

The Corporation of the City of Kawartha Lakes
Agenda
Lindsay-Ops Landfill Public Review Committee Meeting

2022-001

Wednesday, January 19, 2022

**Electronic participation begins at 3:00pm. For access to Zoom link please contact
ksnoddy@kawarthalakes.ca**

Public Works and Engineering Boardroom

322 Kent Street West

Lindsay, ON K9V 4T7

Members:

Councillor Pat Dunn

Chris Appleton

Barry Hodgson

Lloyd Robertson

Larry Scrivens

David Webb

Accessible formats and communication supports are available upon request. The City of Kawartha Lakes is committed to accessibility for persons with disabilities. Please contact AgendaItems@kawarthalakes.ca if you have an accessible accommodation request.

1.	Call to Order	
2.	Election of Officers	
3.	Adoption of Agenda	
4.	Disclosures of Pecuniary Interest	
5.	Approval of the Minutes of the Previous Meeting	3 - 5
6.	Reports	
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8.	Leachate Outbreaks	
9.	Other New Business	
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10.	Public Comment Period	
11.	Next Meeting	
12.	Adjournment	27 - 29

The Corporation of the City of Kawartha Lakes
Minutes
Lindsay-Ops Landfill Public Review Committee
Meeting

2021-006
Wednesday, November 17, 2021
3:00 P.M.
Public Works and Engineering Boardroom
322 Kent Street West
Lindsay, ON K9V 4T7

Members:
Councillor Pat Dunn
Chris Appleton
Barry Hodgson
Lloyd Robertson
Larry Scrivens

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1. Call to Order

The Chair called the meeting to order at 3:01pm.

2. Adoption of Agenda

Moved By B. Hodgson

Seconded By L. Scrivens

Resolved that the Agenda be adopted as printed.

Carried

3. Disclosures of Pecuniary Interest

There were no declarations of pecuniary interest disclosed.

4. Approval of the Minutes of the Previous Meeting

Moved By L. Scrivens

Seconded By C. Appleton

Resolved that the minutes from the previous meeting be approved.

Carried

5. Reports

5.1 PRC Activity Summary Spreadsheet

Kerri reported on each item in the summary sheet. Lloyd inquired about how the mattress program was going. Staff reported we have already recycled more mattresses so far this year than in all of 2020. Chris inquired about the curbside battery and textile programs. Staff reported 11 drums of batteries were collected during the fall battery pick up and approximately 40 tonnes of textiles have been diverted in 2021.

Chris also inquired about the WSP infrastructure study. Staff will get an update on the status of this study from the Capital Assets Engineering Group and report back to the PRC.

6. Landfill Complaints

Staff reported two odour complaints on September 10th and October 22nd. Both complaints were investigated and reported to the MECP. The complaint in September was likely due to an equipment operator scarifying an area to promote drainage and the complaint in October was likely due to the ongoing construction at the Water Pollution Control Plant.

Larry Scrivens inquired as to why the City was accepting oxygen and acetylene tanks at the HHW depot. He mentioned legislation regarding proper storage requirements and noted that most users do not own these tanks but rent them from organizations. Bryan Robinson asked Larry to contact staff after the meeting to discuss further.

7. Leachate Outbreaks

No leachate outbreaks.

8. Other New Business

8.1 Source Separated Organics (SSO) Feasibility Report

David Kerr provided a summary of the report to go to council in December recommending that the City put out a request for expression of interest to see what organizations may be interested in partnering or providing services to CKL for a source separated organics program.

Chris supports what the City is doing overall and informed the PRC about Toronto's effective pay as you throw system and looking at incentives to reduce garbage.

Lloyd suggested that the City proceed incrementally, and not do too much too fast. He mentioned seeing black bags that are still being illegally dumped due to the clear bag program.

Councillor Dunn commented that there are many political ramifications and complaints when there are changes to waste programs.

9. Public Comment Period

No comments.

10. Next Meeting

The next meeting will be Wednesday, January 19th at 3:00pm over Zoom.

11. Adjournment

Moved By Councillor Dunn

Seconded By B. Hodgson

Resolved that the meeting adjourn at 4:10pm.

Carried

**Lindsay Ops Landfill Public Review Committee
Action List**

Meeting Date of Activity	Action	Responsibility	Action Item Date:	Status
17-Jun-15	MECP Comments	CKL	As Available	Jan 19 Meeting: No comments. MECP inspection at Lindsay Ops on October 28th to review today.
21-Jan-15	Provide update on quarterly PCB testing (SW3/ SW13)	CKL	Quarterly	Jan 19 Meeting: Sampling will not occur until April/May when river thaws.
23-Nov-16	Biomonitoring	CKL	As Available	Jan 19 Meeting: 2022 monitoring and reporting awarded. Monitoring to be completed in February as required in ECA.
21-Jan-19	Leachate Water Quality Results	CKL	As Available	Jan 19 Meeting: See attached spreadsheet.
15-May-13	Generator, Wellfield, Flare Operations	CKL	Monthly	Jan 19 Meeting: Generator has been running consistently. Annual report to go to February 8th committee of the whole meeting.
20-Jun-18	Lindsay Ops EA Process Update	CKL	As Available	Jan 19 Meeting: Future Options Study draft completed and going to committee of the whole meeting on February 8th.
15-Jan-14	That the PRC is copied on Staff Reports to Council regarding the Lindsay Ops Landfill	CKL	As Available	Jan 19 Meeting: SSO report went to December council meeting. RFI to go out early 2022 for interest in working with CKL on organics program.
17-May-17	Waste Management Advisory Committee Update	CKL	As Available	Jan 19 Meeting: WMAC went over 2022 work plan, waste strategy update, and corporate waste reduction initiatives.
17-Jan-17	Updates on Blue Box markets and Legislation	CKL	As Available	Jan 19 Meeting: Final regulation posted. Blue Box markets doing very well and are improving each month. City should know more mid 2022 after "rules" are set by producers on how they will operate blue box program.
16-May-18	Construction and Demolition Update	CKL	As Available	Jan 19 Meeting: Our goal is to recycle another 1000 tonnes in 2022.
8-Jan-20	Update on Implementation of Waste Strategy Initiatives	CKL	As Available	Jan 19 Meeting: Progress Update as Agenda Item.



Lindsay Ops Landfill
51 WILSON RD, KAWARTHA LAKES, ON, K9V 4R3

Inspection Report

System Number:
Inspection Start Date: 10/28/2021
Inspection End Date: 11/24/2021
Inspected By: Glenn Rutherford
Badge #: 472

A handwritten signature in black ink that reads "Glenn Rutherford".

(signature)

NON-COMPLIANCE/NON-CONFORMANCE ITEMS

This should not be construed as a confirmation of full compliance with all potential applicable legal requirement and BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: Regulated Activity: WASTE : Landfills

Component Assessed: LANDFILL

Question ID	NOL 1	
Question	Question Type	Legislative Requirement
Does the Open landfill site have an Environmental Compliance Approval (ECA)?	Legislative	EPA 27 (1)
Observation		
<p>Yes</p> <p>An inspection site visit was conducted on October 28, 2021.</p> <p>The 2020 Annual Monitoring Report (AMR) was used as a resource to address inspection questions as needed.</p> <p>This section present some landfill background followed by a discussion of the ECA.</p> <p>Background</p> <p>The Lindsay Ops Landfill site is located at 51 Wilson Road, in the former Township of Ops. The site is just outside the town of Lindsay and is located next to the Lindsay Wastewater Treatment facility. The site is owned by the City of Kawartha Lakes.</p> <p>Landfill operations originally began at the site in 1980. The original landfill at the site is now closed and the currently operating landfill, known as the north expansion area, is located to the north of the closed landfill. The current landfill operation was first approved in 2001.</p> <p>The site consists of a 21.2 hectare waste fill area within a total site area of 53.9 hectares. The landfill site is one of five operating Landfills serving the City of Kawartha Lakes, population approximately 80,000. The site is approved to receive solid, non-hazardous municipal wastes generated within the City of Kawartha Lakes, including residential, commercial, institutional and industrial sectors, contaminated fill, and biosolids (processed organic wastes) restricted to treated and dewatered sewage sludge from the Lindsay Water Pollution Control Plant (WPCP).</p> <p>ECA</p> <p>ECA A321504 was consolidated into a single document dated December 5, 2019 as a "housekeeping" measure to eliminate the seven amending notices and to modernize the ECA wording.</p> <p>A subsequent minor amendment was issued on January 8, 2021. This amendment approved</p>		

changes related to discharge of water from the compost pond. This amendment was incorporated into the main body of the ECA.

Question ID	NOL 3		
Question	Question Type	Legislative Requirement	
Does the holder of the landfill ECA own the entire site?	Information	EPA 27 (1), EPA O. Reg. 232/98 3	
Observation			
Yes			
The 2020 AMR provides a general description of the CAZ lands for the landfill site, as follows:			
2020 AMR page 2 indicates:			
"The Lindsay WPCP is located immediately west of the original landfill and southwest of the expansion area. The Sturgeon Lake Wetland and the Scugog River are west of the Lindsay WPCP and Landfill Site. The City owns the land to the north of the Site. Immediately south of the Site is Lagoon Road, with the adjacent land south of the road owned by the City as a contaminant attenuation zone (CAZ). Immediately east of the Site is Wilson Road. The City owns all of the properties to the east side of Wilson Road with the exception of one at the northeast corner of Wilson Road and Highway 36."			

Question ID	NOL 2		
Question	Question Type	Legislative Requirement	
Is this landfill on Crown land?	Information	Not Applicable	
Observation			
No			

Question ID	NOL 4		
Question	Question Type	Legislative Requirement	
Does the landfill have a Contaminant Attenuation Zone (CAZ)?	Information	Not Applicable	
Observation			
Yes			

Question ID	NOL 5		
Question	Question Type	Legislative Requirement	

Is the CAZ on Crown land?	Information	Not Applicable
Observation		
No		

Question ID	NOL 13	
Question	Question Type	Legislative Requirement
Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?	Information	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 14	
Question	Question Type	Legislative Requirement
Is site access limited to times when an attendant is on duty?	Legislative	EPA 27 (1)
Observation		
<p>Yes</p> <p>Access to the site is controlled. The site is fenced and gated. When open all vehicles entering the site must pass the scale house.</p> <p>Current site public operating times: (Winter and summer hours) Monday: 8am to 5pm Tuesday: 8am to 5pm Wednesday: closed Thursday: 8am to 5pm Friday: 8am to 5pm Saturday: 8am to 3pm</p>		

Question ID	NOL 15	
Question	Question Type	Legislative Requirement
Does the site only receive waste from within its approved service area?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 16	
Question	Question Type	Legislative Requirement

Is the site required to have a ground water monitoring program by the ECA?	Information	Not Applicable
Observation		
Yes		

Question ID	NOL 17	
Question	Question Type	Legislative Requirement
Is the site implementing the groundwater monitoring program as required by the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 18	
Question	Question Type	Legislative Requirement
Are monitoring well samples taken and tested to determine the quality of the ground water?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 25
Observation		
Yes		

Question ID	NOL 19	
Question	Question Type	Legislative Requirement
Is the ministry concerned with the results of the samples that have been tested?	Information	Not Applicable
Observation		
<p>No</p> <p>Groundwater monitoring results from the AMR for the site are periodically reviewed.</p> <p>Based on a limited review of the 2019 AMR for this inspection report, the 2019 AMR's main conclusions appear to be that the contaminate plume from the old landfill does not extend significantly beyond the old landfill site boundary and that loadings to the bedrock aquifer from the landfill are considered acceptable. A single round of PFAS sampling was evaluated.</p> <p>As well, the 2019 AMR does not identify any Reasonable Use Guideline concerns with the site.</p> <p>PFAS sampling has been undertaken at the site and this may assist in identifying the landfill groundwater plume from any other contaminant plume associated with the sewage lagoons or off-site sources.</p>		

Question ID	NOL 20	
Question	Question Type	Legislative Requirement
Is there ongoing abatement to address any concerns the ministry has with the ground water monitoring?	Information	Not Applicable
Observation		
No		

Question ID	NOL 21	
Question	Question Type	Legislative Requirement
Is the site required to manage leachate by the ECA?	Information	Not Applicable
Observation		
<p>Yes</p> <p>Leachate control at the site is provided by the following:</p> <ul style="list-style-type: none"> - An engineered leachate collection system constructed to service the north expansion area. This includes Cells 1, 2, 3, and 6, and more recently Cells 4 and 5 (north half). - The old landfill is serviced by a perimeter leachate collection system installed as part of the site closure but has no base liner system. As well, the old landfill is capped with a synthetic membrane to prevent precipitation from infiltrating to the waste mound. <p>Additionally, sewage from the onsite buildings, septage from the RV dumping station are directed to leachate pump chambers.</p> <p>Leachate is pumped to the water pollution control plant for treatment and disposal.</p> <p>Leachate flow volumes are monitored at the water pollution control plant. The total leachate/groundwater volume pumped in 2020 was approximately 47,235 cubic metres with the majority coming from the landfill expansion area.</p> <p>As per ECA Condition 5.16, annual high pressure flushing and CCTV video inspection of the collection system is completed. The CCTV video inspection was in progress on the day of the inspection.</p>		

Question ID	NOL 22	
Question	Question Type	Legislative Requirement
Is the landfill implementing the procedures required by the ECA to manage leachate?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 23	
Question	Question Type	Legislative Requirement
Are samples taken to monitor leachate quality?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 26
Observation		
Yes		

Question ID	NOL 24	
Question	Question Type	Legislative Requirement
Is the ministry concered with the leachate quality?	Information	Not Applicable
Observation		
No		

Question ID	NOL 25	
Question	Question Type	Legislative Requirement
Is there ongoing abatement to address any concerns the ministry has with the leachate monitoring?	Information	Not Applicable
Observation		
No		

Question ID	NOL 26	
Question	Question Type	Legislative Requirement
Is the site required to manage landfill gas by the ECA?	Information	Not Applicable
Observation		
<p>Yes</p> <p>The Lindsay Ops Landfill is equipped with landfill gas collection. Landfill gas collection wells were added to the older sections of the landfill post-closure while the newer cells were engineered and built with landfill gas collection systems.</p> <p>Landfill gas is collected and pumped to a central facility which cleans the gas for use in engines which are used to generate electricity. The facility is also equipped with a landfill gas flare which operates when the engines are not operational and for burning off wastes from the siloxane filter.</p> <p>The 2020 AMR reports that the landfill gas monitoring program continues to confirm that methane gas from the landfill is not migrating off-site at significant levels. Significant detections of methane gas are found on-site at locations near the waste mound but significant concentrations are not found beyond the vicinity of the waste mound.</p>		

Question ID	NOL 27	
Question	Question Type	Legislative Requirement
Is the site implementing the landfill gas management requirements in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 29	
Question	Question Type	Legislative Requirement
Is the ministry concerned with landfill gas at this site?	Information	Not Applicable
Observation		
No		

Question ID	NOL 30	
Question	Question Type	Legislative Requirement
Is there ongoing abatement to address any concerns the ministry has with landfill gas at this site?	Information	Not Applicable
Observation		
No		

Question ID	NOL 31	
Question	Question Type	Legislative Requirement
Is the site required to have a surface water monitoring program by the ECA?	Information	Not Applicable
Observation		
Yes		
Reviews of previous AMRs have suggested some possible impacts to the Scugog River from either the landfill, the Lindsay Water Pollution Control Plant or another nearby but off-site source. PFAS monitoring that is currently underway and additional sample results may assist in ruling out the landfill as a source of this contamination.		

Question ID	NOL 32	
Question	Question Type	Legislative Requirement
Is the site implementing the surface water monitoring program as required by the ECA?	Legislative	EPA 27 (1)
Observation		

Yes

Question ID	NOL 33	
Question	Question Type	Legislative Requirement
Is the water quality being monitored/sampled for surface water features on-site and for any off-site surface water features that receive run-off from the site?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 24
Observation		
Yes		

Question ID	NOL 34	
Question	Question Type	Legislative Requirement
Are there water quality concerns with the results of the samples that have been tested?	Information	Not Applicable
Observation		
No		

Question ID	NOL 35	
Question	Question Type	Legislative Requirement
Is there ongoing abatement to address any concerns the ministry has with the surface water monitoring?	Information	Not Applicable
Observation		
No		

Question ID	NOL 36	
Question	Question Type	Legislative Requirement
Is proper equipment available for the compaction of waste and applying cover material?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 37	
Question	Question Type	Legislative Requirement
Is the landfill able to accurately determine the amount of waste received?	Legislative	EPA 27 (1)
Observation		

Yes

Question ID	NOL 38	
Question	Question Type	Legislative Requirement
Are all disposal operations at the site adequately and continually supervised?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 39	
Question	Question Type	Legislative Requirement
Does the landfill operator have a site inspection program as required by the ECA?	Information	Not Applicable
Observation		
Yes		

Question ID	NOL 40	
Question	Question Type	Legislative Requirement
Does the landfill operator have a procedure in place to address issues identified by staff during the site inspection?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 41	
Question	Question Type	Legislative Requirement
Is the waste being compacted adequately?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 42	
Question	Question Type	Legislative Requirement
Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 7
Observation		
Yes		

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Question ID	NOL 43	
Question	Question Type	Legislative Requirement
Are procedures implemented to control rodents or other animals and insects at the site?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 44	
Question	Question Type	Legislative Requirement
Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 45	
Question	Question Type	Legislative Requirement
Is the waste disposal area adequately screened from public view?	Legislative	EPA 27 (1)
Observation		
Yes		
The active waste disposal area is visible from the access road but cannot be observed from local public roads.		

Question ID	NOL 46	
Question	Question Type	Legislative Requirement
Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 21
Observation		
Yes		

Question ID	NOL 47	
Question	Question Type	Legislative Requirement
Has the annual operations report been submitted to MECP or	Legislative	EPA 27 (1)

available on site as required by the ECA?		
Observation		
Yes		

Question ID	NOL 48	
Question	Question Type	Legislative Requirement
Is scavenging being prevented?	Legislative	EPA 27 (1), EPA O. Reg. 232/98 23
Observation		
Yes		

Question ID	NOL 51	
Question	Question Type	Legislative Requirement
Is the landfill only accepting the types of waste that they are approved to receive?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 52	
Question	Question Type	Legislative Requirement
Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?	Information	Not Applicable
Observation		
Yes		

Question ID	NOL 53	
Question	Question Type	Legislative Requirement
is the waste refusal procedure being followed?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 54	
Question	Question Type	Legislative Requirement
Does the landfill have a procedure in place to address and	Legislative	EPA 27 (1)

document spills and fires?		
Observation		
Yes		

Question ID	NOL 55	
Question	Question Type	Legislative Requirement
Does the landfill have emergency contingency plan as required by the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 59	
Question	Question Type	Legislative Requirement
Does the landfill have a procedure in place to address complaints?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 61	
Question	Question Type	Legislative Requirement
Has the landfill operator developed a Design and Operations Manual?	Information	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 62	
Question	Question Type	Legislative Requirement
Is the Design and Operations Manual up to date?	Information	Not Applicable
Observation		
Yes		

Question ID	NOL 63	
Question	Question Type	Legislative Requirement
Does the landfill operator have training procedures for site personnel?	Legislative	EPA 27 (1)
Observation		

Yes

Question ID	NOL 64	
Question	Question Type	Legislative Requirement
Is the landfill operator following the established training procedures?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 65	
Question	Question Type	Legislative Requirement
Has the Certificate of Requirement been registered on Title?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	NOL 60	
Question	Question Type	Legislative Requirement
Has the landfill operator addressed the complaints to the satisfaction of the ministry?	Legislative	EPA 27 (1)
Observation		
Yes		

Ministry Program: Regulated Activity: WASTE : Receiver Transfer Processing
Component Assessed: HOUSEHOLD HAZARDOUS WASTE DEPOT

Question ID	1-E2RB6L	
Question	Question Type	Legislative Requirement
Is the site only accepting wastes limited to the types specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		
The site is only collecting the waste classes identified in the ECA.		
Collected wastes are picked up by Terrapure. Collection is generally completed weekly with fewer collections during winter months as received volumes decrease.		

Question ID	1-E2TK4R	
Question	Question	Legislative

	Type	Requirement
Is waste received at the Site within the approved limits as specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		
All waste volumes are recorded via the manifests and tracked.		

Question ID	1-E2TK4Z		
Question	Question Type	Legislative Requirement	
Are wastes stored and handled in accordance with the ECA conditions?	Legislative	EPA 27 (1)	
Observation			
Yes			
Collected materials are stored in drums. Separate drums are used for each waste class. Drums are provided by the carrier.			

Question ID	1-E2TODX		
Question	Question Type	Legislative Requirement	
Are waste areas of the site being inspected, as specified in the ECA?	Legislative	EPA 27 (1)	
Observation			
Yes			

Question ID	1-E2TOEX		
Question	Question Type	Legislative Requirement	
Are trained/competent personnel inspecting the waste areas, as specified in the ECA?	Legislative	EPA 27 (1)	
Observation			
Yes			
All staff working in the HHW depot are trained. This includes TDGA training every 3 years.			

Question ID	1-E2TOF5		
Question	Question Type	Legislative Requirement	
Is the site maintaining records on incoming, outgoing, and waste storage amounts, as specified in the ECA?	Legislative	EPA 27 (1)	

Observation
Yes

Question ID	1-E2TOBB	
Question	Question Type	Legislative Requirement
Are wastes stored in accordance with the storage duration limits specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	1-E2TOD5	
Question	Question Type	Legislative Requirement
Are wastes stored and handled in accordance with any additional or site-specific requirements as specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	1-E2TOCF	
Question	Question Type	Legislative Requirement
Are wastes stored in accordance with the storage quantity limits specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

Question ID	1-E2TOCN	
Question	Question Type	Legislative Requirement
Are wastes stored in accordance with the storage locations specified in the ECA?	Legislative	EPA 27 (1)
Observation		
Yes		

2021 Work Summary

Goal	Completed in 2021
Integrated Waste Management Strategy	<p>PRC provided comment, feedback, and suggestions throughout 2020 on the Integrated Waste Management Strategy progress.</p> <ul style="list-style-type: none"> • In January the PRC reviewed and provided feedback on a summary of the 2020 initiatives which were achieved and which still needed to be completed, and a timeline for achieving the 2021 initiatives. • In February the PRC provided comments and support for a two year bulky plastics recycling pilot program. • In March the PRC provided comments and support for changes to the mattress recycling program to ensure all mattresses will be recycled moving forward. The committee also provided support to make the construction and demolition recycling pilot a permanent program. • In November the PRC made resolutions regarding an SSO program in Kawartha Lakes for staff to seek information from the marketplace.
Lindsay Ops Landfill Operations	<p>The PRC provided feedback on landfill operations projects.</p> <ul style="list-style-type: none"> • In March a PRC member brought forward a presentation on how to reduce landfill congestion for consideration and comments. • The PRC continuously commented and provided feedback on other aspects of landfill operations.
2021 Biomonitoring Report	<p>PRC had the opportunity to view the Biomonitoring report to provide comments and ask questions at the May meeting.</p> <ul style="list-style-type: none"> • In June the PRC reviewed a memo to be submitted to the MECP with a statistical review of the program as rationale to request the program be cancelled.
2020 Annual Monitoring Report	<p>A copy of the 2020 Annual Monitoring Report was provided to the PRC. At the May meeting the PRC viewed a PowerPoint presentation on the reporting results in 2020.</p>
Review of Ministry of the Environment, Conservation and Parks (MECP) Correspondence	<p>PRC reviewed all MECP correspondence regarding the annual monitoring report and any inspection reports.</p> <ul style="list-style-type: none"> • In February the PRC was provided an MECP inspection report of the Lindsay Ops landfill for review and comments. • In June staff provided information to the PRC regarding the final blue box regulation to producer responsibility.
Development of 2021 Work Plan	<p>The PRC developed a 2021 work plan for council approval at the January 2021 meeting.</p>

2022 Lindsay Ops PRC Work Plan Tool	
Committee Name:	Lindsay Ops Landfill Public Review Committee
Work plan for Year:	2022
Approved by Council:	

Goal	Measurement Stages	Timeline	Measurement for Success
Integrated Waste Management Strategy	Provide recommendations on the implementation of various waste management initiatives outlined in the Strategy Update for 2022	Ongoing	Strategy Initiatives achieved
Lindsay Ops Landfill Operations	Provide comment and feedback on operations and diversion programs	Ongoing	Successful programs implemented
2022 Biomonitoring Report	Review biomonitoring results and report	April to June	Provide feedback during draft phase of report
2021 Annual Monitoring Report	Review 2021 Annual Monitoring Report and committee questions	May to June	Dialogue with committee to ensure ECA conditions are met

Goal	Measurement Stages	Timeline	Measurement for Success
Review of Ministry of the Environment Conservation and Parks (MECP) Correspondence	Review all MECP correspondence regarding the annual monitoring report as well as any MECP inspection reports	As received	<ol style="list-style-type: none"> 1. Any Ministry correspondence is addressed in a timely manner by committee and staff for response to MECP. 2. For committee information
Development of 2023 Work Plan	Review and acceptance of 2023 Work Plan Staff Report to Council for approval	Late 2022 or early 2023	Approval of 2023 work plan by Lindsay Ops PRC Committee and Council

Lindsay Ops Leachate
2019

Exceeds Bylaw Value
Exceeds PWQO Value

Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (mg/L)
Hardness (CaCO3)	N/A	N/A	593	596	544	653	925	557	475	628	649	664	1090	666	610	580
Alkalinity (CaCO3)	N/A	N/A	609	599	601	482	1270	528	531	693	773	759	2380	731	610	543
Biochemical Oxygen Demand (BOD)	300	N/A	<3	19	8	7	262	4	3	5	4	n/a	62	< 3	5	5
TDS	N/A	N/A	991	1005	972	928	1550	796	743	1045	1144	1258	4318	1226	1017	868
Dissolved Organic Carbon	N/A	N/A	13.1	13.4	13.5	12.9	207	14.8	12.1	16.1	18.5	1.3	130	11.4	10	8.2
COD	N/A	N/A	73	62	63	56	644	40	38	76	78	112	692	87	59	50
Chloride	N/A	N/A	176	199	198	127	27.5	107	106	138	202	307	887	278	201	146
Ammonia (N) - Total	N/A	1.11	17.6	17.6	16.9	14.1	10	9.71	10.5	20.9	26.6	28.4	350	27.9	17.4	11.8
Fluoride	10	N/A	0.2	0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 3	< 0.1	< 0.1	< 0.1
Phenolic, 4AAP	1	0.001	0.012	<0.002	< 0.002	< 0.002	0.14	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sulphate	N/A	N/A	45	42	48	139	10	38	34	33	22	15	121	17	49	50
Nitrite	N/A	N/A	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05
Nitrate	N/A	N/A	0.08	0.15	0.18	0.16	< 0.05	0.42	0.32	< 0.05	< 0.05	< 0.05	< 1	< 0.05	0.21	0.49
Kjeldahl Nitrogen - Total	50	N/A	19.7	20.5	20.8	17.6	104	10.9	10.5	25.2	30.7	35.8	364	35.3	18	14.9
Aluminum - Total	50	0.075*	0.27	0.12	0.12	0.68	0.13	0.1	0.08	0.15	0.1	0.07	0.62	0.1	0.11	0.11
Antimony - Total	5	0.02	<0.0005	<0.0001	< 0.0005	0.0006	0.0022	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.002	< 0.0005	< 0.0005	< 0.0005
Arsenic - Total	1	0.1	0.0024	0.0013	0.0008	0.0013	0.0107	0.0013	0.0009	0.0026	0.0012	0.0014	0.0189	0.0013	0.0015	0.0012
Barium	N/A	N/A	0.331	0.297	0.253	0.245	0.362	0.211	0.159	0.394	0.382	0.471	0.82	< 0.462	0.313	0.226
Beryllium	N/A	1.1**	<0.002	<0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Boron	N/A	0.2	0.382	0.426	0.37	0.299	2.95	0.281	0.278	0.509	0.54	0.632	9.68	0.605	0.411	0.3
Cadmium - Total	0.7	0.0002	<0.00007	<0.00015	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070
Calcium	N/A	N/A	179	175	160	211	273	184	154	184	186	180	267	182	184	185
Chromium - Total	2.8	0.0099	0.017	0.011	0.012	0.161	0.013	0.004	0.001	0.013	< 0.001	0.004	0.037	0.003	0.01	0.004
Cobalt - Total	5	0.0009	0.0013	0.007	0.0013	0.0025	0.0052	0.0009	0.0011	0.0015	0.001	0.0011	0.0159	0.0013	0.001	0.0008
Copper - Total	2	0.005	0.0042	0.0011	0.0011	0.0062	0.011	0.001	0.0015	0.0021	< 0.0005	< 0.0005	0.008	< 0.0005	0.0006	0.0011
Iron	N/A	0.3	27.7	11	5.64	21	7.96	20.9	10.8	45.5	14.4	15.1	59.6	11.8	13.9	13
Lead - Total	1	0.005	0.0025	0.00012	0.0002	0.0016	0.0016	0.0004	0.0001	0.0005	< 0.0001	< 0.0001	0.0013	0.0002	0.0005	0.0002
Magnesium	N/A	N/A	35.3	38.6	35.1	30.6	59.1	23.6	21.9	40.9	44.8	52	104	51.3	36.6	28.5
Manganese - Total	5	N/A	0.45	0.363	0.355	0.618	0.63	0.439	0.35	0.447	0.379	0.299	0.837	0.272	0.404	0.416
Mercury - Total	0.01	0.0002	<0.00002	<0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum - Total	5	0.04	<0.0005	0.0002	< 0.0005	0.0022	0.0009	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0021	< 0.0005	0.0007	< 0.0005
Nickel - Total	2	0.025	0.01	0.01	0.01	0.07	0.03	< 0.01	< 0.01	0.01	< 0.01	0.01	0.09	0.01	0.01	< 0.01
Potassium	N/A	N/A	18.1	21.3	19.1	14.5	139	11.7	10.8	24	27.4	28.9	260	31.5	19	12.8
Phosphorus	N/A	N/A	<0.1	<0.1	< 0.1	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.3	< 0.1	< 0.1	< 0.1
Phosphorus - Total	10	0.01	0.05	0.03	0.03	0.1	0.29	0.05	0.02	0.05	0.03	0.03	3.21	0.06	0.02	0.04
Selenium - Total	1	0.1	<0.005	<0.0001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.012	< 0.005	< 0.005	< 0.005
Silver - Total	0.4	0.0001	<0.0001	<0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	N/A	N/A	121	136	123	97.6	257	81.6	73	136	149	168	740	179	124	91.6
Strontium	N/A	10 bq/L	0.64 mg/L	0.715 mg/L	0.622	0.678	1.35	0.572	0.515	0.774	0.732	0.794	2.73	82.80%	0.679	0.6
Thallium	N/A	0.0003	<0.0003	<0.0005	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Vanadium	N/A	0.006	0.0018	0.0009	0.0008	0.0025	0.0074	0.0009	0.0005	0.0018	0.0007	0.001	0.0239	0.001	0.001	0.0007
Zinc - Total	2	0.03	0.023	0.009	0.03	0.035	0.034	0.009	< 0.005	0.006	< 0.005	0.005	0.185	< 0.005	0.018	< 0.005
Benzene	0.01	0.1	0.0023	0.0007	0.0006	< 0.5	0.0007	< 0.0005	<0.0016	0.0006	< 0.0005	0.0018	0.0017	< 0.0005	0.0015	0.0019
Toluene	0.02	0.0008	<0.0005	<0.0005	<0.0005	< 0.0005	0.0126	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	0.06	0.008	0.0027	<0.0005	<0.0005	< 0.0005	0.0006	< 0.0005	<0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0008
Xylene, m, p -	N/A	N/A	0.0042	<0.001	<0.001	< 0.001	0.0012	<0.001	<0.0011	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylene, o -	N/A	0.04	0.0005	<0.0005	< 0.0005	< 0.0005	0.0006	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Xylene, m, p, o -	N/A	N/A	0.0042	<0.0011	< 0.0011	< 0.0011	0.0018	<0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011

Parameters	Limits	Provincial Water Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New Cell	Oct Results	Nov Results	Dec Results
pH (at 25 °C)	6.0 - 9.5	6.5 - 8.5	7.34	7.68	7.6	7.34	7.74	7.13	7.35	6.95	7.4	7.28	7.87	7.66	7.6	7.37
Conductivity (at 25 °C)	N/A	N/A	1750 µm ho/cm	1780 µm ho/cm	1790 µmho/cm	1590 µmho/cm	3490 µmho/cm	1370 µmho/cm	1350 µmho/cm	1860 µmho/cm	2000 µmho/cm	2160 µmho/cm	7050 µmho/cm	2110 µmho/cm	1750 µmho/cm	1540 µmho/cm
Conductivity (calculated)	N/A	N/A	1650 µm ho/cm	1720 µm ho/cm	1664 µmho/cm	1563 µmho/cm	2403 µmho/cm	1344 µmho/cm	1267 µmho/cm	1692 µmho/cm	1928 µmho/cm	2141 µmho/cm	6453 µmho/cm	2103 µmho/cm	1725 µmho/cm	1479 µmho/cm
Anion Sum	N/A	N/A	18.1 meq/L	18.5 meq/L	18.6 meq/L	16.1 meq/L	26.4 meq/L	14.4 meq/L	14.3 meq/L	18.4 meq/L	21.6 meq/L	24.1 meq/L	75.1 meq/L	22.8 meq/L	18.9 meq/L	16 meq/L
Cation Sum	N/A	N/A	20.3 meq/L	20.2 meq/L	18.2 meq/L	18.7 meq/L	34.4 meq/L	16.8 meq/L	14.3 meq/L	23 meq/L	22.8 meq/L	24.1 meq/L	88.5 meq/L	24.5 meq/L	20.1 meq/L	17.4 meq/L
% Difference	N/A	N/A	5.77%	4.51%	1.09%	7.29%	13.10%	7.78%	0.18%	11.00%	0.02%	8.17%	3.55%	2.94%	415.00%	
Ion Ratio (AS/CS)	N/A	N/A	0.891	0.914	1.02	0.864	0.769	0.856	1	0.801	0.948	1	0.849	0.931	0.943	0.92
Sodium Adsorption Ratio	N/A	N/A	2.16	2.42	2.29	1.66	3.68	1.5	1.46	2.36	2.54	2.84	9.73	3.02	2.18	1.66
TDS (calc.) / EC (actual)	N/A	N/A	0.567	0.565	0.542	0.585	0.444	0.58	0.551	0.561	0.572	0.582	0.612	0.581	0.582	0.562
Langelier Index (at 25°C)	N/A	N/A	0.875	1.19	1.08	0.845	1.77	0.635	0.78	0.543	1.05	0.903	2.12	1.27	1.14	0.88

Lindsay Ops Leachate
2020

Exceeds Bylaw Value
Exceeds PWQO Value

Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (mg/L)
Hardness (CaCO3)	N/A	N/A	609	616	556	574	370	602	654	694	684	620	875	864	571	672
Alkalinity (CaCO3)	N/A	N/A	579	560	529	603	442	626	697	710	719	688	1910	950	556	777
Biochemical Oxygen Demand (BOD)	300	N/A	5	5	< 3	4	4	3	5	5	7	6	80	< 3	< 10	< 10
TDS	N/A	N/A	896	927	791	906	1095	936	1076	1148	1178	1059	3296	1422	925	954
Dissolved Organic Carbon	N/A	N/A	11.1	12.9	10.9	10.6	34.4	12.4	11.6	15.8	17.5	12.5	67.5	13.4	9.5	17
COD	N/A	N/A	44	51	35	73	104	54	63	80	88	63	548	99	47	46
Chloride	N/A	N/A	135	162	116	136	274	142	185	215	241	199	705	149	185	87.1
Ammonia (N) - Total	N/A	1.11	13.6	12.8	10.6	16.6	0.31	16.2	21.2	25.4	29.6	21.6	250	31.6	14.7	20.8
Fluoride	10	N/A	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenolic, 4AAP	1	0.001	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.036	< 0.002	< 0.002	< 0.002
Sulphate	N/A	N/A	46	44	42	45	94	39	34	29	19	21	58	9	34	17
Nitrite	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate	N/A	N/A	0.11	0.18	0.36	0.16	8.54	0.15	0.09	0.91	0.99	0.18	0.61	0.35	0.09	2.49
Kjeldahl Nitrogen - Total	50	N/A	15.8	15.8	13.2	18	4.1	19.1	27.8	33.3	38.2	25.1	309	31.8	19.6	25.7
Aluminum - Total	50	0.075*	0.18	0.06	0.09	0.09	0.07	0.08	0.02	0.09	0.11	0.1	0.29	0.17	0.09	0.08
Antimony - Total	5	0.02	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0009	< 0.0005	0.0012	< 0.0005	< 0.0005	< 0.0005	0.0021	0.0008	< 0.0005	< 0.0005
Arsenic - Total	1	0.1	0.0022	0.0016	0.0014	0.0012	0.0018	0.001	0.0055	0.0012	0.0014	0.001	0.0171	0.0075	0.0011	0.0012
Barium	N/A	N/A	0.299	0.27	0.213	0.23	0.076	0.255	0.353	0.427	0.489	0.396	0.649	1.56	0.271	0.363
Beryllium	N/A	1.1**	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Boron	N/A	0.2	0.356	0.327	0.259	0.334	2.74	0.324	0.519	0.559	0.668	0.484	6.5	1.28	0.344	0.635
Cadmium - Total	0.7	0.0002	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000059	< 0.000070	< 0.000070	< 0.000070
Calcium	N/A	N/A	192	196	182	179	83.3	188	194	202	192	183	239	217	175	181
Chromium - Total	2.8	0.0099	0.023	0.048	0.001	0.004	0.004	0.001	0.003	0.001	0.001	0.001	0.025	0.005	0.001	0.001
Cobalt - Total	5	0.0009	0.0008	0.0009	0.001	0.0009	0.0039	0.0008	0.0046	0.0012	0.0012	0.0013	0.013	0.0041	0.001	0.0014
Copper - Total	2	0.0005	0.0021	0.0006	0.0036	< 0.0005	0.0055	< 0.0005	0.0022	0.0006	0.0015	< 0.0005	0.0009	0.01	< 0.0005	0.0015
Iron	N/A	0.3	33.6	26	21.3	15.3	0.226	14.8	16.4	15.3	14.1	15.8	36.1	188	7.47	16.8
Lead - Total	1	0.0005	0.0005	0.0004	0.0002	< 0.0001	0.0002	< 0.0001	0.0006	0.0001	0.0003	0.0002	0.0031	0.0115	0.0001	0.0006
Magnesium	N/A	N/A	31.4	30.7	24.5	30.9	39.4	32.1	41.2	45.9	49.6	39.5	86.7	78.3	32.5	53.5
Manganese - Total	5	N/A	0.487	0.44	0.424	0.431	0.026	0.463	0.408	0.361	0.29	0.322	0.519	0.472	0.416	0.35
Mercury - Total	0.01	0.0002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00013	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum - Total	5	0.04	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0017	< 0.0005	0.0009	< 0.0005	< 0.0005	< 0.0005	0.0029	< 0.0005	< 0.0005	< 0.0005
Nickel - Total	2	0.025	< 0.01	0.01	< 0.01	< 0.01	0.03	< 0.01	0.01	0.01	< 0.01	0.01	0.06	0.02	< 0.01	< 0.01
Potassium	N/A	N/A	11.6	15.2	11.8	16.3	94.4	16.9	22.4	27.5	31.5	22.7	210	31.3	17.1	21.8
Phosphorus	N/A	N/A	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.04	< 0.1	< 0.1	1.1	1	< 0.1	0.1
Phosphorus - Total	10	0.01	0.03	0.03	0.02	0.01	0.05	0.02	0.02	< 0.1	0.04	0.04	2.29	0.61	0.03	0.18
Selenium - Total	1	0.1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.006	< 0.005	< 0.005	< 0.001	0.005	< 0.005	< 0.005	< 0.005
Silver - Total	0.4	0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001
Sodium	N/A	N/A	95.8	100	75.4	99.5	244	107	137	155	161	138	496	139	121	83
Strontium	N/A	10 bq/L	0.664	0.641	0.54	0.6	0.671	0.644	0.73	0.734	0.78	0.695	2.39	0.89	0.637	0.656
Thallium	N/A	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0001	0.00006	< 0.0003	< 0.0003	< 0.0003
Vanadium	N/A	0.006	0.0015	0.0007	0.0008	0.0006	0.0017	0.0006	0.0036	0.0008	0.0011	0.0011	0.0155	0.0061	< 0.0005	0.0006
Zinc - Total	2	0.03	0.006	0.006	0.007	< 0.005	0.363	< 0.005	0.013	< 0.005	0.016	0.011	0.194	0.026	0.008	< 0.005
Benzene	0.01	0.1	0.0014	0.001	0.0012	0.0015	< 0.0005	0.0016	0.0013	0.0014	0.0015	0.0012	n/a	0.025	0.011	0.0019
Toluene	0.02	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	0.06	0.008	0.0003	0.0006	0.0007	0.0007	< 0.0005	0.0007	0.0006	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005
Xylene, m, p -	N/A	N/A	0.0019	< 0.0001	< 0.0001	0.001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	n/a	0.0037	< 0.0001	0.0035
Xylene, o -	N/A	0.04	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005
Xylene, m, p, o -	N/A	N/A	0.002	0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	n/a	0.0037	< 0.0011	0.0035

Parameters	Limits	Provincial Water Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New Cell	Oct Results	Nov Results	Dec Results
pH (at 25 °C)	6.0 - 9.5	6.5 - 8.5	7.27	7.6	7.29	8.00	8.54	7.53	7.31	7.36	7.5	7.34	7.80	7.07	7.36	7.61
Conductivity (at 25 °C)	N/A	N/A	1590	1590	1430	1600	2010	1650	1840	2010	2080	1870	5620	2230	1700	1730
Conductivity (calculated)	N/A	N/A	1448	1557	1309	1530	1852	1584	1814	1954	2024	1803	5181	1962	1609	1597
Anion Sum	N/A	N/A	16.3	16.7	14.7	16.8	19.1	17.3	19.9	20.9	21.6	19.8	59.2	23.4	17	18.5
Cation Sum	N/A	N/A	18.5	19.4	15.8	18.2	20.5	19.1	22	23.9	24.3	21.3	65.5	36.5	18.6	20
% Difference	N/A	N/A	6.32%	7.33%	3.62%	3.96%	3.34%	4.76%	5.07%	671.00%	5.84%	3.75%	5.02%	21.80%	4.23%	3.74%
Ion Ratio (AS/CS)	N/A	N/A	0.881	0.863	0.93	0.924	0.935	0.909	0.903	0.874	0.89	0.928	0.904	0.862	0.919	0.928
Sodium Adsorption Ratio	N/A	N/A	1.69	1.75	1.39	1.81	5.52	1.9	2.33	2.56	2.68	2.41	6.99	2.06	2.2	1.39
TDS (calc.) / EC (actual)	N/A	N/A	0.564	0.582	0.554	0.568	0.545	0.567	0.584	0.571	0.566	0.568	0.587	0.638	0.544	0.551
Langelier Index (at 25°C)	N/A	N/A	0.823	1.14	0.791	1.53	1.59	1.1	0.929	1	1.13	0.928	1.93	0.872	0.846	1.26

Lindsav Ons

Exceeds Bylaw Value
Exceeds PWQO Value

Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (mg/L)
Hardness (CaCO3)	N/A	N/A	612	563	537	571	952	640	692	588	667	620	982	637	596	449
Alkalinity (CaCO3)	N/A	N/A	578	518	420	536	1390	621	740	646	742	644	1840	624	563	525
Biochemical Oxygen Demand (BOD)	300	N/A	6	<10	3	< 3	198	< 3	5	4	< 3	< 3	44	< 3	< 3	< 3
TDS	N/A	N/A	927	841	963	770	2423	899	1004	907	996	890	3673	956	947	673
Dissolved Organic Carbon	N/A	N/A	13.7	8.8	19.3	8.8	122	9	9.7	7.5	11.8	10.4	82.4	9.1	6.4	4.7
COD	N/A	N/A	42	25	135	33	620	35	51	59	48	33	602	39	43	19
Chloride	N/A	N/A	155	147	79.6	92.2	431	107	124	115	134	120	881	140	124	80.1
Ammonia (N) - Total	N/A	1.11	14.2	10.1	4.91	6.8	112	15.7	19.2	11.8	17.2	11	289	13.7	8.48	5.4
Fluoride	10	N/A	< 0.1	< 0.1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1
Phenolic, 4AAP	1	0.001	< 0.002	< 0.002	< 0.002	< 0.002	0.274	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.044	< 0.001	< 0.002	< 0.002
Sulphate	N/A	N/A	34	44	35	37	124	27	20	35	24	28	56	29	39	37
Nitrite	N/A	N/A	< 0.05	0.06	0.09	< 0.05	< 0.5	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	0.06	< 0.05	< 0.05
Nitrate	N/A	N/A	0.27	0.64	0.98	0.46	< 0.5	< 0.05	< 0.05	0.76	< 0.05	< 0.05	< 0.5	0.09	< 0.05	0.12
Kjeldahl Nitrogen - Total	50	N/A	18	14.4	9.4	8.2	135	17.4	20.6	13	19.5	11.2	330	16	11.3	6.1
Aluminum - Total	50	0.075*	0.1	0.08	0.55	0.1	0.13	0.11	0.11	0.12	0.08	0.11	0.25	0.12	0.7	0.05
Antimony - Total	5	0.02	< 0.0005	< 0.0005	< 0.0005	< 0.0001	0.0042	0.0006	0.0006	< 0.0005	< 0.0005	0.0006	0.0034	< 0.0005	< 0.0005	0.0005
Arsenic - Total	1	0.1	0.0013	0.0005	0.0128	0.0008	0.0094	0.0014	0.0009	0.0029	0.0006	0.0009	0.0208	0.0024	0.0066	0.0008
Barium	N/A	N/A	0.286	0.241	1.03	0.2	0.35	0.33	0.351	0.309	0.313	0.283	0.692	0.405	0.52	0.141
Beryllium	N/A	1.1**	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Boron	N/A	0.2	0.336	0.273	0.361	0.226	4.22	0.299	0.374	0.241	0.373	0.261	6.85	0.31	0.274	0.155
Cadmium - Total	0.7	0.0002	< 0.000070	< 0.000070	< 0.000070	< 0.000015	< 0.000059	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070
Calcium	N/A	N/A	192	179	185	191	252	204	215	191	207	203	231	202	197	151
Chromium - Total	2.8	0.0099	0.003	<0.001	0.009	< 0.001	0.023	0.001	0.006	0.009	0.001	0.001	0.03	0.009	0.003	< 0.001
Cobalt - Total	5	0.0009	0.0008	0.0007	0.0027	< 0.005	0.009	0.001	0.0008	0.001	0.001	0.001	0.0109	0.001	0.0015	0.001
Copper - Total	2	0.005	< 0.0005	0.0005	0.0033	0.0006	0.0049	< 0.0005	< 0.0005	0.0008	< 0.0005	< 0.0005	0.0081	0.0009	0.0041	0.0106
Iron	N/A	0.3	19.4	8.86	319	15.5	8.2	30.9	16.7	48.3	13.8	16.6	24.4	51.1	127	7.02
Lead - Total	1	0.005	0.0002	0.0001	0.0034	0.0001	0.0042	< 0.0001	0.0002	0.0005	< 0.0001	0.0001	0.0012	0.0006	0.004	< 0.0001
Magnesium	N/A	N/A	32.2	28.1	18.4	22.8	78.3	31.7	37.5	27	36.3	27.3	98.4	32.2	25.3	17.2
Manganese - Total	5	N/A	0.517	0.461	0.439	0.468	0.48	0.545	0.485	0.615	0.522	0.561	0.36	0.563	0.564	0.329
Mercury - Total	0.01	0.0002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum - Total	5	0.04	< 0.0005	< 0.0005	0.0012	0.0001	0.0021	< 0.0005	0.0006	< 0.0005	< 0.0005	< 0.0005	0.0019	0.001	0.0006	< 0.0005
Nickel - Total	2	0.025	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01
Potassium	N/A	N/A	16.3	11.5	7.5	9.5	15.3	15.6	19.8	11.4	18.9	12.4	218	15.5	9.9	6.8
Phosphorus	N/A	N/A	< 0.1	< 0.1	0.3	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.1	< 0.1	0.2	< 0.1
Phosphorus - Total	10	0.01	0.02	0.02	1.21	0.05	0.36	0.01	0.06	0.16	0.01	0.03	2.01	0.09	0.22	0.06
Selenium - Total	1	0.1	< 0.005	< 0.005	< 0.005	< 0.001	0.004	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.012	< 0.005	< 0.005	< 0.005
Silver - Total	0.4	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	N/A	N/A	112	98.5	59.2	70.9	398	82	102	75.6	94.4	82.4	615	94	76.5	50.6
Strontium	N/A	10 bq/L	0.679	0.657	0.623	0.62	1.84	0.709	0.78	0.687	0.752	0.675	2.56	0.74	0.67	0.458
Thallium	N/A	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.00005	0.00009	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Vanadium	N/A	0.006	0.0006	< 0.0005	0.0067	0.0004	0.0084	0.0008	0.0006	0.0022	< 0.0005	< 0.0005	0.0182	0.0017	0.0045	< 0.0005
Zinc - Total	2	0.03	< 0.005	0.013	0.107	0.005	0.069	0.014	0.011	0.006	0.015	0.013	0.32	0.022	0.01	0.031
Benzene	0.01	0.1	0.012	0.001	0.006	0.0017	< 0.0001	0.0017	0.0014	0.0025	0.0013	0.0015	n/a	0.0019	0.0006	0.001
Toluene	0.02	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	0.06	0.008	< 0.0005	0.0006	0.006	0.001	< 0.0001	< 0.0005	< 0.0005	0.0008	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	0.0008
Xylene, m, p -	N/A	N/A	< 0.001	< 0.001	< 0.001	0.0011	< 0.02	< 0.001	< 0.001	0.0012	< 0.001	0.0012	n/a	< 0.001	< 0.001	0.0015
Xylene, o -	N/A	0.04	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.01	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005
Xylene, m, p, o -	N/A	N/A	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.022	< 0.0011	< 0.0011	0.0012	< 0.0011	0.0012	n/a	< 0.0011	< 0.0011	0.0015

Parameters	Limits	Provincial Water Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New Cell	Oct Results	Nov Results	Dec Results
pH (at 25 °C)	6.0 - 9.5	6.5 - 8.5	7.29	7.35	7.53	7.68	7.84	7.43	7.58	7.34	7.47	7.38	7.72	7.63	7.82	7.46
Conductivity (at 25 °C)	N/A	N/A	1640	1540	1140	1330	4130	1540	1680	1500	1630	1500	6090	1600	1490	1220
Conductivity (calculated)	N/A	N/A	1578	1453	936	1304	3792	1514	1686	1434	1666	1492	5980	1542	1342	1133
Anion Sum	N/A	N/A	16.7	15.5	11.5	14.1	42.5	16	18.7	16.9	19.1	16.8	62.8	17	15.6	13.5
Cation Sum	N/A	N/A	19.6	17	31	16.1	48.6	20	21	18.8	19.9	18	77.5	20.9	22.9	12.1
% Difference	N/A	N/A	8.05	4.81%	46.00%	0.0646	6.64%	11.10%	5.89%	5.16%	1.98%	3.30%	10.50%	10.30%	19.10%	5.58%
Ion Ratio (AS/CS)	N/A	N/A	0.851	0.908	0.37	0.879	0.875	0.8	0.889	0.902	0.961	0.936	0.81	0.813	0.679	1.12
Sodium Adsorption Ratio	N/A	N/A	1.97	1.81	1.11	1.29	5.61	1.41	1.69	1.36	1.59	1.44	8.54	1.62	1.36	1.04
TDS (calc.) / EC (actual)	N/A	N/A	0.565	0.545	0.842	0.581	0.587	0.584	0.596	0.605	0.611	0.593	0.603	0.596	0.636	0.552
Langelier Index (at 25°C)	N/A	N/A	0.833	0.824	0.917	1.21	1.86	1.04	1.27	0.929	1.15	1	1.82	1.23	1.36	0.878