ARCADIS Design & Consultancy for natural and built assets

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

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

Date:
February 14, 2020

Contact:
Andy Vitolins

Phone:
518.250.7300

Email:
andy.vitolins@arcadis.com

Our ref:
30001370 (00266434.0000)

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 January 2020 reporting period at the above-referenced site.

Leachate Collection and Treatment System Operation and Maintenance

The leachate collection system shut down on numerous occasions in January 2020 due to pump failure alarms at extraction well EW-4 and power loss alarms at the treatment system. The issues were resolved each time by resetting the programmable logic controller (PLC).

A total of 636,186 gallons of leachate were collected and treated through the system during January 2020. The corresponding average leachate recovery rate for the month was approximately 14.3 gallons per minute (gpm).

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

- On January 2, 2020, five drums of filter sludge were transported for off-site disposal by HEPACO, LLC. The disposal documents are attached to this report (Attachment 1).
- On January 2, January 3, and January 6, 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 January 30, 2020, 15 drums of soil cuttings were transported for off-site disposal by HEPACO, LLC. The disposal documents are attached to this report (Attachment 2).
- The pump and motor in leachate collection well EW-4 was cleaned and replaced due to declining flow rates from iron fouling.
- Iron and solids sludge processing was performed throughout the month. Four 55-gallon drums of sludge were generated during January 2020.

System Sampling

Water samples were collected on January 28, 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, 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 volatize 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

PCB Aroclor 1221 was detected in the Influent and Clarifier Catch Tank samples at concentrations greater than the respective NYSDEC GA Standard. PCBs were not detected in the Cell 3 Bypass, Cell 2 Effluent, or Polishing Pond Effluent samples during the January 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 7.99 mg/L (Influent) to a minimum of non-detect (Cell 3 Bypass). Manganese concentrations ranged from a maximum of 1.74 mg/L (Clarifier Catch) to a minimum of 0.164 mg/L (Polishing Pond Effluent), which are consistent with previous data.

TDS and TSS

The concentrations of TDS and TSS continue to fluctuate between sampling events. During the January 2020 sampling event, TDS concentrations ranged between 382 mg/L and 462 mg/L; TSS concentrations ranged from non-detect and 21.6 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 (ND) to 226 mg/L, respectively.

Next Reporting Period Planned Activities

The following activities are anticipated for February 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:
Attachment 1 – January 2020 Hazardous Waste Disposal Documents
Attachment 2 – January 2020 Non-Hazardous Waste Disposal Documents
Table 1 – January 2020 Treatment System Analytical Data

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NYR000235424
2. Page 1 of: 1
3. Emergency Response Phone: 1-800-888-7689
4. Manifest Tracking Number: 017624736 JJK

GENERATOR

5. Generator's Name and Mailing Address: NYSDEC Fort Edward Landfill
HS Leavy Hollow Lane
Fort Edward, NY 12828

Generator's Site Address (if different than mailing address)

Generator's Phone: 800-888-7689

6. Transporter 1 Company Name: Envirocare of Utah Inc.
U.S. EPA ID Number: NJD054126164

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Wayne Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111
U.S. EPA ID Number: MID048090633

Facility's Phone: 800-592-5489

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, Polychlorinated Biphenyls, Solid, Mixture, 9, PGIII, ERG-171	005	DM			B002 PB06
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Hazard - CD sent to US Waste
Hepaco Project # 2092.04001
Hepaco PO# 94-100596

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [illegible] on behalf of NYSDEC
Signature: [illegible] on behalf of NYSDEC
Month: 01 Day: 02 Year: 2

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
PLB			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

LAND DISPOSAL RESTRICTION & CERTIFICATION FORM

Generator Name: NYSDEC, Fort Edward landfill U.S. EPA ID No.: NYR000235424

Uniform Manifest No.: 07624736 JJK LDR Page 1 of 1

Manifest Page No. & Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	LDR Certification (One per Line)	Subcategory	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Contaminated Soil (10x) and Debris.
1-1	B007, PCB6	NWW	A		PCB's

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	NYR.000235424	1	1-800-888-7667	2092 04012

5. Generator's Name and Mailing Address: NYSDEC Fort Edward Landfill
45 Leavy Hallow Lane
Fort Edward, NY 12828
Generator's Phone: 800-888-7659

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Freehold Cartage Inc. — U.S. EPA ID Number: NJD054126164

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: American BiO Mass
36 Clearwater Dr.
Walterboro, SC 29488
Facility's Phone: 843-893-2880 — U.S. EPA ID Number: SCR000785022

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non RCRA/Non DOT Regulated Material (Soil Cuttings)	015	DM	7500	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
USW-11043
Hepaca Project# 2092.04012
Hepaco PO# 94-100630

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Nathan Klocker on behalf of NYDEC — Signature: on behalf of NYDEC — Month: 01 Day: 30 Year: 20

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month: 01 Day: 30 Year: 20

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

GENERATOR'S/SHIPPER'S INITIAL COPY

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

ARCADIS Design & Consultancy for natural and built assets

Chemical Name	NYSDEC Class GA GW Standard	NYSDEC Class GA GW Effluent Limitation	INFLUENT 1/28/2020	CLARIFIER CATCH 1/28/2020	CELL 3 1/28/2020	CELL 2 1/28/2020	EFFLUENT 1/28/2020
Volatile Organic Compounds (ug/L)							
ACETONE	50	50	5.0 U	5.0 U	5.0 U	5.0 U	6.3
BENZENE	1	1	0.2 J	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHLOROFORM	7	7	1.0 U	1.0 U	0.44 J	0.35 J	1.0 U
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
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:
Constitutents detected above the NYSDEC Class GA GW Standard are in **bold**.
Constitutents 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. January 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 1/28/2020	CLARIFIER CATCH 1/28/2020	CELL 3 1/28/2020	CELL 2 1/28/2020	EFFLUENT 1/28/2020
Polychlorinated Biphenyls (ug/L)							
PCB-1016 (AROCLOR 1016)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1221 (AROCLOR 1221)	*	*	**2.1**	**3.0**	0.4 U	0.4 U	0.4 U
PCB-1232 (AROCLOR 1232)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1242 (AROCLOR 1242)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1248 (AROCLOR 1248)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1254 (AROCLOR 1254)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1260 (AROCLOR 1260)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1262 (AROCLOR 1262)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1268 (AROCLOR 1268)	*	*	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U
Metals (mg/L)							
ALUMINUM	--	2.0	0.2 U	1.1	0.2 U	0.2 U	0.115 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	0.0386 J	0.0337 J	0.038 J	0.0526 J	0.0359 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	--	--	77.3	78.5	94.9	96.2	88
CHROMIUM, TOTAL	0.05	0.10	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
COBALT	--	--	0.0024 J	0.0022 J	0.05 U	0.05 U	0.05 U
COPPER	0.2	1.0	0.025 U	0.0081 J	0.025 U	0.025 U	0.025 U
IRON	0.3	0.6	**7.99**	**5.43**	0.15 U	**3.15**	**0.398**
LEAD	0.03	0.05	0.0074 J	0.0075 J	0.0058 J	0.0044 J	0.004 J
MAGNESIUM	35	35	17.6	18.2	16.9	16.7	16.4
MANGANESE	0.3	0.6	**1.72**	**1.74**	**0.416**	0.267	0.164
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	0.04 U	0.04 U	0.04 U	0.04 U
POTASSIUM	--	--	2.58 J	2.60 J	3.79 J	3.14 J	2.81 J
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	--	**46.6**	**48.3**	**47.1**	**44.7**	**37.9**
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	0.0295 J	0.0182 J	0.005 J	0.0065 J	0.0042 J
Conventional Chemistry (mg/L)							
TOTAL DISSOLVED SOLIDS	--	--	438	382	470	462	456
TOTAL SUSPENDED SOLIDS	--	--	21.6	15.2	2.5 U	14.7	2.5 U

Notes:
Constitutents detected above the NYSDEC Class GA GW Standard are in **bold**.
Constitutents 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.
J - The concentration is an approximate value.
mg/L - milligrams per liter
ug/L - micrograms per liter