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The Municipality of Dysart et al

HALIBURTON SEWAGE TREATMENT PLANT

2021 ANNUAL REPORT

January 1 to December 31, 2021

Certificate of Approval Number 8325-6EENZ5

Date:

March 23, 2022

Prepared by:

Clearford Waterworks
212-704 Mara Street,
Point Edward, ON,
Canada N7V 1X4

Tel: 519 542 7900
or 1 800 704 4188
Fax: 519 542 3020

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1.0 OVERVIEW

The Haliburton Sewage Treatment Plant (STP) provides wastewater treatment for the Village of Haliburton, Municipality of Dysart et al, Ontario. The Works generally consist of a raw sewage pumping station (RSPS), headworks and equalization facilities, secondary treatment, sludge digestion and chemical feed systems, effluent filtration and ultraviolet (UV) disinfection, all described in detail in Certificated of Approval (C of A) Number 8325-6EENZ5 issued on August 9, 2005.

This report presents a summary of the operational activities and annual monitoring results for the operating period from January 1 to December 31, 2021. In accordance with Condition 10(5) of the C of A, this report includes a detailed analysis of effluent concentrations with reference to the criteria outlined in Conditions 6 and 7 of the C of A, as well as flow analysis and facility performance issues.

2.0 BACKGROUND

The original Haliburton STP and collection system including four (4) pumping stations were constructed in 1975 to service the Village of Haliburton. In 1983, a study was prepared to extend the sewage collection system to several resorts located along the north shore of Lake Kashagawigamog. In 1985, approval was applied for to construct the North Kashagawigamog sewer extension, but prior to granting approval, the Ministry of the Environment, Conservation and Parks (MECP) required a capacity study to be conducted on the existing STP. The capacity study concluded that the existing STP did not have sufficient capacity to accommodate the anticipated future flow from the Village and the extended service areas, and therefore recommended an expansion to the existing STP.

The expansion of the Haliburton STP required a Class Environmental Assessment (Class EA) to be conducted which began in May 1988. The Class EA process was completed and a design for the expanded STP was finalized in 1994. Construction for the expansion began in 1994 and the new facilities were commissioned in 1995. Following the completion of the upgraded STP, work began on the installation of the new collection system which included various sizes of gravity collection systems and seven (7) pumping stations. An eighth pumping station was constructed and commissioned in late 2004.

The original STP Certificate of Approval (C of A) No. 3-0183-94-006 was issued on May 20, 1994. An Amended C of A No. 0191-5SZKZ9 was issued on December 4, 2003 following a request to decommission the old extended aeration plant and subsequently de-rate the remaining new plant to an average daily flow capacity of 1,575 m^3/day with a peak flow rate capacity of 4,410 m^3/day.

An Amended C of A No. 8325-6EENZ5 was issued on August 9, 2005 following an application by ASI Group Ltd. (subsequently Clearford ASI, now Clearford Waterworks), the current Operating Authority of the system, to make some additional changes to the plant. A copy of the C of A is included in Appendix A.

3.0 MONITORING DATA & EFFLUENT LIMITS

3.1 MONITORING PROGRAM

The monitoring program for the facility is described in detail in the C of A, including: Raw Sewage monthly composite samples, and Final Effluent weekly and monthly composite and grab samples. Continuous flow measurements were recorded daily by a magnetic flowmeter on the effluent discharge line.

Samples were collected by the plant operator, Clearford Waterworks (formerly Clearford ASI), who is licensed in accordance with the conditions of O.Reg. 129/04. Samples were tested for the following parameters:

- Raw Sewage – $CBOD_5$, TSS, TP, TKN, TAN;
- Final Effluent – $CBOD_5$, TSS, TP, TAN, NO_3, *E. coli*, pH and Temperature (field), and Un-Ionized Ammonia (calculated).

Temperature and pH testing was performed at site by the operator. All other parameter testing was conducted by SGS Canada Inc., an independent accredited laboratory. Samples were retained in laboratory-supplied coolers containing ice and transported to the laboratory for analysis. Chain of custody documents were provided for all samples.

3.2 SUMMARY OF MONITORING DATA

The facility performance is presented below with respect to the parameters identified in the monitoring program. Table 1 outlines the Effluent Objectives per Condition 6 and the Effluent Limits (compliance criteria) per Condition 7 of the C of A. Table 2 summarizes the influent flows to the plant over the reporting period including the number of days in operation and the calculated annualized average daily flow (ADF). Table 3 shows average monthly concentrations of various parameters in the raw wastewater and the calculated average daily loadings based on monthly average day volumes of wastewater received.

The monthly and annual plant data summaries are included in Appendix B. Copies of the Raw Sewage and Treated Effluent Laboratory Analytical Certificates are included in Appendix C.

TABLE 1. CERTIFICATE OF APPROVAL EFFLUENT QUALITY CRITERIA

PARAMETER	EFFLUENT OBJECTIVE	EFFLUENT LIMIT
Average Daily Flow (m^3/d), Annualized Average	1,575	-
Peak Flow Rate (m^3/d)	4,410	-
$CBOD_5$ Concentration (mg/L), Annualized Average	5.0	10.0
Suspended Solids (TSS) Concentration (mg/L), Annualized Average	5.0	10.0
Total Ammonia Nitrogen (TAN) Concentration (mg/L), Average Monthly	2.0	5.0
Total Phosphorus as P (TP) Concentration (mg/L), Average Monthly	0.1	0.2
TP Loading (kg/y), Annualized Average	-	115
pH (pH units), At All Times	6.5-9.0	6.0-9.5
E. coli (CFU/100mL), Monthly Geometric Mean Density	200	-

TABLE 2. MONTHLY WASTEWATER FLOWS (m^3)

PERIOD	TOTAL DAYS IN OPERATION	TOTAL MONTHLY INFLUENT FLOW	AVERAGE DAILY FLOW (ADF)	MAXIMUM DAILY FLOW (MDF)
January	31	23,469	757	875
February	28	18,940	676	676
March	31	27,594	890	778
April	30	29,593	986	1,191
May	31	28,142	908	1,104
June	30	26,390	880	1,030
July	31	31,860	1,028	1,162
August	31	28,524	920	1,129
September	30	27,811	927	1,413
October	31	29,214	942	1,134
November	30	26,869	896	1,048
December	31	29,731	959	1,231
Total	**365**	**328,137**		
Average		**27,345**	**899**	
Maximum		**31,860**		**1,413**

TABLE 3. MONTHLY INFLUENT (RAW) CONCENTRATIONS AND LOADINGS

PERIOD	$CBOD_5$		TSS		TAN		UN-IONIZED AMMONIA		TKN	
PARAMETER	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)
January	147	111	176	133	20.3	15.4	0.123	0.093	22.2	16.8
February	97	66	204	138	23.9	16.2	0.074	0.050	26.9	18.2
March	305	271	204	181	27.6	24.6	0.079	0.070	34.1	30.4
April	107	106	165	163	13.4	13.2	0.047	0.047	17.6	17.4
May	143	130	176	160	15.9	14.4	0.108	0.098	22.5	20.4
June	132	116	194	170	17.8	15.7	0.109	0.096	22.8	20.1
July	168	173	181	186	16.6	17.1	0.049	0.051	20.2	20.8
August	197	181	183	168	18.9	17.4	0.144	0.132	23.1	21.3
September	173	160	144	133	22.1	20.5	0.717	0.665	25.6	23.7
October	130	123	157	148	19.0	17.9	0.516	0.486	20.2	19.0
November	107	96	150	134	16.3	14.6	0.478	0.428	20.0	17.9
December	85	82	155	148	15.2	14.6	0.366	0.351	19.6	18.8
Annual	**149**	**135**	**174**	**155**	**18.9**	**16.8**	**0.234**	**0.214**	**22.9**	**20.4**

TABLE 3 (CONTINUED). MONTHLY INFLUENT (RAW) CONCENTRATIONS AND LOADINGS

PERIOD	NO_2		NO_3		TP			pH
PARAMETER	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(kg/m)	(pH units)
January	0.05	0.038	0.22	0.167	2.61	1.98	61.4	7.42
February	<0.03	<0.020	0.06	0.041	3.13	2.11	59.2	7.17
March	<0.03	<0.027	0.06	0.053	3.00	2.67	82.6	7.16
April	<0.03	<0.030	0.06	0.059	1.96	1.94	58.1	7.22
May	<0.03	<0.027	0.06	0.054	2.33	2.12	65.6	7.45
June	<0.03	<0.026	0.06	0.053	2.67	2.35	70.5	7.37
July	<0.03	<0.031	0.06	0.062	2.71	2.79	86.5	6.88
August	<0.03	<0.028	0.06	0.055	2.68	2.46	76.3	7.32
September	0.05	0.046	0.06	0.056	2.48	2.30	68.9	7.95
October	<0.03	<0.028	0.06	0.057	2.25	2.12	65.7	7.90
November	0.19	0.170	1.12	1.003	2.16	1.93	58.0	7.98
December	<0.03	<0.029	0.06	0.058	2.08	1.99	61.7	7.99
Annual	**<0.05**	**<0.042**	**<0.16**	**0.143**	**2.50**	**2.23**	**67.9**	**7.48**

Table 4 below shows average monthly concentrations of various parameters in the treated effluent and calculated average daily loadings based on monthly average day volumes of wastewater received. Un-ionized ammonia values were calculated using TAN, pH and temperature values, while the monthly *E. coli* was calculated using the geometric mean density. Temperature and pH readings were completed in-house at time of sampling.

TABLE 4. MONTHLY EFFLUENT (TREATED) CONCENTRATIONS AND LOADINGS

PERIOD	$CBOD_5$		TSS		TAN		UN-IONIZED AMMONIA		TKN	
PARAMETER	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)
January	4	3.03	<2.4	<1.82	<0.05	<0.038	<0.00006	<0.00005	0.50	0.379
February	<4	<2.71	3.2	2.16	<0.19	<0.128	<0.00018	<0.00012	0.80	0.541
March	<4	<3.56	<3.5	<3.12	<0.04	<0.036	<0.00008	<0.00007	1.20	1.068
April	<2	<1.97	4.4	4.34	<0.04	<0.039	<0.00010	<0.00010	<0.50	<0.493
May	<2	<1.82	<4.2	<3.78	<0.04	<0.036	<0.00015	<0.00013	1.40	1.271
June	<4	<3.52	4.4	3.87	<0.04	<0.036	<0.00030	<0.00027	0.50	0.440
July	<4	<4.11	<2.4	<2.47	<0.05	<0.050	<0.00010	<0.00010	<0.50	<0.514
August	<4	<3.68	<2.5	<2.30	<0.05	<0.046	<0.00064	<0.00058	<0.50	<0.460
September	<4	<3.71	<3.0	<2.78	<0.05	<0.049	<0.00173	<0.00160	<0.50	<0.464
October	<4	<3.77	<3.2	<3.02	0.06	0.058	0.00037	0.00035	<0.50	<0.471
November	<4	<3.58	<3.3	<2.99	<0.04	<0.037	<0.00021	<0.00019	0.80	0.717
December	<4	<3.84	2.4	2.30	<0.04	<0.041	<0.00020	<0.00019	0.60	0.575
Annual	**<3.7**	**<3.27**	**<3.2**	**<2.91**	**<0.06**	**<0.049**	**<0.00034**	**<0.00031**	**<0.69**	**<0.616**

TABLE 4 (CONTINUED). MONTHLY EFFLUENT (TREATED) CONCENTRATIONS AND LOADINGS

PERIOD	NO_2		NO_3		TP			*E. coli*	pH	
PARAMETER	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(mg/L)	(kg/d)	(kg/m)	(CFU/100mL)	Min.	Max.
January	<0.03	<0.023	10.1	7.618	0.04	0.032	0.997	<2	6.55	7.08
February	<0.04	<0.025	10.6	7.180	0.09	0.061	1.705	<2	6.51	6.97
March	<0.03	<0.027	10.1	8.990	0.08	0.067	2.070	<2	6.56	7.28
April	<0.03	<0.030	8.9	8.767	0.09	0.084	2.515	<2	6.63	7.53
May	<0.03	<0.027	9.7	8.844	0.08	0.074	2.283	<2	6.74	7.39
June	0.04	0.037	11.6	10.222	0.08	0.070	2.111	<2	6.53	7.98
July	<0.03	<0.031	10.5	10.786	<0.04	<0.045	<1.394	<2	6.52	7.11
August	<0.04	<0.037	11.8	10.894	<0.03	<0.031	<0.970	<2	6.73	7.98
September	<0.04	<0.035	10.8	10.051	0.05	0.043	1.286	6	7.16	8.12
October	<0.03	<0.028	10.3	9.662	<0.04	<0.038	<1.169	<2	7.14	7.25
November	<0.03	<0.027	10.5	9.438	<0.06	<0.053	1.585	<2	7.18	7.29
December	<0.03	<0.029	8.8	8.433	0.04	0.038	1.189	<2	7.13	7.40
Annual	**<0.03**	**<0.030**	**10.3**	**9.24**	**<0.06**	**<0.053**	**<19.3 (Total)**	**<2**	**6.51 (Min.)**	**8.12 (Max.)**

3.3 INTERPRETATION OF ADEQUACY OF THE WORKS

The facility has a design daily flow capacity of 1,575 m^3/day and a design peak flow rate of 4,410 m^3/day. The annual average sewage inflow was 899 m^3/day and the maximum day flow was 1,413 m^3/day occurring in September 2021, as presented in Table 2 above. The annual ADF represents 57% of the rated capacity of the system, indicating adequate hydraulic capacity of the plant.

The facility achieved excellent $CBOD_5$, TAN, TKN, TP and *E. coli* removal performance, demonstrating the ongoing success and adequacy of the Works. The final effluent limit criteria were achieved consistently throughout the year with no non-compliance events. Refer to the Tables above and Appendices for detailed influent and effluent data.

The annual average influent $CBOD_5$ to the facility was 149 mg/L while the treated effluent value was <4.0 mg/L. Effective $CBOD_5$ removal below the effluent limits (10 mg/L) was typically achieved throughout the year, as presented in Table 4 above.

The annual average influent TSS to the facility was 174 mg/L while the treated effluent value was <3.2 mg/L. Effective TSS removal below the effluent limit (10 mg/L) was achieved throughout the year, as presented in Table 4 above.

The annual average influent TAN and TKN to the facility were 18.9 mg/L and 22.9 mg/L, while the treated effluent values were <0.06 mg/L and <0.69 mg/L, respectively. Effluent TAN below the limit (5 mg/L) was typically achieved throughout the year, as presented in Table 4 above. Un-ionized ammonia was typically low in the influent and decreased to <0.00034 mg/L in the treated effluent. Nitrate and Nitrite concentrations in the influent were <0.16 mg/L and <0.05 mg/L, while the treated effluent values were 10.3 mg/L and <0.03 mg/L, respectively.

These results confirmed the successful nitrification process in the aeration tanks transforming ammonia nitrogen in the system to nitrite and subsequently to nitrate. The water quality guidelines for Nitrate for the protection of aquatic life is set at 13 mg/L for freshwater (2003). Therefore, effluent was below the water quality guidelines.

The annual average influent TP to the facility was 2.50 mg/L while the treated effluent value was <0.06 mg/L. Effective TP removal below the effluent limit (0.2 mg/L) was achieved throughout the year, as presented in Table 4 above. The calculated annual TP loading was 19.3 kg/year, which is well below the compliance value of 115 kg/year.

All sample pH measurements during the reporting period fell within the treated effluent compliance limits of 6.0 to 9.5, with values ranging from 6.51 to 8.12, as presented in Table 4 above.

Effective disinfection was achieved below the effluent objective for *E. coli* (200 CFU/100mL) throughout the year, as presented in Table 4 above.

4.0 OPERATING PROBLEMS & CORRECTIVE ACTIONS

No major operational problems requiring corrective actions were encountered during the reporting period. All equipment issues were dealt with in a timely manner and did not affect the long-term performance of the plant.

The operator made necessary process adjustments as required, such as increased biosolids wasting. Spring flows were within normal expected flows and did not upset the plant. Scheduled and preventative maintenance was completed as discussed in Section 5.0.

5.0 FACILITY & EQUIPMENT MAINTENANCE

Routine preventative maintenance was performed on the plant equipment during the reporting period. This includes the lubrication of applicable bearings and gearboxes, cleaning and/or replacement of the UV disinfection equipment, and servicing of the chemical feed systems. The following are highlights of more substantial maintenance activities:

- Replaced suction line on final effluent auto-sampler;
- Calibrated MLSS DO system as required;
- Replaced faulty heater in generator room;
- Rebuilt Backwash Pump #1, discovered small crack in cable housing, made repair, reinstalled and returned to service;
- Sharp Electric wire up new RAS pump installed;
- Installed and tested rebuilt Backwash Pump #2;
- Replaced Alum Pump setup with temporary diaphragm pump replacement;
- Replaced failed EQ Pump M5 with new unit;
- Replaced driveway side Anaerobic pump;
- Replaced blower air filter;
- Replaced faulted UPS unit (under warranty by vendor) and returned to service;
- Rebuilt complete UV Bank #1, put online and reset counter;

- Replaced MLSS DO sensor on Tank #1;
- Completed annual calibrations on RAS and Raw flowmeters.

6.0 EFFLUENT QUALITY ASSURANCE

The facility operator undertook regular quality assurance activities during the reporting period to ensure adequate treatment plant operation and effluent quality.

A 24-hour automatic sampler is used to collect the required raw sewage and final effluent composite samples: 100-mL samples are taken every 30 minutes (48 aliquots per day) to form a representative composite sample. The samplers are calibrated monthly and the sample containers and tubing are cleaned regularly.

The necessary instrumentation required to perform the in-house analysis of various parameters was available to the facility operators. All sampling and analyses were performed in accordance with the "*Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works*", "*Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater*", and "*Standard Methods for Examination of Water and Wastewater*".

7.0 MONITORING EQUIPMENT CALIBRATION & MAINTENANCE

All magnetic flowmeters were calibrated on November 29, 2021. Copies of the calibration reports are included in Appendix D. All in-house instrumentation is calibrated regularly as per the manufacturer's specifications.

8.0 EFFORTS AND RESULTS ACHIEVED

The operational efforts made during the reporting period as described in the Sections above achieved the effluent objectives and limits listed in the facility C of A. The operator followed the recommendations and procedures outlined in the facility Operations & Maintenance Manual. Data was recorded in the facility logbook and monitored for changes. When appropriate, the operator made minor adjustments to the treatment processes and took corrective actions to ensure that the effluent quality met the objectives and limits for the facility.

The facility was operated in such a manner to enhance the success and adequacy of the Works. The success rate in achieving the effluent concentration objectives is calculated in Table 5 based on the number of samples analyzed and those exceeding the objectives. Table 6 evaluates the performance of the wastewater treatment process expressed as removal efficiency using the annualized influent and effluent concentrations.

TABLE 5. SUCCESS IN ACHIEVING OBJECTIVES

PARAMETER	NO. SAMPLES ANALYZED	NO. SAMPLES EXCEEDING OBJECTIVES	SUCCESS RATE
$CBOD_5$	12	0	100%
TSS	64	3	95%
TP	103	6	94%
TAN	103	0	100%
E. coli	12	0	100%
pH (range)	103	0	100%

TABLE 6. REMOVAL EFFICIENCY

PARAMETER	REMOVAL RATE
$CBOD_5$	97.6%
TSS	98.1%
TP	99.9%
TAN	99.7%
Un-Ionized Ammonia	99.8%
TKN	96.9%

9.0 SLUDGE MANAGEMENT

Table 7 provides monthly volumes of biosolids (sludge) transferred from the Haliburton STP to various approved locations operated under Shepherd Enterprises Inc. During the reporting period, a total of 1,353 m^3 of processed biosolids was transferred from the STP and hauled directly to the approved Organic Soil Conditioning Site and Shepherd Transfer Facility. A similar amount of biosolids production is expected for the next reporting period.

Copies of the biosolids (sludge) Laboratory Analytical Certificates are included in Appendix E. Copies of the provisional C of A's for Shepherd Enterprises Inc. are included in Appendix F describing disposal of the Haliburton STP biosolids.

TABLE 7. SUMMARY OF HAULING AND DISPOSAL (m^3)

PERIOD	HAULED FROM PLANT	PLANT TO LAGOON TRANSFER FACILITY	PLANT TO SHEPHERD TRANSFER FACILITY	PLANT TO SHEPHERD FIELD	COOPER LAGOON TO FIELD
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	436.5	0	436.5	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	255.5	0	255.5	0	0
August	212.6	0	0	212.6	0
September	0	0	0	0	0
October	250.1	0	0	250.1	0
November	198.2	0	0	198.2	0
December	0	0	0	0	0
Annual	**1,352.9**	**0**	**692**	**660.9**	**0**

10.0 COMPLAINTS

There were no complaints received during the reporting period.

11.0 BY-PASSES, SPILLS & ABNORMAL DISCHARGES

There were no by-passes, spills, or abnormal discharge events during the reporting period.

12.0 OTHER REQUESTED INFORMATION

No additional information was requested by the District Manager during the reporting period.

13.0 SUMMARY

During the reporting period, the facility achieved compliance with the effluent objective and compliance limits in the C of A with respect to all parameters. The average daily sewage flow was consistently below the rated capacity for the facility. No major operating problems were encountered, nor did any by-pass, spill or abnormal discharge events occur. No special maintenance or quality assurance measures were undertaken outside of regular activities.

It is anticipated that the facility will continue to achieve adequate treatment and operational performance during the next reporting period.

APPENDIX A.
CERTIFICATE OF APPROVAL

Ontario

Ministry of the Environment | Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 8325-6EENZ5

The Corporation of the Township of Dysart et al
PO Box 389
Haliburton, Ontario
K0M 1S0

AUG 1 6 2005

Site Location: Haliburton Sewage Treatment Plant
1394 Highway #121 (Part of Lot 14, Concession 8, Dysart Township)
Dysart et al Township, County of Haliburton
K0M 1S0

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

Modifications to the existing Haliburton Sewage Treatment Plant for the collection, transmission, treatment and disposal of domestic sewage rated at an *Average Daily Flow* of 1,575 m^3/d, a *Peak Flow Rate* of 4,410 m^3/d and consisting of the following *Works*:

PROPOSED WORKS

The *Proposed Works* include the following:

- installation of one (1) fine screen at the by-pass channel up-stream end of the grit removal chamber to handle a flowrate of 178 L/s;

- decommissioning of the two (2) (one duty, one stand-by) variable frequency drive submersible centrifugal sewage pumps, each rated at 23.5 L/s at a TDH of 6.9 m, together with a common header with a magnetic flow meter and a 100 mm diameter forcemain to the influent box of the decommissioned secondary treatment plant (Plant No. 1) as mentioned in *Previous Works* ;

- replacement of the two (2) (one duty, one stand-by) variable speed rotary lobe type sludge pumps, each rated at 22.8 L/s at a TDH of 13.3 m, as mentioned in *Previous Works* with two (2) (one duty, one stand-by) variable frequency drive centrifugal sludge pumps, each rated at 22.8 L/s at a TDH of 13.3 m; and

- installation of all associated appurtenances, piping, electrical and control systems necessary to operate the *Works*.

All in accordance with the Application for Approval of Municipal and Private Sewage Works from the Municipality of Dysart et al dated June 07, 2005 under a cover letter from ASI Group dated June 06, 2005.

PREVIOUS WORKS

The *Previous Works* include the following:

Plant Feed Raw Sewage Pumping Station and Forcemain

A raw sewage pumping station, located on the south side of Highway 121 approximately 130 m east of the Haliburton Sewage Treatment Plant access road, and consisting of three (3) submersible centrifugal sewage pumps, two (2) rated at 63.0 L/s at a TDH of 14.5 m and one (1) at 42.3 L/s at a TDH of 12.2 m, discharging through an existing 200 mm diameter plant feed forcemain into the existing grit channel at the plant site.

Solids Comminution and Grit Removal Facilities

Solids comminution and grit removal facilities consist of the following:

- a solids comminution facility at the up-stream end of the grit removal facility described below, consisting of an inlet chamber equipped with a manual coarse bar screen, and twin comminutor channels equipped with inlet and outlet gates and one (1) ¾ hp motor solids comminutor rated at a peak flow of 81.1 L/s installed in one of the channels, with the other channel serving as a by-pass channel intended for installation of a second comminutor in the future plant expansion; and

- a grit removal facility in the over-structure of the equalization tanks described below, consisting of two (2) manually cleaned parallel grit channels with common inlet and outlet chambers, each channel 7.0 m long x 0.76 m wide x 0.81 m side water depth, and each with inlet and outlet gates and a proportional weir discharging into the common outlet chamber draining through valved drain pipes into the equalization tanks described below.

Flow Equalization Facilities

The following is included:

- two (2) parallel flow equalization tanks, each having an operating volume of 147 m^3 at a maximum water depth of 4.6 m, each equipped with a gate valve on the floor level outlet to the flow equalization pumping chamber described below, an emergency overflow to the

corresponding anaerobic tank, and a tank mixing coarse bubble air diffuser system rated at 77.9 L/s standard air per tank, consisting of a stainless steel manifold with eight (8) stainless steel headers and jet nozzle type diffusers in each tank connected to the compressed air supply system described below;

- a flow equalization pumping chamber having an operating volume of 55 m^3 at a maximum water depth of 4.6 m, equipped as follows:

  - two (2) (one duty, one stand-by) variable frequency drive submersible centrifugal sewage pumps, each rated at 23.5 L/s at a TDH of 6.9 m, now decommissioned per *Proposed Works* together with a common header with a magnetic flow meter and a 100 mm diameter forcemain to the influent box of the decommissioned secondary treatment plant (Plant No. 1); and

  - three (3) (two duty, one stand-by) variable frequency drive submersible centrifugal sewage pumps, each rated at 63.0 L/s at a TDH of 5.1 m, together with a common header with a magnetic flow meter and a 150 mm diameter forcemain to the anaerobic tanks inflow splitter box at the existing secondary treatment plant (Plant No. 2).

Plant Control Building

A Plant Control Building housing the office and laboratory facilities, three (3) air blowers, coagulant storage and feed system, chlorination equipment and a 100 kW Diesel engine emergency power generator set.

Secondary Treatment Facilities

Secondary treatment comprises of the following:

- two (2) parallel anaerobic tanks, each 6.9 m long x 3.0 m wide x 4.5 m side water depth, together with an inflow splitter box in the over-structure of the tanks, discharging through overflow pipes into the corresponding anoxic tanks described below, each tank equipped with an individual jet mixing system consisting of one (1) submersible sewage pump rated at 23.7 L/s at a TDH of 6.0 m and a header with four (4) jet nozzles installed at the bottom of the tank;

- two (2) parallel anoxic tanks, each 6.9 m long x 3.0 m wide x 4.5 m side water depth, discharging through overflow weirs into the aeration tanks inflow spitter box described below, each tank equipped with an individual jet mixing system consisting of one (1) submersible sewage pump rated at 23.7 L/s at a TDH of 6.0 m and a header with four (4) jet nozzles installed at the bottom of the tank;

- one (1) aeration tanks inflow splitter box designed for three-way flow distribution to the below described two (2) proposed aeration tanks and one (1) future (expansion) aeration tank;

- two (2) parallel rectangular aeration tanks, each 13.5 m long x 4.5 m wide x 4.5 m side water depth, overflowing into a common aeration tank effluent channel, equipped with a fine bubble aeration system rated at 595 L/s standard air per tank, consisting of 230 ceramic disc type diffusers on a PVC pipe air distribution grid system with a stainless steel raiser pipe in each tank, connected to the compressed air supply system;

- an internal mixed liquor recirculation pumping station consisting of a chamber on the outlet from the aeration tank effluent channel described above, including a gravity discharge line to the secondary clarifier influent splitter box described below and two (2) (one duty, one stand-by) internal recirculation submersible pumps, each rated at 36.0 L/s at a TDH of 5.2 m, with a common header and individual discharge pipes to the anoxic tanks described above, including a magnetic flow meter on the recirculation pump header and ball valves on the individual discharge pipes;

- a secondary clarifier influent splitter box designed for two-way flow distribution to the below described proposed secondary clarifier and one (1) future (expansion) secondary clarifier;

- one (1) 13.72 m diameter centre feed circular secondary clarifier with a centre sludge hopper and a peripheral clarifier overflow weir discharging into the secondary clarifier effluent box described below, and a peripheral scum baffle with a scum box discharging into the scum chamber described below, equipped with centre shaft motor driven two (2) rotating rake arm scrapers with steel blades and adjustable spring brass squeegees, and one (1) rotating arm scum skimmer;

- one (1) secondary clarifier effluent box with a gravity discharge line to the effluent filter inflow distribution trough;

- one (1) scum chamber in common structure with the clarifier effluent box;

- a return and waste activated sludge pumping system in the basement of the new Filter Building described below, consisting of two (2) (one duty, one stand-by) variable speed rotary lobe type sludge pumps, now replaced with centrifugal pumps per *Proposed Works*, each rated at 22.8 L/s at a TDH of 13.3 m, with a common suction line from the sludge hopper of the secondary clarifier described above and forcemain with a magnetic flowmeter and individual valved discharge lines to the anaerobic tanks inflow splitter box (return sludge) and to the aerobic sludge digester described below (waste sludge); and

- a scum transfer system in the basement of the new Filter Building described below, consisting of two (2) (one duty, one stand-by) screw type centrifugal scum transfer pumps, each rated at 8.0 L/s at a TDH of 9.8 m, with a common suction line from the scum chamber and a discharge line to the aerobic sludge digester described below.

Sludge Digestion Facilities

Sludge digestion includes the following:

- one (1) aerobic sludge digester consisting of a rectangular tank 10.5 m long x 4.5 m wide x 4.5 m side water depth, with an overflow pipe to the digested sludge storage tank described below, equipped with a coarse bubble air diffuser system rated at 247.6 L/s standard air, consisting of a stainless steel manifold with 24 stainless steel headers and jet nozzle type diffusers connected to the compressed air supply system described below, and one (1) sludge transfer submersible pump rated at 12.6 L/s at a TDH of 9.0 m connected to the sludge loading facility;

- one (1) digested sludge storage tank in common structure with the digester described above, consisting of a rectangular tank 2.7 m long x 4.5 m wide x 4.5 m side water depth, equipped with a coarse bubble air diffuser system rated at 63.8 L/s standard air, consisting of a stainless steel manifold with six (6) stainless steel headers and jet nozzle type diffusers connected to the compressed air supply system described below, one (1) sludge transfer submersible pump rated at 12.6 L/s at a TDH of 9.0 m connected to the sludge loading facility described below, and one (1) supernatant discharge submersible pump rated at 12.6 L/s at a TDH of 9.0 m, with a suction pipe flared inlet rim 2.0 m above the tank bottom and a discharge line to the flow equalization pumping chamber; and

- a sludge truck loading station at the outside wall of the sludge storage tank, consisting of a sludge transfer pump discharge pipe with a flexible discharge hose mounted on a wall-mounted over-head arm.

Compressed Air Supply System

Three (3) (two duty, one stand-by) multi-stage centrifugal air blowers in the Filter Building described below, each rated at 538 L/s at 53.8 kPa (1275 cfm at 7.8 psi), to supply air to the fine bubble aeration and coarse bubble aeration systems and the filter air scour system, including the associated air distribution headers.

Chemical Storage and Feed Facilities

Chemical feed systems include the following:

- a coagulant storage and feed facility in the Chemical Room of the Filter Building described below, consisting of a 22.7 m^3 capacity fibreglass reinforced plastic liquid coagulant storage tank, two (2) (one duty, one stand-by) flow paced variable speed duplex head diaphragm type chemical metering pumps rated at 77.9 L/hr each, together with suction lines from the storage tank and two (2) separate feed lines to the aeration tanks inflow splitter box and the secondary clarifier influent splitter box; and

- a polyelectrolyte preparation and feed facility in the Chemical Room of the Filter Building described below, consisting of one (1) 790 L capacity fibreglass reinforced plastic polyelectrolyte solution mixing and storage tank manually filled with dry polymer, including a potable water supply line and a 1/3 hp mechanical mixer, and two (2) flow paced variable

speed simplex head diaphragm type chemical metering pumps rated at 12.0 L/hr each, a common suction line system from the solution mixing and storage tank, and a solution feed line to the effluent filter inflow distribution trough.

Filter Building

A Filter Building in common structure with the Treatment Plant facilities, housing the effluent filter system, coagulant and polyelectrolyte storage and feed facilities, air blowers, UV disinfection system, sludge pumping facilities, and diesel generator set.

Effluent Filtration Facilities

Effluent filtration comprises of the following:

- six (6) concrete filter cells arranged in two rows of three cells, each cell 3.09 m wide x 1.83 m long x 2.47 m deep (maximum water level), including installation of a single effluent filter inflow distribution trough with individual cell inlet adjustable weirs and wafer type butterfly valves, one (1) filter effluent header discharging into the UV disinfection facility described below, and two (2) backwash troughs with adjustable cell overflow weirs running across the tops of the two rows of cells and discharging into the "mud well" described below;

- four (4) automatically operated deep-bed dual-media gravity type effluent filter systems in four of the above-noted filter cells (two in each row of cells), each filter system consisting of:

  - a steel plate false bottom integrated with an underdrain system with valved connections to the filter effluent and filter backwash headers, and with an air scour diffuser system connected to the air header from the air blower system described above; and

  - filter media consisting of a 480 mm layer of 0.9 to 1.1 mm particle size anthracite over a 300 mm layer of 0.45 to 0.50 mm particle size silica sand;

- a 31.5 m^3 capacity filter backwash wastewater sump ("mud well") in common structure with the effluent filter tanks, equipped with two (2) (one duty, one stand-by) submersible solids-handling centrifugal type constant speed backwash disposal pumps rated at 19 L/s at a TDH of 7.6 m each, with a common forcemain and valved discharge lines to the flow equalization pumping chamber, aerobic sludge digester and the internal mixed liquor recirculation pumping station;

- a filter backwash water supply pump sump on outlet from the filter effluent header to the UV disinfection channel described below, equipped with two (2) (one duty, one stand-by) submersible supply pumps, each rated at 3.2 L/s at a TDH of 7.6 m, with a common supply pipe to the filter backwash water reservoir described below; and

- a 27.8 m^3 capacity filter backwash water reservoir ("clear well") in common structure with the mud well described above, equipped with two (2) (one duty, one stand-by) submersible

backwash pumps, each rated at 68.4 L/s at a TDH of 12.2 m, together with a filter backwash header with connections to the filter underdrain systems.

Final Effluent UV Disinfection Facility

An ultra-violet irradiation effluent disinfection facility in the Filter Building, consisting of a 762 mm wide x 610 mm deep x 7.80 m long covered UV disinfection channel with a steel plate baffle along the length of the channel reducing the channel width to 533 mm, and an outlet sump discharging into the plant effluent sewer described below, equipped with the following:

- an automatic level control flap gate on discharge to the outlet sump, set to maintain the channel water level between 292 mm and 318 mm above the channel bottom, and

- a low pressure mercury vapour ultraviolet irradiation lamp system with 65% of the radiation output at the wave length of 253.7 nm and a nominal average intensity of radiation of 27,850 : Ws/cm^2 at 65% transmission, providing a UV irradiation density of 3.35 W/L (watts per litre) at a detention time of 6.5 seconds at a peak flow of 7528 m3/d, consisting of two (2) in-series independently operated banks of seven (7) independently removable lamp modules having four (4) UV lamps in each module.

Plant Effluent Sewer

A 300 mm diameter plant outfall sewer from the UV disinfection channel in the Filter Building to the plant outlet manhole located on the existing 300 mm diameter plant outfall sewer to Drag River.

Stand-by Power Generator

A 350 kW stand-by diesel engine power generator set with two (2) 909 L capacity fuel storage tanks in the Filter Building.

Process and Maintenance Effluent Water Supply Facility

A plant process and maintenance effluent water supply facility in the Filter Building, consisting of two (2) dry pit centrifugal effluent water pressure pumps, each rated at 1.6 L/s at a TDH of 35.0, with a common suction line from the outlet section of the UV disinfection channel described above, and two (2) 280 L operating capacity precharged pressure tanks, connected to the plant process and maintenance water distribution system.

Plant Operation Control System

An integrated computerized plant operation monitoring and control system, consisting of:

- a master programmable controller installed in the Electrical Room of the Filter Building, providing operation control for the air blowers, sludge wasting valves, UV disinfection

system, flow equalization transfer pumps and various monitoring and alarm functions;

- a local programmable controller installed in the Filter Building, providing monitoring and operation control for the effluent filter system;

- a PC-based central operator work station, installed in the Office of the Plant Control Building; and

- all monitoring, signal transmission, and process control equipment and instrumentation associated with individual plant facilities and pieces of plant equipment.

Miscellaneous

All associated appurtenances, piping, heating and ventilation, electrical and control systems necessary to operate the *Works*.

All in accordance with the following:

1. Application for Approval of Municipal and Private Sewage Works signed on September 26, 2003 under a cover letter from Tammy McKelvey, C.A.O/Clerk of Municipality of Dysart et al dated September 30, 2003 along with a letter from AWS Engineers and Planners Corp. dated September 22, 2003; and

2. Original application(s) for approval, including design calculations, engineering drawings, contract documents, specifications and reports prepared in support of the previous Certificate(s) of Approval.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"*Act*" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Annual Average Concentration*" means the arithmetic mean of the *Monthly Average Concentrations* of a contaminant in the effluent calculated for any particular calendar year;

"*Annual Average Loading*" means the *Annual Average Concentration* of a contaminant multiplied by the *Average Daily Flow* during that year multiplied by the number of days sewage was flowing through the treatment plant and correcting the units to kilograms (per year);

"*Average Daily Flow*" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"$CBOD_5$" means five day biochemical oxygen demand measured in an unfiltered sample;

"*By-pass*" means any discharge from the *Works* that does not undergo any or full treatment before it is

discharged to the environment;

"*Certificate*" means this entire certificate of approval document, issued in accordance with Section 53 of the *Act*, and includes any schedules;

"*Daily Concentration*" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"*District Manager*" means the District Manager of the Peterborough District Office of the Ministry;

"*E. Coli*" refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"*Geometric Mean Density*" is the nth root of the product of multiplication of the results of n number of samples over the period specified;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Monthly Average Concentration*" means the arithmetic mean of all *Daily Concentrations* of a contaminant in the effluent sampled or measured, or both, during a calendar month;

"*Monthly Average Daily Flow*" means the cumulative total sewage flow to the sewage works during a calendar month divided by the number of days during which sewage was flowing to the sewage works that month;

"*Monthly Average Loading*" means the value obtained by multiplying the *Monthly Average Concentration* of a contaminant by the *Monthly Average Daily Flow* over the same calendar month:

"*Owner*" means the Municipality of Dysart *et al* and includes its successors and assignees;

"*Peak Flow Rate*" means the maximum rate of sewage flow for which the plant or process unit was designed;

"*Previous Works*" means those portions of the sewage works previously constructed and approved under a certificate of approval;

"*Proposed Works*" means the sewage works described in the *Owner*'s application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate*;

"*Rated Capacity*" means the *Average Daily Flow* for which the *Works* are approved to handle; and

"*Works*" means the sewage works described in the *Owner*'s application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate* and includes both the *Proposed Works* and the *Previous Works*.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the *Works* and the submitted supporting documents and plans and specifications as listed in this *Certificate*.

(3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Certificate* shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Certificate* will cease to apply to those parts of the *Works* which have not been constructed within five (5) years of the date of this *Certificate*.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the

following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the *Substantial Completion* of the *Works*, the *Owner* shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this *Certificate*, and upon request, shall make the written statement available for inspection by *Ministry* personnel.

(2) Within one year of the *Substantial Completion* of the *Proposed Works*, a set of as-built drawings showing the *Works* "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

5. BY-PASSES

(1) Any *By-pass* of sewage from any portion of the *Works* is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage; or

(b) the *District Manager* agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* has given prior written

acknowledgment of the *by-pass*.

(2) The *Owner* shall collect at least one (1) grab sample of the *By-pass* and have it analyzed for the parameters outlined in Condition 7(1) using the protocols in Condition 9(4).

(3) The *Owner* shall maintain a logbook of all *By-pass* events which shall include, at a minimum, the time, location, duration, quantity of *By-pass*, the authority for *By-pass* pursuant to subsection (1), and the reasons for the occurrence.

6. EFFLUENT OBJECTIVES

(1) The *Owner* shall use best efforts to design, construct and operate the *Works* with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Table 1 - Effluent Objectives

Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
$CBOD_5$	5.0
Suspended Solids	5.0
Total Phosphorus	0.1
Total Ammonia Nitrogen	2.0
E. Coli	200 organisms/100 mL (Monthly *Geometric Mean Density*)

(2) The *Owner* shall use best efforts to:

(a) maintain the pH of the effluent from the *Works* within the range of 6.5 to 9.0, inclusive, at all times;

(b) operate the works within the *Rated Capacity* of the *Works*; and

(c) ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(3) The *Owner* shall include in all reports submitted in accordance with Conditions 10, a summary of the efforts made and results achieved under this Condition.

7. EFFLUENT LIMITS

(1) The *Owner* shall operate and maintain the *Works* such that the concentrations and waste loadings of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Table 2 - Effluent Limits		
Effluent Parameter	**Monthly or Annual Average Concentration** (milligrams per litre unless otherwise indicated)	**Annual Average Loading** (kilograms per year unless otherwise indicated)
Column 1	Column 2	Column 3
$CBOD_5$	10.0 *1	-
Suspended Solids	10.0 *1	-
Total Phosphorus	0.2 *2	115
Total Ammonia Nitrogen	5.0 *2	-
pH of the effluent to be maintained between 6.0 to 9.5, inclusive.		

*1 Annual Average Concentration.

*2 Monthly Average Concentration.

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) The *Annual Average Concentration* of $CBOD_5$ and suspended solids in Column 1 of Table 2 in subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of Table 2 in subsection (1).

(b) The *Monthly Average Concentration* of total ammonia nitrogen and total phosphorus in Column 1 of Table 2 in subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of Table 2 in subsection (1).

(c) The *Annual Average Loading* of total phosphorus in Column 1 of Table 2 in subsection (1) shall not exceed the corresponding loading set out in Column 3 of Table 2 in subsection (1).

(3) Paragraphs (a), (b), and (c) of subsection (2) shall apply upon the issuance of this *Certificate*.

(4) Only those monitoring results collected during the corresponding time period shall be used in calculating the *Monthly* or *Annual Average Concentrations* and *Annual Average Loading* for this *Certificate*.

8. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Certificate* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this *Certificate* and the *Act* and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the *Works*.

(2) The *Owner* shall prepare an operations manual within six (6) months of the date of issuance of this *Certificate*, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works*;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works*;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager*; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall provide for the overall operation of the *Works* with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

9. MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, "weekly" means once every week and "monthly" means once every month.

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring
(Sampling point at the inlet of the treatment plant)

Parameters	Sample Type	Frequency
$CBOD_5$	24-hour composite	Monthly
Suspended Solids	24-hour composite	Monthly
Total Phosphorus	24-hour composite	Monthly
Total Kjeldahl Nitrogen	24-hour composite	Monthly
Total Ammonia Nitrogen	24-hour composite	Monthly

Table 4 - Effluent Monitoring
(Sampling point at the outlet of the treatment plant or at the sewer outfall as close as possible to the treatment plant)

Parameters	Sample Type	Frequency
$CBOD_5$	24-hour composite	Monthly
Suspended Solids	24-hour composite	Monthly
Total Phosphorus as P	24-hour composite	Weekly
Total Ammonia Nitrogen	24-hour composite	Weekly
Nitrate Nitrogen	24-hour composite	Weekly
E. Coli	Grab	Monthly
pH	Grab (on-site)	Weekly
Temperature	Grab (on-site)	Weekly

(Note: Definitions for grab and composite samples are included in one or more documents below. 24-hour composite sample means a time-composite sample and constitutes of an integrated sample made up of blending 24 hourly aliquots taken by refrigerated autosampler, which are obtained at an hourly frequency having same sample volume).

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (20th edition), as amended from time to time by more recently published editions; and

(d) for any parameters not mentioned in the documents referenced in (a), (b), or (c), written approval of the *District Manager* shall be obtained prior to sampling.

(5) The temperature and pH of the effluent from the *Works* shall be determined in the field at the time of sampling for Total Ammonia Nitrogen. The concentration of unionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (unionized).

(6) The *Owner* shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the effluent from the *Works* with an accuracy to within plus or minus 10 per cent (+/- 10%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a daily frequency.

(7) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Certificate*.

10. REPORTING

(1) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 4 and as soon as possible for an unplanned *By-pass*, the *Owner* shall notify the *District Manager* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *By-pass*.

(2) The *Owner* shall report to the *District Manager* or designate, any exceedance of any parameter specified in Condition 7 orally, as soon as reasonably possible, and in writing

within seven (7) days after the laboratory results of the exceedance have been received.

(3) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(4) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(5) The *Owner* shall prepare, and submit to the *District Manager* a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the *Works*;

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*;

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment; and

(f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6.

(g) a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

(h) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(i) a summary of all *By-pass*, spill or abnormal discharge events; and

(j) any other information the *District Manager* requires from time to time.

11. REVOCATION OF EXISTING APPROVALS

(1) The descriptions of the approved works and conditions of approval in this *Certificate* apply in place of all the existing descriptions and conditions in the Certificates of Approval under the Ontario Water Resources Act for sewage works which are part of the works approved by this *Certificate*.

(2) Notwithstanding Condition 11(1) above, the original applications for approval, including design calculations, engineering drawings, and reports prepared in support of the existing *Certificate(s)* of Approval whose descriptions of the approved works and conditions are now replaced pursuant to Condition 11(1) above, shall form part of this *Certificate*.

(3) Where an existing Certificate of Approval referred t in Condition 11(1) above applies to *Works* in addition to the *Works* approved by this *Certificate*, it shall continue to apply to those additional *Works*.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the *Owners* their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate*.

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to ensure that the *Works* are constructed in accordance with the approval and that record drawings of the *Works* "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving

watercourse is prohibited, save in certain limited circumstances where the failure to *By-pass* could result in greater injury to the public interest than the *By-pass* itself where a *By-pass* will not violate the approved effluent requirements, or where the *By-pass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *By-pass* events.

6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.

7. Condition 7 is imposed to ensure that the effluent discharged from the *Works* to the Drag River meets the *Ministry*'s effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

8. Condition 8 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a manual is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner*'s operation of the *Works*.

9. Condition 9 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.

10. Condition 10 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

11. Condition 11 is included to stipulate that this *Certificate* replaces all previous approvals for the works being the subject of this Certificate, and that the existing approvals remain in force for the purpose of any works which are not subject to this *Certificate*.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 0191-5SZKZ9 issued on December 4, 2003.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days

after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 9th day of August, 2005

THIS CERTIFICATE WAS MAILED
ON Aug. 12, 2005
9c
(Signed)

Mohamed Dhalla, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

ZB/
c: District Manager, MOE Peterborough
Jack Yu, ASI Group Ltd. ✓
Water Standards Section, Standards Development Branch, MOE Toronto

APPENDIX B. MONTHLY AND ANNUAL DATA SUMMARIES

Municipality of Dysart et al
Haliburton WWTP
2021 Raw Sewage Summary
Monthly Concentrations and Loadings

Month	Raw Sewage Flows (m^3)			Average Monthly $CBOD_5$		Average Monthly Suspended Solids		Average Monthly Total Ammonia Nitrogen		Average Monthly UnionizedAmmonia Nitrogen		Average Monthly Total Kjeldahl Nitrogen		Average Monthly Nitrite		Average Monthly Nitrate		Average Monthly Total Phosphorus			Monthly pH	Temperature
	Total Flow	Average Daily Flow	Maximum Daily Flow	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Loading (kg/month)	Minimum (pH Units)	°C
January	23,469	757	875	147	111	176	133	20.3	15.4	0.1227	0.0929	22.2	16.8	**0.05**	**0.038**	**0.22**	**0.167**	2.61	1.98	61.35	7.42	10.3
February	18,940	676	676	97	66	204	138	23.9	16.2	0.0735	0.0497	26.9	18.2	**0.03**	**0.020**	**0.06**	**0.041**	3.13	2.11	59.21	7.17	9.0
March	27,594	890	778	305	271	204	181	27.6	24.6	0.0791	0.0704	34.1	30.4	**0.03**	**0.027**	**0.06**	**0.053**	3.00	2.67	82.64	7.16	8.4
April	29,593	986	1,191	107	106	165	163	13.4	13.2	0.0473	0.0467	17.6	17.4	**0.03**	**0.030**	**0.06**	**0.059**	1.96	1.94	58.06	7.22	9.3
May	28,142	908	1,104	143	130	176	160	15.9	14.4	0.1078	0.0979	22.5	20.4	**0.03**	**0.027**	**0.06**	**0.054**	2.33	2.12	65.62	7.45	10.9
June	26,390	880	1,030	132	116	194	170	17.8	15.7	0.1094	0.0962	22.8	20.1	**0.03**	**0.026**	**0.06**	**0.053**	2.67	2.35	70.51	7.37	12.0
July	31,860	1,028	1,162	168	173	181	186	16.6	17.1	0.0491	0.0505	20.2	20.8	**0.03**	**0.031**	**0.06**	**0.062**	2.71	2.79	86.47	6.88	17.2
August	28,524	920	1,129	197	181	183	168	18.9	17.4	0.1435	0.1320	23.1	21.3	**0.03**	**0.028**	**0.06**	**0.055**	2.68	2.46	76.30	7.32	16.3
September	27,811	927	1,413	173	160	144	133	22.1	20.5	0.7169	0.6646	25.6	23.7	0.05	0.046	**0.06**	**0.056**	2.48	2.30	68.86	7.95	16.6
October	29,214	942	1,134	130	123	157	148	19.0	17.9	0.5157	0.4860	20.2	19.0	**0.03**	**0.028**	**0.06**	**0.057**	2.25	2.12	65.73	7.90	15.7
November	26,869	896	1,048	107	96	150	134	16.3	14.6	0.4776	0.4277	20.0	17.9	0.19	0.170	1.12	1.003	2.16	1.93	58.04	7.98	14.3
December	29,731	959	1,231	85	82	155	148	15.2	14.6	0.3663	0.3513	19.6	18.8	**0.03**	**0.029**	**0.06**	**0.058**	2.08	1.99	61.72	7.99	11.4
Total	**328,137**																					
Average	**27,345**	**899**		**149**	**135**	**174**	**155**	**18.9**	**16.8**	**0.2341**	**0.2138**	**22.9**	**20.4**	**0.05**	**0.04167**	**0.16**	**0.143**	**2.50**	**2.23**	**67.88**	**7.48**	**12.62**
Maximum	**31,860**		**1,413**																			

Municipality of Dysart et al
Haliburton WWTP
2021 Final Effluent Summary
Monthly Concentrations and Loadings

Month	Raw Sewage Flows (m^3)			Average Monthly $CBOD_5$		Average Monthly Suspended Solids		Average Monthly Total Ammonia Nitrogen		Average Monthly Unionized Ammonia		Average Monthly Total Kjeldahl Nitrogen		Average Monthly Total Phosphorus			Average Monthly Nitrite		Average Monthly Nitrate		Monthly E.Coli	Monthly pH	
	Total Flow	Average Daily Flow	Maximum Daily Flow	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Loading (kg/month)	Concentration (mg/L)	Loading (kg/day)	Concentration (mg/L)	Loading (kg/day)	Geometric Mean (cfu/100 mL)	Minimum (pH Units)	Maximum (pH Units)
January	23,469	757	875	4	3.028	**2.4**	**1.817**	**0.05**	**0.038**	**0.00006**	**0.00005**	0.50	0.379	0.04	0.032	0.997	**0.03**	**0.023**	10.1	7.618	**2**	6.55	7.08
February	18,940	676	778	**4**	**2.706**	**3.2**	**2.165**	**0.19**	**0.128**	**0.00018**	**0.00012**	0.80	0.541	0.09	0.061	1.705	**0.04**	**0.025**	10.6	7.180	**2**	6.51	6.97
March	27,594	890	1,323	**4**	**3.561**	**3.5**	**3.115**	**0.04**	**0.036**	**0.00008**	**0.00007**	1.20	1.068	0.08	0.067	2.070	**0.03**	**0.027**	10.1	8.990	**2**	6.56	7.28
April	29,593	986	1,191	**2**	**1.973**	4.4	4.340	**0.04**	**0.039**	**0.00010**	**0.00010**	**0.50**	**0.493**	0.09	0.084	2.515	**0.03**	**0.030**	8.9	8.767	**2**	6.63	7.53
May	28,142	908	1,104	**2**	**1.816**	**4.2**	**3.783**	**0.04**	**0.036**	**0.00015**	**0.00013**	1.40	1.271	0.08	0.074	2.283	**0.03**	**0.027**	9.7	8.844	**2**	6.74	7.39
June	26,390	880	1,030	**4**	**3.519**	4.4	3.871	**0.04**	**0.036**	**0.00030**	**0.00027**	0.50	0.440	0.08	0.070	2.111	0.04	0.037	11.6	10.222	**2**	6.53	7.98
July	31,860	1,028	1,162	**4**	**4.111**	**2.4**	**2.467**	**0.05**	**0.050**	**0.00010**	**0.00010**	**0.50**	**0.514**	**0.04**	**0.045**	**1.394**	**0.03**	**0.031**	10.5	10.786	**2**	6.52	7.11
August	28,524	920	1,129	**4**	**3.681**	**2.5**	**2.300**	**0.05**	**0.046**	**0.00064**	**0.00058**	**0.50**	**0.460**	**0.03**	**0.031**	**0.970**	**0.04**	**0.037**	11.8	10.894	**2**	6.73	7.98
September	27,811	927	1,413	**4**	**3.708**	**3.0**	**2.781**	**0.05**	**0.049**	**0.00173**	**0.00160**	**0.50**	**0.464**	0.05	0.043	1.286	**0.04**	**0.035**	10.8	10.051	6	7.16	8.12
October	29,214	942	1,134	**4**	**3.770**	**3.2**	**3.016**	0.06	0.058	0.00037	0.00035	**0.50**	**0.471**	**0.04**	**0.038**	**1.169**	**0.03**	**0.028**	10.3	9.662	**2**	7.14	7.25
November	26,869	896	1,048	**4**	**3.583**	**3.3**	**2.985**	**0.04**	**0.037**	**0.00021**	**0.00019**	0.80	0.717	**0.06**	**0.053**	**1.585**	**0.03**	**0.027**	10.5	9.438	**2**	7.18	7.29
December	29,731	959	1,231	**4**	**3.836**	2.4	2.302	**0.04**	**0.041**	**0.00020**	**0.00019**	0.60	0.575	0.04	0.038	1.189	**0.03**	**0.029**	8.8	8.433	**2**	7.13	7.40
Total	**328,137**															**19.27**							
Average	**27,345**	**899.0**		**3.7**	**3.274**	**3.2**	**2.912**	**0.06**	**0.049**	**0.00034**	**0.00031**	**0.69**	**0.616**	**0.06**	**0.053**		**0.0331**	**0.0296**	10.3	9.24	**2**	**Minimum**	**Maximum**
Maximum	**31,860**		**1,413**																			**6.51**	**8.12**
Certificate of Approval Compliance Criteria	**N/A**	**1575 m^3 Annual Average**	**4410 m^3 Daily**	**10.0 mg/L Annual Average**	**N/A**	**10.0 mg/L Annual Average**	**N/A**	**5.0 mg/L Monthly Average**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**0.2 mg/L Monthly Average**	**N/A**	**115 kg/Year Annual Average**	**N/A**	**N/A**	**N/A**	**N/A**	**200 cfu/100 ml Objective**	**Between 6.0 to 9.5 Inclusive**	

Note: **Numbers highlighted in grey are equal to less than (<) the value shown**

Municipality of Dysart et al
Haliburton WWTP
January 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH_3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH_3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	818																						
2	809																						
3	763																						
4	875		*173*						*2.28*				2	0.07	0.00016		0.04			*6.99*	*10.3*	*7.67*	
5	776	147	*160*	*20.3*	0.12268	*22.2*	*0.05*	*0.22*	*2.58*	*7.42*	*10.3*	4	2	0.04	0.00011	**0.5**	0.04	**0.03**	9.91	*7.08*	*10.5*	*7.19*	**2**
6	795																						
7	783																						
8	791																						
9	810																						
10	734																						
11	833		*174*						*2.20*				3	0.04	0.00006		**0.03**			*6.82*	*10.8*	*7.59*	
12	701													**0.04**	**0.00003**		0.03	**0.03**	10.50	*6.55*	*10.0*	*7.56*	
13	779																						
14	747																						
15	788																						
16	753																						
17	685																						
18	723		*183*						*2.75*				3	0.08	0.00008		0.04			*6.64*	*10.9*	*8.01*	
19	734													0.05	0.00004		0.04	**0.03**	9.64	*6.55*	*9.7*	*7.78*	
20	730																						
21	801																						
22	763																						
23	712																						
24	673																						
25	707		*188*						*3.26*				2	0.04	0.00000		0.06			*6.92*	*9.2*	*8.31*	
26	748													**0.04**	**0.00003**		0.06	**0.03**	10.20	*6.57*	*8.4*	*7.68*	
27	763																						
28	718																						
29	739																						
30	705																						
31	713																						
Total	23,469																						
Average	757	147	176	20.3	0.12268	22.2	**0.05**	**0.22**	2.61	7.42	10.3	4	**2.4**	**0.05**	**0.00006**	0.5	0.04	**0.03**	10.1	6.77	10.0	7.72	**2**
Max.	875	147	188	20.3	0.12268	22.2	**0.05**	**0.22**	3.26	7.42	10.3	4	3	0.08	0.00016	0.5	0.06	**0.03**	10.5	7.08	10.9	8.31	**2**
Min.	673	147	160	20.3	0.12268	22.2	**0.05**	**0.22**	2.20	7.42	10.3	4	**2**	**0.04**	**0.00000**	0.5	0.03	**0.03**	9.64	6.55	8.4	7.19	**2**
Count	31	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
February 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	681		193						2.96				3	0.06	0.00011		0.06			*6.97*	*8.1*	*7.9*	
2	695	97	*202*	*23.9*	0.07351	*26.9*	***0.03***	***0.06***	*2.98*	7.17	9.0	**4**	2	0.05	0.00005	0.8	0.08	**0.03**	10.8	*6.71*	*8.6*	*8.6*	**2**
3	778																						
4	723																						
5	686																						
6	633																						
7	616																						
8	661		*212*						*3.28*				2	0.05	0.00007		0.08			*6.81*	*9.4*	*8.0*	
9	664													0.05	0.00003		0.09	**0.03**	10.6	*6.51*	*9.3*	*7.9*	
10	721																						
11	702																						
12	716																						
13	642																						
14	682																						
15	639		*148*						*2.76*				4	0.06	0.00007		0.07			*6.77*	*9.0*	*6.6*	
16	641													**0.04**	**0.00005**		0.07	**0.03**	11.3	*6.69*	*10.7*	*7.6*	
17	680																						
18	671																						
19	719																						
20	699																						
21	668																						
22	635		*267*						*3.65*				5	0.36	0.00046		**0.13**			*6.79*	*9.0*	*5.7*	
23	620													0.84	0.00062		**0.14**	0.06	9.8	*6.52*	*9.9*	*6.0*	
24	633																						
25	680																						
26	700																						
27	626																						
28	729																						
Total	18,940																						
Average	676	97	204	23.9	0.07351	26.9	**0.03**	**0.06**	3.13	7.17	9.0	**4**	3.2	**0.19**	**0.00018**	0.8	0.09	**0.04**	10.6	6.72	9.3	7.26	**2**
Max.	778	97	267	23.9	0.07351	26.9	**0.03**	**0.06**	3.65	7.17	9.0	**4**	5	0.84	0.00062	0.8	0.14	0.06	11.3	6.97	10.7	8.6	**2**
Min.	616	97	148	23.9	0.07351	26.9	**0.03**	**0.06**	2.76	7.17	9.0	**4**	2	**0.04**	**0.00003**	0.8	0.06	**0.03**	9.8	6.51	8.1	5.7	**2**
Count	28	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective

Municipality of Dysart et al
Haliburton WWTP
March 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	650		280						3.58				5	0.04	0.00005		0.09			*6.77*	*10.3*	*6.7*	
2	674	305	*251*	*27.6*	0.07913	*34.1*	**0.03**	***0.06***	3.74	7.16	8.4	**4**	4	**0.04**	**0.00004**	1.2	0.08	**0.03**	11.60	*6.72*	*8.9*	*8.0*	**2**
3	695																						
4	662																						
5	715																						
6	648																						
7	679																						
8	648		*274*						*3.59*				4	**0.04**	**0.00013**		0.08			*7.23*	*8.3*	*8.3*	
9	698													**0.04**	**0.00003**		0.08	**0.03**	11.70	*6.56*	*9.5*	*6.9*	
10	808																						
11	1139																						
12	899																						
13	793																						
14	747																						
15	774		*162*						2.81				2	**0.04**	**0.00004**		0.08			*6.76*	*7.9*	*7.4*	
16	779													0.04	0.00008		0.07	**0.03**	10.10	*6.95*	*9.7*	*8.2*	
17	884																						
18	835																						
19	747																						
20	854																						
21	778																						
22	903		*133*						2.60				4	**0.04**	**0.00019**		0.07			*7.28*	*11.4*	*6.8*	
23	984													**0.04**	**0.00004**		0.06	**0.03**	9.56	*6.61*	*10.7*	*6.7*	
24	985																						
25	1168																						
26	1323																						
27	1162																						
28	1300																						
29	1214		*122*						*1.65*				**2**	**0.04**	**0.00009**		0.07			*6.98*	*10.2*	*7.3*	
30	1205													0.04	0.00005		0.07	**0.03**	7.54	*6.77*	*9.6*	*7.5*	
31	1244																						
Total	27,594																						
Average	890	305	204	27.6	0.0791	34.1	**0.03**	**0.06**	3.00	7.16	8.4	**4**	**3.5**	**0.04**	**0.00008**	1.2	0.08	**0.03**	10.10	6.86	9.7	7.4	**2**
Max.	1,323	305	280	27.6	0.0791	34.1	**0.03**	**0.06**	3.74	7.16	8.4	**4**	5	0.04	0.00019	1.2	0.09	**0.03**	11.70	7.28	11.4	8.3	**2**
Min.	648	305	122	27.6	0.0791	34.1	**0.03**	**0.06**	1.65	7.16	8.4	**4**	**2**	**0.04**	**0.00003**	1.2	0.06	**0.03**	7.54	6.56	7.9	6.7	**2**
Count	31	1	6	1	1	1	1	1	6	1	1	1	6	10	10	1	10	5	5	10	10	10	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
April 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	1191																						
2	1124																						
3	1028																						
4	1025																						
5	1010		*119*						*1.88*				**8**	0.04	0.00011		0.06			*7.05*	*10.9*	*7.1*	
6	1032	*107*	*143*	*13.4*	0.04733	*17.6*	***0.0***	***0.06***	*1.57*	*7.22*	*9.3*	**2**	*3*	0.04	0.00006	***0.5***	0.04	**0.03**	*7.78*	*6.82*	*9.0*	*7.9*	**2**
7	1013																						
8	1038																						
9	1066																						
10	991																						
11	895																						
12	982		*212*						*2.03*				*4*	**0.04**	**0.00038**		0.07			*7.53*	*12.8*	*7.0*	
13	989													**0.04**	**0.00007**		0.07	**0.03**	9.09	*6.80*	*12.1*	*6.3*	
14	982																						
15	1095																						
16	1154																						
17	914																						
18	869																						
19	939		*200*						*2.13*				*4*	**0.04**	**0.00008**		0.07			*6.86*	*12.4*	*7.4*	
20	958													**0.04**	**0.00006**		0.08	**0.03**	9.27	*6.77*	*10.8*	*7.3*	
21	954																						
22	936																						
23	919																						
24	932																						
25	863																						
26	868		*150*						*2.20*				*3*	0.04	0.00005		**0.14**			*6.69*	*11.3*	*6.6*	
27	879													**0.04**	**0.00004**		**0.15**	**0.03**	9.41	*6.63*	*11.2*	*6.6*	
28	1002																						
29	962																						
30	983																						
Total	29,593																						
Average	986	107	165	13.4	0.04733	17.6	**0.03**	**0.06**	1.96	7.22	9.3	**2**	4.4	**0.04**	**0.00010**	**0.5**	0.09	**0.03**	8.89	6.89	11.3	7.02	**2**
Max.	1,191	107	212	13.4	0.04733	17.6	**0.03**	**0.06**	2.20	7.22	9.3	**2**	8	0.04	0.00038	**0.5**	0.15	**0.03**	9.41	7.53	12.8	7.89	**2**
Min.	863	107	119	13.4	0.04733	17.6	**0.03**	**0.06**	1.57	7.22	9.3	**2**	3	**0.04**	**0.00004**	**0.5**	0.04	**0.03**	7.78	6.63	9.0	6.26	**2**
Count	30	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
May 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	951																						
2	923																						
3	955		287						2.65				**7**	0.04	0.00010		0.09			*6.98*	*12.3*	*6.2*	
4	971	143	177	15.9	0.10783	22.5	**0.03**	**0.06**	2.32	*7.45*	*10.9*	**2**	3	**0.04**	**0.00005**	1.4	0.08	**0.03**	8.92	*6.74*	*11.2*	*6.8*	**2**
5	947																						
6	926																						
7	996																						
8	916																						
9	852																						
10	920		162						2.23				3	**0.04**	**0.00018**		0.09			*7.23*	*12.3*	*6.9*	
11	953													**0.04**	**0.00012**		0.09	**0.03**	9.32	*7.06*	*12.3*	*6.9*	
12	1104																						
13	876																						
14	873																						
15	848																						
16	842																						
17	818		170						2.13				**6**	**0.04**	**0.00028**		0.08			*7.38*	*13.5*	*6.4*	
18	884													**0.04**	**0.00029**		0.08	**0.03**	9.83	*7.39*	*13.6*	*6.5*	
19	964														0.00000								
20	914																						
21	1049																						
22	896																						
23	853																						
24	860		176						2.48				**2**	**0.04**	**0.00020**		0.08			*7.18*	*15.2*	*6.1*	
25	890													**0.04**	**0.00007**		0.08	**0.03**	10.90	*6.77*	*14.4*	*6.0*	
26	913																						
27	917																						
28	918																						
29	839																						
30	757																						
31	817		86						2.18				4	**0.04**	**0.00014**		0.06			*7.05*	*14.3*	*6.2*	
Total	28,142																						
Average	908	143	176	15.9	0.10783	22.5	**0.03**	**0.06**	2.33	7.45	10.9	**2**	**4.2**	**0.04**	**0.00015**	1.4	0.08	**0.03**	9.74	7.09	13.2	6.4	**2**
Max.	1,104	143	287	15.9	0.10783	22.5	**0.03**	**0.06**	2.65	7.45	10.9	**2**	**7**	0.04	0.00029	1.4	0.09	**0.03**	10.90	7.39	15.2	6.9	**2**
Min.	757	143	86	15.9	0.10783	22.5	**0.03**	**0.06**	2.13	7.45	10.9	**2**	**2**	**0.04**	**0.00000**	1.4	0.06	**0.03**	8.92	6.74	11.2	6.0	**2**
Count	31	1	6	1	1	1	1	1	6	1	1	1	6	9	10	1	9	4	4	9	9	9	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
June 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	826	132	187	17.8	0.10941	22.8	**0.03**	**0.06**	2.71	*7.37*	*12.0*	**4**	3	**0.04**	**0.00012**	0.5	0.08	0.03	11.30	*6.98*	*14.5*	*5.9*	**2**
2	767																			*6.79*	*16.5*	*5.5*	
3	801																						
4	868																						
5	835																						
6	845																						
7	874		146						2.54				4	**0.04**	**0.00011**		0.07			*6.86*	*16.7*	*4.4*	
8	880													**0.04**	**0.00009**		0.07	0.04	11.70	*6.79*	*16.5*	*5.5*	
9	811																						
10	926																						
11	862																						
12	803																						
13	1012																						
14	965		261						3.12				5	**0.04**	**0.00032**		0.08			*7.33*	*16.7*	*5.3*	
15	876													**0.04**	**0.00141**		0.07	0.05	12.30	*7.98*	*16.8*	*5.5*	
16	851																						
17	793																						
18	903																						
19	785																						
20	788																						
21	839		202						2.77				5	**0.04**	**0.00012**		0.09			*6.85*	*17.9*	*4.6*	
22	806													0	0.00006		0.10	0.06	12.30	*6.53*	*17.8*	*4.6*	
23	873																						
24	834																						
25	921																						
26	1030																						
27	983																						
28	1020		173						2.22				5	**0.04**	**0.00021**		0.08			*7.10*	*18.0*	*5.3*	
29	1012													0.05	0.00029		0.08	0.03	10.50	*7.15*	*17.8*	*5.8*	
30	1001																						
Total	26,390																						
Average	880	132	194	17.8	0.10941	22.8	**0.03**	**0.06**	2.67	7.37	12.0	**4**	4.4	**0.04**	**0.00030**	0.5	0.08	0.04	11.62	7.04	16.9	5.3	**2**
Max.	1,030	132	261	17.8	0.10941	22.8	**0.03**	**0.06**	3.12	7.37	12.0	**4**	5	0.05	0.00141	0.5	0.10	0.06	12.30	7.98	18.0	5.9	**2**
Min.	767	132	146	17.8	0.10941	22.8	**0.03**	**0.06**	2.22	7.37	12.0	**4**	3	**0.04**	**0.00006**	0.5	0.07	0.03	10.50	6.53	14.5	4.4	**2**
Count	30	1	5	1	1	1	1	1	5	1	1	1	5	9	9	1	9	5	5	10	10	10	1

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2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
July 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	945																						
2	1005																						
3	860																						
4	831																						
5	1162		160						2.27				**2**	**0.04**	**0.00006**		0.04			*6.54*	*17.8*	*5.2*	
6	1005	168	317	16.6	0.04913	20.2	**0.03**	**0.06**	3.65	*6.88*	*17.2*	**4**	2	**0.04**	**0.00008**	**0.5**	0.04	0.03	11.10	*6.65*	*18.5*	*4.7*	**2**
7	1037																						
8	1154																						
9	1126																						
10	1020																						
11	973																						
12	977		156						2.42				**2**	0.04	0.00008		0.06			*6.68*	*18.1*	*5.7*	
13	1125													**0.04**	**0.00022**		0.06	0.03	9.78	*7.11*	*18.4*	*4.0*	
14	1071																						
15	1161																						
16	1082																						
17	1080																						
18	1042																						
19	1021		101						2.46				**2**	0.11	0.00017		0.06			*6.56*	*18.6*	*5.8*	
20	1065													**0.04**	**0.00006**		**0.03**	0.03	10.60	*6.55*	*18.7*	*6.0*	
21	1045																						
22	1022																						
23	1082																						
24	1076																						
25	872																						
26	964		171						2.77				4	**0.04**	**0.00006**		**0.03**			*6.52*	*18.2*	*5.6*	
27	966													**0.04**	**0.00007**		**0.03**	**0.03**	10.50	*6.57*	*18.8*	*6.3*	
28	966																						
29	1065																						
30	1020																						
31	1040																						
Total	31,860																						
Average	1,028	168	181	16.6	0.04913	20.2	**0.03**	**0.06**	2.71	6.88	17.2	**4**	**2.4**	**0.05**	**0.00010**	**0.5**	**0.04**	**0.03**	10.5	6.65	18.4	5.4	**2**
Max.	1,162	168	317	16.6	0.04913	20.2	**0.03**	**0.06**	3.65	6.88	17.2	**4**	4	0.11	0.00022	**0.5**	0.06	0.03	11.1	7.11	18.8	6.3	**2**
Min.	831	168	101	16.6	0.04913	20.2	**0.03**	**0.06**	2.27	6.88	17.2	**4**	**2**	**0.04**	**0.00006**	**0.5**	**0.03**	**0.03**	9.8	6.52	17.8	4.0	**2**
Count	31	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

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2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
August 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	1034																						
2	1037		180						2.69				2	**0.04**	**0.00008**		**0.03**			*6.73*	*16.9*	*5.7*	
3	1032	197	149	18.9	0.14348	23.1	**0.03**	**0.06**	2.49	*7.32*	*16.3*	**4**	2	0.05	0.00014	**0.5**	0.03	0.04	11.40	*6.82*	*18.0*	*5.8*	**2**
4	1075																						
5	913																						
6	988																						
7	945																						
8	902																						
9	932		171						2.56				**2**	**0.04**	**0.00019**		0.04			*7.01*	*19.5*	*5.2*	
10	910													**0.04**	**0.00159**		**0.03**	0.04	11.60	*7.98*	*18.5*	*5.1*	
11	1129																						
12	975																						
13	959																						
14	914																						
15	804																						
16	909		187						2.76				4	0.08	0.00141		0.03			*7.63*	*18.1*	*5.8*	
17	877													0.08	0.00081		0.03	0.04	11.60	*7.38*	*18.3*	*6.1*	
18	916																						
19	923																						
20	954																						
21	894																						
22	809																						
23	853		202						3.00				2	**0.04**	**0.00092**		**0.03**			*7.69*	*20.0*	*5.3*	
24	842													0.05	0.00049		**0.03**	0.04	12.60	*7.33*	*19.4*	*5.4*	
25	852																						
26	874																						
27	850																						
28	779																						
29	912																						
30	867		207						2.55				3	**0.04**	**0.00037**		0.04			*7.30*	*19.6*	*5.4*	
31	864													**0.04**	**0.00036**		0.05	0.04	12.00	*7.30*	*19.3*	*4.7*	
Total	28,524																						
Average	920	197	183	18.9	0.14348	23.1	**0.03**	**0.06**	2.68	7.32	16.3	**4**	**2.5**	**0.05**	**0.00064**	**0.5**	**0.03**	**0.04**	11.8	7.32	18.8	5.4	**2**
Max.	1,129	197	207	18.9	0.14348	23.1	**0.03**	**0.06**	3.00	7.32	16.3	**4**	4	0.08	0.00159	**0.5**	0.05	**0.04**	12.6	7.98	20.0	6.1	**2**
Min.	779	197	149	18.9	0.14348	23.1	**0.03**	**0.06**	2.49	7.32	16.3	**4**	**2**	**0.04**	**0.00008**	**0.5**	**0.03**	**0.04**	11.4	6.73	16.9	4.7	**2**
Count	31	1	6	1	1	1	1	1	6	1	1	1	6	10	10	1	10	5	5	10	10	10	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
September 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	788																						
2	873																						
3	862																						
4	872																						
5	773																						
6	794		45						2.95				3	0.11	0.00459		0.06			*7.96*	*19.8*	*4.2*	
7	962	173	176	22.1	0.71690	25.6	0.05	**0.06**	2.62	*7.95*	*16.6*	**4**	3	**0.04**	**0.00155**	**0.5**	0.06	0.06	12.2	*7.94*	*19.4*	*5.0*	6
8	1006																						
9	853																						
10	896																						
11	848																						
12	787																						
13	793		219						2.44				3	0.06	0.00168		0.05			*7.82*	*18.6*	*5.3*	
14	833													**0.04**	**0.00079**		0.04	0.03	10.8	*7.69*	*17.8*	*5.4*	
15	821																						
16	919																						
17	860																						
18	833																						
19	775																						
20	754		142						2.58				4	0.05	0.00256		0.05			*8.10*	*18.3*	*5.5*	
21	867													**0.04**	**0.00220**		0.04	0.03	11.1	*8.12*	*18.7*	*5.2*	
22	1161																						
23	1413																						
24	1095																						
25	1251																						
26	1031																						
27	1094		138						1.79				**2**	**0.04**	**0.00022**		0.04			*7.17*	*16.8*	*5.7*	
28	1024													**0.04**	**0.00022**		0.03	**0.03**	9.3	*7.16*	*16.7*	*6.5*	
29	931																						
30	1042																						
Total	27,811																						
Average	927	173	144	22.1	0.71690	25.6	0.05	**0.06**	2.48	7.95	16.6	**4**	**3.0**	**0.05**	**0.00173**	**0.5**	0.05	**0.04**	10.8	7.75	18.3	5.4	6
Max.	1,413	173	219	22.1	0.71690	25.6	0.05	**0.06**	2.95	7.95	16.6	**4**	4	0.11	0.00459	**0.5**	0.06	0.06	12.2	8.12	19.8	6.5	6
Min.	754	173	45	22.1	0.71690	25.6	0.05	**0.06**	1.79	7.95	16.6	**4**	**2**	**0.04**	**0.00022**	**0.5**	0.03	**0.03**	9.3	7.16	16.7	4.2	6
Count	30	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

Notes: 1. Numbers highlighted in grey are equal to less than (<) the value shown
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
October 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	1015																						
2	1003																						
3	916																						
4	993		191						2.18				3	0.05	0.00031		0.03			*7.17*	*18.2*	*5.6*	
5	1051	130	151	19.0	0.51571	20.2	**0.03**	**0.06**	2.32	*7.90*	*15.7*	**4**	4	0.05	0.00029	**0.5**	0.04	**0.03**	9.8	*7.16*	*17.6*	*5.2*	**2**
6	987																						
7	990																						
8	1017																						
9	966																						
10	1001																						
11	987		100										4	0.06	0.00034		**0.03**			*7.14*	*17.8*	*5.4*	
12	962													0.05	0.00031		0.03	**0.03**	10.60	*7.20*	*17.2*	*6.3*	
13	996																						
14	959																						
15	970																						
16	1069																						
17	840																						
18	891		152										3	0.05	0.00031		0.04			*7.22*	*16.5*	*6.0*	
19	951													0.06	0.00039		0.04	**0.03**	10.40	*7.25*	*16.2*	*6.6*	
20	852																						
21	855																						
22	958																						
23	921																						
24	883																						
25	1134		192										**2**	0.11	0.00063		0.07	0.03	10.2	*7.23*	*15.3*	*6.3*	
26	899																						
27	879																						
28	890																						
29	832																						
30	886																						
31	661																						
Total	29,214																						
Average	942	130	157	19.0	0.51571	20.2	**0.03**	**0.06**	2.25	7.90	15.7	**4**	**3.2**	0.06	0.00037	**0.5**	**0.04**	**0.03**	10.3	7.20	17.0	5.9	**2**
Max.	1,134	130	192	19.0	0.51571	20.2	**0.03**	**0.06**	2.32	7.90	15.7	**4**	4	0.11	0.00063	**0.5**	0.07	0.03	10.6	7.25	18.2	6.6	**2**
Min.	661	130	100	19.0	0.51571	20.2	**0.03**	**0.06**	2.18	7.90	15.7	**4**	**2**	0.05	0.00029	**0.5**	**0.03**	**0.03**	9.8	7.14	15.3	5.2	**2**
Count	31	1	5	1	1	1	1	1	2	1	1	1	5	7	7	1	7	4	4	7	7	7	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
November 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	1048		73										4	**0.04**	**0.00022**		**0.13**			*7.22*	*15.3*	*7.3*	
2	860	107	145	16.3	0.47756	20.0	0.2	1.1	2.14	*7.98*	*14.3*	**4**	3	0.04	0.00021	0.8	**0.11**	**0.03**	12.4	*7.20*	*14.8*	*6.2*	**2**
3	855																						
4	848																						
5	858																						
6	903																						
7	847																						
8	883		147										4	**0.04**	**0.00026**		0.07			*7.29*	*15.2*	*6.9*	
9	826													**0.04**	**0.00019**		0.06	**0.03**	10.0	*7.18*	*14.1*	*7.6*	
10	862																						
11	944																						
12	902																						
13	738																						
14	828																						
15	821		182										4	**0.04**	**0.00022**		0.04			*7.26*	*13.9*	*7.4*	
16	783													**0.04**	**0.00020**		0.05	**0.03**	9.3	*7.21*	*13.8*	*6.7*	
17	818																						
18	877																						
19	1013																						
20	863																						
21	973																						
22	984		194										3	0.05	0.00025		0.04			*7.22*	*13.7*	*7.8*	
23	930													**0.04**	**0.00017**		0.03	**0.03**	11.0	*7.19*	*12.5*	*8.8*	
24	970																						
25	968																						
26	946																						
27	941																						
28	922																						
29	899		159						2.18				**2**	0.04	0.00020		**0.03**			*7.29*	*12.0*	*8.6*	
30	959													**0.04**	**0.00016**		**0.03**	**0.03**	10.0	*7.21*	*11.5*	*8.1*	
Total	26,869																						
Average	896	107	150	16.3	0.47756	20.0	0.19	1.12	2.16	7.98	14.3	**4**	**3.3**	**0.04**	**0.00021**	0.8	**0.06**	**0.03**	10.5	7.23	13.7	7.5	**2**
Max.	1,048	107	194	16.3	0.47756	20.0	0.19	1.12	2.18	7.98	14.3	**4**	4	0.05	0.00026	0.8	0.13	**0.03**	12.4	7.29	15.3	8.8	**2**
Min.	738	107	73	16.3	0.47756	20.0	0.19	1.12	2.14	7.98	14.3	**4**	**2**	**0.04**	**0.00016**	0.8	**0.03**	**0.03**	9.29	7.18	11.5	6.2	**2**
Count	30	1	6	1	1	1	1	1	2	1	1	1	6	10	10	1	10	5	5	10	10	10	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

Municipality of Dysart et al
Haliburton WWTP
December 2021

Date	Raw Sewage											Final Effluent											
	Raw Sewage Flow m^3/d	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	Total Phosphorus mg/L	pH	Temperature °C	$CBOD_5$ mg/L	Suspended Solids mg/L	Total Ammonia mg/L	Calculated Un-ionized Ammonia as NH3 mg/l	Total Kjeldahl Nitrogen mg/L	Total Phosphorus mg/L	Nitrite Nitrogen mg/L	Nitrate Nitrogen mg/L	pH	Temperature oC	Dissolved Oxygen mg/L	E. Coli cfu/100 mL
1	839																						
2	946																						
3	1057																						
4	819																						
5	929																						
6	878		170						2.24				2	**0.04**	**0.00014**		0.04			*7.13*	*11.6*	*8.2*	
7	872	85	152	15.2	0.36627	19.6	**0.03**	**0.06**	2.04	*7.99*	*11.4*	**4**	2	0.05	0.00020	0.6	0.04	**0.03**	9.12	*7.19*	*11.6*	*8.5*	**2**
8	871																						
9	944																						
10	884																						
11	1197																						
12	998																						
13	1023		108						1.88				2	0.05	0.00029		0.04			*7.38*	*11.0*	*8.1*	
14	1011																						
15	1065													0.04	0.00021		0.04	**0.03**	7.99	*7.30*	*12.0*	*9.3*	
16	1098																						
17	1231																						
18	1029																						
19	903																						
20	971		163						2.04				4	0.04	0.00017		0.04			*7.28*	*10.1*	*9.2*	
21	991													**0.04**	**0.00026**		0.04	**0.03**	8.60	*7.40*	*11.6*	*9.8*	
22	973																						
23	1005																						
24	921																						
25	891																						
26	815																						
27	922		180						2.18				2	0.04	0.00016		0.04			*7.25*	*10.3*	*8.4*	
28	956																						
29	924													0.04	0.00019		0.04	**0.03**	9.46	*7.30*	*10.7*	*9.0*	
30	861																						
31	907																						
Total	29,731																						
Average	959	85	155	15.2	0.36627	19.6	**0.03**	**0.06**	2.08	7.99	11.4	**4**	2.4	**0.04**	**0.00020**	0.6	0.04	**0.03**	8.79	7.28	11.1	8.8	**2**
Max.	1,231	85	180	15.2	0.36627	19.6	**0.03**	**0.06**	2.24	7.99	11.4	**4**	4	0.05	0.00029	0.6	0.04	**0.03**	9.46	7.40	12.0	9.8	**2**
Min.	815	85	108	15.2	0.36627	19.6	**0.03**	**0.06**	1.88	7.99	11.4	**4**	2	**0.04**	**0.00014**	0.6	0.04	**0.03**	7.99	7.13	10.1	8.1	**2**
Count	31	1	5	1	1	1	1	1	5	1	1	1	5	8	8	1	8	4	4	8	8	8	1

Notes: **1. Numbers highlighted in grey are equal to less than (<) the value shown**
2. Numbers highlighted in green exceed the effluent objective
3. Numbers highlighted in red exceed the effluent limit and are reportable

APPENDIX C. LABORATORY ANALYTICAL CERTIFICATES

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

11-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 January 2021
LR Report: **CA13136-JAN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					04-Jan-21 08:45	04-Jan-21 08:50
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	6.99	---
Field Temperature [celcius]	---	---	---	---	10.3	---
Total Suspended Solids [mg/L]	07-Jan-21	19:17	08-Jan-21	13:54	2	173
Phosphorus (total) [mg/L]	07-Jan-21	15:11	11-Jan-21	08:37	0.04	2.28
Ammonia+Ammonium (N) [mg/L]	07-Jan-21	15:01	08-Jan-21	13:13	0.07	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002372058

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 January 2021
LR Report: **CA13141-JAN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					05-Jan-21 12:00	05-Jan-21 11:50
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	7.42	7.08
Field Temperature [celcius]	---	---	---	---	10.3	10.5
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	06-Jan-21	16:40	11-Jan-21	17:00	147	4
Total Suspended Solids [mg/L]	09-Jan-21	11:11	11-Jan-21	13:14	160	2
pH@temp15 [pH Units]	07-Jan-21	10:27	07-Jan-21	15:54	---	7.21
Phosphorus (total) [mg/L]	07-Jan-21	15:11	11-Jan-21	08:37	2.58	0.04
Total Kjeldahl Nitrogen [as N mg/L]	06-Jan-21	16:37	07-Jan-21	16:08	22.2	< 0.5
Unionized Ammonia [mg/L as N]	07-Jan-21	15:01	08-Jan-21	13:14	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	07-Jan-21	15:01	08-Jan-21	13:14	20.3	0.04
Nitrite (as N) [mg/L]	07-Jan-21	13:28	12-Jan-21	15:53	0.05	< 0.03
Nitrate (as N) [mg/L]	07-Jan-21	13:28	12-Jan-21	15:53	0.22	9.91
Nitrate + Nitrite (as N) [mg/L]	07-Jan-21	13:28	12-Jan-21	15:53	0.27	9.91
E. Coli [cfu/100mL]	06-Jan-21	17:15	08-Jan-21	10:22	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002374106

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

15-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 13 January 2021
LR Report: **CA13241-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					11-Jan-21 08:10	11-Jan-21 08:20
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	6.82	---
Field Temperature [celcius]	---	---	---	---	10.8	---
Total Suspended Solids [mg/L]	14-Jan-21	07:50	15-Jan-21	09:22	3	174
Phosphorus (total) [mg/L]	13-Jan-21	16:55	14-Jan-21	11:17	< 0.03	2.20
Ammonia+Ammonium (N) [mg/L]	14-Jan-21	16:40	15-Jan-21	11:47	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002377830

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

18-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 13 January 2021
LR Report: **CA13242-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					12-Jan-21 10:27
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Field pH [no unit]	---	---	---	---	6.55
Field Temperature [celcius]	---	---	---	---	10.0
Phosphorus (total) [mg/L]	13-Jan-21	16:55	18-Jan-21	11:40	< 0.03
Unionized Ammonia [mg/L as N]	14-Jan-21	16:40	15-Jan-21	11:48	< 0.001
Ammonia+Ammonium (N) [mg/L]	14-Jan-21	16:40	15-Jan-21	11:48	< 0.04
Nitrite (as N) [mg/L]	14-Jan-21	16:44	15-Jan-21	16:22	< 0.03
Nitrate (as N) [mg/L]	14-Jan-21	16:44	15-Jan-21	16:22	10.5
Nitrate + Nitrite (as N) [mg/L]	14-Jan-21	16:44	15-Jan-21	16:22	10.5

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002379375

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

22-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 20 January 2021
LR Report: **CA12676-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					18-Jan-21 08:25	18-Jan-21 08:15
Temperature Upon Receipt [°C]	---	---	---	---	2.0	2.0
Field pH [no unit]	---	---	---	---	6.64	---
Field Temperature [celcius]	---	---	---	---	10.9	---
Total Suspended Solids [mg/L]	21-Jan-21	09:34	22-Jan-21	09:15	3	183
Phosphorus (total) [mg/L]	20-Jan-21	19:50	22-Jan-21	11:21	0.04	2.75
Ammonia+Ammonium (N) [mg/L]	20-Jan-21	20:00	21-Jan-21	14:17	0.08	---

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002384664

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

26-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 20 January 2021
LR Report: **CA12659-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent (Weekly)
Sample Date & Time					19-Jan-21 10:29
Temperature Upon Receipt [°C]	---	---	---	---	2.0
Field pH [no unit]	---	---	---	---	6.55
Field Temperature [celcius]	---	---	---	---	9.7
Phosphorus (total) [mg/L]	20-Jan-21	19:50	21-Jan-21	12:01	0.04
Unionized Ammonia [mg/L as N]	20-Jan-21	20:00	21-Jan-21	14:14	< 0.001
Ammonia+Ammonium (N) [mg/L]	20-Jan-21	20:00	21-Jan-21	14:14	0.05
Nitrite (as N) [mg/L]	21-Jan-21	20:09	25-Jan-21	16:20	< 0.03
Nitrate (as N) [mg/L]	21-Jan-21	20:09	25-Jan-21	16:20	9.64
Nitrate + Nitrite (as N) [mg/L]	21-Jan-21	20:09	25-Jan-21	16:20	9.64

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002386709

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

29-January-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 27 January 2021
LR Report: **CA13620-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					25-Jan-21 08:45	25-Jan-21 08:55
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	6.92	---
Field Temperature [celcius]	---	---	---	---	9.2	---
Total Suspended Solids [mg/L]	27-Jan-21	16:36	28-Jan-21	13:42	2	188
Phosphorus (total) [mg/L]	28-Jan-21	17:09	28-Jan-21	14:14	0.06	3.26
Ammonia+Ammonium (N) [mg/L]	27-Jan-21	17:23	28-Jan-21	13:36	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002390490

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

01-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 27 January 2021
LR Report: **CA13619-JAN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent (Weekly)
Sample Date & Time					26-Jan-21 09:52
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Field pH [no unit]	---	---	---	---	6.57
Field Temperature [celcius]	---	---	---	---	8.4
Phosphorus (total) [mg/L]	28-Jan-21	17:09	28-Jan-21	14:13	0.06
Ammonia+Ammonium (N) [mg/L]	27-Jan-21	17:23	28-Jan-21	13:35	< 0.04
Unionized Ammonia [mg/L as N]	27-Jan-21	17:23	28-Jan-21	13:35	< 0.001
Nitrite (as N) [mg/L]	29-Jan-21	18:16	01-Feb-21	14:19	< 0.03
Nitrate (as N) [mg/L]	29-Jan-21	18:16	01-Feb-21	14:19	10.2
Nitrate + Nitrite (as N) [mg/L]	29-Jan-21	18:16	01-Feb-21	14:19	10.2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002392676

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

03-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 February 2021
LR Report: **CA12637-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					01-Feb-21 07:40	01-Feb-21 07:50
Temperature Upon Receipt [°C]	---	---	---	---	2.0	2.0
Field pH [no unit]	---	---	---	---	6.92	---
Field Temperature [celcius]	---	---	---	---	8.1	---
Total Suspended Solids [mg/L]	04-Feb-21	10:04	09-Feb-21	11:12	3	193
Phosphorus (total) [mg/L]	03-Feb-21	17:16	04-Feb-21	13:53	0.06	2.96
Ammonia+Ammonium (N) [mg/L]	03-Feb-21	17:01	04-Feb-21	10:04	0.06	---

Revised March 3, 2021 - Sample collection date corrected.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002419390

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

09-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 February 2021
LR Report: **CA12637-FEB21**
Reference: PO#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					02-Feb-21 07:40	02-Feb-21 07:50
Temperature Upon Receipt [°C]	---	---	---	---	2.0	2.0
Field pH [no unit]	---	---	---	---	6.92	---
Field Temperature [celcius]	---	---	---	---	8.1	---
Total Suspended Solids [mg/L]	04-Feb-21	10:04	09-Feb-21	11:12	3	193
Phosphorus (total) [mg/L]	03-Feb-21	17:16	04-Feb-21	13:53	0.06	2.96
Ammonia+Ammonium (N) [mg/L]	03-Feb-21	17:01	04-Feb-21	10:04	0.06	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002399184

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

11-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 February 2021
LR Report: **CA12640-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent (Monthly)	6: DS - Sewage Effluent (Monthly)
Sample Date & Time					02-Feb-21 10:35	02-Feb-21 10:25
Temperature Upon Receipt [°C]	---	---	---	---	2.0	2.0
Field pH [no unit]	---	---	---	---	7.17	6.71
Field Temperature [celcius]	---	---	---	---	9.0	8.6
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	04-Feb-21	17:23	09-Feb-21	15:48	97	< 4
Total Suspended Solids [mg/L]	04-Feb-21	10:04	09-Feb-21	11:12	202	2
pH@temp15 [pH Units]	04-Feb-21	13:29	05-Feb-21	09:45	---	7.50
Phosphorus (total) [mg/L]	03-Feb-21	17:16	04-Feb-21	13:53	2.98	0.08
Total Kjeldahl Nitrogen [as N mg/L]	03-Feb-21	17:24	04-Feb-21	11:18	26.9	0.8
Ammonia+Ammonium (N) [mg/L]	03-Feb-21	17:01	04-Feb-21	10:11	---	0.05
Ammonia+Ammonium (N) [as N mg/L]	03-Feb-21	17:01	04-Feb-21	10:11	23.9	---
Unionized Ammonia [mg/L as N]	03-Feb-21	17:01	04-Feb-21	10:11	---	< 0.001
Nitrite (as N) [mg/L]	05-Feb-21	22:13	10-Feb-21	16:38	< 0.03	< 0.03
Nitrate (as N) [mg/L]	05-Feb-21	22:13	10-Feb-21	16:38	< 0.06	10.8
Nitrate + Nitrite (as N) [mg/L]	05-Feb-21	22:13	10-Feb-21	16:38	< 0.06	10.8
E. Coli [cfu/100mL]	03-Feb-21	17:06	05-Feb-21	10:14	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002401071

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 February 2021
LR Report: **CA12848-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					08-Feb-21 08:35	08-Feb-21 08:45
Temperature Upon Receipt [°C]	---	---	---	---	3.0	3.0
Field pH [no unit]	---	---	---	---	6.81	---
Field Temperature [celcius]	---	---	---	---	9.4	---
Total Suspended Solids [mg/L]	11-Feb-21	09:54	16-Feb-21	13:18	2	212
Phosphorus (total) [mg/L]	10-Feb-21	18:35	11-Feb-21	13:14	0.08	3.28
Ammonia+Ammonium (N) [mg/L]	10-Feb-21	18:34	11-Feb-21	14:09	0.05	---

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002405727

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 February 2021
LR Report: **CA12847-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					09-Feb-21 09:59
Temperature Upon Receipt [°C]	---	---	---	---	3.0
Field pH [no unit]	---	---	---	---	6.51
Field Temperature [celcius]	---	---	---	---	9.3
Phosphorus (total) [mg/L]	10-Feb-21	18:35	12-Feb-21	11:54	0.09
Unionized Ammonia [mg/L as N]	10-Feb-21	18:34	11-Feb-21	14:09	< 0.001
Ammonia+Ammonium (N) [mg/L]	10-Feb-21	18:34	11-Feb-21	14:09	0.05
Nitrite (as N) [mg/L]	11-Feb-21	22:04	16-Feb-21	19:07	< 0.03
Nitrate (as N) [mg/L]	11-Feb-21	22:04	16-Feb-21	19:07	10.6
Nitrate + Nitrite (as N) [mg/L]	11-Feb-21	22:04	16-Feb-21	19:07	10.6

Note: Provincial unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002405721

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

19-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 February 2021
LR Report: **CA12025-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					15-Feb-21 08:25	15-Feb-21 08:30
Temperature Upon Receipt [°C]	---	---	---	---	-1	-1
Field pH [no unit]	---	---	---	---	6.77	---
Field Temperature [celcius]	---	---	---	---	9.0	---
Total Suspended Solids [mg/L]	17-Feb-21	14:13	18-Feb-21	14:07	4	148
Phosphorus (total) [mg/L]	17-Feb-21	17:17	18-Feb-21	09:59	0.07	2.76
Ammonia+Ammonium (N) [mg/L]	17-Feb-21	16:47	18-Feb-21	10:36	0.06	---

Note: Sample temperature upon receipt was low; no ice present in sample.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002407408

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

23-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 February 2021
LR Report: **CA12021-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					16-Feb-21 10:26
Temperature Upon Receipt [°C]	---	---	---	---	-1
Field pH [no unit]	---	---	---	---	6.69
Field Temperature [celcius]	---	---	---	---	10.7
Phosphorus (total) [mg/L]	17-Feb-21	17:17	18-Feb-21	09:56	0.07
Ammonia+Ammonium (N) [mg/L]	17-Feb-21	16:47	18-Feb-21	10:34	< 0.04
Unionized Ammonia [mg/L as N]	17-Feb-21	16:47	18-Feb-21	10:34	< 0.001
Nitrite (as N) [mg/L]	19-Feb-21	21:09	23-Feb-21	14:51	< 0.03
Nitrate (as N) [mg/L]	19-Feb-21	21:09	23-Feb-21	14:51	11.3
Nitrate + Nitrite (as N) [mg/L]	19-Feb-21	21:09	23-Feb-21	14:51	11.3

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002411638

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

26-February-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 February 2021
LR Report: **CA13698-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					22-Feb-21 07:30	22-Feb-21 07:40
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	6.79	---
Field Temperature [celcius]	---	---	---	---	9.0	---
Total Suspended Solids [mg/L]	25-Feb-21	09:32	26-Feb-21	15:31	5	267
Phosphorus (total) [mg/L]	24-Feb-21	15:56	25-Feb-21	12:58	0.13	3.65
Ammonia+Ammonium (N) [mg/L]	24-Feb-21	15:53	25-Feb-21	10:48	0.36	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002416428

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

03-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 February 2021
LR Report: **CA13696-FEB21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					23-Feb-21 09:44
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Field pH [no unit]	---	---	---	---	6.52
Field Temperature [celcius]	---	---	---	---	9.9
Phosphorus (total) [mg/L]	24-Feb-21	15:56	25-Feb-21	12:58	0.14
Unionized Ammonia [mg/L as N]	24-Feb-21	15:53	25-Feb-21	10:48	< 0.001
Ammonia+Ammonium (N) [mg/L]	24-Feb-21	15:53	25-Feb-21	10:47	0.84
Nitrite (as N) [mg/L]	01-Mar-21	18:14	03-Mar-21	09:20	0.06
Nitrate (as N) [mg/L]	01-Mar-21	18:14	03-Mar-21	09:20	9.76
Nitrate + Nitrite (as N) [mg/L]	01-Mar-21	18:14	03-Mar-21	09:20	9.82

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002419058

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

08-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 March 2021
LR Report: **CA12074-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					01-Mar-21 08:45	01-Mar-21 08:55
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	6.77	---
Field Temperature [celcius]	---	---	---	---	10.3	---
Total Suspended Solids [mg/L]	05-Mar-21	07:41	08-Mar-21	11:40	5	280
Phosphorus (total) [mg/L]	03-Mar-21	16:30	04-Mar-21	11:03	0.09	3.58
Ammonia+Ammonium (N) [mg/L]	03-Mar-21	16:21	04-Mar-21	12:58	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002423297

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

10-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 March 2021
LR Report: **CA12073-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Raw Sewage Influent	6: DS-Sewage Effluent
Sample Date & Time					02-Mar-21 10:45	02-Mar-21 10:28
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.16	6.72
Field Temperature [celcius]	---	---	---	---	8.4	8.9
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Mar-21	16:48	08-Mar-21	17:07	305	< 4
Total Suspended Solids [mg/L]	05-Mar-21	07:41	08-Mar-21	11:40	251	4
Phosphorus (total) [mg/L]	03-Mar-21	16:30	05-Mar-21	10:06	3.74	0.08
Total Kjeldahl Nitrogen [as N mg/L]	03-Mar-21	19:00	04-Mar-21	10:42	34.1	1.2
pH@temp15 [pH Units]	04-Mar-21	14:58	05-Mar-21	11:17	---	6.83
Unionized Ammonia [mg/L as N]	03-Mar-21	16:21	04-Mar-21	12:57	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	03-Mar-21	16:21	04-Mar-21	12:54	27.6	< 0.04
Nitrite (as N) [mg/L]	05-Mar-21	23:00	09-Mar-21	14:53	< 0.03	< 0.03
Nitrate (as N) [mg/L]	05-Mar-21	23:00	09-Mar-21	14:53	< 0.06	11.6
Nitrate + Nitrite (as N) [mg/L]	05-Mar-21	23:00	09-Mar-21	14:53	< 0.06	11.6
E. Coli [cfu/100mL]	03-Mar-21	16:41	05-Mar-21	13:02	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002425693

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 March 2021
LR Report: **CA12366-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					08-Mar-21 09:50	08-Mar-21 10:00
Temperature Upon Receipt [°C]	---	---	---	---	4.0	4.0
Field pH [no unit]	---	---	---	---	7.23	---
Field Temperature [celcius]	---	---	---	---	8.3	---
Total Suspended Solids [mg/L]	11-Mar-21	12:15	12-Mar-21	13:08	4	274
Phosphorus (total) [mg/L]	10-Mar-21	18:45	11-Mar-21	14:35	0.08	3.59
Ammonia+Ammonium (N) [mg/L]	10-Mar-21	17:00	11-Mar-21	11:59	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002429271

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 March 2021
LR Report: **CA12365-MAR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					09-Mar-21 08:58
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Field pH [no unit]	---	---	---	---	6.56
Field Temperature [celcius]	---	---	---	---	9.5
Phosphorus (total) [mg/L]	10-Mar-21	18:45	11-Mar-21	14:35	0.08
Ammonia+Ammonium (N) [mg/L]	10-Mar-21	17:00	11-Mar-21	11:58	< 0.04
Nitrite (as N) [mg/L]	13-Mar-21	00:07	17-Mar-21	15:52	< 0.03
Nitrate (as N) [mg/L]	13-Mar-21	00:07	17-Mar-21	15:52	11.7
Nitrate + Nitrite (as N) [mg/L]	13-Mar-21	00:07	17-Mar-21	15:52	11.7
Unionized Ammonia [mg/L as N]	10-Mar-21	17:00	11-Mar-21	11:59	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002433244

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

23-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 March 2021
LR Report: **CA12623-MAR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					15-Mar-21 09:24	15-Mar-21 09:40
Temperature Upon Receipt [°C]	---	---	---	---	10.0	10.0
Field pH [no unit]	---	---	---	---	6.76	---
Field Temperature [celcius]	---	---	---	---	7.9	---
Total Suspended Solids [mg/L]	17-Mar-21	18:21	19-Mar-21	11:58	2	162
Phosphorus (total) [mg/L]	17-Mar-21	18:21	18-Mar-21	13:30	0.08	2.81
Ammonia+Ammonium (N) [mg/L]	17-Mar-21	18:18	22-Mar-21	14:11	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002438421

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

23-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 March 2021
LR Report: **CA12623-MAR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					15-Mar-21 09:24	15-Mar-21 09:40
Temperature Upon Receipt [°C]	---	---	---	---	10.0	10.0
Field pH [no unit]	---	---	---	---	6.76	---
Field Temperature [celcius]	---	---	---	---	7.9	---
Total Suspended Solids [mg/L]	17-Mar-21	18:21	19-Mar-21	11:58	2	162
Phosphorus (total) [mg/L]	17-Mar-21	18:21	18-Mar-21	13:30	0.08	2.81
Ammonia+Ammonium (N) [mg/L]	17-Mar-21	18:18	22-Mar-21	14:11	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002438421

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 March 2021
LR Report: **CA12624-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					16-Mar-21 11:10
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Field pH [no unit]	---	---	---	---	6.95
Field Temperature [celcius]	---	---	---	---	9.7
Phosphorus (total) [mg/L]	17-Mar-21	18:21	18-Mar-21	13:30	0.07
Ammonia+Ammonium (N) [mg/L]	17-Mar-21	18:18	18-Mar-21	14:36	0.04
Nitrite (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	< 0.03
Nitrate (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	10.1
Nitrate + Nitrite (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	10.1
Unionized Ammonia [mg/L as N]	17-Mar-21	18:18	18-Mar-21	14:37	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002439442

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 March 2021
LR Report: **CA12624-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					16-Mar-21 11:10
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Field pH [no unit]	---	---	---	---	6.95
Field Temperature [celcius]	---	---	---	---	9.7
Phosphorus (total) [mg/L]	17-Mar-21	18:21	18-Mar-21	13:30	0.07
Ammonia+Ammonium (N) [mg/L]	17-Mar-21	18:18	18-Mar-21	14:36	0.04
Nitrite (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	< 0.03
Nitrate (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	10.1
Nitrate + Nitrite (as N) [mg/L]	19-Mar-21	21:13	23-Mar-21	15:52	10.1
Unionized Ammonia [mg/L as N]	17-Mar-21	18:18	18-Mar-21	14:37	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002439442

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 March 2021
LR Report: **CA13639-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent	6: DS - Raw Sewage Influent
Sample Date & Time					22-Mar-21 10:35	22-Mar-21 10:45
Temperature Upon Receipt [°C]	---	---	---	---	4.0	4.0
Field pH [no unit]	---	---	---	---	7.28	---
Field Temperature [celcius]	---	---	---	---	11.4	---
Total Suspended Solids [mg/L]	25-Mar-21	14:17	30-Mar-21	10:34	4	133
Phosphorus (total) [mg/L]	25-Mar-21	17:49	26-Mar-21	12:14	0.07	2.60
Ammonia+Ammonium (N) [mg/L]	25-Mar-21	17:49	26-Mar-21	13:57	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00024455B2

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 March 2021
LR Report: **CA13636-MAR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Raw Sewage Collection System MH #1
Sample Date & Time					23-Mar-21 10:57
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Oil & Grease (total) [mg/L]	27-Mar-21	08:05	30-Mar-21	09:19	< 2
Oil & Grease (animal/vegetable) [mg/L]	27-Mar-21	08:05	30-Mar-21	09:19	< 4
Oil & Grease (mineral/synthetic) [mg/L]	27-Mar-21	08:05	30-Mar-21	09:19	< 4

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002445579

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

29-March-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 March 2021
LR Report: **CA13638-MAR21**
Reference: Project#: OH19-007

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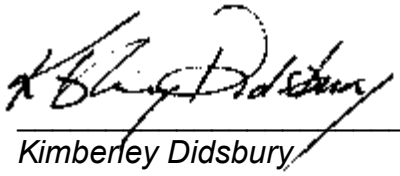
CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					23-Mar-21 11:43
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Field pH [no unit]	---	---	---	---	6.61
Field Temperature [celcius]	---	---	---	---	10.7
Phosphorus (total) [mg/L]	25-Mar-21	17:49	29-Mar-21	13:21	0.06
Unionized Ammonia [mg/L as N]	25-Mar-21	17:49	26-Mar-21	13:57	< 0.001
Ammonia+Ammonium (N) [mg/L]	25-Mar-21	17:49	26-Mar-21	13:57	< 0.04
Nitrite (as N) [mg/L]	25-Mar-21	18:24	26-Mar-21	14:58	< 0.03
Nitrate (as N) [mg/L]	25-Mar-21	18:24	26-Mar-21	14:58	9.56
Nitrate + Nitrite (as N) [mg/L]	25-Mar-21	18:24	26-Mar-21	14:58	9.56

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002444853

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

08-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 31 March 2021
LR Report: **CA13951-MAR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					29-Mar-21 08:25	29-Mar-21 08:40
Temperature Upon Receipt [°C]	---	---	---	---	3.0	3.0
Field pH [no unit]	---	---	---	---	6.98	---
Field Temperature [celcius]	---	---	---	---	10.2	---
Total Suspended Solids [mg/L]	03-Apr-21	11:35	06-Apr-21	15:57	< 2	122
Phosphorus (total) [mg/L]	31-Mar-21	15:55	05-Apr-21	11:36	0.07	1.65
Ammonia+Ammonium (N) [mg/L]	31-Mar-21	21:23	01-Apr-21	08:36	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00024533341

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

06-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 31 March 2021
LR Report: **CA13962-MAR21**
Reference: Project#: OH19-007

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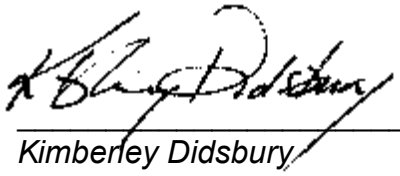
CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					30-Mar-21 07:47
Temperature Upon Receipt [°C]	---	---	---	---	3.0
Field pH [no unit]	---	---	---	---	6.77
Field Temperature [celcius]	---	---	---	---	9.6
Phosphorus (total) [mg/L]	31-Mar-21	15:55	01-Apr-21	13:33	0.07
Ammonia+Ammonium (N) [mg/L]	31-Mar-21	15:34	01-Apr-21	12:02	0.04
Unionized Ammonia [mg/L as N]	31-Mar-21	15:34	01-Apr-21	12:02	< 0.001
Nitrite (as N) [mg/L]	01-Apr-21	18:07	06-Apr-21	12:00	< 0.03
Nitrate (as N) [mg/L]	01-Apr-21	18:07	06-Apr-21	12:00	7.54
Nitrate + Nitrite (as N) [mg/L]	01-Apr-21	18:07	06-Apr-21	12:00	7.54

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00024518S7

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 April 2021
LR Report: **CA12214-APR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					05-Apr-21 08:45	05-Apr-21 08:55
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.05	---
Field Temperature [celcius]	---	---	---	---	10.9	---
Total Suspended Solids [mg/L]	09-Apr-21	14:17	12-Apr-21	15:03	8	119
Phosphorus (total) [mg/L]	08-Apr-21	15:42	09-Apr-21	13:05	0.06	1.88
Ammonia+Ammonium (N) [mg/L]	08-Apr-21	21:25	09-Apr-21	10:26	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002458424

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 April 2021
LR Report: **CA13231-APR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					06-Apr-21 10:25	06-Apr-21 10:35
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.22	6.82
Field Temperature [celcius]	---	---	---	---	9.3	9.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	08-Apr-21	17:16	13-Apr-21	14:54	107	< 2
Total Suspended Solids [mg/L]	08-Apr-21	12:09	09-Apr-21	11:36	143	3
pH@temp15 [pH Units]	08-Apr-21	14:24	09-Apr-21	13:54	---	7.39
Phosphorus (total) [mg/L]	08-Apr-21	15:42	13-Apr-21	08:28	1.57	0.04
Total Kjeldahl Nitrogen [as N mg/L]	08-Apr-21	15:52	09-Apr-21	11:04	17.6	< 0.5
Ammonia+Ammonium (N) [mg/L]	08-Apr-21	21:25	09-Apr-21	10:29	13.4	0.04
Nitrite (as N) [mg/L]	09-Apr-21	20:27	13-Apr-21	16:18	< 0.03	< 0.03
Nitrate (as N) [mg/L]	09-Apr-21	20:27	13-Apr-21	16:18	< 0.06	7.78
Nitrate + Nitrite (as N) [mg/L]	09-Apr-21	20:27	13-Apr-21	16:18	< 0.06	7.78
E. Coli [cfu/100mL]	07-Apr-21	18:24	09-Apr-21	14:36	---	< 2
Unionized Ammonia [mg/L as N]	08-Apr-21	21:25	09-Apr-21	10:29	---	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002460299

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 14 April 2021
LR Report: **CA13437-APR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					12-Apr-21 08:50	12-Apr-21 08:57
Temperature Upon Receipt [°C]	---	---	---	---	5.0	5.0
Field pH [no unit]	---	---	---	---	7.53	---
Field Temperature [celcius]	---	---	---	---	12.8	---
Total Suspended Solids [mg/L]	15-Apr-21	13:08	16-Apr-21	14:02	4	212
Phosphorus (total) [mg/L]	14-Apr-21	18:30	15-Apr-21	10:04	0.07	2.03
Ammonia+Ammonium (N) [mg/L]	14-Apr-21	21:45	15-Apr-21	10:22	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00024644449

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

19-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 14 April 2021
LR Report: **CA13440-APR21**
Reference: Project #: OH19-007

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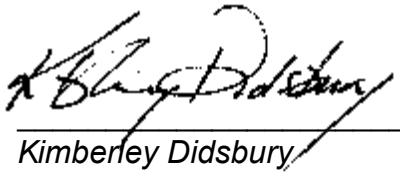
CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					13-Apr-21 08:40
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	6.80
Field Temperature [celcius]	---	---	---	---	12.1
Phosphorus (total) [mg/L]	15-Apr-21	19:00	16-Apr-21	14:27	0.07
Unionized Ammonia [mg/L as N]	15-Apr-21	21:00	16-Apr-21	16:31	< 0.001
Ammonia+Ammonium (N) [mg/L]	15-Apr-21	21:00	16-Apr-21	16:31	< 0.04
Nitrite (as N) [mg/L]	17-Apr-21	11:27	19-Apr-21	15:23	< 0.03
Nitrate (as N) [mg/L]	17-Apr-21	11:27	19-Apr-21	15:23	9.09
Nitrate + Nitrite (as N) [mg/L]	17-Apr-21	11:27	19-Apr-21	15:23	9.09

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00024665986

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

23-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 21 April 2021
LR Report: **CA12879-APR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					19-Apr-21 08:10	19-Apr-21 08:20
Temperature Upon Receipt [°C]	---	---	---	---	2.0	2.0
Field pH [no unit]	---	---	---	---	6.86	---
Field Temperature [celcius]	---	---	---	---	12.4	---
Total Suspended Solids [mg/L]	22-Apr-21	08:11	22-Apr-21	15:34	4	200
Phosphorus (total) [mg/L]	21-Apr-21	16:30	22-Apr-21	20:50	0.07	2.13
Ammonia+Ammonium (N) [mg/L]	21-Apr-21	16:33	22-Apr-21	14:16	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002471761

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

28-April-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 21 April 2021
LR Report: **CA12878-APR21**
Reference: Project#: OH19-007

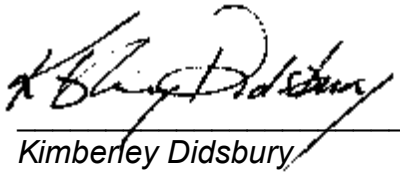
Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					20-Apr-21 11:25
Temperature Upon Receipt [°C]	---	---	---	---	2.0
Field pH [no unit]	---	---	---	---	6.77
Field Temperature [celcius]	---	---	---	---	10.8
Phosphorus (total) [mg/L]	21-Apr-21	16:30	22-Apr-21	20:50	0.08
Unionized Ammonia [mg/L as N]	21-Apr-21	16:33	22-Apr-21	14:16	< 0.001
Ammonia+Ammonium (N) [mg/L]	21-Apr-21	16:33	22-Apr-21	14:16	< 0.04
Nitrite (as N) [mg/L]	24-Apr-21	09:50	27-Apr-21	17:01	< 0.03
Nitrate (as N) [mg/L]	24-Apr-21	09:50	27-Apr-21	17:01	9.27
Nitrate + Nitrite (as N) [mg/L]	24-Apr-21	09:50	27-Apr-21	17:01	9.27

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002476636

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

05-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 28 April 2021
LR Report: **CA15617-APR21**
Reference: Project#: OH9-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					26-Apr-21 07:16	26-Apr-21 07:34
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	6.69	---
Field Temperature [celcius]	---	---	---	---	11.3	---
Total Suspended Solids [mg/L]	29-Apr-21	10:02	02-May-21	08:44	3	150
Phosphorus (total) [mg/L]	28-Apr-21	18:04	29-Apr-21	13:46	0.14	2.20
Ammonia+Ammonium (N) [mg/L]	04-May-21	08:10	04-May-21	16:57	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002483912

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

05-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 28 April 2021
LR Report: **CA13981-APR21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					27-Apr-21 10:07
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Field pH [no unit]	---	---	---	---	6.63
Field Temperature [celcius]	---	---	---	---	11.2
Phosphorus (total) [mg/L]	28-Apr-21	18:04	29-Apr-21	13:43	0.15
Ammonia+Ammonium (N) [mg/L]	29-Apr-21	22:07	30-Apr-21	14:30	< 0.04
Nitrite (as N) [mg/L]	30-Apr-21	13:49	03-May-21	16:40	< 0.03
Nitrate (as N) [mg/L]	30-Apr-21	13:49	03-May-21	16:40	9.41
Nitrate + Nitrite (as N) [mg/L]	30-Apr-21	13:49	03-May-21	16:40	9.41
Unionized Ammonia [mg/L as N]	29-Apr-21	22:07	05-May-21	14:56	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002484480

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

11-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 05 May 2021
LR Report: **CA13139-MAY21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					03-May-21 08:38	03-May-21 09:15
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	6.98	---
Field Temperature [celcius]	---	---	---	---	12.3	---
Total Suspended Solids [mg/L]	09-May-21	09:21	11-May-21	08:58	7	287
Phosphorus (total) [mg/L]	05-May-21	19:38	06-May-21	15:34	0.09	2.65
Ammonia+Ammonium (N) [mg/L]	11-May-21	11:55	11-May-21	14:59	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002491105

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 05 May 2021
LR Report: **CA13103-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					04-May-21 11:55	04-May-21 12:10
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	7.45	6.74
Field Temperature [celcius]	---	---	---	---	10.9	11.2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	06-May-21	17:29	11-May-21	15:44	143	< 2
Total Suspended Solids [mg/L]	09-May-21	11:58	12-May-21	08:52	177	3
pH@temp15 [pH Units]	06-May-21	15:34	09-May-21	14:49	---	7.36
Phosphorus (total) [mg/L]	06-May-21	16:52	07-May-21	15:11	2.32	0.08
Total Kjeldahl Nitrogen [as N mg/L]	06-May-21	16:57	07-May-21	10:08	22.5	1.4
Unionized Ammonia [mg/L as N]	07-May-21	18:57	10-May-21	17:19	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	07-May-21	18:57	10-May-21	17:19	15.9	< 0.04
Nitrite (as N) [mg/L]	08-May-21	11:07	11-May-21	16:46	< 0.03	< 0.03
Nitrate (as N) [mg/L]	08-May-21	11:07	11-May-21	16:46	< 0.06	8.92
Nitrate + Nitrite (as N) [mg/L]	08-May-21	11:07	11-May-21	16:46	< 0.06	8.92
E. Coli [cfu/100mL]	05-May-21	17:03	07-May-21	10:47	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002491753

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 12 May 2021
LR Report: **CA12377-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					10-May-21 09:50	10-May-21 09:55
Temperature Upon Receipt [°C]	---	---	---	---	4.0	4.0
Field pH [no unit]	---	---	---	---	7.23	---
Field Temperature [celcius]	---	---	---	---	12.3	---
Total Suspended Solids [mg/L]	13-May-21	14:39	16-May-21	14:28	3	162
Phosphorus (total) [mg/L]	13-May-21	15:29	14-May-21	14:01	0.09	2.23
Ammonia+Ammonium (N) [mg/L]	13-May-21	14:42	14-May-21	13:26	< 0.04	---

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002497200

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

21-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 12 May 2021
LR Report: **CA12376-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					11-May-21 12:10
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Field pH [no unit]	---	---	---	---	7.06
Field Temperature [celcius]	---	---	---	---	12.3
Phosphorus (total) [mg/L]	12-May-21	17:00	13-May-21	20:10	0.09
Unionized Ammonia [mg/L as N]	12-May-21	21:30	14-May-21	13:24	< 0.001
Ammonia+Ammonium (N) [mg/L]	12-May-21	21:30	14-May-21	13:24	< 0.04
Nitrite (as N) [mg/L]	15-May-21	10:48	20-May-21	11:15	< 0.03
Nitrate (as N) [mg/L]	15-May-21	10:48	20-May-21	11:15	9.32
Nitrate + Nitrite (as N) [mg/L]	15-May-21	10:48	20-May-21	11:15	9.32

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002504111

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 19 May 2021
LR Report: **CA12661-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					17-May-21 07:50	17-May-21 08:00
Temperature Upon Receipt [°C]	---	---	---	---	5.0	5.0
Field pH [no unit]	---	---	---	---	7.38	---
Field Temperature [celcius]	---	---	---	---	13.5	---
Total Suspended Solids [mg/L]	21-May-21	13:43	25-May-21	14:55	6	170
Phosphorus (total) [mg/L]	20-May-21	17:00	21-May-21	15:53	0.08	2.13
Ammonia+Ammonium (N) [mg/L]	20-May-21	19:13	21-May-21	15:05	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002506532

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 19 May 2021
LR Report: **CA12660-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					18-May-21 11:10
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	7.39
Field Temperature [celcius]	---	---	---	---	13.6
Phosphorus (total) [mg/L]	20-May-21	17:00	21-May-21	15:53	0.08
Unionized Ammonia [mg/L as N]	20-May-21	19:13	21-May-21	15:05	< 0.001
Ammonia+Ammonium (N) [mg/L]	20-May-21	19:13	21-May-21	15:05	< 0.04
Nitrite (as N) [mg/L]	21-May-21	22:54	25-May-21	15:19	< 0.03
Nitrate (as N) [mg/L]	21-May-21	22:54	25-May-21	15:19	9.83
Nitrate + Nitrite (as N) [mg/L]	21-May-21	22:54	25-May-21	15:19	9.83

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025965325

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

31-May-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 26 May 2021
LR Report: **CA12886-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					24-May-21 08:25	24-May-21 08:30
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.18	---
Field Temperature [celcius]	---	---	---	---	15.2	---
Total Suspended Solids [mg/L]	27-May-21	19:00	30-May-21	09:08	< 2	176
Phosphorus (total) [mg/L]	27-May-21	16:22	28-May-21	13:25	0.08	2.48
Ammonia+Ammonium (N) [mg/L]	27-May-21	17:09	28-May-21	13:31	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002511371

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

01-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 26 May 2021
LR Report: **CA12885-MAY21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					25-May-21 11:51
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Field pH [no unit]	---	---	---	---	6.77
Field Temperature [celcius]	---	---	---	---	14.4
Phosphorus (total) [mg/L]	27-May-21	16:22	28-May-21	13:24	0.08
Unionized Ammonia [mg/L as N]	27-May-21	17:09	28-May-21	13:31	< 0.001
Ammonia+Ammonium (N) [mg/L]	27-May-21	17:09	28-May-21	13:31	< 0.04
Nitrite (as N) [mg/L]	28-May-21	14:57	31-May-21	17:01	< 0.03
Nitrate (as N) [mg/L]	28-May-21	14:57	31-May-21	17:01	10.9
Nitrate + Nitrite (as N) [mg/L]	28-May-21	14:57	31-May-21	17:01	10.9

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002513337

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

10-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 02 June 2021
LR Report: **CA12116-JUN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					31-May-21 08:15	31-May-21 08:25
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.05	---
Field Temperature [celcius]	---	---	---	---	14.3	---
Total Suspended Solids [mg/L]	04-Jun-21	09:08	07-Jun-21	14:49	4	86
Phosphorus (total) [mg/L]	02-Jun-21	18:46	04-Jun-21	14:34	0.06	2.18
Ammonia+Ammonium (N) [mg/L]	03-Jun-21	19:11	10-Jun-21	15:50	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002524936

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

09-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 02 June 2021
LR Report: **CA12115-JUN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS- Sewage Effluent
Sample Date & Time					01-Jun-21 08:32	01-Jun-21 08:40
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.37	6.98
Field Temperature [celcius]	---	---	---	---	12.0	14.5
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Jun-21	17:53	08-Jun-21	15:19	132	< 4
Total Suspended Solids [mg/L]	04-Jun-21	12:39	09-Jun-21	09:39	187	3
pH@temp15 [pH Units]	07-Jun-21	16:11	08-Jun-21	09:54	---	7.31
Phosphorus (total) [mg/L]	03-Jun-21	19:11	07-Jun-21	19:20	2.71	0.08
Total Kjeldahl Nitrogen [as N mg/L]	03-Jun-21	19:55	07-Jun-21	15:30	22.8	0.5
Ammonia+Ammonium (N) [mg/L]	03-Jun-21	20:24	06-Jun-21	20:59	17.8	< 0.04
Unionized Ammonia [mg/L as N]	03-Jun-21	20:24	06-Jun-21	21:00	---	< 0.001
Nitrite (as N) [mg/L]	04-Jun-21	15:55	07-Jun-21	12:27	< 0.03	0.03
Nitrate (as N) [mg/L]	04-Jun-21	15:55	07-Jun-21	12:27	< 0.06	11.3
Nitrate + Nitrite (as N) [mg/L]	04-Jun-21	15:55	07-Jun-21	12:27	< 0.06	11.3
E. Coli [cfu/100mL]	02-Jun-21	17:53	04-Jun-21	09:16	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025226B5

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 09 June 2021
LR Report: **CA12297-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					07-Jun-21 08:20	07-Jun-21 08:26
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	6.86	---
Field Temperature [celcius]	---	---	---	---	16.7	---
Total Suspended Solids [mg/L]	11-Jun-21	12:08	15-Jun-21	10:08	4	146
Phosphorus (total) [mg/L]	10-Jun-21	16:32	13-Jun-21	22:26	0.07	2.54
Ammonia+Ammonium (N) [mg/L]	11-Jun-21	21:28	15-Jun-21	11:16	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00032529791

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 09 June 2021
LR Report: **CA12296-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					08-Jun-21 12:22
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Field pH [no unit]	---	---	---	---	6.79
Field Temperature [celcius]	---	---	---	---	16.5
Phosphorus (total) [mg/L]	10-Jun-21	16:32	14-Jun-21	20:54	0.07
Unionized Ammonia [mg/L as N]	11-Jun-21	21:28	15-Jun-21	11:16	< 0.001
Ammonia+Ammonium (N) [mg/L]	11-Jun-21	21:28	15-Jun-21	11:16	< 0.04
Nitrite (as N) [mg/L]	11-Jun-21	10:28	14-Jun-21	12:58	0.04
Nitrate (as N) [mg/L]	11-Jun-21	10:28	14-Jun-21	12:58	11.7
Nitrate + Nitrite (as N) [mg/L]	11-Jun-21	10:28	14-Jun-21	12:58	11.7

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002529784

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

18-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 16 June 2021
LR Report: **CA13786-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					14-Jun-21 08:45	14-Jun-21 08:55
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.33	---
Field Temperature [celcius]	---	---	---	---	16.7	---
Total Suspended Solids [mg/L]	18-Jun-21	07:39	18-Jun-21	14:20	5	261
Phosphorus (total) [mg/L]	16-Jun-21	18:42	17-Jun-21	20:59	0.08	3.12
Ammonia+Ammonium (N) [mg/L]	17-Jun-21	21:35	18-Jun-21	09:46	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002535147

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 16 June 2021
LR Report: **CA13789-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					15-Jun-21 07:30
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Field pH [no unit]	---	---	---	---	7.98
Field Temperature [celcius]	---	---	---	---	16.8
Phosphorus (total) [mg/L]	16-Jun-21	18:42	24-Jun-21	14:59	0.07
Ammonia+Ammonium (N) [mg/L]	17-Jun-21	21:35	18-Jun-21	09:46	< 0.04
Nitrite (as N) [mg/L]	18-Jun-21	20:00	21-Jun-21	14:00	0.05
Nitrate (as N) [mg/L]	18-Jun-21	20:00	21-Jun-21	14:00	12.3
Nitrate + Nitrite (as N) [mg/L]	18-Jun-21	20:00	21-Jun-21	14:00	12.4
Unionized Ammonia [mg/L as N]	17-Jun-21	21:35	18-Jun-21	09:47	<0.002

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002541834

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

29-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 23 June 2021
LR Report: **CA12796-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					21-Jun-21 08:20	21-Jun-21 08:25
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	6.85	---
Field Temperature [celcius]	---	---	---	---	17.9	---
Total Suspended Solids [mg/L]	24-Jun-21	07:46	25-Jun-21	13:19	5	202
Phosphorus (total) [mg/L]	24-Jun-21	15:07	29-Jun-21	14:24	0.09	2.77
Ammonia+Ammonium (N) [mg/L]	24-Jun-21	17:04	25-Jun-21	13:29	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002547314

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-June-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 23 June 2021
LR Report: **CA12797-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					22-Jun-21 12:10
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Field pH [no unit]	---	---	---	---	6.53
Field Temperature [celcius]	---	---	---	---	17.8
Phosphorus (total) [mg/L]	24-Jun-21	15:07	29-Jun-21	20:48	0.10
Ammonia+Ammonium (N) [mg/L]	24-Jun-21	17:04	25-Jun-21	13:30	0.04
Unionized Ammonia [mg/L as N]	24-Jun-21	17:04	25-Jun-21	13:30	< 0.001
Nitrite (as N) [mg/L]	25-Jun-21	15:05	28-Jun-21	09:14	0.06
Nitrate (as N) [mg/L]	25-Jun-21	15:05	28-Jun-21	09:14	12.3
Nitrate + Nitrite (as N) [mg/L]	25-Jun-21	15:05	28-Jun-21	09:14	12.4

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002547750

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

07-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 30 June 2021
LR Report: **CA19910-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					28-Jun-21 09:15	28-Jun-21 09:20
Temperature Upon Receipt [°C]	---	---	---	---	12.0	12.0
Field pH [no unit]	---	---	---	---	7.10	---
Field Temperature [celcius]	---	---	---	---	18.0	---
Total Suspended Solids [mg/L]	05-Jul-21	14:16	07-Jul-21	11:21	5	173
Phosphorus (total) [mg/L]	02-Jul-21	18:22	05-Jul-21	16:01	0.08	2.22
Ammonia+Ammonium (N) [mg/L]	05-Jul-21	19:08	06-Jul-21	16:15	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002555345

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

06-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 30 June 2021
LR Report: **CA19909-JUN21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					29-Jun-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	12.0
Field pH [no unit]	---	---	---	---	7.15
Field Temperature [celcius]	---	---	---	---	17.8
Phosphorus (total) [mg/L]	02-Jul-21	18:22	05-Jul-21	16:01	0.08
Unionized Ammonia [mg/L as N]	05-Jul-21	19:08	06-Jul-21	16:14	< 0.001
Ammonia+Ammonium (N) [mg/L]	05-Jul-21	19:08	06-Jul-21	16:14	0.05
Nitrite (as N) [mg/L]	02-Jul-21	16:59	05-Jul-21	12:07	0.03
Nitrate (as N) [mg/L]	02-Jul-21	16:59	05-Jul-21	12:07	10.5
Nitrate + Nitrite (as N) [mg/L]	02-Jul-21	16:59	05-Jul-21	12:07	10.5

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002554516

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 July 2021
LR Report: **CA12216-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					05-Jul-21 09:15	05-Jul-21 09:20
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	6.54	---
Field Temperature [celcius]	---	---	---	---	17.8	---
Total Suspended Solids [mg/L]	11-Jul-21	10:39	14-Jul-21	10:41	< 2	160
Phosphorus (total) [mg/L]	08-Jul-21	16:52	09-Jul-21	13:02	0.04	2.27
Ammonia+Ammonium (N) [mg/L]	09-Jul-21	06:34	12-Jul-21	11:01	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025635S36

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

15-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 July 2021
LR Report: **CA12215-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					06-Jul-21 12:14	06-Jul-21 12:23
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	6.88	6.65
Field Temperature [celcius]	---	---	---	---	17.2	18.5
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	07-Jul-21	17:12	12-Jul-21	16:42	168	< 4
Total Suspended Solids [mg/L]	11-Jul-21	10:39	14-Jul-21	10:41	317	2
pH@temp15 [pH Units]	09-Jul-21	14:10	12-Jul-21	09:22	---	7.43
Phosphorus (total) [mg/L]	08-Jul-21	16:52	09-Jul-21	13:02	3.65	0.04
Total Kjeldahl Nitrogen [as N mg/L]	07-Jul-21	16:15	09-Jul-21	08:50	20.2	< 0.5
Unionized Ammonia [mg/L as N]	09-Jul-21	06:34	12-Jul-21	11:01	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	09-Jul-21	06:34	12-Jul-21	11:01	16.6	< 0.04
Nitrite (as N) [mg/L]	10-Jul-21	08:44	14-Jul-21	15:40	< 0.03	0.03
Nitrate (as N) [mg/L]	10-Jul-21	08:44	14-Jul-21	15:40	< 0.06	11.1
Nitrate + Nitrite (as N) [mg/L]	10-Jul-21	08:44	14-Jul-21	15:40	< 0.06	11.1
E. Coli [cfu/100mL]	08-Jul-21	10:38	09-Jul-21	15:17	---	< 2

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025649654

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

21-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 14 July 2021
LR Report: **CA12594-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					12-Jul-21 10:00	12-Jul-21 10:10
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	6.68	---
Field Temperature [celcius]	---	---	---	---	18.1	---
Total Suspended Solids [mg/L]	19-Jul-21	16:38	20-Jul-21	20:46	< 2	156
Phosphorus (total) [mg/L]	15-Jul-21	15:53	18-Jul-21	21:15	0.06	2.42
Ammonia+Ammonium (N) [mg/L]	14-Jul-21	21:53	15-Jul-21	17:19	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002572401

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

20-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 14 July 2021
LR Report: **CA12593-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					13-Jul-21 09:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Field pH [no unit]	---	---	---	---	7.11
Field Temperature [celcius]	---	---	---	---	18.4
Phosphorus (total) [mg/L]	15-Jul-21	15:53	18-Jul-21	21:15	0.06
Ammonia+Ammonium (N) [mg/L]	14-Jul-21	21:53	15-Jul-21	17:19	< 0.04
Nitrite (as N) [mg/L]	16-Jul-21	15:28	20-Jul-21	12:18	0.03
Nitrate (as N) [mg/L]	16-Jul-21	15:28	20-Jul-21	12:18	9.78
Nitrate + Nitrite (as N) [mg/L]	16-Jul-21	15:28	20-Jul-21	12:18	9.81
Unionized Ammonia [mg/L as N]	14-Jul-21	21:53	15-Jul-21	17:26	< 0.001

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002571153

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

28-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 21 July 2021
LR Report: **CA12871-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					19-Jul-21 07:10	19-Jul-21 07:17
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	6.56	---
Field Temperature [celcius]	---	---	---	---	18.6	---
Total Suspended Solids [mg/L]	23-Jul-21	13:04	26-Jul-21	15:31	< 2	101
Phosphorus (total) [mg/L]	21-Jul-21	15:30	22-Jul-21	14:15	0.06	2.46
Ammonia+Ammonium (N) [mg/L]	21-Jul-21	08:30	28-Jul-21	11:32	0.11	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002582274

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

27-July-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 21 July 2021
LR Report: **CA12869-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					20-Jul-21 12:23
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Field pH [no unit]	---	---	---	---	6.55
Field Temperature [celcius]	---	---	---	---	18.7
Phosphorus (total) [mg/L]	21-Jul-21	15:30	26-Jul-21	20:26	< 0.03
Unionized Ammonia [mg/L as N]	22-Jul-21	13:30	23-Jul-21	10:44	< 0.001
Ammonia+Ammonium (N) [mg/L]	22-Jul-21	13:30	23-Jul-21	10:44	< 0.04
Nitrite (as N) [mg/L]	22-Jul-21	14:18	23-Jul-21	14:50	0.03
Nitrate (as N) [mg/L]	22-Jul-21	14:18	23-Jul-21	14:50	10.6
Nitrate + Nitrite (as N) [mg/L]	22-Jul-21	14:18	23-Jul-21	14:50	10.6

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002580155

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

03-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 28 July 2021
LR Report: **CA15851-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent	6: DS - Raw Sewage Influent
Sample Date & Time					26-Jul-21 09:10	26-Jul-21 09:15
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	6.52	---
Field Temperature [celcius]	---	---	---	---	18.2	---
Total Suspended Solids [mg/L]	29-Jul-21	11:20	02-Aug-21	21:03	4	171
Phosphorus (total) [mg/L]	28-Jul-21	17:48	03-Aug-21	13:15	< 0.03	2.77
Ammonia+Ammonium (N) [mg/L]	28-Jul-21	18:05	03-Aug-21	11:30	< 0.04	---

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025880S9

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

03-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 28 July 2021
LR Report: **CA15711-JUL21**
Reference: Project#: OH19-007

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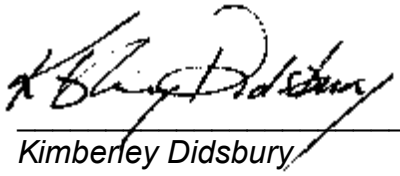
CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					27-Jul-21 10:37
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Field pH [no unit]	---	---	---	---	6.57
Field Temperature [celcius]	---	---	---	---	18.8
Phosphorus (total) [mg/L]	28-Jul-21	17:48	30-Jul-21	14:37	< 0.03
Unionized Ammonia [mg/L as N]	28-Jul-21	18:05	03-Aug-21	11:30	< 0.001
Ammonia+Ammonium (N) [mg/L]	28-Jul-21	18:05	03-Aug-21	11:30	< 0.04
Nitrite (as N) [mg/L]	29-Jul-21	09:05	30-Jul-21	15:12	< 0.03
Nitrate (as N) [mg/L]	29-Jul-21	09:05	30-Jul-21	15:12	10.5
Nitrate + Nitrite (as N) [mg/L]	29-Jul-21	09:05	30-Jul-21	15:12	10.5

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00025875961

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

11-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 04 August 2021
LR Report: **CA13136-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					02-Aug-21 08:15	02-Aug-21 08:25
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	6.73	---
Field Temperature [celcius]	---	---	---	---	16.9	---
Total Suspended Solids [mg/L]	06-Aug-21	15:14	10-Aug-21	17:41	2	180
Phosphorus (total) [mg/L]	04-Aug-21	20:11	05-Aug-21	16:30	< 0.03	2.69
Ammonia+Ammonium (N) [mg/L]	04-Aug-21	17:55	05-Aug-21	20:41	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002592271

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 04 August 2021
LR Report: **CA13141-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					03-Aug-21 11:49	03-Aug-21 11:41
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	7.32	6.82
Field Temperature [celcius]	---	---	---	---	16.3	18.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	04-Aug-21	18:01	09-Aug-21	15:04	197	< 4
Total Suspended Solids [mg/L]	10-Aug-21	09:16	10-Aug-21	17:52	149	2
pH@temp15 [pH Units]	06-Aug-21	13:46	10-Aug-21	11:07	---	7.36
Phosphorus (total) [mg/L]	05-Aug-21	16:24	06-Aug-21	14:27	2.49	0.03
Total Kjeldahl Nitrogen [as N mg/L]	05-Aug-21	20:32	09-Aug-21	15:32	23.1	< 0.5
Unionized Ammonia [mg/L as N]	05-Aug-21	15:52	06-Aug-21	13:08	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	05-Aug-21	15:52	06-Aug-21	13:08	18.9	0.05
Nitrite (as N) [mg/L]	08-Aug-21	18:52	12-Aug-21	19:04	< 0.03	0.04
Nitrate (as N) [mg/L]	08-Aug-21	18:52	12-Aug-21	19:04	< 0.06	11.4
Nitrate + Nitrite (as N) [mg/L]	08-Aug-21	18:52	12-Aug-21	19:04	< 0.06	11.4
E. Coli [cfu/100mL]	04-Aug-21	18:30	07-Aug-21	11:16	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003600677

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 11 August 2021
LR Report: **CA12377-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					09-Aug-21 09:30	09-Aug-21 09:45
Temperature Upon Receipt [°C]	---	---	---	---	16.0	16.0
Field pH [no unit]	---	---	---	---	7.01	---
Field Temperature [celcius]	---	---	---	---	19.5	---
Total Suspended Solids [mg/L]	16-Aug-21	08:55	17-Aug-21	13:36	< 2	171
Phosphorus (total) [mg/L]	13-Aug-21	16:21	24-Aug-21	15:56	0.04	2.56
Ammonia+Ammonium (N) [mg/L]	11-Aug-21	21:25	12-Aug-21	15:57	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026155S1

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

18-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 11 August 2021
LR Report: **CA12361-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					10-Aug-21 10:45
Temperature Upon Receipt [°C]	---	---	---	---	16.0
Field pH [no unit]	---	---	---	---	7.87
Field Temperature [celcius]	---	---	---	---	18.5
Phosphorus (total) [mg/L]	13-Aug-21	16:21	16-Aug-21	13:10	< 0.03
Unionized Ammonia [mg/L as N]	11-Aug-21	21:25	12-Aug-21	15:57	<0.002
Ammonia+Ammonium (N) [mg/L]	11-Aug-21	21:25	12-Aug-21	15:57	< 0.04
Nitrite (as N) [mg/L]	13-Aug-21	08:26	18-Aug-21	10:56	0.04
Nitrate (as N) [mg/L]	13-Aug-21	08:26	18-Aug-21	10:56	11.6
Nitrate + Nitrite (as N) [mg/L]	13-Aug-21	08:26	18-Aug-21	10:56	11.6

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002607267

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 18 August 2021
LR Report: **CA12710-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					16-Aug-21 08:30	16-Aug-21 08:40
Temperature Upon Receipt [°C]	---	---	---	---	13.0	13.0
Field pH [no unit]	---	---	---	---	7.63	---
Field Temperature [celcius]	---	---	---	---	18.1	---
Total Suspended Solids [mg/L]	23-Aug-21	12:57	24-Aug-21	07:39	4	187
Phosphorus (total) [mg/L]	18-Aug-21	19:50	25-Aug-21	14:55	0.03	2.76
Ammonia+Ammonium (N) [mg/L]	21-Aug-21	14:28	24-Aug-21	10:50	0.08	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002616206

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 18 August 2021
LR Report: **CA12711-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					17-Aug-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	13.0
Field pH [no unit]	---	---	---	---	7.38
Field Temperature [celcius]	---	---	---	---	18.3
Phosphorus (total) [mg/L]	18-Aug-21	19:50	20-Aug-21	08:30	0.03
Ammonia+Ammonium (N) [mg/L]	21-Aug-21	14:28	24-Aug-21	10:50	0.08
Unionized Ammonia [mg/L as N]	21-Aug-21	14:28	24-Aug-21	10:50	< 0.001
Nitrite (as N) [mg/L]	19-Aug-21	13:44	25-Aug-21	06:15	0.04
Nitrate (as N) [mg/L]	19-Aug-21	13:44	25-Aug-21	06:15	11.6
Nitrate + Nitrite (as N) [mg/L]	19-Aug-21	13:44	25-Aug-21	06:15	11.6

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026155S7

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

31-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 25 August 2021
LR Report: **CA12961-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					23-Aug-21 11:50	23-Aug-21 12:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	7.69	---
Field Temperature [celcius]	---	---	---	---	20.0	---
Total Suspended Solids [mg/L]	27-Aug-21	11:53	31-Aug-21	08:07	2	202
Phosphorus (total) [mg/L]	25-Aug-21	16:48	26-Aug-21	11:30	< 0.03	3.00
Ammonia+Ammonium (N) [mg/L]	25-Aug-21	17:38	26-Aug-21	13:33	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002623149

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-August-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 25 August 2021
LR Report: **CA12965-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					24-Aug-21 08:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Field pH [no unit]	---	---	---	---	7.33
Field Temperature [celcius]	---	---	---	---	19.4
Phosphorus (total) [mg/L]	25-Aug-21	16:48	26-Aug-21	11:31	< 0.03
Unionized Ammonia [mg/L as N]	25-Aug-21	17:38	26-Aug-21	13:36	< 0.001
Ammonia+Ammonium (N) [mg/L]	25-Aug-21	17:38	26-Aug-21	13:35	0.05
Nitrite (as N) [mg/L]	27-Aug-21	12:20	30-Aug-21	14:01	0.04
Nitrate (as N) [mg/L]	27-Aug-21	12:20	30-Aug-21	14:01	12.6
Nitrate + Nitrite (as N) [mg/L]	27-Aug-21	12:20	30-Aug-21	14:01	12.6

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002621571

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

07-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 01 September 2021
LR Report: **CA12018-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					30-Aug-21 10:00	30-Aug-21 10:10
Temperature Upon Receipt [°C]	---	---	---	---	5.0	5.0
Field pH [no unit]	---	---	---	---	7.30	---
Field Temperature [celcius]	---	---	---	---	19.6	---
Total Suspended Solids [mg/L]	03-Sep-21	07:52	06-Sep-21	20:34	3	207
Phosphorus (total) [mg/L]	01-Sep-21	16:39	02-Sep-21	14:26	0.04	2.55
Ammonia+Ammonium (N) [mg/L]	02-Sep-21	17:45	03-Sep-21	14:10	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002629822

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

09-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 01 September 2021
LR Report: **CA12011-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					31-Aug-21 12:47
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	7.30
Field Temperature [celcius]	---	---	---	---	19.5
Phosphorus (total) [mg/L]	01-Sep-21	16:39	02-Sep-21	14:24	0.05
Ammonia+Ammonium (N) [mg/L]	01-Sep-21	21:22	02-Sep-21	15:37	< 0.04
Nitrite (as N) [mg/L]	02-Sep-21	10:59	07-Sep-21	15:43	0.04
Nitrate (as N) [mg/L]	02-Sep-21	10:59	07-Sep-21	15:43	12.0
Nitrate + Nitrite (as N) [mg/L]	02-Sep-21	10:59	07-Sep-21	15:43	12.0
Unionized Ammonia [mg/L as N]	01-Sep-21	21:22	08-Sep-21	16:06	< 0.001

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002632619

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 September 2021
LR Report: **CA12287-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					06-Sep-21 08:45	06-Sep-21 08:55
Temperature Upon Receipt [°C]	---	---	---	---	12.0	12.0
Field pH [no unit]	---	---	---	---	7.96	---
Field Temperature [celcius]	---	---	---	---	19.8	---
Total Suspended Solids [mg/L]	10-Sep-21	07:53	13-Sep-21	13:38	3	45
Phosphorus (total) [mg/L]	09-Sep-21	17:26	13-Sep-21	11:35	0.06	2.95
Ammonia+Ammonium (N) [mg/L]	08-Sep-21	21:11	16-Sep-21	13:47	0.11	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002642263

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 September 2021
LR Report: **CA12288-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Raw Sewage Influent	6: DS - Sewage Effluent
Sample Date & Time					07-Sep-21 08:20	07-Sep-21 08:40
Temperature Upon Receipt [°C]	---	---	---	---	12.0	12.0
Field pH [no unit]	---	---	---	---	7.95	7.64
Field Temperature [celcius]	---	---	---	---	16.6	19.4
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	08-Sep-21	17:07	13-Sep-21	17:06	173	< 4
Total Suspended Solids [mg/L]	11-Sep-21	09:30	13-Sep-21	15:19	176	3
pH@temp15 [pH Units]	09-Sep-21	14:01	10-Sep-21	08:00	---	7.26
Phosphorus (total) [mg/L]	08-Sep-21	17:30	10-Sep-21	14:58	2.62	0.06
Total Kjeldahl Nitrogen [as N mg/L]	08-Sep-21	18:45	09-Sep-21	15:10	25.6	< 0.5
Unionized Ammonia [mg/L as N]	08-Sep-21	21:11	10-Sep-21	15:49	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	08-Sep-21	21:11	10-Sep-21	15:49	22.1	< 0.04
Nitrite (as N) [mg/L]	09-Sep-21	09:32	10-Sep-21	07:57	0.05	0.06
Nitrate (as N) [mg/L]	09-Sep-21	09:32	10-Sep-21	07:57	< 0.06	12.2
Nitrate + Nitrite (as N) [mg/L]	09-Sep-21	09:32	10-Sep-21	07:57	< 0.06	12.3
E. Coli [cfu/100mL]	08-Sep-21	19:35	11-Sep-21	14:49	---	6

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002639124

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

20-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 15 September 2021
LR Report: **CA12624-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					13-Sep-21 09:30	13-Sep-21 09:15
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	7.82	---
Field Temperature [celcius]	---	---	---	---	18.6	---
Total Suspended Solids [mg/L]	17-Sep-21	15:52	20-Sep-21	14:26	3	219
Phosphorus (total) [mg/L]	16-Sep-21	19:58	20-Sep-21	10:57	0.05	2.44
Ammonia+Ammonium (N) [mg/L]	15-Sep-21	22:26	20-Sep-21	10:08	0.06	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002647316

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 15 September 2021
LR Report: **CA12625-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					14-Sep-21 11:30
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Field pH [no unit]	---	---	---	---	7.69
Field Temperature [celcius]	---	---	---	---	17.8
Phosphorus (total) [mg/L]	16-Sep-21	19:58	20-Sep-21	10:57	0.04
Unionized Ammonia [mg/L as N]	15-Sep-21	22:26	20-Sep-21	10:08	< 0.001
Ammonia+Ammonium (N) [mg/L]	15-Sep-21	22:26	20-Sep-21	10:08	< 0.04
Nitrite (as N) [mg/L]	17-Sep-21	18:36	23-Sep-21	21:32	0.03
Nitrate (as N) [mg/L]	17-Sep-21	18:36	23-Sep-21	21:32	10.8
Nitrate + Nitrite (as N) [mg/L]	17-Sep-21	18:36	23-Sep-21	21:32	10.8

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002652043

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

29-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 22 September 2021
LR Report: **CA12920-SEP21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					20-Sep-21 09:30	20-Sep-21 09:40
Temperature Upon Receipt [°C]	---	---	---	---	11.0	11.0
Field pH [no unit]	---	---	---	---	8.10	---
Field Temperature [celcius]	---	---	---	---	18.3	---
Total Suspended Solids [mg/L]	24-Sep-21	10:20	29-Sep-21	16:12	4	142
Phosphorus (total) [mg/L]	22-Sep-21	16:09	23-Sep-21	16:47	0.05	2.58
Ammonia+Ammonium (N) [mg/L]	22-Sep-21	22:04	24-Sep-21	11:31	0.05	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002658134

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

28-September-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 22 September 2021
LR Report: **CA12918-SEP21**
Reference: Project#: OH19-007

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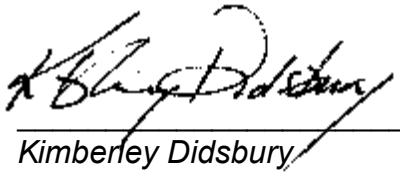
CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					21-Sep-21 09:50
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Field pH [no unit]	---	---	---	---	8.12
Field Temperature [celcius]	---	---	---	---	18.7
Phosphorus (total) [mg/L]	22-Sep-21	16:09	23-Sep-21	16:47	0.04
Ammonia+Ammonium (N) [mg/L]	22-Sep-21	22:04	23-Sep-21	14:52	< 0.04
Unionized Ammonia [mg/L as N]	22-Sep-21	22:04	23-Sep-21	14:52	<0.003
Nitrite (as N) [mg/L]	23-Sep-21	12:38	28-Sep-21	06:54	0.03
Nitrate (as N) [mg/L]	23-Sep-21	12:38	28-Sep-21	06:54	11.1
Nitrate + Nitrite (as N) [mg/L]	23-Sep-21	12:38	28-Sep-21	06:54	11.1

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.



Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002655920

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

04-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue, Stoney Creek
Canada, L8E 5P1
Phone: 519-542-7900, Fax:

Date Rec. : 29 September 2021
LR Report: **CA14695-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					27-Sep-21 09:40	27-Sep-21 09:45
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	7.17	---
Field Temperature [celcius]	---	---	---	---	16.8	---
Total Suspended Solids [mg/L]	30-Sep-21	19:26	01-Oct-21	13:48	< 2	138
Phosphorus (total) [mg/L]	30-Sep-21	16:24	01-Oct-21	14:56	0.04	1.79
Ammonia+Ammonium (N) [mg/L]	30-Sep-21	17:20	04-Oct-21	11:52	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026626649

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

04-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 29 September 2021
LR Report: **CA14694-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					28-Sep-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Field pH [no unit]	---	---	---	---	7.16
Field Temperature [celcius]	---	---	---	---	16.7
Phosphorus (total) [mg/L]	30-Sep-21	16:24	04-Oct-21	11:10	0.03
Unionized Ammonia [mg/L as N]	30-Sep-21	17:20	04-Oct-21	11:52	< 0.001
Ammonia+Ammonium (N) [mg/L]	30-Sep-21	17:20	04-Oct-21	11:52	< 0.04
Nitrite (as N) [mg/L]	30-Sep-21	10:48	01-Oct-21	16:04	< 0.03
Nitrate (as N) [mg/L]	30-Sep-21	10:48	01-Oct-21	16:04	9.27
Nitrate + Nitrite (as N) [mg/L]	30-Sep-21	10:48	01-Oct-21	16:04	9.27

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002662646

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

13-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 October 2021
LR Report: **CA13162-OCT21**
Reference: Project#:OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Eflfuent (QA/QC)	6: DW-Raw Sewage Influent (QA/QC)
Sample Date & Time					04-Oct-21 06:50	04-Oct-21 06:55
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	7.17	---
Field Temperature [celcius]	---	---	---	---	18.2	---
Total Suspended Solids [mg/L]	10-Oct-21	07:36	11-Oct-21	18:51	3	191
Phosphorus (total) [mg/L]	09-Oct-21	12:57	12-Oct-21	07:51	0.03	2.18
Ammonia+Ammonium (N) [mg/L]	08-Oct-21	22:08	13-Oct-21	14:52	0.05	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002673347

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 October 2021
LR Report: **CA13164-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Raw Sewage Influent	6: DS-Sewage Effluent
Sample Date & Time					05-Oct-21 08:25	05-Oct-21 08:10
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	7.90	7.16
Field Temperature [celcius]	---	---	---	---	15.7	17.6
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	07-Oct-21	16:41	12-Oct-21	17:56	130	< 4
Total Suspended Solids [mg/L]	10-Oct-21	13:56	13-Oct-21	16:08	151	4
Phosphorus (total) [mg/L]	09-Oct-21	12:57	13-Oct-21	13:42	2.32	0.04
Total Kjeldahl Nitrogen [as N mg/L]	09-Oct-21	10:13	12-Oct-21	12:59	20.2	< 0.5
Unionized Ammonia [mg/L as N]	08-Oct-21	22:08	13-Oct-21	14:52	---	< 0.001
Ammonia+Ammonium (N) [mg/L]	08-Oct-21	22:08	13-Oct-21	14:52	19.0	0.05
Nitrite (as N) [mg/L]	07-Oct-21	19:24	08-Oct-21	15:09	< 0.03	< 0.03
Nitrate (as N) [mg/L]	07-Oct-21	19:24	08-Oct-21	15:09	< 0.06	9.81
Nitrate + Nitrite (as N) [mg/L]	07-Oct-21	19:24	08-Oct-21	15:09	< 0.06	9.81
E. Coli [cfu/100mL]	06-Oct-21	16:44	08-Oct-21	14:47	---	< 2
pH@temp15 [pH Units]	08-Oct-21	14:12	11-Oct-21	09:20	---	7.32

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002674206

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

21-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 13 October 2021
LR Report: **CA12510-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					11-Oct-21 07:46	11-Oct-21 10:42
Temperature Upon Receipt [°C]	---	---	---	---	7.0	7.0
Field pH [no unit]	---	---	---	---	7.14	---
Field Temperature [celcius]	---	---	---	---	17.8	---
Total Suspended Solids [mg/L]	15-Oct-21	10:49	19-Oct-21	13:52	4	100
Phosphorus (total) [mg/L]	13-Oct-21	16:27	14-Oct-21	15:10	< 0.03	---
Ammonia+Ammonium (N) [mg/L]	19-Oct-21	18:35	20-Oct-21	16:30	0.06	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026636660

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

21-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 13 October 2021
LR Report: **CA12511-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					12-Oct-21 09:00
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Field pH [no unit]	---	---	---	---	7.20
Field Temperature [celcius]	---	---	---	---	17.2
Phosphorus (total) [mg/L]	13-Oct-21	16:27	14-Oct-21	15:10	0.03
Unionized Ammonia [mg/L as N]	19-Oct-21	18:35	20-Oct-21	16:30	< 0.001
Ammonia+Ammonium (N) [mg/L]	19-Oct-21	18:35	20-Oct-21	16:30	0.05
Nitrite (as N) [mg/L]	15-Oct-21	07:43	16-Oct-21	10:03	< 0.03
Nitrate (as N) [mg/L]	15-Oct-21	07:43	16-Oct-21	10:03	10.6
Nitrate + Nitrite (as N) [mg/L]	15-Oct-21	07:43	16-Oct-21	10:03	10.6

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026836631

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

26-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 20 October 2021
LR Report: **CA13669-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					18-Oct-21 09:10	18-Oct-21 09:15
Temperature Upon Receipt [°C]	---	---	---	---	5.0	5.0
Field pH [no unit]	---	---	---	---	7.22	---
Field Temperature [celcius]	---	---	---	---	16.5	---
Total Suspended Solids [mg/L]	25-Oct-21	09:25	26-Oct-21	10:28	3	152
Phosphorus (total) [mg/L]	21-Oct-21	21:52	25-Oct-21	13:12	0.04	---
Ammonia+Ammonium (N) [mg/L]	21-Oct-21	17:14	22-Oct-21	12:39	0.05	---

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026896975

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

25-October-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 20 October 2021
LR Report: **CA13672-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					19-Oct-21 08:05
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	7.25
Field Temperature [celcius]	---	---	---	---	16.2
Phosphorus (total) [mg/L]	21-Oct-21	21:52	22-Oct-21	14:06	0.04
Ammonia+Ammonium (N) [mg/L]	21-Oct-21	17:14	22-Oct-21	12:41	0.06
Unionized Ammonia [mg/L as N]	21-Oct-21	17:14	22-Oct-21	12:42	< 0.001
Nitrite (as N) [mg/L]	21-Oct-21	18:12	25-Oct-21	13:12	< 0.03
Nitrate (as N) [mg/L]	21-Oct-21	18:12	25-Oct-21	13:12	10.4
Nitrate + Nitrite (as N) [mg/L]	21-Oct-21	18:12	25-Oct-21	13:12	10.4

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026880325

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

02-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 27 October 2021
LR Report: **CA15860-OCT21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					25-Oct-21 09:10	25-Oct-21 09:15
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0
Field pH [no unit]	---	---	---	---	7.23	---
Field Temperature [celcius]	---	---	---	---	15.3	---
Total Suspended Solids [mg/L]	29-Oct-21	15:46	01-Nov-21	13:24	< 2	192
Phosphorus (total) [mg/L]	27-Oct-21	17:50	01-Nov-21	12:05	0.07	---
Ammonia+Ammonium (N) [mg/L]	27-Oct-21	21:02	02-Nov-21	13:37	0.11	---
Unionized Ammonia [mg/L as N]	27-Oct-21	21:02	02-Nov-21	13:37	< 0.001	---
Nitrite (as N) [mg/L]	27-Oct-21	15:31	29-Oct-21	12:31	0.03	---
Nitrate (as N) [mg/L]	27-Oct-21	15:31	29-Oct-21	12:31	10.2	---
Nitrate + Nitrite (as N) [mg/L]	27-Oct-21	15:31	29-Oct-21	12:31	10.2	---

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002698341

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

09-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 November 2021
LR Report: **CA13133-NOV21**
Reference: Project# OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					01-Nov-21 09:40	01-Nov-21 09:55
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.22	---
Field Temperature [celcius]	---	---	---	---	15.3	---
Total Suspended Solids [mg/L]	08-Nov-21	13:54	09-Nov-21	11:45	4	73
Phosphorus (total) [mg/L]	04-Nov-21	16:41	05-Nov-21	14:23	0.13	---
Ammonia+Ammonium (N) [mg/L]	04-Nov 21	18:52	08-Nov-21	08:50	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027706356

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

10-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 November 2021
LR Report: **CA13125-NOV21**
Reference: Project#: OH-19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Raw Sewage Influent	6: DS-Sewage Effluent
Sample Date & Time					02-Nov-21 08:25	02-Nov-21 08:10
Temperature Upon Receipt [°C]	---	---	---	---	9.0	9.0
Field pH [no unit]	---	---	---	---	7.98	7.20
Field Temperature [celcius]	---	---	---	---	14.3	14.8
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	04-Nov-21	16:35	09-Nov-21	13:44	107	< 4
Total Suspended Solids [mg/L]	09-Nov-21	14:22	10-Nov-21	10:21	145	3
pH@temp15 [pH Units]	05-Nov-21	15:41	10-Nov-21	08:19	---	7.32
Phosphorus (total) [mg/L]	04-Nov-21	16:41	05-Nov-21	14:23	2.14	0.11
Total Kjeldahl Nitrogen [as N mg/L]	04-Nov-21	17:54	05-Nov-21	12:54	20.0	0.8
Ammonia+Ammonium (N) [as N mg/L]	04-Nov 21	18:52	09-Nov-21	16:30	16.3	---
Ammonia+Ammonium (N) [mg/L]	04-Nov 21	18:52	09-Nov-21	13:21	---	0.04
Unionized Ammonia [mg/L as N]	04-Nov 21	18:52	09-Nov-21	13:22	---	< 0.001
Nitrite (as N) [mg/L]	04-Nov-21	01:36	08-Nov-21	14:19	0.19	< 0.03
Nitrate (as N) [mg/L]	04-Nov-21	01:36	08-Nov-21	14:19	1.12	12.4
Nitrate + Nitrite (as N) [mg/L]	04-Nov-21	01:36	08-Nov-21	14:19	1.31	12.4
E. Coli [cfu/100mL]	03-Nov-21	15:59	05-Nov-21	09:55	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002707238

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

06-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 November 2021
LR Report: **CA12371-NOV21**
Reference: Project#: OH19-007

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					08-Nov-21 12:58	08-Nov-21 13:05
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.29	---
Field Temperature [celcius]	---	---	---	---	15.2	---
Total Suspended Solids [mg/L]	15-Nov-21	13:43	16-Nov-21	11:25	4	147
Phosphorus (total) [mg/L]	10-Nov-21	15:53	12-Nov-21	14:31	0.07	---
Ammonia+Ammonium (N) [mg/L]	11-Nov-21	22:13	12-Nov-21	09:28	< 0.04	---

Revised December 6, 2021 - Sample collection date changed from Nov 9th to Nov 8th as per client's instructions.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002734265

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 10 November 2021
LR Report: **CA12372-NOV21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					09-Nov-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	7.18
Field Temperature [celcius]	---	---	---	---	14.1
Phosphorus (total) [mg/L]	10-Nov-21	15:53	12-Nov-21	14:32	0.06
Unionized Ammonia [mg/L as N]	11-Nov-21	22:13	12-Nov-21	09:28	< 0.001
Ammonia+Ammonium (N) [mg/L]	11-Nov-21	22:13	12-Nov-21	09:28	< 0.04
Nitrite (as N) [mg/L]	13-Nov-21	11:51	16-Nov-21	13:46	< 0.03
Nitrate (as N) [mg/L]	13-Nov-21	11:51	16-Nov-21	13:46	10.0
Nitrate + Nitrite (as N) [mg/L]	13-Nov-21	11:51	16-Nov-21	13:46	10.0

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002714181

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

19-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 November 2021
LR Report: **CA13643-NOV21**
Reference: Project: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DW - Sewage Effluent (QA/QC)	6: DW - Raw Sewage Influent (QA/QC)
Sample Date & Time					15-Nov-21 08:55	15-Nov-21 09:05
Temperature Upon Receipt [°C]	---	---	---	---	5.0	5.0
Field pH [no unit]	---	---	---	---	7.26	---
Field Temperature [celcius]	---	---	---	---	13.9	---
Total Suspended Solids [mg/L]	18-Nov-21	07:43	19-Nov-21	10:33	4	182
Phosphorus (total) [mg/L]	17-Nov-21	16:29	18-Nov-21	12:36	0.04	---
Ammonia+Ammonium (N) [mg/L]	17-Nov-21	21:28	18-Nov-21	10:40	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002718218

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 17 November 2021
LR Report: **CA13645-NOV21**
Reference: Project: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					16-Nov-21 08:20
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Field pH [no unit]	---	---	---	---	7.21
Field Temperature [celcius]	---	---	---	---	13.8
Phosphorus (total) [mg/L]	17-Nov-21	16:29	23-Nov-21	12:03	0.05
Ammonia+Ammonium (N) [mg/L]	17-Nov-21	21:28	18-Nov-21	10:40	< 0.04
Unionized Ammonia [mg/L as N]	17-Nov-21	21:28	18-Nov-21	10:40	< 0.001
Nitrite (as N) [mg/L]	18-Nov-21	16:44	23-Nov-21	16:05	< 0.03
Nitrate (as N) [mg/L]	18-Nov-21	16:44	23-Nov-21	16:05	9.29
Nitrate + Nitrite (as N) [mg/L]	18-Nov-21	16:44	23-Nov-21	16:05	9.29

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002722198

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

26-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 November 2021
LR Report: **CA13832-NOV21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					22-Nov-21 07:55	22-Nov-21 07:45
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.22	---
Field Temperature [celcius]	---	---	---	---	13.7	---
Total Suspended Solids [mg/L]	25-Nov-21	14:56	26-Nov-21	13:53	3	194
Phosphorus (total) [mg/L]	24-Nov-21	17:13	26-Nov-21	12:06	0.04	---
Ammonia+Ammonium (N) [mg/L]	25-Nov-21	17:40	26-Nov-21	13:12	0.05	---

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027225804

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

29-November-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 November 2021
LR Report: **CA13830-NOV21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					23-Nov-21 08:20
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Field pH [no unit]	---	---	---	---	7.19
Field Temperature [celcius]	---	---	---	---	12.5
Phosphorus (total) [mg/L]	24-Nov-21	17:13	26-Nov-21	12:06	0.03
Ammonia+Ammonium (N) [mg/L]	24-Nov-21	17:45	26-Nov-21	13:11	< 0.04
Unionized Ammonia [mg/L as N]	24-Nov-21	17:45	26-Nov-21	13:12	< 0.001
Nitrite (as N) [mg/L]	25-Nov-21	15:09	29-Nov-21	11:55	< 0.03
Nitrate (as N) [mg/L]	25-Nov-21	15:09	29-Nov-21	11:55	11.0
Nitrate + Nitrite (as N) [mg/L]	25-Nov-21	15:09	29-Nov-21	11:55	11.0

Note:
- Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002272507

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

03-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 01 December 2021
LR Report: **CA14013-DEC21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					29-Nov-21 07:23	29-Nov-21 07:30
Temperature Upon Receipt [°C]	---	---	---	---	1.0	1.0
Field pH [no unit]	---	---	---	---	7.29	---
Field Temperature [celcius]	---	---	---	---	12.0	---
Total Suspended Solids [mg/L]	02-Dec-21	11:05	03-Dec-21	12:07	< 2	159
Phosphorus (total) [mg/L]	02-Dec-21	15:43	03-Dec-21	12:02	< 0.03	2.18
Ammonia+Ammonium (N) [mg/L]	02-Dec-21	17:25	03-Dec-21	13:23	0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002733468

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

08-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 01 December 2021
LR Report: **CA13053-DEC21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					30-Nov-21 08:15
Temperature Upon Receipt [°C]	---	---	---	---	1.0
Field pH [no unit]	---	---	---	---	7.21
Field Temperature [celcius]	---	---	---	---	11.5
Phosphorus (total) [mg/L]	02-Dec-21	15:43	03-Dec-21	11:56	< 0.03
Unionized Ammonia [mg/L as N]	02-Dec-21	17:25	03-Dec-21	13:10	< 0.001
Ammonia+Ammonium (N) [mg/L]	02-Dec-21	17:25	03-Dec-21	13:09	< 0.04
Nitrite (as N) [mg/L]	01-Dec-21	21:34	07-Dec-21	15:05	< 0.03
Nitrate (as N) [mg/L]	01-Dec-21	21:34	07-Dec-21	15:05	10.0
Nitrate + Nitrite (as N) [mg/L]	01-Dec-21	21:34	07-Dec-21	15:05	10.0

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002736149

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 December 2021
LR Report: **CA13296-DEC21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					06-Dec-21 08:30	06-Dec-21 08:35
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.13	---
Field Temperature [celcius]	---	---	---	---	11.6	---
Total Suspended Solids [mg/L]	09-Dec-21	19:29	13-Dec-21	13:29	2	170
Phosphorus (total) [mg/L]	08-Dec-21	17:49	10-Dec-21	15:59	0.04	2.24
Ammonia+Ammonium (N) [mg/L]	08-Dec-21	18:20	09-Dec-21	12:47	< 0.04	---

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002743338

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 December 2021
LR Report: **CA13301-DEC21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Raw Sewage Influent	6: DS-Sewage Effluent
Sample Date & Time					07-Dec-21 07:45	07-Dec-21 07:30
Temperature Upon Receipt [°C]	---	---	---	---	6.0	6.0
Field pH [no unit]	---	---	---	---	7.99	7.19
Field Temperature [celcius]	---	---	---	---	11.4	11.6
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	09-Dec-21	17:08	14-Dec-21	14:23	85	< 4
Total Suspended Solids [mg/L]	09-Dec-21	10:37	10-Dec-21	11:29	152	2
pH@temp15 [pH Units]	13-Dec-21	10:40	14-Dec-21	08:20	---	7.37
Phosphorus (total) [mg/L]	08-Dec-21	17:49	10-Dec-21	09:26	2.04	0.04
Total Kjeldahl Nitrogen [as N mg/L]	08-Dec-21	18:18	10-Dec-21	13:54	19.6	0.6
Ammonia+Ammonium (N) [mg/L]	08-Dec-21	18:20	09-Dec-21	12:49	15.2	0.05
Unionized Ammonia @temp15 [mg/L as N]	13-Dec-21	10:40	14-Dec-21	08:21	---	< 0.001
Nitrite (as N) [mg/L]	09-Dec-21	09:02	13-Dec-21	09:26	< 0.03	< 0.03
Nitrate (as N) [mg/L]	09-Dec-21	09:02	13-Dec-21	09:26	< 0.06	9.12
Nitrate + Nitrite (as N) [mg/L]	09-Dec-21	09:02	13-Dec-21	09:26	< 0.06	9.12
E. Coli [cfu/100mL]	08-Dec-21	17:15	10-Dec-21	09:33	---	< 2

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027438991

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

23-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 16 December 2021
LR Report: **CA13697-DEC21**
Reference: Project#: OH19-007

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Sewage Effluent (QA/QC)	6: DS - Raw Sewage Influent (QA/QC)
Sample Date & Time					13-Dec-21 10:35	13-Dec-21 10:49
Temperature Upon Receipt [°C]	---	---	---	---	4.0	4.0
Field pH [no unit]	---	---	---	---	7.38	---
Field Temperature [celcius]	---	---	---	---	11.0	---
Total Suspended Solids [mg/L]	20-Dec-21	13:41	22-Dec-21	10:44	108	2
Phosphorus (total) [mg/L]	17-Dec-21	17:16	21-Dec-21	13:21	1.88	0.04
Ammonia+Ammonium (N) [mg/L]	17-Dec-21	09:26	20-Dec-21	10:37	11.8	---

Revised December 23, 2021 - Sample collection date changed from Dec 15th to Dec 13th as per client's instructions.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027540960

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

22-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 16 December 2021
LR Report: **CA13694-DEC21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					15-Dec-21 10:31
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Field pH [no unit]	---	---	---	---	7.30
Field Temperature [celcius]	---	---	---	---	12.0
Phosphorus (total) [mg/L]	17-Dec-21	17:16	21-Dec-21	13:21	0.04
Ammonia+Ammonium (N) [mg/L]	20-Dec-21	19:48	21-Dec-21	14:12	0.04
Unionized Ammonia [mg/L as N]	20-Dec-21	19:48	21-Dec-21	14:12	< 0.001
Nitrite (as N) [mg/L]	17-Dec-21	16:07	21-Dec-21	16:16	< 0.03
Nitrate (as N) [mg/L]	17-Dec-21	16:07	21-Dec-21	16:16	7.99
Nitrate + Nitrite (as N) [mg/L]	17-Dec-21	16:07	21-Dec-21	16:16	7.99

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002752488

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 22 December 2021
LR Report: **CA13966-DEC21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Sewage Effluent (QA/QC)	6: DS-Raw Sewage Influent (QA/QC)
Sample Date & Time					20-Dec-21 07:40	20-Dec-21 07:50
Temperature Upon Receipt [°C]	---	---	---	---	4.0	4.0
Field pH [no unit]	---	---	---	---	7.28	---
Field Temperature [celcius]	---	---	---	---	10.1	---
Total Suspended Solids [mg/L]	23-Dec-21	14:56	24-Dec-21	09:49	4	163
Phosphorus (total) [mg/L]	22-Dec-21	15:56	23-Dec-21	14:15	0.04	2.04
Ammonia+Ammonium (N) [mg/L]	22-Dec-21	21:31	23-Dec-21	08:50	0.04	---

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002756468

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-December-2021

Clearford ASI Inc. (Haliburton WPCP)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 22 December 2021
LR Report: **CA13964-DEC21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sewage Effluent
Sample Date & Time					21-Dec-21 08:25
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Field pH [no unit]	---	---	---	---	7.40
Field Temperature [celcius]	---	---	---	---	11.6
Phosphorus (total) [mg/L]	22-Dec-21	15:56	23-Dec-21	14:15	0.04
Ammonia+Ammonium (N) [mg/L]	22-Dec-21	21:31	23-Dec-21	08:48	< 0.04
Unionized Ammonia [mg/L as N]	22-Dec-21	21:31	23-Dec-21	08:49	< 0.001
Nitrite (as N) [mg/L]	23-Dec-21	23:01	30-Dec-21	14:25	< 0.03
Nitrate (as N) [mg/L]	23-Dec-21	23:01	30-Dec-21	14:25	8.60
Nitrate + Nitrite (as N) [mg/L]	23-Dec-21	23:01	30-Dec-21	14:25	8.60

Note: Unionized ammonia calculated from field pH and temperature provided on the chain of custody form.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027595G7

APPENDIX D.
FLOWMETER CALIBRATION REPORTS

CALIBRATION REPORT

Report No.:	ASI 2021 FIT-182
Date:	Nov. 29, 2021

SITE:	Haliburton WPCP	**SERVICE DATE:**	Nov. 29, 2021
PROCESS AREA:	RAS	**TECHNICIAN:**	M Manley
INSTR. TAG:	FIT-182	**JOB REFERENCE:**	ASI 2021
MANUFACTURER:	F & P		
MODEL:	50XM13BXAD		
SERIAL No.:	9409b2060		
INSTR. RANGE:	10m/s		

Input	**(Test)**
Type:	55XC4310A
Min:	0.00
Max:	341.78
Meter Size (inch)	6
Range Unit	m3/hr
Cal. Factor	609.54000

Output	**(Signal)**	**(Process)**
Type or EGU:	mA	m3/hr
Min:	4.00	0.00
Max:	20.00	208.33

			Before Calibration		**After Calibration**	
Input (Y pos)	**Input %**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0	0.00%	4.00	3.99	-0.05%	3.99	-0.05%
85	24.87%	7.98	7.92	-1.49%	7.92	-1.49%
171	50.03%	12.01	11.94	-0.81%	11.94	-0.81%
256	74.90%	15.98	15.92	-0.54%	15.92	-0.54%
342	100.06%	20.01	19.96	-0.31%	19.96	-0.31%

Calibration Equipment			
Type:	Simulator	Multimeter	
Manufacturer:	F & P	Fluke	
Model:	55XC4130A	87 V	
Serial No.:	57266	13440128	
Last Cal. Date:	Nov. 5, 2020	Mar. 12, 2021	

Comments: 5895075 m3 as found
Mag meter total jumped to 5885888 m3 on power reset when returned to service.

CALIBRATION REPORT

Report No.:	ASI 2021 FIT-132
Date:	Nov. 29, 21

SITE:	Haliburton WPCP	**SERVICE DATE:**	Nov. 29, 21
PROCESS AREA:	Raw		
INSTR. TAG:	FIT-132	**TECHNICIAN:**	M Manley
MANUFACTURER:	F & P		
MODEL:	50XM13BXAD	**JOB REFERENCE:**	ASI 2021
SERIAL No.:	9409b2060		
INSTR. RANGE:	10m/s		

Input	**(Test)**
Type:	55XC4310A
Min:	0.00
Max:	546.86
Meter Size (inch)	6
Range Unit	m3/hr
Cal. Factor	609.54000

Output	**(Signal)**	**(Process)**
Type or EGU:	mA	m3/hr
Min:	4.00	0.00
Max:	20.00	333.33

			Before Calibration		**After Calibration**	
Input (Y pos)	**Input %**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0	0.00%	4.00	3.97	-0.15%	3.97	-0.15%
137	25.05%	8.01	8.01	0.04%	8.01	0.04%
273	49.92%	11.99	11.98	-0.09%	11.98	-0.09%
410	74.97%	16.00	15.96	-0.30%	15.96	-0.30%
547	100.03%	20.00	20.00	-0.03%	20.00	-0.03%

Calibration Equipment

Type:	Simulator	Multimeter	
Manufacturer:	F & P	Fluke	
Model:	55XC4130A	87 V	
Serial No.:	57266	13440128	
Last Cal. Date:	Nov. 5, 2020	Mar. 12, 2021	

Comments: 8052973 m3

APPENDIX E.
BIOSOILDS LABORATORY ANALYTICAL CERTIFICATES

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

18-January-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 January 2021
LR Report: **CA13137-JAN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					05-Jan-21 08:30
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Total Solids [mg/L]	06-Jan-21	20:23	08-Jan-21	10:26	24500
Total Kjeldahl Nitrogen [as N mg/L]	08-Jan-21	09:05	12-Jan-21	10:26	1450
Ammonia+Ammonium (N) [as N mg/L]	08-Jan-21	13:50	11-Jan-21	11:52	15.5
Nitrite (as N) [mg/L]	08-Jan-21	19:37	15-Jan-21	17:25	0.2
Nitrate (as N) [mg/L]	08-Jan-21	19:37	15-Jan-21	17:25	0.6
Nitrate + Nitrite (as N) [mg/L]	08-Jan-21	19:37	15-Jan-21	17:25	0.8
Aluminum [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	1100
Arsenic [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	< 0.1
Cadmium [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.014
Cobalt [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.04
Chromium [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.28
Copper [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	28
Mercury [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.088
Potassium [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	130
Molybdenum [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.17
Nickel [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.24
Phosphorus (Total) [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	640
Lead [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	0.3
Selenium [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	< 0.1
Zinc [mg/L]	12-Jan-21	14:50	13-Jan-21	10:16	9
E. Coli [cfu/1g dried wgt]	---	---	---	---	126531
E. Coli [cfu/100mL]	06-Jan-21	16:55	08-Jan-21	10:04	310000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002379023

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13137-JAN21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002379023

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-February-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 February 2021
LR Report: **CA12634-FEB21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Liquid Sludge
Sample Date & Time					02-Feb-21 08:15
Temperature Upon Receipt [°C]	---	---	---	---	2.0
Total Solids [mg/L]	03-Feb-21	20:10	05-Feb-21	10:30	28400
Total Kjeldahl Nitrogen [as N mg/L]	04-Feb-21	06:46	05-Feb-21	14:39	1590
Ammonia+Ammonium (N) [as N mg/L]	04-Feb-21	07:41	05-Feb-21	14:06	11.6
Nitrite (as N) [mg/L]	04-Feb-21	23:23	11-Feb-21	20:28	2.6
Nitrate (as N) [mg/L]	04-Feb-21	23:23	11-Feb-21	20:28	76
Nitrate + Nitrite (as N) [mg/L]	04-Feb-21	23:23	11-Feb-21	20:28	79
Aluminum [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	1240
Arsenic [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	< 0.1
Cadmium [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.018
Cobalt [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.16
Chromium [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.38
Copper [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	38
Mercury [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.095
Potassium [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	137
Molybdenum [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.18
Nickel [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.28
Phosphorus (Total) [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	686
Lead [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	0.3
Selenium [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	< 0.1
Zinc [mg/L]	05-Feb-21	14:30	08-Feb-21	11:14	11
E. Coli [cfu/1g dried wgt]	---	---	---	---	16549
E. Coli [cfu/100mL]	03-Feb-21	17:01	05-Feb-21	09:47	47000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002402565

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12634-FEB21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002402565

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

11-March-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 March 2021
LR Report: **CA12075-MAR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Liquid Sludge
Sample Date & Time					02-Mar-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Total Solids [mg/L]	03-Mar-21	19:20	05-Mar-21	10:23	22600
Total Kjeldahl Nitrogen [as N mg/L]	04-Mar-21	08:40	08-Mar-21	11:35	1610
Ammonia+Ammonium (N) [as N mg/L]	04-Mar-21	07:25	05-Mar-21	10:32	30.5
Nitrite (as N) [mg/L]	05-Mar-21	00:03	10-Mar-21	09:20	11
Nitrate (as N) [mg/L]	05-Mar-21	00:03	10-Mar-21	09:20	180
Nitrate + Nitrite (as N) [mg/L]	05-Mar-21	00:03	10-Mar-21	09:20	190
Aluminum [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	1200
Arsenic [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	< 0.1
Cadmium [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.016
Cobalt [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.04
Chromium [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.28
Copper [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	30
Mercury [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.093
Potassium [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	130
Molybdenum [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.18
Nickel [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.24
Phosphorus (Total) [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	660
Lead [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	0.3
Selenium [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	< 0.1
Zinc [mg/L]	09-Mar-21	16:25	10-Mar-21	11:15	10
E. Coli [cfu/1g dried wgt]	---	---	---	---	10177
E. Coli [cfu/100mL]	03-Mar-21	16:38	05-Mar-21	13:13	23000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002426694

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12075-MAR21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002426694

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-April-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 April 2021
LR Report: **CA12201-APR21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					06-Apr-21 07:47
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Total Solids [mg/L]	07-Apr-21	21:06	09-Apr-21	13:46	26300
Total Kjeldahl Nitrogen [as N mg/L]	09-Apr-21	07:22	13-Apr-21	10:41	1570
Ammonia+Ammonium (N) [as N mg/L]	08-Apr-21	21:25	09-Apr-21	10:25	24.2
Nitrite (as N) [mg/L]	09-Apr-21	08:49	13-Apr-21	15:52	< 0.2
Nitrate (as N) [mg/L]	09-Apr-21	08:49	13-Apr-21	15:52	0.6
Nitrate + Nitrite (as N) [mg/L]	09-Apr-21	08:49	13-Apr-21	15:52	0.6
Aluminum [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	1100
Arsenic [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	< 0.1
Cadmium [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.014
Cobalt [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.06
Chromium [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.30
Copper [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	28
Mercury [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.125
Potassium [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	130
Molybdenum [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.17
Nickel [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.23
Phosphorus (Total) [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	610
Lead [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	0.3
Selenium [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	< 0.1
Zinc [mg/L]	12-Apr-21	13:30	13-Apr-21	11:19	8
E. Coli [cfu/1g dried wgt]	---	---	---	---	114068
E. Coli [cfu/100mL]	07-Apr-21	17:32	09-Apr-21	14:26	300000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002460296

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12201-APR21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002460296

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

26-April-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 20 April 2021
LR Report: **CA12769-APR21**
Reference: Project #: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge Hauled
Sample Date & Time					19-Apr-21 10:20
Temperature Upon Receipt [°C]	--	---	---	---	7.0
Total Solids [mg/L]	20-Apr-21	20:17	23-Apr-21	09:24	26300
Total Kjeldahl Nitrogen [as N mg/L]	21-Apr-21	09:57	22-Apr-21	15:38	1050
Ammonia+Ammonium (N) [as N mg/L]	21-Apr-21	08:58	22-Apr-21	13:43	32.0
Nitrite (as N) [mg/L]	22-Apr-21	16:59	26-Apr-21	11:14	1.1
Nitrate (as N) [mg/L]	22-Apr-21	16:59	26-Apr-21	11:14	274
Nitrate + Nitrite (as N) [mg/L]	22-Apr-21	16:59	26-Apr-21	11:14	275
Arsenic [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	< 0.1
Aluminum [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	1200
Cadmium [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.015
Cobalt [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.05
Chromium [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.29
Copper [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	32
Mercury [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.090
Potassium [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	150
Molybdenum [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.18
Nickel [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.25
Phosphorus (Total) [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	720
Lead [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	0.3
Selenium [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	< 0.1
Zinc [mg/L]	22-Apr-21	14:46	22-Apr-21	17:05	11
E. Coli [cfu/1g dried wgt]	---	---	---	---	<380
E. Coli [cfu/100mL]	20-Apr-21	18:26	23-Apr-21	10:44	< 1000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002474605

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12769-APR21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002474605

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

12-May-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 05 May 2021
LR Report: **CA13108-MAY21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					04-May-21 11:40
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Total Solids [mg/L]	06-May-21	20:46	11-May-21	11:03	10300
Total Kjeldahl Nitrogen [as N mg/L]	06-May-21	13:14	10-May-21	18:01	640
Ammonia+Ammonium (N) [as N mg/L]	07-May-21	13:21	10-May-21	14:22	22.6
Nitrite (as N) [mg/L]	08-May-21	01:03	12-May-21	12:17	0.9
Nitrate (as N) [mg/L]	08-May-21	01:03	12-May-21	12:17	31
Nitrate + Nitrite (as N) [mg/L]	08-May-21	01:03	12-May-21	12:17	32
Aluminum [mg/L]	07-May-21	14:30	10-May-21	09:16	490
Arsenic [mg/L]	07-May-21	14:30	10-May-21	09:16	< 0.1
Cadmium [mg/L]	07-May-21	14:30	10-May-21	09:16	0.006
Cobalt [mg/L]	07-May-21	14:30	10-May-21	09:16	0.03
Chromium [mg/L]	07-May-21	14:30	10-May-21	09:16	0.14
Copper [mg/L]	07-May-21	14:30	10-May-21	09:16	12
Mercury [mg/L]	07-May-21	14:30	10-May-21	09:16	0.055
Potassium [mg/L]	07-May-21	14:30	10-May-21	09:16	85
Molybdenum [mg/L]	07-May-21	14:30	10-May-21	09:16	0.09
Nickel [mg/L]	07-May-21	14:30	10-May-21	09:16	0.11
Phosphorus (Total) [mg/L]	07-May-21	14:30	10-May-21	09:16	280
Lead [mg/L]	07-May-21	14:30	10-May-21	09:16	0.1
Selenium [mg/L]	07-May-21	14:30	10-May-21	09:16	< 0.1
Zinc [mg/L]	07-May-21	14:30	10-May-21	09:16	5
E. Coli [cfu/1g dried wgt]	---	---	---	---	106796
E. Coli [cfu/100mL]	05-May-21	16:10	10-May-21	09:57	110000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002492475

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13108-MAY21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002492475

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-June-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 02 June 2021
LR Report: **CA12117-JUN21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					01-Jun-21 07:40
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Total Solids [mg/L]	02-Jun-21	21:43	06-Jun-21	10:24	20000
Total Kjeldahl Nitrogen [as N mg/L]	03-Jun-21	10:52	14-Jun-21	22:19	806
Ammonia+Ammonium (N) [as N mg/L]	03-Jun-21	09:59	04-Jun-21	15:10	52.9
Nitrite (as N) [ug/g]	03-Jun-21	22:31	08-Jun-21	15:17	0.4
Nitrate (as N) [ug/g]	03-Jun-21	22:31	08-Jun-21	15:17	1.5
Nitrate + Nitrite (as N) [ug/g]	03-Jun-21	22:31	08-Jun-21	15:17	1.9
Aluminum [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	810
Arsenic [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	< 0.1
Cadmium [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.008
Cobalt [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.04
Chromium [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.24
Copper [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	20
Mercury [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.099
Potassium [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	110
Molybdenum [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.14
Nickel [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.17
Phosphorus (Total) [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	480
Lead [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	0.2
Selenium [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	< 0.1
Zinc [mg/L]	09-Jun-21	15:35	10-Jun-21	09:37	8
E. Coli [cfu/1g dried wgt]	---	---	---	---	28500
E. Coli [cfu/100mL]	02-Jun-21	17:48	04-Jun-21	09:30	57000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

00025308869

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12117-JUN21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002530869

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

20-July-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 07 July 2021
LR Report: **CA12214-JUL21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge Hauled
Sample Date & Time					06-Jul-21 11:00
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Total Solids [mg/L]	07-Jul-21	22:18	12-Jul-21	11:40	29100
Total Kjeldahl Nitrogen [as N mg/L]	09-Jul-21	06:43	14-Jul-21	05:56	1600
Ammonia+Ammonium (N) [as N mg/L]	08-Jul-21	07:32	13-Jul-21	21:19	52.2
Nitrite (as N) [ug/g]	12-Jul-21	16:47	14-Jul-21	17:28	0.3
Nitrate (as N) [ug/g]	12-Jul-21	16:47	14-Jul-21	17:28	0.3
Nitrate + Nitrite (as N) [ug/g]	12-Jul-21	16:47	14-Jul-21	17:28	0.6
Aluminum [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	1300
Arsenic [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	< 0.1
Cadmium [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.014
Cobalt [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.06
Chromium [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.34
Copper [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	32
Mercury [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.160
Potassium [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	110
Molybdenum [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.17
Nickel [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.23
Phosphorus (Total) [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	740
Lead [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	0.4
Selenium [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	< 0.1
Zinc [mg/L]	16-Jul-21	13:55	19-Jul-21	15:13	13
E. Coli [cfu/1g dried wgt]	20-Jul-21	07:05	20-Jul-21	07:05	89347
E. Coli [cfu/100mL]	07-Jul-21	18:46	12-Jul-21	10:02	260000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002570106

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12214-JUL21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002570106

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-August-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 04 August 2021
LR Report: **CA13139-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					03-Aug-21 11:26
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Total Solids [mg/L]	04-Aug-21	19:50	06-Aug-21	09:32	27300
Total Kjeldahl Nitrogen [as N mg/L]	05-Aug-21	11:40	09-Aug-21	14:34	1310
Ammonia+Ammonium (N) [as N mg/L]	05-Aug-21	12:53	09-Aug-21	14:16	4.6
Nitrite (as N) [mg/L]	07-Aug-21	06:29	10-Aug-21	18:53	< 0.2
Nitrate (as N) [mg/L]	07-Aug-21	06:29	10-Aug-21	18:53	63
Nitrate + Nitrite (as N) [mg/L]	07-Aug-21	06:29	10-Aug-21	18:53	63
Aluminum [mg/L]	13-Aug-21	13:29	17-Aug-21	13:55	842
Arsenic [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	< 0.1
Cadmium [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.017
Cobalt [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.05
Chromium [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.41
Copper [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	36
Mercury [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.166
Potassium [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	120
Molybdenum [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.24
Nickel [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.29
Phosphorus (Total) [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	870
Lead [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.4
Selenium [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	0.1
Zinc [mg/L]	11-Aug-21	14:41	12-Aug-21	17:29	14
E. Coli [cfu/1g dried wgt]	04-Aug-21	18:15	07-Aug-21	11:25	733
E. Coli [cfu/100mL]	04-Aug-21	18:15	07-Aug-21	11:25	2000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

00026060

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13139-AUG21**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002606070

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

01-September-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 25 August 2021
LR Report: **CA12966-AUG21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge Hauled
Sample Date & Time					24-Aug-21 07:30
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Total Solids [mg/L]	25-Aug-21	21:21	30-Aug-21	14:05	24000
Total Kjeldahl Nitrogen [as N mg/L]	26-Aug-21	07:06	31-Aug-21	11:43	1420
Ammonia+Ammonium (N) [as N mg/L]	26-Aug-21	15:08	29-Aug-21	23:20	94.2
Nitrite (as N) [ug/g]	26-Aug-21	12:59	30-Aug-21	11:15	< 0.2
Nitrate (as N) [ug/g]	26-Aug-21	12:59	30-Aug-21	11:15	< 0.3
Nitrate + Nitrite (as N) [ug/g]	26-Aug-21	12:59	30-Aug-21	11:15	< 0.3
Aluminum [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	1100
Arsenic [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	< 0.1
Cadmium [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.034
Cobalt [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.06
Chromium [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.33
Copper [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	32
Mercury [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.118
Potassium [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	130
Molybdenum [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.17
Nickel [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.25
Phosphorus (Total) [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	840
Lead [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	0.3
Selenium [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	< 0.1
Zinc [mg/L]	31-Aug-21	14:26	01-Sep-21	13:17	11
E. Coli [cfu/1g dried wgt]	01-Sep-21	14:40	01-Sep-21	14:40	187500
E. Coli [cfu/100mL]	25-Aug-21	13:48	27-Aug-21	14:13	450000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002625024

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12966-AUG21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002625024

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

14-September-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 September 2021
LR Report: **CA12304-SEP21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					07-Sep-21 08:05
Temperature Upon Receipt [°C]	---	---	---	---	16.0
Total Solids [mg/L]	08-Sep-21	18:44	13-Sep-21	17:22	10100
Total Kjeldahl Nitrogen [as N mg/L]	09-Sep-21	11:17	13-Sep-21	11:06	570
Ammonia+Ammonium (N) [as N mg/L]	09-Sep-21	13:17	10-Sep-21	15:49	4.5
Nitrite (as N) [ug/g]	11-Sep-21	10:38	13-Sep-21	13:39	4.3
Nitrate (as N) [ug/g]	11-Sep-21	10:38	13-Sep-21	13:39	81
Nitrate + Nitrite (as N) [ug/g]	11-Sep-21	10:38	13-Sep-21	13:39	85
Aluminum [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	450
Arsenic [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	< 0.1
Cadmium [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.014
Cobalt [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.02
Chromium [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.12
Copper [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	12
Mercury [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.040
Potassium [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	80
Molybdenum [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.07
Nickel [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.08
Phosphorus (Total) [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	310
Lead [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	0.1
Selenium [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	< 0.1
Zinc [mg/L]	10-Sep-21	17:12	13-Sep-21	11:56	4
E. Coli [cfu/1g dried wgt]	14-Sep-21	06:55	14-Sep-21	06:55	158416
E. Coli [cfu/100mL]	08-Sep-21	19:42	11-Sep-21	14:43	160000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002639121

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA12304-SEP21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002639121

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

15-October-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 06 October 2021
LR Report: **CA13154-OCT21**
Reference: Project#: OH19-007

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge
Sample Date & Time					05-Oct-21 07:45
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Total Solids [mg/L]	08-Oct-21	21:10	13-Oct-21	14:30	18600
Total Kjeldahl Nitrogen [as N mg/L]	07-Oct-21	17:12	08-Oct-21	12:05	1030
Ammonia+Ammonium (N) [as N mg/L]	07-Oct-21	11:18	08-Oct-21	11:39	8.9
Nitrite (as N) [ug/g]	07-Oct-21	17:56	08-Oct-21	17:48	0.3
Nitrate (as N) [ug/g]	07-Oct-21	17:56	08-Oct-21	17:48	15
Nitrate + Nitrite (as N) [ug/g]	07-Oct-21	17:56	08-Oct-21	17:48	15
Aluminum [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	1100
Arsenic [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	< 0.1
Cadmium [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.029
Cobalt [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.05
Chromium [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.26
Copper [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	28
Mercury [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.070
Potassium [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	95
Molybdenum [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.15
Nickel [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.21
Phosphorus (Total) [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	640
Lead [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	0.3
Selenium [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	< 0.1
Zinc [mg/L]	13-Oct-21	13:08	14-Oct-21	18:07	10
E. Coli [cfu/1g dried wgt]	15-Oct-21	08:18	15-Oct-21	08:18	75269
E. Coli [cfu/100mL]	06-Oct-21	16:21	08-Oct-21	07:40	140000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13154-OCT21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002675692

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

22-October-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 15 October 2021
LR Report: **CA13537-OCT21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge Hauled
Sample Date & Time					14-Oct-21 07:09
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Total Solids [mg/L]	15-Oct-21	21:15	18-Oct-21	15:45	27400
Total Kjeldahl Nitrogen [as N mg/L]	18-Oct-21	07:05	20-Oct-21	14:04	1590
Ammonia+Ammonium (N) [as N mg/L]	18-Oct-21	08:45	19-Oct-21	15:11	30.2
Nitrite (as N) [ug/g]	18-Oct-21	19:17	21-Oct-21	12:37	< 0.2
Nitrate (as N) [ug/g]	18-Oct-21	19:17	21-Oct-21	12:37	0.4
Nitrate + Nitrite (as N) [ug/g]	18-Oct-21	19:17	21-Oct-21	12:37	0.4
Aluminum [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	2000
Arsenic [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	< 0.1
Cadmium [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.056
Cobalt [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.09
Chromium [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.51
Copper [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	57
Mercury [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.149
Potassium [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	140
Molybdenum [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.26
Nickel [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.43
Phosphorus (Total) [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	1100
Lead [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.5
Selenium [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	0.1
Zinc [mg/L]	20-Oct-21	19:53	22-Oct-21	09:27	19
E. Coli [cfu/1g dried wgt]	---	---	---	---	113139
E. Coli [cfu/100mL]	15-Oct-21	13:56	17-Oct-21	12:03	310000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

00026859S1

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13537-OCT21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00026595S1

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

09-November-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 03 November 2021
LR Report: **CA13131-NOV21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Liquid Sludge
Sample Date & Time					02-Nov-21 07:50
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Total Solids [mg/L]	03-Nov-21	18:00	08-Nov-21	11:38	18500
Total Kjeldahl Nitrogen [as N mg/L]	05-Nov-21	17:07	08-Nov-21	09:36	947
Ammonia+Ammonium (N) [as N mg/L]	04-Nov-21	08:25	08-Nov-21	08:50	26.1
Nitrite (as N) [ug/g]	04-Nov-21	16:03	05-Nov-21	16:42	0.9
Nitrate (as N) [ug/g]	04-Nov-21	16:03	05-Nov-21	16:42	0.7
Nitrate + Nitrite (as N) [ug/g]	04-Nov-21	16:03	05-Nov-21	16:42	1.6
Aluminum [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	1000
Arsenic [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	< 0.1
Cadmium [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.018
Cobalt [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.05
Chromium [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.34
Copper [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	28
Mercury [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.062
Potassium [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	100
Molybdenum [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.17
Nickel [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.22
Phosphorus (Total) [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	670
Lead [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	0.2
Selenium [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	< 0.1
Zinc [mg/L]	05-Nov-21	12:42	08-Nov-21	13:27	8
E. Coli [cfu/1g dried wgt]	---	---	---	---	291892
E. Coli [cfu/100mL]	03-Nov-21	14:20	05-Nov-21	09:42	540000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0002705609

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13131-NOV21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027056O9

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

30-December-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 08 December 2021
LR Report: **CA13295-DEC21**
Reference: Project#: OH19-007

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS-Liquid Sludge
Sample Date & Time					07-Dec-21 07:15
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Total Solids [mg/L]	08-Dec-21	21:01	10-Dec-21	08:16	9570
Total Kjeldahl Nitrogen [as N mg/L]	09-Dec-21	08:04	15-Dec-21	12:44	1110
Ammonia+Ammonium (N) [as N mg/L]	09-Dec-21	18:09	13-Dec-21	11:22	4.6
Nitrite (as N) [ug/g]	10-Dec-21	12:52	13-Dec-21	07:07	0.5
Nitrate (as N) [ug/g]	10-Dec-21	12:52	13-Dec-21	07:07	1.5
Nitrate + Nitrite (as N) [ug/g]	10-Dec-21	12:52	13-Dec-21	07:07	2.0
Aluminum [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	430
Arsenic [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	< 0.1
Cadmium [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.006
Cobalt [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.02
Chromium [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.11
Copper [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	13
Mercury [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.021
Potassium [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	89
Molybdenum [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.06
Nickel [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.10
Phosphorus (Total) [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	270
Lead [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	0.1
Selenium [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	< 0.1
Zinc [mg/L]	17-Dec-21	12:12	22-Dec-21	11:54	3
E. Coli [cfu/1g dried wgt]	---	---	---	---	355277
E. Coli [cfu/100mL]	08-Dec-21	17:16	10-Dec-21	09:20	340000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Revised December 30, 2021 - Sample collection date corrected.

OnLine LIMS

0002758994

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13295-DEC21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00027589994

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

01-December-2021

Clearford ASI Inc. (Haliburton WPCP-Sludge)
Attn : Clearford Compliance

566 Arvin Avenue
Stoney Creek, ON
L8E 5P1, Canada

Phone: 519-542-7900
Fax:

Date Rec. : 24 November 2021
LR Report: **CA13835-NOV21**
Reference: Project#: OH19-007

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: DS - Liquid Sludge Hauled
Sample Date & Time					23-Nov-21 07:30
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Total Solids [mg/L]	24-Nov-21	19:46	26-Nov-21	12:33	21100
Total Kjeldahl Nitrogen [as N mg/L]	25-Nov-21	06:34	26-Nov-21	13:03	1150
Ammonia+Ammonium (N) [as N mg/L]	25-Nov-21	06:39	26-Nov-21	13:03	18.0
Nitrite (as N) [ug/g]	26-Nov-21	22:04	30-Nov-21	12:14	0.3
Nitrate (as N) [ug/g]	26-Nov-21	22:04	30-Nov-21	12:14	50
Nitrate + Nitrite (as N) [ug/g]	26-Nov-21	22:04	30-Nov-21	12:14	50
Aluminum [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	1061
Arsenic [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	< 0.1
Cadmium [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.017
Cobalt [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.05
Chromium [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.27
Copper [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	31
Mercury [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.078
Potassium [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	89
Molybdenum [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.15
Nickel [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.20
Phosphorus (Total) [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	599
Lead [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	0.4
Selenium [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	< 0.1
Zinc [mg/L]	26-Nov-21	13:59	30-Nov-21	11:50	8
E. Coli [cfu/1g dried wgt]	---	---	---	---	142180
E. Coli [cfu/100mL]	24-Nov-21	15:45	26-Nov-21	09:36	300000

Note:
- Metals and mercury were analyzed on the as-received sample.
- The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

00027229840

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA13835-NOV21**

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002729840

APPENDIX F.
CERTIFICATES OF APPROVAL FOR SHEPHERD ENTERPRISES INC.

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A710148
Issue Date: July 19, 2012

Shepherd Enterprises Inc.
6798 Highway 35, Ward 2
P.O. Box 68 Coboconk
Kawartha Lakes, Ontario
K0M 1K0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

a waste management system for the management of non-agricultural source material and processed organic waste serving:

the Province of Ontario

For the purpose of this environmental compliance approval, the following definitions apply:

a. "**Approval**" means this entire Approval document and any Schedules to it, including the application and Supporting Documentation ;

b. "**Company**" means Shepherd Enterprises Inc., or its agents or assignees;

c. "**Director**" means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the EPA;

d. "**District Manager**" means the District Manager of the MOE district office in the geographic area for which Soil Conditioners are to be applied on Sites;

e. "**EPA**" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

f. " **EPA Land Application Approval**" means a certificate of approval or provisional certificate of approval under Part V of the EPA for land application of a Soil Conditioner that has been issued by the Director;

g. " **EPA Land Application Approval Site**" means a site that has a valid EPA Land Application Approval;

h. "**Guidelines**" refers to the publication entitled "Guidelines for the Utilization of Biosolids and Other

Wastes on Agricultural Land", dated March 1996, as amended.

i. "**Ministry**" and "**MOE**" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;

j. "**NASM Plan Area**" means a NASM plan area as defined by O. Reg. 267/03 under the NMA.

k. "**NMA NASM Site**" means a NASM Plan Area that has been established in accordance with O. Reg. 267/03 under the NMA and complies with Section 8.3 of that regulation.

l. "**NMA**" means the *Nutrient Management Act 2002,* S.O, 2002 Chapter 4

m. "**NASM**" means non-agricultural source material as defined by O. Reg. 267/03 under the NMA

n. "**Land Application Site**" means a NMA NASM Site or EPA Land Application Approval Site.

o. "**Land Application Site Operator**" means the person or persons responsible for managing the farming operations or land application of Soil Conditioner at a Land Application Site and may include the Land Application Site Owner;

p. "**Land Application Site Owner**" means the owner of the land where a Land Application Site is located;

q. "**Processed Organic Waste**" means processed organic waste as defined by Regulation 347 under the EPA.

r. "**Soil Conditioner**" means NASM, processed organic waste, or other materials including biosolids applied to land to improve its characteristics for crop or ground cover growth;.

s. "**Site**" means a NMA NASM Site, EPA Land Application Approval Sites, a Waste Disposal Site Approved Under Part V of the EPA, or a sewage works approved under Section 53 of the Ontario Water Resources Act.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

TERMS AND CONDITIONS

GENERAL

1. This Approval supersedes and replaces all previously issued Certificates of Approval or any other Environmental Compliance Approval issued under Part V of the EPA with respect to this specific operation.

2. This Soil Conditioning Waste Management System shall be operated in accordance with the application for the Environmental Compliance Approval, the supporting information, and the specifications listed on Schedule "A".

3. The requirements specified in this Approval are requirements under the EPA. Issuance of this Approval in no way abrogates the Company's legal obligations to take all reasonable steps to avoid violating other applicable provisions of this legislation and other legislations and regulations.

4. The requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected in any way.

5. The Company must ensure compliance with all terms and conditions of this Approval. Any non-compliance constitutes a violation of the EPA and is grounds for enforcement.

6. a. The Company shall, forthwith upon request of the Director, District Manager, or Provincial Officer (as defined in the EPA), furnish any information requested by such persons with respect to compliance with this Approval, including but not limited to, any records required to be kept under this Approval; and

   b. In the event the Company provides the Ministry with information, records, documentation or notification in accordance with this Approval (for the purposes of this condition referred to as "Information"),

      i. the receipt of Information by the Ministry;
      ii. the acceptance by the Ministry of the Information's completeness or accuracy; or
      iii. the failure of the Ministry to prosecute the Company, or to require the Company to take any action, under this Approval or any statute or regulation in relation to the Information;

      shall not be construed as an approval, excuse or justification by the Ministry of any act or omission of the Company relating to the Information, amounting to non-compliance with this Approval or any statute or regulation.

7. When a conflict exists between the conditions of this Approval and the items listed on Schedule "A", the provisions of this Approval shall prevail. When a conflict exists between items on Schedule "A", the most recent item shall prevail.

8. The Company shall ensure that all communications/correspondence made in relation to this waste management system or to this Approval includes reference to this Approval number.

9. The Company shall notify the Director in writing of any of the following changes, within thirty (30) days of the change occurring:

   a. a change of partners where the Company is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, shall be included in the notification to the Director;

   b. a change of name of the corporation where the Company is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (form 1 or 2 under Regulation 182 made under the Corporations Information Act, R.S.O. 1990 c. C.39,)

and filed under the Corporations Information Act, shall be included in the notification to the Director; and

c. a change in directors or officers of the corporation where the Company is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" as referred to in 10(b), supra.

d. Change of owner/address of the Company truck storage yard(s).

10. Any information relating to this Approval and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

11. All records and monitoring data required by the conditions of this Approval must be kept on the Company's premises for a minimum period of five (5) years from the date of their creation.

OPERATING CONDITIONS

12. Soil conditioners shall only be delivered to an NMA NASM Site, EPA Land Application Approval Site, a Waste Disposal Site Approved Under Part V of the EPA, or a sewage works approved under Section 53 of the Ontario Water Resources Act.

13. Soil Conditioner may only be collected, transported or handled from facilities for which a valid contract is in place between the generator of the Soil Conditioner and the Company.

NMA NASM Sites

14. This approval does not authorize land application or storage of Soil Conditioner at a NMA NASM Site. For clarity, once transferred to a NMA NASM Site the Soil Conditioner must be managed and land applied in accordance with O. Reg. 267/03 under the NMA.

EPA Land Application Approval Sites

15. Soil Conditioners transferred to an EPA Land Application Approval Site; may only be transferred to a site that is approved to receive the Soil Conditioner.

16. a. The application rate, timing, and operational procedures for applying Soil Conditioner to EPA Land Application Approval Sites shall be done in accordance with the following:

    i. nitrogen fertilizer recommendation for the crop, as described in the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Publications 811 (Agronomy Guide for Field Crops) and 360 (Fruit Production Recommendations), which are revised annually;
    ii. the conditions of this Approval;
    iii. the application and supporting information for the EPA Land Application Approval Site submitted to the District Manager to obtain Site approval;
    iv. the conditions set out in the approval for the EPA Land Application Approval Site

issued by the Director; and,

v. the Guidelines.

In no case shall the application rate exceed that prescribed in the Guidelines unless specifically approved in the EPA Land Application Approval Site.

b. The application of Soil Conditioner shall be such that it does not cause surface runoff or result in groundwater contamination.

c. Soil Conditioner shall not be applied when the depth to the water table is less than 0.9 metres.

d. If subsurface injection is used, the depth to the water table, at the time of application, less the depth of injection must be equal to or greater than 0.9 metres.

e. Application of Soil Conditioner shall not be carried out:

i. when frozen ground conditions prevent the immediate infiltration or incorporation of Soil Conditioner into the soils;

ii. on ice or snow covered soils; or

iii. during rain causing runoff.

f. For spring application, fields shall only be used after spring flooding has receded.

g. The Company shall ensure that each Site is designed such that the Land Application Site Owner/Operator is capable of complying with the appropriate waiting periods between the application of Soil Conditioner and cropping and pasturing as specified in the Guidelines.

h. If at any time the results of the monthly Soil Conditioner analysis (12 month moving average) exceeds the standards identified in the Guidelines, the Company will immediately notify the District Manager and no further Soil Conditioner application from that facility will take place without the District Manager's express written approval.

i. The Company shall notify the District Manager in writing of any of the following changes, within thirty (30) days of becoming aware of the change occurring:

i. change of the Land Application Site Owner or Land Application Site Operator or both;

ii. address of the new Land Application Site Owner or change of address; and

j. Further application of the Soil Conditioner to the Land Application Site requires the written consent of the new owner or his/her legally designated agent.

VEHICLES AND EQUIPMENT

17. Only vehicles approved for the collection and transportation of the Soil Conditioner under this Approval shall be used. Any addition, deletion or other change to the fleet of vehicles, trailers and equipment including year, make, model, serial number, licence number and ownership of each vehicle, trailer or piece of equipment including any of the forgoing that are leased or rented shall be reported, in writing, to the Director within fourteen (14) days of any such change.

18. The Company shall ensure that its staff are trained in the operation and maintenance of the specific equipment which they operate in conjunction with the collection transport and handling of Soil Conditioner and in emergency procedures in the event of a spill.

19. The Company shall conduct regular inspections of the equipment under its care and control to ensure that all equipment is operated in a manner that will not cause and adverse effect on the environment. Any deficiencies that could have an adverse effect on the environment shall be promptly corrected. A written record shall be maintained which shall include, as a minimum, the following:

    a. name and signature of the trained personnel conducting the inspection;

    b. date and time of the inspection;

    c. list of equipment inspected and all deficiencies observed that could have an adverse effect on the environment;

    d. recommendations for remedial action and actions undertaken;

    e. date and time of maintenance activity; and

    f. a detailed description of the maintenance activity.

20. Every vehicle utilized to collect and transport waste pursuant to this Approval shall be insured under a vehicle liability policy for a minimum of one million dollars ($1,000,000.00) until such time as this Approval is revoked.

21. The Company shall ensure that its vehicle liability policy, or combination of vehicle and environmental liability insurance policies, cover accidents, including spills, associated with each vehicle and the use and operation of equipment on each vehicle while the vehicle is stationary or in motion.

22. The following documents shall be maintained with each vehicle operated pursuant to this Approval at all times that the vehicle is being operated or contains any wastes:

    a. a copy of this Approval;

    b. a certificate verifying the driver's successful completion of a training and safety program, if required by Regulation 347 under the EPA; and

    c. a certificate of vehicle liability insurance specifying that it provides coverage of a minimum of one million dollars ($1,000,000.00) until such time as this Approval is revoked.

23. Soil Conditioner shall not be collected, handled or transported from a facility unless a valid contract is in place between the generator of the Soil Conditioner and the Company.

RECORD KEEPING

24. When a Soil Conditioner is collected by the Company, the Company shall make a record that includes:

a. the name and location of the facility from which the soil conditioner was collected;

b. the type and quantity of Soil Conditioner collected;

c. the date the Soil Conditioner is collected;

d. the name and the applicable approval number of the intended Site to which the soil conditioner will be delivered;

25. A copy of the record described in Condition 24 shall be provided to the operator of the facility from which the Soil Conditioner was collected and a copy shall be retained in the vehicle during transport of the Soil Conditioner.

26. Upon delivery of Soil Conditioner to a Site the record referenced in Condition 24 shall be updated to identify the actual receiving Site if different from the intended receiving Site and a copy shall be provided to the receiving Site and the record shall be retained by the Company for a period of five years.

ANNUAL REPORT

27. The Company must keep written records in order to complete an Annual Report by March 31st of each year, covering the previous calendar year. The Report shall be prepared and retained at the Company's place of business. This Report shall include, but is not limited to:

a. a list of all Sites and their locations where Soil Conditioner was applied or disposed;

b. a complete and up-to-date record showing when, and the source and quantity of Soil Conditioner applied or disposed at each Site;

c. details as to the nature of any spill or upset occurring, and the action taken for clean-up, correction and prevention of future occurrences; and

d. a statement as to the compliance with all conditions of this Approval and with the inspections, monitoring, and reporting requirements of the conditions herein.

e. results of all analysis conducted on Soil Conditioners, soil and water as required by the conditions of this Approval and the EPA Land Application Approval Site.

28. The Company shall promptly take all necessary steps to contain and clean up any spills which result from operations. All spills and upsets shall be immediately reported to the Ministry's Spills Action Centre at (416) 325-3000 or 1-800-268-6060, and shall be recorded as part of the records required under condition 24 of this Approval as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

SYSTEM CLEAN-OUT PROCEDURE

29. The Company shall ensure that:

a. any part of the system that comes into contact with Soil Conditioner is cleaned prior to being

used for hauling other types of waste or materials; and

b. any part of the system that comes into contact with other types of waste or materials is cleaned prior to being used for hauling Soil Conditioner.

SCHEDULE "A"

This Schedule "A" forms part of this Environmental Compliance Approval:

1. Application dated February 2, 2012 and all supporting documentation and information submitted therewith for an amendment to Provisional Certificate of Approval to allow the transport of NASM materials to agricultural lands, signed by Mr. Michael Shepherd, Business Manager of Shepherd Enterprises Inc.
2. Email dated November 4, 2010, containing a request to include source facilities in Schedule "B", from Doug Elliot of Shepherd Environmental Services.
3. Email dated October 21, 2010, containing a request to include source facilities in Schedule "B", from Sarah Bellamy of the District Office.
4. Email dated October 14, 2010, containing a request to include source facilities in Schedule "B", from Doug Elliot of Shepherd Environmental Services.
5. Letter dated August 10, 2010, containing a request to include the Haliburton WPCP in Schedule "B", from Doug Elliot of Shepherd Environmental Services.
6. Letter dated July 9, 2010, containing a request to ammend Condition 14 (a) (ii), from Doug Elliot of Shepherd Environmental Services.
7. Electronic mail dated July 25, 2008, containing comments regarding draft Certificate and request to add Biosolids source facilities listed in three (3) Notices, from Doug Elliot of the Company.
8. Facsimile dated July 21, 2008, containing a revised vehicle list, proof of vehicle ownership and vehicle insurance and system clean-out procedure, from Doug Elliot, of the Company.
9. Letter dated June 6, 2008, containing a request to remove from the Certificate the requirement for the individual listing of disposal sites on Schedule "B", from George W. J. Shepherd of the Company.
10. Application dated January 24, 2005, submitted by Mr. George Shepherd, President, Shepherd Enterprises Incorporated, requesting the amendment.
11. Application dated September 23, 2002, submitted by Mr. Michael L. Shepherd, Shepherd Enterprises Incorporated, requesting the amendment.
12. Application dated August 15, 2001 submitted by Michael L. G. Shepherd, Shepherd Enterprises Inc., requesting the amendment.
13. Application dated August 14, 2000 submitted by George W. J. Shepherd, Shepherd Enterprises Inc., requesting an amendment.
14. Facsimile dated July 30, 1998, to Karen Wassink, Approvals Branch, MOE, from V. Shepherd, enclosing site address information.
15. Facsimile dated July 24, 1998, to Karen Wassink, Approvals Branch, MOE, from V. Shepherd, enclosing Certificate of Incorporation.

16. Letter dated July 24, 1998, from Karen Wassink, Approvals Branch, MOE, to Mr. George Shepherd, Shepherd Septic Service, acknowledging receipt of application and the application fee in the amount of $300.00.

17. Application for Certificate of Approval, dated July 6, 1998, from George Shepherd, Shepherd Septic Service (Division of Shepherd Enterprises Inc.), 6798 Highway #35, P.O. Box 68, Cobocok, Ontario, K0M 1K0, to use Biosolids from the following Water Pollution Control Plant(s): Bobcaygeon, Fenelon Falls, Minden and Bark Lake for spreading on farmland.

The reasons for the imposition of these terms and conditions are as follows:

1. The reason for conditions 1, 3, 4, 5, 7, 8, 9, 10, 11, 13 and 22 is to clarify the legal responsibilities and obligations imposed by this Approval.

2. The reason for conditions 2, 23, 24, 25, 26 and 27 is to ensure that this Waste Management System is operated in accordance with the application submitted by the Company, and not in a manner which the Director was not asked to consider.

3. The reason for conditions 6 is to ensure that appropriate Ministry staff have ready access to the system in order to confirm that the system is being operated according to this Approval. The condition is supplementary to the powers afforded a Provincial Officer pursuant to the EPA ,the Ontario Water Resources Act, and the Pesticides Act, as amended.

4. The reason for condition 12 is to ensure that this Waste Management System is used only to transport waste to sites that have been established in accordance with the, NMA and Ontario Water Resources Act and that may receive Soil Conditioners.

5. The reason for condition 14 is to clarify that Soil Conditioners transferred to a NMA NASM Site must be managed, stored and land applied in accordance with the requirements of O. Reg. 267/03 under the NMA.

6. The reason for conditions 15 and 16 is to ensure that Soil Conditioners transferred to an EPA Land Application Approval Site are managed in a manner that is protective of human health and the environment.

7. The reason for condition 17, 18 and 19 is to ensure that all vehicles, trailers and equipment including those leased or rented for operation under this Approval have been approved as part of a suitable waste transportation system to collect and transport waste as an unsuitable waste transportation system could result in a hazard to the health and safety of any person or the natural environment.

8. The reason for condition 20 is to ensure that every vehicle operated under this Approval is adequately insured under a vehicle liability policy. The transportation of Soil Conditioner in a vehicle that has not been adequately insured under a vehicle liability policy would not be in the

public interest.

9. The reason for condition 21 is to ensure that adequate insurance is available to effect suitable remedial action if an event occurs which may create a nuisance or result in a hazard to the health or safety of any person or the natural environment.

10. The reason for condition 28 is to ensure that the Company notifies the Ministry forthwith of any spills as required in Part X of the EPA so that the appropriate spills response can be determined.

11. The reason for condition 29 is to ensure that the system is thoroughly cleaned between the transportation of Soil Conditioner and other types of waste or material.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A710148 issued on November 10, 2010

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 19th day of July, 2012

Sherif Hegazy, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SJ/

c: District Manager, MOE Peterborough District
Doug Elliot/Michael Shepherd, Shepherd Enterprises Inc.

OFFICIAL ECA A710160

BIOSOLID AND HAULED SEWAGE LAGOONS

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A710160
Issue Date: December 15, 2011

Shepherd Enterprises Inc.
6798 Highway 35 P.O. Box 68
Bexley Ward, Ontario
K0M 1K0

Site Location: Shepherd Pine Grove Farms Inc.
311 County Road #41
Lot Part 8, Concession 3
Kawartha Lakes City

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

a Waste Disposal Site (Transfer and Storage), which includes a reinforced concrete storage tank to be used only for the storage of processed organic waste and a lined storage structure to be used only for the storage of hauled sewage.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this Environmental Compliance Approval and any Schedules to it, including the application and supporting documentation listed in Schedule "A".

"Biosolids" means processed organic waste or sewage biosolids, as defined in O. Reg. 347, R. R. O. 1990 or the Guidelines, from the approved MOE WPCPs;

"Company" means Shepherd Septic Service a division of Shepherd Enterprises Inc.;

"Director" means a Director of the Environmental Approvals Branch of the Ontario Ministry of the Environment;

"District Manager" means the District Manager, Peterborough District Office, Ontario Ministry of the Environment;

"EPA" means the *Environmental Protection Act* R.S.O. 1990, Chapter E.19 as amended;

"EPA Land Application Approval" means an Environmental Compliance Approval under Part V of the EPA for land application of a Soil Conditioner that has been issued by the Director;

"EPA Land Application Approval Site" means a site that has a valid EPA Land Application Approval;

"Hauled Sewage Disposal Site" means a site that has a valid Environmental Compliance Approval issued under the EPA for hauled sewage waste;

"Guidelines" refers to the publication entitled "Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land", dated March 1996, as amended or the most recent revision;

"Hauled Sewage" is as defined in ontario Regulation347, R.R.o. 1990, as amended;

"NASM Plan Area" means a NASM plan area as defined by O. Reg. 267/03 under the NMA;

"NMA NASM Site" means a NASM Plan Area that has been established in accordance with O. Reg. 267/03 under the
NMA and complies with Section 8.3 of that regulation;

"NMA" means the *Nutrient Management Act 2002,* S.O, 2002 Chapter 4;

"NASM" means non-agricultural source material as defined by O. Reg. 267/03 under the NMA;

"Land Application Site" means a NMA NASM Site or EPA Land Application Approval Site;

"Land Application Site Operator" means the person or persons responsible for managing the farming operations or
land application of Soil Conditioner at a Land Application Site and may include the Land Application Site Owner;

"Land Application Site Owner" means the owner of the land where a Land Application Site is located;

"Ministry" means the Ontario Ministry of the Environment;

"Processed Organic Waste" means processed organic waste as defined by Regulation 347 under the EPA, as amended;

"Soil Conditioner" means NASM, processed organic waste, supernatants or other materials including biosolids applied
to land to improve its characteristics for crop or ground cover growth;

"Site" means a NMA NASM Site, EPA Land Application Approval Sites, a Waste Disposal Site Approved Under Part V
of the EPA, or a sewage works approved under Section 53 of the *Ontario Water Resources Act; and*

"Trained Personnel" means knowledgeable in the following through instruction/or practice:
(i) relevant waste Management legislation, regulations and guidelines;
(ii) major environmental concerns pertaining to the waste to be handled;
(iii) occupational health and safety concerns pertaining to the processes and wastes to be handled;
(iv) management procedures including the use and operation of equipment for the processes and wastes to be handled;
(v) emergencyresponseprocedures;
(vi) specific written procedures for the control of nuisance conditions; and

(vii) the requirements of this Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Except as otherwise provided by these Conditions, the Site shall be operated in accordance with the plans, specifications and information listed in the attached Schedule A.

2. Where there is a conflict within the documents, the following shall apply:

   (a) Where there is a conflict between a provision of any document referred to in "Schedule A", and the conditions of this Approval, the conditions in this Approval shall take precedence; and

   (b) Where there is a conflict between documents listed in "Schedule A", the document bearing the most recent date shall prevail.

3. Requirements specified in this Approval are the requirements under the Act. Issuance of this Approval in no way abrogates the Company's legal obligations to take all reasonable steps to avoid violating other applicable provisions of the Act and other legislation and regulations and to obtain any other approvals required by legislation.

4. Requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.

5. The Company must ensure compliance with all terms and Conditions of this Approval. Any non-compliance constitutes a violation of the Act and is grounds for enforcement.

6. The Company shall ensure that all communications/correspondence made pursuant to this Approval reference the Site number (A 710160).

7. The Company shall notify the Director in writing of any of the following changes within thirty (30) days of the change occurring:

   a) (i) change of Owner or operator of the Site or both;

   (ii) change of address or address of the new Owner;

(iii) change of partners where the Owner or operator is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, 1991 shall be included in the notification to the Director;

(iv) any change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (form 1 or 2 of O. Reg. 182, Chapter C-39, R.R.O. 1990 as amended from time to time), filed under the Corporations Information Act shall be included in the notification to the Director; and

(v) change in directors or officers of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" as referred to in 8(a)(iv), supra;

b) In the event of any change in ownership of the Site, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the Director.

8. The Company shall allow Ministry personnel, or a Ministry authorized representative(s), upon presentation of credentials, to:

a) carry out any and all inspections authorized by Section 156, 157 or 158 of the Act, Section 15, 16, or 17 of the Ontario Water Resources Act, R.S.O. 1990, or Section 19 or 20 of the Pesticides Act, R.S.O. 1990, as amended from time to time, of any place to which this Approval relates; and,

without restricting the generality of the foregoing to:

b) (i) enter upon the premises where the records required by the Conditions of this Approval are kept;

(ii) have access to and copy, at any reasonable time, any records required by the Conditions of this Approval;

(iii) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required by the Conditions of this Approval; and

(iv) sample and monitor at reasonable times for the purposes of assuring compliance with the Conditions of this Approval.

9. a) The Company shall, forthwith upon request of the Director, District Manager, or Provincial Officer (as defined in the Act), furnish any information requested by such persons with respect to compliance with this Approval, including but not limited to, any records required to be kept under this Approval; and

b) In the event the Company provides the Ministry with information, records, documentation or notification in accordance with this Approval (for the purposes of this Condition referred to as "Information"),

(i) the receipt of Information by the Ministry;

(ii) the acceptance by the Ministry of the Information's completeness or accuracy; or

(iii) the failure of the Ministry to prosecute the Company, or to require the Company to take any action, under this Approval or any statute or regulation in relation to the Information shall not be construed as an approval, excuse or justification by the Ministry of any act or omission of the Company relating to the Information, amounting to non-compliance with this Approval or any statute or regulation.

10. All records and monitoring data required by the Conditions of this Approval must be available at the premises of Shepherd Enterprises Ltd. for a minimum of five years, unless a different requirement is stated for the records.

11. (a) All soil conditioner including *NASM* , *processed organic wastes* and *biosolids* must be managed at the Site and transported to and from the Site in accordance with Ontario Regulation 347, R.R.O. 1990 and Ontario Regulation 267/03 under the NMA.

(b) All *hauled sewage* must be managed at the *Site* and transported to and from the site in accordance with Ontario Regualation 347, R.R.O. 1990.

(c) *Soil conditioner* , or a mixture of soil conditioner from multiple generators, shall not be mixed or blended with hauled sewage, at any time.

12. This Approval does not relieve the Company from the prohibitions against pollution in the statutes and does not permit an emission into the environment that contains concentrations of contaminants that have, or are likely to have, an adverse effect on the environment.

13. The Company shall ensure compliance with all the terms and conditions of this Approval. Any non-compliance constitutes a violation of the Environmental Protection Act, R.S.O. 1990 and is grounds for enforcement.

Conditions 14 to 17 only apply to Biosolids Transfer Structure

14. Only soil conditioner including *NASM* , *processed organic wastes* and *biosolids* shall be stored and blended at this facility in the concrete structure and under the following provisions:

(a) only processed organic wastes which are generated and remain as a liquid residue from an approved Water Pollution Control Plant, and which meet the quality criteria referred to in Condition 14(b) prior to mixing or blending, may be taken into storage;

(b) the quality of all *soil conditioner* transferred to and from the Site shall meet the criteria specified in the Guidelines and/or the criteria specified in O.Reg. 267/03 under the NMA;

(c) the Company shall obtain and maintain copies of the current analyses for the *soil conditioner* from its generator or hauler;

(d) prior to land application, *soil conditioner* must be thoroughly mixed and analyzed for the parameters identified in the Guidelines and/or O.Reg. 267/03 under the NMA. Procedures for collecting the samples and the frequency of the analysis must be in accordance with the Guidelines and/or O.Reg. 267/03 under the NMA; and

(e) no *soil conditioner* shall be applied on land if its quality does not meet the criteria specified in the Guidelines and/or O.Reg. 267/03 under the NMA. In the event that *soil conditioner* does not meet the criteria, the *District Manager* shall be notified, and if directed, the *soil conditioner* must be disposed of at a waste disposal facility which is approved to receive that type of waste.

15. (a) The maximum rate at which *soil conditioner* may be received at the Site shall not exceed 500 m^3 (500,000 litres) per day; and

(b) the total volume of *soil conditioner* stored at the Site shall not exceed 3,600 m^3 (3,600,000 litres) at any time.

16. *Soil conditioner* transferred from the Site for use as a soil conditioner shall be applied to a site approved for that use, as a *NASM site* , an *EPA land application site* , or an *organic soil conditioning site* , at a rate that does not exceed those prescribed in the Guidelines, the Approval for that site, or O.Reg. 267/03 under NMA.

17. The Company shall ensure that:

(a) the Site is:

(i) constructed, operated and maintained in an environmentally safe and secure manner; and

(ii) that *soil conditioner* is properly stored at the Site; so as not to pose a threat or nuisance to the health and safety of the public, Site personnel and the environment;

(b) *Soil conditioner* is properly transported to and spread only on a NASM site, an EPA land application site, or an organic soil conditioning site that are approved to receive *soil conditioner* only, and in accordance with the conditions and limitations of the Guidelines,

the Approval for that site, or O.Reg. 267/03 under NMA;

(c) *Soil conditioner* stored in the tank at this Site shall not exceed the maximum storage capacity of the tank. The Company shall utilize the Contingency Plan identified in Condition **31**, if either the tank limit is exceeded or access to, or use of, an approved Soil Conditioner site(s) is not available;

(d) the Site personnel trained in spill contingency planning shall be on duty at all times when *soil conditioner* is being discharged to, or pumped from, the storage structure at the Site;

(e) the facility meets all the design requirements and specifications identified in Item 2 of Schedule A of this Approval. In addition, once the facility is in operation, the Company shall ensure that the facility is inspected on a routine basis and after heavy rainfall to ensure spillage or leakage has not occurred;

(f) the tank shall be periodically emptied and an internal inspection of the tank shall be carried out to ensure the integrity of its structure; and

(g) the Company shall ensure that the Site is not operated unless all air approvals under Section 9 of the Act, where applicable, have been obtained.

Conditions 18 to 28 only apply to Hauled Sewage Storage Structure

18. The maximum amount of Hauled Sewage that maybe stored in the storage structure at any time is 3, 945 m3 (3,945,000 litres) (the stated operating capacity of the storage structure).

19. The liquid depth within the storage structure shall not exceed a level 0.5 metres below the top of the storage structure (freeboard).

20. Portable toilet wastes must not be transferred into this storage structure. Such wastes shall be managed in accordance with Ontario Regulation 347.

21. The storage structure shall be emptied by no later than November 30th of each year, to facilitate visual inspection of the interior condition of the storage structure for evidence of fracture failure or leakage and to ensure that there is storage capacity available for the subsequent winter. A record of the results of the visual inspection of the interior of the storage structure must be created and maintained.

22. Shepherd Enterprises Inc. shall retain the services of a qualified consultant to submit, by March 31st each year, to the District Manager, the annual Monitoring Report covering the previous calendar year and documenting the results or the monitoring program currently in place. The annual Monitoring Report shall include, but not be limited to the following:

(a) The results and an interpretive analysis of the results of all groundwater and surface water monitoring, currently being performed which includes one spring, summer or fall sample collection, including an assessment of the need to amend the monitoring programs or to implement potential contingency measures;

(b) A general groundwater impact assessment, a general surfacewater impact assessment, and an assessment of off-site impacts;

(c) A summary of the results of the inspections required by this Approval, including a discussion of any operational problems encountered at the site and the corrective action taken;

(d) The amount of hauled sewage deposited into and removed from the storage structure and where it was disposed of;

(e) A summary of any complaints received at the site and the responses made;

(f) The status of compliance with all of the conditions of this Approval; and

(g) A copy of the annual monitoring report(s) must be maintained on the premises of Shepherd Enterprises on a permanent basis.

23. Following review of any of the analytical results or any of the reports required by this Approval, the District Manager may alter the frequencies and locations of sampling and parameters for analysis required if he/she considers it necessary for proper assessment of the operation of the hauled sewage facility and its impact on the environment.

24. The current minimum sampling requirements, as stated above, are to be carried out for a minimum period of one (1) year. If after that time, the Owner can demonstrate that the storage structure has been performing satisfactorily and without any adverse impact to the environment, the Owner can make a written request to the District Manager for alteration to the operating or monitoring conditions. The Owner must obtain written concurence or written revised requirements, from the District Manager, prior to altering the operating or monitoring conditions.

25. The Site must be maintained in a secure manner, such that unauthorized persons cannot enter the Site.

26. Hauled sewage transferred out of the storage structure may be disposed of at a Water Pollution Control Plant and/or may be land applied on a *hauled sewage disposal site* , which carries a valid Approval, for such use.

27. The maximum amount of material that may be applied to land is 15 litres per square metre per 7 days, unless a different maximum amount is stated in the Approval for the *hauled sewage disposal site.*

28. Upon written notification from the District Manager, the Approval Holder must land apply the hauled sewage and or perform other activities as directed and within the time frame specified.

Conditions 29 to 39 apply to both storage structures

Staff Training

29. The Company shall ensure that all operators at the Site have been trained with respect to:

(a) the terms, Conditions and operating requirements of this Approval;
(b) the operation and management of all transfer, storage and contingency measures equipment;
(c) any environmental concerns pertaining to the Site and materials to be transferred; and
(d) relevant waste management legislation and Regulations under the Act and Ontario Water Resources Act.

Complaint Response Procedure

30. If at any time, the Company receives complaints regarding the operation of the Site, the Company shall respond to these complaints according to the following procedure:

(a) The Company shall record each complaint. The information recorded shall include the nature of the complaint, the name, address and the telephone number of the complainant and the time and date of the complaint;

(b) Verbally notify the MOE, Peterborough District;

(c) The Company, upon notification of the complaint shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

(d) Within one (1) week of the complaint date, the company shall submit to the District Manager and retain on-site a report written iisting the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the re-occurrence of similar incidents.

Contingency Plan

31. If at any time, problems such as odours, noise, vermin, vector, litter, dust and/or any other nuisances are generated at the Site, resulting in impact on the environment and the public and/or complaint(s) received by this Ministry and validated by a Provincial Officer, then upon request of the Ministry, immediately take appropriate remedial action to rectify the problem. Appropriate remedial action may include temporary stoppage of all operations until the problem has been rectified and measures have been undertaken to prevent future occurrences;

32. Within 30 days of the issuance date of this Approval, the Company must submit, for approval by the District Manager, a detailed written Contingency Plan for this facility. The approved plan shall be implemented in the event of an emergency or spill at the site.

33. (a) The Company shall ensure that contingency equipment and materials necessary for emergency response in the event of a spill is immediately available and that operating personnel are trained in its use and the methods and procedures to be employed in the event of a spill.

(b) The company shall promptly take all necessary steps to contain and clean up any spills which result from the operation of the Site. All spills and upsets shall be immediately reported to the Ministry's Spills Action Centre at (416) 325-3000 or 1-800-268-6060 and shall be recorded in a written log or an electronic file, referred to in Condition **36** of this Approval, as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

Inspection and Record Keeping:

34. The Company shall ensure that regular inspections of the equipment and facilities, by a qualified employee, as identified in Condition **29,** is conducted, to ensure that all equipment and facilities at the Site are operated in a manner that will not cause an adverse effect on the environment. Any deficiencies, that might negatively impact the environment, detected during these regular inspections, shall be promptly corrected. A written record must be maintained at the Site, which includes the following:

(a) name and signature of qualified personnel conducting the inspection;

(b) date and time of the inspection;

(c) list of equipment inspected and all observed deficiencies that might cause an adverse effect to the environment;

(d) recommendations for remedial action and actions undertaken, including a schedule for action to be undertaken in the future;

(e) date and time of maintenance activity; and

(f) a detailed description of the maintenance activity.

35. The Company must ensure that a qualified employee conducts, on each operating day, a visual inspection of the following areas to ensure the Site is secure and that no off-site impacts such as vermin, vectors, odour, dust, litter and noise, result from the operation of the facility:

(a) visual inspection of external condition of the tank for evidence of structural failure, seepage, or overflowing;

(b) inspection of the soil conditioner level in the storage structure to ensure that a minimum 0.3 metre freeboard (distance between the liquid surface and top of the storage structure) is maintained at all times;

(c) inspection of the hauled sewage level in the storage structure to ensure that a minimum 0.5 meter freeboard (distance between the liquid surface and top of the storage structure) is maintained at all times;

(d) loading/unloading area;

(e) storage/transfer area; and

(f) security fence or barriers and property line.

36. The Company shall maintain, at the office of Shepherd Enterprises Inc., for a minimum of five years, a log book or electronic file which records daily the following information for each storage structure:

(a) date of record;

(b) client name, address, telephone number and contact person;

(c) volume, date and source of soil conditioner and/or hauled sewage received;

(d) volume, date and destination of soil conditioner and/or hauled sewage shipped from the Site;

(e) results of all analysis carried out for soil conditioner and/or hauled sewage, as required by this Approval, the Guideline, O.Reg. 267/03, the NASM plan, the EPA Land Application Approval, the hauled sewage site approval, the hauled sewage system approval, and as directed by the District Manager;

(f) all complaint(s) received and action(s) taken to rectify the problem; and

(g) description of any spill including the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

Annual Report

37. By March 31, 2012, and on an annual basis thereafter, the Company shall prepare an annual written report, covering the previous calendar year (12 month period). Each report shall be maintained for a minimum of five years at the Site and include, as a minimum, the following:

(a) the result of soil conditioner and/or hauled sewage analysis;

(b) summary of operation of the Site over the year including maintenance requirements for the storage structures and repair of the storage structures, or the like, if any;

(c) summary of volumes of soil conditioner and hauled sewage and approximate annual quantity from each source;

(d) the location of each application site or water pollution control plant, volume and date on which land application (or transfer to a water pollution control plant) occurred, including the field number; for soil conditioner and/or haulded sewage.

(e) report of any operational difficulties during removal and land application of soil conditioner and/or hauled sewage.

(f) a detailed monthly summary of the quantity of soil coinditioner and/or hauled sewage received into and transferred out from the storage structures;

(g) the results of any analysis performed for ground water monitoring, surface water monitoring, domestic well(s) on or adjacent to the site and site soils;

(h) the record of the results of the visual inspection of both the exterior area and the interior area of the storage structures;

(i) any environmental and operational problems, that could negatively impact the environment, encountered during the operation of the Site and during the facility inspections and any actions taken to mitigate the problem;

(j) a statement as to compliance with all Conditions of this Approval and with the inspection and reporting requirements of the Conditions herein; and

(k) any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

Financial Assurance

38. (a) Within 20 days of issuance of this Approval, the Owner shall submit financial assurance as defined in Section 131 of the EPA, in the amount of Seventy Thousand dollars **($70,000)** CDN. This Financial Assurance shall provide sufficient funds for the analysis, transportation, Site clean-up, monitoring and disposal of all quantities of waste on the Site at any one time;

(b) No later than March 31, 2014 and at intervals of three (3) years thereafter, the Owner shall submit to the Director, a re-evaluation of the amount of Financial Assurance to implement the actions required under Condition 38 (a). The re-evaluation shall include an assessment based on any new information relating to the environmental conditions of the Site and shall include the costs of additional monitoring and/or implementation of contingency plans required by the Director upon review of the closure plan and annual reports.

(c) Commencing on March 31, 2012, the Owner shall prepare and maintain at the Site an updated re-evaluation of the amount of Financial Assurance required to implement the actions required under Condition 38(a) for each of the intervening years in which a re-evaluation is not required to be submitted to the Director under Condition 38(b). The re-evaluation shall be made available to the Ministry, upon request; and

(d) The amount of Financial Assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any Financial Assurance is scheduled to expire or notice is received, indicating Financial Assurance will not be renewed, and satisfactory methods have not been made to replace the Financial assurance at least sixty (60) days before the Financial Assurance terminates, the Financial Assurance shall forthwith be replaced by cash.

Closure Plan

39. (a) The Company must submit, for approval by the Director, a written Closure Plan for the Site four (4) months prior to closure of the Site. This plan must include, as a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work; and

(b) Within ten (10) days of closure of the Site, the Company shall notify the District Manager, in writing, that the Site is closed and that the Site Closure Plan has been implemented.

SCHEDULE "A"

This Schedule "A" forms part of Approval No. A 710160.

1. Application for Approval of a Waste Disposal Site, dated June 20, 1997.

2. Supporting documentation submitted along with the June 20, 1997 Application, entitled Shepherd Septic Service, Sludge Transfer Facility (STF-A), Preliminary Design Brief), dated May 30, 1997,

prepared by Hydro-Mech Consulting Engineers.

3. Letter and its attachment, dated June 11, 1997, from George W. J. Shepherd and Michael L. G. Shepherd, Shepherd Septic Service to Director of Approvals Branch, MOE, re: Shepherd Septic Service - Sludge Transfer Facility (STF-A), Application for Environmental Compliance Approval.

4. Letter dated June 11, 1997, from George W. J. Shepherd, re: the consent of the landowner for the use of the property for sludge transfer facility.

5. Letter from George Shepherd and Michael Shepherd, Shepherd Septic Service, to Ms. Helen Russell, Clerk - Treasurer, Township of Bexley, re: Shepherd Septic Service - Proposed Transfer Facility.

6. Letter dated July 16, 1997, from Helen Russell, Clerk - Treasurer, Township of Bexley to Shepherd Septic Service, re: Council Meeting held July 14, 1997.

7. Letter dated July 18, 1997, from J. R. Mulder, MOE to Ms. Helen Russell, Township of Bexley.

8. Letter dated July 18, 1997, from J. R. Mulder, MOE to Mr. D. L. Leighton, County of Victoria.

9. Memorandum dated July 29, 1997, from F. Crossley, Hydrogeologist, MOE to J. R. Mulder, MOE.

10. Memorandum dated September 09, 1997, from Victor Castro, Planner, MOE to J. R. Mulder, MOE.

11. Letter dated July 31, 1998, from Michael L. Shepherd, Shepherd Septic Service to J. R. Mulder, MOE.

12. Letter and its attachment dated February 11, 1999, from Eric Cosens, Planning Department, County of Victoria to Mrs. Helen Russell, Clerk, Township of Bexley, re: Zoning Amendment to permit a Sludge Transfer Station.

13. Letter dated March 24, 1999, from Mohsen Keyvani, MOE to Mr. M. Shepherd, Shepherd Septic Service, re: Application for Sludge Transfer Facility (Waste Transfer Site), located at Lot 8, Concession 3, Township of Bexley.

14. Facsimile dated March 24, 1999, from Cameron Smith, P. Eng., Simcoe Engineering Group Limited, to Mohsen Keyvani, MOE, re: Shepherd Septic Service STF-A.

15. Facsimile and its attachment dated August 9, 1999, from Mike Shepherd, Shepherd Septic Service to Mohsen Keyvani, MOE, including a copy of the letter dated May 26, 1999, from Helen Russell, Clerk - Treasurer, Township of Bexley, re: Declaration Under Section 34(20) of the Planning Act. S.O. 1983.

16. Letter dated September 1, 1999, from Mohsen Keyvani, MOE to Mr. M. Shepherd, Shepherd Septic Service, re: Application for Sludge Transfer Facility (Waste Transfer Site).

17. Letter and its attachment from Michael L. Shepherd, Manager, Shepherd Septic Service to the Director, Environmental Assessment and Approvals Branch, MOE, dated August 14, 2000, Re: Request for Amendment to Environmental Compliance Approval A710160 (Transfer Site).

18. Letter from Brad Ross, MOE to George W. J. Shepherd, Shepherd Enterprises Inc., dated August 22, 2000, Re: Application for Approval of Waste Disposal Sites, Increase Storage Capability to 3600 cubic metres, Bexley Township, County of Victoria, MOE Reference Number 2834-4NFN66.

19. Letter from Mohsen Keyvani, MOE to George W. J. Shepherd, Shepherd Enterprises Inc., dated September 22, 2000, Re: Application for Approval of Waste Disposal Sites, Increase Storage Capability to 3600 cubic metres, Bexley Township, County of Victoria, MOE Reference Number 2834-4NFN66.

20. Letter and its attachment from Michael L. Shepherd, Manager, Shepherd Septic Service to Mohsen Keyvani, MOE, dated October 16, 2000, Re: Application for Approval of Waste Disposal Sites, Increase Storage Capability to 3600 cubic metres, Bexley Township, County of Victoria, MOE Reference Number 2834-4NFN66.

21. Facsimile and its attachment from Mike Shepherd, Shepherd Septic Service to Mohsen Keyvani, MOE, dated November 16, 2000, Re: Engineering drawing for the Biosolids storage tank.

Application to re-evaluate Financial Assurance, dated April 26, 2010 and signed by Michael L. Shepherd, General Manager, Shepherd Enterprises Inc.

The reasons for the imposition of these terms and conditions are as follows:

The reason for Conditions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 26 is to clarify the legal rights and responsibilities of the Company.

The reason for Condition 9 is to ensure that the appropriate Ministry staff have ready access to the operations of the Site which are approved under this Approval. The Condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the Environmental Protection Act, the Ontario Water Resources Act and the Pesticides Act, as amended.

The reason for Condition 14 is to ensure that environmental quality, consumer and animal health, food quality and productivity of the land is protected, before Biosolids can be applied on land.

The reason for Conditions 15, 16, 18, 19 and 20 is to ensure that the type of Biosolids received, stored and transferred at the Site is in accordance with that approved by this Approval.

The reason for Conditions 17, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32, 35 and 36 is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of people or the environment.

The reason for Condition 29 is to ensure that all operators working at the Site have been trained so that the Site is operated in a safe and environmentally acceptable manner and does not pose a threat to the health and safety of people or the natural environment.

The reason for Condition 30 is to ensure that complaints are properly and quickly resolved, and
that the complaints and follow-up actions have been documented.

The reason for Condition 33 is to ensure that staff promptly report spills and to minimize the possibility of off-site impacts and to ensure staff deal promptly and effectively with any spills that do occur.

The reason for Condition 37 is to maintain at the Site an annual record of the Site operation and a summary of the quantities and types of the Biosolidss handled at the Site.

The reason for Condition 38 is to ensure that if for any reason the Company should cease operations or abandon the Site sufficient funds will be available for the Site to be closed down and the Biosolids disposed of in an acceptable manner.

The reason for Condition 39 is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A710160 issued on November 1, 1999, as amended.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are

substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 15th day of December, 2011

Tesfaye Gebrezghi, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AT/
c: District Manager, MOE Peterborough
Michael Shepherd, Shepherd Enterprises Inc.

Ministry of the Environment

Peterborough District Office
300 Water Street
Peterborough ON K9J 8M5
Telephone: (705) 755-4300
Fax: (705) 755-4321

Ministère de l'Environnement

Bureau de district de Peterborough
300, rue Water
Peterborough ON K9J 8M5
Téléphone: (705) 755-4300
Télécopieur: (705) 755-4321

Ontario

July 14, 2009

Mr. Michael Shepherd
Shepherd Enterprises Inc.
6798 Highway 35, P.O. Box 68
Coboconk ON K0M 1K0

WHALEN

Dear Mr. Shepherd:

Re: Provisional Certificate of Approval No. S-3213-002
Organic Soil Conditioning Site,
Lot 7, Concession 9,
Laxton Ward, City of Kawartha Lakes

The attached Provisional Certificate of Approval No. S-3213-002 has been issued to you for the establishment, use and operation of an Organic Soil Conditioning Site located at Lot 7, Concession 9, Laxton Ward, City of Kawartha Lakes, for the aerobically digested sewage biosolids from the Haliburton Water Pollution Control Plant.

This Certificate of Approval has been issued subject to a number of conditions. Please ensure that you are familiar with and comply with the requirements of these conditions and please note this Certificate expires on **July 31, 2014**. Application of biosolids at this site after this date is prohibited without a renewal of this Certificate.

In addition, please be aware that all land application of non-agricultural source material must be undertaken in accordance with the requirements of the Nutrient Management Act (NMA) and Ontario Regulation 267/03.

...2/

Should you have any questions regarding this Certificate, please do not hesitate to contact either Ms. Sarah Bellamy, Environmental Officer, at (705) 755-4325, or the undersigned at (705) 755-4315.

Yours sincerely,

Hope Boehm
District Manager
Peterborough District

c: File: SI VI LA CO 9 270, Lot 7, Con. 9, Laxton, M Bickles Own, Shepherd/Haliburton
Ms. Michele Bickles, 1219 Gregory Ln, R.R.#2, Haliburton, ON K0M 1S0
Mr. Mike Whalen, 159 Laxton 8th Line, R.R.#1, Norland, ON K0M 2L0
Ms. Tammy McKelvey, CAO/Clerk, Township of Dysart et al, 135 Maple Ave., P.O. Box 389, Haliburton ON K0M 1S0
Ms. Jane Lunn, CAO, City of Kawartha Lakes, P.O. Box 9000, 26 Francis St., Lindsay, ON K9V 5R8

PROVISIONAL CERTIFICATE OF APPROVAL
FOR AN ORGANIC SOIL CONDITIONING SITE

Under the Environmental Protection Act and Regulations, and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Shepherd Enterprises Inc.
6798 Highway 35, P.O. Box 68
Coboconk ON K0M 1K0

for the establishment, use and operation of a 20.8 hectare Organic Soil Conditioning Site located on Lot 7, Concession 9, Laxton Ward, City of Kawartha Lakes, for the utilization of aerobically digested sewage biosolids from the Haliburton Water Pollution Control Plant.

All in accordance with the following documents:

(a) "Application for Approval of Hauled Sewage (septage), Sewage Biosolids and Other Wastes" dated April 16, 2009, including the site plan dated May 21, 2009 (as amended), and soils reports dated April 21, 2009 and May 14, 2009.

and the following conditions:

(1) This approval applies only to the areas shown on the site plan submitted in support of the Application for a Certificate of Approval for a Waste Disposal Site (Organic Soil Conditioning) and the spreading shall be restricted to those lands delineated on the site plan. Biosolids shall only be applied to fields #1, 2, 3,4, 5, and 6, as specified on the site plan.

(2) Except as specified on this Certificate, the utilization of biosolids shall be in accordance with the "Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land" dated March, 1996 (hereafter referred to as the Guideline) or its successor document and the letter from the District Manager, Peterborough District, Ministry of the Environment, with which this Provisional Certificate of Approval was conveyed.

(3) All sewage biosolids to be utilized at this site shall have been analyzed in accordance with the Guideline. The biosolids must meet the criteria for metal concentrations for aerobically digested sewage sludge.

(4) No biosolids shall be applied to any approved field forming part of this site unless soil samples have been taken from the field, in accordance to the Guideline. These soil samples shall be analyzed for pH and phosphorous and biosolids may be applied only if the analytical results confirm soils pH to be greater than 6.0 and phosphorous levels to be less than 60 milligrams per litre (mg/L) as per the Guideline.

(5) The biosolids application rate shall not exceed the rate specified in the Guideline for aerobically digested sewage biosolids. Application rates shall be established in accordance with the Guideline. After any field application has been completed, a report summarizing the application of biosolids will be provided to the landowner (copy to tenant if requested by tenant) in the format outlined in the Guideline. The five year loading criteria period specified in the Guideline will commence on the date of issue of

this Certificate.

(6) Biosolids application must be undertaken in a manner to provide uniform spreading on any field approved for this site and must be performed in such a manner and under such conditions that the biosolids will not flow off the field or create runoff that would carry biosolids off the field. Dumping of biosolids is not permitted.

(7) When biosolids are applied to tilled fields, they shall be incorporated into the soil within 48 hours of application, unless the field has been pre-tilled, biosolids have been injected, the aerway tool has been utilized, or there is crop residue or plant matter present on the field.

(8) Biosolids shall not be spread on any approved lands within:

- 90 metres of any individual residences;
- 450 metres of a residential area;
- 50 metres of any surface water (0-3% slope/well drained);
- 100 metres of any surface water (3-6% slope/well drained);
- 15 metres from any drilled well that has a depth of at least 15 metres and a watertight casing to a depth of at least 6 metres below ground level; and
- 90 metres from all other wells including dug wells.

Provided that there is a living crop or crop residual present in the spreading area and the aerway tool is utilized, the following reduced separation distances may be applied. Biosolids shall not be spread on any approved lands within:

- **50 metres of any surface water (3-6% slope, well drained); and**
- **25 metres of any surface water (0-3% slope, well drained);**

Provided that sewage biosolids are injected or immediately incorporated into the soil, the following reduced separation distances may be applied. Biosolids shall not be spread on any approved lands within:

- **25 metres of any individual residences;**
- **50 metres of any residential area; and**
- **20 metres of any surface water;**

Amendments to these minimum separation distances may be requested in consideration of land application methods. Amendments to the above separation distance requirements require written approval from the District Manager, Peterborough District, Ministry of the Environment.

(9) Biosolids shall not be spread on lands approved by this Provisional Certificate of Approval at times when the static groundwater level is less than 0.9 metres (3 feet) below ground surface.

(10) There shall be no spreading of biosolids on snow covered ground, or when ice covered or

frozen ground conditions prevent the normal infiltration rate of the liquid portion of the biosolids into the soil of the site.

(11) Spreading of biosolids shall not be carried out between December 1 and March 31 inclusive.

(12) Any changes to the site or to adjacent land uses during the period of this approval that may result in non-compliance with regard to: the application of biosolids to this site or the Guideline or this Provisional Certificate of Approval, shall be reported to the District Manager, Peterborough District, Ministry of the Environment, within fourteen (14) days following such changes.

(13) This Certificate of Approval expires on **July 31, 2014**. No biosolids shall be applied to this site after this date without renewal of the Certificate. Application for renewal of this Certificate of Approval must specify previous biosolids application to this site and the current loading to the site respective of the five year loading limit.

(14) All haulers using the field(s) approved under this Provisional Certificate of Approval shall have a Certificate of Approval for an Organic Waste Management System which authorizes the transportation of biosolids from the Haliburton Water Pollution Control Plant.

(15) This Certificate of Approval supersedes all other Certificates issued regarding this biosolids spreading site. All previous Certificates of Approval for the spreading of biosolids on the property or properties specified in this Provisional Certificate of Approval are hereby revoked.

(16) Requirements specific to this Provisional Certificate of Approval are minimum requirements and do not abrogate the need to take all reasonable steps to avoid violating the provisions of the applicable legislation.

(17) The requirements of the Provisional Certificate of Approval are severable. If any requirement of this Provisional Certificate of Approval, or the application of any requirement of the Provisional Certificate of Approval to any circumstances, is held invalid the application of such requirement to other circumstances and the remainder to this Provisional Certificate of Approval shall not be affected thereby.

The reasons for the imposition of these conditions are as follows:

(1) The reason for Condition 1 is to ensure that biosolids are not spread in areas which have not been approved and which could result in environmental damage.

(2) The reason for Condition 2 is to ensure that biosolids are utilized in accordance with sound environmental, agricultural and health practices as necessary to prevent damage to persons or property.

(3) The reason for Conditions 3, 4 and 5 is to assist in attaining the objective of benefiting crops through biosolids application without degrading the environment or risking health and productivity of the crops.

(4) The reason for Conditions 6, 7, 8, 9, 10, 11 and 12 is to avoid degradation of the natural environment and nuisance to property owners.

(5) The reason for Condition 13 is to ensure all biosolids land application sites are reviewed at least every five years to ensure the site complies with the guidelines.

(6) The reason for Condition 14 is to ensure that the wastes are hauled in an approved manner under the appropriate approvals and not in a manner which the Director was not asked to consider.

(7) The reason for Condition 15 is to ensure that the site is operated in accordance with the Certificate of Approval and not with a previously issued or expired Certificate.

(8) Conditions 16 and 17 have been included to clarify the legal rights and obligations of this Provisional Certificate of Approval.

You may, by written notice served upon the Director and the Environmental Review Tribunal within 15 days after receipt of this Certificate, require a hearing by the Environmental Review Tribunal. Section 142 of the Environmental Protection Act, R.S.O. 1990 as amended, provides that the notice requiring the hearing shall state:

1. The portions of each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these statutory requirements, the notice should include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Appeal;
7. The name of the Director;
8. The municipality within which the works are located;

and the notice should be signed and dated by the appellant.

This notice should be served upon:

The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

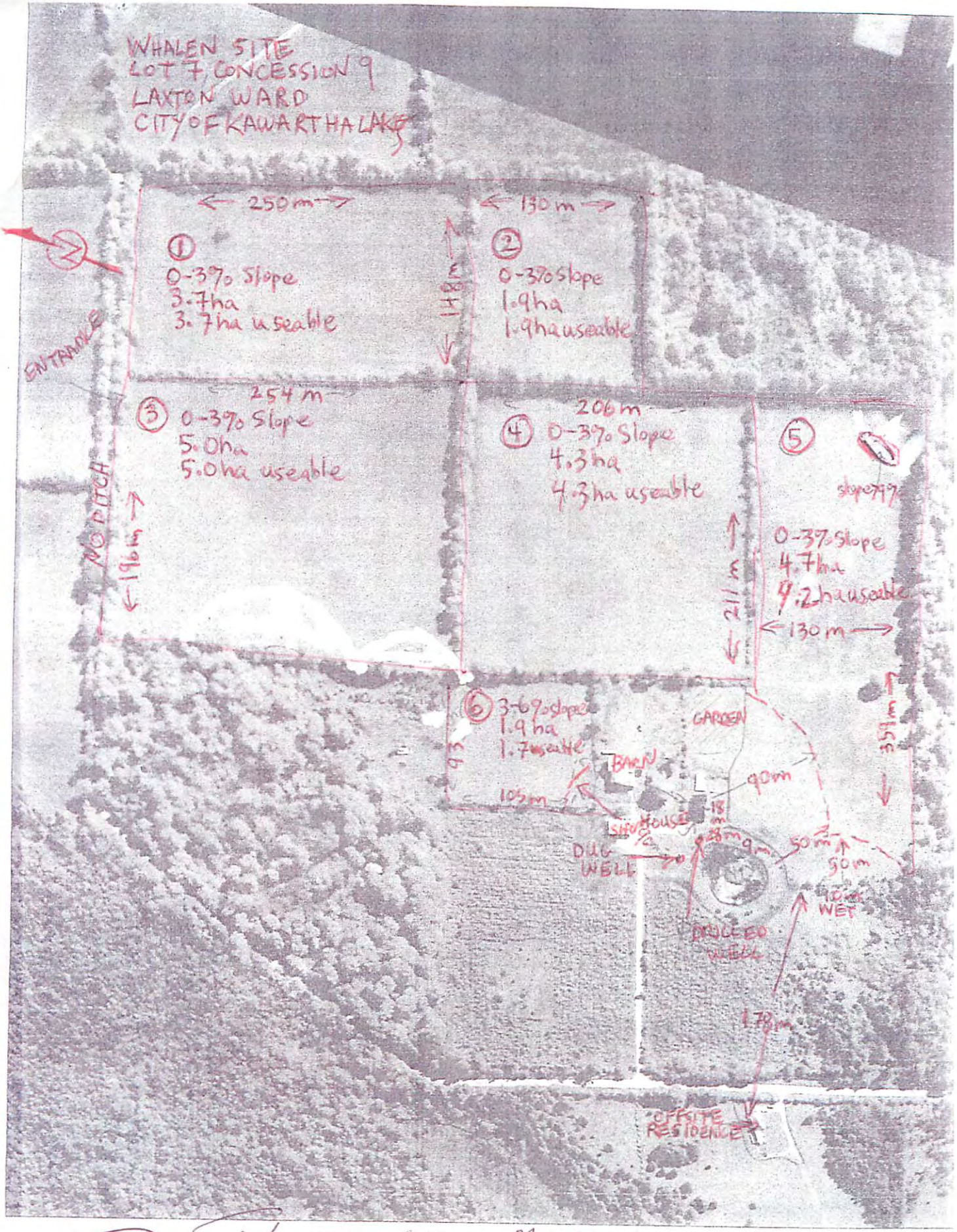
AND

The Director
Section 39, E.P.A.
Ministry of the Environment
300 Water Street, 2nd Floor, South Tower
Peterborough, Ontario
K9J 8M5

Dated at Peterborough this 14th day of July 2009.

for

Hope Boehm
Director, Section 39, E.P.A.
Ministry of the Environment



Douglas G. Elliot May 21, 09