110 Sand Company

170 Cabot Street
West Babylon, New York 11704
631-249-4108 Fax 631-249-4126

PIT LOCATION: BETHPAGE/SPAGNOLI ROAD, MELVILLE, N.Y. 11747 (631) 694-2822 FAX (631) 694-2832

February 21, 2018

Syed H. Rahman, P.E.
Regional Materials Management Engineer - NYSDEC
Division of Materials Management, Region One
SUNY @ Stony Brook
50 Circle Rd
Stony Brook, NY 11790-3409

Re: NYSDEC Facility No. 52-D-12
110 Sand Company Clean Fill Disposal Site
2017 Annual Report

Dear Mr. Rahman,

Enclosed please find the signed original and one electronic copy (.pdf on CD) of the above-referenced annual report. Also please note that an electronic copy of this report has been submitted to the Department's Division of Materials Management, Bureau of Permitting and Planning in Albany.

Should you have any questions on the above report, please contact me at (631) 694-2822 ext. 112.

Very truly yours,

James Debis

James Debis, P.E.
Engineer

Cc: G. Newsome, 110 Sand Co.
J. Gerlach, LKB

2017
ANNUAL REPORT FOR
110 SAND COMPANY
CLEAN FILL DISPOSAL SITE

FACILITY CODE NO. 52-D-12

SUBMITTED TO:

NYSDEC REGION 1 &
CENTRAL OFFICE

February 21, 2018

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Report Section — Page No.

Attachments**

** The Attachments follow the Report Sections in the order listed above, and are separated by sheets of blue paper.

Clear Form

LONG ISLAND LANDFILL ANNUAL/QUARTERLY REPORT

Submit the Annual Report no later than March 1, 2018.

A. This annual report is for the year of operation from January 01, 2017 to December 31, 2017

B. Quarterly Report for: ☐ Quarter 1 ☐ Quarter 2 ☐ Quarter 3 ☐ Quarter 4

SECTION 1 – FACILITY INFORMATION

FACILITY INFORMATION

FACILITY NAME: 110 Sand Clean Fill Disposal Site

FACILITY LOCATION ADDRESS:	FACILITY CITY:	STATE:	ZIP CODE:
136 Spagnoli Rd.	Melville	NY	11747

FACILITY TOWN:	FACILITY COUNTY:	FACILITY PHONE NUMBER:
Huntington	Suffolk	(631) 694-2822

FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report).
N/A (Private Company)

NYSDEC REGION #: 1

360 PERMIT #:	DATE ISSUED:	DATE EXPIRES:	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER:
1-4726-00490/00010	10/1/2015	9/30/2020	52-D-12

FACILITY CONTACT:	☐ public ☒ private	CONTACT PHONE NUMBER:	CONTACT FAX NUMBER:
Jason Golden		(631) 249-4108	(631) 460-7495

CONTACT EMAIL ADDRESS:

OWNER INFORMATION

OWNER NAME:	OWNER PHONE NUMBER:	OWNER FAX NUMBER:
Broad Hollow Estates	(631) 249-4108	(631) 249-4126

OWNER ADDRESS:	OWNER CITY:	STATE:	ZIP CODE:
170 Cabot Street	West Babylon	NY	11704

OWNER CONTACT:	OWNER CONTACT EMAIL ADDRESS:
Jason Golden	jasong@110sand.com

OPERATOR INFORMATION

OPERATOR NAME: ☐ *same as owner*
110 Sand Company

☐ public ☒ private

PREFERENCES

Preferred address to receive correspondence: ☐ *Facility location address* ☐ *Owner address* ☒ *Other (provide):* 110 Sand Company, 170 Cabot Street, West Babylon, New York 11704

Preferred email address: ☒ *Facility Contact* ☐ *Owner Contact* ☐ *Other (provide):*

Preferred individual to receive correspondence: ☒ *Facility Contact* ☐ *Owner Contact* ☐ *Other (provide):*

Did you operate in 2017? ☒ Yes; Complete this form.

☐ No; Complete and submit Sections 1 and 21. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: http://www.dec.ny.gov/chemical/52706.html .

SECTION 2 - SITE LIFE

1. Landfill Capacity Utilized Last Year (reporting year).

   a. What is the estimated landfill capacity that was utilized during the reporting year?

   776,478 Cubic Yards of Airspace

   b. What is the estimated in-situ waste density for the reporting year?

   Please do not report units as pounds per cubic yard.

   1.05 Tons/Cubic Yard

2. Remaining Constructed Capacity

   a. What is the remaining capacity of the landfill that is already constructed?

   2,905,008 Cubic Yards of Airspace

   b. What is the estimated remaining life of the constructed capacity?

   3 Years 6 Months

   at 866,592 Tons/Year.*

   * Please note that this tonnage rate must include all materials placed in the landfill, i.e., waste, soil, cover, alternative daily covers, etc.

   c. The tonnage rate reported under 2.b. is based on (select one):

   No The amount of materials placed in the landfill in the reporting year

   No Estimated future disposal

   No Permit limit

   Other (explain): Based on a 20-year average disposal rate.

3. Permitted Capacity Still to be Constructed

   a. What is the remaining but not yet constructed landfill capacity that is authorized by a Part 360 permit?

   24,200,000 Cubic Yards of Airspace

   b. What is the projected life of capacity reported in 3a.?

   29 Years 4 Months

   at 866,592 Tons/Year.*

   * Please note that this tonnage rate must include all materials disposed in the landfill, i.e., waste, and soil and alternative daily covers.

   c. The tonnage rate reported under 3.b. is based on (select one):

   No The amount of materials placed in the landfill in the reporting year

   No Estimated future disposal

   No Permit limit

   Other (explain): Based on a 20-year average disposal rate.

4. Capacity Proposed in a Part 360 Permit Application

What is the capacity of any expansion proposed in a Part 360 permit application that has been submitted to the Department but not authorized by a permit as of the end of the reporting period?

N/A _____ Cubic Yards of Airspace

5. Estimated Potential Future Capacity Not Permitted or in an Application (optional)

What is the estimated capacity of any potential future expansion at the facility that is not yet authorized by a permit or proposed in a Part 360 permit application that has been submitted to the Department?

N/A _____ Cubic Yards of Airspace

SECTION 3 – PRIMARY LEACHATE

Name of off-site leachate treatment facility(s) utilized: Bergen Point STP.

Does the landfill have a constructed liner and a leachate collection system? ☒ Yes ☐ No

Enter the quantity of primary leachate that was collected, removed for on-site and off-site treatment, and recirculated each month, and the corresponding **Acreage, by Cell**:
(Note: For double-lined landfills this should not include the volume of leachate collected from secondary leachate collection and removal systems.

For **each cell**, please report the **acreage** and the **primary leachate** amount.

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	PRIMARY LEACHATE COLLECTED (GALLONS)						PRIMARY LEACHATE TREATED OFF SITE (GALLONS)					
	Phases 3-6 39 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11* 21 Acres			Phase 3-6 39 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11* 21 Acres		
January	303,790	996,510	43,275	-			303,790	996,510	43,275	-		
February	257,560	828,360	37,440	-			257,560	828,360	37,440	-		
March	278,815	910,950	39,200	-			278,815	910,950	39,200	-		
April	256,200	933,400	28,370	267,008			256,200	933,400	28,370	267,008		
May	282,450	959,900	36,080	2,208,822			282,450	959,900	36,080	2,208,822		
June	271,175	1,013,755	47,700	1,539,628			271,175	1,013,755	47,700	1,539,628		
July	276,660	1,093,260	46,475	1,288,553			276,660	1,093,260	46,475	1,288,533		
August	270,965	1,073,660	44,350	897,509			270,965	1,073,660	44,350	897,509		
September	278,270	1,117,945	41,750	1,091,316			278,270	1,117,945	41,750	1,091,316		
October	262,110	1,065,620	38,600	749,370			262,110	1,065,620	38,600	749,370		
November	257,070	1,075,950	35,750	1,442,800			257,070	1,075,950	35,750	1,442,800		
December	252,080	999,010	33,100	678,815			252,080	999,010	33,100	678,815		
ANNUAL	3,247,145	12,068,320	472,090	10,163,821			3,247,145	12,068,320	472,090	10,163,821		

* Phase 11 became the actve phase on April 27, 2017.

	PRIMARY LEACHATE RECIRCULATED (GALLONS)						PRIMARY LEACHATE TREATED ON SITE (GALLONS)					
	Phases 3-6 39 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11 21 Acres			Phases 3-6 39 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11 21 Acres		
January	N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A		
February												
March												
April												
May												
June												
July												
August												
September												
October												
November												
December												
ANNUAL												

Reprinted (12/17)

Submit (attached to this form) a copy of the maintenance logs which document compliance with the Operation and Maintenance Manual's schedule for the routine annual flushing and inspection of the primary leachate collection and removal system. List required submissions that have been attached to this form or the reason for not attaching a required piece of information: The Phases 3-6, Phases 7-9 and Phase 10 collection lines were flushed on December 18th & 19th. Approximately 2,500 gallons of clean water were sent down each clean-out access point located on the east side of Phases 7-10. Each line was found to be providing free-flowing conditions.

Submit (attached to this form) a tabulated compilation of the semi-annual primary leachate quality data collected throughout the year including a summary comparing this year's data with the previous year's data and a summary discussion of results. This list should identify sample location(s) and method of analysis. List required submissions that have been attached to this form or the reason for not attaching a required piece of information:

The requested information is provided in Attachment 3-1, Summary Discussion and Tabular Summary of 2017 Primary Leachate-Monitoring Results, prepared by LKB.

SECTION 4 - SECONDARY LEACHATE

Does landfill have a double liner system with a secondary leachate collection and removal system? ☒ Yes ☐ No

Submit (attached to this form) a tabulated compilation of the semi-annual secondary leachate quality data collected throughout the year including a summary comparing this year's data with all previous years' data and a summary discussion of results. This list should identify sample location(s) and methods of analysis. List required submissions that have been attached to this form or the reason for not attaching a required piece of information:

The requested information is provided in Attachment 4-1, Summary Discussion and Tabular Summary of 2017 Secondary Leachate-Monitoring Results, prepared by LKB.

Please report total cost for the year, not cost/gal.

Leachate Cost: (including transportation if appropriate) during the calendar year for leachate treatment:

$ 86,585

Total quantity treated: 14,482,535 gal

Enter the quantity of secondary leachate that was collected, removed for on-site and off-site treatment, and recirculated each month, and the corresponding **Acreage, by Cell**:

For **each cell**, please report the **acreage** and the **secondary leachate** amount.

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	SECONDARY LEACHATE COLLECTED (GALLONS)						SECONDARY LEACHATE TREATED OFF SITE (GALLONS)					
	Phases 5&6 25 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11* 21 Acres			Phases 5&6 25 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11* 21 Acres		
January	3,630	19,411	836	-			3,630	19,411	836	-		
February	3,080	9,665	733	-			3,080	9,665	733	-		
March	3,410	10,245	88	-			3,410	10,245	88	-		
April	3,300	10,715	165	1,219			3,300	10,715	165	1,219		
May	3,410	6,541	710	5,324			3,410	6,541	710	5,324		
June	3,300	5,313	26	7,128			3,300	5,313	26	7,128		
July	3,410	1,676	77	5,365			3,410	1,676	77	5,365		
August	3,410	2,472	363	6,139			3,410	2,472	363	6,139		
September	3,410	2,773	265	6,895			3,410	2,773	265	6,895		
October	3,300	2,659	125	3,650			3,300	2,659	125	3,650		
November	3,300	4,571	589	7,361			3,300	4,571	589	7,361		
December	3,190	4,257	0	3,715			3,190	4,257	0	3,715		
ANNUAL	40,150	80,298	3,977	46,796			40,150	80,298	3,977	46,796		

* Phase 11 became the active phase on April 27, 2017.

	SECONDARY LEACHATE RECIRCULATED (GALLONS)						SECONDARY LEACHATE TREATED ON SITE (GALLONS)					
	Phases 5&6 25 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11 21 Acres			Phases 5&6 25 Acres	Phases 7-9 49 Acres	Phase 10 19 Acres	Phase 11 21 Acres		
January	N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A		
February												
March												
April												
May												
June												
July												
August												
September												
October												
November												
December												
ANNUAL												

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SECTION 5 – BENEFICIAL USE DETERMINATION MATERIALS

For each type of waste material that the Department has approved for use as alternative daily cover, intermediate cover, or other landfill material, provide the annual weight in tons, use (i.e., daily cover, intermediate cover, etc.), and source of material. (If material is from a solid waste facility also provide facility name, address, NYS Planning Unit, County/ Province, and State/Country.) **Refer to the list of NYS Planning Units that can be found at the end of this report.**

Type of Solid Waste	Weight (tons/year)	Use	NYS Planning Unit (See Attached List of NYS Planning Units)	County or Province	State or Country	Source (Facility and Address)
Aggregate/Concrete						
Dredge Spoils						
Glass						
MSW/Wood Ash						
Processed C&D						
Tire Chips						
Wood/Wood Chips						
Other (specify)						
Total ADC						
Total Beneficial Use Determination Materials						

Percent Alternative Daily Cover (ADC) Calculation

ADC Calculations: Total Tons ADC/Total Tons Waste Disposed x 100 = N/A

Please note the calculation **is**: Tons ADC (from table above)/Tons Solid Waste (from table in Section 6) x 100 and **Not**: Tons ADC / (Tons Solid Waste + ADC) x 100

SECTION 6 - SOLID WASTE DISPOSED

Provide the tonnages of solid waste disposed. Exclude Beneficial Use Determination Material amounts reported in Section 5.
Specify the methods used to measure the quantities disposed and the percentages measured by each method:

50 % Scale Weight _____% Estimated

50 % Truck Count _____% Other (Specify: _____)

Type of Solid Waste	Tip Fee ($/Ton)	January (tons)	February (tons)	March (tons)	April (tons)	May (tons)	June (tons)	July (tons)
Ash (MSW Energy Recovery)								
Construction & Demolition Debris (mixed)	$45/CY* $69/Ton	53,433	51,644	68,442	61,319	64,795	80,695	71,913
Emergency Authorization Waste (Storm Debris)								
Other (specify) **	$38/CY	N/A	N/A	N/A	N/A	N/A	N/A	N/A
** Land-Clearing Debris.								
Total Tons Disposed		53,433	51,644	68,442	61,319	64,795	80,695	71,913

Type of Solid Waste	August (tons)	September (tons)	October (tons)	November (tons)	December (tons)	Total Year (tons)	Daily Avg. (tons)
Ash (MSW Energy Recovery)							
Construction & Demolition Debris (mixed)	78,334	87,421	73,480	63,552	73,895	828,923	2,709
Emergency Authorization Waste (Storm Debris)							
Other (specify)	N/A	N/A	N/A	N/A	N/A	13,545 CY	
Total Tons Disposed	78,334	87,421	73,480	63,552	73,895	828,923*	

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* C&D Debris Only. Price Fluctuated between $43/CY & $67/Ton to $45/CY & $69/Ton.

SECTION 7 – SERVICE AREA OF SOLID WASTE RECEIVED

Identify the service area of the material. The Total Tons Received reported below should equal the Total Tons Received in Section 6 (SOLID WASTE DISPOSED). DO NOT REPORT IN CUBIC YARDS!

1) Direct hauled from the generator of the material. In the case where the material is hauled to your facility from the generator (i.e. hauled from residences, job sites, commercial establishments, etc.), "Direct Haul" is the appropriate response in Column 2 under "Service Area." Please report the tonnage by material type and identify the state, county and planning unit where it was generated; or

2) Sent to your facility from another solid waste management facility. Material may be sent to your facility from another solid waste management facility. In this case, please report the tonnage by material type from each sending solid waste management facility, as well as the sending facility's name, address, county, and the planning unit where the sending facility is located.

Specify transport method and percentages of total waste transported by each:

100 % Road _____% Rail

_____% Water _____% Other (specify: _____)

Explain which waste types and service areas below are included in these transport methods _____

_____

SERVICE AREA OF SOLID WASTE RECEIVED

TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Ash (MSW Energy Recovery)					
Construction and Demolition Debris (mixed)					
	See Attachment 7-1, Listing of Customers > 500 Tons				828,923
	in 2017.				
Emergency Authorization Waste (Storm Debris)					
Other (specify)**	Town of Huntington (Direct Haul)	NY	Suffolk County	Huntington (Town)	13,545 CY
	**Land-Clearing Debris				
				TOTAL RECEIVED (tons):	828,923*

* C&D Debris Only.

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SECTION 8 – UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

☐ Yes ■ No If yes, give information below for each incident (attach additional sheets if necessary):

Date Received	Type Received	Date Disposed	Disposal Method & Location

Radiation Monitoring

Does your facility use a fixed radiation monitor? _☐_ Yes _■_ No

Identify Manufacturer _____ and Model _____ of fixed unit.

Does your facility use a portable radiation monitor? _☐_ Yes _■_ No

Identify Manufacturer _____ and Model _____ of fixed unit.

If the radiation monitors have been triggered give information below for each incident:

Incident Number	Received		Hauler	Origin	Truck Number	Reading	Disposal Status	Removed	
	Date	Time						Date	Time

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SECTION 9 - WASTE IN PLACE

Summary by Waste Type and Year

Include all active and inactive sections of the landfill. Report waste disposed annually by type, if known, in tons per year. Report total waste disposed, if breakdown of types is not available. In the case where more than one landfill section operated in a given year identify each separately, if known. If the annual amount is not available, report the quantities for a range of years. If you include amounts from old, closed landfills then clearly identify them on the table and explain below. In each row, report quantities disposed each year (or group of years if individual years unknown) for each waste type. Report cumulative WIP at bottom (sum of annual quantities disposed). Add additional sheets as necessary.

Year	MSW (tons)	Asbestos Waste (tons)	Ash (tons)	C&D Debris (tons)	Industrial Waste (tons)	Petroleum Contaminated Soil (tons)	Sewage Treatment Plant Sludge (tons)	Other* (tons)	Year(s) Total (tons)	Identify Landfill Section(s) Used
2017				544,488					544,488	Phase 11
2017				219,902					219,902	Phase 10
2017				50,913					50,913	Phase 8
WIP Cumulative Total				815,303						

* Other waste could include, but not limited to, yard waste, paper, wood, textiles, or diapers.

Overall in place volume 518,560 * cubic yards (* Phase 11)

Method for determining waste composition, if known. Landfill is a L.I. Clean Fill.

Explain if closed landfills are included above Phase 8 began accepting waste in June 2014 in order to achieve final grades for future capping.

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Waste Summary by Landfill Section

Provide waste in place information for all landfill sections.

Number of landfill sections: 11

Original* section used (years) from _____ to _____

Section Footprint _____ acres

Capped with approved final cover system Yes ☐ No ☐

Percent capped _____

Waste in Place: _____ Tons _____ Cubic Yards, if known

Next* section used (years) from 4/2017 to Present

Section Footprint 21 acres

Capped with approved final cover system Yes ☐ No ■

Percent capped 0%

Waste in Place: _____ Tons 518,560 Cubic Yards, if known

Note: Waste data for earlier phases was submitted in prior reports.

* If there are additional landfill sections, phases or cells, please provide the same waste in place information on additional sheets and attach to form.

SECTION 10 - LANDFILL GAS

Does the landfill have a landfill gas collection & control system?
Yes ■ No ☐ If Yes: Active ■ Passive ☐

Number of gas wells: 48

Total landfill footprint acreage 156

Total landfill acreage from which gas is collected 135

Landfill sections from which gas is collected Phases 1-10

Landfill acreage from which gas is collected for energy recovery N/A

Measured Methane Generation Rate*, k N/A

Measured Potential Methane Generation Capacity*, L_o N/A m^3/Mg

NMOC Concentration* N/A ppmv as hexane

Does the landfill require a Title V Permit? Yes ☐ No ■

Name of Landfill Gas Recovery (gas to energy or other use) Facility: N/A

* Note: If Concentration NMOC, Lo and k are not known or included, default values will be used to calculate the NMOCs emissions from the Landfill.
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Flare

Open and Enclosed Flares located at the Landfill and the Landfill Gas Recovery Facility:

Number of Flares: 1

Type of Flare: Opened Flare _____ Enclosed Flare X

Please report units in cubic feet

Quantity of Gas Collected and Flared Annually 563,080,700 cubic feet
Flare Hours of Operation per Year 8,658 hours/year
Methane Percentage in Landfill Gas before flaring 35 %
Methane Destruction efficiency 100 %

Candlestick Flares:

Number of Candlestick Flares 0
Estimate of Gas Flared Candlestick Flare N/A cubic feet

Gas To Energy

Please report units in cubic feet

Number of Internal Combustion Engines: 0

Quantity of Gas collected for Internal Combustion Engine Annually _____ cubic feet
Methane Destruction efficiency _____ %
Methane Percentage in Landfill Gas before combustion _____ %
Utility Company Receiving Electricity _____

Gas Processed for Use (Other than gas to electricity)

Quantity of Gas Collected for Processing 0 cubic feet
Methane Percentage in Landfill Gas before processing _____ %
On-site or Off-site User of Gas _____

Landfill Gas Recovery Facility/Landfill Data

Facility Contact N/A Phone # (_____)_____-_____

Contact e-mail address _____ Fax # (_____)_____-_____

Operation and maintenance cost for calendar year: $_____

Does the LGRF experience shut downs: ☐ Yes ☐ No

If yes, indicate reasons for shut downs. List required submissions that have been attached to this form or the reasons for not attaching a required piece of information:

_____

_____

_____

_____

Year landfill opened: 2017 Anticipated landfill closure date: 2031

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Results of Condensate Sampling

Submit (attached to this form) condensate quality monitoring results accomplished in accordance with condensate sampling. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

Not applicable, condensate monitoring and reporting is not performed.

Landfill Gas Utilized For Energy Recovery

Provide the following information for the landfill gas recovered for energy. **DO NOT INCLUDE THE GAS FLARED!**

	Landfill Gas Collected for Energy Recovery (Cubic Feet)	Steam* Generated (Cubic Feet)	Total Electricity* Generated for onsite and offsite use (K.W.H.)	Total Gas Processed for use other than electricity generation (Cubic Feet)	Condensate Generated (Gallons)	Facility Operation (Hours)
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
ANNUAL TOTAL	N/A					

* Provide where applicable.

Normal Weekdays of Operation _____ Normal Hours of Operation_____

Electricity Generated and used/marketed offsite _____KWH
Electricity Generated and used onsite _____ KWH
Gas Processed and used/marketed offsite _____ cubic feet
Gas Processed and used onsite _____ cubic feet

Describe the collection, storage, treatment and disposal techniques used in managing the condensate:

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SECTION 11 - COST ESTIMATES AND FINANCIAL ASSURANCE DOCUMENTS

Are there required cost estimates and financial assurance documents for closure and post-closure care?

☒ Yes ☐ No If yes, attach additional sheets reflecting annual adjustments for inflation and any changes to the Closure Plan? See Attachment 11-1.*

* Note: 110 Sand Company is currently exploring options to comply with these DEC requirements.

SECTION 12 – PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

☐ Yes ☒ No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem.

SECTION 13 – CHANGES

Were there any changes from approved reports, plans, specifications, and permit conditions?

☐ Yes ☒ No If yes, attach additional sheets identifying changes with a justification for each change.

SECTION 14 - ANALYTICAL RESULTS

Submit (attached to this form) tables showing the sample collection date, the analytical results [including all peaks even if below the Method Detection Limits (MDL)], designation of upgradient wells and location number for each environmental monitoring point sampled, applicable water quality standards, and groundwater protection standards if established, MDL's, and Chemical Abstracts Service (CAS) numbers on all parameters. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

Not required for annual reports.

SECTION 15 - COMPARING DATA

Submit (attached to this form) tables or graphical representations comparing current water quality with existing water quality and with upgradient water quality. These comparisons may include Piper diagrams, Stiff diagrams, tables, or other analyses. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

Not required for annual reports.

Reprinted (12/17)

SECTION 16 - DISCUSSION OF RESULTS

Submit (attached to this form) a summary of any contraventions of State water quality standards, significant increases in concentrations above existing water quality, any exceedances of groundwater protection standards, and discussion of results, and any proposed modifications to the sampling and analysis schedule necessary to meet the Existing, Operational and Contingency water quality monitoring requirements. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

Not required for annual reports.

SECTION 17 - DATA QUALITY ASSESSMENT

Submit (attached to this form) any required data quality assessment reports. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

Not required for annual reports.

SECTION 18 - SUMMARIES OF MONITORING DATA

Submit (attached to this form) a summary of the water quality information presented in Sections 15 and 16 for the year of operation for which the Annual Report is made, noting any changes in water quality which have occurred throughout the year. List submissions (required by this section) that have been attached to this form or the reasons for not attaching a required piece of information:

The requested information is provided in Attachment 18-1, which is a copy of the summary of key findings of the Third Quarter 2017 groundwater monitoring report.

SECTION 19 - SURFACE IMPOUNDMENTS

Does this landfill have a surface impoundment?

☐ Yes ■ No If yes, repeat Sections 12 through 16 above for Quarterly Reports and Section 18 above for Annual report. Attach additional submissions required by this section.

SECTION 20 - PERMIT/CONSENT ORDER REPORTING REQUIREMENTS

Are there any additional permit/consent order reporting requirements not covered by the previous sections of this form?

■ Yes ☐ No If yes, attach additional sheets identifying the reporting requirements with their respective responses. See Attachment 20-1.

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SECTION 21 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit the completed form by email or mail to the appropriate Regional Office (See attachment for Regional Office email & mailing addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMFannualreport@dec.ny.gov

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Jason Golden
Signature

2/16/18
Date

Jason Golden
Name (Print or Type)

President of the General Partner "C. Broman Trans."
Title (Print or Type)

jasong@110sand.com
Email (Print or Type)

170 Cabot Street
Address

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City

New York 11704
State and Zip

(631) 249-4108
Phone Number

ATTACHMENTS: ☒ YES ☐ NO
(Please check appropriate line)

Reprinted (12/17)

ATTACHMENT 3-1
Summary Discussion and Tabular Summary of 2017 Primary Leachate-Monitoring Results

Primary leachate samples were collected during the first and third quarter monitoring rounds in accordance with the required biannual monitoring schedule. Specifically, during each round, samples were collected from the collection systems of Phases 3 through 6, Phases 7 through 9, and Phase 10. Phase 11 became new active phase on April 27th. The first operational sample from the Phase 11 collection system was collected during the third quarter monitoring round. Phases 1 and 2 are unlined and therefore do not have leachate collection systems.

The monitoring plan and schedule for the 110 Sand CFDS requires monitoring primary leachate for the inorganic Part 360 baseline parameters (i.e., leachate indicators and inorganic parameters) twice per year, and monitoring for the organic Part 360 baseline parameters (i.e., volatile organic compounds (VOCs)) once every two years. Monitoring for VOCs was performed during the third quarter of 2017 and the results are included in this summary. The monitoring plan also requires newly-active phases to be monitored for the Part 360 expanded parameters. The Phase 11 collection system leachate was monitored for these additional parameters during the third quarter 2017 monitoring round and the results are included in this summary.

The results for all 2017 collection system leachate samples are summarized in Tables 3-1 through 3-4. To determine the potential for the collection system leachate to impact ground water, the results are compared to the 6NYCRR Part 703 ground-water effluent limits listed in TOGS 1.1.1 Table 5.

As shown in Table 3-1, except for nitrate, which was not detected, the Part 360 baseline leachate indicator parameters were typically detected in the Phases 3 through 11 primary leachate samples. Moreover, the concentrations of the other parameters for which Class GA ground-water effluent limits exist (boron, bromide, chloride, phenols and sulfate) typically exceeded those limits in most or all of the primary leachate samples.

As shown in Table 3-2, of the 24 Part 360 baseline inorganic parameters the Phases 3 through 11 primary leachate samples were analyzed for, three (beryllium, selenium and silver) were not detected, and 11 additional parameters (aluminum, antimony, cadmium, cobalt, copper, cyanide, lead, mercury, nickel, thallium and zinc) were only detected sporadically and/or only at low, primarily estimated concentrations. The ten other parameters (arsenic, barium, calcium, chromium, iron, magnesium, manganese, potassium, sodium and vanadium) were detected in nearly all of the Phases 3 through 11 leachate samples.

However, although the arsenic, iron and magnesium concentration in most or all of the Phases 3 through 11 primary leachate samples exceeded the Class GA ground-water effluent limitations, exceedances for other parameters were relatively low in magnitude and limited to antimony and chromium in Phases 7 through 9, manganese in Phases 10 and 11, and thallium in Phase 11. This finding indicates that, with respect to the Part 360 baseline inorganic parameters, the potential for primary leachate from Phases 3 through 11 to impact ground water is relatively low.

As shown in Table 3-3, a total of 18 VOCs were detected in the 2017 primary leachate samples. Nearly all of the detections occurred only in the Phase 11 sample, and nine of these detections exceeded their Class GA ground water-effluent limit. VOC detections in the other phases' collection systems were limited to lower, primarily sporadic concentrations of 12 of these same VOCs. Only six of these other detections exceeded their Class GA ground water-effluent limit.

As shown in Table 3-4, the Phase 11 collection system leachate is not a significant source of most of the additional Part 360 expanded parameters. Specifically, pesticides, herbicides, PCB Aroclors, hexavalent chromium and tin were not detected. Only cresol, phenol and sulfide were detected, at concentrations exceeding their Class GA ground water-effluent limit.

Overall, the 2017 primary leachate-monitoring results for Phases 3 through 10 are similar to previous years' results.

Table 3-1 (Page 1 of 2)
Summary of First Quarter 2017 Leachate Indicator Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT		
		Phases 3-6 Collection	Phases 7-9 Collection	Phase 10 Collection
Alkalinity, Total	No Std.	3,190	3,640	2,440
Ammonia, as N	Site-Specific	371	333	26.1
BOD	No.Std.	<28.6	104	<28.6
Boron	2	**27.9**	**30.4**	**9.34**
Bromide	2	**22.5**	**4.4**	**15.5**
Chloride	500	**1,660**	**1,410**	<20.0
COD	No Std.	2,190	1,730	483
Color	No Std.	300	400	100
Hardness, Total	No.Std.	1,500	2,000	2,300
Nitrate, as N	20	<0.05	<0.05	<0.05
Phenols, Total	0.002	**0.0417**	**0.0772**	**0.0511**
Sulfate	500	214	**757**	**1,150**
TDS	No Std.	5,920	6,460	4,340
TKN, as N	No Std.	445	366	34.2
TOC	No.Std.	566	384	122

Notes:
Parameters are the NYSDEC Part 360 baseline inorganic parameters.
BOD = Biological oxygen demand.
COD = Chemical oxygen demand.
TDS = Total dissolved solids.
TKN = Total Kjeldahl nitrogen.
TOC = Total organic carbon.
Data are in units of milligrams per Liter (mg/L), except for color which is in color units.
J = Value is qualified as estimated based on results of data validation.
Analyses were performed by a State-certified laboratory using approved methods
Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 3-1 (Page 2 of 2)
Summary of Third Quarter 2017 Leachate Indicator Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT			
		Phases 3-6 Collection	Phases 7-9 Collection	Phase 10 Collection	Phase 11 Collection
Alkalinity, Total	No Std.	3,250	4,960	2,300	1,530
Ammonia, as N	Site-Specific	339	394	26.8	13.5
BOD	No.Std.	63.6	496	46.9	209
Boron	2	**26.8**	**25.2**	**9.62**	**2.58**
Bromide	2	**11.6**	**5.5**	1.6 J	0.6
Chloride	500	**1,760**	**1,890**	**632**	156
COD	No Std.	2,300	2,170	542	550
Color	No Std.	500	1,500	150	250
Hardness, Total	No.Std.	1,700	2,100	2,200	1,100
Nitrate, as N	20	<0.050	<0.050	<0.050	<0.500
Phenols, Total	0.002	**0.1510**	**1.6300**	**0.0291**	**0.120**
Sulfate	500	113	639	**646**	**310**
TDS	No Std.	6,080	8,640	4,250	1,560
TKN, as N	No Std.	532	497	44.6	19.9
TOC	No.Std.	751	725	183	118

Notes:
Parameters are the NYSDEC Part 360 baseline inorganic parameters.
BOD = Biological oxygen demand.
COD = Chemical oxygen demand.
TDS = Total dissolved solids.
TKN = Total Kjeldahl nitrogen.
TOC = Total organic carbon.
Data are in units of milligrams per Liter (mg/L), except for color which is in color units.
J = Value is qualified as estimated based on results of data validation.
Analyses were performed by a State-certified laboratory using approved methods
Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 3-2 (Page 1 of 2)
Summary of First Quarter 2017 Inorganic Parameter Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT		
		Phases 3-6 Collection	Phase 7-9 Collection	Phase 10 Collection
Aluminum	2,000	<200	<200	<200
Antimony	6	<60.0	<60.0	<60.0
Arsenic	50	**55.3**	**96.0**	<10.0
Barium	2,000	744	348	218
Beryllium	3	<5.0	<5.0	<5.0
Cadmium	10	<2.5	<2.5	<2.5
Calcium	No Std.	134,000	290,000	423,000
Chromium, total	100	40.6	**119**	<10.0
Cobalt	No Std.	<50.0	<50.0	<50.0
Copper	1,000	<25.0	<25.0	<25.0
Cyanide, Total	400	<10.0	<10.0	<10.0
Iron	600	**692**	<100	**21,800**
Iron and Manganese	1,000	776	216	**24,000**
Lead	50	<5.0	<5.0	<5.0
Magnesium	35,000	**270,000**	**324,000**	**323,000**
Manganese	600	84.3	216	**2,200**
Mercury	1.4	<0.20	<0.20	<0.20
Nickel	200	<40.0	<40.0	<40.0
Potassium	No Std.	299,000	251,000	74,200
Selenium	20	<10.0	<10.0	<10.0
Silver	100	<10.0	<10.0	<10.0
Sodium	Site-Specific	1,250,000	1,270,000	715,000
Thallium	0.5	<10.0	<10.0	<10.0
Vanadium	No Std.	90.1	164	65.0
Zinc	5,000	<20.0	<20.0	<20.0

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

Data are in units of micrograms per Liter (ug/L).

J = Value is qualified as estimated based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 3-2 (Page 2 of 2)
Summary of Third Quarter 2017 Inorganic Parameter Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT			
		Phases 3-6 Collection	Phases 7-9 Collection	Phase 10 Collection	Phase 11 Collection
Aluminum	2,000	<200	544	<200	47.3 J
Antimony	6	<60.0	**84.1**	<60.0	<60.0
Arsenic	50	**67.6**	**251**	11.9	**96.5**
Barium	2,000	684	261	226	231
Beryllium	3	<5.0	<5.0	<5.0	<5.0
Cadmium	10	0.12 J	<2.5	<2.5	<2.5
Calcium	No Std.	127,000	188,000	334,000	253,000
Chromium, total	100	37.2	**230**	17.6	6.8 J
Cobalt	No Std.	11.4 J	4.3 J	<50.0	1.3 J
Copper	1,000	5.2 J	<25.0	<25.0	<25.0
Cyanide	400	<10 J	87 J	<10	13.8
Iron	600	**14,400**	70.4	**4,940**	**5,100**
Iron and Manganese	1,000	**14,464**	209	**6,430**	**13,120**
Lead	50	<5.0	<5.0	<5.0	2.2 J
Magnesium	35,000	**246,000**	**245,000**	**304,000**	**108,000**
Manganese	600	63.8	139	**1,490**	**8,020**
Mercury	1.4	<0.20	<0.20	<0.20	0.036 J
Nickel	200	12.2 J	13.6 J	10.6 J	8.4 J
Potassium	No Std.	280,000	239,000	74,000	38,200
Selenium	20	<10.0	<10.0	<10.0	<10.0
Silver	100	<10.0	<10.0	<10.0	<10.0
Sodium	Site-Specific	1,130,000	1,430,000	631,000	288,000
Thallium	0.5	<10.0	<10.0	<10.0	**4.9 J**
Vanadium	No Std.	93.6	213	83.6	32.9 J
Zinc	5,000	31.2	9.0 J	2.6 J	2.4 J

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

Data are in units of micrograms per Liter (ug/L).

J = Value is qualified as estimated based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 3-3
Summary of Third Quarter 2017 Volatile Organic Compound Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT			
		Phases 3-6 Collection	Phases 7-9 Collection	Phase 10 Collection	Phase 11 Collection
Acetone	50	16	49.6	<5.0	**369**
Benzene	1	**4.7**	**6.9**	**2.9**	**4.1**
2-Butanone	50	<5.0	3.0 J	<5.0	**129**
Carbon Disulfide	60	1.8	4.9	<1.0	5.9
1,4-Dichlorobenzene	3	1.0	1.8	1.4	1.9
Dichlorodifluoromethane	5	<1.0	<1.0	<1.0	**6.0**
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	1.5
1,2-Dichloroethane	0.6	<1.0	<1.0	**1.9**	**8.2**
cis-1,2-Dichloroethene	5	<1.0	1.3	2.8	4.5
Ethylbenzene	5	2.2	**7.2**	1.6	**13**
2-Hexanone	50	<5.0	<5.0	<5.0	1.7 J
Methylene Chloride	5	<1.0	<1.0	<1.0	**8.7**
4-Methyl-2-Pentanone	No Std.	<5.0	21.2	<5.0	21.6
Styrene	5	<1.0	<1.0	<1.0	2.6
Tetrachloroethene	5	<1.0	<1.0	<1.0	2.0
Toluene	5	1.0	**10.4**	1.5	**35.1**
Trichloroethene	5	<1.0	2.3	<1.0	3.0
Xylene	15	<2.0	<2.0	1.2 J	**47.5**

Notes:
Parameters are the NYSDEC Part 360 Baseline VOCs that were detected in at least one leachate sample.
Standards are the Class GA ground-water effluent limits listed in NYSDEC DOW TOGS 1.1.1.
Data are in units of micrograms per Liter (ug/L).
J = result qualified as estimated by data validator.
Analyses were performed by a State-certified laboratory using approved methods
Results in boldface type are potentially higher than the effluent limit.

Table 3-4
Summary of Third Quarter 2017 Expanded Parameter Results
110 Sand CFDS Primary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	PHASE 11 COLLECTION SYSTEM SAMPLE RESULTS
Additional Analyte Groups:		
Pesticides	Varies	ND
Herbicides	Varies	ND
PCB Aroclors	0.09*	ND
SVOCs Detected:		
Cresol (m+p)	2**	**185**
Phenol	2**	**67.5**
Additional Inorganic Parameters:		
Hexavalent Chromium	100	<200
Sulfide	1,000	**76,800**
Tin	No Std.	<50.0

Notes:
Parameters listed are the additional Part 360 expanded parameters.
Pesticides and PCBs were not detected.
Only the two SVOCs listed were detected.
Effluent limits are from NYSDEC TOGS 1.1.1.
Data are in units of micrograms per Liter (ug/L).
ND = not detected.
Results in boldface type are higher than effluent limit.
* Limit for Total PCBs.
** Limit for Total Phenolic Compounds.

ATTACHMENT 4-1
Summary Discussion and Tabular Summary of 2017 Secondary Leachate-Monitoring Results

Secondary leachate samples were collected during the first and third quarter monitoring rounds in accordance with the required biannual monitoring schedule. Specifically, during each round, samples were collected from the detection systems of Phases 5 and 6, Phases 7 through 9, and Phase 10. Phase 11 became new active phase on April 27th. The first operational sample from the Phase 11 detection system was collected during the third quarter monitoring round. Phases 1 and 2 are unlined and Phases 3 and 4 are single-lined, and therefore do not have leachate detection systems.

The monitoring plan and schedule for the 110 Sand CFDS requires monitoring secondary leachate for the inorganic Part 360 baseline parameters (i.e., leachate indicators and inorganic parameters) twice per year, and monitoring for the organic Part 360 baseline parameters (i.e., volatile organic compounds (VOCs)) once every two years. Monitoring for VOCs was performed during the third quarter of 2017 and results included in this summary. The monitoring plan also requires newly-active phases to be monitored for the Part 360 expanded parameters. The Phase 11 detection system leachate was monitored for these additional parameters during the third quarter 2017 monitoring round and the results are included in this summary.

The results for all 2017 detection system leachate samples are summarized in Tables 4-1 through 4-4. To determine the potential for the detection system leachate to impact ground water, the results are compared to the 6NYCRR Part 703 ground-water effluent limits listed in TOGS 1.1.1 Table 5.

As shown in Table 4-1, except for nitrate, which was not detected, each Part 360 baseline leachate indicator parameter was detected in most or all of the Phases 5 through 11 secondary leachate samples. Moreover, the concentrations of four of the five other parameters for which Class GA ground-water effluent limits exist (boron, bromide, chloride and phenols) exceeded those limits in certain samples, primarily the samples from Phases 5 through 9.

As shown in Table 4-2, six of the 24 Part 360 baseline inorganic parameters (antimony, beryllium, cadmium, mercury, selenium and silver) were not detected in the Phases 5 through 11 secondary leachate samples. Ten other parameters (aluminum, chromium, cobalt, copper, cyanide, lead, nickel, thallium, vanadium and zinc) were only detected sporadically and/or only at low, primarily estimated concentrations. Two additional parameters (arsenic, and barium,) were only detected and/or at their highest concentrations in the Phases 5 and 6 samples. Manganese was detected at its highest concentrations in the Phase 10 and Phase 11 samples. The five remaining parameters (calcium, iron, magnesium,

potassium and sodium) were detected in a majority of the Phases 5 through 11 secondary leachate samples.

However, although the iron and magnesium concentrations in most of the Phases 5 through 11 secondary leachate sample exceeded their Class GA ground-water effluent limitation, exceedances for other parameters were limited to sporadic, exceedances for arsenic, and manganese. This finding indicates that with respect to these inorganic parameters, the potential for secondary leachate from Phases 5 through 11 to impact ground water is also relatively low.

As shown in Table 4-3, only 9 of the 18 VOCs detected in the primary leachate samples were detected in the secondary leachate samples, and almost all of these detections were limited to sporadic, low concentrations below their NYSDEC Class GA ground-water effluent limit. The only exceedances were for benzene Phases 7 through 9. This VOC breaks down in the environment, and has typically not been detected at significant concentrations in ground-water samples. Overall, the VOC results for the secondary leachate samples indicates minimal potential to impact ground water.

As shown in Table 4-4, the Phase 11 secondary leachate is not a significant source of the additional Part 360 expanded parameters. Specifically, pesticides, herbicides, PCB Aroclors, cresol, phenol and hexavalent chromium were not detected. Only tin was detected, at a low, estimated concentration below the Class GA ground water-effluent limit.

Overall, the 2017 secondary leachate-monitoring results for Phases 5 through 10 are also similar to previous years' results.

Table 4-1 (Page 1 of 2)
Summary of First Quarter 2017 Leachate Indicator Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT			
		Phases 5-6 Detection	Phases 5-6 Duplicate	Phases 7-9 Detection	Phase 10 Detection
Alkalinity, Total	No Std.	1,090	1,100	359	925
Ammonia, as N	Site-Specific	143	140	7.2	30.5
BOD	No.Std.	31.9	95.8	<28.6	<28.6
Boron	2	**10.7**	**10.8**	0.712	**2.72**
Bromide	2	**4.50**	**4.3**	<0.50	0.57
Chloride	500	**945**	**1,000**	159	159
COD	No Std.	1,020	908	109	225
Color	No Std.	200	150	250	50.0
Hardness, Total	No.Std.	400	600	320	1,300
Nitrate, as N	20	<0.05	<0.05	<0.05	<0.05
Phenols, Total	0.002	**0.0688**	**0.0542**	**0.0088**	**0.0151**
Sulfate	500	84.4	83.3	167	31.1
TDS	No Std.	2,410	2,330	800	1,620
TKN, as N	No Std.	142	153	8.0	31.8
TOC	No.Std.	206	207	16.6	57.0

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

BOD = Biological oxygen demand.

COD = Chemical oxygen demand.

TDS = Total dissolved solids.

TKN = Total Kjeldahl nitrogen.

TOC = Total organic carbon.

Data are in units of milligrams per Liter (mg/L).

J = Value is qualified as estimated based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 4-1 (Page 2 of 2)
Summary of Third Quarter 2017 Leachate Indicator Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT				
		Phases 5-6 Detection	Phases 5-6 Duplicate	Phases 7-9 Detection	Phase 10 Detection	Phase 11 Detection
Alkalinity, Total	No Std.	1,520	3,400	993	976	518
Ammonia, as N	Site-Specific	156	177	30.9	4.7	1.5
BOD	No.Std.	431	356	36.0	<13.3	97.9
Boron	2	**12.3**	**12.2**	**2.830**	0.886	0.456
Bromide	2	**5.10**	**6.1**	0.46 J	0.25 J	0.046 J
Chloride	500	**982**	**1,300**	229	94.5	34.4
COD	No Std.	902	796	267	182	107
Color	No Std.	750	750	100	40.0	75.0
Hardness, Total	No.Std.	750	1,000	800	780	367
Nitrate, as N	20	<0.050	<0.050	<0.050	<0.050	<0.50
Phenols, Total	0.002	**0.0847**	**0.0761**	**0.0076 J**	**0.0132**	**0.0069**
Sulfate	500	113	358	114	134	130
TDS	No Std.	5,030	5,320	1,230	1,270	754
TKN, as N	No Std.	216	227	49.6	18.2	2.0
TOC	No.Std.	279	289	77.7	40.6	31.1

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

BOD = Biological oxygen demand.

COD = Chemical oxygen demand.

TDS = Total dissolved solids.

TKN = Total Kjeldahl nitrogen.

TOC = Total organic carbon.

Data are in units of milligrams per Liter (mg/L).

J = Value is qualified as estimated based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 4-2 (Page 1 of 2)
Summary of First Quarter 2017 Inorganic Parameter Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT			
		Phases 5-6 Detection	Phases 5-6 Duplicate	Phases 7-9 Detection	Phase 10 Detection
Aluminum	2,000	<200	<200	<200	<200
Antimony	6	<60.0	<60.0	<60.0	<60.0
Arsenic	50	47.5	**86.3**	<10.0	<10.0
Barium	2,000	269	277	<200	202
Beryllium	3	<5.0	<5.0	<5.0	<5.0
Cadmium	10	<2.5	<2.5	<2.5	<2.5
Calcium	No Std.	33,000	34,600	136,000	219,000
Chromium, total	100	<10.0	<10.0	<10.0	<10.0
Cobalt	No Std.	<50.0	<50.0	<50.0	<50.0
Copper	1,000	<25.0	<25.0	<25.0	<25.0
Cyanide, Total	400	<10.0	<10.0	<10.0	<10.0
Iron	600	**12,200**	**36,900**	**611**	**6,230**
Iron and Manganese	1,000	**12,356**	**36,995**	**1,092**	**8,290**
Lead	50	<5.0	<5.0	<5.0	<5.0
Magnesium	35,000	**76,300**	**78,300**	22,500	**50,800**
Manganese	600	156	94.9	481	**2,060**
Mercury	1.4	<0.20	<0.20	<0.20	<0.20
Nickel	200	<40.0	<40.0	<40.0	<40.0
Potassium	No Std.	110,000	109,000	10,600	32,500
Selenium	20	<10.0	<10.0	<10.0	<10.0
Silver	100	<10.0	<10.0	<10.0	<10.0
Sodium	Site-Specific	612,000	611,000	81,100	254,000
Thallium	0.5	<10.0	<10.0	<10.0	<10.0
Vanadium	No Std.	<50.0	<50.0	<50.0	<50.0
Zinc	5,000	<20.0	<20.0	<20.0	<20.0

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

Data are in units of micrograms per Liter (ug/L).

J = Value is qualified as estimated based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 4-2 (Page 2 of 2)
Summary of Third Quarter 2017 Inorganic Parameter Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT				
		Phases 5-6 Detection	Phases 5-6 Duplicate	Phases 7-9 Detection	Phase 10 Detection	Phase 11 Detection
Aluminum	2,000	<200	48.7 J	<200	<200	30.3 J
Antimony	6	<60.0	<60.0	<60.0	<60.0	<60.0
Arsenic	50	**117 J**	**78.0 J**	<10.0	<10.0	<10.0
Barium	2,000	306	299	113 J	171 J	77.7 J
Beryllium	3	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	10	<2.5	<2.5	<2.5	<2.5	<2.5
Calcium	No Std.	46,100	45,900	169,000	225,000	142,000
Chromium, total	100	13	20.5	8.4 J	<10.0	<10.0
Cobalt	No Std.	3.4 J	2.9 J	<50.0	<50.0	2.6 J
Copper	1,000	14.0 J	4.6 J	<25.0	6.2 J	3.0 J
Cyanide, Total	400	14	18.2	<10	<10	<10
Iron	600	**40,500 J**	**13,700 J**	**1,910**	**18,800**	**8,530**
Iron and Manganese	1,000	**40,597**	**13,748**	**2,444**	**21,430**	**13,790**
Lead	50	1.3 J	<5.0	<5.0	<5.0	2.5 J
Magnesium	35,000	**88,900**	**89,100**	**44,300**	32,900	18,800
Manganese	600	96.6 J	47.9 J	534	**2,630**	**5,260 J**
Mercury	1.4	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	200	7.5 J	6.5 J	1.0 J	1.2 J	1.4 J
Potassium	No Std.	126,000	124,000	29,500	16,700	9,820
Selenium	20	<10.0	<10.0	<10.0	<10.0	<10.0
Silver	100	<10.0	<10.0	<10.0	<10.0	<10.0
Sodium	Site-Specific	651,000	653,000	169,000	200,000	88,700
Thallium	0.5	<10.0	<10.0	<10.0	<10.0	<10.0
Vanadium	No Std.	28.3 J	27.8 J	16.0 J	6.2 J	<50.0
Zinc	5,000	3.6 J	2.0 J	5.4 J	3.5 J	<20.0

Notes:

Parameters are the NYSDEC Part 360 baseline inorganic parameters.

Data are in units of micrograms per Liter (ug/L).

J = Value is qualified as estimated based on results of data validation.

R = Value is qualified as rejected based on results of data validation.

Analyses were performed by a State-certified laboratory using approved methods.

Results in bold font exceed NYSDEC Part 703 Effluent Limit in TOGS 1.1.1 Table 5.

Table 4-3
Summary of Third Quarter 2017 Volatile Organic Compound Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	SAMPLE LOCATION AND RESULT				
		Phases 5-6 Detection	Phases 5-6 Duplicate	Phases 7-9 Detection	Phase 10 Detection	Phase 11 Detection
Acetone	50	4.2 J	7.1	<5.0	<5.0	27.8
Benzene	1	**9.6**	**10.0**	**2.6**	1.0	<1.0
2-Butanone	50	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Disulfide	60	2.7	3.1	1.6	<1.0	<1.0
1,4-Dichlorobenzene	3	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	1.1	1.9	<1.0
Ethylbenzene	5	1.5	1.4	1.6	<1.0	<1.0
2-Hexanone	50	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	5	<1.0	<1.0	<1.0	2.6	4.1
4-Methyl-2-Pentanone	No Std.	1.3 J	1.5 J	<5.0	<5.0	<5.0
Styrene	5	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	1.6	1.7	3.5	<1.0	<1.0
Trichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene	15	<2.0	<2.0	3.1	<2.0	<2.0

Notes:

Parameters are the NYSDEC Part 360 Baseline VOCs that were detected in at least one leachate sample.

Standards are the Class GA ground-water effluent limits listed in NYSDEC DOW TOGS 1.1.1.

Data are in units of micrograms per Liter (ug/L).

J = result qualified as estimated by data validator.

Analyses were performed by a State-certified laboratory using approved methods

Results in boldface type are potentially higher than the effluent limit.

Table 4-4
Summary of Third Quarter 2017 Expanded Parameter Results
110 Sand CFDS Secondary Leachate Samples

PARAMETER	NYSDEC EFFLUENT LIMIT	PHASE 11 DETECTION SYSTEM SAMPLE RESULTS
Additional Analyte Groups:		
Pesticides	Varies	ND
Herbicides	Varies	ND
PCB Aroclors	0.09*	ND
SVOCs Detected:		
Cresol (m+p)	2**	<5.0
Phenol	2**	<5.0
Additional Inorganic Parameters:		
Hexavalent Chromium	100	<200
Sulfide	1,000	<2,000
Tin	No Std.	4.8 J

Notes:
Parameters listed are the additional Part 360 expanded parameters.
Pesticides and PCBs were not detected.
Only the two SVOCs listed were detected.
Effluent limits are from NYSDEC TOGS 1.1.1.
Data are in units of micrograms per Liter (ug/L).
ND = not detected.
Results in boldface type are higher than effluent limit.
* Limit for Total PCBs.
** Limit for Total Phenolic Compounds.

ATTACHMENT 7-1

Listing of Customers > 500 Tons in 2017

LISTING OF CUSTOMERS >500 TONS IN 2017 (PAGE 1 OF 2)		
CUSTOMER ---- ---- ---- COUNTY	Estimated Tons Received	Transport Method
Nassau & Suffolk		
A DILEMME CONTRACTING	488	Direct haul
A H CONSTRUCTION	2,367	Direct haul
A. RUSSO WRECKING Inc.	825	Direct haul
AA DANZO SANITATION	2,183	Direct haul
AJR INDUSTRIES INC.	896	Direct haul
ALL UNITED MADRID IN	1,236	Direct haul
ASPLUNDH CONSTRUCTION CORP.	1,058	Direct haul
ATC	1,592	Direct haul
BONILLA DUMPSTER RENTAL	1,367	Direct haul
BOYLE SERVICES INC.	587	Direct haul
BROTHERS WASTE SERVICES	2,348	Direct haul
CHESTERFIELD ASSOCIATES	669	Direct haul
CODI TRANSPORT INC.	19,906	Direct haul
CROWN WASTE	618	Direct haul
D&S ROOFING	706	Direct haul
DARR CONST. EQUIP. CORP.	710	Direct haul
DIPAOLA CONSTRUCTION	752	Direct haul
E & B INDUSTRIAL CLEANING CORP	3,422	Direct haul
EASTERN ENVIRONMENTAL	1,178	Direct haul
EXTREME REMODELING O	2,786	Direct haul
G.F. CONSTRUCTION	1,072	Direct haul
GATEWAY DEMOLITION CORP.	729	Direct haul
GRAMERCY GROUP	7,746	Direct haul
HORAN SAND & GRAVEL	618	Direct haul
IEV TRUCKING	1,118	Direct haul
INTERCOUNTY PAVING	529	Direct haul
ITP LAUNDROMAT CORP	2,255	Direct haul
JET SANITATION SERVICES	4,066	
JOHANSEN EXCAV-TRUCK	621	Direct haul
L & G RUGGIERO INC.	968	Direct haul
LOS DOS ASES INC.	3,461	Direct haul
MELBA ENTERPRISE	609	Direct haul
N. SAMPOGNA & SON CO	514	Direct haul
NYTAC CORP.	510	Direct haul
PARKLINE ASPHALT	1,356	Direct haul
PAT FRANCO CONTRACTING	3,618	Direct haul
PHIL'S CONSTRUCTION	1,206	Direct haul
POSILLICO CIVIL INC.	907	Direct haul
QUICK CLEAN SERVICES	656	Direct haul
REALITY ROOFING	561	Direct haul
RUTTURA & SONS CONSTRUCT.	7,383	Direct haul
S. VERGATA	535	Direct haul
SILVERITE CONSTRUCTION	675	Direct haul
STEVEN DUBNER LANDSCAP.	617	Direct haul
UNITECH SERVICES GROUP	1,452	Direct haul
V. GAROFALO CARTING	874	Direct haul
VERA CONTRACTING	2,211	Direct haul
WESTBURY RECYCLING	5,757	
WINTERS BROS. WASTE	3,776	Direct haul

LISTING OF CUSTOMERS >500 TONS IN 2017 (PAGE 2 OF 2)		
CUSTOMER ---- ---- ---- COUNTY	Estimated Tons Received	Transport Method
New York City		
A.J. RECYCLING	13,555	
ALLOCCO RECYCLING	1,602	
ARGUDO CORP	1,077	Direct haul
ATLAS ROLL-OFF	9,303	Direct haul
BASIN HAULAGE INC.	1,389	Direct haul
CITY RECYCLING CORP.	317,082	
CLEAN EARTH INC.	6,217	Direct haul
COOPER TANK	36,839	
EMPIRE RECYCLING SERVICES	15,602	
GLOBAL TRANSFER STATION	15,135	
GREEN BAY SANITATION	1,235	Direct haul
J M CONTRACTORS	2,271	Direct haul
JD RECYCLING	26,257	
MASPETH CONTRACTING	868	Direct haul
NEW STYLE RECYCLING	2,473	
NEW YORK FAST CARTING CORP.	2,692	Direct haul
RAREFORM CARTING INC	1,076	Direct haul
REGAL RECYCLING CO.	2,300	
ROCKAWAY INDUSTRIES	2,197	Direct haul
STATEWIDE DEMOLITION	510	Direct haul
SUNNY BUILDER'S NY CO	1,411	Direct haul
THE CESSPOOL MAN	714	Direct haul
TOTAL STRUCTURE	2,959	Direct haul
TRANSBORO	21,832	
TRIPLE CROWN	3,237	Direct haul
TRISTATE CLEANING SO	1,847	Direct haul
TULLY ENVIRONMENTAL	2,655	
US ENVIRONMENTAL ABATE	2,978	Direct haul
ZEVEL TRANSFER	14,223	
Westchester County		
WAGNER CONSTRUCTION	543	Direct haul
Out of State		
CARDELLA WASTE SERVICES	1,051	Direct haul

ATTACHMENT 11-1

Letter from S. Rahman of NYSDEC to J. Golden of 110 Sand Company, dated February 21, 2018

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Materials Management, Region 1
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0375 I F: (631) 444-0231
www.dec.ny.gov

CERTIFIED MAIL – RETURN RECEIPT

February 21, 2018

Mr. Jason Golden
110 Sand Company
170 Cabot Street
West Babylon, NY 11704

Re: **110 Sand Clean Fill Disposal Site (CFDS) (Facility)**
Final Cover System Design and Financial Assurance submission

Dear Mr. Golden:

The Department is in receipt of the Financial Assurance calculations dated June 30, 2017. In this regard, the regional staff met with you and your consultant (Mr. Paul Lappano, P.E.) of LKB on August 15, 2017, and discussed the closure cost and post closure maintenance cost and the capping design. Subsequent to that meeting, Mr. Lappano forwarded a revised engineering report (addendum) for the capping design and a clarification on the revised costs via an email dated August 24, 2017. Regional staff again met with you and Mr. Lappano on February 1, 2018 to further clarify the Department requirements.

Based on the review of the documents and our discussions, the Department offers the following comments:

I. Design of the final cover system:

The facility's closure plan and the solid waste permit were approved and issued under the 6 NYCRR Part 360 regulations (effective March 2003). This regulation has since been revised and a new version became effective on November 4, 2017. In accordance with the transition rules of 6 NYCRR Part 360 (effective November 4, 2017), the requirements of this regulation will not be applicable to the facility until the solid waste permit is either renewed or modified. As such, our review is based on the regulation that was effective at the time of your permit issuance.

a) 110 Sand's original cover system design (using the conventional option in accordance with 6 NYCRR Part 360-2.15(d)), includes a gas venting layer. If the facility intends to eliminate the gas venting layer, as required in 6 NYCRR Part 360-2.13(p), the facility must submit a variance request in accordance with 6 NYCRR Part 360-1.7(c). Otherwise, the permit needs to be modified, and will then be subject to the revised regulation.

b) Similarly, a permit modification will not be needed for the use of an alternate closure design (equivalent design in accordance with 6 NYCRR Part 360-2.13(w)). If the facility intends to pursue a proposed equivalent design (alternative cap design with turf), the facility must submit a detailed design calculation for Department's approval demonstrating that the alternative components of the closure system will have the ability to perform in the same manner as the components prescribed under Subpart 360-2.15(d). The alternative design must comply with the requirements specified in 6 NYCRR Part 360-2.13(w) and must include variance requests in accordance with 6 NYCRR Part 360-1.7(c) for the gas venting layer, the composite cover component, and the top soil layer.

II. Closure Cost and post closure maintenance cost:

According to 6 NYCRR Part 360-2.19(b)(1), the closure cost estimate must include the cost for hiring a third party to perform closure in accordance with the facility's closure plan. The recently submitted closure plan includes conventional and alternate closure options for the cover system for phases 8 through 11. In accordance with 6 NYCRR Part 360-2.19(b)(1)(i), the cost estimate must equal the cost of closing the largest active portion of the landfill when the extent and manner of its operation would make closure most expensive as indicated by the closure plan. Therefore, the facility's closure cost estimate must include the costs for closing phases 8 through 11 in accordance with the more expensive closure option.

Additionally, the post-closure care cost estimate must include costs for phases 1 through 11. The post-closure care costs for phases 1 through 7 which are permanently closed and capped, should reflect the required post-closure care monitoring and maintenance activities for these cells. Whereas, the closure and post-closure care costs for phases 8 through 11 which are active, should reflect the post-closure care monitoring and maintenance activities associated with the more expensive closure option as per 6 NYCRR Part 360-2.19(c). Therefore, you must maintain the financial assurance (closure cost and post closure maintenance cost) based on the more expensive closure option. If 110 Sand does not want to submit the above required variance requests, then it must submit the closure cost estimates based on the conventional design option for the phases 8 through 11.

Please provide the Department with the revised financial assurance in case you do not wish to pursue the variance request. At this point, the Department requests you to submit all the relevant documents as outlined in this letter within 60 calendar days of the receipt of this letter.

If you have any questions regarding the above matter, please contact Mr. Omar Chowdhury, P.E. of my staff at (631) 444-0422.

Sincerely,

Syed H. Rahman, P.E.
Regional Materials Management Engineer

cc: Merlange Genece, P.E., Regional Engineer, Air and Materials Management
Jignesh Shah, P.E., NYSDEC, Region 1
Omar Chowdhury, P.E., NYSDEC, Region 1
Benazir. Khan, P.E., NYSDEC, Region 1
Jaime Lang, P.E., NYSDEC, Albany
Paola Munar Monero, NYSDEC, Albany

ATTACHMENT 18-1

Copy of the Summary of Key Findings
Third Quarter 2017 Ground Water-Monitoring Report

The summary of key findings from the 2017 third quarter report is restated below:

1. Overall, the results of the third quarter 2017 monitoring round are consistent with previous quarters' results, and indicate that Phases 1 through 11 are not significantly impacting ground water at the Site and that no significant Site-related threats to public health and/or the environment exist via the ground-water pathway. The results also show natural variations in ground-water quality due to the below-average recharge from precipitation since 2015.
2. Based on the water-level data collected this quarter, ground water-flow directions and gradients at the Site are consistent with previous results, and with the phase-specific designations and depths of the wells used to monitor ground-water quality. However, the results also indicate that the Phases 7 through 9 wells are potentially downgradient of portions of Phases 1 through 6. Moreover, the Phases 7 through 10 wells on the west side of the Site are potentially downgradient of the lands located directly to the west.
3. The field parameter results indicate noticeable differences in the results for at least one parameter in every downgradient well relative to Background Well 14S. The specific differences vary by well, but overall are consistent with the leachate indicator and inorganic parameter results. The pH of the ground water is lower than the 6.5-SU lower range-based limit in most of the wells sampled, but the low pH values are naturally-occurring. In general, pH was higher in the downgradient wells than in the background well. The turbidity of the ground water is lower than the 5-NTU ground-water standard in every well sampled except Wells 20S, 25S, 46S, 57S and MW-P10W. The higher turbidities in these wells, all of which are located along the west side of the Site, are attributed to the finer-grained soil lithology in this area of the Site and to the currently low water levels in certain wells.
4. The leachate indicator parameter results indicate that the Site is not a significant source of leachate indicator impacts to ground water. The concentrations of most of the leachate indicator parameters in most of the downgradient wells sampled were noticeably higher relative to Background Well 14S. However, most of the higher concentrations occurred in the Phases 1 through 6 wells, and the Phases 9 and 10 wells located on the east side of the Site. The highest concentrations of most parameters occurred in Phases 1 through 6 Well 13, which is located beneath the older, capped phases of the Site at least 500 feet from the downgradient property boundary. The two Phases 9 and 10 wells on the east side of the Site are located in an area previously used for bentonite mixing and other construction-related activities. The higher concentrations of certain leachate indicator parameters in these two wells are attributed to this past land use. The results for Well 17S also reflect haul-road dust entering the well during the period

when its grip-plug cap was missing. The below-average recharge from precipitation this quarter and during eight of the ten preceding quarters is also contributing to the increases in leachate parameter concentrations as the aquifer is not receiving its normal amount of recharge. The higher chloride concentrations in most of the downgradient wells are primarily attributed to the use of calcium chloride for road deicing during winter months.

5. The only Site-related exceedances of the ground-water standards for leachate indicator parameters were for ammonia, boron and color in Well 13. These exceedances do not represent a significant threat to public health or the environment because: 1) Well 13 is located beneath the older, capped phases of the Site approximately 500 feet from the downgradient property boundary, 2) ammonia is relatively reactive and immobile in ground water, and is not a significant health hazard at such low levels, and 3) the standard for color is aesthetics-based.

6. Except for nitrate, which was not detected in the leachate samples, the Part 360 baseline leachate indicator parameters were detected in most of the leachate samples at much higher concentrations than in the ground-water samples. In general, concentrations were higher in the collection system samples than in the detection system samples. The fact that these parameters are either not detected, or only detected sporadically and/or at much lower concentrations, in the ground-water samples indicates that leachate is not significantly impacting the ground water at the Site.

7. The inorganic parameter results also indicate that the Site is not a significant source of inorganic parameter impacts to ground water. Most (13 out of 24) of the inorganic parameters were either not detected, or were only detected sporadically at low, often estimated concentrations in the ground-water samples. Five others were detected at higher concentrations, but only in one or two wells and most of these detections are not Site-related. The other six (calcium, iron, magnesium, manganese, potassium and sodium) were detected more frequently and at relatively higher concentrations. For the most part, they were detected in the downgradient wells at higher concentrations than in Background Well 14S. This is believed to be due in part to the below-average recharge from precipitation since 2015, which serves to concentrate inorganic parameters in the aquifer water.

8. Site-related exceedances of the Class GA standards for inorganic parameters were limited to iron in Well 13, manganese in Well 6SR, the sum of iron and manganese in these two wells, and sodium in Wells 5SR, 6SR, 6I, 12 and 13. These exceedances are not a significant concern because these parameters are not particularly hazardous and these Phases 1 through 8 wells are located beneath the older, capped phases of the Site at least 500 feet from the property boundary. The exceedances for iron and manganese are not a significant concern with respect to public health or the environment because their standards are aesthetics-based, not health-based. The exceedances for sodium are also not a significant concern with respect to public health or the environment because sodium is not particularly hazardous.

9. The other inorganic parameter exceedances in Well 20S, Well Cluster 24 and Well 25S are associated with localized ground water-quality conditions in this area of the Site and/or off-site influences. The sporadic exceedances for mercury and thallium this quarter are attributed to the below-average recharge from precipitation and low water levels, which results in fine sediment on the bottoms of wells becoming entrained in the samples.

10. Only ten of the 24 Part 360 baseline inorganic parameters were detected in at least one leachate sample at concentrations significantly higher than those typically detected in Site ground-water samples. The fact that these parameters were not detected at similar concentrations in the ground-water samples indicates that Phases 3 through 11 are not significantly impacting ground-water quality. Also, the fact that the concentrations of 13 of the Part 360 baseline inorganic parameters for which NYSDEC effluent limits exist are lower than those limits indicates that the potential for Phases 3 through 11 leachate to significantly impact ground water is relatively low.

11. Based on the VOC results, the Site is not a significant source of VOC releases to ground water. VOCs were detected in only four of the 20 monitoring wells sampled, and were limited to relatively low concentrations of one or two VOCs in each well. Although the benzene concentrations in three of the wells slightly exceeded the 1-ug/L Class GA ground-water standard, these exceedances are not a significant concern because benzene breaks down readily in the environment. VOC detections in leachate primarily occurred in the collection system samples. VOCs in the detection system samples were limited to sporadic, relatively low concentrations of just nine VOCs, only one of which slightly exceeded its Class GA ground water-effluent limit.

12. Phase 11 leachate is not a significant source of the additional expanded parameter releases to ground water. Specifically, pesticides, herbicides and PCBs were not detected in either of the samples. Only two related SVOCs (cresol and phenols) were detected, and only in the collection system sample. Hexavalent chromium was not detected. Only one of the two additional inorganic parameters (sulfide) was detected at a significant concentration, also only in the collection system sample. The cresol and phenol concentrations in the collection system sample exceeded the Class GA ground water-effluent limit for total phenolic compounds, but these two parameters were not detected in the detection system sample.

13. Site-related exceedances of at least one UCL for the leachate indicators and/or inorganic parameters occurred in every Phases 1 through 6 well sampled this quarter. These exceedances are attributed to past releases from the unlined phases of the Site (Phases 1 and 2, and northern side-slope of Phase 3) prior to their being capped; and to the use of calcium chloride for road deicing during the winter months. Moreover, many of these exceedances are relatively minor in magnitude, are for parameters with low RL-based UCLs, and/or are for parameters that are not particularly hazardous (e.g., chloride and sodium). Some sporadic leachate indicator UCL exceedances also occurred in several Phases 7, 9, 10 and

11 wells this quarter. However, these exceedances are not significant because except for Well 17S almost all of them are minor in magnitude, and appear to reflect natural variations in ground water-quality associated with its low pH and the extended period of below-average recharge from precipitation since 2015. The higher-magnitude exceedances in Well 17S are primarily attributed to haul-road dust entering the well during the period when its grip-plug cap was missing. Moreover, the exceedances in Wells 20S and 24S are attributed to localized ground water-quality conditions in this area of the Site and/or off-site influences. There were no exceedances of the VOC UCLs this quarter.

14. The trend analysis results are consistent with the pattern of UCL exceedances and indicate long-term, Site-related increasing trends in the concentrations of at least three out of five trend analysis parameters in Phases 1 through 6 Well 13 since the third quarter of 2004. Impacts in the Phases 1 through 6 wells are attributed to past releases from the unlined phases of the Site. In recent years, fewer than three trend analysis parameters show increasing trends in the Phases 1 through 6 wells, including Well 13. Based on these more recent monitoring results, ground water-quality conditions downgradient of Phases 1 through 6 are stable or improving.

15. The monitoring results this quarter also indicate noticeable differences in ground-water quality, exceedances of standards, guidance values and/or UCLs, and/or increasing trends for three out of five parameters in Wells 17S, 20S, 24S, 25S and MW-P10W. However, further analysis of the results for these wells indicates that these impacts are not related to clean fill disposal activities.

ATTACHMENT 20-1
Summary of Additional Reports Submitted in 2017

During 2017, First, Second and Third Quarter Ground Water-Monitoring Reports, First through Fourth Quarterly Reports, and the 2016 Annual Report were submitted as part of the permit to operate. No leakage was detected in the double-walled leachate collection or detection piping.