Clean Harbors Canada, Inc.
Lambton Facility
4090 Telfer Road R.R. #1
Corunna, ON
N0N 1G0

2022 Annual Landfill Report

Executive Summary

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1. INTRODUCTION

1.1 Background

The Lambton Facility is a hazardous waste management complex operated by Clean Harbors Canada Inc. The facility is located on a 140-hectare parcel of land on Telfer Road in the St. Clair Township of Lambton County. The facility includes an analytical laboratory, a transportation depot, a high temperature incinerator, a thermal desorber unit and a landfill with associated pre-treatment processes.

The landfill is operated in accordance with Environmental Compliance Approval (ECA) No. A031806 dated September 5, 1997, as amended by subsequent Notices up to, and including, Notice 16 dated June 30, 2022.

The location plan of the Lambton Facility is shown in **Figure 1** and the site features are shown in **Figure 2.**

1.2 Scope

Condition 15 of the ECA requires that the Annual Landfill Report be submitted by April 1st of each year and include the following information:

a. The results and an interpretive analysis of the results of all Site monitoring programs, including an assessment of the need to amend the monitoring programs;

b. A summary of any drilling programs, geotechnical monitoring programs, and the results of any soil testing;

c. An assessment of the operation and performance of all Major Works, the need to amend the design or operation of the Site, and the adequacy of and need to implement the contingency plans;

d. Site plans showing the existing contours of the Site; areas of landfilling operation during the reporting period; areas of intended operation during the next reporting period; areas of excavation during the reporting period; any encountered gravel or sand lenses, the progress of final cover, vegetative cover, and any intermediate cover application; facilities existing, added or removed during the reporting period; and Site preparations and facilities planned for installation during the next reporting period;

e. Calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the Site during the reporting period and a calculation of the total volume of Site capacity used during the reporting period;

f. A calculation of the remaining capacity of the Site and an estimate of the remaining Site life;

g. A summary of the monthly, maximum daily and total annual quantity (tonnes) of waste received at the Site for landfilling and pre-treatment, including types and origin;

h. Any Unused Tonnage applied to the current year;

i. A summary of any complaints received, and the responses made;

j. A discussion of any operational problems encountered at the Site and corrective action taken;

k. Any changes to the Design and Operations Report and the Closure Plan that have been approved by the Director since the last Annual Report;

l. A report on the status of all monitoring wells and a statement as to compliance with Ontario Regulation 903;

m. Site plan showing the location of the storage for the unacceptable waste;

n. A list of all rejected loads, including reasons for any rejection;

o. A summary of quantities and types of wastes temporarily stored and transferred from the Site; and

p. Any other information with respect to the Site which the District Manager may require from time to time.

q. **For QC Results:** a summary of all quality control sampling in accordance with the quality assurance/quality control plans for the Major Works, including interpretation and discussion of compliance with those plans;

r. **For LDR**: a detailed monthly summary of the type (by waste class and characteristic) and quantity of waste received at the Site for LDR and at the Processing Facility for LDR and landfill pre-treatment system, total amount and type of reagents used in the process, and the total amount and destination of all outgoing wastes from the Processing Facility; and

s. **For LDR**: a descriptive summary of upgrades conducted during the previous calendar year.

This annual report includes the requested information from the period of January 1, 2022 to December 31, 2022.

2. ADMINISTRATIVE SUMMARY

2.1 Review of 2021 Annual Landfill Report

It has been the historic practice for the Ministry of the Environment, Conservation and Parks (MECP) to provide comments on the facility's annual landfill reports. The comments typically relate to requests for clarification and/or a difference in opinion on data interpretation. Clean Harbors Canada Inc. confers closely with its independent consultants in reviewing and providing a written response to any comments made by the MECP.

In 2023, Clean Harbors received comments from the MECP regarding the 2021 Annual Groundwater Monitoring Report. These comments are included in **Appendix A.** All comments have been addressed within the 2022 Annual Groundwater Monitoring Report which is included in **Appendix I.**

No comments on the 2021 Annual Report were received from Aamjiwnaang First Nation (AFN) or Walpole Island First Nation (WIFN).

2.2 Community Liaison & Advisory Committee (CLAC)

The Community Liaison & Advisory Committee (CLAC) meets regularly during the year to discuss the Lambton Landfill facility operations, updates and potential issues. The Committee is made up of local community members, St. Clair Township Councillors, Walpole Island First Nation, Aamjiwnaang First Nation, a representative of the Ministry of Environment, Conservation and Parks, and Clean Harbors employees.

A copy of the presentations from each meeting in 2022 are included in **Appendix B**.

2.3 Summary of Complaints

In 2022 Clean Harbors received three off-site complaints. The complaints made to the Clean Harbors Lambton facility are summarized in **Table 1.**

Table 1: Summary of Complaints

Date	Complaint Description	Responses and Corrective Actions
August 29, 2022	Leachate odour complaint received at 1:30 PM from a resident at 2280 Plank Road.	Clean Harbors noted no odours during the 1:45 PM perimeter site check.
September 1, 2022	Odour complaint received by the MECP at 7:30 AM from a neighbouring property	Clean Harbors noted no odours at 07:30 AM during the perimeter site check. The incinerator and TDU were both shut down at the time of the complaint. The Clean Harbors staff measured the ambient air using a 5-gas monitor and detected no readings. As a precautionary measure, Clean Harbors added an odour suppressant to the leachate ponds.
November 23, 2022	Leachate odour complaint received by the MECP at 5:30 AM from a passing motorist.	Clean Harbors noted no odours during the 5:15 AM, 7:00 AM or the 8:30 AM perimeter site check. The MECP came to the site and identified a light leachate odour and requested that Clean Harbors add an odour suppressant to the leachate ponds. Clean Harbors complied with the request.

3. WASTE SUMMARY

The waste streams deemed acceptable for the landfill at the Lambton Facility are identified in Conditions 4 and 5 of the ECA. The facility uses material classification codes to describe the landfilled destined waste. The waste classification codes used in this report reflect the implementation of Clean Harbors' corporate computer business platform used internally across North America. The waste codes provide a description of the wastes to be received.

A summary of the waste classification codes and their description is provided in **Appendix C**.

As per Condition 8 of the ECA, daily records are maintained at the facility, identifying the quantities and types of wastes received, origin of the waste, results of analyses performed and the location of placement in the cell. Associated information (i.e., description of the quantities of waste received and their origin), and an estimate of the remaining capacity are summarized on an annual basis per Condition 15 (b).

3.1 Waste Quantities

3.1.1 LDR Waste Pre-treatment Quantities

Waste streams are fully characterised and evaluated by Clean Harbors Canada Inc. to ensure all landfill disposal requirements (LDR) can be met prior to being landfilled. If required, waste can undergo varies methods of pre-treatment at the Lambton Facility to meet the LDR requirements. The pre-treatment methods at the Lambton Facility include:

A. Stabilization
B. Solidification
C. Macro-encapsulation
D. Thermal desorption

A. Stabilization

Stabilization is a pre-treatment method that is done by mixing varying concentrations of binding reagents (such as: Portland Cement (PC), Water (W), Ferrous Sulphate (F), Sodium Sulfide (D), Trisodium Phosphate (TSP)) to meet LDR requirements prior to landfilling

Table 2 provides a summary of waste classes received for stabilization each month and the amount of reagent used in 2022.

Table 2: Waste Pre-treatment Quantities by Month in 2022 - Stabilization

Month	Waste Class	Weight (Tonnes)	Reagent Weight (Tonnes)					Weight Landfilled (Tonnes)
			PC	W	F	D	TSP	
January	N/A	426.9	54.4	86.2	4.7	-	-	572.2
February	146 C	150.0	-	64.1	10.1	-	-	224.2
	N/A	1,053.3	253.4	237.4	16.0	-	-	1,560.1
March	131 H	20.3	16.0	-	1.0	-	-	37.3
	146 C	85.4	-	35.0	8.0	-	-	128.4
	146 T	117.5	31.9	17.8	-	-	0.4	167.6
	N/A	975.1	216.5	203.2	22.1	0.6	0.1	1,417.6
April	131 H	19.5	4.2	2.0	0.6	-	-	26.3
	146 C	21.8	-	11.0	7.0	-	-	39.8
	146 H	18.4	4.9	2.0	0.9	0.7	-	26.9
	146 T	205.0	38.5	17.4	-	2.6	-	263.5
	N/A	1,204.7	261.0	273.0	15.0	-	-	1,753.7
May	131 H	18.5	1.9	0.5	-	-	-	20.9
	146 C	109.8	-	40.8	10.6	-	-	161.2
	146 T	15.0	1.5	1.5	-	-	-	18.0
	N/A	1,322.0	331.4	368.1	17.0	-	-	2,038.5
June	131 H	39.2	6.1	1.8	0.3	-	-	47.4
	143 H	107.0	19.5	33.0	3.0	-	-	162.5
	146 A	29.1	4.4	10.7	-	-	-	44.2
	146 H	0.7	0.1	0.5	0.1	-	-	1.4
	146 T	26.5	11.0	10.4	-	-	0.2	48.1
	N/A	1,188.3	237.1	372.1	21.0	-	-	1,818.5
July	143 H	127.9	25.6	40.2	4.3	70.1	-	268.1
	146 H	1.5	0.1	0.5	0.1	0.7	-	2.9
	146 T	21.0	2.1	2.6	-	4.7	-	30.4
	N/A	296.3	58.8	71.1	5.0	134.9	-	566.1
August	146 T	145.6	28.5	5.0	1.4	1.0	181.5	363.0
	N/A	1,303.7	215.3	327.5	17.5	-	1,864.0	3,728.0
September	131 H	22.6	2.9	-	0.2	-	-	25.7
	146 H	37.3	5.3	4.5	0.6	0.6	-	48.3
	146 T	299.9	62.4	17.1	-	-	0.2	379.6
	N/A	697.8	156.7	190.7	13.0	-	-	1,058.2
October	146 C	7.3	-	4.0	4.0	-	-	15.3
	146 H	20.6	2.1	11.5	0.7	0.6	-	35.5
	146 T	264.2	57.1	17.7	-	-	0.2	339.2
	N/A	642.2	143.0	152.9	11.0	-	-	949.1
November	143 H	7.6	10.0	5.0	-	-	-	22.6
	146 C	7.6	-	2.4	1.1	-	-	11.1
	146 H	26.7	2.7	1.0	-	-	-	30.4
	146 T	109.9	51.0	18.3	-	-	-	179.2
	N/A	291.7	32.2	65.0	3.1	-	-	392.0
December	131 H	27.6	5.5	2.0	-	-	-	35.1
	146 C	7.8	-	2.0	1.0	-	-	10.8
	146 T	52.0	5.2	9.0	-	-	-	0.0
	N/A	351.6	84.3	106.4	10.0	-	-	552.3

Notes: 1. “N/A” refers to in-house generated waste which includes the incinerator burner ash and the thermal desorber ash.
2. Reagents: Portland Cement (PC), Water (W), Ferrous Sulphate (F), Sodium Sulfide (D), Trisodium Phosphate (TSP)
3. “-“ indicates that no waste was received and/or no reagent was used in the pre-treatment process.

B. Solidification

Wastes that have high water content may require solidification pre-treatment prior to landfilling. To solidify the waste, solidification materials are used to sorb the free liquids and increase the solids content (examples of solidification materials include saw dust, drywall paper and woodchips etc.).

Table 3 summarizes the quantity of waste processed for solidification pre-treatment each month at the landfill in 2022.

Table 3: Waste Pre-treatment Quantities by Month in 2022 – Solidification

Month	Waste Processed (t)	Month	Waste Processed (t)
January	-	July	21
February	52	August	113
March	148	September	297
April	15	October	516
May	139	November	964
June	23	December	697

Note: “-“ indicates that no waste was received for solidification for that month

C. Macro-encapsulation

The facility will accept and process inorganic and organic ‘debris’ defined by the LDR regulations by pre-treating it through macro-encapsulation. Macro-encapsulation is a technique used to coat the waste in a layer of cement or carbonaceous reagent. The cement slurry or carbonaceous reagent used for macro-encapsulation is comprised of varying concentrations of different reagents such as fly ash, cement bag house dust and incinerator ash.

The quantity of waste pre-treated by macro-encapsulation each month in 2022 is summarized in **Table 4.**

Table 4: Waste Pre-treatment Quantities by Month in 2022 - Macro-Encapsulation

Month	Waste Processed (t)	Month	Waste Processed (t)
January	145	July	414
February	144	August	260
March	299	September	250
April	279	October	491
May	227	November	1131
June	200	December	712

D. Thermal Desorption

Wastes with high organic and/or water content can be pre-treated through the on-site Thermal Desorber Unit (TDU) to meet the LDR requirements. In order to pre-treat the waste, it is continuously fed into an indirectly heated horizontal cylinder that mixes and conveys the solids to remove the water and organic vapours from the material. The treated soils are discharged to a stockpile or roll-off containers after cooling and wetting prior to being tested to verify LDR standards are met before being landfilled.

The quantities of waste pre-treated by the TDU each month in 2022 are summarized in **Table 5.**

Table 5: Waste Pre-treatment Quantities by Month in 2022 - Thermal Desorber

Month	Waste Processed (t)	Month	Waste Processed (t)
January	1,384	July	591
February	1,145	August	1,834
March	1,327	September	631
April	1,634	October	1,380
May	1,799	November	966
June	1,622	December	789

3.1.2 Landfill Waste Quantities

In 2022 the Lambton Facility received approximately 95,259 tonnes of solid waste (not including the 5,852 tonnes of ash generated from the incinerator). A summary of the waste types and quantities received is provided in **Table 6**.

Table 6: Quantities of Waste Type Received at the Lambton Facility in 2022

Clean Harbors Waste Codes	Generator Location			Total (t)
	Ontario	Other Provinces	United States	
CA1 & CA2	59	-	78	137
CANL	159	4,608	10,645	15,412
CATRI & CATRN	195	56	522	773
CBP	5,722	1,210	1,444	8,377
CBPR	20	10,286	136	10,442
CBPS	176	0	2,727	2,903
CCRT	2,596	10	7,734	10,340
CCS	692	0	1,133	1,824
CCSF	0	0	380	380
CCSM	3,183	73	313	3,569
CCSMA	24,976	1,606	2,232	28,814
CCSS	0	0	250	250
CNIA	58	34	42	134
CNO	11,360	0	30	11,390
CNON	471	0	6	477
CNOS	0	0	37	37

Incinerator ash	5,852	-	-	5,852
TOTAL (t)	55,519	17,883	27,709	101,111
Percent of Total	55%	18%	27%	100%

Note: "-" indicates that no waste was received for a particular Clean Harbors Waste Code

The total quantity of waste received at the Lambton Landfill (other than site generated incinerator ash) is summarized by point of origin in **Table 7.**

Table 7: Total Waste Received by Point of Origin in 2022

Source	Quantity Received (t)	Total Quantity (%)
Ontario	49,667	52%
Other Provinces	17,883	19%
United States	27,709	29%
TOTAL	95,259	100%

A detailed monthly breakdown for waste type quantity received by generators each month in Ontario, other provinces and the United States is provided in **Table 8, Table 9,** and **Table 10** respectively.

Table 8: Quantities of Waste Types Received by Generators in 2022 - Ontario

Clean Harbors Waste Codes	Generator Location: Ontario												Total (t)
	Weight (t)												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
CA1&2	-	16	-	9	-	7	-	15	7	-	6	-	59
CANL	17	-	-	-	-	-	-	-	-	74	-	69	159
CATR / CATRN	-	2	-	6	-	-	-	20	19	39	110	-	195
CBP	910	299	530	343	448	406	336	631	245	157	757	662	5,722
CBPR	-	-	-	-	-	-	-	12	8	-	-	-	20
CBPS	-	54	86	3	-	7	2	0	-	4	-	20	176
CCRT	421	153	425	91	240	156	171	197	195	202	283	63	2,596
CCS	25	19	37	44	52	194	124	38	48	26	12	74	692
CCSF	-	-	-	-	-	-	-	-	-	-	-	-	0
CCSM	135	139	731	247	186	177	323	305	330	171	188	253	3,183
CCSMA	1,902	1,799	1,902	2,061	2,222	2,458	2,425	1,836	2,138	1,836	2,579	1,819	24,976
CCSS	-	-	-	-	-	-	-	-	-	-	-	-	0
CNIA	-	3	-	-	6	-	-	-	-	32	10	8	58
CNO	904	810	897	777	1,120	1,075	802	1,040	845	964	1,175	951	11,360
CNON	-	30	7	4	0	1	-	3	6	5	119	296	471
CNOS	-	-	-	-	-	-	-	-	-	-	-	-	0
TOTAL (t)	4,311	3,323	4,615	3,585	4,275	4,478	4,183	4,095	3,841	3,509	5,239	4,214	49,667

Note: "-" indicates that no waste was received for a particular Clean Harbors Waste Code

Table 9: Quantities of Waste Types Received by Generators in 2022 - Other Provinces

Clean Harbors Waste Codes	Generator Location: Other Provinces												Total (t)
	Weight (t)												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
CA1&2	-	-	-	-	-	-	-	-	-	-	-	-	-
CANL	535	485	496	283	323	408	216	270	397	457	505	234	4,608
CATR / CATRN	-	-	-	-	31	-	-	-	-	-	-	25	56
CBP	-	179	137	32	37	-	158	613	55	-	-	-	1,210
CBPR	2,533	2,704	-	-	-	2,561	669	-	15	-	1,805	-	10,286
CBPS	-	-	-	-	-	-	-	-	-	-	-	-	0
CCRT	-	-	-	-	-	-	-	-	10	-	-	-	10
CCS	-	-	-	-	-	-	-	-	-	-	-	-	0
CCSF	-	-	-	-	-	-	-	-	-	-	-	-	0
CCSM	-	-	20	10	11	5	-	7	9	-	-	11	73
CCSMA	171	169	85	141	55	89	178	119	146	169	144	141	1,606
CCSS	-	-	-	-	-	-	-	-	-	-	-	-	0
CNIA	-	-	-	-	-	14	10	-	-	10	-	-	34
CNO													0
CNON	-	-	-	-	-	-	-	-	-	-	-	-	0
CNOS	-	-	-	-	-	-	-	-	-	-	-	-	0
TOTAL (t)	3,239	3,536	738	466	457	3,076	1,230	1,008	633	636	2,453	411	17,883

Note: "-" indicates that no waste was received for a particular Clean Harbors Waste Code

Table 10: Quantities of Waste Types Received by Generators in 2022 - United States

Clean Harbors Waste Codes	Generator Location: United States												Total (t)
	Weight (kg)												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
CA1&2	-	9	29	-	-	8	5	4	-	13	-	10	78
CANL	1,712	1,123	1,410	2,493	1,277	252	346	423	307	463	470	369	10,645
CATR / CATRN	-	-	-	56	191	-	166	-	-	32	31	47	522
CBP	154	75	159	491	223	34	29	3	53	121	10	91	1,444
CBPR	18	1	-	17	14	18	15	2	16	16	1	19	136
CBPS	27	44	8	-	123	18	-	112	216	512	1,089	579	2,727
CCRT	837	216	579	914	639	789	501	410	531	668	1,042	609	7,734
CCS	-	16	33	172	-	13	-	114	293	275	179	38	1,133
CCSF	28	6	56	50	31	27	44	62	33	28	-	16	380
CCSM	-	5	128	69	-	9	-	2	17	36	21	27	313
CCSMA	79	110	137	188	304	219	311	341	200	144	108	92	2,232
CCSS	-	-	-	-	-	-	-	-	18	-	197	36	250
CNIA	-	-	35	-	-	-	-	-	7	-	-	-	42
CNO	1	-	-	-	-	-	-	19	-	8	-	3	30
CNON	-	-	-	-	-	-	-	-	6	-	-	-	6
CNOS	-	-	-	-	-	-	-	-	-	-	-	37	37
TOTAL (t)	2,855	1,606	2,574	4,449	2,801	1,387	1,416	1,492	1,697	2,314	3,148	1,971	27,709

Note: "**-**" indicates that no waste was received for a particular Clean Harbors Waste Code

3.2 Waste Load Rejection

In 2022 there were 10 full loads and 7 partial loads of waste rejected by the Lambton Facility (for both the incinerator and the landfill). The reasons for rejection included:

- Did not meet acceptance criteria/facility requirements – 8 loads and 1 partial load
- Unable to offload – 2 loads and 6 partial loads

Clean Harbors Canada Inc. is required under Condition 15 (b) (xiv) of the ECA to provide the MECP with a list of all rejected waste loads (i.e., vehicle shipments) with the reasons for rejection.

A summary of all waste loads rejected, and related reasoning is shown in **Appendix D**.

At the Lambton Facility, rejected loads are stored within the Out of Spec and Transfer Storage Area. To prevent potential mix-up with transfer containers, the rejected containers are marked to make them discernible from the transfer containers stored within the same area (i.e., with caution tape). In this storage area, it is ensured that the rejected waste containers remain untouched and that no processing or co-mingling with other waste takes place. The waste is stored in this area until it is shipped to another disposal location or returned to the customer. The rejected containers will be shipped from the site in the same condition as they were received.

Figure 3 shows the waste storage areas on site including the out-of-spec material storage area.

3.3 Temporary Waste Storage

No waste was temporarily stored and then transferred from the site during 2022.

3.4 Waste Tonnage

Condition 29 (i) of the ECA specifies that the maximum rate at which the Site may accept waste is 200,000 tonnes per calendar year. No unused tonnage was applied to the 2022 reporting year.

4. SITE DEVELOPMENT

4.1 LDR Building Development

In 2022, the garage door for the excavator on the east side of the LDR building was replaced. However, after replacement it was damaged and is scheduled to be replaced again in 2023.

4.2 Landfill Development

The expansion of the Lambton Landfill was approved in 2015 and involves the vertical expansion of the landfill, mainly over previously filled areas of the existing landfill. The construction of landfill expansion commenced in the fall of 2015 as described in the Design and Operations Plan approved by MECP on October 19, 2015.

4.2.1 Landfill Capacity

The vertical landfill expansion was approved in 2015 with a permitted capacity of 3,870,000 m^3. Active waste filling within the landfill expansion began in Subcell 19-1 in early 2016. The Landfill D&O Plan reports the average waste density is 1.4 tonnes/m^3. In 2022, active landfilling took place in the west side of Cell 20-1. The landfill received 95,259 tonnes of waste with an approximate volume of 68,042 m^3. Based on the volume of waste received in 2022, it is expected that as of December 31, 2022, the remaining capacity of the landfill expansion is approximately 3,406,708 m^3 (463,292 m^3 or 12% of capacity used).

Based on current projections using 2022 volumes, the landfill expansion is expected to have a site life of 50 more years.

4.2.2 Major Works

The following engineered design elements of the Lambton Landfill are considered to be Major Works:

- Interim clay cap;
- Hydraulic control layer;
- Final cover including HDPE liner, geosynthetic liner and geocomposite; and
- Perimeter leachate control trench

The major works/landfill development activities undertaken in 2022 include the following:

- Interim cap placement on 19-3, the temporary waste cell and the west side of 20-1;
- Further capping in the area east of leachate ponds and surrounding process water pond 1402;
- Leachate collection system installed in 20-1;
- Re-enforced berms surrounding the leachate ponds; and
- Construction of road around 20-1

As a result of the 20-1 slope failure that occurred in 2021, the following additional major work items were completed in 2022:

- A buttress of compacted Cement Kiln Dust (CKD) was installed at the toe of the north and south slopes of 20-1.

5. SITE INSPECTIONS

5.1 Geotechnical Inspections and Monitoring

A. Background

In 2021, as a response to the slope issue in Cell 20-1, the MECP issued correspondence to Clean Harbors that included Notice 15 of ECA A031806 issued on August 24, 2021 which attached in **Appendix E**. The ECA notice included Condition 46 as follows:

"46. The Owner shall not place any waste into the eastern half of cell 19-3 or Cell 20-1 until a report is prepared by a Professional Engineer confirming that landfilling can resume in these cells in a manner that is protective of the health and safety of people and the environment."

A geotechnical investigation was completed to address the requirement set out in Condition 46, and at the direction of Clean Harbors. Additionally, Clean Harbors hired an independent third-party peer reviewer to evaluate all conclusions of the geotechnical investigation. Based on the investigation, peer reviews and comments provided by the MECP, the following was concluded:

- Prior to the installation of the buttress for the north and south slopes, that on a weekly basis the existing and additional survey pins be measured, and a visual inspection of the side slopes be conducted to determine if evidence of movement or instability of the slopes is present;
- The vibrating wire piezometric data should be collected on a quarterly basis; and
- A Geotechnical Engineer will visit the site and conduct a visual inspection of the exposed slopes on a quarterly basis, starting in April or May. These visual inspections will be continued until waste placement has reached an elevation where the exposed slopes are no longer a stability concern (FS greater than 1.5, estimated based on the modelling presented in this letter, approximately when the waste level has reached the upper bench of 190 m asl), confirmed by visual and survey pin monitoring.

B. Cell 20-1 Development

In 2022, the following construction activities in Cell 20-1 took place to improve the factor of safety and/or optimize future development activities:

- The north and south buttresses were constructed;
- The north corner ramp was cut back; and
- A central east-west diver berm was constructed

C. Cell 20-1 Geotechnical Inspections and Survey Monitoring

Commencing in April of 2022, geotechnical inspections were completed by GHD on quarterly basis and survey monitoring was completed by Clean Harbors on a weekly basis. Based on the inspections and survey monitoring the following conclusions were made:

- Geotechnical inspections of Cell 20-1 side slopes occurred on April 22, June 23, August 17 and October 27, 2022 and on January 11, 2023. The following observations were noted:
    - The slide slopes were found to be visually stable for each of the inspections;
    - Minor sloughing of the south and east slopes was observed in April 2022; and
    - Evidence of shallow groundwater seepage was observed from the southeast corner of the cell in April and October of 2022 and January of 2023.
- The survey pins showed stable conditions at all locations with no significant movements from baseline conditions observed over any of the events. Due to this lack of movement, the survey pin monitoring frequency was reduced to every two weeks in 2023.
- VWP-01 piezometric readings are showing a gradually increasing trend, due to waste placement in the western half of Cell 20-1, with piezometric readings just above elevation 197.2 to 197.6 m asl. VWP-02 piezometric readings are more variable and are more subject to seasonal and weather variations. The deep piezometric reading is in the range of 198 m asl, while the two shallower piezometers fluctuate several metres in head between 193.5 and199.5 m asl. This large fluctuation in piezometric head may indicate faulty piezometers, and will be reviewed during the 2023 season as new data is collected.
- Clean Harbors intends to remove the existing ramp on the east side wall of Cell 20-1 to increase the capacity of the cell during waste filling. Based on the stable side wall conditions observed during 2022, and the modelling work completed as presented in the geotechnical reports, and the March 2, 2022 recommendations, the removal of this ramp will not impact the slope stability of the east side wall. To maintain a factor of safety of 1.3, a lower buttress should be kept in place, similar to the one constructed on the north side wall. The lower buttress should have a top elevation of 188.3 m, and should be a minimum width of 15 m across the top of the buttress.

Based on the conclusions, the following recommendations were made for 2023:

- The Geotechnical inspections will continue on a quarterly basis until waste placement has reached an elevation where the exposed slopes are no longer a concern;

- The survey pin monitoring frequency can be reduced to bi-weekly; and

- The vibrating wire piezometric data should be collected on a quarterly basis.

The geotechnical monitoring/inspection summary provided by GHD is provided in **Appendix F.**

5.2 Quarterly Site Inspections

Clean Harbors uses an external third-party consultant to complete quarterly site inspections at the Lambton Facility. The quarterly inspection program was completed by GHD in 2022. The quarterly inspections provide independent confirmation that the site is being developed in accordance with the provisions set forth in the Design and Operations Report.

In 2022, the quarterly site inspections were completed on the following dates: March 31, June 10, September 13 and December 13. The inspections each consist of a visual assessment and review of the waste process and landfill operations including:

A. The landfill cell development and active waste disposal areas;
B. The landfill cover;
C. The perimeter berms; and
D. The water management systems (surface water management system, process water management system, leachate management system).

A summary of the findings from the quarterly site inspections are provided below**.** The site inspections are documented in the interim reports included in **Appendix G.**

A. Landfill Cell Development and Active Waste Disposal

In 2022, landfilling activities took place in Cell 20-1.

A berm running north to south divides the cell into two equal sections. Waste and leachate are contained within the west portion of the cell, stormwater is stored in the eastern section. A five-phase fill plan was developed for the Cell and is attached in **Appendix H.** In 2022, phase 1 of the fill plan was being executed. The active tipping waste face was located in the northwest corner of the Cell and progressed towards the southwest corner throughout 2022. It should be noted that the five-phase fill plan is subject to modification as Clean Harbors deems necessary.

A description of the active tipping face location and waste placement is presented in the site inspection reports contained in **Appendix G**. The haul route utilized from the unloading area to the active tipping face is also described in each quarterly report.

B. Landfill Cover

As part of each quarterly site inspection, visual observations are made of any cap placement work and the condition of the interim and final already in place.

With the approval of the vertical expansion of the landfill, previously capped areas of the landfill are considered to be interim, since a portion of the cap will be removed and additional waste placed in these areas.

In 2022, interim cap cover was installed on the temporary waste cell and further capping was completed in areas east of the leachate pond and surrounding process water pond 1402. The quarterly inspections noted that the interim cover throughout the site remains in good condition with minor surface water erosion channels. In the fourth quarter of 2022, Clean Harbors addressed surface erosion channels on the south area of Cell 19 with the placement of clay and the installation of a spill way.

The final cover was inspected, and sufficient seed uptake has occurred and no areas of the final cover appear to require maintenance. It was also noted that sediment build-up and erosions channels along the interior ditches require on-going periodic maintenance.

C. Perimeter Berms

The geometry of the perimeter berms surrounding the landfill is unchanged. Erosion of the perimeter screening berm was observed to occur in a number of locations on the interior or landfill side of the berm. This ranged from minor channels to more significant channeling in select areas of the site. The erosion channels are a result of the interior side walls being unvegetated. The erosion has resulted in some sedimentation occurring in the perimeter storm water ditching. The maintenance of the erosion channels is on-going.

D. Water Management System

i. Surface Water

The surface water management system at the Lambton Facility is comprised of a network of drainage ditches, and until early 2020 of two surface water ponds located in the East and West portions of the site. The construction of the revised surface water management system commenced in 2020 and was completed by October 30, 2020. Surface water runoff from undeveloped portions of the site, perimeter berms, capped and closed landfill cells is directed through this network of drainage ditches and reservoirs to the on-site surface water treatment facility. Treated effluent from the surface water treatment facility is discharged to and retained in the Equalization Reservoir before being discharged via a channel to the municipal drainage swale located along Telfer Sideroad.

Inspection of the perimeter ditches and surface water ponds established that their side-slopes were stable with only minor evidence of erosion. An elevation difference

between the northeast and southeast surface water ditching was noted to be preventing the northeast ditching to drain efficiently.

The water level within the surface water ponds was noted to be moderate to high throughout 2022. Erosion channels were observed along the sides of Pond B and Pond C.

Water levels within the equalization pond were generally at normal operating levels during the year. The Equalization Pond provides for the adequate retention of the treated storm water. The exposed, concrete-lined side-slopes appear to be stable, although cracks and spalling of the concrete were observed, consistent with previous observations.

Detailed observations of the surface water management system are presented in the site inspections contained in **Appendix** .

ii. Process Water

The Process Water Management System at the Site consists of four ponds and a series of ditches and swales. Impacted and potentially impacted runoff from the operational areas and active landfill sub-cells is directed to the following four ponds:

1. **The North Process Water Pond:** located immediately west of the TDU;
2. **The South Process Water Pond:** located immediately south of the incinerator;
3. **The West Process Water Pond**: located adjacent to the West side of the Storm Water Pond;
4. **The East Process Water Pond (1402)**: located north of the leachate ponds.

Water retained in the Process Water Management System is used as quench water for the site incineration operations. Detailed observations of the process water management system are presented in the site inspections contained in **Appendix G**.

iii. Leachate Management System

The site contains three leachate ponds that are designed to receive leachate from the active fill area and process areas of the Site. The berms around the leachate ponds were reinforced with the placement of clay in 2022. Leachate is transferred from the active fill area through the leachate trench to the leachate ponds for storage prior to transfer to the incinerator for disposal. The leachate trench system was extended to the east to manage leachate in cells 19-3 and 20-1.

A leachate conveyance pipe was installed to transport leachate from the temporary waste cell to the west side of Cell 20-1.

The Leachate Storage Tank (Tank T-112) operates as the feed tank to the incinerator.

Detailed observations of the leachate management system are presented in the site inspections contained in **Appendix** .

6. ENVIRONMENTAL MONITORING

6.1 Groundwater and Landfill Performance Monitoring Program

The Groundwater and Landfill Performance Monitoring Program undertaken at the Lambton Facility is based on the “Final Draft – Groundwater and Landfill Performance Monitoring Programs” document prepared by RWDI (December 9, 2015).

The Groundwater Monitoring Program is subdivided into three programs:

A. Perimeter Groundwater Monitoring Program

B. Sub-Cell 3 Performance Monitoring Program

C. Engineered Landfill System Performance Monitoring Program

The goal of the monitoring programs is to provide early detection of changes in groundwater quality and to demonstrate that the engineering systems are functioning as intended. For each of the programs, monitoring wells have been installed within the three hydraulically active water-bearing zones: the Active Aquitard, the Interface Aquifer and the Shale Aquitard.

The Active Aquitard is within the weathered portion of the clay-silt overburden located 3 to 4 meters below ground surface. The weathering has occurred as a result of the summer desiccation and winter frost action fracturing the clay materials. Groundwater flow through the clay fractures can be potentially rapid in comparison to the groundwater flow through unfractured overburden materials.

The Interface Aquifer is located at the overburden and bedrock interface. It is characterized by a thin, discontinuous layer of granular material overlying the fractured bedrock. The Interface Aquifer has been capable of satisfying residential water requirements albeit the yield and quality has been problematic. The Active Aquitard and the Interface Aquifer are considered the primary pathways for possible contaminants to travel.

The Shale Aquitard located within the shale bedrock from the Kettle Point Formation. It is located approximately 40 meters below ground surface and has few fractures and therefore a low hydraulic conductivity.

All on-site monitoring wells are maintained as required in Section 20 of Ontario Regulation 903 (O. Reg. 903) under the Ontario Water Resources Act (OWRA).

The 2022 Annual Groundwater Monitoring Program report including descriptions of each of the three monitoring programs is provided in **Appendix I**.

A. Perimeter Groundwater Monitoring Program

The objective of the Perimeter Groundwater Monitoring Program is to characterize each of the three hydrostatic units (The Active Aquitard, The Interface Aquifer and the Shale Aquitard). This is completed by assessing the groundwater flow direction of the vertical and horizontal gradients of and determining if potential groundwater contamination is present.

The following are the conclusions derived from the 2022 Groundwater Monitoring Program Along the Perimeter of the Facility:

- As designed, the northern berm has caused groundwater elevation increases within and below the berm causing a groundwater mound that induces an inward hydraulic gradient from the berm to the waste footprint. Groundwater elevations outside of the berm remain stable within historical ranges.
- Groundwater potentiometric contours in the Interface Aquifer indicate a potentiometric high in the northwest portion of the property consistent with historical patterns.
- The groundwater quality of both the Active Aquitard and the Interface Aquifer have exceedances of ODWS parameters such as TDS, alkalinity, chloride, sodium, barium, iron, and sulphate but have been attributed to naturally occurring concentrations. With the exception of barium, the ODWS for these parameters are non-health related (i.e., aesthetic or operational). The exceedances are also consistent with historical monitoring data for the landfill and baseline groundwater quality monitoring.
- Sulphate concentrations in the Active Aquitard exceed the maximum allowable concentration at the compliance boundary calculated following the Reasonable Use Guideline. The source of sulphate in the Active Aquitard has been identified as the result of natural processes. Overall, the exceedances of Reasonable Use concentrations in Active Aquitard monitoring wells are not interpreted to be landfill related.
- Consistent with historical data, groundwater samples taken from Interface Aquifer wells indicate exceedances for chloride, TDS, barium, boron, iron, and sodium. With only one exceedance noted for fluoride. These exceedances are not interpreted to be landfill related, and with the exception of barium, the parameters have non-health related standards.
- Statistical trend analysis (as outlined in Section 3) was completed for groundwater data collected for Active Aquitard and Interface Aquifer monitoring wells. The majority of monitoring wells indicated either no trend or a decreasing trend with concentrations generally within historical ranges. The lack of

increasing trends in the monitoring data is an indica□on that exceedances are not related to landfill impacts.

B. Sub-Cell 3 Performance Monitoring Program

The objective of the Sub-Cell 3 Remedial Performance Monitoring Program is to assess the performance of the Hydraulic Control Layers (HCL) which was installed as remedial measures within Sub-Cell 3. This is completed by confirming that an appropriate hydraulic head difference between the Interface Aquifer and the HCL is maintained, and no cross-contamination of leachate to groundwater is occurring.

- Groundwater elevation in the HCL monitoring wells and extraction wells was greater than the groundwater elevation in the Interface Aquifer indicating that the extraction wells were not operating in 2022, and the HCL was not controlling groundwater levels in Sub-Cell 3 as designed. Significant surface works have occurred in the Sub-Cell 3 area between 2021 and 2022 and have affected the operation of the extraction wells.

- The extraction well pumps became operational on February 15, 2023. Water levels in the Sub-Cell 3 HCL are expected to decrease and re-establish the inward hydraulic gradient.

- While the water elevation data for the HCL indicates that it had not been operating as designed, the groundwater quality data do not indicate deteriorating groundwater quality. The low permeability of the unweathered till results in extremely low groundwater velocities even when there is a reversal of vertical hydraulic gradients.

C. Engineered Landfill System Performance Monitoring Program

The object of the Performance of Engineered Landfill System Program is to assess the performance of the Leachate Control System (LCS) at the Lambton Facility. The LCS is used to maintain and inward hydraulic gradient at the site to prevent leachate migration. The assessment is completed by confirming an inward hydraulic gradient between the LCS and the perimeter monitoring wells and evaluating the groundwater quality in the Active Aquifer.

- Analysis of the leachate control system (LCS) and nearby monitors indicated that the hydraulic gradient was inwards towards the LCS, preventing leachate from migrating beyond the southern and southwestern property boundary. Groundwater quality monitoring data supports this conclusion.

The groundwater monitoring data for each of the programs is provided in **Appendix I.**

6.2 Surface Water Monitoring

The Lambton Facility uses a surface water management system to direct all stormwater generated from non-operational areas to the onsite Surface Water Treatment Plant using a series of ditches and reservoirs.

The following Surface Water Monitoring is completed at the site:

A. Discharge Monitoring
B. Surface Water Characterization Monitoring

A description of each of the surface water monitoring programs is described below.

A. Discharge Monitoring

The Surface Water Treatment Plant is utilized when the Surface Water pond levels become high and storage becomes limited. High surface water levels occur typically as a result of heavy or frequent precipitation events and/or seasonal periods of high water runoff.

When the Surface Water Treatment Plant is put into operation, it is put into a recirculation mode that filters the surface water through a series of carbon-filters. The recirculation mode is continued until the effluent meets the criteria established under the ECA.

Once the effluent from the treatment plant is in compliance with the ECA criteria, the treated water is discharged to the Equalization Pond. Before discharging is permitted, surface water from the Equalization Pond is analyzed and verified to meet the discharge criteria. When the conditions are satisfied, the Equalization Pond is discharged to a drainage ditch along the east side Telfer Road. A revised surface water monitoring program for the Facility was approved by the MECP in March 2016.

During discharging, the treated surface water is monitored and sampled daily with additional sampling occurring monthly and off-site sampling conducted seasonally.

In 2022, two discharging events occurred at the Site from:

- **Discharge event 1:** December 23rd, 2021 to January 6th, 2022; and
- **Discharge event 2:** March 22, 2022 to May 5, 2022.

An outline of the monitoring and results are summarized below.

i. Daily Discharge Monitoring

During discharging, the treated surface water is monitored daily for continual acceptance against the discharge criteria. Samples are collected from the Equalization pond and analyzed for: pH, specific conductivity, phenols, chloride, solvent extractables (oil and grease), and total suspended solids.

Daily discharge monitoring was completed for both of the 2022 discharge events and no exceedances of the monitoring parameters required for daily discharge monitoring.

ii. Monthly Discharge Monitoring

Monthly discharge monitoring is conducted on-site during discharge events. Samples are collected from the Equalization pond, Pond A and Pond D for analysis of general chemistry, total metals, volatile organic compounds, semi-volatile and organic compounds.

For discharge event 1, monthly monitoring samples were collected on December 14th, 2021. For discharge period 2, monthly monitoring samples were collected on March 22, 2022 and May 2, 2022. There are no site-specific compliance criteria for the monthly discharge samples.

For a point of reference, the results were compared to the Provincial Water Quality Objectives (PWQO). Note that the PWQO are criteria which serve as chemical and physical indicators of desirable levels for surface water in Ontario. The PWQO are often used to provide guidance in making water quality management decisions, however it is noted that “background” surface water quality in the Province of Ontario commonly exceeds the PWQO for various parameters. It is therefore necessary to account for local conditions in assessing surface water quality against the PWQO.

The Pond A, Pond D and the equalization pond analytical results were generally below the PWQO with the exception of the following:

- Aluminum;
- Molybdenum;
- Phosphorous;
- Iron;
- Chromium VI;
- Un-ionized ammonia; and
- Total Phenols.

Based on local background conditions in surface water and historical results, the concentrations of these parameters reported in 2022 are interpreted to be the result of natural variability in surface water. There is no evidence of site related surface water impact within the Equalization Pond, Pond A or Pond D. Further details of the monthly discharge monitoring are provided in the Surface Water Monitoring Report attached in **Appendix J.**

iii. Toxicity Monitoring

For discharge event 1, monthly monitoring samples that included toxicity analysis were collected on December 14th, 2021. For discharge period 2, monthly monitoring samples

that included toxicity analysis were collected on March 22, 2022 and May 2, 2022. Each of the toxicity samples were collected from the Equalization Pond to monitor the overall water quality toxicity.

In 2021, the toxicity sample was collected prior to the discharge event, however, it was unable to be analyzed due to a laboratory error. The toxicity samples collected on March 22 and May 2, 2022 indicated non-toxic results.

iv. Visual Observations

Visual observations confirming the presence/absence of fish are documented to gain a general understanding of the overall health of the Equalization Pond and water quality with regard to aquatic life.

Visual observations were noted on December 16th, 2021 and March 31, June 10, September 13 and December 13, 2022 as part of the quarterly site inspection. No fish were observed in the Equalization Pond during each inspection, however, the water was reported to be murky, making it difficult to observe fish and confirm if they are in the deeper water. It is also likely that the fish were near the bottom of the pond.

v. Off-Site Monitoring

Off-site sampling evaluated the general surface water quality in the area. The Site has a clayey overburden and as such the surface water is impacted by the natural materials that present within the overburden. Off-site samples are collected from each of the locations twice per year, typically during discharge events in the spring and late summer/fall. Sample are collected and analyzed for: general chemistry, total metals, VOCs and sVOCs.

In 2022, Clean Harbors received approval from the MECP to re-locate the off-site sample locations (STN6U and STN6D replacing STN6 and STN6A). The off-site sample locations were re-located due to fallen trees and dangerous sampling conditions.

Off-site samples were collected on May 3, 2022. The analytical results for the off-site locations were generally below the PWQO with the exception of aluminum and iron. Alumium and iron concentrations exceeded the PWQO at upstream and downstream locations, indicating natural elevated concentrations within the receiving waterway (i.e. municipal ditch along road).

The detailed surface water monitoring program results are included in **Appendix J.**

B. Surface Water Characterization Monitoring

Condition 9 of ECA No. 4731-BNNT5Y specifies that a surface water characterization should be completed to evaluate surface water quality with relation to the vertical expansion and landfill operations. A key concern was the potential for dust/operational impacts since the active disposal cells are along the south, near the surface water ponds. A surface water characterization monitoring program was incorporated through

the sampling of Ponds A and D (formerly the East Pond and West Pond) for 5 years following commencement of the landfill expansion. The landfill expansion commenced in 2016, however, the characterization was delayed for one year due to construction activities in 2020. The surface water characterization was provided in the 2021 Annual Surface Water Report.

It is recommended that the next review be completed in 2026 to determine if landfill-related impacts are occurring to surface water ponds. This review will cover the next 5-years of monitoring data, from 2022 to 2026. The March and May 2022 monitoring results from Pond A and Pond D will be used in the surface water characterization completed in 2026.

6.3 Ambient Air Monitoring Program

Clean Harbors conducts an annual Ambient Air Monitoring Program to ensure that any potential contaminant release from the facility are within accepted regulatory and guideline limits. The monitoring program includes a series of measurements for speciated vapor and particulate constituents in accordance with the monitoring plan prepared in 2015.

The north and south twenty-four hour sampling commenced at 0000 hours on May 5, 2022 (Eastern Standard Time) and ended on 2400 hours September 14, 2022. The sampling schedule generally followed the NAPS schedules.

For the 2022 monitoring program, VOCs, particulates, carbonyls, mercury and metal component concentrations were measured and no exceedances were detected. Acrolein is reported at high than the MECP limit for that compound; however, Acrolein was not detected in any of the analyzed samples and the reported exceedance is due to the high detection limit relative to the MECP limit.

In general, the measurements for the 2022 monitoring program were within the range seen in previous years. Vapour phase mercury and the metals chromium, nickel, tin, vanadium, arsenic, selenium, cadmium, antimony, and cobalt were detected in more samples than typically seen in the last three years. Vapor phase mercury was detected in only three (3) samples in the last three years but was detected in all six (6) samples analyzed in 2022. The rest of the metals were not detected at all in the preceding three years, with the exception of Nickel, which was detected in 1-4 samples per site in 2020 and 2021. In 2022 many of these metals were consistently detected at both sites with 10 detects per site, while the least detected (cobalt) was still detected in 5 samples total for both sites.

Total benzene concentrations were generally lower than historically seen, with the exception of the last sample taken on September 14th which had the highest measured concentrations in the three-year period.

Average TSP concentrations were lower than in 2020 or 2021 by approximately 15%. Additionally, the TSP maximum concentration was considerably lower than in 2020 or

2021, with a maximum of 38 µg/m^3 this year compared to 110 µg/m^3 in 2020 and 70 µg/m^3 in 2021.

The Ambient Air Monitoring Report is provided in **Appendix K**.

6.4 Annual Biomonitoring Program

An Annual Biomonitoring Program is completed at the Lambton facility as a requirement under Condition 9 of the Facility's Environmental Compliance Approval No. A031806 dated September 5, 1997 and as amended. The Biomonitoring Program provides an indication of trends, through time, in the concentration of analytes in several environmental media at a network of test Sites located within approximately 1.5 km of the Lambton Facility boundary.

The Annual Biomonitoring Program includes the collection of samples from up to four environmental media (soil, drainage ditch sediment, natural vegetation and agricultural crops) from various sites which are submitted to the analytical laboratory to determine the concentration of selected metals, pesticides, chlorinated phenols, and dioxins and furans. For the 2021 Field Year, a total of 12 test Sites were monitored.

In general, the results of the biomonitoring program based on field observations of agricultural crops, fertility and characterization data, and/or measured analytical concentrations in sampled environmental media, do not indicate that upset conditions have occurred and that the biomonitoring results are comparable to previous years.

The 2021 Annual Bio-Monitoring Report is provided in **Appendix L.**

7. SITE AMENDMENTS

7.1 ECA Amendments

On June 30th, 2022 the Lambton facility received an amendment of ECA A031806 issued as Notice 16. The ECA amendment outlined new requirements of the temporary storage waste area regarding interim cover, leachate collection, inspection frequency, seep management and notification. The ECA amendment is attached in **Appendix M.**

7.2 ECA Applications

The Lambton facility did not apply for an ECA amendment in 2022. However, Clean Harbors is still working with the MECP to amend the following:

- Condition 10 b) of A031806 to allow treatment of treatment of leachate generated on Site and the disposal of the treated leachate through high temperature evaporation of the leachate within the quench water system that cools the incineration exhaust prior to the exhaust air treatment systems. This application was submitted on October 29th, 2021.

- To amend and consolidate ECA Nos. A031813, A031806, 8-1030-94-006, and 6547-5G5MSP. The amendment would also include:
    - An update to the facility's hazardous waste incinerator, including the incorporation of Limited Operational Flexibility (LOF) for the Incinerator Tank Farm to allow the contents of the tanks to be changed as needed;
    - the use of Frac Tanks for temporary liquid waste storage;
    - the connection of the leachate tank to the incinerator vent system and carbon bed;
    - the inclusion of Waste Class Code 331 (gaseous ODS); and
    - the approval for leachate treatment and injection into the quench/spray dryer zone and the use of off-site nonhazardous industrial water for injection into the quench chamber. The application for the amendment was submitted to the MECP for review on February 17, 2022.

  Due to the complexity of the amendment applications, it has taken longer than anticipated to finalize. The Lambton Facility is expecting to receive the amendments in the Spring of 2023.

7.3 Design and Operations Report

No changes were made to The Design and Operations Report in 2022.

In 2023, it is anticipated that with approval of the ECA consolidation mentioned in **Section 7.2** that there will be an update of the Design and Operations report.

7.4 Environmental Monitoring Programs

A. Surface Water Monitoring Program

In 2022, Clean Harbors received approval from the MECP to re-locate the off-site sample locations (STN6U and STN6D replacing STN6 and STN6A). The off-site sample locations were re-located due to fallen trees and dangerous sampling conditions. Details of the new locations are included in the Surface Water Monitoring Report attached within **Appendix J.**

No other amendments were made to the environmental monitoring programs in 2022.

In 2023, Clean Harbors will be assessing the environmental monitoring programs for possible amendment considerations.

7.5 Contingency Plan

In 2022, the Clean Harbors Emergency and Preparedness Manual received amendments to the following sections:

- Section 5.1: Incineration Fires and Reactions – updated August 2022
- Section 5.2: Landfill Fires and Reactions – updated August 2022

- Section 5.5: On-Site Spills – updated January 2022
- Section 5.11: TDU Fires and Reactions – updated August 2022
- Section 5.12: SPL Fire or Reaction – updated August 2022
- Spill Prevention Plan – updated March 2022

7.6 Closure Plan

No amendments to the facility closure plan were made in 2022.

FIGURES

Figure 1: Location Plan

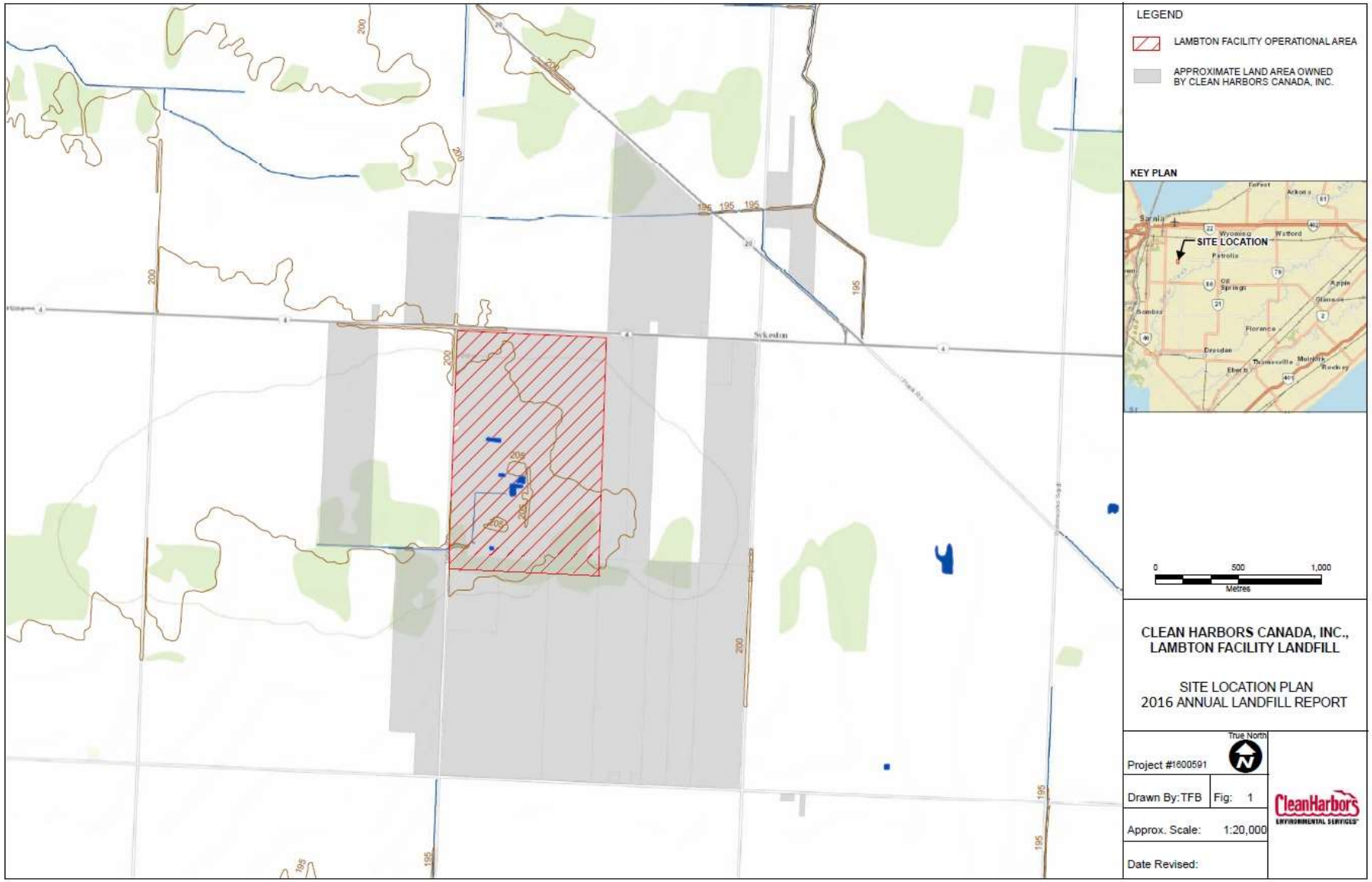

Figure 2: Site Features

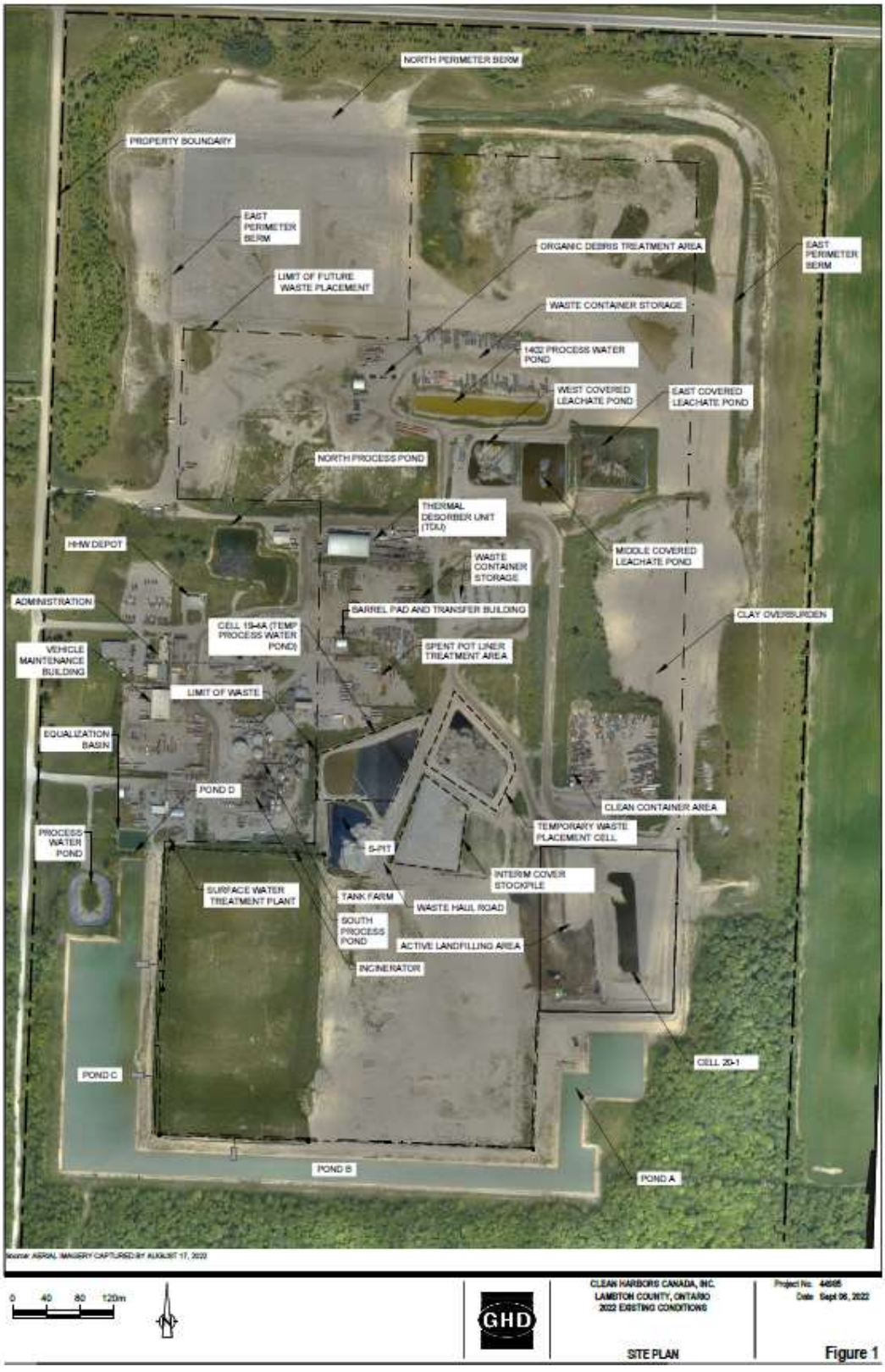

Figure 3: Waste Storage Areas