

Payson Long
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Bureau of Program Management
625 Broadway, 12th Floor
Albany, NY 12233-7012

Arcadis CE, Inc.
855 Route 146
Suite 210
Clifton Park
New York 12065
Tel 518 250 7300
Fax 518 250 73012757
www.arcadis.com

Subject:
February 2020 Monthly Report
Fort Edward Landfill
NYSDEC Site No. 558001
Contract No. D007618-39

Date:
March 24, 2020

Contact:
Andy Vitolins

Dear Mr. Long:

Arcadis CE, Inc. (Arcadis) has prepared this letter report to summarize the leachate collection and treatment system operation, maintenance, and monitoring (OM&M) activities completed during the February 2020 reporting period at the above-referenced site.

Phone:
518.250.7300

Leachate Collection and Treatment System Operation and Maintenance

Email:
andy.vitolins@arcadis.com

The leachate collection system shut down on two occasions in February 2020 due to power loss alarms at the treatment system. The issues were resolved each time by resetting the programmable logic controller (PLC).

A total of 719,813 gallons of leachate were collected and treated through the system during February 2020. The corresponding average leachate recovery rate for the month was approximately 17.2 gallons per minute (gpm).

Our ref:
30001370 (00266434.0000)

The following activities were completed during the February 2020 operating period:

- On February 3 and 4, 2020, Arcadis conducted groundwater sampling of the newly installed Phase 3 monitoring and temporary wells, and four of the existing site wells. Results of the sampling event will be provided under separate cover.
- On February 25, 2020, Arcadis met with Aztech Environmental Technologies (Aztech) to discuss upcoming site O&M activities and review daily processes.

- Iron and solids sludge processing was performed throughout the month. Three 55-gallon drums of sludge were generated during February 2020.

System Sampling

Water samples were collected on February 18, 2020 from the following treatment system locations:

- Influent (i.e. combined flow from extraction wells EW-1, EW-2, EW-3, and EW-4);
- Clarifier Catch Tank discharge;
- Cell 3 Bypass (i.e. treatment Cell 3 discharge into the Cell 2/3 bypass pipe);
- Cell 2 Chamber (i.e. treatment Cell 2 discharge into the effluent collection chamber); and
- Polishing Pond Effluent.

No samples were collected from extraction wells EW-1, EW-2, EW-3, leachate collection well EW-4, or Cell 1 Chamber (treatment Cell 1 discharge into the effluent collection chamber). Samples from these locations are collected on a quarterly basis and will be sampled again in the second quarter of 2020.

The monthly samples were submitted to Eurofins TestAmerica for analysis of volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), metals, total dissolved solids (TDS), and total suspended solids (TSS).

The analytical results are discussed in the sections below and have been summarized in Table 1. The laboratory analytical data will be submitted to NYSDEC's EIMS Administrator in the required EQUIS EDD format.

Analytical Results

VOCs

As shown in Table 1, VOCs were detected in the Influent, Clarifier Catch Tank, Cell 3 Bypass, Cell 2 Effluent, and Polishing Pond Effluent samples but did not exceed the corresponding NYSDEC Class GA Standards.

Based on data collected in 2019, Arcadis has temporarily ceased pumping from extraction well EW-1 (the primary contributor of VOCs and PCBs to the treatment plant). EW-1 will remain off until recommendations presented in the January 31, 2018 Remedial System Optimization Report (RSO) can be implemented and evaluated. These recommendations include VOC removal within the Inclined Plate Clarifier (IPC). Air diffusers placed in the IPC, for example, may volatilize VOCs before they are discharged to the CWTS. This would reduce contaminant loading of the CWTS and the potential for VOCs impacts to the Polishing Pond.

PCBs

PCBs were not detected in the Influent, Clarifier Catch Tank, Cell 3 Bypass, Cell 2 Effluent, or Polishing Pond Effluent samples during the February 2020 sampling event (Table 1).

Metals

Iron and manganese were detected at one or more of the treatment system samples at concentrations greater than the corresponding NYSDEC Standards of 0.3 milligrams per liter (mg/L) and 0.6 mg/L, respectively. Iron concentrations ranged from a maximum of 8.74 mg/L (Influent) to a minimum of non-

detect (Cell 3 Bypass). Manganese concentrations ranged from a maximum of 1.88 mg/L (Influent) to a minimum of 0.24 mg/L (Cell 2 Bypass), which are consistent with previous data.

TDS and TSS

The concentrations of TDS and TSS continue to fluctuate between sampling events. During the February 2020 sampling event, TDS concentrations ranged between 425 mg/L and 482 mg/L; TSS concentrations ranged from non-detect and 11.4 mg/L. These data are consistent with the results from previous sampling events. Since September 2016, TDS and TSS have ranged from 210 to 4,900 mg/L and non-detect to 226 mg/L, respectively.

Next Reporting Period Planned Activities

The following activities are anticipated for March 2020:

- Continuation of iron and solids treatment and processing; and
- Routine monthly system sampling.

If you have any questions, please do not hesitate to contact me or Jeremy Wyckoff.

Sincerely,

Arcadis CE, Inc.



Andy Vitolins, P.G.
Vice President

Copies:

Jeremy Wyckoff, Arcadis
Jasmine Mullins, Arcadis
File

Enclosures:

Table 1 – February 2020 Treatment System Analytical Data

**Table 1. February 2020 Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001**

Chemical Name	NYSDEC Class GA GW Standard	NYSDEC Class GA GW Effluent Limitation	INFLUENT	CLARIFIER CATCH	CELL 3	CELL 2	PPE
			2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020
Volatile Organic Compounds (ug/L)							
ACETONE	50	50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
BENZENE	1	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BROMODICHLOROMETHANE	50	50	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BROMOFORM	50	50	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BROMOMETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-BUTANONE (MEK)	50	50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CARBON DISULFIDE	60	60	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON TETRACHLORIDE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHLOROBENZENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHLORODIBROMOMETHANE	50	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHLOROETHANE	5	5	0.8 J	0.64 J	1.0 U	1.0 U	1.0 U
CHLOROFORM	7	7	1.0 U	1.5	0.92 J	0.5 J	0.43 J
CHLOROMETHANE	5	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CYCLOHEXANE	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	0.04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	0.0006	0.0006	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DICHLOROBENZENE	3	3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-DICHLOROBENZENE	3	3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-DICHLOROBENZENE	3	3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
DICHLOROBROMOMETHANE	--	--	1.0 U	0.82 J	1.0 U	1.0 U	1.0 U
DICHLORODIFLUOROMETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CIS-1,2-DICHLOROETHYLENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TRANS-1,2-DICHLOROETHYLENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DICHLOROETHANE	0.6	0.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHYLENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DICHLOROPROPANE	1	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CIS-1,3-DICHLOROPROPENE	0.4	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
ETHYLBENZENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-HEXANONE	50	50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
ISOPROPYLBENZENE (CUMENE)	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
METHYL ACETATE	--	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
METHYL TERT-BUTYL ETHER (MTBE)	10	10	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
METHYL CYCLOHEXANE	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
METHYLENE CHLORIDE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	--	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
STYRENE	5	930	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-TETRACHLOROETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TETRACHLOROETHYLENE (PCE)	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TOLUENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-TRICHLOROBENZENE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-TRICHLOROETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLOROETHANE	1	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TRICHLOROETHYLENE (TCE)	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TRICHLOROFLUOROMETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
VINYL CHLORIDE	2	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
XYLENES, TOTAL	5	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:

Constituent detected above the NYSDEC Class GA GW Standard are in **bold**.

Constituent detected above the NYSDEC Class GA GW Effluent Limitation are highlighted in yellow.

NYSDEC Class GA GW Standard - New York State Department of Environmental Conservation Groundwater Standard and Guidance Value.

NYSDEC Class GA GW Effluent Limitation - New York State Department of Environmental Conservation Effluent Limitation.

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

J - The concentration is an approximate value.

ug/L - micrograms per liter

Table 1. February 2020 Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001

Chemical Name	NYSDEC Class GA GW Standard	NYSDEC Class GA GW Effluent Limitation	INFLUENT	CLARIFIER CATCH	CELL 3	CELL 2	PPE
			2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020
Polychlorinated Biphenyls (ug/L)							
PCB-1016 (AROCLOR 1016)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1221 (AROCLOR 1221)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1232 (AROCLOR 1232)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1242 (AROCLOR 1242)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1248 (AROCLOR 1248)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1254 (AROCLOR 1254)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1260 (AROCLOR 1260)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1262 (AROCLOR 1262)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1268 (AROCLOR 1268)	*	*	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Metals (mg/L)							
ALUMINUM	--	2.0	0.2 U	1.31	0.2 U	0.2 U	0.0842 J
ANTIMONY	0.003	0.006	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
ARSENIC	0.03	0.05	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
BARIUM	1.0	2.0	0.0395 J	0.0338 J	0.0376 J	0.0485 J	0.0389 J
BERYLLIUM	0.003	0.003	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
CADMIUM	0.005	0.01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
CALCIUM	--	--	84	76.9	108	112	103
CHROMIUM, TOTAL	0.05	0.10	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
COBALT	--	--	0.002 J	0.0023 J	0.05 U	0.05 U	0.05 U
COPPER	0.2	1.0	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
IRON	0.3	0.6	8.74	3.07	0.15 U	0.892	0.703
LEAD	0.03	0.05	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
MAGNESIUM	35	35	20.4	18.8	19.9	20	21.3
MANGANESE	0.3	0.6	1.88	1.44	0.278	0.24	0.306
MERCURY	0.0007	0.0014	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
NICKEL	0.1	0.2	0.04 U	0.0083 J	0.04 U	0.0044 J	0.04 U
POTASSIUM	--	--	2.86 JB	2.77 JB	3.21 JB	3.21 JB	3.22 JB
SELENIUM	0.01	0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
SILVER	0.05	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
SODIUM	20	--	52.6	55.8	58.3	54	50.9
THALLIUM	0.0005	0.0005	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
VANADIUM	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ZINC	2	5	0.0333	0.0202 J	0.0052 J	0.0042 J	0.0069 J
Conventional Chemistry (mg/L)							
TOTAL DISSOLVED SOLIDS	--	--	425	432	482	456	461
TOTAL SUSPENDED SOLIDS	--	--	11.2	11.4	2.5 U	3.9	10.5

Notes:

Constituents detected above the NYSDEC Class GA GW Standard are in **bold**.

Constituents detected above the NYSDEC Class GA GW Effluent Limitation are highlighted in yellow.

* The NYSDEC Class GA GW Standard and Effluent Limitation for PCBs is 0.09 ug/L.

NYSDEC Class GA GW Standard - New York State Department of Environmental Conservation Groundwater Standard and Guidance Value.

NYSDEC Class GA GW Effluent Limitation - New York State Department of Environmental Conservation Effluent Limitation.

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

B - Compound was found in the blank and sample.

J - The concentration is an approximate value.

mg/L - milligrams per liter
ug/L - micrograms per liter