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
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Subject:
December 2021 Monthly Report
Fort Edward Landfill
NYSDEC Site No. 558001
Contract No. D009804-7

Date:
January 18, 2022

Contact:
Andy Vitolins, P.G.

Phone:
518.250.7300

Email:
andy.vitolins@arcadis.com

Our ref:
30055713

Dear Mr. Long:

Arcadis of New York, 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 December 2021 reporting period at the above-referenced site.

LEACHATE COLLECTION AND TREATMENT SYSTEM OPERATION AND MAINTENANCE

System Performance

A total of 657,941 gallons of leachate were collected and treated through the system during December 2021. The monthly average total leachate recovery rate for leachate extraction wells EW-2, EW-3, and leachate collection well EW-4 was approximately 14.7 gallons per minute (gpm).

System Operation Summary

During each site visit, Arcadis personnel completed a NYSDEC Daily Inspection Report (Attachment A) to summarize site conditions and work performed. A Arcadis Weekly O&M Log (Attachment B) was completed to record system readings and document system performance.

The following activities were completed during the December 2021 operating period:

- On December 21, 2021, NIMS placed sand on landfill access roads to improve traction and prevent new ice from forming.
- On December 21, 2021, Arcadis replaced the existing Aries 305 Bleach drum with Aries 345 Sodium Permanganate. This replacement was chosen to eliminate chlorine gas production in and to reduce health and safety risks and equipment damage.
- Iron and solids sludge processing was performed throughout the month. Three 55-gallon drums of Filter Sludge were generated during December 2021.
- Updated the National Fire Protection Association (NFPA) placard on the Treatment System building exterior in accordance with the sodium permanganate safety data sheet (SDS).
- Repaired the landfill mid-cap swale gabion caging facing leachate collection well EW-4.
- Collected routine monthly treatment system samples.

Additional details of activities completed in December 2021 are provided in Appendix A.

SYSTEM SAMPLING

Monthly water samples were collected by Arcadis on December 14, 2021 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 Effluent (i.e., treatment Cell 2 discharge into the effluent collection chamber); and
- Polishing Pond Effluent (PPE).

Samples were also collected from extraction wells EW-1, EW-2, EW-3, leachate collection well EW-4, and Cell 1 Effluent (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 first quarter of 2022.

The monthly and quarterly 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.

System Analytical Results

During the December 2021 sampling event, there were no Fort Edward State Pollutant Discharge Elimination System (SPDES) Equivalency Permit Limit exceedances at the Polishing Pond Effluent for VOCs and conventional chemistry. Iron and nickel exceeded the Fort Edward SPDES Permit Limits at the Polishing Pond Effluent sampling location. Additional details of the system analytical results are provided below.

VOCs

As shown in Table 1, VOCs were detected in the Influent, Clarifier Catch Tank, Cell 2 Effluent, and Polishing Pond Effluent samples. VOCs were not detected in the Polishing Pond Effluent at concentrations greater than the compound quantitation limit.

PCBs

PCBs were not detected at concentrations greater than the reporting limit of 1.0 micrograms per liter (µg/L) during the December 2021 sampling event.

Metals

Iron concentrations ranged from a maximum of 10.6 milligrams per liter (mg/L) (Influent) to a minimum of 0.836 mg/L (Polishing Pond Effluent). The PPE iron concentration of 0.836 mg/L exceeded the Fort Edward SPDES Equivalency Permit Limit of 0.3 mg/L. Nickel concentrations ranged from a maximum of 0.025 milligrams per liter (mg/L) (Influent) to a minimum of 0.0136 mg/L estimated (Cell 2 Effluent). The PPE nickel concentration of 0.017 mg/L estimated exceeded the Fort Edward SPDES Equivalency Permit Limit of 0.0096 mg/L.

There were no other metal concentrations which exceeded the Fort Edward SPDES Equivalency Permit Limits in December 2021. Additional metal concentrations are shown on Table 1.

Conventional Chemistry

As shown on Table 1, TDS concentrations ranged from 402 mg/L (Cell 3 Bypass) to 570 mg/L (Influent), and TSS concentrations ranged from non-detect in several samples to 28 mg/L (Influent). 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 591 mg/L, respectively.

NEXT REPORTING PERIOD PLANNED ACTIVITIES

The following activities are anticipated for January 2022:

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

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

Sincerely,

Arcadis of New York, Inc.

Vice President

Copies:
Jeffrey Dyber, NYSDEC
Jeremy Wyckoff, P.G., Arcadis
Jasmine Mullins, E.I.T., Arcadis
Todd Carignan, Arcadis
File

Enclosures:

Attachment A – NYSDEC Daily Inspection Reports

Attachment B – Arcadis Weekly O&M Logs

Table 1 – December 2021 Treatment System Analytical Data

ATTACHMENT A

NYSDEC Daily Inspection Reports

Report No. 68 **Fort Edward Landfill - NYSDEC Site No. 558001** Date: 12/07/2021

NYSDEC
Division of Environmental Remediation

NYSDEC Contract No. D009804

Superintendent:

NYSDEC PM: Payson Long

Consultant PM: Andy Vitolins, P.G.

Consultant Site Inspectors: Colby Churchill

Site Location: Hudson Falls, New York

Weather Conditions

General Description	Sunny	AM	Cloudy	PM
Temperature	32 °F	AM	28 °F	PM
Wind	6 MPH WNW	AM	7 MPH W	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No **X**	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No	NA **X**
Were there any nuisance issues reported/observed on this date?	*Yes	No **X**	NA

Health & Safety Comments

None at this time.

Summary of Work Performed	Arrived at site:	0830	Departed Site:	1650

- Payson Long and associates of NYSDEC were on-site from 1115 to 1145 for a site walk.
- Completed prefill, onstream, blowdown, and cake discharge of the Filter Press.
- Containerized one 55-gallon drum of Filter Press Filter Sludge.
- Completed subsequent prefill of the Filter Press.
- Repeatedly transferred sludge from Inclined Plate Clarifier (IPC) to Thickener Tank.
- Performed routine housekeeping and chemical inspection within the Treatment System building.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No **X**	NA
Were there any vehicles which were not tarped?	* Yes	No	NA **X**
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA **X**

Personnel and Equipment

Individual	Company	Trade	Total Hours
Colby Churchill	Arcadis	Jr. Engineer	8.4

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

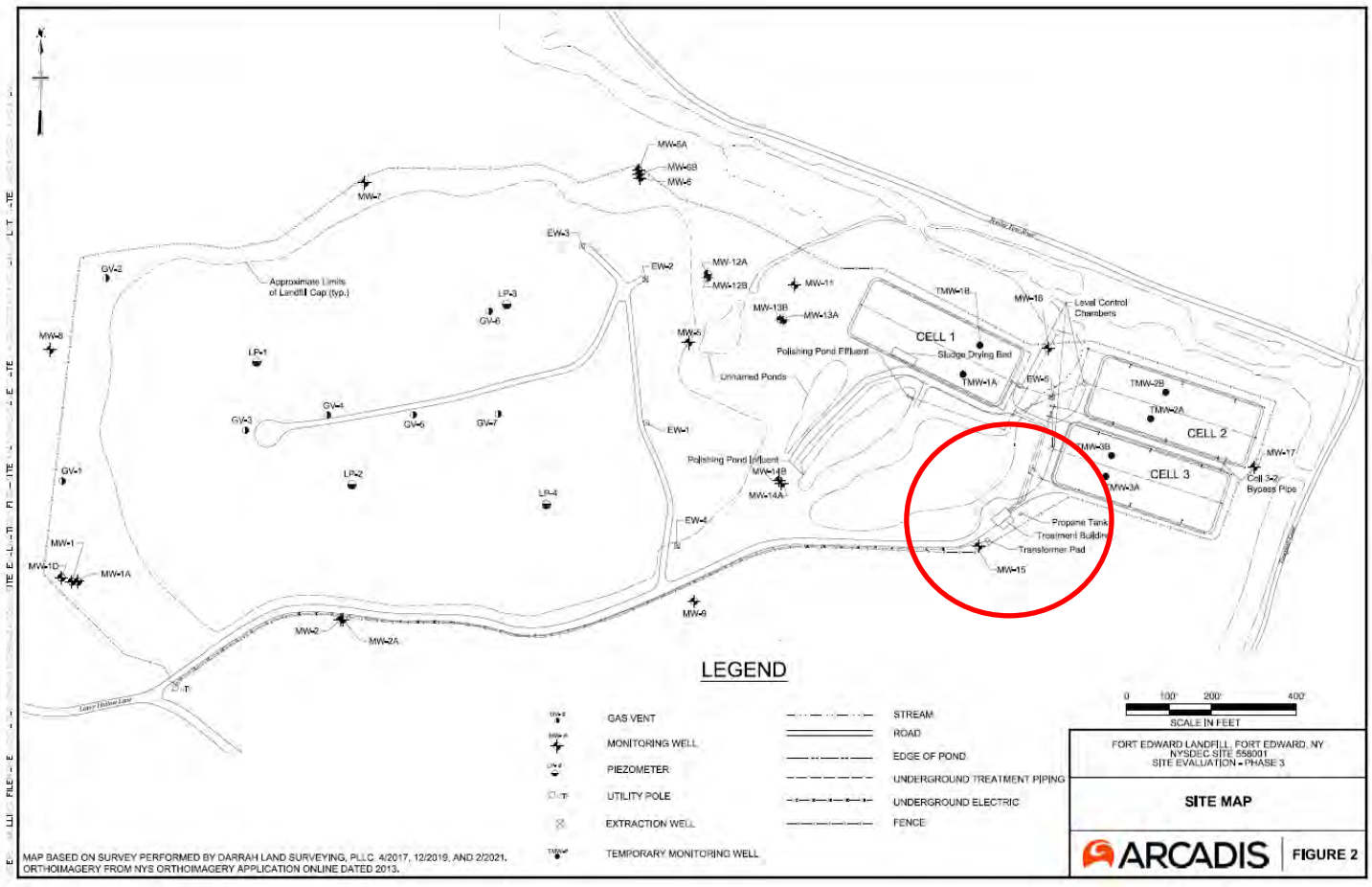
None at this time.

Visitors to Site			
Name	**Representing**	**Entered Exclusion/CRZ Zone**	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives	
Name	**Representing**
Payson Long	NYSDEC

Project Schedule Comments
None at this time.
Issues Pending
None at this time.
Interaction with Public, Property Owners, Media, etc.
None at this time.

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on December 7, 2021.

Site Photographs (Descriptions Below)	
	
View of IPC plates before cleaning.	View of clear IPC discharge.
Comments	
None at this time.	
Site Inspector(s): Colby Churchill	**Date:** 12/07/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments: None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to any of 1-4 above: • If it is not critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it is critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
Comments: None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☒
Comments: None at this time.			

Report No. 69 **Fort Edward Landfill - NYSDEC Site No. 558001** Date: 12/14/2021

NYSDEC
Division of Environmental Remediation

NYSDEC Contract No. D009804

Superintendent:

NYSDEC PM: Payson Long

Consultant PM: Andy Vitolins, P.G.

Consultant Site Inspectors: Colby Churchill

Site Location: Hudson Falls, New York

Weather Conditions

General Description	Sunny	AM	Sunny	PM
Temperature	36 °F	AM	48 °F	PM
Wind	8 MPH NNW	AM	6 MPH NE	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No **X**	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No	NA **X**
Were there any nuisance issues reported/observed on this date?	*Yes	No **X**	NA

Health & Safety Comments

None at this time.

Summary of Work Performed	Arrived at site:	0800	Departed Site:	1705

- Competed routine monthly Treatment System sampling. Sample coolers were picked up by Pace courier.
- Completed onstream, blowdown, and cake discharge of the Filter Press.
- Containerized one 55-gallon drum of Filter Press Filter Sludge.
- Completed subsequent prefill and partial onstream of the Filter Press.
- Repeatedly transferred sludge from Inclined Plate Clarifier (IPC) to Thickener Tank.
- Performed routine housekeeping and chemical inspection within the Treatment System building.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No **X**	NA
Were there any vehicles which were not tarped?	* Yes	No	NA **X**
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA **X**

Personnel and Equipment

Individual	Company	Trade	Total Hours
Colby Churchill	Arcadis	Jr. Engineer	9.1

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

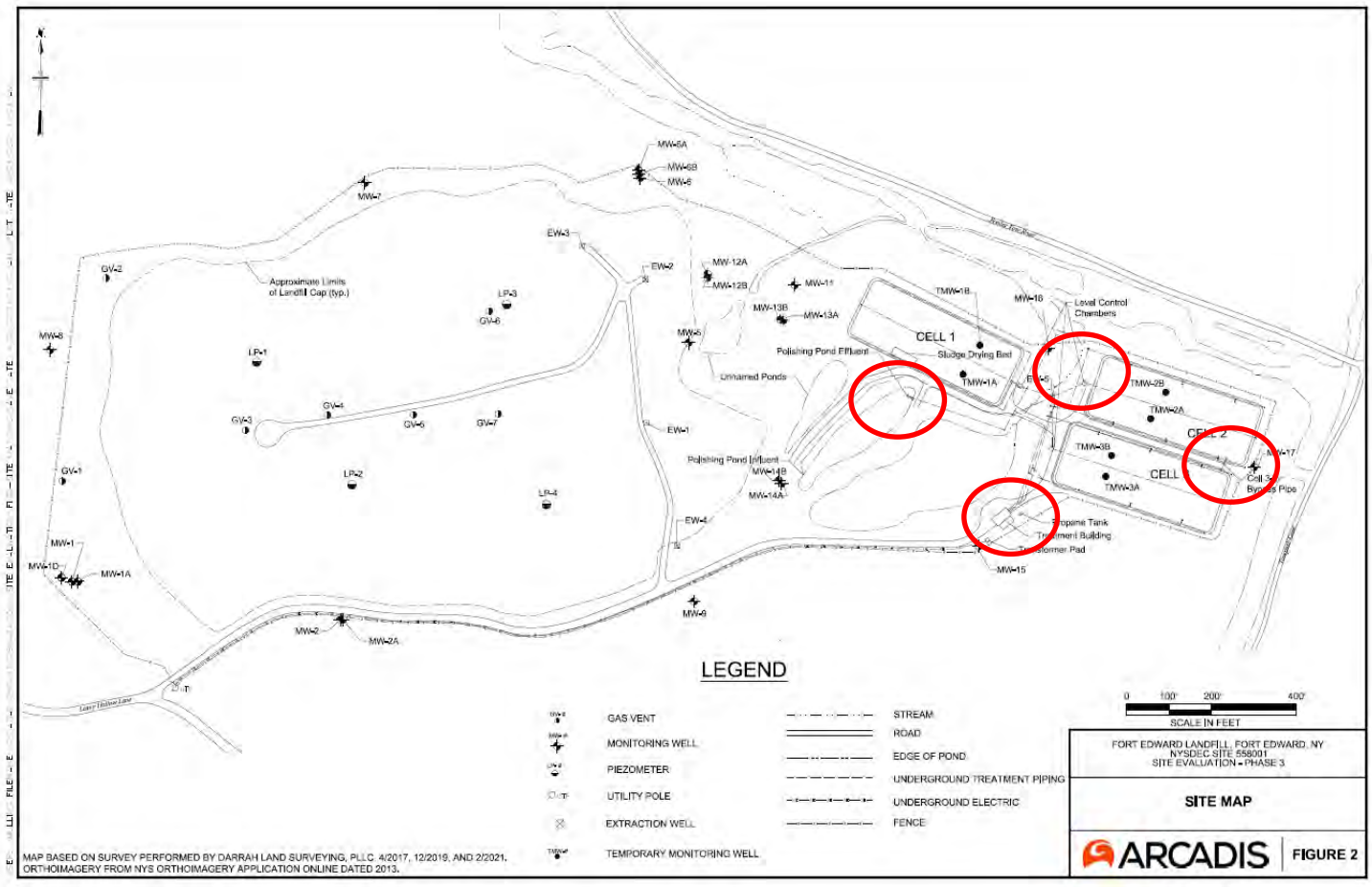
None at this time.

Visitors to Site			
Name	**Representing**	**Entered Exclusion/CRZ Zone**	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives	
Name	**Representing**

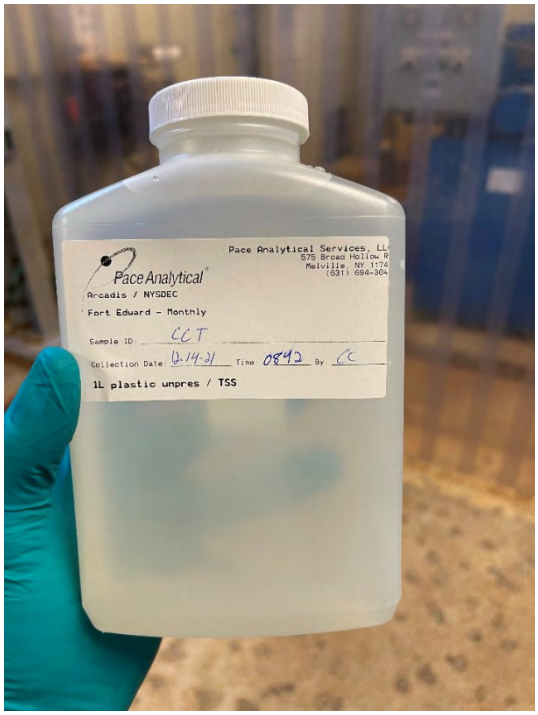
Project Schedule Comments
None at this time.
Issues Pending
None at this time.
Interaction with Public, Property Owners, Media, etc.
None at this time.

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on December 14, 2021.

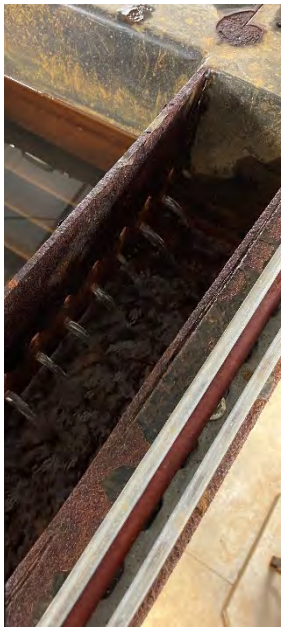
Site Photographs (Descriptions Below)



View of Clarifier Catch Tank (CCT) sample.

View of Filter Press Filter Sludge during cake discharge.

View of IPC mixing chambers.



View of IPC discharge.

Comments

None at this time.

Site Inspector(s): Colby Churchill **Date:** 12/14/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments: None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to any of 1-4 above: • If it is not critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it is critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
Comments: None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☒
Comments: None at this time.			

Report No. 70 **Fort Edward Landfill - NYSDEC Site No. 558001** Date: 12/21/2021

NYSDEC
Division of Environmental Remediation

NYSDEC Contract No. D009804

Superintendent:

NYSDEC PM: Payson Long

Consultant PM: Andy Vitolins, P.G.

Consultant Site Inspectors: Colby Churchill, Jasmine Mullins

Site Location: Hudson Falls, New York

Weather Conditions

General Description	Cloudy	AM	Clear	PM
Temperature	27 °F	AM	32 °F	PM
Wind	6 MPH NW	AM	5 MPH N	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No **X**	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No	NA **X**
Were there any nuisance issues reported/observed on this date?	*Yes	No **X**	NA

Health & Safety Comments

None at this time.

Summary of Work Performed	Arrived at site:	0755	Departed Site:	2000

- NIMS plow truck onsite to apply sand to landfill access roads.
- Teal's trailer onsite for delivery of two ARIES 345 Sodium Permanganate 55-gallon drums and four ARIES 2130 Coagulant 55-gal drums.
- Stern's Towing wrecker onsite to tow out Teal's trailer which got stuck in the snow around Cell 3.
- Replaced ARIES 305 (Bleach) with ARIES 345.
- Updated National Fire Protection Association (NFPA) placard outside of the Treatment System building.
- Repeatedly transferred sludge from the Incline Plate Clarifier (IPC) to the Thickener Tank.
- Completed onstream and blowdown of the Filter Press.
- Containerized one 55-gallon drum of Filter Press Filter Sludge.
- Completed subsequent prefill and partial onstream of the Filter Press.
- Repaired a portion of the landfill mid-cap swale gabion caging facing extraction well EW-4.
- Sprayed down the inside of the Clarifier Catch Tank (CCT).
- Performed routine housekeeping within the Treatment System building.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No **X**	NA
Were there any vehicles which were not tarped?	* Yes	No	NA **X**
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA **X**

Personnel and Equipment

Individual	Company	Trade	Total Hours
Colby Churchill	Arcadis	Jr. Engineer	12.1
Jasmine Mullins	Arcadis	Engineer	12.1

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

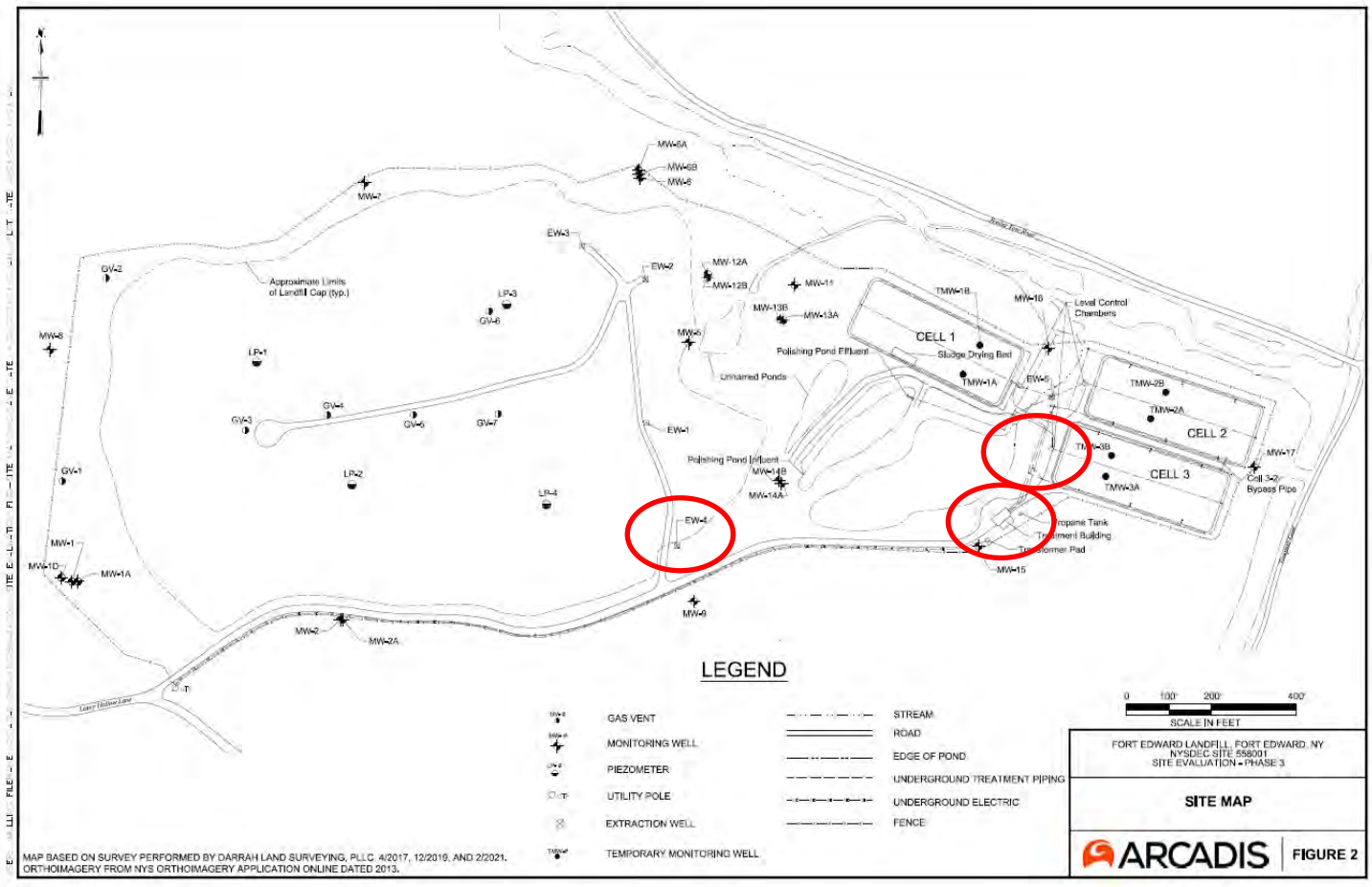
None at this time.

Visitors to Site			
Name	**Representing**	**Entered Exclusion/CRZ Zone**	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives	
Name	**Representing**

Project Schedule Comments
None at this time.
Issues Pending
None at this time.
Interaction with Public, Property Owners, Media, etc.
None at this time.

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on December 21, 2021.

Site Photographs (Descriptions Below)

View of new ARIES 345 drum online.

View of updated NFPA placard.

Comments
None at this time.

Site Inspector(s): Colby Churchill, Jasmine Mullins

Date: 12/21/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments: None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to <u>any</u> of 1-4 above: • If it is <u>not</u> critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it <u>is</u> critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
<u>Comments:</u> None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☒
<u>Comments:</u> None at this time.			

Report No. 71 **Fort Edward Landfill - NYSDEC Site No. 558001** Date: 12/23/2021

NYSDEC
Division of Environmental Remediation

Site Location: Hudson Falls, New York

NYSDEC Contract No. D009804

Superintendent:

NYSDEC PM: Payson Long

Consultant PM: Andy Vitolins, P.G.

Consultant Site Inspectors: Colby Churchill

Weather Conditions

General Description	Sunny	AM	Cloudy	PM
Temperature	37 °F	AM	39 °F	PM
Wind	5 MPH W	AM	3 MPH W	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No **X**	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No	NA **X**
Were there any nuisance issues reported/observed on this date?	*Yes	No **X**	NA

Health & Safety Comments

None at this time.

Summary of Work Performed	Arrived at site:	1145	Departed Site:	1245

- Upon arrival, Aries 345 Sodium Permanganate was dosing as normal.
- Confirmed proper operation of the Aries 345 dosing pump.
- Completed inspection of sludge ports, Inclined Plate Clarifier (IPC), Clarifier Catch Tank (CCT), and Polishing Pond.
- Delivered supplies to the site.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No **X**	NA
Were there any vehicles which were not tarped?	*Yes	No	NA **X**
Were there any vehicles which were not decontaminated prior to exiting the work site?	*Yes	No	NA **X**

Personnel and Equipment

Individual	Company	Trade	Total Hours
Colby Churchill	Arcadis	Jr. Engineer	1.0

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

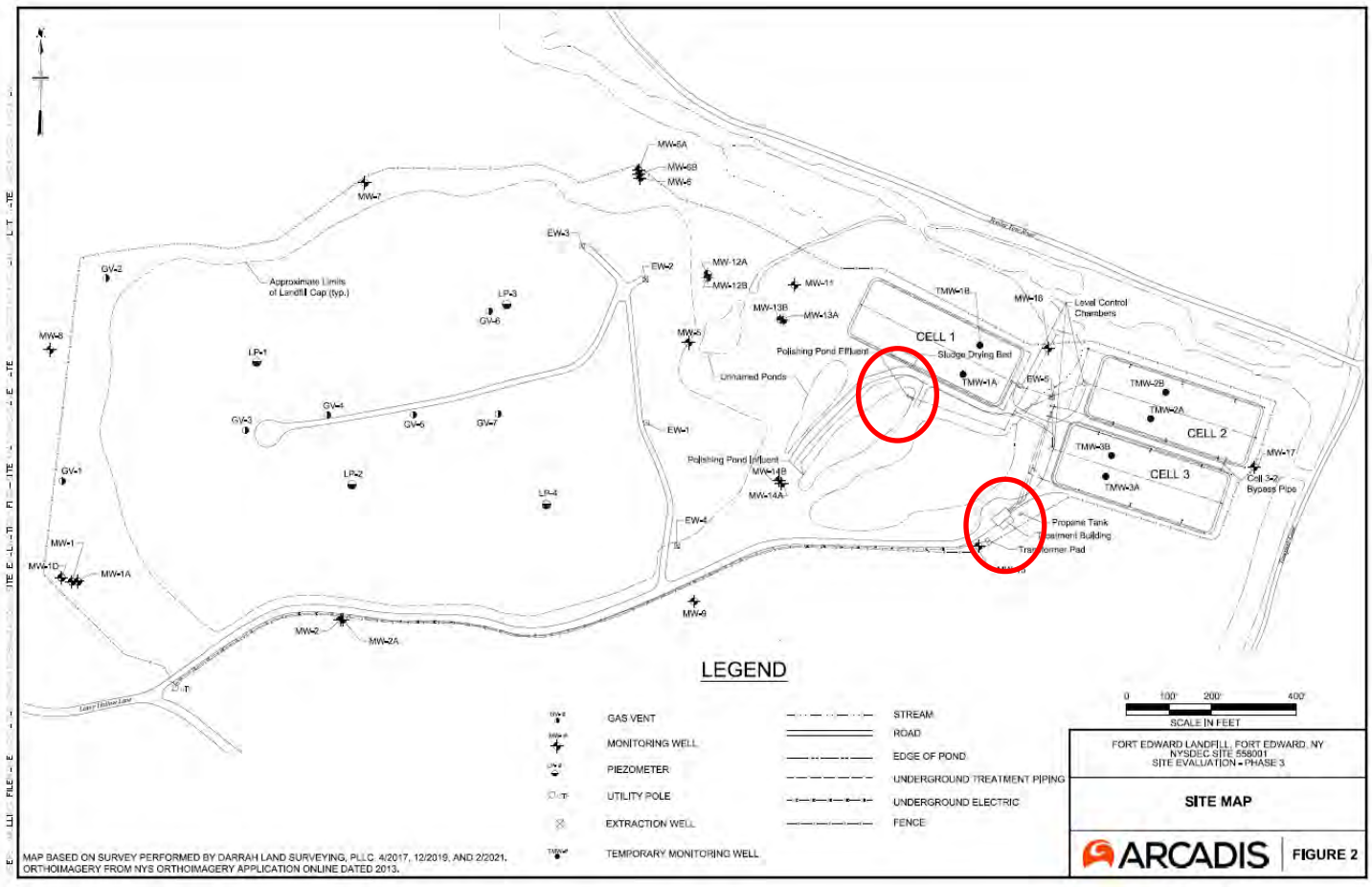
None at this time.

Visitors to Site			
Name	**Representing**	**Entered Exclusion/CRZ Zone**	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives	
Name	**Representing**

Project Schedule Comments
None at this time.
Issues Pending
None at this time.
Interaction with Public, Property Owners, Media, etc.
None at this time.

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on December 23, 2021.

Site Photographs (Descriptions Below)	
	
View of Sodium Permanganate pump.	View of clear IPC discharge.
Comments	
None at this time.	
Site Inspector(s): Colby Churchill	**Date:** 12/23/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments: None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to <u>any</u> of 1-4 above: • If it is <u>not</u> critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it <u>is</u> critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
<u>Comments:</u> None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☒
<u>Comments:</u> None at this time.			

Report No. 72 **Fort Edward Landfill - NYSDEC Site No. 558001** Date: 12/28/2021

NYSDEC
Division of Environmental Remediation

NYSDEC Contract No. D009804

Superintendent:

NYSDEC PM: Payson Long

Consultant PM: Andy Vitolins, P.G.

Consultant Site Inspectors: Colby Churchill

Site Location: Hudson Falls, New York

Weather Conditions

General Description	Cloudy	AM	Cloudy	PM
Temperature	22 °F	AM	35 °F	PM
Wind	2 MPH WSW	AM	4 MPH SW	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No **X**	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No	NA **X**
Were there any nuisance issues reported/observed on this date?	*Yes	No **X**	NA

Health & Safety Comments

None at this time.

Summary of Work Performed	Arrived at site:	0830	Departed Site:	1715

- Completed blowdown of the Filter Press.
- Completed subsequent prefill, onstream, and partial blowdown of the Filter Press.
- Repeatedly transferred sludge from Inclined Plate Clarifier (IPC) to Thickener Tank.
- Transferred approximately 3 inches of coagulant from the old drum into the current drum.
- Triple rinsed, removed old drum labels, and staged empty drums behind the Treatment System building.
- Performed routine housekeeping and chemical inspection within the Treatment System building.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No **X**	NA
Were there any vehicles which were not tarped?	* Yes	No	NA **X**
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA **X**

Personnel and Equipment

Individual	Company	Trade	Total Hours
Colby Churchill	Arcadis	Jr. Engineer	8.8

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

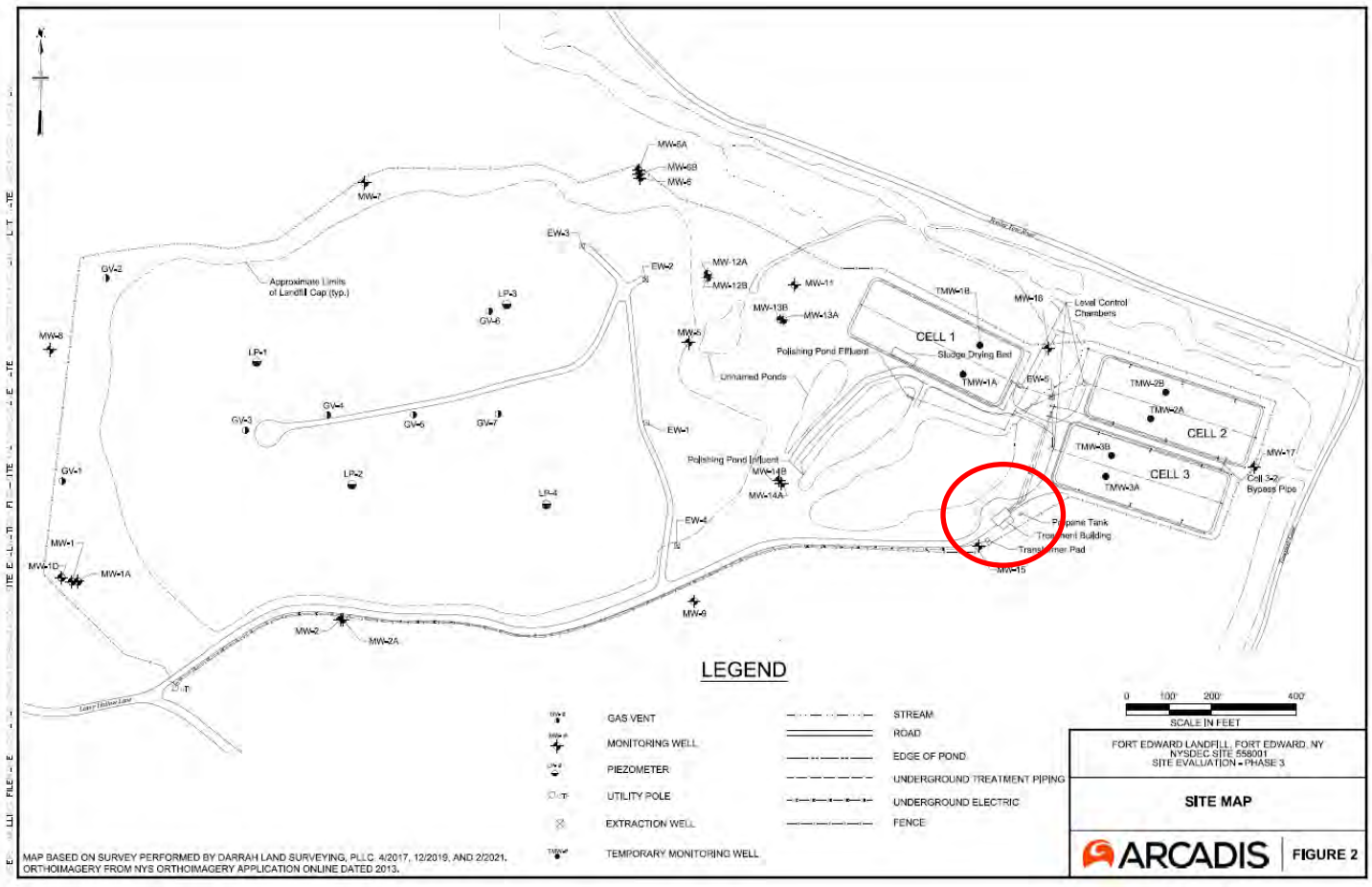
None at this time.

Visitors to Site			
Name	**Representing**	**Entered Exclusion/CRZ Zone**	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives	
Name	**Representing**

Project Schedule Comments
None at this time.
Issues Pending
None at this time.
Interaction with Public, Property Owners, Media, etc.
None at this time.

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on December 28, 2021.

Site Photographs (Descriptions Below)

View of Filter Press Filter Sludge during cake discharge.

View of IPC mixing chambers.

Comments

None at this time.

Site Inspector(s): Colby Churchill

Date: 12/28/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments: None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to <u>any</u> of 1-4 above: • If it is <u>not</u> critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it <u>is</u> critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
<u>Comments:</u> None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☒
<u>Comments:</u> None at this time.			

ATTACHMENT B

Arcadis Weekly O&M Logs

Fort Edward Landfill - Weekly Operation and Maintenance Checklist

ARCADIS Design & Consultancy for natural and built assets

Staff: CC Date: 12-7-21 Time: 0830

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

HMI SCREENS

Extraction Wells		Online (Y/N)	Auto	Manual	Flow (gpm)	Level (ft)	(psi)
Pump Status/Flow	EW-1	N	-	-	0.0	13.87	0.0
Run pumps in "Manual" to confirm flow , if needed.	EW-2	Y	Y	-	21.78	9.98	7.49
Confirm pumps are operating between setpoints	EW-3	Y	Y	-	20.40	9.88	NA
Confirm pressure with pump cycling & not high/low	EW-4	Y	Y	-	30.77	9.79	7.12
If pumps on, is water flowing into IPC (Y/N)? Y	EW-5	Y	Y	-	NA	9.02	NA

Process - (Check if OK or fill in values)				
Chlorine Alarm status (on/off)	A1 off	A2 off	Auto rotate on/off	Y - on ✓
If on - record chlorine concentration (ppm)	-		Discharge pump operating	✓
Operate exhaust fan manually	✓		Discharge pump pressure normal	✓
FT-801 reading (GPM)	38.21		Building temp accurate	✓
Chemical rates normal for flow?	Y		Mixers operating?	✓
Catch tank display level=actual?	✓		Other Alarms (Y/N)	Y - ambient Cl transmitter fail

Filtration (Check if OK)			
Air compressor pressure in range	✓	Solenoid status correct for operation	✓

Data (Check if OK)	
Do Daily & Yesterday Starts make sense	✓

Alarms	
All Alarms Enabled (Y/N)	Y
List any disabled and indicate why	-

BUILDING/GROUNDS

Air Compressor (Check if OK)			
Cycle times normal for load	✓	Check auto drain operation	✓
Check oil level at least monthly	✓	Check dryer - alarms? Cycling?	✓
Belt tension	-	HX fan operates with compressor?	✓

Unit Heaters (Check if OK)			
Thermostats set correctly (50-55 F)	✓	Propane tank level greater than 20%	Y - 38%
Heaters working	✓		

IPC (Y/N)			
IPC discharge clear?	Y	Check sludge ports (Sludge Y/N)	Y
Floatables? (take photos if yes)	N	Indicate % of sludge at each port — Upper	trace
Coag visibly dosing?	Y	Mid	75%
Floc visibly dosing?	Y	Lower	100%

Chemical Feed (Fill in values)					
305 Bleach	Height (in) 15.5"	mA Signal 7.6	# of Full Drums Onsite	0
2130 Coagulant	Height (in) 13.5"	Stroke Rate 23.8	# of Full Drums Onsite	0
1668 Flocculant	Volume (gal) 280 gal	Stroke Rate 141	# of Full Bags Onsite	1
Dosing pumps at normal rate?	Y		Chemicals needed?	Coag + Flocculant

Floor Sumps (Y/N)				
Sump levels normal?	Y	(check monthly)	Pump runs but not emptying sump?	N
High-High level switches operate freely?	Y		Back flowing after pump cycle?	N
Excessive sludge/sediment?	N			

Diaphragm pumps (Check if OK)	Thick Feed	Press Feed	Floc Feed
Proper operation/flow	✓	✓	✓
Regulators working properly	✓	✓	✓
Exhaust mufflers	✓	✓	✓

Filter Press (Check if OK)			
Hydraulic ram operating normally	✓	Sorbent pads replaced?	N
Hydraulic pressure normal	✓	How many total filled Haz drums onsite?	2
Significant leaks?	✓	How many Haz drums filled & closed today?	1

General/Housekeeping					
Wipe down dirty equipment/piping	✓	Any leaks?	N	Waste drums needed?	N
Sweep and/or wash floors	✓	Lights working?	Y	Drum labels needed?	N
Fire extinguisher inspection (monthly)	✓	Exit signs working?	Y	Removed trash?	N
Sludge in Clarifier Catch Tank?	N				

Grounds	
Mow/trim around building, structures, wells, bollards, control panels and cleanouts	Clear woody vegetation from swales and cap
Shovel doorways, apply ice melt	Look for damage fencing/gates
Confirm gates and doorways locked	Confirm storage container locked

Fort Edward Landfill - Typical Operating Parameters

ARCADIS Design & Consultancy for natural and built assets

Extraction Well	Flow (gpm)	Pressure (psi)	Low-Low	Level (off)	Level (on)	High-High
EW-1	20	4.5	2	3	10	20
EW-2	14	11	1	3	10	25
EW-3	20	NA	1	3	10	20
EW-4	30	20	0	7	10	36
EW-5	NA	NA	1	3	10	20

Clarifier Catch Tank	Low-Low	Level (off)	Level (on)	High-High
	0.5	1	2	3.25

Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm
A1 and A2 means concentration greater than 1.0 ppm
If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

Chemical Dosing Rates	HMI Setpoint	Stroke SP	Hand SP	Pump Screen
305 Bleach	0.10%	100	0.16 gph	5.4 - 6.5
2130 Coagulant	0.10%	96	0.16 gph	12.5 - 12.7
1668 Flocculant	0.20%	100	2.47 gph	72 - 75

Discharge Pumps

Typical speed	30-100%
Typical pressure	22 psi @ 100%

Air compressor

operating range	90-175 psi
regulator setpoint	90 psi
Auto drain	On 5 seconds every 5 minutes
Dryer	Display shows "ESA/ON" with dew point level shown on bar scale. Auto drain operates 5 seconds every minute Heat exchanger fan should operate with compressor

Regulators	PSI Range
Thickener feed pump	40 psi max
Filter press feed pump	90 psi max
Floc feed pump	40 psi
Filter press hyd pump	
Blowdown	90 psi max

Notes:

Fort Edward Landfill - Weekly Operation and Maintenance Checklist

ARCADIS Design & Consultancy for natural and built assets

Staff: CC Date: 12-14-21 Time: 1030

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

HMI SCREENS

Extraction Wells		Online (Y/N)	Auto	Manual	Flow (gpm)	Level (ft)	(psi)
Pump Status/Flow	EW-1	N	–	–	0.0	13.73	0.0
Run pumps in "Manual" to confirm flow , if needed.	EW-2	Y	Y	–	21.44	8.29	6.94
Confirm pumps are operating between setpoints	EW-3	Y	Y	–	20.31	7.15	NA
Confirm pressure with pump cycling & not high/low	EW-4	Y	Y	–	30.76	9.70	8.01
If pumps on, is water flowing into IPC (Y/N)? Y	EW-5	Y	Y	–	NA	6.83	NA

Process - (Check if OK or fill in values)					
Chlorine Alarm status (on/off)	A1 off	A2 off	Auto rotate on/off	✓	
If on - record chlorine concentration (ppm)	–		Discharge pump operating	✓	
Operate exhaust fan manually	✓		Discharge pump pressure normal	✓	
FT-801 reading (GPM)	36.42		Building temp accurate	✓	
Chemical rates normal for flow?	✓		Mixers operating?	✓	
Catch tank display level=actual?	✓		Other Alarms (Y/N)	Y - ambient Chlorine transmitter fail	

Filtration (Check if OK)			
Air compressor pressure in range	✓	Solenoid status correct for operation	✓

Data (Check if OK)	
Do Daily & Yesterday Starts make sense	✓

Alarms	
All Alarms Enabled (Y/N)	Y
List any disabled and indicate why	–

BUILDING/GROUNDS

Air Compressor (Check if OK)			
Cycle times normal for load	✓	Check auto drain operation	✓
Check oil level at least monthly	–	Check dryer - alarms? Cycling?	✓
Belt tension	✓	HX fan operates with compressor?	✓

Unit Heaters (Check if OK)			
Thermostats set correctly (50-55 F)	✓	Propane tank level greater than 20%	Y - 68%
Heaters working	✓		

IPC (Y/N)			
IPC discharge clear?	Y	Check sludge ports (Sludge Y/N)	Y
Floatables? (take photos if yes)	N	Indicate % of sludge at each port: Upper	trace
Coag visibly dosing?	Y	Mid	75%
Floc visibly dosing?	Y	Lower	100%

Chemical Feed (Fill in values)					
305 Bleach	Height (in) 6.5	mA Signal 7.4	# of Full Drums Onsite	0	
2130 Coagulant	Height (in) 8.5	Stroke Rate 22.2	# of Full Drums Onsite	0	
1668 Flocculant	Volume (gal) 315	Stroke Rate 130	# of Full Bags Onsite	1	
Dosing pumps at normal rate?	✓		Chemicals needed?	Coag + bleach have been ordered	

Floor Sumps (Y/N)			
Sump levels normal?	Y	Pump runs but not emptying sump?	N
High-High level switches operate freely?	Y	(check monthly) Back flowing after pump cycle?	N
Excessive sludge/sediment?	N		

Diaphragm pumps (Check if OK)	Thick Feed	Press Feed	Floc Feed
Proper operation/flow	✓	✓	✓
Regulators working properly	✓	✓	✓
Exhaust mufflers	✓	✓	✓

Filter Press (Check if OK)			
Hydraulic ram operating normally	✓	Sorbent pads replaced?	N
Hydraulic pressure normal	✓	How many total filled Haz drums onsite?	3
Significant leaks?	✓	How many Haz drums filled & closed today?	1

General/Housekeeping					
Wipe down dirty equipment/piping	✓	Any leaks?	N	Waste drums needed?	N
Sweep and/or wash floors	✓	Lights working?	✓	Drum labels needed?	N
Fire extinguisher inspection (monthly)	–	Exit signs working?	✓	Removed trash?	N
Sludge in Clarifier Catch Tank?	N				

Grounds	
Mow/trim around building, structures, wells, bollards, control panels and cleanouts	Clear woody vegetation from swales and cap
Shovel doorways, apply ice melt	Look for damage fencing/gates
Confirm gates and doorways locked	Confirm storage container locked

Extraction Well	Flow (gpm)	Pressure (psi)	Low-Low	Level (off)	Level (on)	High-High
EW-1	20	4.5	2	3	10	20
EW-2	14	11	1	3	10	25
EW-3	20	NA	1	3	10	20
EW-4	30	20	0	7	10	36
EW-5	NA	NA	1	3	10	20
			Low-Low	Level (off)	Level (on)	High-High
Clarifier Catch Tank			0.5	1	2	3.25

Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm
A1 and A2 means concentration greater than 1.0 ppm
If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

Chemical Dosing Rates	HMI Setpoint	Stroke SP	Hand SP	Pump Screen
305 Bleach	0.10%	100	0.16 gph	5.4 - 6.5
2130 Coagulant	0.10%	96	0.16 gph	12.5 - 12.7
1668 Flocculant	0.20%	100	2.47 gph	72 - 75

Discharge Pumps

Typical speed	30-100%
Typical pressure	22 psi @ 100%

Air compressor

operating range	90-175 psi
regulator setpoint	90 psi
Auto drain	On 5 seconds every 5 minutes
Dryer	Display shows "ESA/ON" with dew point level shown on bar scale. Auto drain operates 5 seconds every minute Heat exchanger fan should operate with compressor

Regulators	PSI Range
Thickener feed pump	40 psi max
Filter press feed pump	90 psi max
Floc feed pump	40 psi
Filter press hyd pump	
Blowdown	90 psi max

Notes:

- Monthly samples collected today

Fort Edward Landfill - Weekly Operation and Maintenance Checklist

ARCADIS Design & Consultancy for natural and built assets

Staff: CC + JM Date: 12-21-21 Time: 0800

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

HMI SCREENS

Extraction Wells		Online (Y/N)	Auto	Manual	Flow (gpm)	Level (ft)	(psi)
Pump Status/Flow	EW-1	N	–	–	0.0	14.04	0.0
Run pumps in "Manual" to confirm flow , if needed.	EW-2	Y	Y	–	21.40	9.77	9.24
Confirm pumps are operating between setpoints	EW-3	Y	Y	–	19.60	9.87	NA
Confirm pressure with pump cycling & not high/low	EW-4	Y	Y	–	30.77	7.77	8.54
If pumps on, is water flowing into IPC (Y/N)? Y	EW-5	Y	Y	–	NA	7.62	NA

Process - (Check if OK or fill in values)					
Chlorine Alarm status (on/off)	A1 off	A2 off	Auto rotate on/off		Y
If on - record chlorine concentration (ppm)	–		Discharge pump operating		✓
Operate exhaust fan manually	✓		Discharge pump pressure normal		✓
FT-801 reading (GPM)	35.50		Building temp accurate		✓
Chemical rates normal for flow?	✓		Mixers operating?		✓
Catch tank display level=actual?	✓		Other Alarms (Y/N)	Y - ambient Cl trans. fail	
Filtration (Check if OK)					
Air compressor pressure in range	✓		Solenoid status correct for operation		✓
Data (Check if OK)					
Do Daily & Yesterday Starts make sense	✓				
Alarms					
All Alarms Enabled (Y/N)	Y				
List any disabled and indicate why	–				

BUILDING/GROUNDS

Air Compressor (Check if OK)			
Cycle times normal for load	✓	Check auto drain operation	✓
Check oil level at least monthly	–	Check dryer - alarms? Cycling?	✓
Belt tension	✓	HX fan operates with compressor?	✓
Unit Heaters (Check if OK)			
Thermostats set correctly (50-55 F)	✓	Propane tank level greater than 20%	Y - 55%
Heaters working	✓		
IPC (Y/N)			
IPC discharge clear?	Y	Check sludge ports (Sludge Y/N)	Y
Floatables? (take photos if yes)	N	Indicate % of sludge at each port: Upper	trace
Coag visibly dosing?	Y	Mid	100%
Floc visibly dosing?	Y	Lower	100%

Chemical Feed (Fill in values)					
305 Bleach	Height (in) < 0.25"	mA Signal 7.5	# of Full Drums Onsite	0; NaMnO4 brought online	
2130 Coagulant	Height (in) 4.5"	Stroke Rate 21.9	# of Full Drums Onsite	4	
1668 Flocculant	Volume (gal) 350	Stroke Rate 129	# of Full Bags Onsite	1	
Dosing pumps at normal rate?	✓		Chemicals needed?	–	

Floor Sumps (Y/N)			
Sump levels normal?	Y	Pump runs but not emptying sump?	N
High-High level switches operate freely?	– (check monthly)	Back flowing after pump cycle?	N
Excessive sludge/sediment?	N		

Diaphragm pumps (Check if OK)	Thick Feed	Press Feed	Floc Feed
Proper operation/flow	✓	✓	✓
Regulators working properly	✓	✓	✓
Exhaust mufflers	✓	✓	✓

Filter Press (Check if OK)			
Hydraulic ram operating normally	✓	Sorbent pads replaced?	N
Hydraulic pressure normal	✓	How many total filled Haz drums onsite?	4
Significant leaks?	N	How many Haz drums filled & closed today?	1

General/Housekeeping					
Wipe down dirty equipment/piping	✓	Any leaks?	N	Waste drums needed?	N
Sweep and/or wash floors	✓	Lights working?	✓	Drum labels needed?	N
Fire extinguisher inspection (monthly)	–	Exit signs working?	✓	Removed trash?	N
Sludge in Clarifier Catch Tank?	N				

Grounds	
Mow/trim around building, structures, wells, bollards, control panels and cleanouts	Clear woody vegetation from swales and cap
Shovel doorways, apply ice melt	Look for damage fencing/gates
Confirm gates and doorways locked	Confirm storage container locked

ARCADIS Design & Consultancy for natural and built assets

Extraction Well	Flow (gpm)	Pressure (psi)	Low-Low	Level (off)	Level (on)	High-High
EW-1	20	4.5	2	3	10	20
EW-2	14	11	1	3	10	25
EW-3	20	NA	1	3	10	20
EW-4	30	20	0	7	10	36
EW-5	NA	NA	1	3	10	20
			Low-Low	Level (off)	Level (on)	High-High
Clarifier Catch Tank			0.5	1	2	3.25

Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm
A1 and A2 means concentration greater than 1.0 ppm
If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

Chemical Dosing Rates	HMI Setpoint	Stroke SP	Hand SP	Pump Screen
305 Bleach	0.10%	100	0.16 gph	5.4 - 6.5
2130 Coagulant	0.10%	96	0.16 gph	12.5 - 12.7
1668 Flocculant	0.20%	100	2.47 gph	72 - 75

Discharge Pumps

Typical speed	30-100%
Typical pressure	22 psi @ 100%

Air compressor

operating range	90-175 psi
regulator setpoint	90 psi
Auto drain	On 5 seconds every 5 minutes
Dryer	Display shows "ESA/ON" with dew point level shown on bar scale. Auto drain operates 5 seconds every minute Heat exchanger fan should operate with compressor

Regulators	PSI Range
Thickener feed pump	40 psi max
Filter press feed pump	90 psi max
Floc feed pump	40 psi
Filter press hyd pump	
Blowdown	90 psi max

Notes:

- After 2nd batch from IPC to T.T. sludge ports were: upper → 0%
  mid → 50%
  lower → 80%
- Replaced bleach drum w/ new drum mixture of 10 gal Aries 345 + 40 gal water.
  Starting ~~volume~~ drum height = 30.25"

Fort Edward Landfill - Weekly Operation and Maintenance Checklist

ARCADIS Design & Consultancy for natural and built assets

Staff: CC Date: 12-28-21 Time: 0830

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

HMI SCREENS

Extraction Wells		Online (Y/N)	Auto	Manual	Flow (gpm)	Level (ft)	(psi)
Pump Status/Flow	EW-1	N	-	-	0.0	14.08	0.0
Run pumps in "Manual" to confirm flow , if needed.	EW-2	Y	Y	-	22.70	7.91	8.71
Confirm pumps are operating between setpoints	EW-3	Y	Y	-	23.36	7.63	NA
Confirm pressure with pump cycling & not high/low	EW-4	Y	Y	-	30.78	9.85	9.30
If pumps on, is water flowing into IPC (Y/N)?	EW-5	Y	Y	-	NA	8.09	NA

Process - (Check if OK or fill in values)					
Chlorine Alarm status (on/off)	A1 Off	A2 Off	Auto rotate on/off		On
If on - record chlorine concentration (ppm)	-		Discharge pump operating		✓
Operate exhaust fan manually	✓		Discharge pump pressure normal		✓
FT-801 reading (GPM)	40.10		Building temp accurate		✓
Chemical rates normal for flow?	✓		Mixers operating?		✓
Catch tank display level=actual?	✓		Other Alarms (Y/N)		N
Filtration (Check if OK)					
Air compressor pressure in range	✓		Solenoid status correct for operation		✓
Data (Check if OK)					
Do Daily & Yesterday Starts make sense	✓				
Alarms					
All Alarms Enabled (Y/N)	Y				
List any disabled and indicate why	-				

BUILDING/GROUNDS

Air Compressor (Check if OK)			
Cycle times normal for load	✓	Check auto drain operation	✓
Check oil level at least monthly	-	Check dryer - alarms? Cycling?	✓
Belt tension	✓	HX fan operates with compressor?	✓
Unit Heaters (Check if OK)			
Thermostats set correctly (50-55 F)	✓	Propane tank level greater than 20%	Y - 40%
Heaters working	✓		
IPC (Y/N)			
IPC discharge clear?	Y	Check sludge ports (Sludge Y/N)	Y
Floatables? (take photos if yes)	N	Indicate % of sludge at each port: Upper	trace
Coag visibly dosing?	Y	Mid	80%
Floc visibly dosing?	Y	Lower	100%

Chemical Feed (Fill in values)						
345 ~~305 Bleach~~ NaMnO4	Height (in)	26.0"	mA Signal	7.2	# of Full Drums Onsite	1
2130 Coagulant	Height (in)	32.0"	Stroke Rate	21.6	# of Full Drums Onsite	3
1668 Flocculant	Volume (gal)	375 gal	Stroke Rate	121	# of Full Bags Onsite	1
Dosing pumps at normal rate?					Chemicals needed?	N

Floor Sumps (Y/N)			
Sump levels normal?	Y	Pump runs but not emptying sump?	N
High-High level switches operate freely?	- (check monthly)	Back flowing after pump cycle?	N
Excessive sludge/sediment?	N		

Diaphragm pumps (Check if OK)	Thick Feed	Press Feed	Floc Feed
Proper operation/flow	✓	✓	✓
Regulators working properly	✓	✓	✓
Exhaust mufflers	✓	✓	✓

Filter Press (Check if OK)			
Hydraulic ram operating normally	✓	Sorbent pads replaced?	N
Hydraulic pressure normal	✓	How many total filled Haz drums onsite?	4
Significant leaks?	✓	How many Haz drums filled & closed today?	0

General/Housekeeping					
Wipe down dirty equipment/piping	✓	Any leaks?	N	Waste drums needed?	N
Sweep and/or wash floors	✓	Lights working?	✓	Drum labels needed?	N
Fire extinguisher inspection (monthly)	-	Exit signs working?	✓	Removed trash?	Y
Sludge in Clarifier Catch Tank?	N				

Grounds	
Mow/trim around building, structures, wells, bollards, control panels and cleanouts	Clear woody vegetation from swales and cap
Shovel doorways, apply ice melt	Look for damage fencing/gates
Confirm gates and doorways locked	Confirm storage container locked

Fort Edward Landfill - Typical Operating Parameters

ARCADIS Design & Consultancy for natural and built assets

Extraction Well	Flow (gpm)	Pressure (psi)	Low-Low	Level (off)	Level (on)	High-High
EW-1	20	4.5	2	3	10	20
EW-2	14	11	1	3	10	25
EW-3	20	NA	1	3	10	20
EW-4	30	20	0	7	10	36
EW-5	NA	NA	1	3	10	20
			Low-Low	Level (off)	Level (on)	High-High
Clarifier Catch Tank			0.5	1	2	3.25

Chlorine Alarm

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Regulators	PSI Range
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Filter press feed pump	90 psi max
Floc feed pump	40 psi
Filter press hyd pump	
Blowdown	90 psi max

Notes:

- Transfered ~3.0" of coagulant from old drum into current drum

TABLES

Table 1. December 2021 Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001

ARCADIS Design & Consultancy for natural and built assets

Location	Influent	Clarifier Catch	Cell 3 Bypass	Cell 2 Effluent	Fort Edward SPDES Equivalency Permit Limit	Polishing Pond Effluent
Date	12/14/2021	12/14/2021	12/14/2021	12/14/2021		12/14/2021
Volatile Organic Compounds (µg/L)						
ACETONE	3.3 J	7.6	5.0 U	4.0 J	--	3.8 J
BENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
BROMODICHLOROMETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
BROMOFORM	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
BROMOMETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
2-BUTANONE (MEK)	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U
CARBON DISULFIDE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CARBON TETRACHLORIDE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CHLOROBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CHLORODIBROMOMETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	20	1.0 U
CHLOROFORM	1.0 U	3.7	1.0 U	1.0 U	150	1.0 U
CHLOROMETHANE	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	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,2-DICHLOROBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,3-DICHLOROBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,4-DICHLOROBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
DICHLOROBROMOMETHANE	1.0 U	1.2	1.0 U	1.0 U	--	1.0 U
DICHLORODIFLUOROMETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1-DICHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	30	1.0 U
1,2-DICHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1-DICHLOROETHENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CIS-1,2-DICHLOROETHENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TRANS-1,2-DICHLOROETHENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,2-DICHLOROETHENE (TOTAL)	1.0 U	1.0 U	1.0 U	1.0 U	30	1.0 U
1,2-DICHLOROPROPANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
CIS-1,3-DICHLOROPROPENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TRANS-1,3-DICHLOROPROPENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
ETHYLBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
2-HEXANONE	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U
ISOPROPYLBENZENE (CUMENE)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
METHYL ACETATE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
METHYL TERT-BUTYL ETHER (MTBE)	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	1.0 U	1.0 U	1.0 U	1.0 U	50	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	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1,1,2-TETRACHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TETRACHLOROETHENE (PCE)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TOLUENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,2,4-TRICHLOROBENZENE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1,1-TRICHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1,2-TRICHLOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TRICHLOROETHENE (TCE)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
TRICHLOROFLUOROMETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
VINYL CHLORIDE	1.0 U	1.0 U	1.0 U	1.0 U	50	1.0 U
XYLENES, TOTAL	3.0 U	3.0 U	3.0 U	3.0 U	--	3.0 U
TOTAL VOCs	3.3	12.5	ND	4.0	--	3.8

Notes:

Constitutents detected above the Fort Edward State Pollution Discharge Elimination System (SPDES) Equivalency Permit at the Polishing Pond Effluent are highlighted in yellow.

"--" - Value does not exist for analyte.

1,2-dichloroethene (total) is the sum of cis-1,2,-dichloroethene and trans-1,2-dichloroethene.

Definitions:

J - The concentration is an approximate value.

µg/L - micrograms per liter.

ND - Non-detect.

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

Table 1. December 2021 Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001

ARCADIS Design & Consultancy for natural and built assets

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Date	**12/14/2021**	**12/14/2021**	**12/14/2021**	**12/14/2021**		**12/14/2021**
Polychlorinated Biphenyls (µg/L)						
PCB-1016 (AROCLOR 1016)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1221 (AROCLOR 1221)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1232 (AROCLOR 1232)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1242 (AROCLOR 1242)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1248 (AROCLOR 1248)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1254 (AROCLOR 1254)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
PCB-1260 (AROCLOR 1260)	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
Metals (mg/L)						
ALUMINUM	2.08	0.862	0.2 U	0.0538 J	--	0.0621 J
ANTIMONY	0.06 U	0.06 U	0.06 U	0.06 U	--	0.06 U
ARSENIC	0.01 U	0.01 U	0.01 U	0.01 U	0.15	0.01 U
BARIUM	0.0331 J	0.0282 J	0.0198 J	0.0402 J	3.5	0.0269 J
BERYLLIUM	0.005 U	0.005 U	0.005 U	0.005 U	--	0.005 U
CADMIUM	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.001	0.0025 U
CALCIUM	71.8	73.6	69.4	90.3	--	84
CHROMIUM, TOTAL	0.01 U	0.01 U	0.01 U	0.01 U	0.21	0.0019 J
COBALT	0.05 U	0.05 U	0.05 U	0.05 U	0.005	0.05 U
COPPER	0.025 U	0.004 J	0.025 U	0.025 U	0.024	0.025 U
IRON	10.6	1.52	1.84	10.3	0.3	0.836
LEAD	0.005 U	0.005 U	0.005 U	0.005 U	0.0032	0.005 U
MAGNESIUM	17.6	17.8	12.7	15.8	--	16.2
MANGANESE	1.27	1.11	0.326	1.05	--	0.122
MERCURY	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0008	0.0002 U
NICKEL	0.025 J	0.0247 J	0.0173 J	0.0136 J	0.0096	0.017 J
POTASSIUM	2.56 J	2.36 J	6.7	2.01 J	--	2.9
SELENIUM	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
SILVER	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
SODIUM	47.7	49.4	31.3	30.6	--	32.8
THALLIUM	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
VANADIUM	0.05 U	0.05 U	0.05 U	0.05 U	0.014	0.05 U
ZINC	0.0156 J	0.0237 J	0.02 U	0.02 U	0.17	0.02 U
Conventional Chemistry (mg/L)						
TOTAL DISSOLVED SOLIDS	570	484	402	490	500	436
TOTAL SUSPENDED SOLIDS	28	6.4	10 U	10 U	50	10

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