Hakes C&D Disposal, Inc.

2020 – ANNUAL OPERATIONS REPORT

HAKES C&D DISPOSAL

4376 Manning Ridge Road
Painted Post, New York 14870

Prepared for:

Casella Waste Management of NY, Inc.
25 Greens Hill Lane
Rutland, VT 05701

Prepared by:

McMahon & Mann Consulting Engineering and Geology, P.C.
2495 Main Street
Suite 432
Buffalo, New York 14214

Permit Number: 8-4630-00010/00001-0
Facility Number SW # 51D03

FEBRUARY 2021

ACTIVE CONSTRUCTION AND DEMOLITION (C&D) DEBRIS LANDFILL ANNUAL/QUARTERLY REPORT

Submit the Annual Report no later than March 1, 2021

A. This annual report is for the year of operation from January 01, 2020 to December 31, 2020

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

SECTION 1 – FACILITY INFORMATION

FACILITY INFORMATION

FACILITY NAME: Hakes C&D Landfill			
FACILITY LOCATION ADDRESS: 4376 Manning Ridge Road	**FACILITY CITY:** Painted Post	**STATE:** NY	**ZIP CODE:** 14870
FACILITY TOWN: Campbell	**FACILITY COUNTY:** Steuben	**FACILITY PHONE NUMBER:** 1-607-937-6044	
FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report). Steuben County		**NYSDEC REGION #:** 8	

360 PERMIT #: 8-4630-00010/00001-0	**DATE ISSUED:** Nov. 11, 2013	**DATE EXPIRES:** Nov. 10, 2023	**NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER:** 51D03

FACILITY CONTACT: Larry Shilling	☐ **public** ☒ **private**	**CONTACT PHONE NUMBER:** 1-585-466-7271	**CONTACT FAX NUMBER:** 1-585-466-3206
CONTACT EMAIL ADDRESS: larry.shilling@casella.com			

OWNER INFORMATION

OWNER NAME: Hakes C&D Disposal, Inc.	**OWNER PHONE NUMBER:** 1-607-937-6044	**OWNER FAX NUMBER:** 1-585-937-6089	
OWNER ADDRESS: 4376 Manning Ridge Road	**OWNER CITY:** Painted Post	**STATE:** NY	**ZIP CODE:** 14870
OWNER CONTACT: Larry Shilling	**OWNER CONTACT EMAIL ADDRESS:** larry.shilling@casella.com		

OPERATOR INFORMATION

OPERATOR NAME: ☒ *same as owner* ☐ **public** ☒ **private**

PREFERENCES

Preferred address to receive correspondence: ☒ *Facility location address* ☐ *Owner address* ☐ *Other (provide):*

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

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

Did you operate in 2020? ☒ Yes; Complete this form.

☐ No; Complete and submit Sections 1 and 18. 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?

   299,520 Cubic Yards of Airspace

   Please do not report units as pounds per cubic yard.

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

   0.70 Tons/Cubic Yard

2. Remaining Constructed Capacity

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

   966,997 Cubic Yards of Airspace

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

   1 Years 5 Months

   at 492,325 Tons/Year.* **(466,000 tons/year C&D waste plus 26,325 tons/year cover soils)**

   * 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):

   _____ The amount of materials placed in the landfill in the reporting year

   _____ Estimated future disposal

   X Permit limit

   Other (explain): _____

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?

   1,753,500 Cubic Yards of Airspace

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

   2 Years 7 Months

   at 492,325 Tons/Year.* **(466,000 tons/year C&D waste plus 26,325 tons/year cover soils)**

   * 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):

   _____ The amount of materials placed in the landfill in the reporting year

   _____ Estimated future disposal

   X Permit limit

   Other (explain): _____

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?

0 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?

_____ Cubic Yards of Airspace

SECTION 3 - PRIMARY LEACHATE

Name of off-site leachate treatment facility(s) utilized: Steuben County WWTP

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.

	PRIMARY LEACHATE COLLECTED (GALLONS)						PRIMARY LEACHATE TREATED OFF SITE (GALLONS)					
	Cells 1 -8						Cells 1 -8					
January	190,098.73						170,263.77					
February	222,725.31						246,848.91					
March	285,546.07						247,484.39					
April	202,051.68						264,079.14					
May	265,359.08						269,748.22					
June	118,181.64						199,805.77					
July	112,665.15						121,333.34					
August	76,920.23						86,033.59					
September	107,573.37						94,707.45					
October	96,200.55						82,798.55					
November	106,916.71						97,803.35					
December	243,180.72						211,573.16					
ANNUAL	2,027,419.24						2,092,479.64					

	PRIMARY LEACHATE RECIRCULATED (GALLONS)						PRIMARY LEACHATE TREATED ON SITE (GALLONS)					
	Cell 1 ___Acres	Cell 2 ___Acres	Cell 3 ___Acres	Cell 4 ___Acres	Cell 5 ___Acres	Cell 6 ___Acres	Cell 1 ___Acres	Cell 2 ___Acres	Cell 3 ___Acres	Cell 4 ___Acres	Cell 5 ___Acres	Cell 6 ___Acres
January												
February												
March												
April												
May												
June												
July												
August												
September												
October												
November												
December												
ANNUAL												

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:

Jamko Technical Solutions, Inc. completed video inspections and cleaned the leachate lines, tanks, manholes, sumps, and the loadout pad in July of 2020. This information is included in Attachment 1.

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:
On-Site Geological Services, D.P.C. (On-Site) provided a tabulated compilation of the semi-annual primary leachate quality data and the other monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

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

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

Total quantity treated: 2,092,479 gal **Leachate disposal cost data is considered proprietary.**

SECTION 4 – BENEFICIAL USE DETERMINATION MATERIALS AND ALTERNATIVE OPERATING COVER MATERIALS

For each type of waste material that the Department has approved for use as alternative operating cover (AOC), intermediate cover, or other landfill material, provide the annual weight in tons, use (i.e., operating 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						
Processed C&D						
Contaminated Soil						
Other (specify)						
Total AOC	0					
Total Beneficial Use Determination Materials	0					

Percent Alternative Operating Cover (AOC) Calculation

AOC Calculations: Total Tons AOC/Total Tons Waste Disposed x 100 = _____

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

SECTION 5 – CONSTRUCTION & DEMOLITION (CD) DEBRIS DISPOSED

Provide the tonnages of CD debris disposed. Exclude Beneficial Use Determination Material amounts reported in Section 4. DO NOT REPORT IN CUBIC YARDS!

Specify the methods used to measure the quantities disposed and the percentages measured by each method:

X____% Scale Weight _____% Estimated

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

Construction & Demolition (CD) Debris	Weight (tons)
January	27,971.90
February	21,961.45
March	21,543.44
April	1,054.54
May	0
June	5,454.18
July	24,108.84
August	20,639.75
September	21,312.77
October	22,323.83
November	20,336.86
December	22,955.79
Total Disposed For Year	209,663.35
Daily Average (Tons)	813 tons/day(based on 258 operational days)

Has the landfill received pulverized C&D debris? ☐ Yes ☒ No

If yes, what is the percentage of waste received that is pulverized C&D debris? _____ %

Tipping Fee

Tipping Fee: 52.00 $/ton

SECTION 6 – SERVICE AREA OF C&D DEBRIS RECEIVED

Please identify where the waste is coming from. The total tons received reported below should equal the total tons received in Section 5 (Construction & Demolition (CD) Debris Disposed). DO NOT REPORT IN CUBIC YARDS!

- If the waste ***WAS*** received from another solid waste management facility, please write in the name *and* address of the facility along with the appropriate state, county and planning unit/municipality.
- If the waste ***WAS NOT*** received from another solid waste management facility, please write in "***Direct Haul***" along with the appropriate state, county and planning unit/municipality where the waste was generated.

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**
Construction and Demolition Debris (mixed)	See Attachment 3 - Waste Origin				
Other (specify)					
				TOTAL RECEIVED (tons):	_____

Reprinted (12/20)

SECTION 7 – 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):

See Attachment 4

Date Received	Type Received	Date Disposed	Disposal Method & Location
August 3, 2020	Garbage Bags	This material was rejected from disposal.	
Between 1/1/20 and 12/31/20	Tires were removed and placed in a dumpster for off-site disposal.		

SECTION 8 - 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? **Approved cost estimates and financial assurance documents are included in Attachment 5)**

SECTION 9 – 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 10 – 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 11 – LANDFILL OPERATOR TRAINING

Name of trained landfill operator: Charles Plank & Larry Shilling

Name and location of training course: Landfill Operator Certification, Niagara Falls, NY

3/18/2018 Date completed: _____

SECTION 12 - 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:

On-Site provided a tabulated compilation of the monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

SECTION 13 - 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:

On-Site provided a tabulated compilation of the monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

SECTION 14 - 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:

On-Site provided a tabulated compilation of the monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

SECTION 15 - 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:

On-Site provided a tabulated compilation of the monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

SECTION 16 - SUMMARIES OF MONITORING DATA

Submit (attached to this form) a summary of the water quality information presented in Sections 13 and 14 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:

On-Site provided a tabulated compilation of the monitoring data required in Sections 12 through 16. This information is included in Attachment 2.

SECTION 17 - SURFACE IMPOUNDMENTS

Does this landfill have a surface impoundment?

☐ Yes ☒ No If yes, repeat Sections 12 through 15 above for Quarterly Reports and Section 16 above for Annual report. Attach additional submissions required by this section.

SECTION 18 - 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 6**

SECTION 19 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form to the appropriate Regional Office (See attachment for Regional Office addresses, email addresses and Materials Management 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 Solid Waste Management
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMFannualreport@dec.ny.gov

I certify, under penalty of law, that the data and other information identified in this report have been prepared under my direction and supervision in compliance with a system designed to ensure that qualified personnel properly and accurately gather and evaluate this information. I am aware that any false statement I make in such report is punishable pursuant to section 71-2703(2) of the Environmental Conservation Law and section 210.45 of the Penal Law.

Signature

2/19/21
Date

Larry Shilling
Name (Print or Type)

General Manager
Title (Print or Type)

Larry.Shilling@casella.com
Email (Print or Type)

6653 Herdman Road
Address

Angelica
City

New York 14709
State and Zip

(585) 466-7271
Phone Number

ATTACHMENTS: ☒ YES ☐ NO

ATTACHMENT 1 – LEACHATE LINE CLEANING LOG

JAMKO

Customer:	Site Location:
CASELLA	HAKES LF

Job Number:	P.O. Number:	Date:
6446		7/24/20

JTS Technician(s): EB, JEREMY, DREW

Start Time:	End Time:	Total Hours:
7:00am	10:30am	3.5

Job Description:

- ☑ CCTV Remove Visual Inspection
- ☐ Equipment Use
- ☐ Pipe Cleaning / Jetting
- ☐ Traffic Protection
- ☐ Vactor Services
- ☐ Billable Labor
- ☐ Technical Services
- ☐ Billable Supplies
- ☐ Other _____

Note:

The above referenced services have been performed in accordance with customer specifications and acceptance criteria. Only authorized contracting representatives should sign here.

Authorized Signature:

Print Name: CHARLES PLANK

Jamko Technical Solutions, Inc. • 932 Sohn Alloway Rd • Lyons, New York 14489
Phone: 315-871-4420 • Fax: 315-871-4430
www.jamkocorp.com

JAMKO

Customer:	Site Location:
CASELLA	HAKES LF

Job Number:	P.O. Number:	Date:
6446		07/23/20

JTS Technician(s):

EB, JEREMY DIXEL

Start Time:	End Time:	Total Hours:
7:00 am	4:30pm	9.5

Job Description:

- ☐ CCTV Remove Visual Inspection
- ☐ Equipment Use
- ☑ Pipe Cleaning / Jetting
- ☐ Traffic Protection
- ☐ Vactor Services
- ☐ Billable Labor
- ☐ Technical Services
- ☐ Billable Supplies
- ☐ Other _____

Note:

The above referenced services have been performed in accordance with customer specifications and acceptance criteria. Only authorized contracting representatives should sign here.

Authorized Signature:

Charles Plank

Print Name:

CHARLES PLANK

Jamko Technical Solutions, Inc. • 932 Sohn Alloway Rd • Lyons, New York 14489
Phone: 315-871-4420 • Fax: 315-871-4430
www.jamkocorp.com

JAMKO

Customer:	Site Location:
CASELLA	HAKES LF

Job Number:	P.O. Number:	Date:
6446		07/22/20

JTS Technician(s):

EB, JEREMY ORR

Start Time:	End Time:	Total Hours:
7:00am	4:00pm	9hrs

Job Description:

- ☐ CCTV Remove Visual Inspection
- ☐ Equipment Use
- ☑ Pipe Cleaning / Jetting
- ☐ Traffic Protection
- ☐ Vactor Services
- ☐ Billable Labor
- ☐ Technical Services
- ☐ Billable Supplies
- ☐ Other _____

Note:

The above referenced services have been performed in accordance with customer specifications and acceptance criteria. Only authorized contracting representatives should sign here.

Authorized Signature:

Print Name:

CHARLES PLUNK

Jamko Technical Solutions, Inc. • 932 Sohn Alloway Rd • Lyons, New York 14489
Phone: 315-871-4420 • Fax: 315-871-4430
www.jamkocorp.com

JAMKO

Customer:	Site Location:
Crapella	Oakes LS

Job Number:	P.O. Number:	Date:
6446		7-21-20

JTS Technician(s):

FB, Rob, Drew, Jeremy

Start Time:	End Time:	Total Hours:
7:30 am	4:30p	9 hrs

Job Description:

- ☐ CCTV Remove Visual Inspection
- ☐ Equipment Use
- ☒ Pipe Cleaning / Jetting
- ☐ Traffic Protection
- ☐ Vactor Services
- ☐ Billable Labor
- ☐ Technical Services
- ☐ Billable Supplies
- ☐ Other _____

Note:

The above referenced services have been performed in accordance with customer specifications and acceptance criteria. Only authorized contracting representatives should sign here.

Authorized Signature:

Print Name:

CHARLES FLANK

Jamko Technical Solutions, Inc. • 932 Sohn Alloway Rd • Lyons, New York 14489
Phone: 315-871-4420 • Fax: 315-871-4430
www.jamkocorp.com

JAMKO

Customer:	Site Location:
Casella	Hakes LF

Job Number:	P.O. Number:	Date:
6446		7-20-20

JTS Technician(s):

EB, Rob, Drew, Jeremy

Start Time:	End Time:	Total Hours:
900 AM	600 PM	9 hrs

Job Description:

- [x] CCTV Remove Visual Inspection
- [x] Pipe Cleaning / Jetting
- [ ] Vactor Services
- [ ] Technical Services
- [ ] Other _____
- [ ] Equipment Use
- [ ] Traffic Protection
- [ ] Billable Labor
- [ ] Billable Supplies

Note:

The above referenced services have been performed in accordance with customer specifications and acceptance criteria. Only authorized contracting representatives should sign here.

Authorized Signature: Charles Hank

Print Name: CHARLES HANK

Jamko Technical Solutions, Inc. • 932 Sohn Alloway Rd • Lyons, New York 14489
Phone: 315-871-4420 • Fax: 315-871-4430
www.jamkocorp.com

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

CCTV Inspection Log

Project No.: 6446 Site Location: Laechate Collection Lines Technician(s)

Cell 1A CO into Hill	539LF	Total CCTV:	539'	Comments/Date	7/24/2020
Cell 1 CO into Hill	649LF	Total CCTV:	629'	Comments/Date	7/23/2020
Cell 2 CO into Hill	680LF	Total CCTV:	600'	Comments/Date	7/23/2020
Cell 3 CO to Cell 8A	1396LF	Total CCTV:	511'	Comments/Date	7/23/2020
Cell 4 CO to Cell 7	1397LF	Total CCTV:	574'	Comments/Date	7/23/2020
Cell 5 East CO to Cell 5 West	1349LF	Total CCTV:	471'	Comments/Date	7/23/2020
Cell 5 West CO to Cell 5 East	1349LF	Total CCTV:	709'	Comments/Date	7/23/2020
Cell 6 East CO to Cell 6 West	1492LF	Total CCTV:	509'	Comments/Date	7/23/2020

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

CCTV Inspection Log

Project No.:	6446	Site Location:	Leachate Collection Lines		Technician(s)	Brandon, Vanhoute, Drew	
Cell 6 West CO to Cell 6 East	1492	Total CCTV:	705'		Comments/Date	7/23/2020	
Cell 7 CO to Cell 4	1397LF	Total CCTV:	500'		Comments/Date	7/20/2020	
Cell 8A CO to Cell 3	1396LF	Total CCTV:	693'		Comments/Date	7/20/2020	
Cell 8C CO to 8B Riser	1190LF	Total CCTV:	750'		Comments/Date	7/20/2020	
Cell 8 D CO to 8B Riser	904LF	Total CCTV:	700'		Comments/Date	7/20/2020	
Cell 9A East to West CO	1155LF	Total CCTV:	106'		Comments/Date	weld bead 7/23/2020	
Cell 9AB east to West		Total CCTV:	71'		Comments/Date	weld bead 7/23/2020	
Cell 9A west to east		Total CCTV:	687'		Comments/Date	Stones a 44' 7/23/2020	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

CCTV Inspection Log

Project No.: 6446 Site Location: Leachate Collection Lines Technician(s) Brandon, Vanhoute, Drew

Cell 8B to 8C	Total CCTV:	467'		Comments/Date	7/24/2020
Cell 8B to 8D	Total CCTV:	307'		Comments/Date	7/24/2020
	Total Cleaned:		Passes: 1 2	Comments/Date	
	Total Cleaned:		Passes: 1 2	Comments/Date	
	Total Cleaned:		Passes: 1 2	Comments/Date	
	Total Cleaned:		Passes: 1 2	Comments/Date	
	Total Cleaned:		Passes: 1 2	Comments/Date	
	Total Cleaned:		Passes: 1 2	Comments/Date	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.:	6446	Site Location:	Laechate Collection Lines	Technician	Brandon, Bade, Vanhoute, Drew		
Cell 1A CO into Hill	539LF	Total Cleaned:	539'	Passes: 2	Comments/Date	7/20/2020	
Cell 1 CO into Hill	649LF	Total Cleaned:	649'	Passes:2	Comments/Date	7/20/2020	
Cell 2 CO into Hill	680LF	Total Cleaned:	680'	Passes: 2	Comments/Date	7/20/2020	
Cell 3 CO to Cell 8A	1396LF	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF	7/20/20
Cell 4 CO to Cell 7	1397LF	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF	7/20/20
Cell 5 East CO to Cell 5 West	1349LF	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF	7/20/20
Cell 5 West CO to Cell 5 East	1349LF	Total Cleaned:	750'	Passes:2	Comments/Date	go 750LF	7/20/20
Cell 6 East CO to Cell 6 West	1492LF	Total Cleaned:	750'	Passes: 1 2	Comments/Date	go 750LF	7/20/20

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.: 6446 Site Location: Leachate Collection Lines Technician(s) Brandon, Bade, Vanhoute, Drew

Cell 6 West CO to Cell 6 East	1492	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF 7/20/20
Cell 7 CO to Cell 4	1397LF	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF 7/20/20
Cell 8A CO to Cell 3	1396LF	Total Cleaned:	750'	Passes: 2	Comments/Date	go 750LF 7/20/20
Cell 8C CO to 8B Riser	1190LF	Total Cleaned:	750'	Passes: 1 2	Comments/Date	go 750LF 7/20/20
Cell 8 D CO to 8B Riser	904LF	Total Cleaned:	750'	Passes: 1 2	Comments/Date	7/20/2020
Cell 9A East to West CO	1155LF	Total Cleaned:	750'	Passes: 1 2	Comments/Date	7/20/2020
		Total Cleaned:		Passes: 1 2	Comments/Date	
		Total Cleaned:		Passes: 1 2	Comments/Date	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.:	6446	Site Location:	Header Lines	Technician	Brandon, Bade, Vanhoute, Drew	
Cell 5 Header CO to Cell 6 Header CO	760LF	Total Cleaned:	760'	Passes:2	Comments/Date	use smallest nozzle
Cell 3 Header CO to Cell 5 Header CO	438LF	Total Cleaned:	438'	Passes:2	Comments/Date	use smallest nozzle 7/20/20
Cell 1 Header CO to Cell 3 Header CO	523LF	Total Cleaned:	523'	Passes:2	Comments/Date	use smallest nozzle 7/20/20
Ccell 8B Header Line 1	200LF	Total Cleaned:	200'	Passes: 2	Comments/Date	use smallest nozzle 7/20/20
Cell 8B Header Line 2	200LF	Total Cleaned:	200'	Passes: 2	Comments/Date	use smallest nozzle 7/20/20
		Total Cleaned:		Passes: 1 2	Comments/Date	
		Total Cleaned:		Passes: 1 2	Comments/Date	
		Total Cleaned:		Passes: 1 2	Comments/Date	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.: 6446 Site Location: Sumps Technician(s) Brandon, Vanhoute, Drew

Cell 1 Sump 1	65LF	Total Cleaned:	65'	Passes: 2	Comments/Date	
Cell 1 Sump 2	65LF	Total Cleaned:	65'	Passes: 2	Comments/Date	7/21/2020
Cell 1A Sump 1	63LF	Total Cleaned:	63'	Passes: 2	Comments/Date	7/21/2020
Cell 1A Sump 2	63LF	Total Cleaned:	63'	Passes: 2	Comments/Date	7/22/2020
Cell 2 Sump 1	48LF	Total Cleaned:	48'	Passes: 2	Comments/Date	7/21/2020
Cell 2 Sump 2	48LF	Total Cleaned:	48'	Passes: 2	Comments/Date	7/21/2020
Cell 3 Sump 1	96LF	Total Cleaned:	96'	Passes: 2	Comments/Date	7/21/2020
Cell 3 Sump 2	96LF	Total Cleaned:	96'	Passes: 1 2	Comments/Date	7/21/2020

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.:	6446	Site Location:		Sumps	Technician(s)		Brandon, Vanhoute, Drew
Cell 4 Sump 1	85LF	Total Cleaned:	85'	Passes: 2	Comments/Date	7/21/2020	
Cell 4 Sump 2	85LF	Total Cleaned:	85'	Passes: 2	Comments/Date	7/21/2020	
Cell 5 Sump 1	103LF	Total Cleaned:	103'	Passes: 2	Comments/Date	7/21/2020	
Cell 5 Sump 2	103LF	Total Cleaned:	103'	Passes: 2	Comments/Date	7/21/2020	
Cell 6 Sump 1	95LF	Total Cleaned:	95'	Passes: 1 2	Comments/Date	7/21/2020	
Cell 6 Sump 2	95LF	Total Cleaned:	95'	Passes: 1 2	Comments/Date	7/21/2020	
Cell 8B Sump 1	93LF	Total Cleaned:	93'	Passes: 1 2	Comments/Date	7/22/2020	
Cell 8B Sump 2	93LF	Total Cleaned:	93'	Passes: 1 2	Comments/Date	7/22/2020	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.:	6446	Site Location:		Sumps	Technician(s)		Brandon, Vanhoute, Drew
Cell 9A Sump 1		105LF	Total Cleaned:	105'	Passes: 2	Comments/Date	7/22/2020
Cell 9A Sump 2		105LF	Total Cleaned:	105'	Passes: 2	Comments/Date	7/22/2020
			Total Cleaned:		Passes: 1 2	Comments/Date	
			Total Cleaned:		Passes: 1 2	Comments/Date	
			Total Cleaned:		Passes: 1 2	Comments/Date	
			Total Cleaned:		Passes: 1 2	Comments/Date	
			Total Cleaned:		Passes: 1 2	Comments/Date	
			Total Cleaned:		Passes: 1 2	Comments/Date	

Core VIS
Visual Inspection Services
a DEKRA company

Casella Hakes C&D Landfill

2020 - Cleaning Log

Project No.:	6446	Site Location:	Tanks and MH's	Technician(s)	Brandon, Vanhoute, Drew

Storage Tank 1	Loads:	4		Comments/Date	7/22/2020
Storage Tank 2	Loads:	4		Comments/Date	7/22/2020
Load Off Pad	Cleaned:	Cleaned		Comments/Date	7/23/2020
Condensate Tank 1	Cleaned:	Cleaned	Passes: 1 2	Comments/Date	7/22/2020
Condensate Tank 2	Cleaned:	Cleaned	Passes: 1 2	Comments/Date	7/22/2020
Storage Tank MH	Cleaned:	Cleaned	Passes: 1 2	Comments/Date	7/22/2020
Cell 1A MH	Cleaned:	Cleaned	Passes: 1 2	Comments/Date	7/22/2020
	Total Cleaned:		Passes: 1 2	Comments/Date	

ATTACHMENT 2 – WATER QUALITY DATA

HAKES C&D DISPOSAL

4th QUARTER / ANNUAL 2020 ENVIRONMENTAL MONITORING REPORT

NYSDEC Permit No.: 8-4630-00010/00001-2

February 2021

Table of Contents

Tables

Figures

Overview

This report summarizes calendar year 2020 and details fourth quarter 2020 operational water quality monitoring activities completed at the Hakes C & D Landfill, located in the Town of Campbell, New York. Environmental monitoring is conducted in accordance with *Hakes Construction and Demolition Debris Landfill Expansion Project, 6 NYCRR Part 360 Permit Modification Application, Appendix C – Environmental Monitoring Plan, dated* September 2019 (EMP). Sampling and reporting activities were performed by On-Site Geological Services, D.P.C. (On-Site) of Wellsville, New York. Sample analysis was performed by ALS Environmental (ALS), located in Rochester, New York.

This report addresses Sections 1, 3, and 12 through 19 of the New York State Department of Environmental Conservation (NYSDEC) annual report form and includes the following:

- Tables;
- Figures;
- Appendix A – Field Sampling Forms; and
- Appendix B – Laboratory Analytical Reports.
- Appendix C – Time-Trend Graphs

Section 1 – Owner/Facility Information

Facility Name: Hakes C&D Landfill Town: Campbell County: Steuben NYSDEC Region #: 8
Facility Location: 4376 Manning Ridge Road, Campbell State: NY Zip: 14870
Facility Contact: Larry Shilling Phone #: (607) 937-6044 Fax #: (607) 937-6089
363 Permit #: 8-4630-00010/00001-0 Issued: 11/11/2013 Expires: 11/10/2023
Owner Name: Hakes C&D Disposal, Inc. Phone #: (607) 937-6044
Mailing Address: Same as above

Section 3 – Primary Leachate (Analytical Results Only)

2020 primary leachate sampling was conducted during the second and fourth quarterly monitoring events. A second quarter leachate sample was collected and analyzed for parameters included in 6 NYCRR Part 360 Expanded Parameter List (expanded parameters). A fourth quarter leachate sample was collected and analyzed for parameters included in 6 NYCRR Part 363 Expanded Parameter List (363 expanded parameters). The samples were collected directly from a leachate tank with analytical results typical of historic Site leachate samples. Site leachate generally exhibits significantly lower contaminant concentrations than observed at typical municipal solid waste landfills. Analytical results for the last five leachate samples are presented in Table 1. Primary leachate organic detections for 2020 are shown in the table below.

Date Sampled	Parameter	Result mg/L
13-May-20	Endosulfan I	0.00044
13-May-20	Perfluorobutanoic Acid	0.00095 X
13-May-20	Perfluorooctanoic Acid	0.0011
13-May-20	Perfluorooctanesulfonamide	0.0000023 J
13-May-20	Perfluorononanoic Acid	0.000037
13-May-20	Perfluorohexanoic Acid	0.003 X
13-May-20	Perfluorohexanesulfonic Acid	0.00024
13-May-20	Perfluoroundecanoic Acid	0.0000024 J
13-May-20	Perfluorodecanoic Acid	0.000021
13-May-20	Perfluoropentanoic Acid	0.0032 X
13-May-20	Perfluorobutanesulfonic Acid	0.0005
13-May-20	N-methylperfluoro-1-octanesulfonamidoacetic acid	0.000042
13-May-20	N-ethylperfluoro-1-octanesulfonamidoacetic acid	0.00002
13-May-20	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.000013
13-May-20	6:2 Fluorotelomer sulfonate	0.00029
13-May-20	Perfluoroheptanoic Acid	0.0008 X
13-May-20	Perfluorooctanesulfonic Acid	0.00011
13-May-20	2,4-Dimethylphenol	0.0093
13-May-20	Fluorene	0.0031 J
13-May-20	2-Methylnaphthalene	0.012
13-May-20	2-Methylphenol	0.0065 J
13-May-20	3/4-Methylphenol	0.034
13-May-20	Dibenzofuran	0.0047 J
13-May-20	1,4-Dioxane	0.17
13-May-20	Acenaphthene	0.011
13-May-20	Anthracene	0.0013 J
13-May-20	Acetophenone	0.01
13-May-20	Toluene	0.0069 J
13-May-20	m&p-Xylene	0.0066 J
13-May-20	Benzene	0.0051 J
13-May-20	Phenol	0.02
13-May-20	4-Methyl-2-pentanone	0.054 J
13-May-20	2-Butanone (MEK)	0.66
13-May-20	Acetone	1.7
13-May-20	Naphthalene	0.066
10-Nov-20	gamma-BHC (Lindane)	0.000087 *
10-Nov-20	Perfluorononanoic Acid	0.000076
10-Nov-20	N-ethylperfluoro-1-octanesulfonamidoacetic acid	0.000027
10-Nov-20	6:2 Fluorotelomer sulfonate	0.00026
10-Nov-20	N-methylperfluoro-1-octanesulfonamidoacetic acid	0.000064
10-Nov-20	Perfluorooctanesulfonamide	0.0000027 J
10-Nov-20	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.000014
10-Nov-20	Perfluorohexanesulfonic Acid	0.00027

Date Sampled	Parameter	Result mg/L
10-Nov-20	Perfluorobutanesulfonic Acid	0.00045
10-Nov-20	Perfluoroundecanoic Acid	0.0000061
10-Nov-20	Perfluorooctanesulfonic Acid	0.00019
10-Nov-20	Perfluorododecanoic Acid	0.0000029 J
10-Nov-20	Perfluorodecane Sulfonate	0.00000071 J
10-Nov-20	Perfluorobutanoic Acid	0.0017 X
10-Nov-20	Perfluoropentanoic Acid	0.0035 X
10-Nov-20	Perfluorohexanoic Acid	0.0039 X
10-Nov-20	Perfluoroheptanoic Acid	0.00082
10-Nov-20	Perfluorooctanoic Acid	0.0012
10-Nov-20	Perfluoroheptane sulfonate	0.000011
10-Nov-20	Perfluorodecanoic Acid	0.000056
10-Nov-20	2,4-Dimethylphenol	0.0017 J
10-Nov-20	Acetophenone	0.006 J
10-Nov-20	Diethylphthalate	0.0013 J
10-Nov-20	1,4-Dioxane	0.11
10-Nov-20	4-Methyl-2-pentanone	0.018 J
10-Nov-20	Acetone	0.3
10-Nov-20	2-Butanone (MEK)	0.068 J

Section 12 – Analytical Results

The fourth quarter 2020 quarterly sampling event was conducted between November 9 and December 16, 2020. Laboratory analysis was performed by ALS. Tables presenting the fourth quarter 2020 field parameters and analytical results are included with the appropriate NYSDEC water quality standards as follows:

- Table 2 – Fourth Quarter 2020 Groundwater Analytical Results;
- Table 3 – Fourth Quarter 2020 Surface Water Analytical Results; and
- Table 4 – Fourth Quarter 2020 Groundwater Suppression Systems Analytical Results.

Tables 5 through 7 provide historical data for the last five quarters. A narrative of comparing data to standards is provided in Section 13 and a discussion of results is presented in Section 14. A data quality assessment is provided in Section 15 and a summary of data is referenced in Section 16.

Section 13 – Comparing Data

Site specific Existing Water Quality Values (EWQVs) and trigger values have been established for the facility since 2000 with periodic revisions associated with landfill expansions. The currently approved EWQVs were submitted to NYSDEC on July 13, 2020 in preparation of Cell 9 operations and are presented in Table 5A. As presented in Table 5A, there are separate EWQVs

and trigger values for wells associated with different sections of the landfill. Therefore Table 5A is divided into four parts as follows.

1. Table 5A – Part 1 are routine parameter EWQVs and trigger values that apply to monitoring wells associated with landfill cells 1 through 8 which includes: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H MW-J, MW-O, MW-P and MW-QR. Table 5A – Part 1 EWQVs and trigger values were submitted to the NYSDEC on May 28, 2008 and developed in accordance with 6 NYCRR Part 360-2.11 (c) (5) (i), which is the applicable regulation at that time.
2. Table 5A – Part 2 includes additional parameters that are on the expanded parameter list but not routine parameter list. These EWQVs are required by the Hakes solid waste permit special condition 59 and apply to landfill cells 1 through 8 monitoring wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H MW-J, MW-O, MW-P and MW-QR. Table 5A – Part 2 EWQVs and trigger values were established in accordance with 6 NYCRR 363-4.6(f)(9)(i) (b)(4)(ii).
3. Table 5A – Part 3 EWQVs and trigger values are inter-well expanded parameter list EWQVs that apply to Cell 9 monitoring wells MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) and MW-V(BR). Table 5A – Part 3 EWQVs and trigger values were established in accordance with 6 NYCRR 363-4.6(f)(9)(i) (b)(4)(ii).
4. Table 5A – Part 4 provides Intra-well EWQVs and trigger values for cell 9 monitoring well MW-V. As the pre-operational geochemistry of this well does not compare adequately with the other Cell 9 wells, a standalone intra-well comparison is most applicable for this well. Table 5A – Part 4 EWQVs and trigger values were established in accordance with 6 NYCRR 363-4.6(f)(9)(i)(b)(4)(ii).

According to 6 NYCRR 363-4.6(f)(9)(ii), operational water quality monitoring must be designed to distinguish facility-derived contamination from existing water quality at the site using trigger values established in accordance with 6 NYCRR 363-4.6(f)(9)(i)(b)(4)(ii). In accordance with 6 NYCRR 363-4.6(f)(9)(i)(b)(6)(ii)(f) a significant increase has occurred if the water quality result for a parameter exceeds the established trigger value for that parameter.

Trigger value exceedances are intended to provide an indication that a sample result may represent a statistically significant increase over existing water quality. However, it is likely that some operational groundwater monitoring results will exceed trigger value as a result of natural conditions, normal variations in ambient groundwater chemistry, or sampling analysis anomalies. As these natural variations or analysis anomalies occur, the resulting trigger value exceedance will require proper clarification in accordance with the regulations and Site Environmental Monitoring Plan, and not be categorized as a statistically significant increase over existing water quality.

A discussion of results is provided in Section 14 below.

Section 14 – Discussion of Results

This section includes a narrative pertaining to results greater than Trigger Values and/or Class GA Standards, significant changes in water quality and a general discussion of results.

Operational water quality monitoring has been ongoing at the site since December 1999. The fourth quarter 2020 quarterly operational water quality event is a NYSDEC 6 NYCRR Part 363 Routine Parameter List (routine parameters) event. Representatives of On-Site conducted this monitoring event with scheduled sampling of groundwater, surface water, groundwater suppression systems and leachate. Please see Figure 1 for sampling locations. Non-dedicated bladder pumps were utilized following low-flow purging techniques for monitoring well purging and sampling with the following exceptions. Low yielding monitoring wells MW-D, MW-GR, MW-N, MW-OBR and MW-QR were each purged dry with a dedicated bailer and allowed time to recover prior to sampling with a dedicated bailer. Field sampling forms are included in Appendix A. The table below provides the locations and dates sampled for the fourth quarter 2020 sampling event.

Hakes C&D Landfill Fourth Quarter 2020 Sample Summary		
Location	**Description**	**Sample Date**
Upgradient Monitoring Wells		
MW-H	Upgradient well	11/9/2020
MW-QR	Upgradient well	11/9-11/10/20
MW-RBRR	Upgradient well	12/15/2020
MW-SBR	Upgradient well	12/15/20
Downgradient Monitoring Wells		
MW-CR	Downgradient well	11/9/2020
MW-D	Downgradient well	11/9-11/10/2020
MW-E	Downgradient well	11/9/2020
MW-F	Downgradient well	11/10/2020
MW-GR	Downgradient well	11/9-11/10/2020
MW-J	Downgradient well	11/9/2020
MW-N	Downgradient well	11/9-11/10/2020
MW-O	Downgradient well	11/9/2020
MW-O(BR)	Downgradient well	12/15-16/2020
MW-P	Downgradient well	11/9/2020
MW-T(BR)	Downgradient well	12/15/2020
MW-U(BR)	Downgradient well	12/16/2020
MW-V	Downgradient well	12/15/2020
MW-V(BR)	Downgradient well	12/15/2020

Surface Water		
SW-1A	Tributary 4 upstream of landfill at property line	11/10/2020
SW-2	Tributary 4 downgradient	11/10/2020
SW-2A	Erwin Hollow Creek down-stream convergence with Tributary 4	11/10/2020
SW-3A	Pond 5 discharge	11/10/2020
SW-4[2]	Pond 1 discharge	11/10/2020
SW-4A[2]	Pond 1 discharge to sand filter	11/10/2020
SW-5A[2]	Pond 3 discharge	11/10/2020
SW-6[2]	Pond 4 discharge	11/10/2020
SW-7[1]	Erwin Hollow Creek upstream Convergence with Tributary 4	11/10/2020
SW-7A	Erwin Hollow Creek adjacent to borrow area	11/10/2020
SW-8[1]	Tributary 4 North Ditch convergence	11/10/2020
SW-9	East pond discharge	11/10/2020
Groundwater Suppression System		
GSS-1[1]	Gravity pipe to Pond 1	11/10/2020
GSS-1A	Sampled from hose at riser pipe	11/10/2020
GSS-2[1]	Gravity pipe to Tributary 4	11/10/2020
GSS-3[1]	Gravity pipe to Tributary 4	11/10/2020
GSS-4[1]	Gravity pipe to Tributary 4	11/10/2020
GSS-5	Gravity pipe to Tributary 4	11/10/2020
GSS-6	Discharge pipe while pumping	11/10/2020
GSS-8	Discharge pipe while pumping	11/10/2020
GSS-9	Discharge pipe while pumping	12/15/2020

[1] Dry or insufficient water volume. No sample collected.

[2] No flow at pond discharge location as flow is diverted to next pond. No sample collected.

Tables 2, 3 and 4 provide analytical results for the fourth quarter 2020 sampling event. Analytical results for the last five quarters are presented in Tables 5 through 7. Analytical results from the fourth quarter 2020 sampling event appear generally consistent with historic results. Some sampling locations, including upgradient monitoring wells, continue to exhibit concentrations above trigger values and/or NYSDEC Standards. These exceedances do not appear to be a result of site operations but rather a factor of ambient water quality.

Discussion of Groundwater Monitoring Results

Fourth quarter 2020 groundwater samples were scheduled to be collected and analyzed for routine parameters at 18 operational wells. For the first time, this monitoring event included Cell 9 monitoring wells MW-O(BR), MW-R(BR)R, MW-S(BR), MW-T(BR), MW-U(BR), MW-V and MW-V(BR) as part of the operational monitoring network. Fourth quarter samples were collected between November 9 and December 15, 2020. Fourth quarter monitoring results are consistent with historic data and ambient groundwater quality. A discussion of results is provided below.

Upgradient Monitoring Wells

Upgradient monitoring well MW-H fourth quarter 2020 results are within trigger values and Class GA Standards and consistent with historical analytical results.

Fourth quarter 2020 upgradient monitoring well MW-QR results are consistent with previous analytical results. Chloride at 115 mg/L exceeds the trigger value but remains below the Class GA Standard. Remaining results at MW-QR are within Class GA Standards and trigger values.

Upgradient monitoring well MW-R(BR)R fourth quarter 2020 results show Chloride at 3.1 mg/L, Nitrate Nitrogen at 3.5 mg/L, Total Kjeldahl Nitrogen (TKN) at 0.29 mg/L and Total Organic Carbon (TOC) at 1.5 mg/L exceeding trigger values but remaining below Class GA Standards. Iron at 2.17 mg/L and Turbidity at 35 NTU are outside the Class GA Standard and trigger values. Remaining analytical results are within trigger values and Class GA Standards.

Fourth quarter 2020 upgradient monitoring well MW-S(BR) results are comparable with previous analytical results remaining below trigger values and Class GA Standards.

Downgradient Monitoring Wells

Downgradient monitoring well MW-CR fourth quarter 2020 results are consistent with historic analytical results, remaining below trigger values and Class GA Standards.

Fourth quarter 2020 downgradient well MW-D results are consistent with previous results and are within trigger values and Class GA Standards.

Downgradient well MW-E fourth quarter analytical results are comparable to previous samplings remaining within trigger values and Class GA Standards.

Fourth quarter 2020 analytical results from downgradient well MW-F are consistent with historic results and are within trigger values and Class GA Standards.

During the fourth quarter 2020, downgradient well MW-GR was sampled using a dedicated bailer. Analytical results are within trigger values and Class GA Standards.

Fourth quarter 2020 downgradient well MW-J results are consistent with historic data and show Chloride at 150 mg/L exceeding the trigger value but remaining below Class GA Standard. Sodium at 90.3 mg/L exceeds both the Class GA Standard and trigger value. The remaining results are within trigger values and Class GA Standards.

Downgradient monitoring well MW-N was sampled during the fourth quarter 2020 using a dedicated bailer. Results are consistent with previous samplings. Alkalinity at 430 mg/L exceeds the trigger value, while remaining below the Class GA Standard. The remaining results are within trigger values and Class GA Standards.

Fourth quarter monitoring well MW-O results are comparable with historic data, remaining within trigger values and Class GA Standards.

Downgradient well MW-O(BR) was sampled during the fourth quarter 2020 using a dedicated bailer. Results are consistent with previous samplings. Biochemical Oxygen Demand (BOD) at 2.2 mg/L, TKN at 0.53 mg/L and TOC at 2.1 mg/L each exceed the respective trigger value but remain below the Class GA Standards.

Fourth quarter 2020 analytical results from downgradient well MW-P, show results are consistent with historic data remaining within trigger values and Class GA Standards.

During the fourth quarter 2020, downgradient monitoring well MW-T(BR) results remain consistent with historic data. Sampling results remain within the trigger values and Class GA Standards.

Downgradient monitoring well MW-U(BR) fourth quarter results are consistent with previous samplings, remaining below trigger values and Class GA Standards.

Fourth quarter analytical results from downgradient well MW-V remain consistent with historic results. With the exception of Field ORP at 192.1 mV, results are within trigger values and Class GA Standards.

Downgradient well MW-V(BR) fourth quarter analytical results are comparable to previous samplings. Ammonia Nitrogen at 0.034 J mg/L is not within the trigger value but remains below the Class GA Standard. The remaining results are within Class GA Standards and trigger values.

Discussion of Surface Water Monitoring Results

In fourth quarter 2020, surface water locations were tested and analyzed for field parameters, air temperature and routine parameters. No flow conditions were observed at two tributary surface water sampling locations (SW-7 and SW-8) and therefore were not sampled. Four pond discharge locations (SW-4, SW-4A, SW-5A and SW-6) were not sampled due to a no flow condition attributed to the pond discharge being diverted to the inlet of the next pond. Therefore the locations sampled in the fourth quarter 2020 are SW-1A, SW-2, SW-2A, SW-3A, SW-7A and SW-9. Locations SW-1A, SW-2, SW-2A, SW-7, SW-7A and SW-8 are stream sampling locations, while SW-3A, SW-4, SW-4A, SW-5A, SW-6 and SW-9 are pond discharge locations (please see Figure 1).

Surface water discharge locations were monitored for visual contrast between the discharge water and water in the stream. There was no evidence of visual contrast between the discharge water and the stream. Fourth quarter 2020 surface water results are within Class C Surface Water Standards. Fourth quarter 2020 surface water analytical results are presented in Table 3; while current plus historic results are provided in Table 6.

Discussion of Groundwater Suppression System Monitoring Results

As part of the fourth quarter 2020 sampling event, water samples were scheduled to be collected from groundwater suppression systems GSS-1, GSS-1A, GSS-2, GSS-3, GSS-4, GSS-5, GSS-6, GSS-8 and GSS-9 for routine parameters. The gravity drain pipes from GSS-1, GSS-2, GSS-3 and GSS-4 were dry and therefore not sampled. The remainders of the groundwater suppression system samples were collected as scheduled. Fourth quarter 2020 groundwater suppression system analytical results are consistent with historic results. GSS-1A results exceed Class GA Standards for Turbidity (6.77 NTU), Iron (3.54 mg/L) and Manganese (2.83 mg/L) as typical of this location. GSS-5 results are below Class GA Standards. GSS-6 analytical results for Turbidity (10.2 NTU), Iron (0.56 mg/L), Sodium (34.2 mg/L), Sulfate (294 mg/L) and Total Dissolved Solids (1000 mg/L) exceed the Class GA Standards. GSS-8 exhibits Manganese (0.559 mg/L), Sodium (49.7 mg/L) and Total Dissolved Solids (582 mg/L) exceeding Class GA Standards. GSS-9 was sampled for the first time during the fourth quarter 2020 with results below Class GA Standards.

Section 15 – Data Quality Assessment

The fourth quarter 2020 sampling event is a routine parameter list event; therefore third party data validation is not required. The laboratory performed internal validation in accordance with NELAC Standards. Laboratory quality control standards were met and no significant analyses anomalies reported. Please see the laboratory analytical reports in Appendix B for additional details.

The laboratory results were reviewed for compliance with the sampling program including laboratory sample receipt, holding times, matrix spike results and duplicate sample results. Data presented in this report should be considered technically correct and usable. A discussion of field duplicate and field equipment blank sampling is provided below.

Field Duplicate Sample

Two field duplicate samples were collected in the fourth quarter 2020 from monitoring wells MW-H and MW-T(BR) labeled DUP1-1120 and DUP1-1220, respectively. Routine parameter results from MW-H and MW-TBR and the associated duplicate samples compare favorably indicating good sampling and analysis precision. A field duplicate sample comparison is provided in Table 8.

Field Equipment Blank Sample

One field equipment blank sample was collected to confirm proper cleaning of the bladder pump and tubing used to purge and sample monitoring wells MW-F, MW-H, MW-R(BR) and MW-V(BR). The equipment blank sample was collected by pumping laboratory provided deionized water through the pump and tubing into laboratory provided sample containers. The equipment blank results are non-detect with the exception of Chloride at 0.9 J mg/L. Results are presented in Table 9.

Section 16 – Summaries of Monitoring Data

A summary of monitoring results for the most recent five quarterly monitoring events of groundwater, surface water and groundwater suppression systems are included as Tables 5, 6 and 7, respectively. Additionally time-trend graph are included in Appendix C for parameters exceeding trigger value during 2020.

Quarterly monitoring was conducted as required in 2020 in accordance with the September 2019 EMP. First, second and fourth quarter 2020 sampling events were conducted for routine parameter analysis, while the second quarter 2020 event was a baseline parameter monitoring event. Please refer to Tables 5 through 7 for water quality results from the last five monitoring events. Each quarterly monitoring event is summarized separately below.

First Quarter 2020

First quarter 2020 routine sampling of groundwater, groundwater suppression system and surface water sampling was completed as required. Groundwater was sampled at Cells 1 through 8 monitoring wells. Additionally replacement well MW-QR was sampled for the first time following installation for baseline parameters. Surface water locations SW-4, SW-4A, SW-5, SW-6, and SW-8 were not sampled either due to dry conditions or water being diverted to a downstream retention pond. Groundwater suppression system sampling locations GSS-1 and GSS-2 were not

sampled due to insufficient water. First quarter results are consistent with historic results and ambient water quality.

Second Quarter 2020

Second quarter 2020 baseline sampling of groundwater, groundwater suppression system and surface water was completed as required. VOCs were not detected in second quarter baseline samples. Additionally, sampling and analysis of leachate for expanded parameters was completed. Groundwater was sampled at Cells 1 through 8 monitoring wells. Surface water sampling locations SW-4, SW-4A, SW-5A, SW-6, SW-8 and SW-9 were not sampled in May 2020 due to dry conditions or water being diverted to a downstream retention pond. A sample was not collected from GSS-1, GSS-2 and GSS-5 due to insufficient water. Second quarter 2020 monitoring results are consistent with historic data.

Third Quarter 2020

Third quarter 2020 routine monitoring was completed as required. Groundwater was sampled at Cells 1 through 8 monitoring wells. Surface water sampling locations SW-3A, SW-4, SW-4A, SW-5A, SW-6, SW-7, SW-8 and SW-9 were not sampled in August 2020 due to dry conditions or water being diverted to a downstream retention pond. Also GSS-1, GSS-2, GSS-3, GSS-4, and GSS-5 were dry therefore not sampled. Third quarter 2020 monitoring results are generally historically consistent. Due to elevated turbidity at upgradient monitoring well MW-QR, Iron and Manganese results were slightly elevated as compared to historic results.

Fourth Quarter 2020

Fourth Quarter 2020 routine parameter sampling and analysis of groundwater, surface water and groundwater suppression systems was completed as required and included sampling of Cell 9 monitoring wells in addition to Cells 1 through 8 wells. Additionally, sampling and analysis of leachate for expanded parameters was completed. Surface water sampling locations SW-4, SW-4A, SW-5A, SW-6, SW-7 and SW-8 were not sampled in November 2020 due to either dry conditions or pond flow diverted to a downstream retention pond. Also GSS-1, GSS-2, GSS-3 and GSS-4 were dry and therefore not sampled. Fourth quarter 2020 monitoring results are historically consistent.

Section 17 – Surface Impoundments

This landfill does not have leachate surface impoundments.

Section 18 – Permit/Consent Order Reporting Requirements

Hakes has an Air State Facility Permit (permit # 8-4630-00010/00011) issued December 19, 2019 which has separate monitoring and reporting requirements. Compliance with air state facility permit requirements are reported separately through the Division of Air Resources.

Section 19 – Signature and Date by Owner or Operator

I hereby affirm under penalty of perjury that information provided on this form and attached statement 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 of 6 NYCRR Part 363. 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.

Signature

2/17/2021
Date

Russell Anderson
Name

Manager of Compliance
Title

4376 Manning Ridge Road
Address

Campbell
City

New York 14870
State and Zip

(603) 545-7125
Phone Number

Tables

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Field Parameters					
Field pH (std. units)	7.01	7.12	7.19	7.17	7.74
ORP (mV)	-2.3	-133	-78.8	-62.7	247.8
Specific Conductivity (us/cm)	6632	7495	6909	7783	4681
Temperature (deg. C)	9.7	15.4	9	10.2	16.7
Turbidity (NTU)	13.1	60.2	88	27.2	17
Inorganic Compounds					
Aluminum	0.422	0.252	0.395	0.147	0.315
Antimony	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Arsenic	0.0551	0.0689	0.0882	0.0561	0.0212
Barium	1.5	1.64	1.67	1.7	0.665
Beryllium	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Boron	13.2	13.7	13.4	15.2	9.39
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	319	275	258	291	189
Chromium	0.0605	0.0719	0.0733	0.0672	0.0358
Chromium, hexavalent	0.1 U	0.1 U,*	0.1 U,*	0.1 U	0.05 U
Cobalt	0.05 U	0.0023 J	0.0021 J	0.0026 J	0.0015 J
Copper	0.02 U	0.02 U	0.0064 J	0.0047 J	0.02 U
Iron	2.5	1.42	2.51	2.12	2.08
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	266	256	229	244	131
Manganese	3.95	3.4	2.86	3.3	3.48
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Nickel	0.0028 J	0.04 U	0.0041 J	0.04 U	0.0099 J
Potassium	142	138	146	153	81.9
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	1020	871	873	1010	575
Thallium	0.0079 J	0.0109	0.01 U	0.007 J	0.01 U
Tin	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vanadium	0.0269 J	0.0271 J	0.0273 J	0.0249 J	0.0138 J
Zinc	0.0097 J	0.0105 J	0.0246	0.02 U	0.0205
PCB's					
Aroclor-1016	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Aroclor-1221	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0018 U
Aroclor-1232	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Aroclor-1242	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Aroclor-1248	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Aroclor-1254	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Aroclor-1260	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.00091 U
Pesticides & Herbicides					
4,4'-DDD	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
4,4'-DDE	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
4,4'-DDT	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Aldrin	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
alpha-BHC	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U

Please see page 6 for notes.

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Pesticides & Herbicides (con't)					
alpha-Chlordane	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
beta-BHC	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Chlorobenzilate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
delta-BHC	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Dieldrin	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Dinoseb	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.00045 U
Endosulfan I	0.000047 U	0.000047 U	0.000046 U	0.00044	0.000045 U
Endosulfan II	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Endosulfan sulfate	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Endrin	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Endrin aldehyde	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
gamma-BHC (Lindane)	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000087 *
gamma-Chlordane	0.000038 J	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Heptachlor	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Heptachlor epoxide	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Methoxychlor	0.000047 U	0.000047 U	0.000046 U	0.000049 U	0.000045 U
Methyl parathion	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Parathion	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Toxaphene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.00046 U
2,4,5-T	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.00045 U
2,4,5-TP	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.00045 U
2,4-D	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.00045 U
Per- and Polyfluoralkyl Substances (PFAS)					
6:2 Fluorotelomer sulfonate			0.00022	0.00029	0.00026
8:2 Fluorotelomer sulfonic acid (8:2 FTS)			0.0000081 J	0.000013	0.000014
N-ethylperfluoro-1-octanesulfonamidoacetic acid			0.000012 J	0.00002	0.000027
N-methylperfluoro-1-octanesulfonamidoacetic acid			0.000046	0.000042	0.000064
Perfluorobutanesulfonic Acid			0.00033	0.0005	0.00045
Perfluorobutanoic Acid			0.00072	0.00095 X	0.0017 X
Perfluorodecane Sulfonate			0.000031 U	0.0000044 U	0.00000071 J
Perfluorodecanoic Acid			0.000015 J	0.000021	0.000056
Perfluorododecanoic Acid			0.000031 U	0.0000044 U	0.0000029 J
Perfluoroheptane sulfonate			0.000031 U	0.0000044 U	0.000011
Perfluoroheptanoic Acid			0.00058	0.0008 X	0.00082
Perfluorohexanesulfonic Acid			0.00022	0.00024	0.00027
Perfluorohexanoic Acid			0.0016	0.003 X	0.0039 X
Perfluorononanoic Acid			0.000046	0.000037	0.000076
Perfluoro-n-tridecanoic acid			0.000031 U	0.0000044 U	0.0000043 U
Perfluorooctanesulfonamide			0.000031 U	0.0000023 J	0.0000027 J
Perfluorooctanesulfonic Acid			0.00012	0.00011	0.00019
Perfluorooctanoic Acid			0.00094	0.0011	0.0012
Perfluoropentanoic Acid			0.0022	0.0032 X	0.0035 X
Perfluorotetradecanoic acid (PFTeDA)			0.000031 U	0.0000044 U	0.0000043 U
Perfluoroundecanoic Acid			0.000031 U	0.0000024 J	0.0000061
Radionuclide Act + Unc (MDC) pCi/L					
Radium-226, Dissolved (EPA 903.1)			1.83 ± 0.79 (0.58)	0.88 ± 0.52 (0.41)	0.75 ± 0.43 (0.5)
Radium-226, Total (EPA 903.1)			0.62 ± 0.56 (0.81)	0.92 ± 0.52 (0.5)	1.02 ± 0.48 (0.49)
Radium-228, Dissolved (EPA 904.0)			2.16 ± 0.97 (1.62)	1.28 ± 0.82 (1.56)	0.81 ± 0.43 (0.76)
Radium-228, Total (EPA 904.0)			2.38 ± 0.96 (1.49)	1.19 ± 0.84 (1.65)	1.54 ± 0.55 (0.77)
Total Uranium, Dissolved (EPA 908.0)			0.41 ± 0.15 (0.11)	0.76 ± 0.22 (0.15)	0.71 ± 0.19 (0.07)
Total Uranium, Total (EPA 908.0)			0.51 ± 0.18 (0.13)	0.65 ± 0.14 (0.07)	0.68 ± 0.19 (0.11)

Please see page 6 for notes.

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Semi Volatile Organic Compounds					
1,2,4,5-Tetrachlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
1,3,5-Trinitrobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
1,3-Dinitrobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
1,4-Dioxane			0.12 *	0.17	0.11
1,4-Naphthoquinone	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
1,4-Phenylenediamine	0.047 UX	0.047 UX	0.048 UX	0.045 UX	0.045 U
1-Naphthylamine	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
2,3,4,6-Tetrachlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,4,5-Trichlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,4,6-Trichlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,4-Dichlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,4-Dimethylphenol	0.0094 U	0.015	0.015	0.0093	0.0017 J
2,4-Dinitrophenol	0.047 U	0.047 U	0.048 U	0.047 U	0.045 U
2,4-Dinitrotoluene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,6-Dichlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,6-Dinitrotoluene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2-Acetylaminofluorene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2-Chloronaphthalene	0.0094 U	0.0094 U	0.0013 J	0.0091 U	0.0091 U
2-Chlorophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2-Methyl-5-nitroaniline	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2-Methylnaphthalene	0.0094 U	0.0047 J	0.009 J	0.012	0.0091 U
2-Methylphenol	0.0094 U	0.0097	0.0079 J	0.0065 J	0.0091 U
2-Naphthylamine	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
2-Nitroaniline	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
2-Nitrophenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
3,3-Dichlorobenzidine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
3,3-Dimethylbenzidine	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
3/4-Methylphenol	0.0094 U	0.082	0.096 D	0.034	0.0091 U
3-Methylcholanthrene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
3-Nitroaniline	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
4,6-Dinitro-2-methylphenol	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
4-Aminobiphenyl	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
4-Bromophenyl-phenylether	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
4-Chloro-3-methylphenol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
4-Chloroaniline	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
4-Chlorophenyl-phenylether	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
4-Nitroaniline	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
4-Nitrophenol	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
7,12-Dimethylbenz(a)anthracene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Acenaphthene	0.0094 U	0.0051 J	0.0089 J	0.011	0.0091 U
Acenaphthylene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Acetophenone	0.0028 J	0.0097	0.012	0.01	0.006 J
Anthracene	0.0015 J	0.0094 U	0.0095 U	0.0013 J	0.0091 U
Benzo(a)anthracene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Benzo(a)pyrene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Benzo(b)fluoranthene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Benzo(g,h,i)perylene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Benzo(k)fluoranthene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Benzyl alcohol	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Bis(1-chloroisopropyl) Ether	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U

Please see page 6 for notes.

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Semi Volatile Organic Compounds (con't)					
bis(2-Chloroethoxy) methane	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
bis(2-Chloroethyl) ether	0.0094 U	0.0094 U	0.0052 J	0.0091 U	0.0091 U
bis(2-Ethylhexyl) phthalate	0.0097 U	0.0097 U	0.0097 U	0.0091 U	0.0091 U
Butylbenzylphthalate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Chrysene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Diallate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Dibenzo(a,h)anthracene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Dibenzofuran	0.0094 U	0.0021 J	0.0037 J	0.0047 J	0.0091 U
Diethylphthalate	0.0094 U	0.0094 U	0.0013 J	0.0091 U	0.0013 J
Dimethoate	0.047 U	0.047 U	0.048 U	0.045 U	0.0091 U
Dimethylphthalate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Di-n-butylphthalate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Di-n-octylphthalate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Diphenylamine	0.0094 UX	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Disulfoton	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Ethyl methanesulfonate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Famphur	0.00094 U	0.00094 U	0.00093 U	0.00097 U	0.0091 U
Fluoranthene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Fluorene	0.0094 U	0.0094 U	0.0023 J	0.0031 J	0.0091 U
Hexachlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Hexachlorocyclopentadiene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Hexachloroethane	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Hexachloropropene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Indeno(1,2,3-cd)pyrene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Isodrin	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Isophorone	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Isosafrole	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Kepone	0.0047 U	0.0047 U	0.0046 U	0.0049 U	0.0091 U
Methapyrilene	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
Methyl methanesulfonate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Nitrobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosodibutylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosodiethylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosodimethylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosodi-n-propylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosodiphenylamine/Diphenylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosomethylethylamine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosopiperidine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
N-Nitrosopyrolidine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
o,o,o-Triethyl phosphorothioate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
o-Toluidine	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
p-(Dimethylamino)azobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Pentachlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Pentachloronitrobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Pentachlorophenol	0.047 U	0.047 U	0.048 U	0.045 U	0.045 U
Phenacetin	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Phenanthrene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Phorate	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Pronamide	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Pyrene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Safrole	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Thionazin	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U

Please see page 6 for notes.

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Volatile Organic Compounds					
1,1,1,2-Tetrachloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1,1-Trichloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1,2,2-Tetrachloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1,2-Trichloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1-Dichloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1-Dichloroethene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,1-Dichloropropene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,2,3-Trichloropropane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,2-Dibromo-3-chloropropane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,2-Dibromoethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,2-Dichlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
1,2-Dichloroethane	0.0026 J	0.0021 J	0.05 U	0.13 U	0.1 U
1,2-Dichloropropane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,3-Dichlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
1,3-Dichloropropane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,4-Dichlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
2,2-Dichloropropane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
2-Butanone (MEK)	0.072 J	0.55	1.3	0.66	0.068 J
2-Chloro-1,3-butadiene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
2-Hexanone	0.1 U	0.013 J	0.019 J	0.25 U	0.2 U
4-Methyl-2-pentanone	0.008 J	0.06 J	0.12	0.054 J	0.018 J
Acetone	0.13	1.2	3 D	1.7	0.3
Acetonitrile	1 U	1 U	1 U	2.5 U	2 U
Acrolein	1 U	1 U	1 U	2.5 U	2 U
Acrylonitrile	1 U	1 U	1 U	2.5 U	2 U
Allyl chloride	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Benzene	0.0035 J	0.0037 J	0.0069 J	0.0051 J	0.1 U
Bromochloromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Bromodichloromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Bromoform	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Bromomethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Carbon disulfide	0.1 U	0.0026 J	0.0027 J	0.25 U	0.2 U
Carbon tetrachloride	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Chlorobenzene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Chloroethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Chloroform	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Chloromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
cis-1,2-Dichloroethene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
cis-1,3-Dichloropropene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Dibromochloromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Dibromomethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Dichlorodifluoromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Dichloromethane (Methylene chloride)	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Ethyl benzene	0.05 U	0.0026 J	0.0037 J	0.13 U	0.1 U
Ethyl methacrylate	0.1 U	0.1 U	0.1 U	0.25 U	0.2 U
Iodomethane	0.1 U	0.1 U	0.1 U	0.25 U	0.2 U
Isobutyl alcohol	1 U	1 U	1 U	2.5 U	2 U
m&p-Xylene	0.0029 J	0.0041 J	0.0074 J	0.0066 J	0.1 U
Methacrylonitrile	0.2 U	0.2 U	0.2 U	0.5 U	0.4 U
Methyl methacrylate	0.1 U	0.1 U	0.1 U	0.25 U	0.2 U
o-Xylene	0.05 U	0.0023 J	0.0043 J	0.13 U	0.1 U

Please see page 6 for notes.

Table 1

Current and Historic Leachate Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	LCS 11/8/2018	LCS 5/1/2019	LCS 11/20/2019	LCS [1] 5/13 & 26/2020	LCS 11/10/2020
Semi Volatile Organic Compounds (con't)					
Phenol	0.0094 U	0.041	0.072	0.02	0.0091 U
Propionitrile	1 U	1 U	1 U	2.5 U	2 U
Styrene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Tetrachloroethene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Toluene	0.0029 J	0.0031 J	0.008 J	0.0069 J	0.1 U
trans-1,2-Dichloroethene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
trans-1,3-Dichloropropene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
trans-1,4-Dichloro-2-butene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Trichloroethene	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Trichlorofluoromethane	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
Vinyl acetate	0.1 U	0.1 U	0.1 U	0.25 U	0.2 U
Vinyl chloride	0.05 U	0.05 U	0.05 U	0.13 U	0.1 U
1,2,4-Trichlorobenzene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Hexachlorobutadiene	0.0094 U	0.0094 U	0.0095 U	0.0091 U	0.0091 U
Naphthalene	0.0094 U	0.023	0.053	0.066	0.0091 U
General Chemistry					
Alkalinity	1910	2000	1840	1830	1190
Ammonia Nitrogen	125	142	287	171	84.8
Biochemical Oxygen Demand	57.4	58.2	96.6	59.7	21.1
Bromide	6.2	6.9	6.4	5.4	4.9
Chemical Oxygen Demand	870	826	982	948	575
Chloride	1720	1810	1620	1910	878
Color (True) (C.U.)	400	390	250	400	700
Cyanide	0.003 J	0.013	0.145	0.083	0.022
Hardness	1890	1740	1590	1730	1010
Nitrate Nitrogen	1 U	1 U	1 U	4 U	1 U
pH of Color Analysis	7.19	7.73 *	7.71 *	7.69 *	7.76 *
Sulfate	295	349	223	582	251
Sulfide	2 U	5 U			
Total Dissolved Solids	5100	4580	4660	5200	2830
Total Kjeldahl Nitrogen	138	176	88.4	172	109
Total Organic Carbon (TOC)	31.1	12.8	280	292	202
Total Phenolics	0.03	0.363	0.426	0.116	0.0082
Total Suspended Solids	5.9				

Notes:

U - Concentration not detected at specified detection limit

J - Estimated value

X/UX - Refer to laboratory analytical report for details

*** -** Quality control parameter exceeds laboratory limits

[1] - Due to sampling analysis error, results presented for radionuclide samples collected 5/26/2020

Table 2

Fourth Quarter 2020 Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Upgradient Wells				Downgradient Wells														Class GA Standard
	MW-H 11/9/2020	MW-QR 11/10/2020	MW-R(BR) 12/15/2020	MW-S(BR) 12/15/2020	MW-CR 11/9/2020	MW-D 11/10/2020	MW-E 11/9/2020	MW-F 11/10/2020	MW-GR 11/10/2020	MW-J 11/9/2020	MW-N 11/10/2020	MW-O 11/9/2020	MW-O(BR) 12/16/2020	MW-P 11/9/2020	MW-T(BR) 12/15/2020	MW-U(BR) 12/16/2020	MW-V 12/15/2020	MW-V(BR) 12/15/2020	
Inorganic Compounds																			
Depth to Groundwater (ft)	6.3	10.35	15.7	4.74	13.75	28.76	22.22	26.82	40.02	17.66	23.45	20.82	53.62	22.83	5.53	13.73	16.37	28.66	
Dissolved Oxygen	4.19		2.19	0.19	2.45		1.91	4.38		1.18		0.68		0.37	0.75	0.4	1.5	1.16	
Field pH (std. units)	6.64	**5.62**	6.62	7.77	7.01	7.31	6.76	**6.21**	6.96	7.13	6.96	7.76	7.47	7.42	7.7	7.69	7.78	7.72	6.5 - 8.5
ORP (mV)	226.7	277	211.8	-49	132.4	293.3	155.6	299.9	200.1	145.4	-37.4	201.8	132.4	30.8	172.1	126.2	192.1	-96.6	
Specific Conductivity (us/cm)	578.3	632	201.3	340	686	499.8	706	580.7	632	1099	775	356.9	422.9	486.9	292.3	281.4	1086	508.9	
Temperature (deg. C)	15.4	13.7	9.1	7.4	18.5	13.3	18.3	16.1	13.5	13.4	14.7	19.8	10.6	19.1	7.7	9.2	7.8	9.8	
Turbidity (NTU)	1.16	3.7	**35**	3.41	**12.6**	2.31	**7.5**	**7.04**	2.98	**15.3**	**21.6**	0.53	**9.55**	**8.5**	**7.44**	1.5	4.51	**5.71**	5
Inorganic Compounds																			
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005
Calcium	61.9	32.2	15.3	49.4	104	79.1	111	82.2	110	108	124	45.2	52.1	63.1	42.3	41.5	87.4	64.3	
Iron	0.1 U	0.14	**2.17**	0.12	**0.95**	0.09 J	0.21	0.22	0.1 U	**0.35**	**3.84**	0.1 U	**0.33**	**0.32**	**0.31**	0.1 U	0.09 J	**0.48**	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025
Magnesium	26.7	14.7	3.9	12.7	31.3	17.2	29.5	22	19.1	31.9	28.7	14.1	15.9	17.9	10.2	10	51.9	20	
Manganese	0.008 J	**1.62**	0.088	**0.548**	0.025	0.01 U	0.076	0.069	0.01 U	0.143	**3.23**	0.035	0.195	**1.53**	**0.663**	**0.366**	**0.921**	**0.677**	0.3
Potassium	0.8 J	4	2.1	1.7 J	3.2	1.9 J	1.3 J	1.7 J	1.1 J	4.1	6.6	2.4	4.6	1.9 J	1.6 J	1.6 J	49.5	4.3	
Sodium	**31**	**68**	4	11.9	14.6	12.1	13.7	15.6	9.8	**90.3**	17.5	16.5	**21.7**	**22.6**	10.8	10.9	**78.2**	**26.3**	20
General Chemistry																			
Alkalinity	111	14.8	30	150	346	246	326	209	326	328	430	180	202	214	136	137	408	190	
Ammonia Nitrogen	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.32	0.05 U	0.032 J	0.05 U	0.05 U	0.05 U	0.05 U	0.034 J	2
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.3	2 U	2.2	2 U	2 U	2 U	2 U	2 U	
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chemical Oxygen Demand	5 U	7.5	5 U	5 U	5 U	5 U	4 J	5 U	5 U	5 U	4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	
Chloride	9.9	115	3.1	0.9 J	16.8	11.1	10.3	36.9	4.6	150	3.1	1.8 J	1.7 J	8.3	1.4 J	1 J	1.6 J	1.2 J	250
Hardness	265	141	54.3	176	388	268	400	296	354	400	429	171	196	231	148	145	432	243	
Nitrate Nitrogen	0.6 J	0.4 J	3.5	1 U	0.5 J	0.6 J	0.6 J	1 U	1 U	1 U	1 U	1 U	0.2 J	1 U	1 U	1 U	1 U	1 U	10
Sulfate	235	113	14	38.7	31	21	72	59.1	26.2	59.8	24.8	18.5	32.8	52.1	22.2	15.1	206	98.6	250
Total Dissolved Solids	385	397	89	217	419	309	447	369	386	**643**	**506**	205	272	297	189	175	**725**	350	500
Total Kjeldahl Nitrogen	0.2 U	0.46	0.29	0.2 U	0.19 J	0.2 U	0.2 U	0.2 U	0.2 U	0.16 J	0.62	0.2 U	0.53	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Total Organic Carbon (TOC)	0.5 J	3	1.5	1 U	1.3	1 U	1.8	1.8	0.7 J	1.3	2.1	1 U	2.1	0.5 J	0.6 J	1 U	1.7	0.7 J	
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001

Notes:
Class GA Standard - NYSDEC Class GA Groundwater Standard
Concentrations in **bold** exceed Class GA Standards

U - Concentration not detected at specified detection limit
J - Estimated value

Table 3

Fourth Quarter 2020 Surface Water Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	SW-1A 11/10/2020	SW-2 11/10/2020	SW-2A 11/10/2020	SW-3A 11/10/2020	SW-7A 11/10/2020	SW-9 11/10/2020	Class C Standard
Field Parameters							
Dissolved Oxygen	6.11	9.94	8.68		7.72		Not < 5
Field pH (std. units)	7.39	7.43	7.13	8.16	6.76	7.74	6.5 - 8.5
ORP (mV)	113.8	174.2	146.2	154.6	173.8	177.2	
Specific Conductivity (us/cm)	200.1	246.1	206.1	444.5	159.8	303.6	
Temperature (deg. C)	9.5	9.2	8.4	11.4	8	11.1	
Turbidity (NTU)	1.22	10.4	2.49	21.5	1.28	38.6	
Inorganic Compounds							
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Calcium	17.5	30.1	22.6	52.5	14.6	38.1	
Iron	0.1 U	0.47	0.09 J	0.76	0.08 J	1.62	
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.008
Magnesium	5.3	7.6	5.8	12.8	3.8	8.6	
Manganese	0.016	0.009 J	0.022	0.02	0.01 U	0.032	
Potassium	1.1 J	1.9 J	1.3 J	2.4	0.8 J	3.1	
Sodium	10	10.7	9.9	20.7	9.7	11.6	
General Chemistry							
Alkalinity	25.2	59.2	48.4	102	20.8	68	
Ammonia Nitrogen	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	2
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	
Chemical Oxygen Demand	8.4	8.1	5.9	13.6	5.3	14.5	
Chloride	25.1	11.5	15.1	44.5	26.4	10.7	
Hardness	65.4	107	80.2	184	51.9	131	
Nitrate Nitrogen	1 U	0.4 J	1 U	1 U	1 U	0.7 J	
Sulfate	25.8	48.4	32.2	88.2	15.1	71	
Total Dissolved Solids	116	164	127	288	95	212	500
Total Kjeldahl Nitrogen	0.2 J	0.3	0.22	0.43	0.21	0.66	
Total Organic Carbon (TOC)	2.6	3.4	1.8	4.8	1.6	4.5	
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	

Notes:
Class C Standard - NYSDEC Class C Surface Water Standard
Results are within Class C Standards
U - Concentration not detected at specified detection limit
J - Estimated value

Table 4

Fourth Quarter 2020 Groundwater Suppression System Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	GSS-1A 11/10/2020	GSS-5 11/10/2020	GSS-6 11/10/2020	GSS-8 11/10/2020	GSS-9 12/15/2020	Class GA Standard
Field Parameters						
Field pH (std. units)	6.58	8.12	7.24	6.87	8.29	6.5 - 8.5
ORP (mV)	-3	176.7	84.1	128.4	104.5	
Specific Conductivity (us/cm)	723	581	1324	941	355.6	
Temperature (deg. C)	14.1	13.5	14.5	18.4	8.7	
Turbidity (NTU)	**6.77**	0.93	**10.2**	1.39	0.52	5
Inorganic Compounds						
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005
Calcium	121	66.1	202	123	50	
Iron	**3.54**	0.1 U	**0.56**	0.1 U	0.1 U	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025
Magnesium	23.8	31.7	63.6	23.5	12.6	
Manganese	**2.83**	0.01 U	0.128	**0.559**	0.005 J	0.3
Potassium	2.3	2.6	4.5	2.2	2.1	
Sodium	6.3	16.9	**34.2**	**49.7**	11.1	20
General Chemistry						
Alkalinity	336	232	532	309	140	
Ammonia Nitrogen	0.124	0.05 U	0.05 U	0.05 U	0.05 U	2
Biochemical Oxygen Demand	2.1	2 U	2 U	2 U	2 U	
Bromide	1 U	1 U	1 U	1 U	1 U	
Chemical Oxygen Demand	61.5	5 U	5 U	8.7	5 U	
Chloride	7	4.3	8.5	101	7.5	250
Hardness	401	296	767	404	177	
Nitrate Nitrogen	1 U	0.7 J	1 U	1 U	0.2 J	10
Sulfate	70.5	83.6	**294**	73.2	42.8	250
Total Dissolved Solids	500	363	**1000**	**582**	229	500
Total Kjeldahl Nitrogen	1.43	0.2 U	0.2 U	0.28	0.2 U	
Total Organic Carbon (TOC)	25.6	0.8 J	1.6	3.2	0.9 J	
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001

Notes:
Class GA Standard - NYSDEC Class GA Groundwater Standards
Concentrations in **bold** exceed Class GA Standards
U - Concentration not detected at specified detection limit
J - Estimated value

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Upgradient Wells																Downgradient Wells				
	MW-H 11/18/2019	MW-H 1/23/2020	MW-H 2/12/2020	MW-H 5/14/2020	MW-H 8/5/2020	MW-H 11/9/2020	MW-Q 11/20/2019	MW-QR 2/12/2020	MW-QR 5/14/2020	MW-QR 8/6/2020	MW-QR 11/10/2020	MW-R(BR)R 2/3/2020	MW-R(BR)R 12/15/2020	MW-S(BR) 12/10/2019	MW-S(BR) 1/14/2020	MW-S(BR) 12/15/2020	MW-CR 11/18/2019	MW-CR 1/23/2020	MW-CR 2/11/2020	MW-CR 5/11/2020	MW-CR 8/5/2020
Field Parameters																					
Depth to Groundwater (ft)	5.15	4.19	3.48	3.92	7.73	6.3	6.36	3.18	6.08	11.42	10.35	14.1	15.7	3.26	3.33	4.74	10.05	10.34	10.14	9.71	11.85
Dissolved Oxygen	3.15	4.65	3.49	3.18	2.4	4.19	1.63	3.52	3.56			4.4	2.19	0.29	1.01	0.19	1.44	5.34	10.04	3.53	2.83
Field pH (std. units)	6.56	6.82	6.83	6.72	6.54	6.64	**5.37**	5.66	5.81	5.85	5.62	6.46	6.62	7.8	7.49	7.77	6.67	7.29	7.37	7.29	6.22
ORP (mV)	183.3	89.2	120.7	210	149.1	226.7	186.2	179.8	173.3	86.6	277	91.5	211.8	-33.7	-5.2	-49	153	70	186.2	190	111.3
Specific Conductivity (us/cm)	563.1	591.7	559.6	492.6	526.9	578.3	453.9	712.5	374.5	563.8	632	111.9	201.3	334.4	336	340	542.8	620.7	584.1	618.2	705
Temperature (deg. C)	8.2	7.2	5	7.9	16.9	15.4	6.5	3.1	11.9	14.8	13.7	8	9.1	7.4	6.3	7.4	8.7	9.8	4.3	10	16.8
Turbidity (NTU)	1.32	1.71	2.8	1.21	1.62	1.16	2.2	2.17	1.12	36.7	3.7	8.37	**35**	0.46	0.45	3.41	5.52	3.34	3.54	3.83	3.94
Inorganic Compounds																					
Aluminum		0.0368 J		0.0491 J				0.143	0.0505 J			0.647		0.1 U	0.1 U			0.0564 J		0.141	
Antimony		0.06 U		0.06 U				0.06 U	0.06 U			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	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.0052 J**	0.01 U	**0.0056 J**	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium		0.0158 J		0.0141 J				0.0575	0.0246			0.0208		0.0931	0.0909			0.0583		0.0609	
Beryllium		0.003 U		0.003 U				0.003 U	0.003 U			0.003 U		0.003 U	0.003 U			0.003 U		0.003 U	
Boron		0.0158 J		0.0148 J				0.2 U	0.0127 J			0.0124 J		0.0467 J	0.0422 J			0.0317 J		0.0322 J	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	56.2	64.1	56	52.3	53.5	61.9	21.4	35.3	15.1	27.3	32.2	14.4	15.3	48	48	49.4	92.8	94.8	85	94.3	101
Chromium		0.01 U		0.01 U				0.01 U	0.01 U			0.0009 J		0.01 U	0.01 U			0.01 U		0.01 U	
Chromium, hexavalent		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U,*			0.01 U,*		0.01 U	
Cobalt		0.05 U		0.05 U				0.0068 J	0.0022 J			0.05 U		0.05 U	0.05 U			0.05 U		0.05 U	
Copper		0.02 U		0.02 U				0.02 U	0.02 U			0.02 U		0.02 U	0.02 U			0.02 U		0.02 U	
Iron	0.07 BJ	0.0436 J	0.17	0.1 U	0.1 U	0.1 U	0.11	0.278	0.155	**5.78**	0.14	0.514	**2.17**	0.0886 J	0.043 J	0.12	0.17 B	0.0751 J	0.14	0.154	0.47
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	25.3	26.7	25	22.9	23.1	26.7	7.9	13.4	5.55	11.4	14.7	3.84	3.9	13	12.9	12.7	28.9	28.4	25.5	28.4	30.8
Manganese	0.009 J	0.01 U	0.027	0.01 U	0.017	0.008 J	0.015	0.285	0.0853	1.47	1.62	0.078	0.088	0.597	0.596	0.548	0.053	0.0415	0.077	0.0361	0.023
Mercury		0.0002 U		0.0002 U				0.0002 U	0.0002 U			0.0002 U		0.0002 U	0.0002 U			0.0002 U		0.0002 U	
Nickel		0.04 U		0.04 U				0.0041 J	0.003 J			0.04 U		0.04 U	0.04 U			0.04 U		0.04 U	
Potassium	0.8 J	0.851 J	0.9 J	0.608 J	0.6 J	0.8 J	1.7 J	2.38	1.32 J	5.2	4	1.75 J	2.1	1.77 J	1.74 J	1.7 J	3.1	3.11	2.5	3.1	3
Selenium		0.01 U		0.01 U				0.01 U	0.01 U			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		0.01 U	0.01 U			0.01 U		0.01 U	
Sodium	32.5	32.8	30.3	28	29.8	31	57.6	76.8	52.1	63.9	68	3.84	4	11.4	11.6	11.9	14.5	14.3	13.8	14.3	15
Thallium		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.0075 J	
Vanadium		0.05 U		0.05 U				0.05 U	0.05 U			0.0011 J		0.0007 J	0.05 U			0.05 U		0.0008 J	
Zinc		0.02 U		0.02 U				**0.138**	**0.0839**			0.02 U		0.02 U	0.02 U			0.02 U		0.02 U	
Volatile Organic Compounds																					
1,1,1,2-Tetrachloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,1,1-Trichloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 UJ	
1,1,2,2-Tetrachloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,1,2-Trichloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Upgradient Wells																Downgradient Wells				
	MW-H 11/18/2019	MW-H 1/23/2020	MW-H 2/12/2020	MW-H 5/14/2020	MW-H 8/5/2020	MW-H 11/9/2020	MW-Q 11/20/2019	MW-QR 2/12/2020	MW-QR 5/14/2020	MW-QR 8/6/2020	MW-QR 11/10/2020	MW-R(BR)R 2/3/2020	MW-R(BR)R 12/15/2020	MW-S(BR) 12/10/2019	MW-S(BR) 1/14/2020	MW-S(BR) 12/15/2020	MW-CR 11/18/2019	MW-CR 1/23/2020	MW-CR 2/11/2020	MW-CR 5/11/2020	MW-CR 8/5/2020
Volatile Organic Compounds (con't)																					
1,1-Dichloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,1-Dichloroethene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,1-Dichloropropene		0.005 U										0.005 U		0.005 U				0.005 U			
1,2,3-Trichloropropane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,2-Dibromo-3-chloropropane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,2-Dibromoethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,2-Dichlorobenzene		0.01 U		0.005 U				0.005 U	0.005 U			0.0093 U			0.005 U			0.01 U		0.005 U	
1,2-Dichloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,2-Dichloropropane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
1,3-Dichlorobenzene		0.01 U										0.0093 U						0.01 U			
1,3-Dichloropropane		0.005 U										0.005 U		0.005 U				0.005 U			
1,4-Dichlorobenzene		0.01 U		0.005 U				0.005 U	0.005 U			0.0093 U			0.005 U			0.01 U		0.005 U	
2,2-Dichloropropane		0.005 U										0.005 U		0.005 UJ				0.005 U			
2-Butanone (MEK)		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.01 U	
2-Chloro-1,3-butadiene		0.005 U										0.005 U		0.005 U				0.005 U			
2-Hexanone		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.01 U	
4-Methyl-2-pentanone		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.01 U	
Acetone		0.01 U		0.01 U				0.010 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.01 U	
Acetonitrile		0.1 U										0.1 U		0.1 UJ				0.1 U			
Acrolein		0.1 U										0.1 U		0.1 U				0.1 U			
Acrylonitrile		0.1 U		0.1 U				0.1 U	0.1 U			0.1 U		0.1 U	0.1 U			0.1 U		0.1 U	
Allyl chloride		0.005 U										0.005 U		0.005 U				0.005 U			
Benzene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Bromochloromethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Bromodichloromethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Bromoform		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Bromomethane		0.005 UJ		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 UJ		0.005 UJ	
Carbon disulfide		0.01 U		0.01 U				0.01 U	0.01 U			0.01 U		0.01 U	0.01 U			0.01 U		0.01 U	
Carbon tetrachloride		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Chlorobenzene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Chloroethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Chloroform		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Chloromethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.00031 J	0.005 U			0.005 U		0.005 U	
cis-1,2-Dichloroethene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
cis-1,3-Dichloropropene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Dibromochloromethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Dibromomethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Dichlorodifluoromethane		0.005 U										0.005 U		0.005 U				0.005 U			
Dichloromethane (Methylene chloride)		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Ethyl benzene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Ethyl methacrylate		0.01 U										0.01 U		0.01 U				0.01 U			
Iodomethane		0.01 U		0.01 U				0.01 U	0.01 U			0.01 UJ		0.01 UJ	0.01 UJ			0.01 U		0.01 U	
Isobutyl alcohol		0.1 U										0.1 U		0.1 UJ				0.1 U			
m&p-Xylene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Methacrylonitrile		0.02 U										0.02 U		0.02 U				0.02 U			
Methyl methacrylate		0.01 U										0.01 U		0.01 U				0.01 U			

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Upgradient Wells																Downgradient Wells				
	MW-H 11/18/2019	MW-H 1/23/2020	MW-H 2/12/2020	MW-H 5/14/2020	MW-H 8/5/2020	MW-H 11/9/2020	MW-Q 11/20/2019	MW-QR 2/12/2020	MW-QR 5/14/2020	MW-QR 8/6/2020	MW-QR 11/10/2020	MW-R(BR)R 2/3/2020	MW-R(BR)R 12/15/2020	MW-S(BR) 12/10/2019	MW-S(BR) 1/14/2020	MW-S(BR) 12/15/2020	MW-CR 11/18/2019	MW-CR 1/23/2020	MW-CR 2/11/2020	MW-CR 5/11/2020	MW-CR 8/5/2020
Volatile Organic Compounds (con't)																					
o-Xylene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Phenol		0.01 U										0.0093 U						0.01 U			
Propionitrile		0.1 U										0.1 U		0.1 U				0.1 U			
Styrene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Tetrachloroethene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Toluene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
trans-1,2-Dichloroethene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
trans-1,3-Dichloropropene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
trans-1,4-Dichloro-2-butene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Trichloroethene		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Trichlorofluoromethane		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Vinyl acetate		0.01 U		0.01 UJ				0.01 U	0.01 UJ			0.01 UJ		0.01 U	0.01 UJ			0.01 U		0.01 U	
Vinyl chloride		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
General Chemistry																					
Alkalinity	114	114	114	106	107	111	42.8	13.2	24.8	29.2	14.8	46	30	152	155	150	322	311	288	305	340
Ammonia Nitrogen	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.05 U	0.05 U	0.05 U	0.014 J	0.015 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	5 U	6.7 J	5 U	5 U	5 U	5 U	5 U	7.4	5 U	9.1	7.5	8	5 U	5 U	5 UJ	5 U	4.2 J	8.4	5 U	5.7	5 U
Chloride	14	14.4	13.5	7.4	5.9	9.9	**112**	**219**	103	**115**	**115**	2.4	**3.1**	0.7 J	0.8 J	0.9 J	17	16.1	16	16.7	17.3
Color (True) (C.U.)		15		3				20	3			18		18	17			20		8	
Cyanide		0.005 U		0.005 U				0.005 U	0.005 U			0.005 U		0.005 U	0.005 U			0.005 U		0.005 U	
Hardness	244	270	243	225	229	265	85.9	143	60.5	115	141	51.8	54.3	173	173	176	351	354	317	353	380
Nitrate Nitrogen	0.7 J	0.6 J	0.6 J	0.5 J	0.3 J	0.6 J	0.5 J	0.4 J	1 U	1 U	0.4 J	**0.6 J**	**3.5**	1 U	1 U	1 U	0.4 J	1 U	0.4 J	1 U	0.2 J
pH of Color Analysis		7.59 *		7.09				5.69	6.17			7.05 *		8.02 *	7.65 *			7.82 *		7.98 *	
Sulfate	176	171	172	164	165	235	21.3	14.4	18.5	78.7	113	9.8	14	38.6	38.7	38.7	27.5	26.7	28.9	31.8	30.1
Total Dissolved Solids	426	427	404	387	390	385	264	381	228	331	397	93	89	230	237	217	411	414	382	404	457
Total Kjeldahl Nitrogen	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.13 J	0.2 U	0.2 U	0.26	0.46	0.2 U	**0.29**	0.2 UJ	0.2 U	0.2 U	0.11 J	0.2 U	0.2 U	0.2 U	0.2 U
Total Organic Carbon (TOC)	0.6 J	0.6 J	0.6 J	1 U	0.6 J	0.5 J	1.9	1	1.2	2.2	3	**1.1**	**1.5**	1 U	1 U	1 U	1.1	1.3	1.1	1.4	1.6
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-CR 11/9/2020	MW-D 11/19/2019	MW-D 2/12/2020	MW-D 5/11-12/2020	MW-D 8/6/2020	MW-D 11/10/2020	MW-E 11/19/2019	MW-E 1/27/2020	MW-E 2/11/2020	MW-E 5/11/2020	MW-E 8/5/2020	MW-E 11/9/2020	MW-F 11/10/2020	MW-F 11/19/2019	MW-F 2/11/2020	MW-F 5/11/2020	MW-F 8/6/2020	MW-GR 11/19/2019	MW-GR 2/12/2020	MW-GR 5/11-12/2020	MW-GR 8/6/2020
Field Parameters																					
Depth to Groundwater (ft)	13.75	26.09	26.04	25.07	26.19	28.76	18.73	17.51	17.39	17.7	21.65	22.22	26.82	25.33	20.74	22.66	26.06	37.61	36.36	35.92	38.43
Dissolved Oxygen	2.45						3.44	3.03	3.52	1.3	1.36	1.91	4.38	3.52	1.96	0.87	1.15				
Field pH (std. units)	7.01	7.09	7.39	7.49	7.31	7.31	6.81	6.83	6.89	6.9	6.07	6.76	6.21	6.34	6.45	6.34	6.13	6.58	6.92	6.88	6.75
ORP (mV)	132.4	25.9	180.1	209.6	111.8	293.3	90.9	45.8	172.2	212.4	102.8	155.6	299.9	111.6	172.4	227.1	185.7	221.1	196.1	237.6	104
Specific Conductivity (us/cm)	686	487.1	513.1	498.3	500.3	499.8	679.8	660	654.9	614.6	718	706	580.7	680.6	855	761	629	570	576.2	584.7	610
Temperature (deg. C)	18.5	11.3	11.5	10.3	12	13.3	6.9	8.2	6.5	8.2	19.4	18.3	16.1	8.1	8.1	11.8	17.8	12.5	12.5	11.7	13.7
Turbidity (NTU)	12.6	4.77	3.98	5.03	2.32	2.31	3.81	9.24	6.6	9.78	4.45	7.5	7.04	11	16.1	4.28	3.83	4.71	5.2	4.63	1.63
Inorganic Compounds																					
Aluminum				0.209				0.184		0.442						0.191				0.144	
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	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium				0.0868				0.0892		0.0849						**0.153**				0.123	
Beryllium				0.003 U				0.003 U		0.003 U						0.003 U				0.003 U	
Boron				0.0203 J				0.0232 J		0.0256 J						0.0223 J				0.019 J	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	104	71.7	71.9	76.2	75.3	79.1	99.1	109	103	98.5	106	111	82.2	104	140	119	88.6	96.3	97.8	102	104
Chromium				0.0009 J				0.01 U		0.0012 J						0.0017 J				0.01 U	
Chromium, hexavalent				0.01 U				0.01 U,*		0.01 U						0.01 U				0.01 U	
Cobalt				0.05 U				0.05 U		0.05 U						0.05 U				0.001 J	
Copper				0.02 U				0.02 U		0.02 U						0.02 U				0.02 U	
Iron	0.95	0.38	0.2	0.24	0.09 J	0.09 J	0.28	0.22	0.23	0.413	0.14	0.21	0.22	0.43	0.94	0.226	0.18	0.24	0.11	0.155	0.1 U
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	31.3	16.7	16.4	17.7	17	17.2	31.2	28.5	27.6	26.3	28.3	29.5	22	28.7	35.7	31.5	24.6	17.5	17.9	18.1	18.7
Manganese	0.025	0.006 J	0.01 U	0.0047 J	0.01 U	0.01 U	0.298	0.745	0.481	0.808	0.108	0.076	0.069	0.059	0.042	0.0701	0.136	0.005 J	0.007 J	0.0047 J	0.01 U
Mercury				0.0002 U				0.0002 U		0.0002 U						0.0002 U				0.0002 U	
Nickel				0.04 U				0.04 U		0.04 U						0.04 U				0.04 U	
Potassium	3.2	2 J	7.3	1.92 J	1.8 J	1.9 J	1.3 J	1.13 J	1.1 J	1.16 J	1.1 J	1.3 J	1.7 J	2.3	2.7	2.18	1.7 J	1.2 J	2.2	1.29 J	1.2 J
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	14.6	12	11.9	12	12.1	12.1	22.2	13.5	14.9	13.8	13.2	13.7	15.6	18	20.3	18.6	16.3	9.2	9.4	9.45	9.7
Thallium				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Vanadium				0.05 U				0.05 U		0.0008 J						0.0007 J				0.05 U	
Zinc				0.02 U				0.02 U		0.02 U						0.02 U				0.02 U	
Volatile Organic Compounds																					
1,1,1,2-Tetrachloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,1,1-Trichloroethane				0.005 UJ				0.005 U		0.005 UJ						0.005 UJ				0.005 UJ	
1,1,2,2-Tetrachloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,1,2-Trichloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-CR 11/9/2020	MW-D 11/19/2019	MW-D 2/12/2020	MW-D 5/11-12/2020	MW-D 8/6/2020	MW-D 11/10/2020	MW-E 11/19/2019	MW-E 1/27/2020	MW-E 2/11/2020	MW-E 5/11/2020	MW-E 8/5/2020	MW-E 11/9/2020	MW-F 11/10/2020	MW-F 11/19/2019	MW-F 2/11/2020	MW-F 5/11/2020	MW-F 8/6/2020	MW-GR 11/19/2019	MW-GR 2/12/2020	MW-GR 5/11-12/2020	MW-GR 8/6/2020
Volatile Organic Compounds (con't)																					
1,1-Dichloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,1-Dichloroethene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,1-Dichloropropene								0.005 U													
1,2,3-Trichloropropane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,2-Dibromo-3-chloropropane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,2-Dibromoethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,2-Dichlorobenzene				0.005 U				0.01 U		0.005 U						0.005 U				0.005 U	
1,2-Dichloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,2-Dichloropropane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
1,3-Dichlorobenzene								0.01 U													
1,3-Dichloropropane								0.005 U													
1,4-Dichlorobenzene				0.005 U				0.01 U		0.005 U						0.005 U				0.005 U	
2,2-Dichloropropane								0.005 U													
2-Butanone (MEK)				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
2-Chloro-1,3-butadiene								0.005 U													
2-Hexanone				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
4-Methyl-2-pentanone				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Acetone				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Acetonitrile								0.1 U													
Acrolein								0.1 U													
Acrylonitrile				0.1 U				0.1 U		0.1 U						0.1 U				0.1 U	
Allyl chloride								0.005 U													
Benzene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Bromochloromethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Bromodichloromethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Bromoform				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Bromomethane				0.005 UJ				0.005 UJ		0.005 UJ						0.005 UJ				0.005 UJ	
Carbon disulfide				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Carbon tetrachloride				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Chlorobenzene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Chloroethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Chloroform				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Chloromethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
cis-1,2-Dichloroethene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
cis-1,3-Dichloropropene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Dibromochloromethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Dibromomethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Dichlorodifluoromethane								0.005 U													
Dichloromethane (Methylene chloride)				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Ethyl benzene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Ethyl methacrylate								0.01 U													
Iodomethane				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Isobutyl alcohol								0.1 U													
m&p-Xylene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Methacrylonitrile								0.02 U													
Methyl methacrylate								0.01 U													

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-CR 11/9/2020	MW-D 11/19/2019	MW-D 2/12/2020	MW-D 5/11-12/2020	MW-D 8/6/2020	MW-D 11/10/2020	MW-E 11/19/2019	MW-E 1/27/2020	MW-E 2/11/2020	MW-E 5/11/2020	MW-E 8/5/2020	MW-E 11/9/2020	MW-F 11/10/2020	MW-F 11/19/2019	MW-F 2/11/2020	MW-F 5/11/2020	MW-F 8/6/2020	MW-GR 11/19/2019	MW-GR 2/12/2020	MW-GR 5/11-12/2020	MW-GR 8/6/2020
Volatile Organic Compounds (con't)																					
o-Xylene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Phenol								0.01 U													
Propionitrile								0.1 U													
Styrene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Tetrachloroethene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Toluene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
trans-1,2-Dichloroethene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
trans-1,3-Dichloropropene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
trans-1,4-Dichloro-2-butene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Trichloroethene				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Trichlorofluoromethane				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Vinyl acetate				0.01 U				0.01 U		0.01 U						0.01 U				0.01 U	
Vinyl chloride				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
General Chemistry																					
Alkalinity	346	232	228	243	230	246	314	304	300	283	312	326	209	274	392	328	232	297	264	302	297
Ammonia Nitrogen	0.05 U	0.016 J	0.03 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.026 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**11.6**	4	2 U
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	5 U	5 U	5 U	7.4	5 U	5 U	5 U	5.4	7	7.4 J	5.3	4 J	5 U	7.4	8.7	10.3	6.6	5 U	14.1	13.8	5.3
Chloride	16.8	11.7	11.5	12.2	12.2	11.1	10.1	7.8	7.8	7.3	9.2	10.3	36.9	32.8	23.7	26.2	34.9	5.6	5.8	6.5	8.5
Color (True) (C.U.)				1				15		14						3				1	
Cyanide				0.005 U				0.005 U		0.005 U						0.005 U				0.005 U	
Hardness	388	248	247	263	258	268	376	390	371	354	380	400	296	377	498	427	323	313	318	330	336
Nitrate Nitrogen	0.5 J	0.6 J	**1.3**	0.5 J	0.4 J	0.6 J	0.8 J	0.8 J	**0.9 J**	**0.9 J**	0.3 J	0.6 J	1 U	1 U	0.4 J	0.6 J	1 U	0.5 J	0.4 J	0.2 J	0.3 J
pH of Color Analysis				7.83				6.93		7.76 *						6.9 *				7.14	
Sulfate	31	21.8	22	20.9	20.6	21	67.9	74.7	75.4	69	66.8	72	59.1	78.3	86.3	78.6	62.1	25.7	24.9	31.2	26.4
Total Dissolved Solids	419	303	302	315	293	309	453	461	456	447	460	447	369	454	587	504	412	375	374	402	383
Total Kjeldahl Nitrogen	0.19 J	0.2 U	0.2 U	0.22	0.17 J	0.2 U	0.2 J	0.2 U	0.15 J	0.2 U	0.2 U	0.2 U	0.2 U	0.15 J	0.21	0.2 U	0.22	0.2 U	0.69	0.31	0.2 U
Total Organic Carbon (TOC)	1.3	0.6 J	0.7 J	0.5 J	0.7 J	1 U	2	2.5	2.6	2.4	2.4	1.8	1.8	3.5	3.7	3.3	2.7	0.7 J	4.5	2.5	1.3
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-GR 11/10/2020	MW-J 11/19/2019	MW-J 1/27/2020	MW-J 2/12/2020	MW-J 5/12/2020	MW-J 8/5/2020	MW-J 11/9/2020	MW-N 11/19/2019	MW-N 2/12/2020	MW-N 5/11-12/2020	MW-N 8/6/2020	MW-N 11/10/2020	MW-O 11/18/2019	MW-O 1/28/2020	MW-O 2/12/2020	MW-O 5/12/2020	MW-O 8/5/2020	MW-O 11/9/2020	MW-O(BR) 12/10-11/2019	MW-O(BR) 1/14/2020	MW-O(BR) 12/16/2020
Field Parameters																					
Depth to Groundwater (ft)	40.02	15.73	14.66	14.49	14.5	16.55	17.66	22.58	21.95	22.22	22.55	23.45	19.71	17.78	17.61	16.55	19.45	20.82	54	53.76	53.62
Dissolved Oxygen		1.84	2.67	4.08	2.06	1.63	1.18						1.01	4.8	5.84	3.38	0.91	0.68	0.53	0.89	
Field pH (std. units)	6.96	7.03	7.2	7.09	7.21	6.23	7.13	6.37	6.91	6.95	6.65	6.96	7.45	8.16	8	8.17	7.76	7.76	7.3	7.37	7.47
ORP (mV)	200.1	91.7	79.4	157.9	244.4	104.8	145.4	31	80.2	224.9	-22.9	-37.4	161	88.8	129.5	197.9	112.5	201.8	114.4	139.2	132.4
Specific Conductivity (us/cm)	632	1074	1079	1085	1068	1130	1099	864	689	690.4	801	775	363.8	327	364.1	358.6	367.6	356.9	407.9	339	422.9
Temperature (deg. C)	13.5	6.2	7.8	5.8	9.5	15.6	13.4	11.8	10.8	9.9	12.3	14.7	7.6	9.1	5.5	8.6	16.8	19.8	5.9	3.1	10.6
Turbidity (NTU)	2.98	7.62	19.7	23.4	10.1	27.9	15.3	19.7	19	16.1	9.57	21.6	4.14	3.22	3.51	1.36	0.5	0.53	6.69	12.1	9.55
Inorganic Compounds																					
Aluminum			1.26		0.614					0.447				0.0531 J		0.0509 J			0.294	**0.748**	
Antimony			0.06 U		0.06 U					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	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium			0.0874		0.0811					0.0909				0.0666		0.0635			0.0458	0.0467	
Beryllium			0.003 U		0.003 U					0.003 U				0.003 U		0.003 U			0.003 U	0.003 U	
Boron			0.0428 J		0.04 J					0.0488 J				0.0242 J		0.0305 J			0.0758 J	0.0669 J	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	110	101	109	97.3	98.4	98.1	108	141	110	120	126	124	44.2	35.2	43.9	44.8	46.1	45.2	59.2	50.8	52.1
Chromium			0.0019 J		0.0027 J					0.01 U				0.0008 J		0.0006 J			0.01 U	0.0007 J	
Chromium, hexavalent			0.01 U,*		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U,*	
Cobalt			0.05 U		0.0016 J					0.0056 J				0.0011 J		0.05 U			0.05 U	0.05 U	
Copper			0.02 U		0.0064 J					0.02 U				0.02 U		0.02 U			0.02 U	0.02 U	
Iron	0.1 U	0.81	1.28	1.54	0.61	2.14	0.35	2.4	1.51	0.579	4.74	3.84	0.22 B	0.0728 J	0.09 J	0.1 U	0.1 U	0.1 U	0.339	0.62	0.33
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	19.1	24.9	28.1	24.1	26.9	26.3	31.9	33	24.4	26.2	28.9	28.7	14.7	13.8	14.7	14.3	14.6	14.1	17.5	16	15.9
Manganese	0.01 U	0.316	0.163	0.126	0.143	0.226	0.143	**4.35**	2.99	3.09	3.74	3.23	0.03	0.0167	0.01 J	0.0139	0.004 J	0.035	0.487	1.1	0.195
Mercury			0.0002 U		0.0002 U					0.0002 U				0.0002 U		0.0002 U			0.0002 U	0.0002 U	
Nickel			0.04 U		0.04 U					0.04 U				0.04 U		0.04 U			0.04 U	0.04 U	
Potassium	1.1 J	3.3	4.15	3.8	3.62	3.9	4.1	6.8	5.8	5.67	5.5	6.6	2.8	6.41	3.6	4.05	3.3	2.4	2.33	2.97	4.6
Selenium			0.01 U		0.01 U					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			0.01 U	0.01 U	
Sodium	9.8	**114**	**105**	**124**	**104**	**111**	**90.3**	19.6	15.4	15.7	16.8	17.5	15.8	20.8	16.2	17.3	17.1	16.5	20.1	20.3	21.7
Thallium			0.01 U		0.01 U					0.0089 J				0.01 U		0.0066 J			0.01 U	0.01 U	
Vanadium			0.0018 J		0.0013 J					0.0011 J				0.05 U		0.05 U			0.05 U	0.0014 J	
Zinc			0.02 U		0.02 U					0.02 U				0.02 U		0.02 U			0.02 U	0.02 U	
Volatile Organic Compounds																					
1,1,1,2-Tetrachloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,1,1-Trichloroethane			0.005 U		0.005 UJ					0.005 UJ				0.005 U		0.005 UJ			0.005 U	0.005 U	
1,1,2,2-Tetrachloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,1,2-Trichloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-GR 11/10/2020	MW-J 11/19/2019	MW-J 1/27/2020	MW-J 2/12/2020	MW-J 5/12/2020	MW-J 8/5/2020	MW-J 11/9/2020	MW-N 11/19/2019	MW-N 2/12/2020	MW-N 5/11-12/2020	MW-N 8/6/2020	MW-N 11/10/2020	MW-O 11/18/2019	MW-O 1/28/2020	MW-O 2/12/2020	MW-O 5/12/2020	MW-O 8/5/2020	MW-O 11/9/2020	MW-O(BR) 12/10-11/2019	MW-O(BR) 1/14/2020	MW-O(BR) 12/16/2020
Volatile Organic Compounds (con't)																					
1,1-Dichloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,1-Dichloroethene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,1-Dichloropropene			0.005 U											0.005 U					0.005 U		
1,2,3-Trichloropropane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,2-Dibromo-3-chloropropane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,2-Dibromoethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,2-Dichlorobenzene			0.0098 U		0.005 U					0.005 U				0.01 U		0.005 U				0.005 U	
1,2-Dichloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,2-Dichloropropane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
1,3-Dichlorobenzene			0.0098 U											0.01 U							
1,3-Dichloropropane			0.005 U											0.005 U					0.005 U		
1,4-Dichlorobenzene			0.0098 U		0.005 U					0.005 U				0.01 U		0.005 U				0.005 U	
2,2-Dichloropropane			0.005 U											0.005 U					0.005 UJ		
2-Butanone (MEK)			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U	
2-Chloro-1,3-butadiene			0.005 U											0.005 U					0.005 U		
2-Hexanone			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U	
4-Methyl-2-pentanone			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U	
Acetone			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U	
Acetonitrile			0.1 U											0.1 U					0.1 UJ		
Acrolein			0.1 U											0.1 U					0.1 U		
Acrylonitrile			0.1 U		0.1 U					0.1 U				0.1 U		0.1 U			0.1 U	0.1 U	
Allyl chloride			0.005 U											0.005 U					0.005 U		
Benzene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Bromochloromethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Bromodichloromethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Bromoform			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Bromomethane			0.005 UJ		0.005 UJ					0.005 UJ				0.005 UJ		0.005 UJ			0.005 U	0.005 U	
Carbon disulfide			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 U	
Carbon tetrachloride			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Chlorobenzene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Chloroethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Chloroform			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Chloromethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
cis-1,2-Dichloroethene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
cis-1,3-Dichloropropene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Dibromochloromethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Dibromomethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Dichlorodifluoromethane			0.005 U											0.005 U					0.005 U		
Dichloromethane (Methylene chloride)			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Ethyl benzene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Ethyl methacrylate			0.01 U											0.01 U					0.01 U		
Iodomethane			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 UJ	0.01 UJ	
Isobutyl alcohol			0.1 U											0.1 U					0.1 UJ		
m&p-Xylene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Methacrylonitrile			0.02 U											0.02 U					0.02 U		
Methyl methacrylate			0.01 U											0.01 U					0.01 U		

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter		Downgradient Wells																			
	MW-GR 11/10/2020	MW-J 11/19/2019	MW-J 1/27/2020	MW-J 2/12/2020	MW-J 5/12/2020	MW-J 8/5/2020	MW-J 11/9/2020	MW-N 11/19/2019	MW-N 2/12/2020	MW-N 5/11-12/2020	MW-N 8/6/2020	MW-N 11/10/2020	MW-O 11/18/2019	MW-O 1/28/2020	MW-O 2/12/2020	MW-O 5/12/2020	MW-O 8/5/2020	MW-O 11/9/2020	MW-O(BR) 12/10-11/2019	MW-O(BR) 1/14/2020	MW-O(BR) 12/16/2020
Volatile Organic Compounds (con't)																					
o-Xylene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Phenol			0.0098 U											0.01 U							
Propionitrile			0.1 U											0.1 U					0.1 U		
Styrene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Tetrachloroethene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Toluene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
trans-1,2-Dichloroethene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
trans-1,3-Dichloropropene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
trans-1,4-Dichloro-2-butene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Trichloroethene			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Trichlorofluoromethane			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Vinyl acetate			0.01 U		0.01 U					0.01 U				0.01 U		0.01 U			0.01 U	0.01 UJ	
Vinyl chloride			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
General Chemistry																					
Alkalinity	326	319	316	316	319	324	328	**492**	369	380	**428**	**430**	182	167	187	182	179	180	198	176	202
Ammonia Nitrogen	0.05 U	0.006 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.247	0.202	0.242	0.23	0.32	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.013 J	**0.06**	0.032 J
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	3.5	2.4	2 U	2 U	2.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**2.8**	**2.2**
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	5 U	5.3	5.7	5 U	4.7 J	4 J	5 U	11.9	7.7	11.6	4 J	4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	7.7	5 U
Chloride	4.6	**166**	**161**	**159**	**151**	**161**	**150**	3.2	3.7	3.6	3.3	3.1	1.8 J	1.8 J	1.7 J	1.7 J	1.8 J	1.8 J	1.9 J	2.3	1.7 J
Color (True) (C.U.)			25		1					5				15		1			20	25	
Cyanide			0.005 U		0.005 U					0.005 U				0.005 U		0.005 U			0.005 U	0.005 U	
Hardness	354	355	387	342	356	353	400	487	375	408	434	429	171	145	170	171	175	171	220	192	196
Nitrate Nitrogen	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4 J	0.4 J	1 U	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 J	0.2 J
pH of Color Analysis			7.16		7.56					7.15				7.54 *		8.08			7.96 *	7.87 *	
Sulfate	26.2	50.7	54.2	59.5	55.5	53.7	59.8	29.7	26.3	26.8	25.2	24.8	20.5	19.1	20.5	24.9	21.3	18.5	46.1	20.5	32.8
Total Dissolved Solids	386	662	676	657	662	683	643	579	460	467	498	506	231	216	230	253	249	205	287	142	272
Total Kjeldahl Nitrogen	0.2 U	0.2 U	0.2 U	0.13 J	0.49	0.2 U	0.16 J	0.96	0.57	0.47	0.59	0.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.29**	**0.53**
Total Organic Carbon (TOC)	0.7 J	1.6	1.4	1.6	1.7	1.7	1.3	4.7	3	2	3	2.1	1 U	1 U	0.6 J	1 U	1 U	1 U	1 U	**1.8**	**2.1**
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Downgradient Wells																
	MW-P 11/19/2019	MW-P 2/11/2020	MW-P 5/12/2020	MW-P 8/5/2020	MW-P 11/9/2020	MW-T(BR) 12/10/2019	MW-T(BR) 1/14/2020	MW-T(BR) 12/15/2020	MW-U(BR) 12/10/2019	MW-U(BR) 1/14/2020	MW-U(BR) 12/16/2020	MW-V 12/10/2019	MW-V 1/14/2020	MW-V 12/15/2020	MW-V(BR) 12/10/2019	MW-V(BR) 1/14/2020	MW-V(BR) 12/15/2020
Field Parameters																	
Depth to Groundwater (ft)	19.24	18.96	18.26	22.62	22.83	3.55	3.75	5.53	2.42	2.42	13.73	12.72	17.98	16.37	23.1	23.89	28.66
Dissolved Oxygen	0.41	1.49	0.51	0.56	0.37	0.43	5.18	0.75	0.53	2.82	0.4	1.55	2.47	1.5	0.74	0.53	1.16
Field pH (std. units)	7.55	7.5	7.48	6.53	7.42	7.66	7.72	7.7	7.94	7.92	7.69	7.09	7.5	7.78	7.6	7.71	7.72
ORP (mV)	27.4	144.3	203.7	111.9	30.8	25.8	27.9	172.1	38.7	-6.3	126.2	**239.1**	109.2	**192.1**	-81.8	-50.6	-96.6
Specific Conductivity (us/cm)	483.4	486.4	480.8	513.6	486.9	330	322.6	292.3	250.3	260	281.4	1055	1108	1086	562.6	558.6	508.9
Temperature (deg. C)	8.1	6.6	11.6	16.9	19.1	8.1	5.8	7.7	9	6.8	9.2	9.5	6.8	7.8	8.8	7.7	9.8
Turbidity (NTU)	2.8	11.5	17.6	11	8.5	2.03	1.43	7.44	3	5.59	1.5	3.27	5.55	4.51	13.6	13.3	5.71
Inorganic Compounds																	
Aluminum			0.449			0.1 U	0.0261 J		0.107	0.0784 J		0.1 U	0.0964 J		0.61	0.0373 J	
Antimony			0.06 U			0.06 U	0.06 U		0.06 U	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	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium			0.0439			0.0785	0.0763		0.113	0.122		0.0295	0.0331		0.0483	0.0522	
Beryllium			0.003 U			0.003 U	0.003 U		0.003 U	0.003 U		0.003 U	0.003 U		0.003 U	0.003 U	
Boron			0.0834 J			0.0521 J	0.047 J		0.0347 J	0.0285 J		0.125 J	0.125 J		0.0674 J	0.0606 J	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	62.3	62.8	64.8	64.4	63.1	49	48.5	42.3	34.4	36.6	41.5	103	112	87.4	76.6	79	64.3
Chromium			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.0007 J		0.01 U	0.01 U	
Chromium, hexavalent			0.01 U			0.01 U	0.003 J		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
Cobalt			0.001 J			0.05 U	0.05 U		0.05 U	0.05 U		0.05 U	0.05 U		0.05 U	0.05 U	
Copper			0.02 U			0.02 U	0.02 U		0.02 U	0.02 U		0.02 U	0.02 U		0.02 U	0.02 U	
Iron	0.17 B	0.91	0.671	0.34	0.32	0.0873 J	0.0464 J	0.31	0.207	0.075 J	0.1 U	0.0867 J	0.317	0.09 J	**0.961**	0.367	0.48
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	18.4	17.9	18.4	18.2	17.9	11.9	11.5	10.2	8.65	9.03	10	54.4	55.5	51.9	25.1	24.8	20
Manganese	0.98	1.9	3.24	2.2	1.53	0.307	0.329	0.663	0.247	0.288	0.366	0.73	0.751	0.921	0.876	0.795	0.677
Mercury			0.0002 U			0.0002 U	0.0002 U		0.0002 U	0.0002 U		0.0002 U	0.0002 U		0.0002 U	0.0002 U	
Nickel			0.04 U			0.04 U	0.04 U		0.04 U	0.04 U		0.04 U	0.04 U		0.04 U	0.04 U	
Potassium	2 J	2	2.09	1.8 J	1.9 J	1.65 J	1.57 J	1.6 J	2.05	1.55 J	1.6 J	46	44.6	49.5	5.36	3.68	4.3
Selenium			0.01 U			0.01 U	0.01 U		0.01 U	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		0.01 U	0.01 U		0.01 U	0.01 U	
Sodium	23.2	23.1	22.8	23.2	22.6	11.7	11.6	10.8	10.4	10.1	10.9	80.8	84.7	78.2	27.7	25.5	26.3
Thallium			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
Vanadium			0.0008 J			0.05 U	0.05 U		0.05 U	0.05 U		0.05 U	0.05 U		0.0008 J	0.05 U	
Zinc			0.02 U			0.02 U	0.02 U		0.02 U	0.02 U		0.02 U	0.02 U		0.02 U	0.02 U	
Volatile Organic Compounds																	
1,1,1,2-Tetrachloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,1,1-Trichloroethane			0.005 UJ			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,1,2,2-Tetrachloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,1,2-Trichloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	

Please see page 9 for notes.

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Downgradient Wells																
	MW-P 11/19/2019	MW-P 2/11/2020	MW-P 5/12/2020	MW-P 8/5/2020	MW-P 11/9/2020	MW-T(BR) 12/10/2019	MW-T(BR) 1/14/2020	MW-T(BR) 12/15/2020	MW-U(BR) 12/10/2019	MW-U(BR) 1/14/2020	MW-U(BR) 12/16/2020	MW-V 12/10/2019	MW-V 1/14/2020	MW-V 12/15/2020	MW-V(BR) 12/10/2019	MW-V(BR) 1/14/2020	MW-V(BR) 12/15/2020
Volatile Organic Compounds (con't)																	
1,1-Dichloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,1-Dichloroethene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,1-Dichloropropene						0.005 U			0.005 U			0.005 U			0.005 U		
1,2,3-Trichloropropane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,2-Dibromo-3-chloropropane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,2-Dibromoethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,2-Dichlorobenzene			0.005 U				0.005 U			0.005 U			0.005 U			0.005 U	
1,2-Dichloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,2-Dichloropropane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
1,3-Dichlorobenzene																	
1,3-Dichloropropane						0.005 U			0.005 U			0.005 U			0.005 U		
1,4-Dichlorobenzene			0.005 U				0.005 U			0.005 U			0.005 U			0.005 U	
2,2-Dichloropropane						0.005 UJ			0.005 UJ			0.005 UJ			0.005 UJ		
2-Butanone (MEK)			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
2-Chloro-1,3-butadiene						0.005 U			0.005 U			0.005 U			0.005 U		
2-Hexanone			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
4-Methyl-2-pentanone			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
Acetone			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
Acetonitrile						0.1 UJ			0.1 UJ			0.1 UJ			0.1 UJ		
Acrolein						0.1 U			0.1 U			0.1 U			0.1 U		
Acrylonitrile			0.1 U			0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	
Allyl chloride						0.005 U			0.005 U			0.005 U			0.005 U		
Benzene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Bromochloromethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Bromodichloromethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Bromoform			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Bromomethane			0.005 UJ			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Carbon disulfide			0.01 U			0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U	0.01 U	
Carbon tetrachloride			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Chlorobenzene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Chloroethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Chloroform			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Chloromethane			0.005 U			0.00029 J	0.005 U		0.00035 J	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
cis-1,2-Dichloroethene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
cis-1,3-Dichloropropene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Dibromochloromethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Dibromomethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Dichlorodifluoromethane						0.005 U			0.005 U			0.005 U			0.005 U		
Dichloromethane (Methylene chloride)			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Ethyl benzene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Ethyl methacrylate						0.01 U			0.01 U			0.01 U			0.01 U		
Iodomethane			0.01 U			0.01 UJ	0.01 UJ		0.01 UJ	0.01 UJ		0.01 UJ	0.01 UJ		0.01 UJ	0.01 UJ	
Isobutyl alcohol						0.1 UJ			0.1 UJ			0.1 UJ			0.1 UJ		
m&p-Xylene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Methacrylonitrile						0.02 U			0.02 U			0.02 U			0.02 U		
Methyl methacrylate						0.01 U			0.01 U			0.01 U			0.01 U		

Please see page 9 for notes.

Table 5

Current and Historic Groundwater Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	Downgradient Wells																
	MW-P 11/19/2019	MW-P 2/11/2020	MW-P 5/12/2020	MW-P 8/5/2020	MW-P 11/9/2020	MW-T(BR) 12/10/2019	MW-T(BR) 1/14/2020	MW-T(BR) 12/15/2020	MW-U(BR) 12/10/2019	MW-U(BR) 1/14/2020	MW-U(BR) 12/16/2020	MW-V 12/10/2019	MW-V 1/14/2020	MW-V 12/15/2020	MW-V(BR) 12/10/2019	MW-V(BR) 1/14/2020	MW-V(BR) 12/15/2020
Volatile Organic Compounds (con't)																	
o-Xylene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Phenol																	
Propionitrile						0.1 U			0.1 U			0.1 U			0.1 U		
Styrene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Tetrachloroethene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Toluene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
trans-1,2-Dichloroethene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
trans-1,3-Dichloropropene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
trans-1,4-Dichloro-2-butene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Trichloroethene			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Trichlorofluoromethane			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Vinyl acetate			0.01 U			0.01 U	0.01 UJ		0.01 U	0.01 UJ		0.01 U	0.01 UJ		0.01 U	0.01 UJ	
Vinyl chloride			0.005 U			0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
General Chemistry																	
Alkalinity	211	216	211	208	214	162	166	136	130	136	137	412	433	408	224	232	190
Ammonia Nitrogen	0.018 J	0.009 J	0.05 U	0.028 J	0.05 U	0.05 UJ	0.05 U	0.05 U	0.013 J	0.016 J	0.05 U	0.05 UJ	0.05 U	0.05 U	0.027 J	0.033 J	**0.034 J**
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	5 U	5 U	5 U	5 U	5 U	5 U	5.7	5 U	5 U	5.1	5 U	7.4	8	5 U	5 U	5.4	5 U
Chloride	9.3	8.4	9.2	9	8.3	1.2 J	1.3 J	1.4 J	1.1 J	1 J	1 J	1.8 J	1.8 J	1.6 J	1.1 J	1.1 J	1.2 J
Color (True) (C.U.)			2			18	17		20	20		25	32		20	17	
Cyanide			0.005 U			0.005 UJ	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U		0.005 U	0.005 U	
Hardness	231	230	237	236	231	171	168	148	121	129	145	480	507	432	295	299	243
Nitrate Nitrogen	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
pH of Color Analysis			7.72			7.99 *	7.97 *		8.05 *	7.93 *		8.09 *	7.94 *		7.99 *	7.95 *	
Sulfate	52.7	51.4	52.4	48.8	52.1	26.1	26.2	22.2	12.8	12.4	15.1	217	236	206	**110**	**112**	98.6
Total Dissolved Solids	318	325	318	335	297	213	224	189	160	175	175	779	815	725	398	425	350
Total Kjeldahl Nitrogen	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 J	0.2 U	0.2 U	0.14 J	0.2 U
Total Organic Carbon (TOC)	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U	0.6 J	**0.9 J**	1 U	1 U	1.7	1.9	1.7	1 U	1 U	0.7 J
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Notes:
U - Concentration not detected at specified detection limit
J/UJ - Estimated value
B/BJ - Analyte detected in associated method blank
***** - Quality control parameter exceeds laboratory limits

100 Parameter exceeds Trigger value but remains below Class GA water quality standard
100 Parameter exceeds both the Trigger value and the Class GA water quality standard

Please see page 9 for notes.

Table 5A - Part 1
EWQVs and Trigger Values
Landfill Cells 1 - 8 Routine Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter	Number Samples	Number Detects	Minimum	Maximum	Mean	Standard Deviation	Trigger Value	Class GA Standard
Note: The EWQVs on this table apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR								
Field Parameters								
Field pH (std. units)	36	36	5.94	8.77	7.25	0.62	5.39-9.11	6.5-8.5
ORP (mV)	36	36	-110.2	310	38.3	128.1	422.7	
Specific Conductivity (us/cm)	36	36	178	1800	611	376	1740	
Turbidity (NTU)	35	35	3.8	94	26.7	23	96	5
Inorganic Compounds								
Aluminum	14	11	0.038	6.8	1.37	2.09	7.66	
Antimony	14	1	0.0005	0.061	0.0063	0.016	0.0544	0.003
Arsenic	14	4	0.0005	0.0193	0.0027	0.005	0.0179	0.025
Barium	14	13	0.008	0.118	0.049	0.026	0.127	1
Beryllium	14	0	0.002	0.003	0.0022	0.0004	0.0035	
Boron	14	2	0.024	0.25	0.084	0.096	0.372	1
Cadmium	34	2	0.0005	0.004	0.0018	0.0011	0.0051	0.005
Calcium	34	34	17.4	196	64	45	199	
Chromium	14	6	0.001	0.012	0.0039	0.004	0.016	0.05
Chromium, hexavalent	13	0	0.01	0.01	0.01	0	0.01	
Cobalt	14	1	0.005	0.013	0.007	0.003	0.015	
Copper	14	2	0.005	0.0148	0.0091	0.0025	0.0166	0.2
Iron	34	34	0.051	3.76	1.38	1.27	5.2	0.3
Lead	34	17	0.0005	0.021	0.0033	0.0048	0.018	0.025
Magnesium	34	34	4.8	75.8	21.2	16.3	70	
Manganese	34	34	0.032	4.69	0.98	1.06	4.15	0.3
Mercury	14	0	0.0002	0.0002	0.0002	0	0.0002	0.0007
Nickel	14	1	0.006	0.015	0.008	0.004	0.02	0.1
Potassium	34	32	0.5	20	8.2	7.3	30.1	
Selenium	14	1	0.0005	0.004	0.0012	0.0012	0.0047	0.01
Silver	14	0	0.001	0.01	0.0032	0.0038	0.0147	0.05
Sodium	34	34	4.45	87.6	25.7	19.2	83.2	20
Thallium	14	0	0.001	0.01	0.0029	0.0038	0.0144	
Vanadium	14	0	0.005	0.03	0.01	0.011	0.042	
Zinc	14	7	0.01	0.052	0.022	0.015	0.067	
General Chemistry								
Alkalinity	115	115	12.4	520	131	98.3	426	
Ammonia Nitrogen	117	66	0.01	2.61	0.174	0.29	1.04	2
Biochemical Oxygen Demand	51	4	1.5	6	2	1.1	5.3	
Bromide	31	0	0.1	1	0.6	0.3	1.5	
Chemical Oxygen Demand	116	37	5	891	26.6	91.2	300	
Chloride	117	117	0.5	290	21.7	28.3	106	250
Color (True) (C.U.)	32	28	2.5	1250	148	306	1066	15
Cyanide	34	1	0.003	0.006	0.003	0.001	0.006	0.2
Hardness	118	118	35.2	802	206	131	598	
Nitrate Nitrogen	114	63	0.05	1.49	0.191	0.226	0.869	10
Sulfate	117	115	2.5	550	59	69	266	250
Total Dissolved Solids	117	117	60	1220	273	185	828	500
Total Kjeldahl Nitrogen	50	18	0.25	10.2	1.17	1.68	6.22	
Total Organic Carbon (TOC)	118	99	0.4	151	6.7	18.9	63.3	
Total Phenolics	115	28	0.001	0.017	0.003	0.003	0.012	0.001

Notes:

1) Existing Water Quality Values (EWQVs) Revision: May 28, 2008

2) Class GA Standard - Class GA Groundwater Standards from NYSDEC Water Quality Regulations Parts 700-705

3) Trigger Value = Mean +3 Standard Deviations

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Inorganic Compounds															
Tin	5	5	100.0%	0.25	0.25	0.25	0.25	0.00	0.00	Yes	No	Type B	0.25	0.25	0.25
Polychlorinated Biphenyls (PCBs)															
Aroclor-1016	5	5	100.0%	0.000490	0.000500	0.000497	0.000500	0.000004	0.01	Yes	No	Type B	0.000510	0.000500	0.000500
Aroclor-1221	5	5	100.0%	0.001	0.001	0.001	0.001	0.000	0.00	Yes	No	Type B	0.001	0.001	0.001
Aroclor-1232	5	5	100.0%	0.0005	0.0005	0.0005	0.0005	0.0000	0.01	Yes	No	Type B	0.0005	0.0005	0.0005
Aroclor-1242	5	5	100.0%	0.0005	0.0005	0.0005	0.0005	0.0000	0.01	Yes	No	Type B	0.0005	0.0005	0.0005
Aroclor-1248	5	5	100.0%	0.0005	0.0005	0.0005	0.0005	0.0000	0.01	Yes	No	Type B	0.0005	0.0005	0.0005
Aroclor-1254	5	5	100.0%	0.0005	0.0005	0.0005	0.0005	0.0000	0.01	Yes	No	Type B	0.0005	0.0005	0.0005
Aroclor-1260	5	5	100.0%	0.0005	0.0005	0.0005	0.0005	0.0000	0.01	Yes	No	Type B	0.0005	0.0005	0.0005
Pesticides															
4,4'-DDD	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
4,4'-DDE	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
4,4'-DDT	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
Aldrin	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
alpha-BHC	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
alpha-Chlordane	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
beta-BHC	5	5	100.0%	0.000025	0.000026	0.000025	0.000026	0.000000	0.02	Yes	No	Type B	0.000027	0.000026	0.000026
Chlorobenzilate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
delta-BHC	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Dieldrin	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Dinoseb	5	5	100.0%	0.000250	0.000260	0.000254	0.000255	0.000004	0.02	Yes	No	Type B	0.000267	0.000258	0.000258
Endosulfan I	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Endosulfan II	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Endosulfan sulfate	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Endrin	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Endrin aldehyde	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
gamma-BHC (Lindane)	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
gamma-Chlordane	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Heptachlor	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Heptachlor epoxide	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Methoxychlor	5	5	100.0%	0.0000245	0.0000255	0.0000252	0.0000255	0.0000004	0.02	Yes	No	Type B	0.0000265	0.0000255	0.0000255
Methyl parathion	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Parathion	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Toxaphene	5	5	100.0%	0.000	0.000	0.000	0.000	0.000	0.01	Yes	No	Type B	0.000	0.000	0.000

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Per- and Polyfluoroalkyl Substances (PFAS)															
6:2 Fluorotelomer sulfonate	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
N-ethylperfluoro-1-octanesulfonamidoacetic acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
N-methylperfluoro-1-octanesulfonamidoacetic acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluorobutanesulfonic Acid	5	2	40.0%	0.00000059	0.00000270	0.00000168	0.00000210	0.00000092	0.55	No	No	Type B	0.00000445	0.00000250	0.00000250
Perfluorobutanoic Acid	5	1	20.0%	0.00000100	0.00001600	0.00000682	0.00000700	0.00000593	0.87	No	No	Type B	0.00002461	0.00001276	0.00001276
Perfluorodecane Sulfonate	5	5	100.0%	0.000002	0.000002	0.000002	0.000002	0.000000	0.03	Yes	No	Type B	0.000002	0.000002	0.000002
Perfluorodecanoic Acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluorododecanoic Acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluoroheptane sulfonate	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluoroheptanoic Acid	5	2	40.0%	0.0000009	0.0000071	0.0000027	0.0000021	0.0000026	0.96	No	No	Type B	0.0000103	0.0000051	0.0000051
Perfluorohexanesulfonic Acid	5	4	80.0%	0.0000013	0.0000023	0.0000020	0.0000022	0.0000004	0.20	Yes	No	Type B	0.0000032	0.0000023	0.0000023
Perfluorohexanoic Acid	5	4	80.0%	0.0000046	0.0000150	0.0000067	0.0000046	0.0000047	0.70	No	No	Type B	0.0000206	0.0000108	0.0000108
Perfluorononanoic Acid	5	4	80.0%	0.0000015	0.0000023	0.0000020	0.0000021	0.0000003	0.15	Yes	No	Type B	0.0000029	0.0000022	0.0000022
Perfluoro-n-tridecanoic acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluorooctanesulfonamide	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluorooctanesulfonic Acid	5	4	80.0%	0.00000085	0.00000110	0.00000092	0.00000090	0.00000010	0.11	Yes	No	Type B	0.00000123	0.00000102	0.00000102
Perfluorooctanoic Acid	5	2	40.0%	0.00000085	0.00001300	0.00000355	0.00000130	0.00000529	1.49	No	No	Type B	0.00001943	0.00000848	0.00000848
Perfluoropentanoic Acid	5	4	80.0%	0.0000021	0.0000150	0.0000047	0.0000022	0.0000057	1.21	No	No	Type B	0.0000220	0.0000099	0.0000099
Perfluorotetradecanoic acid (PFTeDA)	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Perfluoroundecanoic Acid	5	5	100.0%	0.0000021	0.0000023	0.0000022	0.0000022	0.0000001	0.03	Yes	No	Type B	0.0000024	0.0000023	0.0000023
Herbicides															
2,4,5-T	5	5	100.0%	0.000250	0.000260	0.000254	0.000255	0.000004	0.02	Yes	No	Type B	0.000267	0.000258	0.000258
2,4,5-TP	5	5	100.0%	0.000250	0.000260	0.000254	0.000255	0.000004	0.02	Yes	No	Type B	0.000267	0.000258	0.000258
2,4-D	5	5	100.0%	0.000250	0.000260	0.000254	0.000255	0.000004	0.02	Yes	No	Type B	0.000267	0.000258	0.000258
Radionuclides (pCi/L)															
Radium-226, Dissolved (EPA 903.1) (pCi/L)	5	1	20.0%	-0.090	0.240	0.078	0.060	0.127	1.63	No	No	Type B	0.460	0.208	0.208
Radium-226, Total (EPA 903.1) (pCi/L)	5	1	20.0%	-0.100	0.220	0.090	0.080	0.129	1.44	No	No	Type B	0.478	0.212	0.212
Radium-228, Dissolved (EPA 904.0) (pCi/L)	5	1	20.0%	0.170	0.750	0.464	0.510	0.265	0.57	No	No	Type B	1.260	0.722	0.722
Radium-228, Total (EPA 904.0) (pCi/L)	5	1	20.0%	0.350	0.750	0.590	0.620	0.151	0.26	Yes	No	Type B	1.043	0.718	0.718
Total Uranium, Total (EPA 908.0) (pCi/L)	5	1	20.0%	0.068	4.060	2.240	1.890	1.545	0.69	No	No	Type B	6.876	3.776	3.776
Semi Volatile Organic Compounds															
1,2,4,5-Tetrachlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
1,3,5-Trinitrobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
1,3-Dinitrobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
1,4-Dioxane	5	2	40.0%	0.000020	0.000730	0.000173	0.000034	0.000312	1.80	No	No	Type B	0.001108	0.000462	0.000462
1,4-Naphthoquinone	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Semi Volatile Organic Compounds (con't)															
1,4-Phenylenediamine	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
1-Naphthylamine	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
2,3,4,6-Tetrachlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,4,5-Trichlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,4,6-Trichlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,4-Dichlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,4-Dimethylphenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,4-Dinitrophenol	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
2,4-Dinitrotoluene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,6-Dichlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,6-Dinitrotoluene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Acetylaminofluorene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Chloronaphthalene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Chlorophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Methyl-5-nitroaniline	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Methylnaphthalene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Methylphenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2-Naphthylamine	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
2-Nitroaniline	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
2-Nitrophenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
3,3-Dichlorobenzidine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
3,3-Dimethylbenzidine	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
3/4-Methylphenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
3-Methylcholanthrene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
3-Nitroaniline	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
4,6-Dinitro-2-methylphenol	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
4-Aminobiphenyl	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
4-Bromophenyl-phenylether	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
4-Chloro-3-methylphenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
4-Chloroaniline	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
4-Chlorophenyl-phenylether	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
4-Nitroaniline	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
4-Nitrophenol	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
7,12-Dimethylbenz(a)anthracene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Acenaphthene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Acenaphthylene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Acetophenone	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Anthracene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Benzo(a)anthracene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Benzo(a)pyrene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Semi Volatile Organic Compounds (con't)															
Benzo(b)fluoranthene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Benzo(g,h,i)perylene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Benzo(k)fluoranthene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Benzyl alcohol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Bis(1-chloroisopropyl) Ether	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
bis(2-Chloroethoxy) methane	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
bis(2-Chloroethyl) ether	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
bis(2-Ethylhexyl) phthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Butylbenzylphthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Chrysene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Diallate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Dibenzo(a,h)anthracene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Dibenzofuran	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Diethylphthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Dimethoate	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
Dimethylphthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Di-n-butylphthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Di-n-octylphthalate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Diphenylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Disulfoton	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Ethyl methanesulfonate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Famphur	5	5	100.0%	0.00049	0.00050	0.00050	0.00050	0.00000	0.01	Yes	No	Type B	0.00051	0.00050	0.00050
Fluoranthene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Fluorene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Hexachlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Hexachlorocyclopentadiene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Hexachloroethane	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Hexachloropropene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Indeno(1,2,3-cd)pyrene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Isodrin	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Isophorone	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Isosafrole	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Kepone	5	5	100.0%	0.00245	0.00255	0.00252	0.00255	0.00004	0.02	Yes	No	Type B	0.00265	0.00255	0.00255
Methapyrilene	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
Methyl methanesulfonate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Nitrobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodibutylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodiethylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodimethylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Semi Volatile Organic Compounds (con't)															
N-Nitrosodi-n-propylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodiphenylamine/Diphenylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosomethylethylamine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosopiperidine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosopyrolidine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
o,o,o-Triethyl phosphorothioate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
o-Toluidine	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
p-(Dimethylamino)azobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Pentachlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Pentachloronitrobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Pentachlorophenol	5	5	100.0%	0.0245	0.0255	0.0252	0.0255	0.0004	0.02	Yes	No	Type B	0.0265	0.0255	0.0255
Phenacetin	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Phenanthrene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Phorate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Pronamide	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Pyrene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Safrole	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Thionazin	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,1-Trichloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2,2-Tetrachloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2-Trichloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloropropene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,3-Trichloropropane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromo-3-chloropropane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromoethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
1,2-Dichloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichloropropane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,3-Dichlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
1,3-Dichloropropane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,4-Dichlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
2,2-Dichloropropane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
2-Butanone (MEK)	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
2-Chloro-1,3-butadiene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025

Table 5A - Part 2
EWQVs and Trigger Values
Landfill Cells 1 - 8 Additional Parameters
(As required by permit condition 59)
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table suppliment EWQVs on Table 5A-Part 1 and apply to Cells 1-8 wells: MW-CR, MW-D, MW-E, MW-F, MW-GR, MW-H, MW-J, MW-N, MW-O, MW-P & MW-QR															
Volatile Organic Compounds (con't)															
2-Hexanone	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
4-Methyl-2-pentanone	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Acetone	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Acetonitrile	5	5	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Acrolein	5	5	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Acrylonitrile	5	5	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Allyl chloride	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Benzene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromochloromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromodichloromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromoform	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromomethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Carbon disulfide	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Carbon tetrachloride	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chlorobenzene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroform	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
cis-1,2-Dichloroethene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
cis-1,3-Dichloropropene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromochloromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromomethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichlorodifluoromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichloromethane (Methylene chloride)	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl benzene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl methacrylate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Iodomethane	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Isobutyl alcohol	5	5	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
m&p-Xylene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Methacrylonitrile	5	5	100.0%	0.01	0.01	0.01	0.01	0.00	0.00	Yes	No	Type B	0.01	0.01	0.01
Methyl methacrylate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
o-Xylene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Phenol	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Propionitrile	5	5	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Styrene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Tetrachloroethene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Toluene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,2-Dichloroethene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,3-Dichloropropene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,4-Dichloro-2-butene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichloroethene	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichlorofluoromethane	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Vinyl acetate	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Vinyl chloride	5	5	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,4-Trichlorobenzene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Hexachlorobutadiene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005
Naphthalene	5	5	100.0%	0.005	0.005	0.005	0.005	0.000	0.01	Yes	No	Type B	0.005	0.005	0.005

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Field Parameters															
Field pH (std. units)	45	0	0.0%	6.46	9.21	7.61	7.63	0.41	0.05	Yes	Yes	Type A	8.85	7.95	6.37 - 8.85
ORP (mV)	45	0	0.0%	-175.40	217.80	-4.96	-6.20	92.67	-18.70	Yes	Yes	Type A	273.05	112.09	273.05
Specific Conductivity (us/cm)	45	0	0.0%	111.90	589.40	371.11	332.20	116.59	0.31	Yes	Yes	Type A	720.89	554.68	720.89
Temperature (deg. C)	45	0	0.0%	3.10	20.00	9.66	8.45	3.47	0.36	Yes	Yes	Type A	20.07	14.25	20.07
Turbidity (NTU)	45	0	0.0%	0.45	200	14.08	5.31	33.94	2.41	No	Yes	Type B	115.91	17.26	17.26
Inorganic Compounds															
Aluminum	27	5	18.5%	0.0234	3.88	0.409	0.141	0.80	1.96	No	No	Type B	2.8130	0.7422	0.7422
Antimony	27	27	100.0%	0.03	0.03	0.03	0.03	0.00	0.00	Yes	No	Type B	0.03	0.03	0.03
Arsenic	33	27	81.8%	0.0044	0.0056	0.0050071	0.005	0.00	0.03	Yes	No	Type B	0.006	0.005	0.005
Barium	28	0	0.0%	0.0208	0.1430	0.0721	0.0699	0.04	0.50	Yes	Yes	Type A	0.1794	0.1241	0.1794
Beryllium	27	26	96.3%	0.0002	0.0015	0.0014	0.0015	0.00	0.19	Yes	No	Type B	0.0023	0.0015	0.0015
Boron	27	1	3.7%	0.0124	0.1000	0.0529	0.0470	0.02	0.43	Yes	Yes	Type A	0.1204	0.0856	0.1204
Cadmium	44	44	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Calcium	44	0	0.0%	14.40	82.50	51.58	48.00	14.61	0.28	Yes	Yes	Type A	95.41	71.68	95.41
Chromium	27	18	66.7%	0.000	0.005	0.004	0.005	0.00	0.44	Yes	No	Type B	0.009	0.005	0.005
Chromium, hexavalent	27	23	85.2%	0.003	0.009	0.005	0.005	0.00	0.20	Yes	No	Type B	0.008	0.005	0.005
Cobalt	27	25	92.6%	0.002	0.025	0.024	0.025	0.00	0.20	Yes	No	Type B	0.039	0.025	0.025
Copper	27	23	85.2%	0.001	0.010	0.009	0.010	0.00	0.32	Yes	No	Type B	0.018	0.010	0.010
Iron	44	5	11.4%	0.022	3.530	0.450	0.226	0.68	1.51	No	Yes	Type B	2.490	0.926	0.926
Lead	44	44	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Magnesium	44	0	0.0%	3.8	28.9	14.7	12.3	6.13	0.42	Yes	Yes	Type A	33.1	24.5	33.1
Manganese	44	0	0.0%	0.01	1.10	0.53	0.45	0.26	0.49	Yes	Yes	Type A	1.31	0.87	1.31
Mercury	27	27	100.0%	0.0001	0.0001	0.0001	0.0001	0.00	0.00	Yes	No	Type B	0.0001	0.0001	0.0001
Nickel	27	26	96.3%	0.02	0.02	0.02	0.02	0.00	0.00	Yes	No	Type B	0.02	0.02	0.02
Potassium	44	0	0.0%	1.55	18.8	3.43	2.1	3.54	1.03	No	Yes	Type B	14.04	5.87	5.87
Selenium	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Silver	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Sodium	44	0	0.0%	3.84	30.00	15.73	11.60	7.33	0.47	Yes	Yes	Type A	37.71	26.62	37.71
Thallium	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Tin	7	7	100.0%	0.25	0.25	0.25	0.25	0.00	0.00	Yes	No	Type B	0.25	0.25	0.25
Vanadium	27	18	66.7%	0.0007	0.025	0.0169957	0.025	0.01	0.66	No	No	Type B	0.0507792	0.025	0.025
Zinc	27	21	77.8%	0.0019	0.01	0.0089783	0.01	0.00	0.26	Yes	No	Type B	0.0161069	0.01	0.01
Polychlorinated Biphenyls (PCBs)															
Aroclor-1016	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005
Aroclor-1221	7	7	100.0%	0.00095	0.001	0.0009833	0.001	0.00	0.03	Yes	No	Type B	0.0010608	0.001	0.001
Aroclor-1232	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005
Aroclor-1242	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005
Aroclor-1248	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005
Aroclor-1254	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005
Aroclor-1260	7	7	100.0%	0.000465	0.0005	0.0004892	0.000495	0.00	0.03	Yes	No	Type B	0.000532	0.0005	0.0005

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Pesticides															
4,4'-DDD	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
4,4'-DDE	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
4,4'-DDT	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Aldrin	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
alpha-BHC	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
alpha-Chlordane	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
beta-BHC	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Chlorobenzilate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
delta-BHC	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Dieldrin	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Dinoseb	7	7	100.0%	0.00025	0.00026	0.0002517	0.00025	0.00	0.02	Yes	No	Type B	0.00026391	0.000255	0.000255
Endosulfan I	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Endosulfan II	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Endosulfan sulfate	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Endrin	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Endrin aldehyde	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
gamma-BHC (Lindane)	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
gamma-Chlordane	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Heptachlor	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Heptachlor epoxide	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Methoxychlor	7	7	100.0%	0.0000235	0.0000255	0.0000246	0.00002475	0.00	0.03	Yes	No	Type B	0.00002679	0.00002525	0.00002525
Methyl parathion	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Parathion	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Toxaphene	7	7	100.0%	0.00025	0.000255	0.0002508	0.00025	0.00	0.01	Yes	No	Type B	0.000257	0.0002525	0.0002525
Per- and Polyfluoroalkyl Substances (PFAS)															
6:2 Fluorotelomer sulfonate	7	6	85.7%	0.0000006	0.0000022	0.0000019	0.0000021	0.00	0.33	Yes	No	Type B	0.00000367	0.00000215	0.00000215
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
N-ethylperfluoro-1-octanesulfonamidoacetic acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
N-methylperfluoro-1-octanesulfonamidoacetic acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorobutanesulfonic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorobutanoic Acid	7	4	57.1%	0.0000004	0.0000022	0.0000018	0.000002075	0.00	0.39	Yes	No	Type B	0.00000382	0.00000215	0.00000215
Perfluorodecane Sulfonate	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorodecanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorododecanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluoroheptane sulfonate	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluoroheptanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorohexanesulfonic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorohexanoic Acid	7	7	100.0%	0.0000046	0.0000046	0.0000046	0.0000046	0.00	0.00	Yes	No	Type B	0.00000460	0.0000046	0.0000046
Perfluorononanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluoro-n-tridecanoic acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorooctanesulfonamide	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorooctanesulfonic Acid	7	7	100.0%	0.0000008	0.0000009	0.0000008	0.00000085	0.00	0.03	Yes	No	Type B	0.00000091	0.00000085	0.00000085
Perfluorooctanoic Acid	7	4	57.1%	0.0000004	0.0000012	0.0000008	0.00000085	0.00	0.33	Yes	No	Type B	0.00000163	0.00000103	0.00000103
Perfluoropentanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluorotetradecanoic acid (PFTeDA)	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215
Perfluoroundecanoic Acid	7	7	100.0%	0.0000020	0.0000022	0.0000021	0.00000215	0.00	0.03	Yes	No	Type B	0.00000231	0.00000215	0.00000215

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Herbicides															
2,4,5-T	7	7	100.0%	0.00025	0.00026	0.0002517	0.00025	0.00	0.02	Yes	No	Type B	0.0002639	0.000255	0.000255
2,4,5-TP	7	7	100.0%	0.00025	0.00026	0.0002517	0.00025	0.00	0.02	Yes	No	Type B	0.0002639	0.000255	0.000255
2,4-D	7	7	100.0%	0.00025	0.00026	0.0002517	0.00025	0.00	0.02	Yes	No	Type B	0.0002639	0.000255	0.000255
Radionuclides (pCi/L) Act ± Unc (MDC)															
Radium-226, Dissolved (EPA 903.1) (pCi/L)	13	0	0.0%	0.08	3.3	0.57	0.22	0.93	1.65	No	Yes	Type B	3.36	0.81	0.81
Radium-226, Total (EPA 903.1) (pCi/L)	13	0	0.0%	-0.07	0.58	0.26	0.24	0.17	0.65	No	Yes	Type B	0.75	0.39	0.39
Radium-228, Dissolved (EPA 904.0) (pCi/L)	13	0	0.0%	-0.4	1.16	0.36	0.42	0.47	1.31	No	Yes	Type B	1.76	0.92	0.92
Radium-228, Total (EPA 904.0) (pCi/L)	13	0	0.0%	-0.26	5	0.84	0.62	1.42	1.70	No	Yes	Type B	5.11	0.76	0.76
Total Uranium, Dissolved (EPA 908.0) (pCi/L)	13	0	0.0%	0.27	2.15	1.14	0.81	0.74	0.65	No	Yes	Type B	3.35	2.12	2.12
Total Uranium, Total (EPA 908.0) (pCi/L)	13	0	0.0%	0.189	2.18	1.12	0.82	0.75	0.67	No	Yes	Type B	3.36	2.15	2.15
Semi Volatile Organic Compounds															
1,2,4,5-Tetrachlorobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
1,3,5-Trinitrobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
1,3-Dinitrobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
1,4-Dioxane	8	6	75.0%	0.00002	0.00002	0.00002	0.00002	0.00	0.00	Yes	No	Type B	0.00002	0.00002	0.00002
1,4-Naphthoquinone	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
1,4-Phenylenediamine	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
1-Naphthylamine	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
2,3,4,6-Tetrachlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,4,5-Trichlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,4,6-Trichlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,4-Dichlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,4-Dimethylphenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,4-Dinitrophenol	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
2,4-Dinitrotoluene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,6-Dichlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2,6-Dinitrotoluene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Acetylaminofluorene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Chloronaphthalene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Chlorophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Methyl-5-nitroaniline	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Methylnaphthalene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Methylphenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
2-Naphthylamine	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
2-Nitroaniline	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
2-Nitrophenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
3,3-Dichlorobenzidine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
3,3-Dimethylbenzidine	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
3/4-Methylphenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
3-Methylcholanthrene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
3-Nitroaniline	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
4,6-Dinitro-2-methylphenol	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
4-Aminobiphenyl	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
4-Bromophenyl-phenylether	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Semi Volatile Organic Compounds (con't)															
4-Chloro-3-methylphenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
4-Chloroaniline	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
4-Chlorophenyl-phenylether	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
4-Nitroaniline	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
4-Nitrophenol	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
7,12-Dimethylbenz(a)anthracene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Acenaphthene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Acenaphthylene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Acetophenone	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Anthracene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzo(a)anthracene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzo(a)pyrene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzo(b)fluoranthene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzo(g,h,i)perylene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzo(k)fluoranthene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Benzyl alcohol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Bis(1-chloroisopropyl) Ether	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
bis(2-Chloroethoxy) methane	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
bis(2-Chloroethyl) ether	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
bis(2-Ethylhexyl) phthalate	9	7	77.8%	0.005	0.017	0.007	0.005	0.00	0.69	No	No	Type B	0.020	0.010	0.010
Butylbenzylphthalate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Chrysene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Diallate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Dibenzo(a,h)anthracene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Dibenzofuran	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Diethylphthalate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Dimethoate	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
Dimethylphthalate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Di-n-butylphthalate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Di-n-octylphthalate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Diphenylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Disulfoton	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Ethyl methanesulfonate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Famphur	7	7	100.0%	0.000	0.001	0.000	0.000	0.00	0.03	Yes	No	Type B	0.001	0.0005	0.0005
Fluoranthene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Fluorene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Hexachlorobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Hexachlorocyclopentadiene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Hexachloroethane	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Hexachloropropene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Indeno(1,2,3-cd)pyrene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Isodrin	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Isophorone	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Isosafrole	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Kepone	7	7	100.0%	0.0024	0.0026	0.0025	0.0025	0.00	0.03	Yes	No	Type B	0.0027	0.0025	0.0025

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Semi Volatile Organic Compounds (con't)															
Methapyrilene	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
Methyl methanesulfonate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Nitrobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodibutylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodiethylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodimethylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodi-n-propylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosodiphenylamine/Diphenylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosomethylethylamine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosopiperidine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
N-Nitrosopyrolidine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
o,o,o-Triethyl phosphorothioate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
o-Toluidine	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
p-(Dimethylamino)azobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Pentachlorobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Pentachloronitrobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Pentachlorophenol	7	7	100.0%	0.0235	0.0255	0.0241	0.0240	0.00	0.03	Yes	No	Type B	0.0263	0.0248	0.0248
Phenacetin	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Phenanthrene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Phorate	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Pronamide	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Pyrene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Safrole	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Thionazin	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,1-Trichloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2,2-Tetrachloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2-Trichloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloropropene	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,3-Trichloropropane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromo-3-chloropropane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromoethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichlorobenzene	21	21	100.0%	0.0025	0.005	0.0033	0.0025	0.00	0.34	Yes	No	Type B	0.0066	0.0048	0.0048
1,2-Dichloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichloropropane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,3-Dichlorobenzene	7	7	100.0%	0.00465	0.005	0.004775	0.004775	0.00	0.03	Yes	No	Type B	0.0052	0.0049	0.0049
1,3-Dichloropropane	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,4-Dichlorobenzene	21	21	100.0%	0.0025	0.005	0.0033	0.0025	0.00	0.34	Yes	No	Type B	0.0066	0.0048	0.0048
2,2-Dichloropropane	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
2-Butanone (MEK)	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
Volatile Organic Compounds (con't)															
2-Chloro-1,3-butadiene	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
2-Hexanone	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
4-Methyl-2-pentanone	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Acetone	27	25	92.6%	0.0025	0.005	0.005	0.005	0.00	0.11	Yes	No	Type B	0.006	0.005	0.005
Acetonitrile	13	13	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Acrolein	13	13	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Acrylonitrile	27	27	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Allyl chloride	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Benzene	27	26	96.3%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromochloromethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromodichloromethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromoform	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromomethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Carbon disulfide	27	25	92.6%	0.00072	0.005	0.005	0.005	0.00	0.19	Yes	No	Type B	0.007	0.005	0.005
Carbon tetrachloride	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chlorobenzene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroform	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloromethane	27	23	85.2%	0.00029	0.0025	0.0021	0.0025	0.00	0.40	Yes	No	Type B	0.0047	0.0025	0.0025
cis-1,2-Dichloroethene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
cis-1,3-Dichloropropene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromochloromethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromomethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichlorodifluoromethane	13	13	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichloromethane (Methylene chloride)	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl benzene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl methacrylate	13	13	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Iodomethane	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Isobutyl alcohol	13	13	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
m&p-Xylene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Methacrylonitrile	13	13	100.0%	0.01	0.01	0.01	0.01	0.00	0.00	Yes	No	Type B	0.01	0.01	0.01
Methyl methacrylate	13	13	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
o-Xylene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Phenol	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Propionitrile	13	13	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Styrene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Tetrachloroethene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Toluene	27	26	96.3%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,2-Dichloroethene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,3-Dichloropropene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,4-Dichloro-2-butene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichloroethene	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichlorofluoromethane	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Vinyl acetate	27	27	100.0%	0.005	0.005	0.005	0.005	0.00	0.00	Yes	No	Type B	0.005	0.005	0.005
Vinyl chloride	27	27	100.0%	0.0025	0.0025	0.0025	0.0025	0.00	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,4-Trichlorobenzene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Hexachlorobutadiene	7	7	100.0%	0.005	0.005	0.005	0.005	0.00	0.03	Yes	No	Type B	0.005	0.005	0.005
Naphthalene	8	8	100.0%	0.003	0.005	0.004	0.005	0.00	0.20	Yes	No	Type B	0.007	0.005	0.005

Table 5A - Part 3
EWQVs and Trigger Values
Landfill Cell 9 Inter-well Expanded Parameter
Hakes C and D Landfill
Campbell New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed of non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQV's on this table apply to Cell 9 wells: MW-O(BR), MW-R(BR), MW-S(BR), MW-T(BR), MW-U(BR) & MW-V(BR)															
General Chemistry															
Alkalinity	44	0	0.0%	46.00	250.00	173	160	44	0.26	Yes	Yes	Type A	305	230	305
Ammonia Nitrogen	44	26	59.1%	0.010	0.060	0.025	0.025	0.01	0.33	Yes	No	Type B	0.050	0.033	0.033
Biochemical Oxygen Demand	45	42	93.3%	1.00	3.00	1.14	1.00	0.50	0.44	Yes	No	Type B	2.65	1.00	1.00
Bromide	44	44	100.0%	0.5	0.5	0.5	0.5	0.00	0.00	Yes	No	Type B	0.5	0.5	0.5
Chemical Oxygen Demand	44	19	43.2%	2.5	23.6	4.88	2.5	3.92	0.80	No	No	Type B	16.65	8.04	8.04
Chloride	44	0	0.0%	0.70	3.10	1.44	1.30	0.49	0.34	Yes	Yes	Type A	2.91	2.00	2.91
Color (True) (C.U.)	27	0	0.0%	4.00	25.00	13.83	15.00	5.97	0.43	Yes	Yes	Type A	31.75	20.00	31.75
Cyanide	27	27	100.0%	0.0025	0.0050	0.0033	0.0025	0.00	0.36	Yes	No	Type B	0.0068	0.0050	0.0050
Hardness	44	0	0.0%	51.80	325.00	189.35	171.00	61.23	0.32	Yes	Yes	Type A	373.04	281.40	373.04
Nitrate Nitrogen	44	39	88.6%	0.50	0.70	0.51	0.50	0.05	0.09	Yes	No	Type B	0.66	0.50	0.50
pH of Color Analysis	27	0	0.0%	7.05	8.26	7.89	7.96	0.24	0.03	Yes	Yes	Type A	8.60	8.03	8.60
Sulfate	44	0	0.0%	9.80	117.00	44.53	37.10	32.98	0.74	No	Yes	Type B	143.48	99.12	99.12
Total Dissolved Solids	44	0	0.0%	93.00	445.00	246.97	218.00	89.45	0.36	Yes	Yes	Type A	515.33	383.20	515.33
Total Kjeldahl Nitrogen	44	25	56.8%	0.10	0.29	0.13	0.10	0.06	0.42	Yes	No	Type B	0.30	0.20	0.20
Total Organic Carbon (TOC)	44	14	31.8%	0.09	1.80	0.54	0.50	0.30	0.55	No	No	Type B	1.42	0.76	0.76
Total Phenolics	44	39	88.6%	0.0025	0.0074	0.0026	0.0025	0.00	0.31	Yes	No	Type B	0.0050	0.0025	0.0025

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Field Parameters															
Field pH (std. units)	7	0	0.0%	6.67	7.54	7.21	7.28	0.30	0.04	Yes	Yes	Type A	8.11	7.52	6.31 - 8.11
ORP (mV)	7	0	0.0%	-116.40	239.10	12.66	-8.00	123.04	9.72	No	Yes	Type B	381.77	161.16	161.16
Specific Conductivity (us/cm)	7	0	0.0%	1055	1162	1093	1078	41	0.04	Yes	Yes	Type A	1217	1142	1217
Temperature (deg. C)	7	0	0.0%	6.80	20.10	11.03	9.50	4.75	0.43	Yes	Yes	Type A	25.27	16.44	25.27
Turbidity (NTU)	7	0	0.0%	3.10	147.00	26.17	5.55	53.40	2.04	No	Yes	Type B	186.37	66.96	66.96
Inorganic Compounds															
Aluminum	4	1	25.0%	0.05	2.68	0.73	0.10	1.30	1.78	No	No	Type B	4.63	1.91	1.91
Antimony	4	4	100.0%	0.03	0.03	0.03	0.03	0.00	0.00	Yes	No	Type B	0.03	0.03	0.03
Arsenic	5	4	80.0%	0.0050	0.0087	0.0057	0.0050	0.0017	0.29	Yes	No	Type B	0.0107	0.0072	0.0072
Barium	4	0	0.0%	0.0221	0.0355	0.0301	0.0313	0.0058	0.19	Yes	Yes	Type A	0.0476	0.0348	0.0476
Beryllium	4	4	100.0%	0.0015	0.0015	0.0015	0.0015	0.0000	0.00	Yes	No	Type B	0.0015	0.0015	0.0015
Boron	4	0	0.0%	0.1250	0.1290	0.1268	0.1265	0.0021	0.02	Yes	Yes	Type A	0.1329	0.1287	0.1329
Cadmium	7	7	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Calcium	7	0	0.0%	99	141	114	112	15	0.13	Yes	Yes	Type A	159	133	159
Chromium	4	1	25.0%	0.0007	0.0054	0.0030	0.0030	0.0025	0.85	No	No	Type B	0.0106	0.0053	0.0053
Chromium, hexavalent	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Cobalt	4	3	75.0%	0.008	0.025	0.021	0.025	0.009	0.41	Yes	No	Type B	0.046	0.025	0.025
Copper	4	3	75.0%	0.00	0.01	0.01	0.01	0.00	0.37	Yes	No	Type B	0.02	0.01	0.01
Iron	7	0	0.0%	0.09	7.68	2.22	1.16	2.67	1.20	No	Yes	Type B	10.24	5.15	5.15
Lead	7	7	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Magnesium	7	0	0.0%	52.6	59.0	55.7	55.5	2.0	0.04	Yes	Yes	Type A	61.7	57.9	61.7
Manganese	7	0	0.0%	0.730	1.810	1.161	1.220	0.378	0.33	Yes	Yes	Type A	2.296	1.528	2.296
Mercury	4	4	100.0%	0.0001	0.0001	0.0001	0.0001	0.0000	0.00	Yes	No	Type B	0.0001	0.0001	0.0001
Nickel	4	3	75.0%	0.01	0.02	0.02	0.02	0.01	0.44	Yes	No	Type B	0.04	0.02	0.02
Potassium	7	0	0.0%	18.3	48.4	40.3	44.6	10.5	0.26	Yes	Yes	Type A	71.9	47.7	71.9
Selenium	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Silver	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Sodium	7	0	0.0%	64.2	84.7	74.0	72.9	6.8	0.09	Yes	Yes	Type A	94.3	82.4	94.3
Thallium	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Tin	1	1	100.0%	0.25	0.25	0.25	0.25	0.00	0.00	Yes	No	Type B	0.25	0.25	0.25
Vanadium	4	3	75.0%	0.005	0.025	0.020	0.025	0.010	0.52	No	No	Type B	0.051	0.025	0.025
Zinc	4	3	75.0%	0.01	0.01	0.01	0.01	0.00	0.14	Yes	No	Type B	0.02	0.01	0.01
Polychlorinated Biphenyls (PCBs)															
Aroclor-1016	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Aroclor-1221	1	1	100.0%	0.001	0.001	0.001	0.001	0.000	0.00	Yes	No	Type B	0.001	0.001	0.001
Aroclor-1232	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Aroclor-1242	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Aroclor-1248	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Aroclor-1254	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Aroclor-1260	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Pesticides															
4,4'-DDD	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
4,4'-DDE	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
4,4'-DDT	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Aldrin	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
alpha-BHC	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
alpha-Chlordane	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
beta-BHC	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Chlorobenzilate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
delta-BHC	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Dieldrin	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Dinoseb	1	1	100.0%	0.000255	0.000255	0.000255	0.000255	0.000000	0.00	Yes	No	Type B	0.000255	0.000255	0.000255
Endosulfan I	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Endosulfan II	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Endosulfan sulfate	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Endrin	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Endrin aldehyde	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
gamma-BHC (Lindane)	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
gamma-Chlordane	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Heptachlor	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Heptachlor epoxide	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Methoxychlor	1	1	100.0%	0.000025	0.000025	0.000025	0.000025	0.000000	0.00	Yes	No	Type B	0.000025	0.000025	0.000025
Methyl parathion	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Parathion	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Toxaphene	1	1	100.0%	0.00025	0.00025	0.00025	0.00025	0.00000	0.00	Yes	No	Type B	0.00025	0.00025	0.00025
Per- and Polyfluoroalkyl Substances (PFAS)															
6:2 Fluorotelomer sulfonate	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
N-ethylperfluoro-1-octanesulfonamidoacetic acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
N-methylperfluoro-1-octanesulfonamidoacetic acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorobutanesulfonic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorobutanoic Acid	1	0	0.0%	0.0000013	0.0000013	0.0000013	0.0000013	0.0000000	0.00	Yes	Yes	Type A	0.0000013	0.0000013	0.0000013
Perfluorodecane Sulfonate	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorodecanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorododecanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluoroheptane sulfonate	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluoroheptanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorohexanesulfonic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorohexanoic Acid	1	1	100.0%	0.00000465	0.00000465	0.00000465	0.00000465	0.00000000	0.00	Yes	No	Type B	0.00000465	0.00000465	0.00000465
Perfluorononanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluoro-n-tridecanoic acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorooctanesulfonamide	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorooctanesulfonic Acid	1	1	100.0%	0.00000095	0.00000095	0.00000095	0.00000095	0.00000000	0.00	Yes	No	Type B	0.00000095	0.00000095	0.00000095
Perfluorooctanoic Acid	1	0	0.0%	0.00000056	0.00000056	0.00000056	0.00000056	0.00000000	0.00	Yes	Yes	Type A	0.00000056	0.00000056	0.00000056
Perfluoropentanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluorotetradecanoic acid (PFTeDA)	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023
Perfluoroundecanoic Acid	1	1	100.0%	0.0000023	0.0000023	0.0000023	0.0000023	0.0000000	0.00	Yes	No	Type B	0.0000023	0.0000023	0.0000023

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Herbicides															
2,4,5-T	1	1	100.0%	0.000255	0.000255	0.000255	0.000255	0.000000	0.00	Yes	No	Type B	0.000255	0.000255	0.000255
2,4,5-TP	1	1	100.0%	0.000255	0.000255	0.000255	0.000255	0.000000	0.00	Yes	No	Type B	0.000255	0.000255	0.000255
2,4-D	1	1	100.0%	0.000255	0.000255	0.000255	0.000255	0.000000	0.00	Yes	No	Type B	0.000255	0.000255	0.000255
Radionuclides (pCi/L)															
Radium-226, Dissolved (EPA 903.1) (pCi/L)	2	0	0.0%	0.18	0.27	0.23	0.23	0.06	0.28	Yes	Yes	Type A	0.42	0.26	0.42
Radium-226, Total (EPA 903.1) (pCi/L)	2	0	0.0%	-0.030	0.080	0.025	0.025	0.078	3.11	No	Yes	Type B	0.258	0.069	0.069
Radium-228, Dissolved (EPA 904.0) (pCi/L)	2	0	0.0%	0.090	0.440	0.265	0.265	0.247	0.93	No	Yes	Type B	1.007	0.405	0.405
Radium-228, Total (EPA 904.0) (pCi/L)	2	0	0.0%	-0.100	0.240	0.070	0.070	0.240	3.43	No	Yes	Type B	0.791	0.206	0.206
Total Uranium, Dissolved (EPA 908.0) (pCi/L)	2	0	0.0%	8.500	8.600	8.550	8.550	0.071	0.01	Yes	Yes	Type A	8.762	8.590	8.762
Total Uranium, Total (EPA 908.0) (pCi/L)	2	0	0.0%	6.31	9.10	7.71	7.71	1.97	0.26	Yes	Yes	Type A	13.62	8.82	13.62
Semi Volatile Organic Compounds															
1,2,4,5-Tetrachlorobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
1,3,5-Trinitrobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
1,3-Dinitrobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
1,4-Dioxane	2	0	0.0%	0.00023	0.00028	0.00026	0.00026	0.00004	0.14	Yes	Yes	Type A	0.00036	0.00028	0.00036
1,4-Naphthoquinone	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
1,4-Phenylenediamine	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
1-Naphthylamine	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
2,3,4,6-Tetrachlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,4,5-Trichlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,4,6-Trichlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,4-Dichlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,4-Dimethylphenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,4-Dinitrophenol	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
2,4-Dinitrotoluene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,6-Dichlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2,6-Dinitrotoluene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Acetylaminofluorene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Chloronaphthalene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Chlorophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Methyl-5-nitroaniline	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Methylnaphthalene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Methylphenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
2-Naphthylamine	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
2-Nitroaniline	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
2-Nitrophenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
3,3-Dichlorobenzidine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
3,3-Dimethylbenzidine	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
3/4-Methylphenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
3-Methylcholanthrene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
3-Nitroaniline	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
4,6-Dinitro-2-methylphenol	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
4-Aminobiphenyl	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
4-Bromophenyl-phenylether	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Semi Volatile Organic Compounds (con't)															
4-Chloro-3-methylphenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
4-Chloroaniline	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
4-Chlorophenyl-phenylether	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
4-Nitroaniline	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
4-Nitrophenol	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
7,12-Dimethylbenz(a)anthracene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Acenaphthene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Acenaphthylene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Acetophenone	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Anthracene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzo(a)anthracene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzo(a)pyrene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzo(b)fluoranthene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzo(g,h,i)perylene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzo(k)fluoranthene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Benzyl alcohol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Bis(1-chloroisopropyl) Ether	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
bis(2-Chloroethoxy) methane	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
bis(2-Chloroethyl) ether	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
bis(2-Ethylhexyl) phthalate	2	1	50.0%	0.00495	0.02000	0.01248	0.01248	0.01064	0.85	No	No	Type B	0.04440	0.01850	0.01850
Butylbenzylphthalate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Chrysene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Diallate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Dibenzo(a,h)anthracene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Dibenzofuran	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Diethylphthalate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Dimethoate	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
Dimethylphthalate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Di-n-butylphthalate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Di-n-octylphthalate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Diphenylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Disulfoton	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Ethyl methanesulfonate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Famphur	1	1	100.0%	0.000495	0.000495	0.000495	0.000495	0.000000	0.00	Yes	No	Type B	0.000495	0.000495	0.000495
Fluoranthene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Fluorene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Hexachlorobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Hexachlorocyclopentadiene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Hexachloroethane	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Hexachloropropene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Indeno(1,2,3-cd)pyrene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Isodrin	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Isophorone	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Isosafrole	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Kepone	1	1	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Semi Volatile Organic Compounds (con't)															
Methapyrilene	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
Methyl methanesulfonate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Nitrobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosodibutylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosodiethylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosodimethylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosodi-n-propylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosodiphenylamine/Diphenylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosomethylethylamine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosopiperidine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
N-Nitrosopyrolidine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
o,o,o-Triethyl phosphorothioate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
o-Toluidine	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
p-(Dimethylamino)azobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Pentachlorobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Pentachloronitrobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Pentachlorophenol	1	1	100.0%	0.024	0.024	0.024	0.024	0.000	0.00	Yes	No	Type B	0.024	0.024	0.024
Phenacetin	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Phenanthrene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Phorate	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Pronamide	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Pyrene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Safrole	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Thionazin	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,1-Trichloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2,2-Tetrachloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1,2-Trichloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloroethene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,1-Dichloropropene	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,3-Trichloropropane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromo-3-chloropropane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dibromoethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichlorobenzene	3	3	100.0%	0.0025	0.0048	0.0033	0.0025	0.0013	0.41	Yes	No	Type B	0.0073	0.0043	0.0043
1,2-Dichloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2-Dichloropropane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,3-Dichlorobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
1,3-Dichloropropane	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,4-Dichlorobenzene	3	3	100.0%	0.0025	0.0048	0.0033	0.0025	0.0013	0.41	Yes	No	Type B	0.0073	0.0043	0.0043
2,2-Dichloropropane	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
2-Butanone (MEK)	4	4	100.0%	0.0050	0.0050	0.0050	0.0050	0.0000	0.00	Yes	No	Type B	0.0050	0.0050	0.0050

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
Volatile Organic Compounds (con't)															
2-Chloro-1,3-butadiene	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
2-Hexanone	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
4-Methyl-2-pentanone	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Acetone	4	3	75.0%	0.005	0.014	0.007	0.005	0.005	0.62	No	No	Type B	0.021	0.011	0.011
Acetonitrile	2	2	100.0%	0.050	0.050	0.050	0.050	0.000	0.00	Yes	No	Type B	0.050	0.050	0.050
Acrolein	2	2	100.0%	0.050	0.050	0.050	0.050	0.000	0.00	Yes	No	Type B	0.050	0.050	0.050
Acrylonitrile	4	4	100.0%	0.050	0.050	0.050	0.050	0.000	0.00	Yes	No	Type B	0.050	0.050	0.050
Allyl chloride	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Benzene	4	3	75.0%	0.0009	0.0025	0.0021	0.0025	0.0008	0.38	Yes	No	Type B	0.0045	0.0025	0.0025
Bromochloromethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromodichloromethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromoform	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Bromomethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Carbon disulfide	4	3	75.0%	0.003	0.005	0.005	0.005	0.001	0.20	Yes	No	Type B	0.007	0.005	0.005
Carbon tetrachloride	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chlorobenzene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloroform	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Chloromethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
cis-1,2-Dichloroethene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
cis-1,3-Dichloropropene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromochloromethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dibromomethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichlorodifluoromethane	2	2	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Dichloromethane (Methylene chloride)	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl benzene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Ethyl methacrylate	2	2	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Iodomethane	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Isobutyl alcohol	2	2	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
m&p-Xylene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Methacrylonitrile	2	2	100.0%	0.01	0.01	0.01	0.01	0.00	0.00	Yes	No	Type B	0.01	0.01	0.01
Methyl methacrylate	2	2	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
o-Xylene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Phenol	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Propionitrile	2	2	100.0%	0.05	0.05	0.05	0.05	0.00	0.00	Yes	No	Type B	0.05	0.05	0.05
Styrene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Tetrachloroethene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Toluene	4	3	75.0%	0.0003	0.0025	0.0019	0.0025	0.0011	0.58	No	No	Type B	0.0053	0.0025	0.0025
trans-1,2-Dichloroethene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,3-Dichloropropene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
trans-1,4-Dichloro-2-butene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichloroethene	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Trichlorofluoromethane	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
Vinyl acetate	4	4	100.0%	0.005	0.005	0.005	0.005	0.000	0.00	Yes	No	Type B	0.005	0.005	0.005
Vinyl chloride	4	4	100.0%	0.0025	0.0025	0.0025	0.0025	0.0000	0.00	Yes	No	Type B	0.0025	0.0025	0.0025
1,2,4-Trichlorobenzene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Hexachlorobutadiene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048
Naphthalene	1	1	100.0%	0.0048	0.0048	0.0048	0.0048	0.0000	0.00	Yes	No	Type B	0.0048	0.0048	0.0048

Table 5A - Part 4
EWQVs and Trigger Values
MW-V Intra-well Analysis
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter (mg/L except where noted) (one half detection limit listed for non-detects)	Number of Samples	Number of Non-Detects	% Non-Detects	Minimum	Maximum	Mean	Median	Standard Deviation (SD)	Coefficient of Variation (CV) (SD/Mean)	CV 0.5 or Less?	% ND less than 15%?	Data Set Type	Mean + 3 SD	90th Percentile	Trigger Value
Note: The EWQVs on this table are intra-well and apply only to Cell 9 well MW-V															
General Chemistry															
Alkalinity	7	0	0.0%	190	460	396	422	92	0.23	Yes	Yes	Type A	671	444	671
Ammonia Nitrogen	7	3	42.9%	0.025	0.203	0.098	0.082	0.077	0.79	No	No	Type B	0.328	0.183	0.183
Biochemical Oxygen Demand	7	6	85.7%	1.0	8.4	2.3	1.0	2.8	1.18	No	No	Type B	10.7	5.2	5.2
Bromide	7	7	100.0%	0.5	0.5	0.5	0.5	0.0	0.00	Yes	No	Type B	0.5	0.5	0.5
Chemical Oxygen Demand	7	0	0.0%	6.6	44.8	16.0	9.5	13.9	0.87	No	Yes	Type B	57.7	31.7	31.7
Chloride	7	0	0.0%	1.8	5.3	2.5	2.0	1.3	0.50	Yes	Yes	Type A	6.3	3.6	6.3
Color (True) (C.U.)	4	0	0.0%	25	32	28	28	4	0.13	Yes	Yes	Type A	39	31	39
Cyanide	4	4	100.0%	0.0025	0.0050	0.0031	0.0025	0.0013	0.40	Yes	No	Type B	0.0069	0.0043	0.0043
Hardness	7	0	0.0%	477	594	514	507	44	0.09	Yes	Yes	Type A	647	569	647
Nitrate Nitrogen	7	6	85.7%	0.5	0.5	0.5	0.5	0.0	0.00	Yes	No	Type B	0.5	0.5	0.5
pH of Color Analysis	4	0	0.0%	6.92	8.09	7.71	7.92	0.53	0.07	Yes	Yes	Type A	9.32	8.05	9.32
Sulfate	7	0	0.0%	102	530	252	228	131	0.52	No	Yes	Type B	646	354	354
Total Dissolved Solids	7	0	0.0%	748	930	799	779	62	0.08	Yes	Yes	Type A	985	861	985
Total Kjeldahl Nitrogen	7	1	14.3%	0.10	1.28	0.42	0.21	0.41	0.99	No	Yes	Type B	1.66	0.83	0.83
Total Organic Carbon (TOC)	7	0	0.0%	1.7	16.0	5.0	3.1	5.0	1.01	No	Yes	Type B	20.1	9.6	9.6
Total Phenolics	7	3	42.9%	0.0022	0.0141	0.0042	0.0025	0.0044	1.04	No	No	Type B	0.0173	0.0075	0.0075

Table 6

Current and Historic Surface Water Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	SW-1 11/18/2019	SW-1A 11/18/2019	SW-1A 2/11/2020	SW-1A 5/13/2020	SW-1A 8/6/2020	SW-1A 11/10/2020	SW-2 11/18/2019	SW-2 2/11/2020	SW-2 5/13/2020	SW-2 8/6/2020	SW-2 11/10/2020	SW-2A 11/18/2019	SW-2A 2/11/2020	SW-2A 5/13/2020	SW-2A 8/6/2020	SW-2A 11/10/2020
Field Parameters																
Dissolved Oxygen	12.82	11.79	14.13	11.23		6.11	12.87	14.67	11.32	7.57	9.94	13.91	13.18	11.73	7.66	8.68
Field pH (std. units)	8.42	**8.62**	8.24	7.88	6.99	7.39	7.26	7.03	6.96	6.61	7.43	7.27	7.23	7.2	**6.32**	7.13
ORP (mV)	103	125.9	118.3	144.5	26.2	113.8	132	122.4	198.2	-37.2	174.2	122.3	79.8	247.5	-27.4	146.2
Specific Conductivity (us/cm)	87.3	86.7	131.3	74.2	127.4	200.1	130.7	146.1	85.3	185.5	246.1	157	132.4	73.7	171.6	206.1
Temperature (deg. C)	1.2	1.4	0.9	5.2	15.2	9.5	1.7	1	5	15.9	9.2	2.4	1	4	15.3	8.4
Turbidity (NTU)	3.42	6.03	2.24	7.33	4.01	1.22	6.64	6.54	4.96	11.7	10.4	4.81	6.71	6.89	4.34	2.49
Inorganic Compounds																
Aluminum				0.187					0.327					0.458		
Antimony				0.06 U					0.06 U					0.06 U		
Arsenic		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U
Barium				0.0159 J					0.0183 J					0.0177 J		
Beryllium				0.003 U					0.003 U					0.003 U		
Boron				0.2 U					0.0129 J					0.0133 J		
Cadmium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U
Calcium		6.1	6.8	5.76	11.5	17.5	12.7	13	8.89	21.1	30.1		11.2	7.6	19.4	22.6
Chromium				0.01 U					0.01 U					0.01 U		
Chromium, hexavalent				0.01 U					0.01 U					0.01 U		
Cobalt				0.05 U					0.05 U					0.05 U		
Copper				0.02 U					0.02 U					0.02 U		
Iron		0.14 B	0.1 J	0.147	0.12	0.1 U	0.31	0.2	0.233	0.75	0.47		0.25	0.332	0.29	0.09 J
Lead		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U
Magnesium		2.1	2.2	1.8	3.4	5.3	3.7	3.6	2.56	5.9	7.6		3.1	2.06	4.8	5.8
Manganese		0.005 J	0.01 U	0.0063 J	0.039	0.016	0.009 J	0.01	0.0059 J	0.024	0.009 J		0.008 J	0.01	0.057	0.022
Mercury				0.0002 U					0.0002 U					0.0002 U		
Nickel				0.04 U					0.04 U					0.04 U		
Potassium		0.7 J	0.6 J	0.51 J	0.9 J	1.1 J	1.1 J	0.9 J	0.666 J	1.5 J	1.9 J		0.9 J	0.719 J	1.4 J	1.3 J
Selenium				0.01 U					0.01 U					0.01 U		
Silver				0.01 U					0.01 U					0.01 U		
Sodium		7.2	15.6	7.45	6.7	10	6.2	10.4	5.47	8.8	10.7		9.7	4.9	9.2	9.9
Thallium				0.01 U					0.01 U					0.01 U		
Vanadium				0.05 U					0.05 U					0.05 U		
Zinc				0.02 U					0.02 U					0.02 U		
Oil & Grease																
Oil & Grease																
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane				0.005 U					0.005 U					0.005 U		
1,1,1-Trichloroethane				0.005 U					0.005 UJ					0.005 UJ		
1,1,2,2-Tetrachloroethane				0.005 U					0.005 U					0.005 U		
1,1,2-Trichloroethane				0.005 U					0.005 U					0.005 U		
1,1-Dichloroethane				0.005 U					0.005 U					0.005 U		
1,1-Dichloroethene				0.005 U					0.005 U					0.005 U		
1,2,3-Trichloropropane				0.005 U					0.005 U					0.005 U		
1,2-Dibromo-3-chloropropane				0.005 U					0.005 U					0.005 U		
1,2-Dibromoethane				0.005 U					0.005 U					0.005 U		
1,2-Dichlorobenzene				0.005 U					0.005 U					0.005 U		
1,2-Dichloroethane				0.005 U					0.005 U					0.005 U		
1,2-Dichloropropane				0.005 U					0.005 U					0.005 U		
1,4-Dichlorobenzene				0.005 U					0.005 U					0.005 U		
2-Butanone (MEK)				0.01 U					0.01 U					0.01 U		

Please see page 4 for notes.

Table 6

Current and Historic Surface Water Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	SW-1 11/18/2019	SW-1A 11/18/2019	SW-1A 2/11/2020	SW-1A 5/13/2020	SW-1A 8/6/2020	SW-1A 11/10/2020	SW-2 11/18/2019	SW-2 2/11/2020	SW-2 5/13/2020	SW-2 8/6/2020	SW-2 11/10/2020	SW-2A 11/18/2019	SW-2A 2/11/2020	SW-2A 5/13/2020	SW-2A 8/6/2020	SW-2A 11/10/2020
Volatile Organic Compounds (con't)																
2-Hexanone				0.01 U					0.01 U					0.01 U		
4-Methyl-2-pentanone				0.01 U					0.01 U					0.01 U		
Acetone				0.01 U					0.01 U					0.01 U		
Acrylonitrile				0.1 U					0.1 U					0.1 U		
Benzene				0.005 U					0.005 U					0.005 U		
Bromochloromethane				0.005 U					0.005 U					0.005 U		
Bromodichloromethane				0.005 U					0.005 U					0.005 U		
Bromoform				0.005 U					0.005 U					0.005 U		
Bromomethane				0.005 U					0.005 UJ					0.005 UJ		
Carbon disulfide				0.01 U					0.01 U					0.01 U		
Carbon tetrachloride				0.005 U					0.005 U					0.005 U		
Chlorobenzene				0.005 U					0.005 U					0.005 U		
Chloroethane				0.005 U					0.005 U					0.005 U		
Chloroform				0.005 U					0.005 U					0.005 U		
Chloromethane				0.005 U					0.005 U					0.005 U		
cis-1,2-Dichloroethene				0.005 U					0.005 U					0.005 U		
cis-1,3-Dichloropropene				0.005 U					0.005 U					0.005 U		
Dibromochloromethane				0.005 U					0.005 U					0.005 U		
Dibromomethane				0.005 U					0.005 U					0.005 U		
Dichloromethane (Methylene chloride)				0.005 U					0.005 U					0.005 U		
Ethyl benzene				0.005 U					0.005 U					0.005 U		
Iodomethane				0.01 U					0.01 U					0.01 U		
m&p-Xylene				0.005 U					0.005 U					0.005 U		
o-Xylene				0.005 U					0.005 U					0.005 U		
Styrene				0.005 U					0.005 U					0.005 U		
Tetrachloroethene				0.005 U					0.005 U					0.005 U		
Toluene				0.005 U					0.005 U					0.005 U		
trans-1,2-Dichloroethene				0.005 U					0.005 U					0.005 U		
trans-1,3-Dichloropropene				0.005 U					0.005 U					0.005 U		
trans-1,4-Dichloro-2-butene				0.005 U					0.005 U					0.005 U		
Trichloroethene				0.005 U					0.005 U					0.005 U		
Trichlorofluoromethane				0.005 U					0.005 U					0.005 U		
Vinyl acetate				0.01 UJ					0.01 U					0.01 U		
Vinyl chloride				0.005 U					0.005 U					0.005 U		
General Chemistry																
Alkalinity		16	10	14.8	41.6	25.2	34.8	29.2	22.8	66	59.2		26.8	19.2	56.4	48.4
Ammonia Nitrogen		0.003 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.107	0.05 U	0.05 U	0.05 U		0.087	0.05 U	0.05 U	0.05 U
Biochemical Oxygen Demand		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Bromide		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U
Chemical Oxygen Demand		7.7	14.7	8	11.8	8.4	8.4	12.2	10.6	8.4	8.1		12.8	5 U	7.8	5.9
Chloride		10.7	29.2	10.5	1.5 J	25.1	8.3	18.1	7.6	6.9	11.5		16.9	6.3	10.7	15.1
Color (True) (C.U.)				12					7					5		
Cyanide				0.005 U					0.005 U					0.005 U		
Hardness		23.8	26	21.8	42.7	65.4	47	47.3	32.7	77.1	107		40.5	27.4	68.3	80.2
Nitrate Nitrogen		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 J	0.4 J		1 U	1 U	1 U	1 U
Nitrate-Nitrite																
pH of Color Analysis				7.28 *					7.27 *					7.37 *		
Sulfate		8.2	7.1	7	10	25.8	15.4	15	10.7	15.8	48.4		11.4	8.6	12.7	32.2
Total Dissolved Solids		68	88	72	70	116	91	105	68	104	164		96	75	94	127
Total Kjeldahl Nitrogen		0.1 J	0.16 J	0.2 U	0.17 J	0.2 J	0.16 J	0.3	0.19 J	0.21	0.3		0.23	0.19 J	0.15 J	0.22
Total Nitrogen																
Total Organic Carbon (TOC)		3.4	3.3	3.4	2.8	2.6	2.7	3.4	2.7	2.1	3.4		3.3	2.4	1.7	1.8
Total Phenolics		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U
Total Suspended Solids	3.6	2.5					1.2					1.9				

Please see page 4 for notes.

Table 6

Current and Historic Surface Water Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	SW-3A 11/18/2019	SW-3A 2/11/2020	SW-3A 5/13/2020	SW-3A 11/10/2020	SW-7 11/18/2019	SW-7 2/11/2020	SW-7 5/13/2020	SW-7A 2/11/2020	SW-7A 5/13/2020	SW-7A 8/6/2020	SW-7A 11/10/2020	SW-9 2/11/2020	SW-9 11/10/2020	Class C Standard
Field Parameters														
Dissolved Oxygen					12.48	14.93	11.22	14.69	12.03	5.41	7.72			Not < 5
Field pH (std. units)	7.67	7.58	7.59	8.16	7.69	7.01	6.91	6.9	7.15	6.7	6.76	7.63	7.74	6.5 - 8.5
ORP (mV)	143.2	-9.2	188.9	154.6	142.2	125.9	228.3	123.6	217.9	1.4	173.8	72.5	177.2	
Specific Conductivity (us/cm)	347.7	497.3	381.1	444.5	73.9	87.5	59.3	87	59.7	130.5	159.8	226.3	303.6	
Temperature (deg. C)	4.4	2.7	7.6	11.4	2	0.9	4.3	1	3.2	14.5	8	2	11.1	
Turbidity (NTU)	43.3	5.75	12.3	21.5	3.37	6	3.13	6.97	3.18	4.79	1.28	25.7	38.6	
Inorganic Compounds														
Aluminum			0.754				0.168		0.19					
Antimony			0.06 U				0.06 U		0.06 U					
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Barium			0.0463				0.0153 J		0.0144 J					
Beryllium			0.003 U				0.003 U		0.003 U					
Boron			0.0561 J				0.2 U		0.2 U					1
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Calcium	51.4	61.7	50.3	52.5		6.1	5.93	5.8	5.92	12.5	14.6	26.7	38.1	
Chromium			0.01 U				0.01 U		0.01 U					
Chromium, hexavalent			0.01 U				0.01 U		0.01 U					
Cobalt			0.05 U				0.05 U		0.05 U					0.005
Copper			0.02 U				0.02 U		0.02 U					
Iron	2.45	0.29	0.609	0.76		0.29	0.132	0.32	0.158	0.11	0.08 J	1.57	1.62	
Lead	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.008
Magnesium	9.6	13.1	12	12.8		1.7	1.56	1.6	1.56	3.2	3.8	7.1	8.6	
Manganese	0.122	0.088	0.0174	0.02		0.01 U	0.01 U	0.005 J	0.01 U	0.01 J	0.01 U	0.046	0.032	
Mercury			0.0002 U				0.0002 U		0.0002 U					0.0000007
Nickel			0.04 U				0.04 U		0.04 U					0.0082
Potassium	5.9	2.4	2.31	2.4		0.7 J	0.558 J	0.7 J	0.501 J	0.8 J	0.8 J	2.4	3.1	
Selenium			0.01 U				0.01 U		0.01 U					
Silver			0.01 U				0.01 U		0.01 U					
Sodium	11.4	25.1	18.9	20.7		8.1	4.19	8.1	4.43	6.8	9.7	6.1	11.6	
Thallium			0.01 U				0.01 U		0.01 U					0.008
Vanadium			0.0012 J				0.05 U		0.05 U					0.014
Zinc			0.02 U				0.02 U		0.02 U					
Oil & Grease														
Oil & Grease	2.1 J													
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane			0.005 U				0.005 U		0.005 U					
1,1,1-Trichloroethane			0.005 UJ				0.005 UJ		0.005 UJ					
1,1,2,2-Tetrachloroethane			0.005 U				0.005 U		0.005 U					
1,1,2-Trichloroethane			0.005 U				0.005 U		0.005 U					
1,1-Dichloroethane			0.005 U				0.005 U		0.005 U					
1,1-Dichloroethene			0.005 U				0.005 U		0.005 U					
1,2,3-Trichloropropane			0.005 U				0.005 U		0.005 U					
1,2-Dibromo-3-chloropropane			0.005 U				0.005 U		0.005 U					
1,2-Dibromoethane			0.005 U				0.005 U		0.005 U					
1,2-Dichlorobenzene			0.005 U				0.005 U		0.005 U					
1,2-Dichloroethane			0.005 U				0.005 U		0.005 U					
1,2-Dichloropropane			0.005 U				0.005 U		0.005 U					
1,4-Dichlorobenzene			0.005 U				0.005 U		0.005 U					
2-Butanone (MEK)			0.01 U				0.01 U		0.01 U					

Please see page 4 for notes.

Table 6

Current and Historic Surface Water Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	SW-3A 11/18/2019	SW-3A 2/11/2020	SW-3A 5/13/2020	SW-3A 11/10/2020	SW-7 11/18/2019	SW-7 2/11/2020	SW-7 5/13/2020	SW-7A 2/11/2020	SW-7A 5/13/2020	SW-7A 8/6/2020	SW-7A 11/10/2020	SW-9 2/11/2020	SW-9 11/10/2020	Class C Standard
Volatile Organic Compounds (con't)														
2-Hexanone			0.01 U				0.01 U		0.01 U					
4-Methyl-2-pentanone			0.01 U				0.01 U		0.01 U					
Acetone			0.01 U				0.01 U		0.01 U					
Acrylonitrile			0.1 U				0.1 U		0.1 U					
Benzene			0.005 U				0.005 U		0.005 U					
Bromochloromethane			0.005 U				0.005 U		0.005 U					
Bromodichloromethane			0.005 U				0.005 U		0.005 U					
Bromoform			0.005 U				0.005 U		0.005 U					
Bromomethane			0.005 UJ				0.005 UJ		0.005 UJ					
Carbon disulfide			0.01 U				0.01 U		0.01 U					
Carbon tetrachloride			0.005 U				0.005 U		0.005 U					
Chlorobenzene			0.005 U				0.005 U		0.005 U					0.005
Chloroethane			0.005 U				0.005 U		0.005 U					
Chloroform			0.005 U				0.005 U		0.005 U					
Chloromethane			0.005 U				0.005 U		0.005 U					
cis-1,2-Dichloroethene			0.005 U				0.005 U		0.005 U					
cis-1,3-Dichloropropene			0.005 U				0.005 U		0.005 U					
Dibromochloromethane			0.005 U				0.005 U		0.005 U					
Dibromomethane			0.005 U				0.005 U		0.005 U					
Dichloromethane (Methylene chloride)			0.005 U				0.005 U		0.005 U					0.2
Ethyl benzene			0.005 U				0.005 U		0.005 U					
Iodomethane			0.01 U				0.01 U		0.01 U					
m&p-Xylene			0.005 U				0.005 U		0.005 U					
o-Xylene			0.005 U				0.005 U		0.005 U					
Styrene			0.005 U				0.005 U		0.005 U					
Tetrachloroethene			0.005 U				0.005 U		0.005 U					
Toluene			0.005 U				0.005 U		0.005 U					6
trans-1,2-Dichloroethene			0.005 U				0.005 U		0.005 U					
trans-1,3-Dichloropropene			0.005 U				0.005 U		0.005 U					
trans-1,4-Dichloro-2-butene			0.005 U				0.005 U		0.005 U					
Trichloroethene			0.005 U				0.005 U		0.005 U					0.04
Trichlorofluoromethane			0.005 U				0.005 U		0.005 U					
Vinyl acetate			0.01 U				0.01 U		0.01 U					
Vinyl chloride			0.005 U				0.005 U		0.005 U					
General Chemistry														
Alkalinity	112	122	105	102		12.8	15.6	12.8	16	29.2	20.8	55.6	68	
Ammonia Nitrogen	0.011 J	0.05 U	0.05 U	0.05 U		0.006 J	0.05 U	0.014 J	0.05 U	0.05 U	0.05 U	0.025 J	0.05 U	2
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	
Bromide	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chemical Oxygen Demand	11.5	14.7	16.9	13.6		10	5 U	14.1	7.4	6.3	5.3	10.3	14.5	
Chloride	20.8	51.4	36.3	44.5		13.4	5	13.4	5.4	14.3	26.4	7.6	10.7	
Color (True) (C.U.)			20				5		7					
Cyanide			0.005 U				0.005 U		0.005 U					9
Hardness	168	208	175	184		22.4	21.3	21.3	21.2	44.4	51.9	95.9	131	
Nitrate Nitrogen	1 U	1 U	1 U	1 U		0.4 J	1 U	0.3 J	1 U	0.4 J	1 U	0.5 J	0.7 J	
Nitrate-Nitrite	0.003 J													
pH of Color Analysis			8.01 *				7.18 *		7.18 *					
Sulfate	58	73.8	57.2	88.2		6.2	7	5.9	6.3	9.4	15.1	42	71	
Total Dissolved Solids	272	336	246	288		72	33	75	50	78	95	170	212	500
Total Kjeldahl Nitrogen	0.3	0.28	0.37	0.43		0.14 J	0.15 J	0.14 J	0.2 U	0.2 U	0.21	0.35	0.66	
Total Nitrogen	0.31													
Total Organic Carbon (TOC)	4.2	3.7	5.7	4.8		2.6	2.4	2.7	2.6	1.1	1.6	4.2	4.5	
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Total Suspended Solids	18.5				1 U									

Notes:
Class C Standard - NYSDEC Class C Surface Water Standard
Concentrations in **bold** exceed Class C Standards
U - Concentration not detected at specified detection limit
J - Estimated value
B - Analyte detected in associated method blank
***** - Quality control parameter exceeds laboratory limits

Please see page 4 for notes.

Table 7

Current and Historic Groundwater Suppression System Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	GSS-1A 11/18/2019	GSS-1A 2/11/2020	GSS-1A 5/13/2020	GSS-1A 8/6/2020	GSS-1A 11/10/2020	GSS-3 11/18/2019	GSS-3 2/11/2020	GSS-3 5/13/2020	GSS-4 11/18/2019	GSS-4 2/11/2020	GSS-4 5/13/2020	GSS-5 11/18/2019	GSS-5 2/11/2020	GSS-5 11/10/2020
Field Parameters														
Field pH (std. units)	6.78	**6.48**	6.54	**5.74**	6.58	8.3	8.5	8.27	8.46	8.38	8.3	8.44	8.44	8.12
ORP (mV)	114.2	115.2	123.9	-68	-3	96.2	90.1	158.6	95.1	92.8	140.4	101.7	89.1	176.7
Specific Conductivity (us/cm)	308.8	249.9	271.3	875	723	409.7	416.9	419.9	502.2	491.7	405.4	405.3	429.7	581
Temperature (deg. C)	9.9	5.9	11.9	16.6	14.1	10.4	8.8	12.4	11.1	10.8	13.9	10.7	10.8	13.5
Turbidity (NTU)	**21.9**	**27.7**	**17.4**	**7.78**	**6.77**	2.15	3.08	**5.21**	0.81	1.33	0.85	0.41	0.91	0.93
Inorganic Compounds														
Aluminum			0.93					0.2			0.1 U			
Antimony			0.06 U					0.06 U			0.06 U			
Arsenic	0.01 U	0.01 U	0.01 U	0.006 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium			0.0547					0.0587			0.0674			
Beryllium			0.003 U					0.003 U			0.003 U			
Boron			0.0279 J					0.0373 J			0.0235 J			
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	39	32.9	39.2	144	121	56.6	58.5	61.8	42.9	39.6	37.5	43.9	42.9	66.1
Chromium			0.0023 J					0.01 U			0.01 U			
Chromium, hexavalent			0.01 U					0.01 U			0.01 U			
Cobalt			0.001 J					0.05 U			0.05 U			
Copper			0.02 U					0.02 U			0.02 U			
Iron	**0.99**	**1.6**	**0.993**	**5.84**	**3.54**	0.05 BJ	0.1 U	0.25	0.03 BJ	0.1 U	0.1 U	0.03 BJ	0.1 U	0.1 U
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	11.5	9.3	10	29.3	23.8	13.9	14.1	14.5	14.9	13.4	12.4	14.4	14.1	31.7
Manganese	0.072	0.024	0.0145	**2.61**	**2.83**	0.01 U	0.01 U	0.0087 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Mercury			0.0002 U					0.0002 U			0.0002 U			
Nickel			0.0026 J					0.04 U			0.04 U			
Potassium	1.7 J	1.8 J	1.65 J	2.5	2.3	1.8 J	1.9 J	1.95 J	3.2	3	2.75	2.5	2.7	2.6
Selenium			0.01 U					0.01 U			0.01 U			
Silver			0.01 U					0.01 U			0.01 U			
Sodium	4.9	3.6	3.99	6.2	6.3	14.1	14.7	15.2	**36.3**	**37.4**	**32.9**	19.7	**22.9**	16.9
Thallium			0.01 U					0.01 U			0.01 U			
Vanadium			0.0015 J					0.05 U			0.05 U			
Zinc			0.02 U					0.02 U			0.02 U			
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane			0.005 U					0.005 U			0.005 U			
1,1,1-Trichloroethane			0.005 U					0.005 U			0.005 U			
1,1,2,2-Tetrachloroethane			0.005 U					0.005 U			0.005 U			
1,1,2-Trichloroethane			0.005 U					0.005 U			0.005 U			
1,1-Dichloroethane			0.005 U					0.005 U			0.005 U			
1,1-Dichloroethene			0.005 U					0.005 U			0.005 U			
1,2,3-Trichloropropane			0.005 U					0.005 U			0.005 U			
1,2-Dibromo-3-chloropropane			0.005 U					0.005 U			0.005 U			
1,2-Dibromoethane			0.005 U					0.005 U			0.005 U			
1,2-Dichlorobenzene			0.005 U					0.005 U			0.005 U			
1,2-Dichloroethane			0.005 U					0.005 U			0.005 U			
1,2-Dichloropropane			0.005 U					0.005 U			0.005 U			
1,4-Dichlorobenzene			0.005 U					0.005 U			0.005 U			
2-Butanone (MEK)			0.01 U					0.01 U			0.01 U			
2-Hexanone			0.01 U					0.01 U			0.01 U			
4-Methyl-2-pentanone			0.01 U					0.01 U			0.01 U			
Acetone			0.01 U					0.01 U			0.01 U			

Please see page 4 for notes.

Table 7

Current and Historic Groundwater Suppression System Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	GSS-1A 11/18/2019	GSS-1A 2/11/2020	GSS-1A 5/13/2020	GSS-1A 8/6/2020	GSS-1A 11/10/2020	GSS-3 11/18/2019	GSS-3 2/11/2020	GSS-3 5/13/2020	GSS-4 11/18/2019	GSS-4 2/11/2020	GSS-4 5/13/2020	GSS-5 11/18/2019	GSS-5 2/11/2020	GSS-5 11/10/2020
Volatile Organic Compounds (con't)														
Acrylonitrile			0.1 U					0.1 U			0.1 U			
Benzene			0.005 U					0.005 U			0.005 U			
Bromochloromethane			0.005 U					0.005 U			0.005 U			
Bromodichloromethane			0.005 U					0.005 U			0.005 U			
Bromoform			0.005 U					0.005 U			0.005 U			
Bromomethane			0.005 U					0.005 U			0.005 U			
Carbon disulfide			0.01 U					0.01 U			0.01 U			
Carbon tetrachloride			0.005 U					0.005 U			0.005 U			
Chlorobenzene			0.005 U					0.005 U			0.005 U			
Chloroethane			0.005 U					0.005 U			0.005 U			
Chloroform			0.005 U					0.005 U			0.005 U			
Chloromethane			0.005 U					0.005 U			0.005 U			
cis-1,2-Dichloroethene			0.005 U					0.005 U			0.005 U			
cis-1,3-Dichloropropene			0.005 U					0.005 U			0.005 U			
Dibromochloromethane			0.005 U					0.005 U			0.005 U			
Dibromomethane			0.005 U					0.005 U			0.005 U			
Dichloromethane (Methylene chloride)			0.005 U					0.005 U			0.005 U			
Ethyl benzene			0.005 U					0.005 U			0.005 U			
Iodomethane			0.01 U					0.01 U			0.01 U			
m&p-Xylene			0.005 U					0.005 U			0.005 U			
o-Xylene			0.005 U					0.005 U			0.005 U			
Styrene			0.005 U					0.005 U			0.005 U			
Tetrachloroethene			0.005 U					0.005 U			0.005 U			
Toluene			0.005 U					0.005 U			0.005 U			
trans-1,2-Dichloroethene			0.005 U					0.005 U			0.005 U			
trans-1,3-Dichloropropene			0.005 U					0.005 U			0.005 U			
trans-1,4-Dichloro-2-butene			0.005 U					0.005 U			0.005 U			
Trichloroethene			0.005 U					0.005 U			0.005 U			
Trichlorofluoromethane			0.005 U					0.005 U			0.005 U			
Vinyl acetate			0.01 UJ					0.01 UJ			0.01 UJ			
Vinyl chloride			0.005 U					0.005 U			0.005 U			
General Chemistry														
Alkalinity	94.8	71.6	88.8	414	336	177	175	164	70.4	60.4	56.8	110	85.6	232
Ammonia Nitrogen	0.024 J	0.004 J	0.05 U	0.113	0.124	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Biochemical Oxygen Demand	2 U	2 U	2 U	2.1	2.1	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	16.2	12.2	12.2	50.7	61.5	5 U	5.7	5 UJ	5 U	7	5 U	5 U	10.3	5 U
Chloride	1.7 J	2.3	1.1 J	4.2	7	28.3	30.6	35.5	120	116	98.8	51.7	72.7	4.3
Color (True) (C.U.)			12					5			1			
Cyanide			0.005 U					0.005 U			0.005 U			
Hardness	145	120	139	480	401	199	204	214	168	154	145	169	165	296
Nitrate Nitrogen	0.8 J	1.3	0.3 J	1 U	1 U	1 U	1 U	1 U	0.5 J	0.5 J	0.5 J	0.4 J	0.5 J	0.7 J
pH of Color Analysis			7.14 *					8.26 *			7.9 *			
Sulfate	62.3	48.5	44.3	49.7	70.5	18	18.5	21	20	22.5	24.9	35.9	31.8	83.6
Total Dissolved Solids	224	180	191	**550**	500	272	277	266	296	293	278	261	259	363
Total Kjeldahl Nitrogen	0.4	0.34	0.31	1.03	1.43	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Total Organic Carbon (TOC)	6.3	4.6	4.8	22.9	25.6	0.7 J	0.8 J	0.7 J	0.6 J	0.8 J	0.8 J	1 J	0.8 J	0.8 J
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Please see page 4 for notes.

Table 7

Current and Historic Groundwater Suppression System Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	GSS-6 11/18/2019	GSS-6 2/11/2020	GSS-6 5/13/2020	GSS-6 8/6/2020	GSS-6 11/10/2020	GSS-8 11/18/2019	GSS-8 2/11/2020	GSS-8 5/13/2020	GSS-8 8/6/2020	GSS-8 11/10/2020	GSS-9 12/15/2020	Class GA Standard
Field Parameters												
Field pH (std. units)	8.01	8.19	8	7.36	7.24	6.96	7.1	7.19	**6.47**	6.87	8.29	6.5 - 8.5
ORP (mV)	112.5	95.6	125.2	44	84.1	175.2	116	125.2	40.2	128.4	104.5	
Specific Conductivity (us/cm)	801.8	516.5	1117	1293	1324	724	789	695	970	941	355.6	
Temperature (deg. C)	3	2.7	14.2	21.2	14.5	14.2	13.1	18.9	21.4	18.4	8.7	
Turbidity (NTU)	**6.54**	4.12	**5.59**	4.81	**10.2**	4.34	1.39	1.84	1.74	1.39	0.52	5
Inorganic Compounds												
Aluminum			0.191					0.1 U				
Antimony			0.06 U					0.06 U				0.003
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025
Barium			0.0948					0.0622				1
Beryllium			0.003 U					0.003 U				
Boron			0.0935 J					0.0624 J				1
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005
Calcium	58.7	82.7	157	198	202	89.9	94.7	84	118	123	50	
Chromium			0.01 U					0.01 U				0.05
Chromium, hexavalent			0.01 U					0.01 U				
Cobalt			0.05 U					0.05 U				
Copper			0.02 U					0.02 U				0.2
Iron	**1.13**	**1.64**	**0.308**	**2.16**	**0.56**	0.1 B	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025
Magnesium	17.4	23.6	44	60.3	63.6	18.8	20	18.1	22.9	23.5	12.6	
Manganese	0.158	0.063	0.0195	**0.735**	0.128	0.046	0.021	0.0216	**0.307**	**0.559**	0.005 J	0.3
Mercury			0.0002 U					0.0002 U				0.0007
Nickel			0.04 U					0.04 U				0.1
Potassium	2.5	3	3.92	4.5	4.5	2.2	2.3	1.97 J	2.1	2.2	2.1	
Selenium			0.01 U					0.01 U				0.01
Silver			0.01 U					0.01 U				0.05
Sodium	17.7	**22.2**	**28.1**	**32.7**	**34.2**	**48.8**	**54.2**	**54.1**	**53.6**	**49.7**	11.1	20
Thallium			0.01 U					0.01 U				
Vanadium			0.05 U					0.05 U				
Zinc			0.02 U					0.02 U				
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane			0.005 U					0.005 U				0.005
1,1,1-Trichloroethane			0.005 U					0.005 U				0.005
1,1,2,2-Tetrachloroethane			0.005 U					0.005 U				0.005
1,1,2-Trichloroethane			0.005 U					0.005 U				0.001
1,1-Dichloroethane			0.005 U					0.005 U				0.005
1,1-Dichloroethene			0.005 U					0.005 U				0.005
1,2,3-Trichloropropane			0.005 U					0.005 U				0.00004
1,2-Dibromo-3-chloropropane			0.005 U					0.005 U				0.00004
1,2-Dibromoethane			0.005 U					0.005 U				0.005
1,2-Dichlorobenzene			0.005 U					0.005 U				0.003
1,2-Dichloroethane			0.005 U					0.005 U				0.0006
1,2-Dichloropropane			0.005 U					0.005 U				0.001
1,4-Dichlorobenzene			0.005 U					0.005 U				0.003
2-Butanone (MEK)			0.01 U					0.01 U				0.005
2-Hexanone			0.01 U					0.01 U				0.005
4-Methyl-2-pentanone			0.01 U					0.01 U				0.005
Acetone			0.01 U					0.01 U				0.005

Please see page 4 for notes.

Table 7

Current and Historic Groundwater Suppression System Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L except where noted)

Parameter	GSS-6 11/18/2019	GSS-6 2/11/2020	GSS-6 5/13/2020	GSS-6 8/6/2020	GSS-6 11/10/2020	GSS-8 11/18/2019	GSS-8 2/11/2020	GSS-8 5/13/2020	GSS-8 8/6/2020	GSS-8 11/10/2020	GSS-9 12/15/2020	Class GA Standard
Volatile Organic Compounds (con't)												
Acrylonitrile			0.1 U					0.1 U				0.005
Benzene			0.005 U					0.005 U				0.001
Bromochloromethane			0.005 U					0.005 U				0.005
Bromodichloromethane			0.005 U					0.005 U				0.005
Bromoform			0.005 U					0.005 U				0.005
Bromomethane			0.005 U					0.005 U				0.005
Carbon disulfide			0.01 U					0.01 U				0.005
Carbon tetrachloride			0.005 U					0.005 U				0.005
Chlorobenzene			0.005 U					0.005 U				0.005
Chloroethane			0.005 U					0.005 U				0.005
Chloroform			0.005 U					0.005 U				0.007
Chloromethane			0.005 U					0.005 U				0.005
cis-1,2-Dichloroethene			0.005 U					0.005 U				0.005
cis-1,3-Dichloropropene			0.005 U					0.005 U				0.0004
Dibromochloromethane			0.005 U					0.005 U				0.005
Dibromomethane			0.005 U					0.005 U				0.005
Dichloromethane (Methylene chloride)			0.005 U					0.005 U				0.005
Ethyl benzene			0.005 U					0.005 U				0.005
Iodomethane			0.01 U					0.01 U				0.005
m&p-Xylene			0.005 U					0.005 U				0.005
o-Xylene			0.005 U					0.005 U				0.005
Styrene			0.005 U					0.005 U				0.005
Tetrachloroethene			0.005 U					0.005 U				0.005
Toluene			0.005 U					0.005 U				0.005
trans-1,2-Dichloroethene			0.005 U					0.005 U				0.005
trans-1,3-Dichloropropene			0.005 U					0.005 U				0.0004
trans-1,4-Dichloro-2-butene			0.005 U					0.005 U				0.005
Trichloroethene			0.005 U					0.005 U				0.005
Trichlorofluoromethane			0.005 U					0.005 U				0.005
Vinyl acetate			0.01 UJ					0.01 UJ				0.005
Vinyl chloride			0.005 U					0.005 U				0.002
General Chemistry												
Alkalinity	190	277	397	243	532	206	184	158	277	309	140	
Ammonia Nitrogen	0.05 U	0.05 U	0.05 U	0.055	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	2
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	
Bromide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chemical Oxygen Demand	6	9.3	5 U	8.4	5 U	9.5	9.6	4.4 J	10.6	8.7	5 U	
Chloride	30.3	54.9	34.8	20.9	8.5	105	123	134	120	101	7.5	250
Color (True) (C.U.)			5					5				15
Cyanide			0.005 U					0.005 U				0.2
Hardness	218	303	573	744	767	302	319	284	390	404	177	
Nitrate Nitrogen	1 U	1 U	0.2 J	1 U	1 U	0.6 J	0.6 J	0.7 J	1 U	1 U	0.2 J	10
pH of Color Analysis			7.56 *					7.33 *				
Sulfate	77	55.8	221	**257**	**294**	57.9	71.1	57.1	59.8	73.2	42.8	250
Total Dissolved Solids	408	335	**890**	**952**	**1000**	485	498	461	**566**	**582**	229	500
Total Kjeldahl Nitrogen	0.2 U	0.2 U	0.2 U	0.34	0.2 U	0.11 J	0.17 J	0.2 U	0.17 J	0.28	0.2 U	
Total Organic Carbon (TOC)	1.4	1.2	1.5	1.6	1.6	3.1	2.7	2.1	2.8	3.2	0.9 J	
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001

Notes:
Class GA Standard - NYSDEC Class GA Groundwater Standards
Concentrations in **bold** exceed Class GA Standards
U - Concentration not detected at specified detection limit
J/UJ - Estimated value
B/BJ - Analyte detected in associated method blank
***** - Quality control parameter exceeds laboratory limits

Please see page 4 for notes.

Table 8

Fourth Quarter 2020 Field Duplicate Comparison
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter	MWH-1120	DUP1-1120	MWTBR-1220	DUP1-1220
Inorganic Compounds				
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	61.9	61.7	42.3	42.1
Iron	0.1 U	0.1 U	0.31	0.31
Lead	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	26.7	26.5	10.2	10.2
Manganese	0.008 J	0.008 J	0.663	0.672
Potassium	0.8 J	0.8 J	1.6 J	1.6 J
Sodium	31	30.9	10.8	10.7
General Chemistry				
Alkalinity	111	111	136	136
Ammonia Nitrogen	0.05 U	0.05 U	0.05 U	0.05 U
Biochemical Oxygen Demand	2 U	2 U	2 U	2 U
Bromide	1 U	1 U	1 U	1 U
Chemical Oxygen Demand	5 U	5 U	5 U	5 U
Chloride	9.9	9.9	1.4 J	1.4 J
Hardness	265	263	148	147
Nitrate Nitrogen	0.6 J	0.7 J	1 U	1 U
Sulfate	235	189	22.2	22.1
Total Dissolved Solids	385	396	189	192
Total Kjeldahl Nitrogen	0.2 U	0.2 U	0.2 U	0.2 U
Total Organic Carbon (TOC)	0.5 J	0.5 J	0.6 J	1 U
Total Phenolics	0.005 U	0.005 U	0.005 U	0.005 U

Notes:
U - Concentration not detected at specified detection limit
J - Estimated value

Table 9

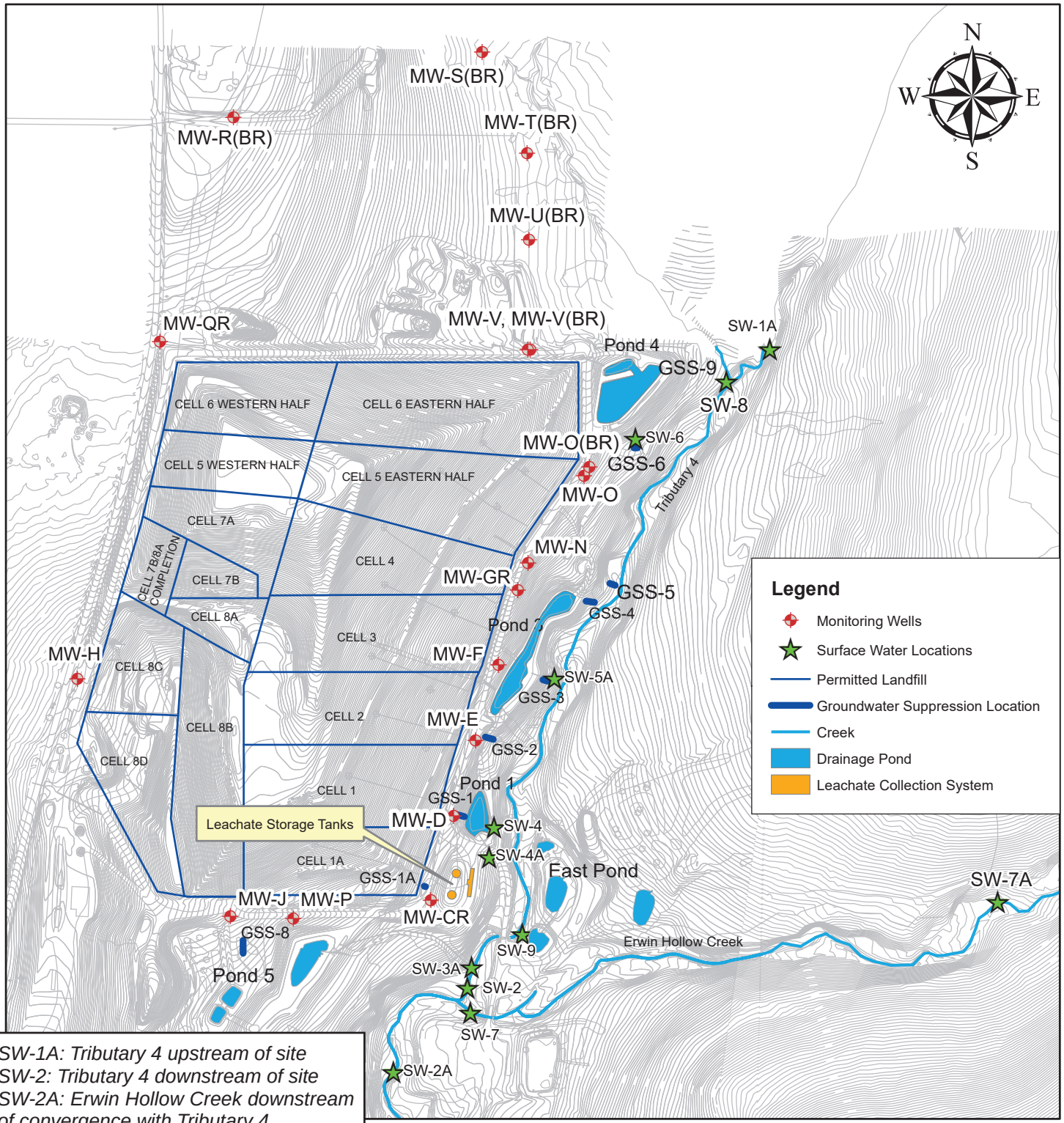
Fourth Quarter 2020 Field Equipment Blank Analytical Results
Hakes C and D Landfill
Campbell, New York
(mg/L)

Parameter	EB1-1120
Inorganic Compounds	
Arsenic	0.01 U
Cadmium	0.005 U
Calcium	1 U
Iron	0.1 U
Lead	0.005 U
Magnesium	1 U
Manganese	0.01 U
Potassium	2 U
Sodium	1 U
General Chemistry	
Alkalinity	2 U
Ammonia Nitrogen	0.05 U
Biochemical Oxygen Demand	2 U
Bromide	1 U
Chemical Oxygen Demand	5 U
Chloride	0.9 J
Hardness	6.62 U
Nitrate Nitrogen	1 U
Sulfate	2 U
Total Dissolved Solids	10 U
Total Kjeldahl Nitrogen	0.2 U
Total Organic Carbon (TOC)	1 U
Total Phenolics	0.005 U

Notes:
U - Concentration not detected at specified detection limit.

Figures

Sampling Locations



SW-1A: Tributary 4 upstream of site
SW-2: Tributary 4 downstream of site
SW-2A: Erwin Hollow Creek downstream of convergence with Tributary 4
SW-3A: Pond 5 discharge pipe
SW-4: Pond 1 discharge pipe
SW-4A: Pond 1 Secondary Discharge
SW-5A: Pond 3 discharge pipe
SW-6: Pond 4 Discharge
SW-7: Erwin Hollow Creek upstream of convergence with Tributary 4
SW-7A: Erwin Hollow Adjacent Borrow Area
SW-8: North Ditch at Tributary 4

On-Site Geological Services
72 Railroad Ave. Wellsville, New York

FIGURE:	1
PROJECT:	HAKES
DOCUMENT:	MONITORING REPORT
FILE/DATE:	SAMPLE LOC.MXD/2.12..2021

Appendix A

Field Forms

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-9-20

Monitoring Well: MW-CR **Sample ID:** MWCR-1120 **Arrival Time:** 1210

Weather Conditions

Temp. 63 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 32.86 ft – SWL: 13.75 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 3.1 gals

Start Purge: 1215 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 188sec/500mL Start Sampling: 1320 Purge Duration: 1hr. 5min. Purge Vol: 3.4 gals.

Field Parameters

Meters: YSI (sn: 20H/01689), Hach 2100P (sn: C011331) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
2.0	1245	7.06	651	5.71	1.13	18.0	130.4	19.33
2.4	1255	7.04	646	4.13	1.47	18.4	129.1	19.95
2.6	1300	7.03	671	4.40	2.01	18.4	128.3	20.24
2.8	1305	7.02	684	5.83	2.39	18.5	129.7	20.80
3.0	1310	7.01	685	8.66	2.48	18.5	131.1	21.07
3.2	1315	7.01	685	10.9	2.79	18.5	132.1	21.30
3.4	1320	7.01	686	12.6	2.45	18.5	132.4	21.54

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

10/40

Analysis Requested: Routine 363 Number of Containers: 6

Well Sampling Completion: Time 1355 Date 11-9-20 Samplers S. Watson

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-D **Sample ID:** MWD-1120 **Arrival Time:** 1447

Weather Conditions

Temp. 77 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 35.05 ft – SWL: 28.76 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.0 gals

Start Purge: 1500 Purging Method: (X) Bail ( ) Peristaltic ( ) Bladder Pump # ____ ( ) Grundfos Pump

Pumping Rate: NA Start Sampling: 1100 Purge Duration: 5 min Purge Vol: .5 gals.

Field Parameters

Meters: YSI (sn: 14400 804), Hach 2100P (sn: 12410) Measured in: ( ) Flow Cell (X) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
.5	1505	Bailed to Bottom						
11/10	1100	7.31	499.8	2.31	NA	13.3	293.3	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bailer Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1113 Date 11-10-20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-9-20

Monitoring Well: mw-E **Sample ID:** mwE-1120 **Arrival Time:** 1400

Weather Conditions

Temp. 20 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment:

Depth & Purging Information

TD: 30.40 ft – SWL: 22.22 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.3 gals

Start Purge: 1405 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 256sec./roml Start Sampling: 1500 Purge Duration: 55 min. Purge Vol: 1.4 gals.

Field Parameters

Meters: YSI (sn: 20H101689), Hach 2100P (sn: C011331) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
.8	1430	6.73	717	7.95	0.86	18.0	161.5	24.20
.9	1435	6.74	707	8.49	1.41	17.7	159.5	24.96
1.0	1440	6.74	705	8.72	1.42	18.0	158.0	25.20
1.1	1445	6.75	704	8.94	1.55	18.3	155.8	25.39
1.2	1450	6.75	706	9.32	1.76	18.7	154.4	25.53
1.3	1455	6.75	705	8.22	1.93	18.3	155.2	25.77
1.4	1500	6.76	706	7.50	1.91	18.3	155.6	26.01

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: Other Observations/Comments:

10/45

Analysis Requested: Routine 36.3 Number of Containers: 6

Well Sampling Completion: Time 1540 Date 11-9-20 Samplers S. WATSON

EB1-1120
1030

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/10/20

Monitoring Well: MW-F **Sample ID:** MWF-1120 **Arrival Time:** 0841

Weather Conditions

Temp. 48 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 38.80 ft – SWL: 26.82 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.9 gals

Start Purge: 0850 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 3 ( ) Grundfos Pump

Pumping Rate: 500ml/128 sec Start Sampling: 0950 Purge Duration: 1hr Purge Vol: 2.5 gals.

Field Parameters

Meters: YSI (sn: 14L100804), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.3	0925	6.23	582.4	11.3	4.98	16.0	289.5	26.98
1.5	0930	6.22	583.0	8.19	4.33	15.9	294.7	29.15
1.8	0933	6.22	582.2	8.26	4.50	16.0	295.5	29.42
2.0	0940	6.22	582.8	7.19	4.40	16.0	296.7	29.90
2.3	0945	6.21	581.2	6.86	4.63	16.0	298.6	30.39
2.5	0950	6.21	580.7	7.04	4.38	16.1	299.9	30.83

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bladder Pump Sample clarity\color: Clear No Odor

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1000 Date 11/14/20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-GR **Sample ID:** MWGR-1120 **Arrival Time:** 1428

Weather Conditions

Temp. 77 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 46.92 ft – SWL: 40.02 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.1 gals

Start Purge: 1430 Purging Method: (X) Bail ( ) Peristaltic ( ) Bladder Pump # ____ ( ) Grundfos Pump

Pumping Rate: NA Start Sampling: 1215 Purge Duration: 5 min Purge Vol: .75 gals.

Field Parameters

Meters: YSI (sn: 14L100804), Hach 2100P (sn: 12410) Measured in: ( ) Flow Cell (X) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
.75	1435	Bailed to Bottom						
1.10	1215	6.96	632	2.98	NA	13.5	200.1	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bailer Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1223 Date 11/10/20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Dup 1
1145

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-H **Sample ID:** MWH-1120 **Arrival Time:** 1023

Weather Conditions

Temp 61 °F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK

Comment:

Depth & Purging Information

TD: ~~29.48~~ 20.28 KD ft – SWL: 6.30 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: ~~3.6~~ 2.2 KD gals

Start Purge: 1035 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 3 ( ) Grundfos Pump

Pumping Rate: 500ml/min Start Sampling: 1125 Purge Duration: 1hr Purge Vol: 3.0 gals.

Field Parameters

Meters: YSI (sn: 17D105223), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.75	1110	6.65	578.7	1.60	4.49	13.1	221.7	7.41
2.0	1115	6.65	579.4	1.40	4.25	15.1	221.3	7.56
2.3	1120	6.64	579.4	1.09	4.35	15.1	220.7	7.40
2.5	1125	6.64	579.2	1.13	4.32	15.3	223.2	7.54
2.75	1130	6.64	578.8	1.10	4.09	15.4	285.0	7.60
3.0	1135	6.64	578.3	1.16	4.19	15.4	226.7	7.61

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bladder Pump Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine Number of Containers: 6+Dup 1

Well Sampling Completion: Time 1159 Date 11/9/20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-9-20

Monitoring Well: MW-J **Sample ID:** MWJ-1120 **Arrival Time:** 0815

Weather Conditions

Temp. 45° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: OK Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 29.52 ft – SWL: 17.66 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.9 gals

Start Purge: 0530 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 100/500/500mL Start Sampling: 0930 Purge Duration: 1hr. Purge Vol: 2.8 gals.

Field Parameters

Meters: YSI (sn: 20141016891), Hach 2100P (sn: C011331) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.4	0900	7.08	1114	25.8	1.62	13.3	149.8	22.01
2.0	0910	7.08	1114	17.1	1.35	13.3	151.9	22.62
2.2	0915	7.10	1116	14.3	1.28	13.4	149.8	23.25
2.4	0920	7.12	1090	14.9	1.26	13.4	147.4	23.61
2.6	0925	7.13	1094	15.0	1.24	13.5	146.2	24.13
2.8	0930	7.13	1099	15.3	1.18	13.4	145.4	24.49

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

10/35

Analysis Requested: Routine 363 Number of Containers: 6

Well Sampling Completion: Time 1000 Date 11-9-20 Samplers S. Winston

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-N **Sample ID:** MWN-1120 **Arrival Time:** 1415

Weather Conditions

Temp. 77 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: ok

Well Visibility (paint) : ok Well Label : ok

Comment: Replaced Rope + Bailer

Depth & Purging Information

TD: 34.70 ft – SWL: 23.45 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.8 gals

Start Purge: 1420 Purging Method: (X) Bail ( ) Peristaltic ( ) Bladder Pump # ____ ( ) Grundfos Pump

Pumping Rate: NA Start Sampling: 1130 Purge Duration: 6min Purge Vol: 1.5 gals.

Field Parameters

Meters: YSI (sn: 14L100804), Hach 2100P (sn: 12410) Measured in: ( ) Flow Cell (X) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.5	1426	Bailed	to Bottom					
11/10	1130	6.96	775	21.6	NA	14.7	-37.4	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bailer Sample clarity\color: Slightly Cloudy Some floating Particulates

Sample Odor (Y) or (N) Explain: ____ Other Observations/Comments: ____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1151 Date 11/10/20 Samplers K D E

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-O **Sample ID:** MWO-1120 **Arrival Time:** 1227

Weather Conditions

Temp. 74 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: N/A Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment:

Depth & Purging Information

TD: 41.22 ft – SWL: 20.82 (PVC) ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 3.2 gals

Start Purge: 1240 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump #Pencil ( ) Grundfos Pump

Pumping Rate: 500ml/320sec Start Sampling: 1340 Purge Duration: 1hr Purge Vol: 1.0 gals.

Field Parameters

Meters: YSI (sn: 17D108273), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)	
0.4	1315	7.75	357.9	.25	.80	19.7	204.7	23.77	water
0.5	1320	7.76	357.4	.78	.78	19.9	203.1	24.08	CASING
0.6	1325	7.76	358.1	.68	.76	19.8	201.9	24.42	
0.75	1330	7.76	358.4	.63	.75	19.6	201.8	24.74	
0.9	1335	7.76	357.5	.49	.71	19.6	202.0	25.08	
1.0	1340	7.76	356.9	.53	.68	19.8	201.8	25.43	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Pencil Pump Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1411 Date 11/9/20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-15-20

Monitoring Well: MW-5 (BR) **Sample ID:** MW5BR-1220 **Arrival Time:** 0852

Weather Conditions

Temp. 20 ° F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 62.43 ft – SWL: 53.62 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.4 gals

Start Purge: 0855 Purging Method: (X) Bail ( ) Peristaltic ( ) Bladder Pump # ____ ( ) Grundfos Pump

Pumping Rate: NA Start Sampling: 0855 Purge Duration: 16 min Purge Vol: 1.25 gals.

Field Parameters

Meters: YSI (sn: 14L100804), Hach 2100P (sn: 12410) Measured in: ( ) Flow Cell (X) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.25	0911	Bailed	to Bottom					
12/15	1408							59.77
12/16	0855	7.47	432.9	9.55	NA	10.0	132.4	54.24

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bailer Sample clarity\color: Clear No Odor

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 0915 Date 12/16/20 Samplers K Dyl

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C. MS/MSD

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-9-20

Monitoring Well: MW-P **Sample ID:** MWP-1120 **Arrival Time:** 1005

Weather Conditions

Temp. 53 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: ok Pro. casing/lock: ok Surface pad: ok

Well Visibility (paint) : ok Well Label : ok

Comment: _____

Depth & Purging Information

TD: 34.54 ft – SWL: 22.83 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.9 gals

Start Purge: 1010 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 122 sec./500mL Start Sampling: 1110 Purge Duration: 1hr. Purge Vol: 2.4 gals.

Field Parameters

Meters: YSI (sn: 20H101689), Hach 2100P (sn: C01331) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.2	1040	7.43	498.6	17.4	0.60	18.3	109.8	23.61
1.6	1050	7.43	486.1	14.1	0.31	18.4	90.1	24.15
1.8	1055	7.43	486.3	12.8	0.33	18.6	48.6	24.22
2.0	1100	7.43	486.6	16.3	0.31	18.8	40.8	24.30
2.2	1105	7.43	486.4	19.9	0.35	19.1	34.9	24.40
2.4	1110	7.42	486.9	8.50	0.37	19.1	30.8	24.51

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

1050

MS/MSD

Analysis Requested: Routine 363 Number of Containers: 6+6

Well Sampling Completion: Time 1205 Date 11-9-20 Samplers S. Watson

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/9/20

Monitoring Well: MW-QR **Sample ID:** MWQR-1120 **Arrival Time:** 1207

Weather Conditions

Temp. 61 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 12.50 ft – SWL: 10.35 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 0.3 gals

Start Purge: 1212 Purging Method: (X) Bail ( ) Peristaltic ( ) Bladder Pump # _____ ( ) Grundfos Pump

Pumping Rate: NA Start Sampling: 0810 Purge Duration: 5min Purge Vol: 0.4 gals.

Field Parameters

Meters: YSI (sn: 17D108223), Hach 2100P (sn: 12410) Measured in: ( ) Flow Cell (X) Cup

Purge (gal)	Time	pH	Conductivity (µs/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
0.4	1217	Bailed	to Bailed	to Bottom				11.40
	1511							
11/10	0810	5.66	632	3.70	NA	13.7	277.0	10.42

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bailer Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1448 Date 11/10/20 Samplers K Dye

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-15-20

Monitoring Well: MW-RBR **Sample ID:** MWRBR-1220 **Arrival Time:** 0930

Weather Conditions

Temp. 26 ° F ( ) Sunny (X) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain (X) Snow light

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: ok Surface pad: ok

Well Visibility (paint) : ok Well Label : ok

Comment: _____

Depth & Purging Information

TD: 30.56 ft – SWL: 15.70 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 2.3 gals

Start Purge: 0935 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 3 ( ) Grundfos Pump

Pumping Rate: 500ml / 151 sec Start Sampling: 1035 Purge Duration: 1hr Purge Vol: 2.5 gals.

Field Parameters

Meters: YSI (sn: 14100804), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.4	1010	6.89	265.8	10.8	1.53	8.4	207.0	17.76
1.6	1015	6.76	236.1	11.0	1.68	8.5	207.6	18.37
1.8	1020	6.73	228.6	13.7	1.79	8.8	208.5	18.97
2.0	1025	6.70	219.7	17.3	1.94	9.0	209.4	19.44
2.25	1030	6.67	213.8	22.3	2.09	9.0	210.7	20.00
2.5	1035	6.62	201.3	35.0	2.19	9.1	211.8	20.63

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bladder Pump Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1101 Date 12/15/20 Samplers K. DE

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-15-20

Monitoring Well: MW-5BR **Sample ID:** MW5BR-1220 **Arrival Time:** 1320

Weather Conditions

Temp. 30 ° F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain (X) Snow lite

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : Needs

Comment: _____

Depth & Purging Information

TD: 26.09 ft – SWL: 4.74 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 3.4 gals

Start Purge: 1330 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 93sec. /500mL Start Sampling: 1430 Purge Duration: 1hr. Purge Vol: 4.8 gals.

Field Parameters

Meters: YSI (sn: 20H101684), Hach 2100P (sn: CC1133 1) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
2.0	1400	7.86	327.6	5.41	0.52	7.0	8.7	6.20
2.6	1410	7.78	339.2	3.85	0.25	7.4	-42.6	6.42
3.2	1415	7.78	339.6	3.47	0.25	7.4	-46.8	6.49
3.8	1420	7.78	339.9	3.31	0.21	7.4	-47.4	6.56
4.2	1425	7.77	340.5	3.20	0.19	7.4	-48.8	6.60
4.8	1420	7.77	340.0	3.41	0.19	7.4	-49.0	6.67

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1515 Date 12-15-20 Samplers S. WATSON

DUP 1-1220
1225

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-15-20

Monitoring Well: MW-TBR **Sample ID:** MWTBR-1220 **Arrival Time:** 1105

Weather Conditions

Temp. 28 ° F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow lite

Wind Conditions: 0-5mph w/gusts

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : Needs

Comment:

Depth & Purging Information

TD: 22.50 ft – SWL: 5.53 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 2.7 gals (Hard)

Start Purge: 1115 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 90 sec./500mL Start Sampling: 1215 Purge Duration: 1 hr. Purge Vol: 4.0 gals.

Field Parameters

Meters: YSI (sn: 20H101689), Hach 2100P (sn: Co1133 1) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
2.0	1145	7.70	291.1	11.5	0.61	7.5	172.6	8.50
2.6	1155	7.70	291.6	11.1	0.63	7.6	172.5	8.75
3.0	1200	7.71	292.1	9.22	0.64	7.7	172.7	8.90
3.3	1205	7.71	292.2	8.01	0.68	7.7	172.0	8.91
3.6	1210	7.72	292.4	7.66	0.71	7.8	171.6	8.92
4.0	1215	7.70	292.3	7.44	0.75	7.7	172.1	8.93

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: Other Observations/Comments:

10/30

DUP1-1220
1225

Analysis Requested: Routine Number of Containers: 6 to 6

Well Sampling Completion: Time 1245 Date 12-15-20 Samplers S. WATSON

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-16-20

Monitoring Well: MWU(BR) **Sample ID:** MWU3R-1220 **Arrival Time:** 0925

Weather Conditions

Temp. 20° F ( ) Sunny (X) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 22.85 ft – SWL: 13.73 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 1.4 gals

Start Purge: 0940 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # Pencil ( ) Grundfos Pump

Pumping Rate: 500ml/272 sec Start Sampling: 1050 Purge Duration: 1hr 10min Purge Vol: 1.5 gals.

Field Parameters

Meters: YSI (sn: 14A100804), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.0	1030	7.66	281.5	2.04	.47	9.1	129.5	14.38
1.1	1035	7.67	281.4	1.48	.45	9.1	129.0	14.37
1.25	1040	7.68	281.3	1.57	.43	9.1	127.9	14.38
1.4	1045	7.69	281.3	2.03	.42	9.2	126.8	14.38
1.5	1050	7.69	281.4	1.50	.40	9.2	126.2	14.41

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Pencil Pump Sample clarity\color: Clear No color / 12/15/20

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: GW Checked Well Pinched at 4' 7". 1.6" Bladder Pump Would not fit. Sampled with Pencil Pump

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1112 Date 12/16/20 Samplers KD/JF

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12-15-20

Monitoring Well: MW-V **Sample ID:** MW-V-1220 **Arrival Time:** 0855

Weather Conditions

Temp. 27° F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain (X) Snow lt

Wind Conditions: 0-5mph

Well Condition Checklist

Bump posts: OK Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : Hakes

Comment:

Depth & Purging Information

TD: 41.70 ft – SWL: 16.37 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: 4.0 gals

Start Purge: 0910 Purging Method: ( ) Bail ( ) Peristaltic ( ) Bladder Pump # 2 ( ) Grundfos Pump

Pumping Rate: 1915ec./5min. Start Sampling: 1015 Purge Duration: 1hr. 5min. Purge Vol: 2.5 gals.

Field Parameters

Meters: YSI (sn: 20H101689), Hach 2100P (sn: CO1331) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
1.1	0950	7.84	1093	5.61	1.79	7.9	192.0	22.50
1.3	0955	7.81	1090	5.58	1.83	7.9	192.0	23.50
1.5	1000	7.80	1086	6.38	1.61	8.0	191.9	24.19
1.8	1005	7.79	1085	6.41	1.52	8.0	191.8	25.25
2.2	1010	7.78	1085	5.34	1.51	8.1	191.7	26.11
2.5	1015	7.78	1086	4.51	1.50	7.8	192.1	27.01

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: bladder pump Sample clarity\color: clear/colorless

Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1050 Date 12-15-20 Samplers S. Watson

Groundwater Purging and Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12/15/20

Monitoring Well: MW-VCBR **Sample ID:** MWVBR-1220 **Arrival Time:** 1120

Weather Conditions

Temp. 30 F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain (X) Snow (light)

Wind Conditions: 0-10 mph

Well Condition Checklist

Bump posts: NA Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint) : OK Well Label : OK

Comment: _____

Depth & Purging Information

TD: 61.42 ft – SWL: 28.66 ft x 0.16 if 2" or 0.65 if 4" = 1 Well Volume: _____ gals

Start Purge: 1135 Purging Method: ( ) Bail ( ) Peristaltic (X) Bladder Pump # 3 ( ) Grundfos Pump

Pumping Rate: 500ml/ Start Sampling: 1250 Purge Duration: 1hr15min Purge Vol: 3.9 gals.

Field Parameters

Meters: YSI (sn: 14L108804), Hach 2100P (sn: 12410) Measured in: (X) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
2.3	1230	7.73	512.5	4.28	.98	9.7	-95.4	31.91
2.6	1235	7.72	513.7	3.14	.95	9.7	-95.9	32.24
3.25	1240	7.72	509.2	6.17	1.05	9.7	-95.7	32.30
3.6	1245	7.71	510.4	7.29	1.10	9.8	-96.1	33.50
3.9	1250	7.72	508.9	5.71	1.16	9.8	-96.6	33.68

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Sample Collection Method: Bladder Pump Sample clarity\color: Clear No Color

Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Well Sampling Completion: Time 1316 Date 12.15.20 Samplers K D E

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-1 **Sample ID:** NO SAMPLE **Arrival Time:** 1055

Weather Conditions:

Temp. 63° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: NO FLOW

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: _____), Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Type: ( ) Grab ( ) Composite Sample Location: ( ) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: _____

Sample Collection Equipment/Method: _____ Sample Time: NA

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Pristine 363 Number of Containers: 6

Sampling Completion: Time 1055 Date 11-10-20 Samplers S. WATSON

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-1A **Sample ID:** GSS1A-1120 **Arrival Time:** 1255

Weather Conditions:

Temp. 72.9 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: 15-20 gpm

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 20H10/659), Hach 2100P (sn: 20/1371)

Field Parameters tested in: ( ) Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1300	6.58	723	6.77	NA	14.1	-3.0

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: (X) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: 2" flex hose - manual on

Sample Collection Equipment/Method: 5 gal. bucket Sample Time: 1305

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Earthy odor

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1315 Date 11-10-20 Samplers S. WATSON

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-2 **Sample ID:** NO SAMPLE **Arrival Time:** 1100

Weather Conditions:

Temp. 68.4° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: NO FLOW

Comments: DRY

Field Parameters (as appropriate)

Meter: YSI (sn: _____), Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Type: ( ) Grab ( ) Composite Sample Location: ( ) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: _____

Sample Collection Equipment/Method: _____ Sample Time: NA

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 0

Sampling Completion: Time 1104 Date 11-10-20 Samplers S. WATSON

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-3 **Sample ID:** NO SAMPLE **Arrival Time:** 1105

Weather Conditions:

Temp. 65° F ( ) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: NO Flow

Comments: One drip

Field Parameters (as appropriate)

Meter: YSI (sn: _____), Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Type: ( ) Grab ( ) Composite Sample Location: ( ) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: _____

Sample Collection Equipment/Method: _____ Sample Time: NA

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: Ø

Sampling Completion: Time 1105 Date 11-10-20 Samplers J. Wilmot

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-4 **Sample ID:** NO SAMPLE **Arrival Time:** 1115

Weather Conditions:

Temp. 65° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: No Flow

Comments: Drip every 3 seconds

Field Parameters (as appropriate)

Meter: YSI (sn: _____), Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Type: ( ) Grab ( ) Composite Sample Location: ( ) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: _____

Sample Collection Equipment/Method: _____ Sample Time: NA

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1118 Date 11-10-20 Samplers S. Watson

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-5 **Sample ID:** ~~GSS5-1120~~ **Arrival Time:** 1120

Weather Conditions:

Temp. 65 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: ~~.25 gpm~~ .10 gpm

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 20H101659), Hach 2100P (sn: C011331)

Field Parameters tested in: ( ) Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1123	8.12	581.0	0.93	NA	13.5	176.7

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: (X) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: 6" HDPE pipe

Sample Collection Equipment/Method: dipper Sample Time: 1125

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1145 Date 11-10-20 Samplers S. Watson

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-6 **Sample ID:** GSS6-1120 **Arrival Time:** 1148

Weather Conditions:

Temp. 21.7 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: 20.5" Estimated Flow: 5gpm

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 20H101689), Hach 2100P (sn: 0111331)

Field Parameters tested in: ( ) Submerged Probe (X) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1159	7.24	1324	10.2	NA	14.5	84.1

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: (X) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: 4" HDPE pipe

Sample Collection Equipment/Method: dipper Sample Time: 1155

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1205 Date 11-10-20 Samplers S. WATSON

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11-10-20

Sampling Location: GSS-8 **Sample ID:** GSS8-1120 **Arrival Time:** 1320

Weather Conditions:

Temp. 73 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: 10 gpm

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 20H101689), Hach 2100P (sn: 20113210)

Field Parameters tested in: ( ) Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1325	6.87	941	1.39	NA	18.4	128.4

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: (X) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: 4" HDPE pipe

Sample Collection Equipment/Method: dipper Sample Time: 1330

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1345 Date 11-10-20 Samplers S. Watson

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 12/15/20

Sampling Location: GSS-9 **Sample ID:** GSS9-1220 **Arrival Time:** 1326

Weather Conditions:

Temp. 30° F ( ) Sunny ( ) Partly Cloudy (X) Cloudy ( ) Light Rain ( ) Hvy. Rain (X) light Snow

Wind Conditions: 0-5mph

Location Type

(X) Groundwater Suppression ( ) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: Approx 10 GPM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 14L100804), Hach 2100P (sn: 12410)

Field Parameters tested in: ( ) Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1335	8.29	355.6	.52	NA	8.7	104.5

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: (X) Discharge Pipe ( ) Pond ( ) Ditch

Location Description/Condition: _____

Sample Collection Equipment/Method: Grab Sample Time: 1335

Sample Description (clarity\color): Clear No color Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Routine Number of Containers: 6

Sampling Completion: Time 1354 Date 12/15/20 Samplers K. DyE

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill–Campbell, New York **Date:** 11-10-20

Sampling Location: SW-1A **Sample ID:** SW1A-1120 **Arrival Time:** 1215

Weather Conditions

Measured Ambient Temp. 70.2° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: None

Depth and Flow Information

Sample Location Water Depth: 6" Flow: 1gpm Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: Col1331)

Field Parameters tested in: (X) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1300	7.39	200.1	1.22	6.11	9.5	113.8

Sample Information

Sample Location: ( ) Pond Discharge Pipe (X) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 1225

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1245 Date 11-10-20 Samplers S. WATSON

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW2-2 **Sample ID:** SW2-1120 **Arrival Time:** 0938

Weather Conditions

Measured Ambient Temp. 61.1 ° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph.

Depth and Flow Information

Sample Location Water Depth: 4" Flow: 5gpm Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: C011331)

Field Parameters tested in: (X) Directly Submerged Probe ( ) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
0949	7.43	246.1	10.4	9.94	9.2	174.2

Sample Information

Sample Location: ( ) Pond Discharge Pipe (X) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 0945

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 0955 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-2A **Sample ID:** SW2A-1120 **Arrival Time:** 0815

Weather Conditions

Measured Ambient Temp. 46.1° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: None

Depth and Flow Information

Sample Location Water Depth: 5" Flow: 25 gpm Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: C011331)

Field Parameters tested in: (X) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
0835	7.13	206.1	2.49	8.68	8.4	146.2

Sample Information

Sample Location: ( ) Pond Discharge Pipe (X) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 0830

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 0845 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-3A **Sample ID:** SW3A-1120 **Arrival Time:** 0955

Weather Conditions

Measured Ambient Temp. 64.4° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph

Depth and Flow Information

Sample Location Water Depth: N/A Flow: .5gpm Flow Measurement Method: eye.

Is pond discharging to stream (X) Yes ( ) No ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: C011331)

Field Parameters tested in: ( ) Directly Submerged Probe (X) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
0958	8.16	444.5	21.5	NA	11.4	154.6

Sample Information

Sample Location: (X) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 1000

Visual Contrast Entering Stream: ( ) NA ( ) Yes (X) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1010 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-4 **Sample ID:** NO SAMPLE **Arrival Time:** 1050

Weather Conditions

Measured Ambient Temp. 44.3° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph Directed to East Pond

Depth and Flow Information

Sample Location Water Depth: NA Flow: NO FLOW Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn:) Turbidity Meter: Hach 2100P (sn:)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: ( ) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: NA Sample Time: NA

Visual Contrast Entering Stream (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 05

Sampling Completion Time 1054 Date 11-10-20 Samplers S. WATSON

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-4A **Sample ID:** NO SAMPLE **Arrival Time:** 1048

Weather Conditions

Measured Ambient Temp. 64.7° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph

Depth and Flow Information

Sample Location Water Depth: N/A Flow: NO FLOW Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: _____) Turbidity Meter: Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: ( ) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: N/A Sample Time: N/A

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: DRY LOCATION

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1050 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-5A **Sample ID:** NO SAMPLE **Arrival Time:** 1110

Weather Conditions

Measured Ambient Temp. 65.1 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5mph

Depth and Flow Information

Sample Location Water Depth: NA Flow: No Flow Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes (X) No ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: _____) Turbidity Meter: Hach 2100P (sn: _____)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: (X) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: _____ Sample Time: NA

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): _____ Sample Odor (Y) or (N) Explain: _____ Other Observations/Comments: _____

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: **Time** 1114 **Date** 11-10-20 Samplers S Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-6 **Sample ID:** NO SAMPLE **Arrival Time:** 1205

Weather Conditions

Measured Ambient Temp. 41 ° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5 mph
Directed to next pond

Depth and Flow Information

Sample Location Water Depth: NA Flow: NO FLOW Flow Measurement Method: eye.

Is pond discharging to stream ( ) **Yes** ( ) **No** (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn:) Turbidity Meter: Hach 2100P (sn:)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: ( ) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: Sample Time: NA

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Route 363 Number of Containers: 0

Sampling Completion: **Time** 1205 Date 11-10-20 Samplers S. Wentland

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-7 **Sample ID:** NO SAMPLE **Arrival Time:** 0845

Weather Conditions

Measured Ambient Temp. 45.4° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: None

Depth and Flow Information

Sample Location Water Depth: DRY Flow: None Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn:) Turbidity Meter: Hach 2100P (sn:)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: ( ) Pond Discharge Pipe (X) Stream

Grab Sample Collection Equipment/Method: NA Sample Time: NA

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): Sample Odor (Y) or (N) Explain: Other Observations/Comments: Stream dry - some small puddles (no flow)

Analysis Requested: Routine 3013 Number of Containers: 8

Sampling Completion: Time 0845 Date 11-10-20 Samplers S. WATA

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-7A **Sample ID:** SW7A-1120 **Arrival Time:** 0903

Weather Conditions

Measured Ambient Temp. 49.9 ° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: None

Depth and Flow Information

Sample Location Water Depth: 4" Flow: 5gpm Flow Measurement Method: eye

Is pond discharging to stream ( ) Yes ( ) No (X) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: 001331)

Field Parameters tested in: (X) Directly Submerged Probe ( ) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
0908	6.76	159.8	1.28	7.72	8.0	173.8

Sample Information

Sample Location: ( ) Pond Discharge Pipe (X) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 0910

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 0927 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-8 **Sample ID:** NO SAMPLE **Arrival Time:** 1210

Weather Conditions

Measured Ambient Temp. 70.5° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph

Depth and Flow Information

Sample Location Water Depth: NA Flow: NO FLOW Flow Measurement Method: eye

Is pond discharging to stream ( ) **Yes** (X) **No** ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn:) Turbidity Meter: Hach 2100P (sn:)

Field Parameters tested in: ( ) Directly Submerged Probe ( ) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)

Sample Information

Sample Location: ( ) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: Sample Time: NA

Visual Contrast Entering Stream: (X) NA ( ) Yes ( ) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): Sample Odor (Y) or (N) Explain: Other Observations/Comments: Flow in ditch line from GSS-9 not groundwater

Analysis Requested: Routine 537 Number of Containers: 6

Sampling Completion: Time 1213 Date 11-10-20 Samplers S. Watson

Surface Water Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill– Campbell, New York **Date:** 11-10-20

Sampling Location: SW-9 **Sample ID:** SW9-1110 **Arrival Time:** 1030

Weather Conditions

Measured Ambient Temp. 66.1 ° F (X)Sunny ( )Partly Cloudy ( )Cloudy ( )Light Rain ( )Hvy. Rain ( )Snow

Wind Conditions: 0-5mph

Depth and Flow Information

Sample Location Water Depth: NA Flow: 2 gpm Flow Measurement Method: eye

Is pond discharging to stream (X) Yes ( ) No ( ) NA **If Yes collect sample**

Field Parameters

Multi Meter: YSI (sn: 20H101689) Turbidity Meter: Hach 2100P (sn: 0011331)

Field Parameters tested in: ( ) Directly Submerged Probe (X) Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1040	7.74	303.6	38.6	NA	11.1	177.2

Sample Information

Sample Location: (X) Pond Discharge Pipe ( ) Stream

Grab Sample Collection Equipment/Method: dipper Sample Time: 1035

Visual Contrast Entering Stream: ( ) NA ( ) Yes (X) No; If yes, **notify project manager**, explain below and take photograph

Sample Description (clarity\color): clear/colorless Sample Odor (Y) or (N) Explain: Other Observations/Comments:

Analysis Requested: Routine 363 Number of Containers: 6

Sampling Completion: Time 1045 Date 11-10-20 Samplers S. WATSON

Groundwater Suppression and Leachate Sampling Field Form
On-Site Geological Services, D.P.C.

Project: Hakes C&D Landfill, Campbell, New York **Date:** 11/10/20

Sampling Location: LCS **Sample ID:** LCS-1120 **Arrival Time:** 1250

Weather Conditions:

Temp. 73 ° F (X) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Hvy. Rain ( ) Snow

Wind Conditions: 0-5 mph

Location Type

( ) Groundwater Suppression (X) Leachate ( ) Secondary Leachate ( ) Surface Water/Sediment ( ) Res. Water

( ) Other _____

Flow and Depth Information (as appropriate)

Depth: Approx 35' Estimated Flow: NA

Comments: _____

Field Parameters (as appropriate)

Meter: YSI (sn: 14L100604), Hach 2100P (sn: 12410)

Field Parameters tested in: ( ) Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
1320	7.74	4681	17.0	NA	16.7	247.8

Sample Information

Sample Type: (X) Grab ( ) Composite Sample Location: ( ) Discharge Pipe ( ) Pond (X) ~~Ditch~~ Tank

Location Description/Condition: North Tank

Sample Collection Equipment/Method: 5-gal Bucket Sample Time: 1320

Sample Description (clarity\color): Clear Light Amber tint Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: 363 Expanded Number of Containers: 27

Sampling Completion: Time 1430 Date 11/10/20 Samplers K Dye

Appendix B

Laboratory Analytical Reports

February 12, 2021 Service Request No:R2010613

Russell Anderson
Casella Waste Systems, Inc.
26 Pleasant Street, Suite 3E
Concord, NH 03301

Laboratory Results for: Hakes C&D Landfill

Dear Russell,

Enclosed are the results of the sample(s) submitted to our laboratory November 10, 2020
For your reference, these analyses have been assigned our service request number **R2010613.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jon Brandes

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill
Sample Matrix: Water

Service Request: R2010613
Date Received: 11/10/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Seven water samples were received for analysis at ALS Environmental on 11/10/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method SM 5210 B-2001(2011), One or more samples were received within the recommended holding time but the time was not documented on the chain at receipt so one or more samples was not analyzed within the recommended holding time. The data is flagged to indicate the holding time exceedance.

Please note: This report has been revised to correct the phenol results for R2010613-007.

Approved by _____ Date 11/24/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: MWH-1120			Lab ID: R2010613-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	111		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.5	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	9.9		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	265			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.6	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	385		10	11	mg/L	SM 2540 C-1997 (2011)
Sulfate	235		1.6	8.0	mg/L	9056A
Calcium, Total	61900		300	1000	ug/L	6010C
Magnesium, Total	26700		30	1000	ug/L	6010C
Manganese, Total	8	J	4	10	ug/L	6010C
Potassium, Total	800	J	200	2000	ug/L	6010C
Sodium, Total	31000		200	1000	ug/L	6010C

CLIENT ID: DUP1-1120			Lab ID: R2010613-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	111		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.5	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	9.9		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	263			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.7	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	396		10	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	189		1.6	8.0	mg/L	9056A
Calcium, Total	61700		300	1000	ug/L	6010C
Magnesium, Total	26500		30	1000	ug/L	6010C
Manganese, Total	8	J	4	10	ug/L	6010C
Potassium, Total	800	J	200	2000	ug/L	6010C
Sodium, Total	30900		200	1000	ug/L	6010C

CLIENT ID: MWO-1120			Lab ID: R2010613-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	180		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Chloride	1.8	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	171			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	205		10	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	18.5		0.4	2.0	mg/L	9056A
Calcium, Total	45200		300	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MWO-1120			Lab ID: R2010613-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Magnesium, Total	14100		30	1000	ug/L	6010C
Manganese, Total	35		4	10	ug/L	6010C
Potassium, Total	2400		200	2000	ug/L	6010C
Sodium, Total	16500		200	1000	ug/L	6010C

CLIENT ID: MWJ-1120			Lab ID: R2010613-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	328		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.3		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	150		1.7	8.0	mg/L	9056A
Hardness, Total as CaCO3	400			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.16	J	0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	643		10	11	mg/L	SM 2540 C-1997 (2011)
Sulfate	59.8		0.4	2.0	mg/L	9056A
Calcium, Total	108000		300	1000	ug/L	6010C
Iron, Total	350		70	100	ug/L	6010C
Magnesium, Total	31900		30	1000	ug/L	6010C
Manganese, Total	143		4	10	ug/L	6010C
Potassium, Total	4100		200	2000	ug/L	6010C
Sodium, Total	90300		200	1000	ug/L	6010C

CLIENT ID: MWP-1120			Lab ID: R2010613-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	214		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.5	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	8.3		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	231			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	297		10	11	mg/L	SM 2540 C-1997 (2011)
Sulfate	52.1		0.4	2.0	mg/L	9056A
Calcium, Total	63100		300	1000	ug/L	6010C
Iron, Total	320		70	100	ug/L	6010C
Magnesium, Total	17900		30	1000	ug/L	6010C
Manganese, Total	1530		4	10	ug/L	6010C
Potassium, Total	1900	J	200	2000	ug/L	6010C
Sodium, Total	22600		200	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MWCR-1120			Lab ID: R2010613-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	346		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.3		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	16.8		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	388			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.5	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.19	J	0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	419		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	31.0		0.4	2.0	mg/L	9056A
Calcium, Total	104000		300	1000	ug/L	6010C
Iron, Total	950		70	100	ug/L	6010C
Magnesium, Total	31300		30	1000	ug/L	6010C
Manganese, Total	25		4	10	ug/L	6010C
Potassium, Total	3200		200	2000	ug/L	6010C
Sodium, Total	14600		200	1000	ug/L	6010C

CLIENT ID: MWE-1120			Lab ID: R2010613-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	326		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.8		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	4.0	J	3.8	5.0	mg/L	410.4
Chloride	10.3		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	400			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.6	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	447		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	72.0		0.4	2.0	mg/L	9056A
Calcium, Total	111000		300	1000	ug/L	6010C
Iron, Total	210		70	100	ug/L	6010C
Magnesium, Total	29500		30	1000	ug/L	6010C
Manganese, Total	76		4	10	ug/L	6010C
Potassium, Total	1300	J	200	2000	ug/L	6010C
Sodium, Total	13700		200	1000	ug/L	6010C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:**R2010613

Project: Hakes C&D Landfill/Part 363 Routine-water

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010613-001	MWH-1120	11/9/2020	1135
R2010613-002	DUP1-1120	11/9/2020	1145
R2010613-003	MWO-1120	11/9/2020	1340
R2010613-004	MWJ-1120	11/9/2020	0930
R2010613-005	MWP-1120	11/9/2020	1110
R2010613-006	MWCR-1120	11/9/2020	1320
R2010613-007	MWE-1120	11/9/2020	1500

CHAIN of CUSTODY

Page 1 of 1

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

Project: Hakes C&D Landfill - 363 Routine Parameters

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Method of Shipment: FED EX

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Matrix: Water	Matrix: Air	Matrix: Other	Prsv.: Yes	Prsv.: No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
MWH-1120		6		X			X	X	11-9-20	1135	X	X	X	X	X	X
Dup1-1120		6		X			X	X	11-9-20	1145	X	X	X	X	X	X
MWO-1120		6		X			X	X	11-9-20	1340	X	X	X	X	X	X

REMARKS

Sample Received Intact: Yes No

Temperature received: Ice No ice

	Date	Time		
Relinq. by sampler (Sign & Print Name): Kevin Dye / Kevin Dye	11-9-20	1545	Received by (Sign & Print Name)	
Relinquished by	Date	Time	Received by	
Relinquished by	Date	Time	Received by	
Relinquished by	Date	Time	Received by laboratory: ALS	Date 11/10/2020 Time 1150

Lab Work No.

R2010613 5
Casella Waste Systems, Inc.
Hakes C&D Landfill

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

CHAIN of CUSTODY

Project: Hakes C&D Landfill - 363 Routine Parameters

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Page 1 of 1

Method of Shipment: UPS

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
MWJ - 1120		6		X			X	X	11-9-20	0930	X	X	X	X	X	X
MWP - 1120 MS/MSD		12		X			X	X	11-9-20	1110	X	X	X	X	X	X
MWCR - 1120		6		X			X	X	11-9-20	1320	X	X	X	X	X	X
MWE - 1120		6		X			X	X	11-9-20	1500	X	X	X	X	X	X

REMARKS: MS/MSD

4 mes added as per Jon Brandes 11/16/20

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Scott Watson	11-9-20	1600	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: ALS — Date: 11/10/2020 — Time: 1150

Lab Work No.

R2010613 5
Casella Waste Systems, Inc.
Hakes C&D Landfill

Cooler Receipt and Preservation Check Form

Project/Client CaSelk Folder Number

Cooler received on 11/10/2020 by: dw

COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	**Perchlorate** samples have required headspace?	Y N ~~NA~~
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y ~~N~~ NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	~~ALS/ROC~~ CLIENT
4	Circle: ~~Wet Ice~~ **Dry Ice Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	~~NA~~

8. Temperature Readings Date: 11/10/2020 Time: 1211 ID: IR#7 ~~IR#10~~ From: Temp Blank ~~Sample Bottle~~

Observed Temp (°C)	0.1°	0.6°					
Within 0-6°C?	~~Y~~ N	~~Y~~ N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: Rack by dw on 11/10/2020 at 1214

5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/10/2020 Time: 2145 by: dw

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? ~~YES~~ NO
10. Did all bottle labels and tags agree with custody papers? ~~YES~~ NO
11. Were correct containers used for the tests indicated? ~~YES~~ NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO ~~N/A~~
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated ~~N/A~~

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	223419	HNO_3	✓		20200431H					
≤2	↓	H_2SO_4	✓		K121-25					
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 20-09-09, 80720-09, 092120-13MC, 030220-2AM0

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: dw

PC Secondary Review: dw 11/16/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water		

Sample Name:	MWH-1120	**Date Collected:**	11/9/20
Lab Code:	R2010613-001	**Date Received:**	11/10/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name:	DUP1-1120	**Date Collected:**	11/9/20
Lab Code:	R2010613-002	**Date Received:**	11/10/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010613
Project: Hakes C&D Landfill/Part 363 Routine-water

Sample Name: MWO-1120 **Date Collected:** 11/9/20
Lab Code: R2010613-003 **Date Received:** 11/10/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWJ-1120 **Date Collected:** 11/9/20
Lab Code: R2010613-004 **Date Received:** 11/10/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water		

Sample Name:	MWP-1120	**Date Collected:**	11/9/20
Lab Code:	R2010613-005	**Date Received:**	11/10/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name:	MWCR-1120	**Date Collected:**	11/9/20
Lab Code:	R2010613-006	**Date Received:**	11/10/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water		

Sample Name:	MWE-1120	**Date Collected:**	11/9/20
Lab Code:	R2010613-007	**Date Received:**	11/10/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:35
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWH-1120	**Basis:**	NA
Lab Code:	R2010613-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/12/20 19:48	11/11/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/12/20 19:48	11/11/20	
Calcium, Total	6010C	**61900**		ug/L	1000	300	1	11/12/20 19:48	11/11/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/12/20 19:48	11/11/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/12/20 19:48	11/11/20	
Magnesium, Total	6010C	**26700**		ug/L	1000	30	1	11/12/20 19:48	11/11/20	
Manganese, Total	6010C	**8**	**J**	ug/L	10	4	1	11/12/20 19:48	11/11/20	
Potassium, Total	6010C	**800**	**J**	ug/L	2000	200	1	11/12/20 19:48	11/11/20	
Sodium, Total	6010C	**31000**		ug/L	1000	200	1	11/12/20 19:48	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:45
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	DUP1-1120	**Basis:**	NA
Lab Code:	R2010613-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/12/20 19:51	11/11/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/12/20 19:51	11/11/20	
Calcium, Total	6010C	**61700**	ug/L	1000	300	1	11/12/20 19:51	11/11/20	
Iron, Total	6010C	100 U	ug/L	100	70	1	11/12/20 19:51	11/11/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/12/20 19:51	11/11/20	
Magnesium, Total	6010C	**26500**	ug/L	1000	30	1	11/12/20 19:51	11/11/20	
Manganese, Total	6010C	**8 J**	ug/L	10	4	1	11/12/20 19:51	11/11/20	
Potassium, Total	6010C	**800 J**	ug/L	2000	200	1	11/12/20 19:51	11/11/20	
Sodium, Total	6010C	**30900**	ug/L	1000	200	1	11/12/20 19:51	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 13:40
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWO-1120	**Basis:**	NA
Lab Code:	R2010613-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/12/20 19:54	11/11/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/12/20 19:54	11/11/20	
Calcium, Total	6010C	**45200**	ug/L	1000	300	1	11/12/20 19:54	11/11/20	
Iron, Total	6010C	100 U	ug/L	100	70	1	11/12/20 19:54	11/11/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/12/20 19:54	11/11/20	
Magnesium, Total	6010C	**14100**	ug/L	1000	30	1	11/12/20 19:54	11/11/20	
Manganese, Total	6010C	**35**	ug/L	10	4	1	11/12/20 19:54	11/11/20	
Potassium, Total	6010C	**2400**	ug/L	2000	200	1	11/12/20 19:54	11/11/20	
Sodium, Total	6010C	**16500**	ug/L	1000	200	1	11/12/20 19:54	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 09:30
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWJ-1120	**Basis:**	NA
Lab Code:	R2010613-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/12/20 19:58	11/11/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/12/20 19:58	11/11/20	
Calcium, Total	6010C	**108000**	ug/L	1000	300	1	11/12/20 19:58	11/11/20	
Iron, Total	6010C	**350**	ug/L	100	70	1	11/12/20 19:58	11/11/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/12/20 19:58	11/11/20	
Magnesium, Total	6010C	**31900**	ug/L	1000	30	1	11/12/20 19:58	11/11/20	
Manganese, Total	6010C	**143**	ug/L	10	4	1	11/12/20 19:58	11/11/20	
Potassium, Total	6010C	**4100**	ug/L	2000	200	1	11/12/20 19:58	11/11/20	
Sodium, Total	6010C	**90300**	ug/L	1000	200	1	11/12/20 19:58	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:10
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWP-1120	**Basis:**	NA
Lab Code:	R2010613-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/12/20 20:01	11/11/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/12/20 20:01	11/11/20	
Calcium, Total	6010C	**63100**		ug/L	1000	300	1	11/12/20 20:01	11/11/20	
Iron, Total	6010C	**320**		ug/L	100	70	1	11/12/20 20:01	11/11/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/12/20 20:01	11/11/20	
Magnesium, Total	6010C	**17900**		ug/L	1000	30	1	11/12/20 20:01	11/11/20	
Manganese, Total	6010C	**1530**		ug/L	10	4	1	11/12/20 20:01	11/11/20	
Potassium, Total	6010C	**1900**	**J**	ug/L	2000	200	1	11/12/20 20:01	11/11/20	
Sodium, Total	6010C	**22600**		ug/L	1000	200	1	11/12/20 20:01	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 13:20
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWCR-1120	**Basis:**	NA
Lab Code:	R2010613-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/12/20 20:24	11/11/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/12/20 20:24	11/11/20	
Calcium, Total	6010C	**104000**	ug/L	1000	300	1	11/12/20 20:24	11/11/20	
Iron, Total	6010C	**950**	ug/L	100	70	1	11/12/20 20:24	11/11/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/12/20 20:24	11/11/20	
Magnesium, Total	6010C	**31300**	ug/L	1000	30	1	11/12/20 20:24	11/11/20	
Manganese, Total	6010C	**25**	ug/L	10	4	1	11/12/20 20:24	11/11/20	
Potassium, Total	6010C	**3200**	ug/L	2000	200	1	11/12/20 20:24	11/11/20	
Sodium, Total	6010C	**14600**	ug/L	1000	200	1	11/12/20 20:24	11/11/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 15:00
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWE-1120	**Basis:**	NA
Lab Code:	R2010613-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/12/20 20:27	11/11/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/12/20 20:27	11/11/20	
Calcium, Total	6010C	**111000**	ug/L	1000	300	1	11/12/20 20:27	11/11/20	
Iron, Total	6010C	**210**	ug/L	100	70	1	11/12/20 20:27	11/11/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/12/20 20:27	11/11/20	
Magnesium, Total	6010C	**29500**	ug/L	1000	30	1	11/12/20 20:27	11/11/20	
Manganese, Total	6010C	**76**	ug/L	10	4	1	11/12/20 20:27	11/11/20	
Potassium, Total	6010C	**1300 J**	ug/L	2000	200	1	11/12/20 20:27	11/11/20	
Sodium, Total	6010C	**13700**	ug/L	1000	200	1	11/12/20 20:27	11/11/20	

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:35
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWH-1120	**Basis:**	NA
Lab Code:	R2010613-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**111**		mg/L	2.0	1.8	1	11/18/20 14:33	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:48	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:42	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 20:55	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.5**	**J**	mg/L	1.0	0.5	1	11/18/20 15:06	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**9.9**		mg/L	2.0	0.5	10	11/10/20 20:55	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**265**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.6**	**J**	mg/L	1.0	0.2	10	11/10/20 20:55	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:53	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:22	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**385**		mg/L	11	10	1	11/16/20 11:55	NA	
Sulfate	9056A	**235**		mg/L	8.0	1.6	40	11/12/20 16:06	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:45
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	DUP1-1120	**Basis:**	NA
Lab Code:	R2010613-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**111**		mg/L	2.0	1.8	1	11/18/20 14:39	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:49	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:43	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 21:01	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.5**	**J**	mg/L	1.0	0.5	1	11/18/20 16:09	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**9.9**		mg/L	2.0	0.5	10	11/10/20 21:01	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**263**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.7**	**J**	mg/L	1.0	0.2	10	11/10/20 21:01	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:54	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:26	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**396**		mg/L	10	10	1	11/16/20 11:55	NA	
Sulfate	9056A	**189**		mg/L	8.0	1.6	40	11/12/20 16:12	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 13:40
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWO-1120	**Basis:**	NA
Lab Code:	R2010613-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Q	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**180**		mg/L	2.0	1.8	1	11/18/20 14:45	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:52	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:40	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 21:07	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 16:30	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**1.8**	**J**	mg/L	2.0	0.5	10	11/10/20 21:07	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**171**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/10/20 21:07	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:55	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:30	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**205**		mg/L	10	10	1	11/16/20 11:55	NA	
Sulfate	9056A	**18.5**		mg/L	2.0	0.4	10	11/10/20 21:07	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 09:30
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWJ-1120	**Basis:**	NA
Lab Code:	R2010613-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**328**		mg/L	2.0	1.8	1	11/18/20 14:51	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:54	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:38	NA	*
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 20:18	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.3**		mg/L	1.0	0.5	1	11/18/20 16:51	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**150**		mg/L	8.0	1.7	40	11/12/20 16:18	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**400**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/10/20 20:18	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.16**	**J**	mg/L	0.20	0.15	1	11/20/20 11:58	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:34	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**643**		mg/L	11	10	1	11/16/20 11:55	NA	
Sulfate	9056A	**59.8**		mg/L	2.0	0.4	10	11/10/20 20:18	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 11:10
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWP-1120	**Basis:**	NA
Lab Code:	R2010613-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**214**		mg/L	2.0	1.8	1	11/18/20 14:57	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:55	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:27	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 20:24	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.5**	**J**	mg/L	1.0	0.5	1	11/18/20 17:12	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**8.3**		mg/L	2.0	0.5	10	11/10/20 20:24	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**231**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/10/20 20:24	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:59	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:38	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**297**		mg/L	11	10	1	11/16/20 11:55	NA	
Sulfate	9056A	**52.1**		mg/L	2.0	0.4	10	11/10/20 20:24	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 13:20
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWCR-1120	**Basis:**	NA
Lab Code:	R2010613-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**346**		mg/L	2.0	1.8	1	11/18/20 15:10	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:58	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:37	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 20:42	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.3**		mg/L	1.0	0.5	1	11/18/20 19:09	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**16.8**		mg/L	2.0	0.5	10	11/10/20 20:42	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**388**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.5**	**J**	mg/L	1.0	0.2	10	11/10/20 20:42	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.19**	**J**	mg/L	0.20	0.15	1	11/20/20 12:01	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:50	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**419**		mg/L	10	9	1	11/16/20 11:55	NA	
Sulfate	9056A	**31.0**		mg/L	2.0	0.4	10	11/10/20 20:42	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20 15:00
Sample Matrix:	Water	**Date Received:**	11/10/20 11:50
Sample Name:	MWE-1120	**Basis:**	NA
Lab Code:	R2010613-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**326**		mg/L	2.0	1.8	1	11/18/20 15:16	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:59	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 10:36	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/10/20 20:49	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.8**		mg/L	1.0	0.5	1	11/18/20 19:30	NA	
Chemical Oxygen Demand, Total	410.4	**4.0**	**J**	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**10.3**		mg/L	2.0	0.5	10	11/10/20 20:49	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**400**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.6**	**J**	mg/L	1.0	0.2	10	11/10/20 20:49	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:02	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:10	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**447**		mg/L	10	9	1	11/16/20 11:55	NA	
Sulfate	9056A	**72.0**		mg/L	2.0	0.4	10	11/10/20 20:49	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010613-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/12/20 18:23	11/11/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/12/20 18:23	11/11/20	
Calcium, Total	6010C	1000	U	ug/L	1000	300	1	11/12/20 18:23	11/11/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/12/20 18:23	11/11/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/12/20 18:23	11/11/20	
Magnesium, Total	6010C	1000	U	ug/L	1000	30	1	11/12/20 18:23	11/11/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/12/20 18:23	11/11/20	
Potassium, Total	6010C	2000	U	ug/L	2000	200	1	11/12/20 18:23	11/11/20	
Sodium, Total	6010C	1000	U	ug/L	1000	200	1	11/12/20 18:23	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill/Part 363 Routine-water
Sample Matrix: Water

Service Request:R2010613
Date Collected:11/09/20
Date Received:11/10/20
Date Analyzed:11/12/20

Duplicate Matrix Spike Summary
Inorganic Parameters

Sample Name: MWP-1120
Lab Code: R2010613-005

Units:ug/L
Basis:NA

			Matrix Spike			Duplicate Matrix Spike					
			R2010613-005MS			R2010613-005DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Arsenic, Total	6010C	10 U	40	40	100	40	40	100	75-125	<1	20
Cadmium, Total	6010C	5.0 U	49.6	50.0	99	49.9	50.0	100	75-125	<1	20
Calcium, Total	6010C	63100	66100	2000	149 #	65100	2000	98 #	75-125	2	20
Iron, Total	6010C	320	1270	1000	95	1260	1000	94	75-125	<1	20
Lead, Total	6010C	5.0 U	501	500	100	500	500	100	75-125	<1	20
Magnesium, Total	6010C	17900	20200	2000	116 #	20000	2000	103 #	75-125	1	20
Manganese, Total	6010C	1530	2040	500	103	2030	500	100	75-125	<1	20
Potassium, Total	6010C	1900 J	21500	20000	98	21400	20000	97	75-125	<1	20
Sodium, Total	6010C	22600	42000	20000	97	41700	20000	95	75-125	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill/Part 363 Routine-water
Sample Matrix: Water

Service Request: R2010613
Date Analyzed: 11/12/20

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R2010613-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	42	40	104	80-120
Cadmium, Total	6010C	51.0	50.0	102	80-120
Calcium, Total	6010C	2040	2000	102	80-120
Iron, Total	6010C	1010	1000	101	80-120
Lead, Total	6010C	511	500	102	80-120
Magnesium, Total	6010C	1980	2000	99	80-120
Manganese, Total	6010C	499	500	100	80-120
Potassium, Total	6010C	19200	20000	96	80-120
Sodium, Total	6010C	19500	20000	97	80-120

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010613-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	11/18/20 12:38	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/13/20 20:24	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 17:38	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	11/10/20 13:43	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 13:57	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	11/10/20 13:43	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	11/10/20 13:43	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:43	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 19:06	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/16/20 11:55	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	11/10/20 13:43	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010613-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Q
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 17:38	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	11/12/20 15:53	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/16/20 11:55	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	11/12/20 15:53	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20
Sample Matrix:	Water	**Date Received:**	11/10/20
		Date Analyzed:	11/18/20

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name:	MWH-1120	**Units:**	mg/L
Lab Code:	R2010613-001	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2010613-001MS			**Duplicate Matrix Spike** R2010613-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic (TOC)	0.5 J	11.1	10.0	106	11.0	10.0	104	48-135	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill/Part 363 Routine-water
Sample Matrix: Water

Service Request:R2010613
Date Collected:11/09/20
Date Received:11/10/20
Date Analyzed:11/10/20 - 11/20/20

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: MWP-1120
Lab Code: R2010613-005

Units:mg/L
Basis:NA

	Matrix Spike	Duplicate Matrix Spike
	R2010613-005MS	R2010613-005DMS

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Ammonia as Nitrogen, undistilled	350.1	0.050 U	0.232	0.250	93	0.234	0.250	93	90-110	<1	20
Bromide	9056A	1.0 U	9.6	10.0	96	9.8	10.0	98	80-120	2	15
Chloride	9056A	8.3	28.1	20.0	99	28.2	20.0	99	80-120	<1	15
Chemical Oxygen Demand, Total	410.4	5.0 U	25.0	25.0	100	25.8	25.0	103	90-110	3	20
Phenolics, Total Recoverable	9066	0.0050 U	0.0333	0.0400	83	0.0263	0.0400	66	49-137	24*	20
Sulfate	9056A	52.1	70.5	20.0	92	70.4	20.0	91	80-120	<1	15
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20 U	2.36	2.50	94	2.39	2.50	96	90-110	1	20
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	0.5 J	10.6	10.0	101	10.6	10.0	101	48-135	<1	20
Nitrate as Nitrogen	9056A	1.0 U	9.7	10.0	97	9.7	10.0	97	80-120	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project:	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20
Sample Matrix:	Water	**Date Received:**	11/10/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Chemical Oxygen Demand, Total

Sample Name:	MWCR-1120	**Units:**	mg/L
Lab Code:	R2010613-006	**Basis:**	NA
Analysis Method:	410.4		

		Matrix Spike R2010613-006MS			Duplicate Matrix Spike R2010613-006DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chemical Oxygen Demand, Total	5.0 U	27.2	25.0	109	26.1	25.0	105	90-110	4	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010613
Project	Hakes C&D Landfill/Part 363 Routine-water	**Date Collected:**	11/09/20
Sample Matrix:	Water	**Date Received:**	11/10/20
		Date Analyzed:	11/11/20 - 11/18/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	MWP-1120	**Units:**	mg/L
Lab Code:	R2010613-005	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010613-005DUP Result	Average	RPD	RPD Limit
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	1.8	214	215	214	<1	20
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0		2.0 U	2.0 U	NC	NC	20
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	11	10	297	297	297	<1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill/Part 363 Routine-water
Sample Matrix: Water

Service Request: R2010613
Date Analyzed: 11/10/20 - 11/20/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010613-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	18.4	20.0	92	80-120
Ammonia as Nitrogen, undistilled	350.1	0.256	0.250	102	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	197	198	99	85-115
Bromide	9056A	0.989	1.00	99	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	9.12	10.0	91	80-121
Chemical Oxygen Demand, Total	410.4	46.6	50.0	93	90-110
Chloride	9056A	2.01	2.00	100	80-120
Nitrate as Nitrogen	9056A	0.984	1.00	98	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.38	2.50	95	90-110
Phenolics, Total Recoverable	9066	0.0396	0.0400	99	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	900	914	98	90-110
Sulfate	9056A	2.09	2.00	105	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill/Part 363 Routine-water
Sample Matrix: Water

Service Request: R2010613
Date Analyzed: 11/11/20 - 11/16/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010613-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	203	198	102	85-115
Chloride	9056A	1.94	2.00	97	80-120
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	864	914	95	90-110
Sulfate	9056A	2.01	2.00	100	80-120

November 24, 2020 Service Request No:R2010671

Russell Anderson
Casella Waste Systems, Inc.
26 Pleasant Street, Suite 3E
Concord, NH 03301

Laboratory Results for: Hakes C&D Landfill - 363 Routine Parameters

Dear Russell,

Enclosed are the results of the sample(s) submitted to our laboratory November 11, 2020
For your reference, these analyses have been assigned our service request number **R2010671.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jon Brandes

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Received: 11/11/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Sixteen water samples were received for analysis at ALS Environmental on 11/11/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method 9056A Nitrate: The analysis of one or more samples was initially attempted within holding time but was not useable due to an analytical system or QC failure (Associated CCV's failed low for nitrate). Efforts were made to reanalyze the sample(s) as soon as possible after the analytical system was back in control. However, the reanalysis of the sample(s) was performed past the recommended holding time. The results from both analyses are reported. The data is flagged to indicate the holding time exceedance.

Approved by _____ Date 11/24/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: MWQR-1120			Lab ID: R2010671-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	14.8		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	3.0		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	7.5		3.8	5.0	mg/L	410.4
Chloride	115		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	141			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.4	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.46		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	397		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	113		0.4	2.0	mg/L	9056A
Calcium, Total	32200		300	1000	ug/L	6010C
Iron, Total	140		70	100	ug/L	6010C
Magnesium, Total	14700		30	1000	ug/L	6010C
Manganese, Total	1620		4	10	ug/L	6010C
Potassium, Total	4000		200	2000	ug/L	6010C
Sodium, Total	68000		200	1000	ug/L	6010C

CLIENT ID: MWF-1120			Lab ID: R2010671-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	209		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.8		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	36.9		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	296			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	369		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	59.1		0.4	2.0	mg/L	9056A
Calcium, Total	82200		300	1000	ug/L	6010C
Iron, Total	220		70	100	ug/L	6010C
Magnesium, Total	22000		30	1000	ug/L	6010C
Manganese, Total	69		4	10	ug/L	6010C
Potassium, Total	1700	J	200	2000	ug/L	6010C
Sodium, Total	15600		200	1000	ug/L	6010C

CLIENT ID: EB1-1120			Lab ID: R2010671-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloride	0.9	J	0.5	2.0	mg/L	9056A

CLIENT ID: MWD-1120			Lab ID: R2010671-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	246		1.8	2.0	mg/L	SM 2320 B-1997 (2011)

SAMPLE DETECTION SUMMARY

CLIENT ID: MWD-1120	Lab ID: R2010671-004					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloride	11.1		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	268			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.6	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	309		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	21.0		0.4	2.0	mg/L	9056A
Calcium, Total	79100		300	1000	ug/L	6010C
Iron, Total	90	J	70	100	ug/L	6010C
Magnesium, Total	17200		30	1000	ug/L	6010C
Potassium, Total	1900	J	200	2000	ug/L	6010C
Sodium, Total	12100		200	1000	ug/L	6010C

CLIENT ID: MWN-1120	Lab ID: R2010671-005					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	430		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Ammonia as Nitrogen, undistilled	0.320		0.026	0.050	mg/L	350.1
Biochemical Oxygen Demand (BOD)	2.3			2.0	mg/L	SM 5210 B-2001 (2011)
Carbon, Total Organic (TOC)	2.1		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	4.0	J	3.8	5.0	mg/L	410.4
Chloride	3.1		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	429			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.62		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	506		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	24.8		0.4	2.0	mg/L	9056A
Calcium, Total	124000		300	1000	ug/L	6010C
Iron, Total	3840		70	100	ug/L	6010C
Magnesium, Total	28700		30	1000	ug/L	6010C
Manganese, Total	3230		4	10	ug/L	6010C
Potassium, Total	6600		200	2000	ug/L	6010C
Sodium, Total	17500		200	1000	ug/L	6010C

CLIENT ID: MWGR-1120	Lab ID: R2010671-006					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	326		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.7	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	4.6		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	354			6.62	mg/L	SM 2340 B-1997 (2011)

SAMPLE DETECTION SUMMARY

CLIENT ID: MWGR-1120			Lab ID: R2010671-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Dissolved (TDS)	386		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	26.2		0.4	2.0	mg/L	9056A
Nitrate as Nitrogen	0.5	J	0.2	1.0	mg/L	9056A
Calcium, Total	110000		300	1000	ug/L	6010C
Magnesium, Total	19100		30	1000	ug/L	6010C
Potassium, Total	1100	J	200	2000	ug/L	6010C
Sodium, Total	9800		200	1000	ug/L	6010C

CLIENT ID: SW2A-1120			Lab ID: R2010671-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	48.4		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.8		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	5.9		3.8	5.0	mg/L	410.4
Chloride	15.1		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	80.2			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.22		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	127		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	32.2		0.4	2.0	mg/L	9056A
Calcium, Total	22600		300	1000	ug/L	6010C
Iron, Total	90	J	70	100	ug/L	6010C
Magnesium, Total	5800		30	1000	ug/L	6010C
Manganese, Total	22		4	10	ug/L	6010C
Potassium, Total	1300	J	200	2000	ug/L	6010C
Sodium, Total	9900		200	1000	ug/L	6010C

CLIENT ID: SW7A-1120			Lab ID: R2010671-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	20.8		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.6		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	5.3		3.8	5.0	mg/L	410.4
Chloride	26.4		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	51.9			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.21		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	95		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	15.1		0.4	2.0	mg/L	9056A
Calcium, Total	14600		300	1000	ug/L	6010C
Iron, Total	80	J	70	100	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: SW7A-1120			Lab ID: R2010671-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Magnesium, Total	3800		30	1000	ug/L	6010C
Potassium, Total	800	J	200	2000	ug/L	6010C
Sodium, Total	9700		200	1000	ug/L	6010C

CLIENT ID: SW2-1120			Lab ID: R2010671-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	59.2		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	3.4		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	8.1		3.8	5.0	mg/L	410.4
Chloride	11.5		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	107			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.4	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.30		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	164		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	48.4		0.4	2.0	mg/L	9056A
Nitrate as Nitrogen	0.5	J	0.2	1.0	mg/L	9056A
Calcium, Total	30100		300	1000	ug/L	6010C
Iron, Total	470		70	100	ug/L	6010C
Magnesium, Total	7600		30	1000	ug/L	6010C
Manganese, Total	9	J	4	10	ug/L	6010C
Potassium, Total	1900	J	200	2000	ug/L	6010C
Sodium, Total	10700		200	1000	ug/L	6010C

CLIENT ID: SW3A-1120			Lab ID: R2010671-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	102		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	4.8		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	13.6		3.8	5.0	mg/L	410.4
Chloride	44.5		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	184			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.43		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	288		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	88.2		0.4	2.0	mg/L	9056A
Calcium, Total	52500		300	1000	ug/L	6010C
Iron, Total	760		70	100	ug/L	6010C
Magnesium, Total	12800		30	1000	ug/L	6010C
Manganese, Total	20		4	10	ug/L	6010C
Potassium, Total	2400		200	2000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: SW3A-1120			Lab ID: R2010671-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Sodium, Total	20700		200	1000	ug/L	6010C

CLIENT ID: SW9-1120			Lab ID: R2010671-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	68.0		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	4.5		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	14.5		3.8	5.0	mg/L	410.4
Chloride	10.7		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	131			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.7	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.66		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	212		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	71.0		0.4	2.0	mg/L	9056A
Nitrate as Nitrogen	0.7	J	0.2	1.0	mg/L	9056A
Calcium, Total	38100		300	1000	ug/L	6010C
Iron, Total	1620		70	100	ug/L	6010C
Magnesium, Total	8600		30	1000	ug/L	6010C
Manganese, Total	32		4	10	ug/L	6010C
Potassium, Total	3100		200	2000	ug/L	6010C
Sodium, Total	11600		200	1000	ug/L	6010C

CLIENT ID: GSS5-1120			Lab ID: R2010671-012			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	232		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.8	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	4.3		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	296			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.7	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	363		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	83.6		0.4	2.0	mg/L	9056A
Nitrate as Nitrogen	0.7	J	0.2	1.0	mg/L	9056A
Calcium, Total	66100		300	1000	ug/L	6010C
Magnesium, Total	31700		30	1000	ug/L	6010C
Potassium, Total	2600		200	2000	ug/L	6010C
Sodium, Total	16900		200	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: GSS6-1120			Lab ID: R2010671-013			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	532		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.6		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	8.5		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	767			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	1000		11	12	mg/L	SM 2540 C-1997 (2011)
Sulfate	294		4	20	mg/L	9056A
Nitrate as Nitrogen	0.4	J	0.2	1.0	mg/L	9056A
Calcium, Total	202000		300	1000	ug/L	6010C
Iron, Total	560		70	100	ug/L	6010C
Magnesium, Total	63600		30	1000	ug/L	6010C
Manganese, Total	128		4	10	ug/L	6010C
Potassium, Total	4500		200	2000	ug/L	6010C
Sodium, Total	34200		200	1000	ug/L	6010C

CLIENT ID: SW1A-1120			Lab ID: R2010671-014			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	25.2		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	2.6		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	8.4		3.8	5.0	mg/L	410.4
Chloride	25.1		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	65.4			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	0.20	J	0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	116		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	25.8		0.4	2.0	mg/L	9056A
Calcium, Total	17500		300	1000	ug/L	6010C
Magnesium, Total	5300		30	1000	ug/L	6010C
Manganese, Total	16		4	10	ug/L	6010C
Potassium, Total	1100	J	200	2000	ug/L	6010C
Sodium, Total	10000		200	1000	ug/L	6010C

CLIENT ID: GSS1A-1120			Lab ID: R2010671-015			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	336		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Ammonia as Nitrogen, undistilled	0.124		0.026	0.050	mg/L	350.1
Biochemical Oxygen Demand (BOD)	2.1			2.0	mg/L	SM 5210 B-2001 (2011)
Carbon, Total Organic (TOC)	25.6		0.5	1.0	mg/L	SM 5310 C-2000 (2011)

SAMPLE DETECTION SUMMARY

CLIENT ID: GSS1A-1120			Lab ID: R2010671-015			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chemical Oxygen Demand, Total	61.5		3.8	5.0	mg/L	410.4
Chloride	7.0		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	401			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrogen, Total Kjeldahl (TKN)	1.43		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	500		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	70.5		0.4	2.0	mg/L	9056A
Calcium, Total	121000		300	1000	ug/L	6010C
Iron, Total	3540		70	100	ug/L	6010C
Magnesium, Total	23800		30	1000	ug/L	6010C
Manganese, Total	2830		4	10	ug/L	6010C
Potassium, Total	2300		200	2000	ug/L	6010C
Sodium, Total	6300		200	1000	ug/L	6010C

CLIENT ID: GSS8-1120			Lab ID: R2010671-016			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	309		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	3.2		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chemical Oxygen Demand, Total	8.7		3.8	5.0	mg/L	410.4
Chloride	101		1.3	6.0	mg/L	9056A
Hardness, Total as CaCO3	404			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.4	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.28		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	582		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	73.2		0.4	2.0	mg/L	9056A
Calcium, Total	123000		300	1000	ug/L	6010C
Magnesium, Total	23500		30	1000	ug/L	6010C
Manganese, Total	559		4	10	ug/L	6010C
Potassium, Total	2200		200	2000	ug/L	6010C
Sodium, Total	49700		200	1000	ug/L	6010C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:**R2010671

Project: Hakes C&D Landfill - 363 Routine Parameters

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010671-001	MWQR-1120	11/10/2020	0810
R2010671-002	MWF-1120	11/10/2020	0950
R2010671-003	EB1-1120	11/10/2020	1030
R2010671-004	MWD-1120	11/10/2020	1100
R2010671-005	MWN-1120	11/10/2020	1130
R2010671-006	MWGR-1120	11/10/2020	1215
R2010671-007	SW2A-1120	11/10/2020	0830
R2010671-008	SW7A-1120	11/10/2020	0910
R2010671-009	SW2-1120	11/10/2020	0945
R2010671-010	SW3A-1120	11/10/2020	1000
R2010671-011	SW9-1120	11/10/2020	1035
R2010671-012	GSS5-1120	11/10/2020	1125
R2010671-013	GSS6-1120	11/10/2020	1155
R2010671-014	SW1A-1120	11/10/2020	1225
R2010671-015	GSS1A-1120	11/10/2020	1305
R2010671-016	GSS8-1120	11/10/2020	1330

CHAIN of CUSTODY

Page 1 of 1

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

Project: Hakes C&D Landfill - 363 Routine Parameters

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Method of Shipment: FED EX

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Matrix: Water	Matrix: Air	Matrix: Other	Prsv.: Yes	Prsv.: No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
MWQR-1120		6		X			X	X	11-10-20	0810	X	X	X	X	X	X
MWF-1120		6		X			X	X	11-10-20	0950	X	X	X	X	X	X
EB1-1120		6		X			X	X	11-10-20	1030	X	X	X	X	X	X
MWD-1120		6		X			X	X	11-10-20	1100	X	X	X	X	X	X
MWN-1120		6		X			X	X	11-10-20	1130	X	X	X	X	X	X
MWGR-1120		6		X			X	X	11-10-20	1215	X	X	X	X	X	X

REMARKS

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Kevin Dye / Kevin Dye	11/10/20	1530	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: Date 11/11/2020 Time 0930

Lab Work No.

R2010671 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 363 Routine Parameters

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

CHAIN of CUSTODY

Page 1 of 1

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project: Hakes C&D Landfill - 363 Routine Parameters

Project Manager: Russ Anderson/Jon Brandes

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Method of Shipment: UPS

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
SW2A-1120		6		X			X	X	11/10	0830	X	X	X	X	X	X
SW7A-1120		6		X			X	X		0910	X	X	X	X	X	X
SW2-1120		6		X			X	X		0945	X	X	X	X	X	X
SW3A-1120		6		X			X	X		1000	X	X	X	X	X	X
SW9-1120		6		X			X	X		1035	X	X	X	X	X	X
GSS5-1120		6		X			X	X		1125	X	X	X	X	X	X
GSS6-1120		6		X			X	X		1155	X	X	X	X	X	X
SW1A-1120		6		X			X	X		1225	X	X	X	X	X	X
GSS1A-1120		6		X			X	X		1305	X	X	X	X	X	X
GSS8-1120		6		X			X	X		1330	X	X	X	X	X	X

REMARKS

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Scott Watson	11-10-20	1500	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: Date 11/11/2020 Time 0950

Lab Work No.

R2010671 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 363 Routine Parameters

Cooler Receipt and Preservation Check Form

R2010671 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 363 Routine Parameters

Project/Client Casella Folder Number

Cooler received on 11/11/2020 by: CO

COURIER: ALS (UPS) FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, AIR, or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (Wet Ice) **Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 11/11/2020 Time: 1045 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.0	3.4	2.9	4.0	3.8		
Within 0-6°C?	(Y) N	(Y) N	(Y) N	(Y) N	(Y) N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-452 by CO on 11/11/2020 at 1105
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/11/2020 Time: 2000 by: DW

9.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	YES	NO
10.	Did all bottle labels and tags agree with custody papers?	YES	NO
11.	Were correct containers used for the tests indicated?	YES	NO
12.	Were 5035 vials acceptable (no extra labels, not leaking)?	YES	NO N/A
13.	Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N	Canisters Pressurized	Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	223419	HNO_3	✓		20200314					
≤2	↓	H_2SO_4	✓		K121-25					
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 20-09-09, 091420-13AC, 030220-2AAC, 80720-09
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: DW
PC Secondary Review: DW 11/16/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: MWQR-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-001 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		NMANSEN
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWF-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-002 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		NMANSEN
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: EB1-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-003 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: EB1-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-003.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: MWD-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-004 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		NMANSEN
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: MWD-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-004 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWN-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-005 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWN-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-005.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: MWGR-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-006 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: MWGR-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-006 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWGR-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-006.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW2A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-007 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: SW2A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-007.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW7A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-008 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: SW7A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-008.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW2-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-009 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: SW2-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-009 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: SW2-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-009.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW3A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-010 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: SW3A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-010.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW9-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-011 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: SW9-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-011.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: GSS5-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-012 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: GSS5-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-012 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: GSS5-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-012.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: GSS6-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-013 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: GSS6-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-013.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: SW1A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-014 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: SW1A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-014.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: GSS1A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-015 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010671
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: GSS1A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-015 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: GSS1A-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-015.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

Sample Name: GSS8-1120 **Date Collected:** 11/10/20
Lab Code: R2010671-016 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	NMANSEN
9056A		CWOODS
9066		CWOODS
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Analyst Summary report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters/		

Sample Name:	GSS8-1120	**Date Collected:**	11/10/20
Lab Code:	R2010671-016.R01	**Date Received:**	11/11/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
9056A		NMANSEN

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 08:10
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWQR-1120	**Basis:**	NA
Lab Code:	R2010671-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 21:25	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 21:25	11/12/20	
Calcium, Total	6010C	**32200**	ug/L	1000	300	1	11/13/20 21:25	11/12/20	
Iron, Total	6010C	**140**	ug/L	100	70	1	11/13/20 21:25	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 21:25	11/12/20	
Magnesium, Total	6010C	**14700**	ug/L	1000	30	1	11/13/20 21:25	11/12/20	
Manganese, Total	6010C	**1620**	ug/L	10	4	1	11/13/20 21:25	11/12/20	
Potassium, Total	6010C	**4000**	ug/L	2000	200	1	11/13/20 21:25	11/12/20	
Sodium, Total	6010C	**68000**	ug/L	1000	200	1	11/13/20 21:25	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:50
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWF-1120	**Basis:**	NA
Lab Code:	R2010671-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:35	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:35	11/12/20	
Calcium, Total	6010C	**82200**		ug/L	1000	300	1	11/13/20 21:35	11/12/20	
Iron, Total	6010C	**220**		ug/L	100	70	1	11/13/20 21:35	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:35	11/12/20	
Magnesium, Total	6010C	**22000**		ug/L	1000	30	1	11/13/20 21:35	11/12/20	
Manganese, Total	6010C	**69**		ug/L	10	4	1	11/13/20 21:35	11/12/20	
Potassium, Total	6010C	**1700**	**J**	ug/L	2000	200	1	11/13/20 21:35	11/12/20	
Sodium, Total	6010C	**15600**		ug/L	1000	200	1	11/13/20 21:35	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	EB1-1120	**Basis:**	NA
Lab Code:	R2010671-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:38	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:38	11/12/20	
Calcium, Total	6010C	1000	U	ug/L	1000	300	1	11/13/20 21:38	11/12/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/13/20 21:38	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:38	11/12/20	
Magnesium, Total	6010C	1000	U	ug/L	1000	30	1	11/13/20 21:38	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 21:38	11/12/20	
Potassium, Total	6010C	2000	U	ug/L	2000	200	1	11/13/20 21:38	11/12/20	
Sodium, Total	6010C	1000	U	ug/L	1000	200	1	11/13/20 21:38	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:00
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWD-1120	**Basis:**	NA
Lab Code:	R2010671-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:41	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:41	11/12/20	
Calcium, Total	6010C	**79100**		ug/L	1000	300	1	11/13/20 21:41	11/12/20	
Iron, Total	6010C	**90**	**J**	ug/L	100	70	1	11/13/20 21:41	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:41	11/12/20	
Magnesium, Total	6010C	**17200**		ug/L	1000	30	1	11/13/20 21:41	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 21:41	11/12/20	
Potassium, Total	6010C	**1900**	**J**	ug/L	2000	200	1	11/13/20 21:41	11/12/20	
Sodium, Total	6010C	**12100**		ug/L	1000	200	1	11/13/20 21:41	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWN-1120	**Basis:**	NA
Lab Code:	R2010671-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 21:45	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 21:45	11/12/20	
Calcium, Total	6010C	**124000**	ug/L	1000	300	1	11/13/20 21:45	11/12/20	
Iron, Total	6010C	**3840**	ug/L	100	70	1	11/13/20 21:45	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 21:45	11/12/20	
Magnesium, Total	6010C	**28700**	ug/L	1000	30	1	11/13/20 21:45	11/12/20	
Manganese, Total	6010C	**3230**	ug/L	10	4	1	11/13/20 21:45	11/12/20	
Potassium, Total	6010C	**6600**	ug/L	2000	200	1	11/13/20 21:45	11/12/20	
Sodium, Total	6010C	**17500**	ug/L	1000	200	1	11/13/20 21:45	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 12:15
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWGR-1120	**Basis:**	NA
Lab Code:	R2010671-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:48	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:48	11/12/20	
Calcium, Total	6010C	**110000**		ug/L	1000	300	1	11/13/20 21:48	11/12/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/13/20 21:48	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:48	11/12/20	
Magnesium, Total	6010C	**19100**		ug/L	1000	30	1	11/13/20 21:48	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 21:48	11/12/20	
Potassium, Total	6010C	**1100**	**J**	ug/L	2000	200	1	11/13/20 21:48	11/12/20	
Sodium, Total	6010C	**9800**		ug/L	1000	200	1	11/13/20 21:48	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 08:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW2A-1120	**Basis:**	NA
Lab Code:	R2010671-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Q	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:51	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:51	11/12/20	
Calcium, Total	6010C	**22600**		ug/L	1000	300	1	11/13/20 21:51	11/12/20	
Iron, Total	6010C	**90**	**J**	ug/L	100	70	1	11/13/20 21:51	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:51	11/12/20	
Magnesium, Total	6010C	**5800**		ug/L	1000	30	1	11/13/20 21:51	11/12/20	
Manganese, Total	6010C	**22**		ug/L	10	4	1	11/13/20 21:51	11/12/20	
Potassium, Total	6010C	**1300**	**J**	ug/L	2000	200	1	11/13/20 21:51	11/12/20	
Sodium, Total	6010C	**9900**		ug/L	1000	200	1	11/13/20 21:51	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:10
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW7A-1120	**Basis:**	NA
Lab Code:	R2010671-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:54	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:54	11/12/20	
Calcium, Total	6010C	**14600**		ug/L	1000	300	1	11/13/20 21:54	11/12/20	
Iron, Total	6010C	**80**	**J**	ug/L	100	70	1	11/13/20 21:54	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:54	11/12/20	
Magnesium, Total	6010C	**3800**		ug/L	1000	30	1	11/13/20 21:54	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 21:54	11/12/20	
Potassium, Total	6010C	**800**	**J**	ug/L	2000	200	1	11/13/20 21:54	11/12/20	
Sodium, Total	6010C	**9700**		ug/L	1000	200	1	11/13/20 21:54	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:45
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW2-1120	**Basis:**	NA
Lab Code:	R2010671-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 21:58	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 21:58	11/12/20	
Calcium, Total	6010C	**30100**		ug/L	1000	300	1	11/13/20 21:58	11/12/20	
Iron, Total	6010C	**470**		ug/L	100	70	1	11/13/20 21:58	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 21:58	11/12/20	
Magnesium, Total	6010C	**7600**		ug/L	1000	30	1	11/13/20 21:58	11/12/20	
Manganese, Total	6010C	**9**	**J**	ug/L	10	4	1	11/13/20 21:58	11/12/20	
Potassium, Total	6010C	**1900**	**J**	ug/L	2000	200	1	11/13/20 21:58	11/12/20	
Sodium, Total	6010C	**10700**		ug/L	1000	200	1	11/13/20 21:58	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:00
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW3A-1120	**Basis:**	NA
Lab Code:	R2010671-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 22:01	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 22:01	11/12/20	
Calcium, Total	6010C	**52500**	ug/L	1000	300	1	11/13/20 22:01	11/12/20	
Iron, Total	6010C	**760**	ug/L	100	70	1	11/13/20 22:01	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 22:01	11/12/20	
Magnesium, Total	6010C	**12800**	ug/L	1000	30	1	11/13/20 22:01	11/12/20	
Manganese, Total	6010C	**20**	ug/L	10	4	1	11/13/20 22:01	11/12/20	
Potassium, Total	6010C	**2400**	ug/L	2000	200	1	11/13/20 22:01	11/12/20	
Sodium, Total	6010C	**20700**	ug/L	1000	200	1	11/13/20 22:01	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:35
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW9-1120	**Basis:**	NA
Lab Code:	R2010671-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 22:04	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 22:04	11/12/20	
Calcium, Total	6010C	**38100**	ug/L	1000	300	1	11/13/20 22:04	11/12/20	
Iron, Total	6010C	**1620**	ug/L	100	70	1	11/13/20 22:04	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 22:04	11/12/20	
Magnesium, Total	6010C	**8600**	ug/L	1000	30	1	11/13/20 22:04	11/12/20	
Manganese, Total	6010C	**32**	ug/L	10	4	1	11/13/20 22:04	11/12/20	
Potassium, Total	6010C	**3100**	ug/L	2000	200	1	11/13/20 22:04	11/12/20	
Sodium, Total	6010C	**11600**	ug/L	1000	200	1	11/13/20 22:04	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:25
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS5-1120	**Basis:**	NA
Lab Code:	R2010671-012		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 22:14	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 22:14	11/12/20	
Calcium, Total	6010C	**66100**		ug/L	1000	300	1	11/13/20 22:14	11/12/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/13/20 22:14	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 22:14	11/12/20	
Magnesium, Total	6010C	**31700**		ug/L	1000	30	1	11/13/20 22:14	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 22:14	11/12/20	
Potassium, Total	6010C	**2600**		ug/L	2000	200	1	11/13/20 22:14	11/12/20	
Sodium, Total	6010C	**16900**		ug/L	1000	200	1	11/13/20 22:14	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:55
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS6-1120	**Basis:**	NA
Lab Code:	R2010671-013		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 22:17	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 22:17	11/12/20	
Calcium, Total	6010C	**202000**		ug/L	1000	300	1	11/13/20 22:17	11/12/20	
Iron, Total	6010C	**560**		ug/L	100	70	1	11/13/20 22:17	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 22:17	11/12/20	
Magnesium, Total	6010C	**63600**		ug/L	1000	30	1	11/13/20 22:17	11/12/20	
Manganese, Total	6010C	**128**		ug/L	10	4	1	11/13/20 22:17	11/12/20	
Potassium, Total	6010C	**4500**		ug/L	2000	200	1	11/13/20 22:17	11/12/20	
Sodium, Total	6010C	**34200**		ug/L	1000	200	1	11/13/20 22:17	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 12:25
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW1A-1120	**Basis:**	NA
Lab Code:	R2010671-014		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 22:20	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 22:20	11/12/20	
Calcium, Total	6010C	**17500**		ug/L	1000	300	1	11/13/20 22:20	11/12/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/13/20 22:20	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 22:20	11/12/20	
Magnesium, Total	6010C	**5300**		ug/L	1000	30	1	11/13/20 22:20	11/12/20	
Manganese, Total	6010C	**16**		ug/L	10	4	1	11/13/20 22:20	11/12/20	
Potassium, Total	6010C	**1100**	**J**	ug/L	2000	200	1	11/13/20 22:20	11/12/20	
Sodium, Total	6010C	**10000**		ug/L	1000	200	1	11/13/20 22:20	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 13:05
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS1A-1120	**Basis:**	NA
Lab Code:	R2010671-015		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 22:24	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 22:24	11/12/20	
Calcium, Total	6010C	**121000**	ug/L	1000	300	1	11/13/20 22:24	11/12/20	
Iron, Total	6010C	**3540**	ug/L	100	70	1	11/13/20 22:24	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 22:24	11/12/20	
Magnesium, Total	6010C	**23800**	ug/L	1000	30	1	11/13/20 22:24	11/12/20	
Manganese, Total	6010C	**2830**	ug/L	10	4	1	11/13/20 22:24	11/12/20	
Potassium, Total	6010C	**2300**	ug/L	2000	200	1	11/13/20 22:24	11/12/20	
Sodium, Total	6010C	**6300**	ug/L	1000	200	1	11/13/20 22:24	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 13:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS8-1120	**Basis:**	NA
Lab Code:	R2010671-016		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	11/13/20 22:27	11/12/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	11/13/20 22:27	11/12/20	
Calcium, Total	6010C	**123000**	ug/L	1000	300	1	11/13/20 22:27	11/12/20	
Iron, Total	6010C	100 U	ug/L	100	70	1	11/13/20 22:27	11/12/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	11/13/20 22:27	11/12/20	
Magnesium, Total	6010C	**23500**	ug/L	1000	30	1	11/13/20 22:27	11/12/20	
Manganese, Total	6010C	**559**	ug/L	10	4	1	11/13/20 22:27	11/12/20	
Potassium, Total	6010C	**2200**	ug/L	2000	200	1	11/13/20 22:27	11/12/20	
Sodium, Total	6010C	**49700**	ug/L	1000	200	1	11/13/20 22:27	11/12/20	

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 08:10
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWQR-1120	**Basis:**	NA
Lab Code:	R2010671-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**14.8**		mg/L	2.0	1.8	1	11/18/20 15:48	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 20:40	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:07	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/11/20 16:10	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**3.0**		mg/L	1.0	0.5	1	11/18/20 20:54	NA	
Chemical Oxygen Demand, Total	410.4	**7.5**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**115**		mg/L	2.0	0.5	10	11/11/20 16:10	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**141**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.4**	**J**	mg/L	1.0	0.2	10	11/11/20 16:10	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.46**		mg/L	0.20	0.15	1	11/20/20 12:05	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:22	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**397**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**113**		mg/L	2.0	0.4	10	11/11/20 16:10	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:50
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWF-1120	**Basis:**	NA
Lab Code:	R2010671-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**209**		mg/L	2.0	1.8	1	11/18/20 15:54	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 20:44	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:05	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/11/20 16:23	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.8**		mg/L	1.0	0.5	1	11/18/20 21:15	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**36.9**		mg/L	2.0	0.5	10	11/11/20 16:23	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**296**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 16:23	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:06	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:26	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**369**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**59.1**		mg/L	2.0	0.4	10	11/11/20 16:23	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	EB1-1120	**Basis:**	NA
Lab Code:	R2010671-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	11/18/20 15:57	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 20:56	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:03	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 12:22	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 21:36	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**0.9**	**J**	mg/L	2.0	0.5	10	11/12/20 12:22	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	6.62	U	mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 18:42	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 12:22	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:13	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:34	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	2.0	U	mg/L	2.0	0.4	10	11/12/20 12:22	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:00
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWD-1120	**Basis:**	NA
Lab Code:	R2010671-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**246**		mg/L	2.0	1.8	1	11/18/20 16:03	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 21:00	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:01	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/11/20 16:29	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 21:57	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**11.1**		mg/L	2.0	0.5	10	11/11/20 16:29	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**268**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.6**	**J**	mg/L	1.0	0.2	10	11/11/20 16:29	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:16	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:38	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**309**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**21.0**		mg/L	2.0	0.4	10	11/11/20 16:29	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWN-1120	**Basis:**	NA
Lab Code:	R2010671-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**430**		mg/L	2.0	1.8	1	11/18/20 16:09	NA	
Ammonia as Nitrogen, undistilled	350.1	**0.320**		mg/L	0.050	0.026	1	11/14/20 21:07	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	**2.3**		mg/L	2.0	-	1	11/11/20 15:04	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 20:52	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**2.1**		mg/L	1.0	0.5	1	11/18/20 22:59	NA	
Chemical Oxygen Demand, Total	410.4	**4.0**	**J**	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**3.1**		mg/L	2.0	0.5	10	11/12/20 20:52	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**429**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 16:59	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 20:52	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.62**		mg/L	0.20	0.15	1	11/20/20 12:19	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:42	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**506**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**24.8**		mg/L	2.0	0.4	10	11/12/20 20:52	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 12:15
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	MWGR-1120	**Basis:**	NA
Lab Code:	R2010671-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**326**		mg/L	2.0	1.8	1	11/18/20 16:15	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 21:08	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:06	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 20:59	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.7**	**J**	mg/L	1.0	0.5	1	11/18/20 23:20	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/17/20 19:00	NA	
Chloride	9056A	**4.6**		mg/L	2.0	0.5	10	11/12/20 20:59	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**354**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:05	NA	
Nitrate as Nitrogen	9056A	**0.5**	**J**	mg/L	1.0	0.2	10	11/12/20 20:59	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:19	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 21:46	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**386**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**26.2**		mg/L	2.0	0.4	10	11/12/20 20:59	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 08:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW2A-1120	**Basis:**	NA
Lab Code:	R2010671-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**48.4**		mg/L	2.0	1.8	1	11/18/20 18:31	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 21:10	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 15:11	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:05	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.8**		mg/L	1.0	0.5	1	11/18/20 23:41	NA	
Chemical Oxygen Demand, Total	410.4	**5.9**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**15.1**		mg/L	2.0	0.5	10	11/12/20 21:05	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**80.2**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:11	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 21:05	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.22**		mg/L	0.20	0.15	1	11/20/20 12:20	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:06	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**127**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**32.2**		mg/L	2.0	0.4	10	11/12/20 21:05	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:10
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW7A-1120	**Basis:**	NA
Lab Code:	R2010671-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**20.8**		mg/L	2.0	1.8	1	11/18/20 18:38	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:15	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:11	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:11	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.6**		mg/L	1.0	0.5	1	11/19/20 00:02	NA	
Chemical Oxygen Demand, Total	410.4	**5.3**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**26.4**		mg/L	2.0	0.5	10	11/12/20 21:11	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**51.9**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:17	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 21:11	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.21**		mg/L	0.20	0.15	1	11/20/20 12:23	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:10	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**95**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**15.1**		mg/L	2.0	0.4	10	11/12/20 21:11	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 09:45
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW2-1120	**Basis:**	NA
Lab Code:	R2010671-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**59.2**		mg/L	2.0	1.8	1	11/18/20 19:04	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:16	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:12	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:17	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**3.4**		mg/L	1.0	0.5	1	11/19/20 00:23	NA	
Chemical Oxygen Demand, Total	410.4	**8.1**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**11.5**		mg/L	2.0	0.5	10	11/12/20 21:17	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**107**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.4**	**J**	mg/L	1.0	0.2	10	11/11/20 17:23	NA	
Nitrate as Nitrogen	9056A	**0.5**	**J**	mg/L	1.0	0.2	10	11/12/20 21:17	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.30**		mg/L	0.20	0.15	1	11/20/20 12:24	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:14	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**164**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**48.4**		mg/L	2.0	0.4	10	11/12/20 21:17	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:00
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW3A-1120	**Basis:**	NA
Lab Code:	R2010671-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**102**		mg/L	2.0	1.8	1	11/18/20 19:12	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:17	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:09	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:23	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**4.8**		mg/L	1.0	0.5	1	11/19/20 01:05	NA	
Chemical Oxygen Demand, Total	410.4	**13.6**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**44.5**		mg/L	2.0	0.5	10	11/12/20 21:23	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**184**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:29	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 21:23	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.43**		mg/L	0.20	0.15	1	11/20/20 12:25	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:18	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**288**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**88.2**		mg/L	2.0	0.4	10	11/12/20 21:23	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 10:35
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW9-1120	**Basis:**	NA
Lab Code:	R2010671-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**68.0**		mg/L	2.0	1.8	1	11/18/20 16:35	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:19	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 05:59	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:29	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**4.5**		mg/L	1.0	0.5	1	11/19/20 02:07	NA	
Chemical Oxygen Demand, Total	410.4	**14.5**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**10.7**		mg/L	2.0	0.5	10	11/12/20 21:29	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**131**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.7**	**J**	mg/L	1.0	0.2	10	11/11/20 17:36	NA	
Nitrate as Nitrogen	9056A	**0.7**	**J**	mg/L	1.0	0.2	10	11/12/20 21:29	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.66**		mg/L	0.20	0.15	1	11/20/20 12:25	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:22	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**212**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**71.0**		mg/L	2.0	0.4	10	11/12/20 21:29	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:25
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS5-1120	**Basis:**	NA
Lab Code:	R2010671-012		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**232**		mg/L	2.0	1.8	1	11/18/20 16:41	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:20	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:31	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 21:35	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.8**	**J**	mg/L	1.0	0.5	1	11/19/20 03:10	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**4.3**		mg/L	2.0	0.5	10	11/12/20 21:35	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**296**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.7**	**J**	mg/L	1.0	0.2	10	11/11/20 17:42	NA	
Nitrate as Nitrogen	9056A	**0.7**	**J**	mg/L	1.0	0.2	10	11/12/20 21:35	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:26	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:26	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**363**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**83.6**		mg/L	2.0	0.4	10	11/12/20 21:35	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 11:55
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS6-1120	**Basis:**	NA
Lab Code:	R2010671-013		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**532**		mg/L	2.0	1.8	1	11/18/20 16:47	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:21	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:30	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 22:05	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.6**		mg/L	1.0	0.5	1	11/19/20 04:13	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**8.5**		mg/L	2.0	0.5	10	11/12/20 22:05	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**767**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:48	NA	
Nitrate as Nitrogen	9056A	**0.4**	**J**	mg/L	1.0	0.2	10	11/12/20 22:05	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:27	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:30	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**1000**		mg/L	12	11	1	11/17/20 16:45	NA	
Sulfate	9056A	**294**		mg/L	20	4	100	11/12/20 22:11	NA	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 12:25
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	SW1A-1120	**Basis:**	NA
Lab Code:	R2010671-014		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**25.2**		mg/L	2.0	1.8	1	11/18/20 16:52	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:23	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:37	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 22:30	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**2.6**		mg/L	1.0	0.5	1	11/19/20 04:33	NA	
Chemical Oxygen Demand, Total	410.4	**8.4**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**25.1**		mg/L	2.0	0.5	10	11/12/20 22:30	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**65.4**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 17:54	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 22:30	NA	*
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.20**	**J**	mg/L	0.20	0.15	1	11/20/20 12:28	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:34	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**116**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**25.8**		mg/L	2.0	0.4	10	11/12/20 22:30	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 13:05
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS1A-1120	**Basis:**	NA
Lab Code:	R2010671-015		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**336**		mg/L	2.0	1.8	1	11/18/20 16:59	NA	
Ammonia as Nitrogen, undistilled	350.1	**0.124**		mg/L	0.050	0.026	1	11/14/20 22:26	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	**2.1**		mg/L	2.0	-	1	11/12/20 06:35	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 11:51	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**25.6**		mg/L	1.0	0.5	1	11/19/20 04:54	NA	
Chemical Oxygen Demand, Total	410.4	**61.5**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**7.0**		mg/L	2.0	0.5	10	11/12/20 11:51	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**401**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 18:12	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 11:51	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**1.43**		mg/L	0.20	0.15	1	11/20/20 12:29	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:38	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**500**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**70.5**		mg/L	2.0	0.4	10	11/12/20 11:51	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20 13:30
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	GSS8-1120	**Basis:**	NA
Lab Code:	R2010671-016		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**309**		mg/L	2.0	1.8	1	11/18/20 17:04	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:32	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 06:36	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	11/12/20 12:09	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**3.2**		mg/L	1.0	0.5	1	11/19/20 05:15	NA	
Chemical Oxygen Demand, Total	410.4	**8.7**		mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	**101**		mg/L	6.0	1.3	30	11/13/20 19:01	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**404**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.4**	**J**	mg/L	1.0	0.2	10	11/11/20 18:30	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 12:09	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.28**		mg/L	0.20	0.15	1	11/20/20 12:30	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 22:42	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**582**		mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	**73.2**		mg/L	2.0	0.4	10	11/12/20 12:09	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	11/13/20 20:56	11/12/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	11/13/20 20:56	11/12/20	
Calcium, Total	6010C	1000	U	ug/L	1000	300	1	11/13/20 20:56	11/12/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	11/13/20 20:56	11/12/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	11/13/20 20:56	11/12/20	
Magnesium, Total	6010C	1000	U	ug/L	1000	30	1	11/13/20 20:56	11/12/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	11/13/20 20:56	11/12/20	
Potassium, Total	6010C	2000	U	ug/L	2000	200	1	11/13/20 20:56	11/12/20	
Sodium, Total	6010C	1000	U	ug/L	1000	200	1	11/13/20 20:56	11/12/20	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/13/20

Duplicate Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			R2010671-LCS			R2010671-DLCS				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Arsenic, Total	6010C	39.2	40	98	35.0	40	88	80-120	11	20
Cadmium, Total	6010C	50.0	50.0	100	50.2	50.0	100	80-120	<1	20
Calcium, Total	6010C	2010	2000	101	2010	2000	101	80-120	<1	20
Iron, Total	6010C	981	1000	98	980	1000	98	80-120	<1	20
Lead, Total	6010C	488	500	98	490	500	98	80-120	<1	20
Magnesium, Total	6010C	1950	2000	98	1950	2000	98	80-120	<1	20
Manganese, Total	6010C	490	500	98	491	500	98	80-120	<1	20
Potassium, Total	6010C	18800	20000	94	18800	20000	94	80-120	<1	20
Sodium, Total	6010C	19700	20000	99	19800	20000	99	80-120	<1	20

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	11/18/20 15:24	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 20:13	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 19:38	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	11/11/20 13:15	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 13:57	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	11/11/20 13:15	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	11/11/20 13:15	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:43	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 20:58	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	11/11/20 13:15	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	11/18/20 17:41	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 22:13	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/12/20 14:27	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	11/11/20 15:40	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/18/20 22:38	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:30	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	11/11/20 15:40	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	11/11/20 15:40	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 12:11	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/19/20 19:06	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	11/11/20 15:40	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB3		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Bromide	9056A	0.10 U	mg/L	0.10	0.04	1	11/12/20 09:36	
Chemical Oxygen Demand, Total	410.4	5.0 U	mg/L	5.0	3.8	1	11/17/20 19:00	
Chloride	9056A	0.20 U	mg/L	0.20	0.05	1	11/12/20 09:36	
Nitrate as Nitrogen	9056A	0.10 U	mg/L	0.10	0.02	1	11/12/20 09:36	
Sulfate	9056A	0.20 U	mg/L	0.20	0.04	1	11/12/20 09:36	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB4		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Bromide	9056A	0.10 U	mg/L	0.10	0.04	1	11/12/20 20:40	
Chloride	9056A	0.20 U	mg/L	0.20	0.05	1	11/12/20 20:40	
Nitrate as Nitrogen	9056A	0.10 U	mg/L	0.10	0.02	1	11/12/20 20:40	
Sulfate	9056A	0.20 U	mg/L	0.20	0.04	1	11/12/20 20:40	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010671-MB5		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	9056A	0.20 U	mg/L	0.20	0.05	1	11/13/20 17:24	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request:R2010671
Date Collected:11/10/20
Date Received:11/11/20
Date Analyzed:11/14/20

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: MWQR-1120
Lab Code: R2010671-001

Units:mg/L
Basis:NA

			Matrix Spike R2010671-001MS			Duplicate Matrix Spike R2010671-001DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	350.1	0.050 U	0.503	0.500	101	0.503	0.500	101	90-110	<1	20
Chemical Oxygen Demand, Total	410.4	7.5	31.4	25.0	96	31.7	25.0	97	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Ammonia as Nitrogen, undistilled

Sample Name:	MWF-1120	**Units:**	mg/L
Lab Code:	R2010671-002	**Basis:**	NA
Analysis Method:	350.1		

		Matrix Spike R2010671-002MS			Duplicate Matrix Spike R2010671-002DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	0.050 U	0.497	0.500	99	0.502	0.500	100	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Ammonia as Nitrogen, undistilled

Sample Name:	EB1-1120	**Units:**	mg/L
Lab Code:	R2010671-003	**Basis:**	NA
Analysis Method:	350.1		

		Matrix Spike			Duplicate Matrix Spike					
		R2010671-003MS			R2010671-003DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	0.050 U	0.501	0.500	100	0.500	0.500	100	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request:R2010671
Date Collected:11/10/20
Date Received:11/11/20
Date Analyzed:11/11/20 - 11/20/20

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: MWD-1120
Lab Code: R2010671-004

Units:mg/L
Basis:NA

			Matrix Spike			Duplicate Matrix Spike					
			R2010671-004MS			R2010671-004DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	350.1	0.050 U	0.502	0.500	100	0.505	0.500	101	90-110	<1	20
Bromide	9056A	1.0 U	10.2	10.0	102	10.2	10.0	102	80-120	<1	15
Chloride	9056A	11.1	31.8	20.0	103	31.6	20.0	102	80-120	<1	15
Sulfate	9056A	21.0	41.8	20.0	104	41.4	20.0	102	80-120	<1	15
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20 U	2.61	2.50	104	2.79	2.50	111 *	90-110	7	20
Nitrate as Nitrogen	9056A	0.6 J	10.3	10.0	97	10.3	10.0	97	80-120	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/19/20

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name:	SW3A-1120	**Units:**	mg/L
Lab Code:	R2010671-010	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2010671-010MS			**Duplicate Matrix Spike** R2010671-010DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic (TOC)	4.8	14.5	10.0	96	15.1	10.0	103	48-135	4	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/19/20

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name:	GSS5-1120	**Units:**	mg/L
Lab Code:	R2010671-012	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2010671-012MS			Duplicate Matrix Spike R2010671-012DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic (TOC)	0.8 J	10.9	10.0	101	10.9	10.0	101	48-135	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/12/20

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	GSS6-1120	**Units:**	mg/L
Lab Code:	R2010671-013	**Basis:**	NA
Analysis Method:	9056A		

		Matrix Spike			Duplicate Matrix Spike					
		R2010671-013MS			R2010671-013DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	294	495	200	101	495	200	101	80-120	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Chemical Oxygen Demand, Total

Sample Name:	SW1A-1120	**Units:**	mg/L
Lab Code:	R2010671-014	**Basis:**	NA
Analysis Method:	410.4		

		Matrix Spike R2010671-014MS			Duplicate Matrix Spike R2010671-014DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chemical Oxygen Demand, Total	8.4	28.0	25.0	78 *	26.1	25.0	71 *	90-110	7	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Ammonia as Nitrogen, undistilled

Sample Name:	GSS1A-1120	**Units:**	mg/L
Lab Code:	R2010671-015	**Basis:**	NA
Analysis Method:	350.1		

		Matrix Spike R2010671-015MS			**Duplicate Matrix Spike** R2010671-015DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	0.124	0.553	0.500	86 *	0.560	0.500	87 *	90-110	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/14/20

Duplicate Matrix Spike Summary
Ammonia as Nitrogen, undistilled

Sample Name:	GSS8-1120	**Units:**	mg/L
Lab Code:	R2010671-016	**Basis:**	NA
Analysis Method:	350.1		

		Matrix Spike R2010671-016MS			**Duplicate Matrix Spike** R2010671-016DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	0.050 U	0.479	0.500	96	0.487	0.500	97	90-110	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/18/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	MWGR-1120	**Units:**	mg/L
Lab Code:	R2010671-006	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010671-006DUP Result	Average	RPD	RPD Limit
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	1.8	326	326	326	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/18/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	SW7A-1120	**Units:**	mg/L
Lab Code:	R2010671-008	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010671-008DUP Result	Average	RPD	RPD Limit
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	1.8	20.8	18.4	19.6	12	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/12/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	GSS5-1120	**Units:**	mg/L
Lab Code:	R2010671-012	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2010671-012DUP Result	Average	RPD	RPD Limit
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	2.0 U	2.0 U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010671
Project	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	11/10/20
Sample Matrix:	Water	**Date Received:**	11/11/20
		Date Analyzed:	11/17/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	GSS6-1120	**Units:**	mg/L
Lab Code:	R2010671-013	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010671-013DUP Result	Average	RPD	RPD Limit
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	12	11	1000	999	1000	<1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/11/20 - 11/20/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010671-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	18.8	20.0	94	80-120
Ammonia as Nitrogen, undistilled	350.1	0.500	0.500	100	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	193	198	98	85-115
Bromide	9056A	1.03	1.00	103	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	9.1	10.0	91	80-121
Chemical Oxygen Demand, Total	410.4	46.6	50.0	93	90-110
Chloride	9056A	2.02	2.00	101	80-120
Nitrate as Nitrogen	9056A	1.00	1.00	100	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.38	2.50	95	90-110
Phenolics, Total Recoverable	9066	0.0404	0.0400	101	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	922	914	101	90-110
Sulfate	9056A	2.08	2.00	104	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/11/20 - 11/20/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010671-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	19.6	20.0	98	80-120
Ammonia as Nitrogen, undistilled	350.1	0.497	0.500	99	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	189	198	95	85-115
Bromide	9056A	1.02	1.00	102	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	10.3	10.0	103	80-121
Chemical Oxygen Demand, Total	410.4	49.1	50.0	98	90-110
Chloride	9056A	2.02	2.00	101	80-120
Nitrate as Nitrogen	9056A	1.00	1.00	100	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.62	2.50	105	90-110
Phenolics, Total Recoverable	9066	0.0396	0.0400	99	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	882	914	97	90-110
Sulfate	9056A	2.07	2.00	103	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/12/20 - 11/17/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010671-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromide	9056A	0.998	1.00	100	80-120
Chemical Oxygen Demand, Total	410.4	46.6	50.0	93	90-110
Chloride	9056A	2.00	2.00	100	80-120
Nitrate as Nitrogen	9056A	0.990	1.00	99	80-120
Sulfate	9056A	2.06	2.00	103	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010671-LCS4

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromide	9056A	0.955	1.00	96	80-120
Chloride	9056A	1.97	2.00	98	80-120
Nitrate as Nitrogen	9056A	0.970	1.00	97	80-120
Sulfate	9056A	1.98	2.00	99	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2010671
Date Analyzed: 11/13/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010671-LCS5

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	9056A	1.92	2.00	96	80-120

December 29, 2020 Service Request No:R2011927

Russell Anderson
Casella Waste Systems, Inc.
26 Pleasant Street, Suite 3E
Concord, NH 03301

Laboratory Results for: Hakes C&D Landfill - 363 Routine Parameters

Dear Russell,

Enclosed are the results of the sample(s) submitted to our laboratory December 16, 2020
For your reference, these analyses have been assigned our service request number **R2011927.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jon Brandes

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2011927
Date Received: 12/16/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 12/16/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/29/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: MWRBR-1220			Lab ID: R2011927-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	30.0		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.5		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	3.1		0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	54.3			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	3.5		0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.29		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	89		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	14.0		0.4	2.0	mg/L	9056A
Calcium, Total	15300		300	1000	ug/L	6010C
Iron, Total	2170		70	100	ug/L	6010C
Magnesium, Total	3900		30	1000	ug/L	6010C
Manganese, Total	88		4	10	ug/L	6010C
Potassium, Total	2100		200	2000	ug/L	6010C
Sodium, Total	4000		200	1000	ug/L	6010C

CLIENT ID: MWVBR-1220			Lab ID: R2011927-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	190		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Ammonia as Nitrogen, undistilled	0.034	J	0.026	0.050	mg/L	350.1
Carbon, Total Organic (TOC)	0.7	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	1.2	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	243			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	350		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	98.6		0.4	2.0	mg/L	9056A
Calcium, Total	64300		300	1000	ug/L	6010C
Iron, Total	480		70	100	ug/L	6010C
Magnesium, Total	20000		30	1000	ug/L	6010C
Manganese, Total	677		4	10	ug/L	6010C
Potassium, Total	4300		200	2000	ug/L	6010C
Sodium, Total	26300		200	1000	ug/L	6010C

CLIENT ID: GSS9-1220			Lab ID: R2011927-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	140		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.9	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	7.5		0.5	2.0	mg/L	9056A

SAMPLE DETECTION SUMMARY

CLIENT ID: GSS9-1220			Lab ID: R2011927-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Hardness, Total as CaCO3	177			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.2	J	0.2	1.0	mg/L	9056A
Solids, Total Dissolved (TDS)	229		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	42.8		0.4	2.0	mg/L	9056A
Calcium, Total	50000		300	1000	ug/L	6010C
Magnesium, Total	12600		30	1000	ug/L	6010C
Manganese, Total	5	J	4	10	ug/L	6010C
Potassium, Total	2100		200	2000	ug/L	6010C
Sodium, Total	11100		200	1000	ug/L	6010C

CLIENT ID: MWOBR-1220			Lab ID: R2011927-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	202		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Ammonia as Nitrogen, undistilled	0.032	J	0.026	0.050	mg/L	350.1
Biochemical Oxygen Demand (BOD)	2.2			2.0	mg/L	SM 5210 B-2001 (2011)
Carbon, Total Organic (TOC)	2.1		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	1.7	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	196			6.62	mg/L	SM 2340 B-1997 (2011)
Nitrate as Nitrogen	0.2	J	0.2	1.0	mg/L	9056A
Nitrogen, Total Kjeldahl (TKN)	0.53		0.15	0.20	mg/L	351.2
Solids, Total Dissolved (TDS)	272		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	32.8		0.4	2.0	mg/L	9056A
Calcium, Total	52100		300	1000	ug/L	6010C
Iron, Total	330		70	100	ug/L	6010C
Magnesium, Total	15900		30	1000	ug/L	6010C
Manganese, Total	195		4	10	ug/L	6010C
Potassium, Total	4600		200	2000	ug/L	6010C
Sodium, Total	21700		200	1000	ug/L	6010C

CLIENT ID: MWUBR-1220			Lab ID: R2011927-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	137		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Chloride	1.0	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	145			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	175		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	15.1		0.4	2.0	mg/L	9056A
Calcium, Total	41500		300	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MWUBR-1220			Lab ID: R2011927-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Magnesium, Total	10000		30	1000	ug/L	6010C
Manganese, Total	366		4	10	ug/L	6010C
Potassium, Total	1600	J	200	2000	ug/L	6010C
Sodium, Total	10900		200	1000	ug/L	6010C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:**R2011927

Project: Hakes C&D Landfill - 363 Routine Parameters

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2011927-001	MWRBR-1220	12/15/2020	1035
R2011927-002	MWVBR-1220	12/15/2020	1250
R2011927-003	GSS9-1220	12/15/2020	1335
R2011927-004	MWOBR-1220	12/16/2020	0855
R2011927-005	MWUBR-1220	12/16/2020	1050

CHAIN of CUSTODY

Page 1 of 1

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

Project: Hakes C&D Landfill - 363 Routine Parameters

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Method of Shipment: On-Site KD

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
MWRBR-1220		6		X			X	X	12-15-20	1035	X	X	X	X	X	X
MWVBR-1220		6		X			X	X	12-15-20	1250	X	X	X	X	X	X
GSS9-1220		6		X			X	X	12-15-20	1335	X	X	X	X	X	X
MWOBR-1220		6		X			X	X	12-16-20	0855	X	X	X	X	X	X
MWUBR-1220		6		X			X	X	12-16-20	1050	X	X	X	X	X	X

REMARKS

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Kevin Dye / Kevin Dye	12/16/20	1300	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: Date 12/16/20 Time 1505

Lab Work No.

R2011927 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 383 Routine Parameters

Cooler Receipt and Preservation Check Form

Project/Client Casella Folder Number

Cooler received on 12/16/2020 by: DW COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 12/16/2020 Time: 1305 ID: IR#7 (IR#10) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	0.8°	2.6					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: ________ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: ________ Standing Approval Client aware at drop-off Client notified by: ________

All samples held in storage location: R-002 by DW on 12/16/20 at 1305
5035 samples placed in storage location: ____ by ____ on ____ at ____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 12/16/2020 Time: 1834 by: [initials]

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	203419	HNO_3	✓		112-0081					
≤2	↓	H_2SO_4	✓		211297, K121-25					
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, (Phenol), 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 20-10-02, 091120-1BMC, 030220-2AAD, 80520-01
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: [initials]
PC Secondary Review: [signature] 12/18/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r18.doc 10/20/2020

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011927
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: MWRBR-1220 **Date Collected:** 12/15/20
Lab Code: R2011927-001 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWVBR-1220 **Date Collected:** 12/15/20
Lab Code: R2011927-002 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011927
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: GSS9-1220 **Date Collected:** 12/15/20
Lab Code: R2011927-003 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWOBR-1220 **Date Collected:** 12/16/20
Lab Code: R2011927-004 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Analyst Summary report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters/		

Sample Name:	MWUBR-1220	**Date Collected:**	12/16/20
Lab Code:	R2011927-005	**Date Received:**	12/16/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 10:35
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWRBR-1220	**Basis:**	NA
Lab Code:	R2011927-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	12/22/20 17:53	12/21/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	12/22/20 17:53	12/21/20	
Calcium, Total	6010C	**15300**	ug/L	1000	300	1	12/22/20 17:53	12/21/20	
Iron, Total	6010C	**2170**	ug/L	100	70	1	12/22/20 17:53	12/21/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	12/22/20 17:53	12/21/20	
Magnesium, Total	6010C	**3900**	ug/L	1000	30	1	12/22/20 17:53	12/21/20	
Manganese, Total	6010C	**88**	ug/L	10	4	1	12/22/20 17:53	12/21/20	
Potassium, Total	6010C	**2100**	ug/L	2000	200	1	12/22/20 17:53	12/21/20	
Sodium, Total	6010C	**4000**	ug/L	1000	200	1	12/22/20 17:53	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:50
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWVBR-1220	**Basis:**	NA
Lab Code:	R2011927-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	12/22/20 17:56	12/21/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	12/22/20 17:56	12/21/20	
Calcium, Total	6010C	**64300**	ug/L	1000	300	1	12/22/20 17:56	12/21/20	
Iron, Total	6010C	**480**	ug/L	100	70	1	12/22/20 17:56	12/21/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	12/22/20 17:56	12/21/20	
Magnesium, Total	6010C	**20000**	ug/L	1000	30	1	12/22/20 17:56	12/21/20	
Manganese, Total	6010C	**677**	ug/L	10	4	1	12/22/20 17:56	12/21/20	
Potassium, Total	6010C	**4300**	ug/L	2000	200	1	12/22/20 17:56	12/21/20	
Sodium, Total	6010C	**26300**	ug/L	1000	200	1	12/22/20 17:56	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 13:35
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	GSS9-1220	**Basis:**	NA
Lab Code:	R2011927-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	12/22/20 17:59	12/21/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	12/22/20 17:59	12/21/20	
Calcium, Total	6010C	**50000**	ug/L	1000	300	1	12/22/20 17:59	12/21/20	
Iron, Total	6010C	100 U	ug/L	100	70	1	12/22/20 17:59	12/21/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	12/22/20 17:59	12/21/20	
Magnesium, Total	6010C	**12600**	ug/L	1000	30	1	12/22/20 17:59	12/21/20	
Manganese, Total	6010C	**5 J**	ug/L	10	4	1	12/22/20 17:59	12/21/20	
Potassium, Total	6010C	**2100**	ug/L	2000	200	1	12/22/20 17:59	12/21/20	
Sodium, Total	6010C	**11100**	ug/L	1000	200	1	12/22/20 17:59	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/16/20 08:55
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWOBR-1220	**Basis:**	NA
Lab Code:	R2011927-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	12/22/20 18:02	12/21/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	12/22/20 18:02	12/21/20	
Calcium, Total	6010C	**52100**	ug/L	1000	300	1	12/22/20 18:02	12/21/20	
Iron, Total	6010C	**330**	ug/L	100	70	1	12/22/20 18:02	12/21/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	12/22/20 18:02	12/21/20	
Magnesium, Total	6010C	**15900**	ug/L	1000	30	1	12/22/20 18:02	12/21/20	
Manganese, Total	6010C	**195**	ug/L	10	4	1	12/22/20 18:02	12/21/20	
Potassium, Total	6010C	**4600**	ug/L	2000	200	1	12/22/20 18:02	12/21/20	
Sodium, Total	6010C	**21700**	ug/L	1000	200	1	12/22/20 18:02	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/16/20 10:50
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWUBR-1220	**Basis:**	NA
Lab Code:	R2011927-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 18:06	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 18:06	12/21/20	
Calcium, Total	6010C	**41500**		ug/L	1000	300	1	12/22/20 18:06	12/21/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	12/22/20 18:06	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 18:06	12/21/20	
Magnesium, Total	6010C	**10000**		ug/L	1000	30	1	12/22/20 18:06	12/21/20	
Manganese, Total	6010C	**366**		ug/L	10	4	1	12/22/20 18:06	12/21/20	
Potassium, Total	6010C	**1600**	**J**	ug/L	2000	200	1	12/22/20 18:06	12/21/20	
Sodium, Total	6010C	**10900**		ug/L	1000	200	1	12/22/20 18:06	12/21/20	

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 10:35
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWRBR-1220	**Basis:**	NA
Lab Code:	R2011927-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**30.0**		mg/L	2.0	1.8	1	12/18/20 00:42	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:43	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:53	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 20:22	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.5**		mg/L	1.0	0.5	1	12/17/20 20:08	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**3.1**		mg/L	2.0	0.5	10	12/16/20 20:22	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**54.3**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**3.5**		mg/L	1.0	0.2	10	12/16/20 20:22	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.29**		mg/L	0.20	0.15	1	12/18/20 13:35	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 17:22	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**89**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**14.0**		mg/L	2.0	0.4	10	12/16/20 20:22	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:50
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWVBR-1220	**Basis:**	NA
Lab Code:	R2011927-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**190**		mg/L	2.0	1.8	1	12/18/20 00:48	NA	
Ammonia as Nitrogen, undistilled	350.1	**0.034**	**J**	mg/L	0.050	0.026	1	12/17/20 21:44	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:52	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 20:30	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.7**	**J**	mg/L	1.0	0.5	1	12/17/20 21:11	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.2**	**J**	mg/L	2.0	0.5	10	12/16/20 20:30	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**243**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 20:30	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:36	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 17:26	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**350**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**98.6**		mg/L	2.0	0.4	10	12/16/20 20:30	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 13:35
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	GSS9-1220	**Basis:**	NA
Lab Code:	R2011927-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**140**		mg/L	2.0	1.8	1	12/18/20 00:54	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:45	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:51	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 20:37	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.9**	**J**	mg/L	1.0	0.5	1	12/17/20 21:32	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**7.5**		mg/L	2.0	0.5	10	12/16/20 20:37	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**177**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.2**	**J**	mg/L	1.0	0.2	10	12/16/20 20:37	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:38	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 17:46	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**229**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**42.8**		mg/L	2.0	0.4	10	12/16/20 20:37	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/16/20 08:55
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWOBR-1220	**Basis:**	NA
Lab Code:	R2011927-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**202**		mg/L	2.0	1.8	1	12/18/20 00:59	NA	
Ammonia as Nitrogen, undistilled	350.1	**0.032**	**J**	mg/L	0.050	0.026	1	12/17/20 21:48	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	**2.2**		mg/L	2.0	-	1	12/17/20 06:52	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 20:45	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**2.1**		mg/L	1.0	0.5	1	12/17/20 22:47	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.7**	**J**	mg/L	2.0	0.5	10	12/16/20 20:45	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**196**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	**0.2**	**J**	mg/L	1.0	0.2	10	12/16/20 20:45	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.53**		mg/L	0.20	0.15	1	12/18/20 13:39	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 17:50	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**272**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**32.8**		mg/L	2.0	0.4	10	12/16/20 20:45	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/16/20 10:50
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWUBR-1220	**Basis:**	NA
Lab Code:	R2011927-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**137**		mg/L	2.0	1.8	1	12/18/20 01:05	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:49	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:52	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 20:52	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	12/17/20 23:08	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.0**	**J**	mg/L	2.0	0.5	10	12/16/20 20:52	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**145**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 20:52	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:40	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 18:42	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**175**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**15.1**		mg/L	2.0	0.4	10	12/16/20 20:52	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011927-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 17:43	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 17:43	12/21/20	
Calcium, Total	6010C	1000	U	ug/L	1000	300	1	12/22/20 17:43	12/21/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	12/22/20 17:43	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 17:43	12/21/20	
Magnesium, Total	6010C	1000	U	ug/L	1000	30	1	12/22/20 17:43	12/21/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	12/22/20 17:43	12/21/20	
Potassium, Total	6010C	2000	U	ug/L	2000	200	1	12/22/20 17:43	12/21/20	
Sodium, Total	6010C	1000	U	ug/L	1000	200	1	12/22/20 17:43	12/21/20	

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011927
Project: Hakes C&D Landfill - 363 Routine Parameters **Date Analyzed:** 12/22/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			R2011927-LCS			R2011927-DLCS				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Arsenic, Total	6010C	38	40	96	42	40	104	80-120	8	20
Cadmium, Total	6010C	50.5	50.0	101	50.4	50.0	101	80-120	<1	20
Calcium, Total	6010C	2010	2000	101	2030	2000	101	80-120	<1	20
Iron, Total	6010C	999	1000	100	1010	1000	101	80-120	<1	20
Lead, Total	6010C	503	500	101	507	500	101	80-120	<1	20
Magnesium, Total	6010C	1940	2000	97	1960	2000	98	80-120	<1	20
Manganese, Total	6010C	492	500	98	495	500	99	80-120	<1	20
Potassium, Total	6010C	19100	20000	95	19200	20000	96	80-120	<1	20
Sodium, Total	6010C	19700	20000	98	19900	20000	99	80-120	<1	20

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011927-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	12/17/20 22:26	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:21	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 13:35	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	12/16/20 18:16	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	12/17/20 17:57	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	12/16/20 18:16	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	12/16/20 18:16	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:24	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 14:46	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	12/16/20 18:16	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011927-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Phenolics, Total Recoverable	9066	0.0050 U	mg/L	0.0050	0.0029	1	12/21/20 17:34	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20
Sample Matrix:	Water	**Date Received:**	12/16/20
		Date Analyzed:	12/17/20

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name:	MWRBR-1220	**Units:**	mg/L
Lab Code:	R2011927-001	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2011927-001MS			**Duplicate Matrix Spike** R2011927-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic (TOC)	1.5	11.2	10.0	96	11.5	10.0	99	48-135	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/16/20
Sample Matrix:	Water	**Date Received:**	12/16/20
		Date Analyzed:	12/18/20

Duplicate Matrix Spike Summary
Chemical Oxygen Demand, Total

Sample Name:	MWUBR-1220	**Units:**	mg/L
Lab Code:	R2011927-005	**Basis:**	NA
Analysis Method:	410.4		

		Matrix Spike R2011927-005MS			Duplicate Matrix Spike R2011927-005DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chemical Oxygen Demand, Total	5.0 U	25.3	25.0	101	18.9	25.0	76 *	90-110	29*	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2011927
Date Analyzed: 12/16/20 - 12/21/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2011927-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	21.6	20.0	108	80-120
Ammonia as Nitrogen, undistilled	350.1	0.246	0.250	98	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	183	198	92	85-115
Bromide	9056A	0.993	1.00	99	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	9.08	10.0	91	80-121
Chemical Oxygen Demand, Total	410.4	52.5	50.0	105	90-110
Chloride	9056A	1.95	2.00	98	80-120
Nitrate as Nitrogen	9056A	0.972	1.00	97	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.28	2.50	91	90-110
Phenolics, Total Recoverable	9066	0.0364	0.0400	91	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	882	914	96	90-110
Sulfate	9056A	1.99	2.00	99	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011927
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Analyzed:**	12/21/20
Sample Matrix:	Water		

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2011927-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Phenolics, Total Recoverable	9066	0.0409	0.0400	102	85-115

December 29, 2020 Service Request No:R2011928

Russell Anderson
Casella Waste Systems, Inc.
26 Pleasant Street, Suite 3E
Concord, NH 03301

Laboratory Results for: Hakes C&D Landfill - 363 Routine Parameters

Dear Russell,

Enclosed are the results of the sample(s) submitted to our laboratory December 16, 2020
For your reference, these analyses have been assigned our service request number **R2011928.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jon Brandes

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2011928
Date Received: 12/16/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Four water samples were received for analysis at ALS Environmental on 12/16/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/29/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: MWV-1220	Lab ID: R2011928-001					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	408		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	1.7		0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	1.6	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	432			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	725		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	206		1.6	8.0	mg/L	9056A
Calcium, Total	87400		300	1000	ug/L	6010C
Iron, Total	90	J	70	100	ug/L	6010C
Magnesium, Total	51900		30	1000	ug/L	6010C
Manganese, Total	921		4	10	ug/L	6010C
Potassium, Total	49500		200	2000	ug/L	6010C
Sodium, Total	78200		200	1000	ug/L	6010C

CLIENT ID: MWTBR-1220	Lab ID: R2011928-002					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	136		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Carbon, Total Organic (TOC)	0.6	J	0.5	1.0	mg/L	SM 5310 C-2000 (2011)
Chloride	1.4	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	148			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	189		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	22.2		0.4	2.0	mg/L	9056A
Calcium, Total	42300		300	1000	ug/L	6010C
Iron, Total	310		70	100	ug/L	6010C
Magnesium, Total	10200		30	1000	ug/L	6010C
Manganese, Total	663		4	10	ug/L	6010C
Potassium, Total	1600	J	200	2000	ug/L	6010C
Sodium, Total	10800		200	1000	ug/L	6010C

CLIENT ID: DUP1-1220	Lab ID: R2011928-003					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	136		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Chloride	1.4	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	147			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	192		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	22.1		0.4	2.0	mg/L	9056A
Calcium, Total	42100		300	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: DUP1-1220	Lab ID: R2011928-003					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Iron, Total	310		70	100	ug/L	6010C
Magnesium, Total	10200		30	1000	ug/L	6010C
Manganese, Total	672		4	10	ug/L	6010C
Potassium, Total	1600	J	200	2000	ug/L	6010C
Sodium, Total	10700		200	1000	ug/L	6010C

CLIENT ID: MWSBR-1220	Lab ID: R2011928-004					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity, Total as CaCO3	150		1.8	2.0	mg/L	SM 2320 B-1997 (2011)
Chloride	0.9	J	0.5	2.0	mg/L	9056A
Hardness, Total as CaCO3	176			6.62	mg/L	SM 2340 B-1997 (2011)
Solids, Total Dissolved (TDS)	217		9	10	mg/L	SM 2540 C-1997 (2011)
Sulfate	38.7		0.4	2.0	mg/L	9056A
Calcium, Total	49400		300	1000	ug/L	6010C
Iron, Total	120		70	100	ug/L	6010C
Magnesium, Total	12700		30	1000	ug/L	6010C
Manganese, Total	548		4	10	ug/L	6010C
Potassium, Total	1700	J	200	2000	ug/L	6010C
Sodium, Total	11900		200	1000	ug/L	6010C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:**R2011928

Project: Hakes C&D Landfill - 363 Routine Parameters

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2011928-001	MWV-1220	12/15/2020	1015
R2011928-002	MWTBR-1220	12/15/2020	1215
R2011928-003	DUP1-1220	12/15/2020	1225
R2011928-004	MWSBR-1220	12/15/2020	1430

CHAIN of CUSTODY

Page 1 of 1

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

Project: Hakes C&D Landfill - 363 Routine Parameters

Telephone No.: 585-593-1824

Email: jonb@on-sitehs.com

Method of Shipment: On-Site (KJ)

Special Detection Limit/Reporting

PDF to Russ and On-Site, and EDD to On-Site.
PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	BOD (NP)	Phenols & TOC (H2SO4)	Alkalinity (NP)	NH3, TKN, COD (H2SO4)	T-Metals, Hard. (Routine + As) (HNO3)	TDS, NO3, Br, Cl, SO4 (NP)
MWV-1220		6		X			X	X	12-15-20	1015	X	X	X	X	X	X
MWTBR-1220		6		X			X	X	12-15-20	1215	X	X	X	X	X	X
DUP1-1220		6		X			X	X	12-15-20	1225	X	X	X	X	X	X
MWSBR-1220		6		X			X	X	12-15-20	1430	X	X	X	X	X	X

REMARKS

Sample Received Intact: Yes No

Temperature received: Ice No ice

	Date	Time		
Relinq. by sampler (Sign & Print Name) Scott Watson	12/16/20	0630	Received by (Sign & Print Name)	
Relinquished by Bernard Dyga	12/16/20	1300	Received by	
Relinquished by	Date	Time	Received by	
Relinquished by	Date	Time	Received by laboratory	Date 12/16/2020 Time 1305

Lab Work No.

R2011928 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 363 Routine Parameters

R2011928 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - 383 Routine Parameters

Cooler Receipt and Preservation Check Form

Project/Client Casella Folder Number

Cooler received on 12/16/2020 by: [illegible]

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (NA)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set (NA)

8. Temperature Readings Date: 12/16/2020 Time: 1305 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	0.1°C	2.1°F					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:

All samples held in storage location: R-002 by dlw on 12/16/20 at 1305
5035 samples placed in storage location: by on at within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 12/16/2020 Time: 1846 by: [illegible]

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	223419	HNO_3	✓		1120081					
≤2	"	H_2SO_4	✓		K121-25, 011397	10/24				
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 20-10-02 80520-04, 0921020-1BMC, 030220-2AAO
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: [illegible]
PC Secondary Review: [illegible] 12/18/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011928
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: MWV-1220 **Date Collected:** 12/15/20
Lab Code: R2011928-001 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWTBR-1220 **Date Collected:** 12/15/20
Lab Code: R2011928-002 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011928
Project: Hakes C&D Landfill - 363 Routine Parameters/

Sample Name: DUP1-1220 **Date Collected:** 12/15/20
Lab Code: R2011928-003 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: MWSBR-1220 **Date Collected:** 12/15/20
Lab Code: R2011928-004 **Date Received:** 12/16/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		MROGERSON
351.2	KMENGS	GNITAJOUPPI
410.4		MROGERSON
6010C	AKONZEL	KMCLAEN
9056A		KWONG
9066		BBOWE
SM 2320 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 10:15
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWV-1220	**Basis:**	NA
Lab Code:	R2011928-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 22:55	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 22:55	12/21/20	
Calcium, Total	6010C	**87400**		ug/L	1000	300	1	12/22/20 22:55	12/21/20	
Iron, Total	6010C	**90**	**J**	ug/L	100	70	1	12/22/20 22:55	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 22:55	12/21/20	
Magnesium, Total	6010C	**51900**		ug/L	1000	30	1	12/22/20 22:55	12/21/20	
Manganese, Total	6010C	**921**		ug/L	10	4	1	12/22/20 22:55	12/21/20	
Potassium, Total	6010C	**49500**		ug/L	2000	200	1	12/22/20 22:55	12/21/20	
Sodium, Total	6010C	**78200**		ug/L	1000	200	1	12/22/20 22:55	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:15
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWTBR-1220	**Basis:**	NA
Lab Code:	R2011928-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10 U	ug/L	10	6	1	12/22/20 22:58	12/21/20	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	12/22/20 22:58	12/21/20	
Calcium, Total	6010C	**42300**	ug/L	1000	300	1	12/22/20 22:58	12/21/20	
Iron, Total	6010C	**310**	ug/L	100	70	1	12/22/20 22:58	12/21/20	
Lead, Total	6010C	5.0 U	ug/L	5.0	2.1	1	12/22/20 22:58	12/21/20	
Magnesium, Total	6010C	**10200**	ug/L	1000	30	1	12/22/20 22:58	12/21/20	
Manganese, Total	6010C	**663**	ug/L	10	4	1	12/22/20 22:58	12/21/20	
Potassium, Total	6010C	**1600 J**	ug/L	2000	200	1	12/22/20 22:58	12/21/20	
Sodium, Total	6010C	**10800**	ug/L	1000	200	1	12/22/20 22:58	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:25
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	DUP1-1220	**Basis:**	NA
Lab Code:	R2011928-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 23:02	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 23:02	12/21/20	
Calcium, Total	6010C	**42100**		ug/L	1000	300	1	12/22/20 23:02	12/21/20	
Iron, Total	6010C	**310**		ug/L	100	70	1	12/22/20 23:02	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 23:02	12/21/20	
Magnesium, Total	6010C	**10200**		ug/L	1000	30	1	12/22/20 23:02	12/21/20	
Manganese, Total	6010C	**672**		ug/L	10	4	1	12/22/20 23:02	12/21/20	
Potassium, Total	6010C	**1600**	**J**	ug/L	2000	200	1	12/22/20 23:02	12/21/20	
Sodium, Total	6010C	**10700**		ug/L	1000	200	1	12/22/20 23:02	12/21/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 14:30
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWSBR-1220	**Basis:**	NA
Lab Code:	R2011928-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 23:05	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 23:05	12/21/20	
Calcium, Total	6010C	**49400**		ug/L	1000	300	1	12/22/20 23:05	12/21/20	
Iron, Total	6010C	**120**		ug/L	100	70	1	12/22/20 23:05	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 23:05	12/21/20	
Magnesium, Total	6010C	**12700**		ug/L	1000	30	1	12/22/20 23:05	12/21/20	
Manganese, Total	6010C	**548**		ug/L	10	4	1	12/22/20 23:05	12/21/20	
Potassium, Total	6010C	**1700**	**J**	ug/L	2000	200	1	12/22/20 23:05	12/21/20	
Sodium, Total	6010C	**11900**		ug/L	1000	200	1	12/22/20 23:05	12/21/20	

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 10:15
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWV-1220	**Basis:**	NA
Lab Code:	R2011928-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**408**		mg/L	2.0	1.8	1	12/18/20 01:10	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:50	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:52	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 21:00	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**1.7**		mg/L	1.0	0.5	1	12/17/20 23:29	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.6**	**J**	mg/L	2.0	0.5	10	12/16/20 21:00	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**432**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 21:00	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:41	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 18:46	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**725**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**206**		mg/L	8.0	1.6	40	12/20/20 02:11	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:15
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWTBR-1220	**Basis:**	NA
Lab Code:	R2011928-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**136**		mg/L	2.0	1.8	1	12/18/20 01:16	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:51	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:55	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 21:30	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.6**	**J**	mg/L	1.0	0.5	1	12/18/20 00:31	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.4**	**J**	mg/L	2.0	0.5	10	12/16/20 21:30	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**148**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 21:30	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:42	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 18:50	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**189**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**22.2**		mg/L	2.0	0.4	10	12/16/20 21:30	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 12:25
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	DUP1-1220	**Basis:**	NA
Lab Code:	R2011928-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**136**		mg/L	2.0	1.8	1	12/18/20 01:21	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:53	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 06:54	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 21:37	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	12/18/20 00:52	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**1.4**	**J**	mg/L	2.0	0.5	10	12/16/20 21:37	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**147**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 21:37	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:43	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 18:54	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**192**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**22.1**		mg/L	2.0	0.4	10	12/16/20 21:37	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20 14:30
Sample Matrix:	Water	**Date Received:**	12/16/20 13:05
Sample Name:	MWSBR-1220	**Basis:**	NA
Lab Code:	R2011928-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**150**		mg/L	2.0	1.8	1	12/18/20 01:27	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:54	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 08:54	NA	
Bromide	9056A	1.0	U	mg/L	1.0	0.4	10	12/16/20 21:45	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	12/18/20 01:13	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	**0.9**	**J**	mg/L	2.0	0.5	10	12/16/20 21:45	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**176**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	12/16/20 21:45	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:43	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 18:58	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**217**		mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	**38.7**		mg/L	2.0	0.4	10	12/16/20 21:45	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011928-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	6	1	12/22/20 21:37	12/21/20	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	0.4	1	12/22/20 21:37	12/21/20	
Calcium, Total	6010C	1000	U	ug/L	1000	300	1	12/22/20 21:37	12/21/20	
Iron, Total	6010C	100	U	ug/L	100	70	1	12/22/20 21:37	12/21/20	
Lead, Total	6010C	5.0	U	ug/L	5.0	2.1	1	12/22/20 21:37	12/21/20	
Magnesium, Total	6010C	1000	U	ug/L	1000	30	1	12/22/20 21:37	12/21/20	
Manganese, Total	6010C	10	U	ug/L	10	4	1	12/22/20 21:37	12/21/20	
Potassium, Total	6010C	2000	U	ug/L	2000	200	1	12/22/20 21:37	12/21/20	
Sodium, Total	6010C	1000	U	ug/L	1000	200	1	12/22/20 21:37	12/21/20	

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2011928
Project: Hakes C&D Landfill - 363 Routine Parameters **Date Analyzed:** 12/22/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

			Lab Control Sample		Duplicate Lab Control Sample					
			R2011928-LCS		R2011928-DLCS					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Arsenic, Total	6010C	36.8	40	92	34.9	40	87	80-120	5	20
Cadmium, Total	6010C	50.2	50.0	100	50.2	50.0	100	80-120	<1	20
Calcium, Total	6010C	2100	2000	103	2000	2000	102	80-120	<1	20
Iron, Total	6010C	1000	1000	100	990	1000	99	80-120	<1	20
Lead, Total	6010C	518	500	104	516	500	103	80-120	<1	20
Magnesium, Total	6010C	2000	2000	99	2000	2000	99	80-120	<1	20
Manganese, Total	6010C	491	500	98	489	500	98	80-120	<1	20
Potassium, Total	6010C	19200	20000	96	19100	20000	95	80-120	<1	20
Sodium, Total	6010C	20500	20000	103	20400	20000	102	80-120	<1	20

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011928-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	12/17/20 22:26	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	12/17/20 21:21	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	12/17/20 13:35	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	12/16/20 18:16	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	12/17/20 17:57	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	12/18/20 19:40	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	12/16/20 18:16	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	12/16/20 18:16	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	12/18/20 13:24	12/17/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	12/21/20 17:34	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	12/19/20 05:40	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	12/16/20 21:15	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2011928-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Bromide	9056A	0.10 U	mg/L	0.10	0.04	1	12/16/20 21:15	
Chloride	9056A	0.20 U	mg/L	0.20	0.05	1	12/16/20 21:15	
Nitrate as Nitrogen	9056A	0.10 U	mg/L	0.10	0.02	1	12/16/20 21:15	
Sulfate	9056A	0.20 U	mg/L	0.20	0.04	1	12/20/20 00:19	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20
Sample Matrix:	Water	**Date Received:**	12/16/20
		Date Analyzed:	12/17/20

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name:	MWV-1220	**Units:**	mg/L
Lab Code:	R2011928-001	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2011928-001MS			Duplicate Matrix Spike R2011928-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic (TOC)	1.7	11.5	10.0	99	12.2	10.0	106	48-135	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project:	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20
Sample Matrix:	Water	**Date Received:**	12/16/20
		Date Analyzed:	12/18/20

Duplicate Matrix Spike Summary
Chemical Oxygen Demand, Total

Sample Name:	DUP1-1220	**Units:**	mg/L
Lab Code:	R2011928-003	**Basis:**	NA
Analysis Method:	410.4		

		Matrix Spike R2011928-003MS			Duplicate Matrix Spike R2011928-003DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chemical Oxygen Demand, Total	5.0 U	26.9	25.0	108	22.2	25.0	89 *	90-110	19	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request:R2011928
Date Collected:12/15/20
Date Received:12/16/20
Date Analyzed:12/16/20 - 12/21/20

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: MWSBR-1220
Lab Code: R2011928-004

Units:mg/L
Basis:NA

			Matrix Spike			Duplicate Matrix Spike					
			R2011928-004MS			R2011928-004DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen, undistilled	350.1	0.050 U	0.235	0.250	94	0.235	0.250	94	90-110	<1	20
Bromide	9056A	1.0 U	10.0	10.0	100	9.9	10.0	99	80-120	<1	15
Chloride	9056A	0.9 J	20.1	20.0	96	20.0	20.0	95	80-120	<1	15
Phenolics, Total Recoverable	9066	0.0050 U	0.0408	0.0400	102	0.0406	0.0400	102	49-137	<1	20
Sulfate	9056A	38.7	57.3	20.0	93	56.7	20.0	90	80-120	<1	15
Nitrate as Nitrogen	9056A	1.0 U	9.8	10.0	98	9.7	10.0	97	80-120	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2011928
Project	Hakes C&D Landfill - 363 Routine Parameters	**Date Collected:**	12/15/20
Sample Matrix:	Water	**Date Received:**	12/16/20
		Date Analyzed:	12/17/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	MWSBR-1220	**Units:**	mg/L
Lab Code:	R2011928-004	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2011928-004DUP Result	Average	RPD	RPD Limit
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	2.0 U	2.0 U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2011928
Date Analyzed: 12/16/20 - 12/21/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2011928-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	21.6	20.0	108	80-120
Ammonia as Nitrogen, undistilled	350.1	0.246	0.250	98	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	183	198	92	85-115
Bromide	9056A	0.993	1.00	99	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	9.08	10.0	91	80-121
Chemical Oxygen Demand, Total	410.4	52.5	50.0	105	90-110
Chloride	9056A	1.95	2.00	98	80-120
Nitrate as Nitrogen	9056A	0.972	1.00	97	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.28	2.50	91	90-110
Phenolics, Total Recoverable	9066	0.0409	0.0400	102	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	896	914	98	90-110
Sulfate	9056A	1.98	2.00	99	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - 363 Routine Parameters
Sample Matrix: Water

Service Request: R2011928
Date Analyzed: 12/16/20 - 12/20/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2011928-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromide	9056A	0.990	1.00	99	80-120
Chloride	9056A	1.95	2.00	97	80-120
Nitrate as Nitrogen	9056A	0.972	1.00	97	80-120
Sulfate	9056A	2.00	2.00	100	80-120

December 29, 2020 Service Request No:R2010670

Russell Anderson
Casella Waste Systems, Inc.
26 Pleasant Street, Suite 3E
Concord, NH 03301

Laboratory Results for: Hakes C&D Landfill - Part 363 Parameters

Dear Russell,

Enclosed are the results of the sample(s) submitted to our laboratory November 11, 2020
For your reference, these analyses have been assigned our service request number **R2010670.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jon Brandes

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Received: 11/11/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Four water samples were received for analysis at ALS Environmental on 11/11/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D, 12/01/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 12/01/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

8270D: An MDL and LCS/LCSD recovery cannot be determined for p-Phenylenediamine. p-Phenylenediamine is degraded in the extraction procedure. The compound has been flagged with an “X” and should be considered as indeterminate.

N-Nitrosodiphenylamine and Diphenylamine identity cannot be distinguished since N-Nitrosodiphenylamine breaks down to diphenylamine in the injection port of the instrument. Quantitation provided for either compound is from the instrument response of both compounds.

Semivoa GC:

Method 8081B, 12/13/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8081B:The extraction of one or more sample(s) was initially performed within holding time, but were re-extracted due to a QC failure. Efforts were made to re-extract the samples as soon as possible. The re-extraction was performed past the recommended holding time. The data are flagged to indicate the holding time exceedance.

Method 8081B, 12/13/2020: The lower control limit for the spike recovery of the Laboratory Control Sample (LCSD) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The analytes affected are flagged in the LCSD Summary. Beta-endosulfan was out low in the lcsd by 1%, lcs was okay , samples reported.

Method 8082A, 12/03/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8082A, 12/03/2020: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly

Approved by _____ Date 12/29/2020

affected and no further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method 7196A, R2010670-001: Sample(s) required dilution due to the nature of the matrix. The reporting limits are adjusted to reflect the dilution.
Method 9056A Nitrate: The analysis of one or more samples was initially attempted within holding time but was not useable due to an analytical system or QC failure. Efforts were made to reanalyze the sample(s) as soon as possible after the analytical system was back in control. However, the reanalysis of the sample(s) was performed past the recommended holding time. The results from both analyses are reported. The data is flagged to indicate the holding time exceedance.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 11/20/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 11/20/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8260: Samples are routinely tested for pH after analysis to confirm that any acid added was sufficient to reduce the pH to <2 to extend the holding time from 7 days to 14 days. The following sample(s) were analyzed beyond 7 days and were found to be insufficiently preserved: R2010670-001.

Method 8260C, R2010670-001: Sample(s) required dilution due to the foaming nature of the matrix. The reporting limits are adjusted to reflect the dilution.

Approved by _____ Date 12/29/2020

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:**R2010670
Project: Hakes C&D Landfill - Part 363 Parameters

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010670-001	LCS-1120	11/10/2020	1320
R2010670-003	Trip Blank	11/10/2020	1320
R2010670-004	Field Blank	11/10/2020	1320

ALS Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585 288 5380

CHAIN of CUSTODY

Page 1 of 1

Client: Casella/On-Site
4376 Manning Ridge Road
Campbell, NY 14870

Project Manager: Russ Anderson/Jon Brandes

Project: Hakes C&D Landfill - Part 363 Expanded Parameters

Telephone No.: 585-593-1824

Email: jonb@on-siteis.com

Method of Shipment: FED EX

Special Detection Limit/Reporting: PDF to Russ and On-Site, and EDD to On-Site. PO 153189

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Matrix: Water	Matrix: Air	Matrix: Other	Prsv.: Yes	Prsv.: No	Sampling Date	Sampling Time	VOC's 8260 (HCL)	TOC Phenols (H2SO4)	BOD, Alkalinity, Total Color (NP)	8081/8082/8151/8270 (NP)	T-Metals (Exp List), Hard (HNO3)	T-CN (NaOH)	TDS, Cr+6, NO3, Br, Cl, SO4 (NP)	NH3, TKN, COD (H2SO4)	T-Ra-226(903.1),Ra 228(904.0)(HNO3)	Total Uranium (908.0) (HNO3)	Diss: Ra-226 (903.1), Ra-228 (904.0)	Dissolved: Uranium (908.0) (NP)	PFAS (EPA 537) (NP)	1,4 Dioxane (EPA 8270 SIM) (NP)
LCS-1120		27		X			X	X	11/10/20	1320	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trip Blank		3							11-10-20	1320	X													
Field Blank		1							11-10-20	1320														

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinquished by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)	Date	Time
Kevin Dye / Kevin Dye	11/10/20	1530			
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by laboratory: [signature]	11/11/2020	0950

Lab Work No.

363 Expanded Parameters

R2010670 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - Part 363 Parameters

Cooler Receipt and Preservation Check Form

R2010670 5
Casella Waste Systems, Inc.
Hakes C&D Landfill - Part 363 Parameters

Project/Client Casella Folder Number

Cooler received on 11/11/2020 by: @

COURIER: ALS (UPS) FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (Wet Ice) Dry Ice Gel packs present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 11/11/2020 Time: 1045 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.0	3.4	2.9	4.0	3.8		
Within 0-6°C?	(Y) N	(Y) N	(Y) N	(Y) N	(Y) N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-402 by @ on 11/11/2020 at 1105
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/11/2020 Time: 2000 by: JW

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12	223410	NaOH	✓		208385					
≤2	↓	HNO_3		✓	20200434					
≤2		H_2SO_4	✓		KIZI-25					
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 090720-1134, 80520-01, 20-0909, 053020-2A0

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: JW
PC Secondary Review: JWW 11/16/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters/

Sample Name: LCS-1120 **Date Collected:** 11/10/20
Lab Code: R2010670-001 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
350.1		SMEDBURY
351.2	MROGERSON	GNITAJOUPPI
410.4		SMEDBURY
6010C	AKONZEL	KMCLAEN
6010C	AKONZEL	NMANSEN
7196A		SMEDBURY
7470A	AKONZEL	AKONZEL
8081B	AFELSER	BALLGEIER
8082A	KSERCU	BALLGEIER
8151A	KSERCU	MPEDRO
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
8270D SIM	AFELSER	AFELSER
9056A		CWOODS
9066		BBOWE
Kelada-01		CWOODS
PFC/537M	KLMILLER	CCONOVER
SM 2120 B-2001(2011)		MROGERSON
SM 2320 B-1997(2011)		STALARICO
SM 2540 C-1997(2011)		KAWONG
SM 5210 B-2001(2011)		KMENGS
SM 5310 C-2000(2011)		SMEDBURY

Sample Name: LCS-1120 **Date Collected:** 11/10/20
Lab Code: R2010670-001.R01 **Date Received:** 11/11/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
9056A		NMANSEN
PFC/537M	KLMILLER	CCONOVER

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters/		

Sample Name:	Trip Blank	**Date Collected:**	11/10/20
Lab Code:	R2010670-003	**Date Received:**	11/11/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER

Sample Name:	Field Blank	**Date Collected:**	11/10/20
Lab Code:	R2010670-004	**Date Received:**	11/11/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
PFC/537M	KLMILLER	CCONOVER

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	100 U	100	4.0	20	11/20/20 17:59	
1,1,1-Trichloroethane (TCA)	100 U	100	4.0	20	11/20/20 17:59	
1,1,2,2-Tetrachloroethane	100 U	100	4.0	20	11/20/20 17:59	
1,1,2-Trichloroethane	100 U	100	4.0	20	11/20/20 17:59	
1,1-Dichloroethane (1,1-DCA)	100 U	100	4.0	20	11/20/20 17:59	
1,1-Dichloroethene (1,1-DCE)	100 U	100	4.0	20	11/20/20 17:59	
1,1-Dichloropropene	100 U	100	4.0	20	11/20/20 17:59	
1,2,3-Trichloropropane	100 U	100	5.2	20	11/20/20 17:59	
1,2-Dibromo-3-chloropropane (DBCP)	100 U	100	9.0	20	11/20/20 17:59	
1,2-Dibromoethane	100 U	100	4.0	20	11/20/20 17:59	
1,2-Dichloroethane	100 U	100	4.0	20	11/20/20 17:59	
1,2-Dichloropropane	100 U	100	4.0	20	11/20/20 17:59	
1,3-Dichloropropane	100 U	100	4.0	20	11/20/20 17:59	
2,2-Dichloropropane	100 U	100	4.8	20	11/20/20 17:59	
2-Butanone (MEK)	**68 J**	200	16	20	11/20/20 17:59	
2-Chloro-1,3-butadiene	100 U	100	4.0	20	11/20/20 17:59	
2-Hexanone	200 U	200	4.0	20	11/20/20 17:59	
2-Methyl-1-propanol (Isobutyl Alcohol)	2000 U	2000	660	20	11/20/20 17:59	
3-Chloro-1-propene	100 U	100	7.2	20	11/20/20 17:59	
4-Methyl-2-pentanone	**18 J**	200	4.0	20	11/20/20 17:59	
Acetone	**300**	200	100	20	11/20/20 17:59	
Acetonitrile	2000 U	2000	110	20	11/20/20 17:59	
Acrolein	2000 U	2000	18	20	11/20/20 17:59	
Acrylonitrile	2000 U	2000	18	20	11/20/20 17:59	
Benzene	100 U	100	4.0	20	11/20/20 17:59	
Bromochloromethane	100 U	100	4.0	20	11/20/20 17:59	
Bromodichloromethane	100 U	100	4.0	20	11/20/20 17:59	
Bromoform	100 U	100	5.0	20	11/20/20 17:59	
Bromomethane	100 U	100	14	20	11/20/20 17:59	
Carbon Disulfide	200 U	200	8.4	20	11/20/20 17:59	
Carbon Tetrachloride	100 U	100	6.8	20	11/20/20 17:59	
Chlorobenzene	100 U	100	4.0	20	11/20/20 17:59	
Chloroethane	100 U	100	4.6	20	11/20/20 17:59	
Chloroform	100 U	100	4.8	20	11/20/20 17:59	
Chloromethane	100 U	100	5.6	20	11/20/20 17:59	
Dibromochloromethane	100 U	100	4.0	20	11/20/20 17:59	
Dibromomethane	100 U	100	4.0	20	11/20/20 17:59	
Dichlorodifluoromethane (CFC 12)	100 U	100	4.2	20	11/20/20 17:59	
Dichloromethane	100 U	100	13	20	11/20/20 17:59	
Ethyl Methacrylate	200 U	200	4.0	20	11/20/20 17:59	
Ethylbenzene	100 U	100	4.0	20	11/20/20 17:59	
Iodomethane	200 U	200	86	20	11/20/20 17:59	
Methacrylonitrile	400 U	400	11	20	11/20/20 17:59	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Methyl Methacrylate	200 U	200	4.8	20	11/20/20 17:59	
Propionitrile	2000 U	2000	24	20	11/20/20 17:59	
Styrene	100 U	100	4.0	20	11/20/20 17:59	
Tetrachloroethene (PCE)	100 U	100	4.2	20	11/20/20 17:59	
Toluene	100 U	100	4.0	20	11/20/20 17:59	
Trichloroethene (TCE)	100 U	100	4.0	20	11/20/20 17:59	
Trichlorofluoromethane (CFC 11)	100 U	100	4.8	20	11/20/20 17:59	
Vinyl Acetate	200 U	200	22	20	11/20/20 17:59	
Vinyl Chloride	100 U	100	4.0	20	11/20/20 17:59	
cis-1,2-Dichloroethene	100 U	100	4.6	20	11/20/20 17:59	
cis-1,3-Dichloropropene	100 U	100	4.0	20	11/20/20 17:59	
m,p-Xylenes	100 U	100	4.0	20	11/20/20 17:59	
o-Xylene	100 U	100	4.0	20	11/20/20 17:59	
trans-1,2-Dichloroethene	100 U	100	4.0	20	11/20/20 17:59	
trans-1,3-Dichloropropene	100 U	100	4.6	20	11/20/20 17:59	
trans-1,4-Dichloro-2-butene	100 U	100	16	20	11/20/20 17:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	11/20/20 17:59	
Dibromofluoromethane	98	80 - 116	11/20/20 17:59	
Toluene-d8	101	87 - 121	11/20/20 17:59	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R2010670-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,1-Dichloropropene	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,2,3-Trichloropropane	5.0 U	5.0	0.26	1	11/20/20 12:31	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.45	1	11/20/20 12:31	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/20/20 12:31	
1,3-Dichloropropane	5.0 U	5.0	0.20	1	11/20/20 12:31	
2,2-Dichloropropane	5.0 U	5.0	0.24	1	11/20/20 12:31	
2-Butanone (MEK)	10 U	10	0.78	1	11/20/20 12:31	
2-Chloro-1,3-butadiene	5.0 U	5.0	0.20	1	11/20/20 12:31	
2-Hexanone	10 U	10	0.20	1	11/20/20 12:31	
2-Methyl-1-propanol (Isobutyl Alcohol)	100 U	100	33	1	11/20/20 12:31	
3-Chloro-1-propene	5.0 U	5.0	0.36	1	11/20/20 12:31	
4-Methyl-2-pentanone	10 U	10	0.20	1	11/20/20 12:31	
Acetone	10 U	10	5.0	1	11/20/20 12:31	
Acetonitrile	100 U	100	5.2	1	11/20/20 12:31	
Acrolein	100 U	100	0.90	1	11/20/20 12:31	
Acrylonitrile	100 U	100	0.90	1	11/20/20 12:31	
Benzene	5.0 U	5.0	0.20	1	11/20/20 12:31	
Bromochloromethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
Bromoform	5.0 U	5.0	0.25	1	11/20/20 12:31	
Bromomethane	5.0 U	5.0	0.70	1	11/20/20 12:31	
Carbon Disulfide	10 U	10	0.42	1	11/20/20 12:31	
Carbon Tetrachloride	5.0 U	5.0	0.34	1	11/20/20 12:31	
Chlorobenzene	5.0 U	5.0	0.20	1	11/20/20 12:31	
Chloroethane	5.0 U	5.0	0.23	1	11/20/20 12:31	
Chloroform	5.0 U	5.0	0.24	1	11/20/20 12:31	
Chloromethane	5.0 U	5.0	0.28	1	11/20/20 12:31	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
Dibromomethane	5.0 U	5.0	0.20	1	11/20/20 12:31	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.21	1	11/20/20 12:31	
Dichloromethane	5.0 U	5.0	0.65	1	11/20/20 12:31	
Ethyl Methacrylate	10 U	10	0.20	1	11/20/20 12:31	
Ethylbenzene	5.0 U	5.0	0.20	1	11/20/20 12:31	
Iodomethane	10 U	10	4.3	1	11/20/20 12:31	
Methacrylonitrile	20 U	20	0.52	1	11/20/20 12:31	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R2010670-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Methyl Methacrylate	10 U	10	0.24	1	11/20/20 12:31	
Propionitrile	100 U	100	1.2	1	11/20/20 12:31	
Styrene	5.0 U	5.0	0.20	1	11/20/20 12:31	
Tetrachloroethene (PCE)	5.0 U	5.0	0.21	1	11/20/20 12:31	
Toluene	5.0 U	5.0	0.20	1	11/20/20 12:31	
Trichloroethene (TCE)	5.0 U	5.0	0.20	1	11/20/20 12:31	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.24	1	11/20/20 12:31	
Vinyl Acetate	10 U	10	1.1	1	11/20/20 12:31	
Vinyl Chloride	5.0 U	5.0	0.20	1	11/20/20 12:31	
cis-1,2-Dichloroethene	5.0 U	5.0	0.23	1	11/20/20 12:31	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/20/20 12:31	
m,p-Xylenes	5.0 U	5.0	0.20	1	11/20/20 12:31	
o-Xylene	5.0 U	5.0	0.20	1	11/20/20 12:31	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/20/20 12:31	
trans-1,3-Dichloropropene	5.0 U	5.0	0.23	1	11/20/20 12:31	
trans-1,4-Dichloro-2-butene	5.0 U	5.0	0.78	1	11/20/20 12:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	11/20/20 12:31	
Dibromofluoromethane	104	80 - 116	11/20/20 12:31	
Toluene-d8	106	87 - 121	11/20/20 12:31	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
1,2,4-Trichlorobenzene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
1,2-Dichlorobenzene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
1,3,5-Trinitrobenzene	9.1 U	9.1	4.0	1	12/01/20 01:42	11/13/20	
1,3-Dichlorobenzene	9.1 U	9.1	0.92	1	12/01/20 01:42	11/13/20	
1,3-Dinitrobenzene	9.1 U	9.1	1.6	1	12/01/20 01:42	11/13/20	
1,4-Dichlorobenzene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
1,4-Naphthoquinone	45 U	45	1.3	1	12/01/20 01:42	11/13/20	
p-Phenylenediamine	**45 UX**	45	-	1	12/01/20 01:42	11/13/20	
1-Naphthylamine	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
2,3,4,6-Tetrachlorophenol	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
2,4,5-Trichlorophenol	9.1 U	9.1	0.99	1	12/01/20 01:42	11/13/20	
2,4,6-Trichlorophenol	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
2,4-Dichlorophenol	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
2,4-Dimethylphenol	**1.7 J**	9.1	1.3	1	12/01/20 01:42	11/13/20	
2,4-Dinitrophenol	45 U	45	19	1	12/01/20 01:42	11/13/20	
2,4-Dinitrotoluene	9.1 U	9.1	2.2	1	12/01/20 01:42	11/13/20	
2,6-Dichlorophenol	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
2,6-Dinitrotoluene	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
2-Acetylaminofluorene	9.1 U	9.1	3.8	1	12/01/20 01:42	11/13/20	
2-Chloronaphthalene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
2-Chlorophenol	9.1 U	9.1	0.97	1	12/01/20 01:42	11/13/20	
5-Nitro-2-methylaniline	9.1 U	9.1	1.8	1	12/01/20 01:42	11/13/20	
2-Methylnaphthalene	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
2-Methylphenol	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
2-Naphthylamine	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
2-Nitroaniline	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
2-Nitrophenol	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
3,3'-Dichlorobenzidine	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
3,3'-Dimethylbenzidine	45 U	45	0.94	1	12/01/20 01:42	11/13/20	
3- and 4-Methylphenol Coelution	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
3-Methylcholanthrene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
3-Nitroaniline	9.1 U	9.1	2.3	1	12/01/20 01:42	11/13/20	
4,6-Dinitro-2-methylphenol	45 U	45	18	1	12/01/20 01:42	11/13/20	
4-Aminobiphenyl	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
4-Bromophenyl Phenyl Ether	9.1 U	9.1	1.5	1	12/01/20 01:42	11/13/20	
4-Chloro-3-methylphenol	9.1 U	9.1	0.98	1	12/01/20 01:42	11/13/20	
4-Chloroaniline	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
4-Chlorophenyl Phenyl Ether	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
4-Nitroaniline	9.1 U	9.1	2.5	1	12/01/20 01:42	11/13/20	
4-Nitrophenol	45 U	45	5.8	1	12/01/20 01:42	11/13/20	
7,12-Dimethylbenz(a)anthracene	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Acenaphthene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthylene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Acetophenone	**6.0 J**	9.1	1.2	1	12/01/20 01:42	11/13/20	
Anthracene	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Benz(a)anthracene	9.1 U	9.1	1.5	1	12/01/20 01:42	11/13/20	
Benzo(a)pyrene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
Benzo(b)fluoranthene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
Benzo(g,h,i)perylene	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Benzo(k)fluoranthene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
Benzyl Alcohol	9.1 U	9.1	1.5	1	12/01/20 01:42	11/13/20	
2,2'-Oxybis(1-chloropropane)	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Bis(2-chloroethoxy)methane	9.1 U	9.1	1.8	1	12/01/20 01:42	11/13/20	
Bis(2-chloroethyl) Ether	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Bis(2-ethylhexyl) Phthalate	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Butyl Benzyl Phthalate	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Chlorobenzilate	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Chrysene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
Di-n-butyl Phthalate	9.1 U	9.1	1.9	1	12/01/20 01:42	11/13/20	
Di-n-octyl Phthalate	9.1 U	9.1	3.0	1	12/01/20 01:42	11/13/20	
Diallate	9.1 U	9.1	1.8	1	12/01/20 01:42	11/13/20	
Dibenz(a,h)anthracene	9.1 U	9.1	0.93	1	12/01/20 01:42	11/13/20	
Dibenzofuran	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Diethyl Phthalate	**1.3 J**	9.1	0.98	1	12/01/20 01:42	11/13/20	
Dimethoate	9.1 U	9.1	1.7	1	12/01/20 01:42	11/13/20	
Dimethyl Phthalate	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Diphenylamine	9.1 U	9.1	2.4	1	12/01/20 01:42	11/13/20	
Disulfoton	9.1 U	9.1	2.8	1	12/01/20 01:42	11/13/20	
Ethyl Methanesulfonate	9.1 U	9.1	0.99	1	12/01/20 01:42	11/13/20	
Famphur	9.1 U	9.1	5.0	1	12/01/20 01:42	11/13/20	
Fluoranthene	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
Fluorene	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Hexachlorobenzene	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
Hexachlorobutadiene	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Hexachlorocyclopentadiene	9.1 U	9.1	2.0	1	12/01/20 01:42	11/13/20	
Hexachloroethane	9.1 U	9.1	0.96	1	12/01/20 01:42	11/13/20	
Hexachloropropene	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Indeno(1,2,3-cd)pyrene	9.1 U	9.1	1.6	1	12/01/20 01:42	11/13/20	
Isodrin	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
Isophorone	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Isosafrole	9.1 U	9.1	1.6	1	12/01/20 01:42	11/13/20	
Kepone	9.1 U	9.1	4.6	1	12/01/20 01:42	11/13/20	
Methapyrilene	45 U	45	40	1	12/01/20 01:42	11/13/20	
Methyl Methanesulfonate	9.1 U	9.1	0.95	1	12/01/20 01:42	11/13/20	
Methyl Parathion	9.1 U	9.1	1.5	1	12/01/20 01:42	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
N-Nitrosodi-n-butylamine	9.1 U	9.1	1.9	1	12/01/20 01:42	11/13/20	
N-Nitrosodi-n-propylamine	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
N-Nitrosodiethylamine	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
N-Nitrosodimethylamine	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
N-Nitrosodiphenylamine	9.1 U	9.1	2.4	1	12/01/20 01:42	11/13/20	
N-Nitrosomethylethylamine	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
N-Nitrosopiperidine	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
N-Nitrosopyrrolidine	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Naphthalene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	
Nitrobenzene	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
O,O,O-Triethyl Phosphorothioate	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Parathion	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Pentachlorobenzene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Pentachloronitrobenzene (PCNB)	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Pentachlorophenol (PCP)	45 U	45	8.9	1	12/01/20 01:42	11/13/20	
Phenacetin	9.1 U	9.1	1.4	1	12/01/20 01:42	11/13/20	
Phenanthrene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Phenol	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
Phorate	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Pronamide	9.1 U	9.1	1.6	1	12/01/20 01:42	11/13/20	
Pyrene	9.1 U	9.1	1.3	1	12/01/20 01:42	11/13/20	
Safrole	9.1 U	9.1	1.2	1	12/01/20 01:42	11/13/20	
Thionazin	9.1 U	9.1	1.5	1	12/01/20 01:42	11/13/20	
o-Toluidine	9.1 U	9.1	0.91	1	12/01/20 01:42	11/13/20	
p-Dimethylaminoazobenzene	9.1 U	9.1	1.1	1	12/01/20 01:42	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	97	35 - 141	12/01/20 01:42	
2-Fluorobiphenyl	67	31 - 118	12/01/20 01:42	
2-Fluorophenol	38	10 - 105	12/01/20 01:42	
Nitrobenzene-d5	58	31 - 110	12/01/20 01:42	
Phenol-d6	34	10 - 107	12/01/20 01:42	
p-Terphenyl-d14	72	10 - 165	12/01/20 01:42	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**110**	0.40	0.27	1	11/18/20 01:14	11/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	86	64 - 124	11/18/20 01:14	

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
4,4'-DDE	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
4,4'-DDT	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Aldrin	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Dieldrin	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Endosulfan I	**0.27**	0.045	0.019	1	11/23/20 14:31	11/12/20	
Endosulfan II	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Endosulfan Sulfate	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Endrin	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Endrin Aldehyde	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Heptachlor	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Heptachlor Epoxide	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
Methoxychlor	**0.062**	0.045	0.019	1	11/23/20 14:31	11/12/20	
Toxaphene	0.46 U	0.46	0.46	1	11/23/20 14:31	11/12/20	
alpha-BHC	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
alpha-Chlordane	**0.045 U**	0.045	0.019	1	11/23/20 14:31	11/12/20	
beta-BHC	**0.030 JP**	0.045	0.019	1	11/23/20 14:31	11/12/20	
delta-BHC	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	
gamma-BHC (Lindane)	**0.045 J**	0.045	0.019	1	11/23/20 14:31	11/12/20	
gamma-Chlordane	0.045 U	0.045	0.019	1	11/23/20 14:31	11/12/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	17	10 - 164	11/23/20 14:31	
Tetrachloro-m-xylene	23	10 - 147	11/23/20 14:31	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
4,4'-DDE	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
4,4'-DDT	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Aldrin	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Dieldrin	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Endosulfan I	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Endosulfan II	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Endosulfan Sulfate	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Endrin	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Endrin Aldehyde	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Heptachlor	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Heptachlor Epoxide	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Methoxychlor	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
Toxaphene	0.46 U	0.46	0.46	1	12/13/20 21:07	12/10/20	*
alpha-BHC	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
alpha-Chlordane	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
beta-BHC	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
delta-BHC	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*
gamma-BHC (Lindane)	**0.087**	0.045	0.019	1	12/13/20 21:07	12/10/20	*
gamma-Chlordane	0.045 U	0.045	0.019	1	12/13/20 21:07	12/10/20	*

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	40	10 - 164	12/13/20 21:07	
Tetrachloro-m-xylene	55	10 - 147	12/13/20 21:07	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	
Aroclor 1221	1.8 U	1.8	0.91	1	11/23/20 17:14	11/12/20	
Aroclor 1232	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	
Aroclor 1242	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	
Aroclor 1248	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	
Aroclor 1254	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	
Aroclor 1260	0.91 U	0.91	0.46	1	11/23/20 17:14	11/12/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	25	10 - 152	11/23/20 17:14	
Tetrachloro-m-xylene	37	14 - 129	11/23/20 17:14	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	
Aroclor 1221	1.8 U	1.8	0.91	1	12/03/20 03:18	11/30/20	
Aroclor 1232	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	
Aroclor 1242	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	
Aroclor 1248	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	
Aroclor 1254	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	
Aroclor 1260	0.91 U	0.91	0.46	1	12/03/20 03:18	11/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	33	10 - 152	12/03/20 03:18	
Tetrachloro-m-xylene	69	14 - 129	12/03/20 03:18	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ug/L
Lab Code:	R2010670-001	**Basis:**	NA

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	0.45 U	0.45	0.13	1	11/18/20 15:48	11/16/20	
2,4,5-TP	0.45 U	0.45	0.11	1	11/18/20 15:48	11/16/20	
2,4-D	0.45 U	0.45	0.11	1	11/18/20 15:48	11/16/20	
Dinoseb	0.45 U	0.45	0.088	1	11/18/20 15:48	11/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	69	10 - 136	11/18/20 15:48	

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Casella Waste Systems (Hampden M	**Service Request:**	LCS-1120
Project No.:	R2010670	**Date Collected:**	11/10/2020
Project Name:		**Date Received:**	11/11/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **LCS-1120** **Lab Code:** **R2010670-001**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	315		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	21.2		
Barium	6010C	20.0	3.0	1.0	665		
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Boron	6010C	200	12.0	1.0	9390		
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	189000		
Chromium	6010C	10.0	0.590	1.0	35.8		
Cobalt	6010C	50.0	0.890	1.0	1.5	J	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	2080		
Lead	6010C	5.0	2.1	1.0	5.0	U	
Magnesium	6010C	1000	29.0	1.0	131000		
Manganese	6010C	10.0	3.7	1.0	3480		
Nickel	6010C	40.0	2.6	1.0	9.9	J	
Potassium	6010C	2000	200	1.0	81900		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	10000	1300	10.0	575000		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Tin	6010C	500	8.0	1.0	500	U	
Vanadium	6010C	50.0	0.670	1.0	13.8	J	
Zinc	6010C	20.0	9.4	1.0	20.5		

% Solids: **0.0**

Comments:

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Basis:**	NA
Lab Code:	R2010670-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	**1190**		mg/L	2.0	1.8	1	11/18/20 18:23	NA	
Ammonia as Nitrogen, undistilled	350.1	**84.8**		mg/L	5.0	2.6	100	11/14/20 20:39	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	**21.1**		mg/L	2.0	-	1	11/11/20 15:27	NA	
Bromide	9056A	**4.9**		mg/L	1.0	0.4	10	11/12/20 12:16	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**202**		mg/L	20	9	20	11/19/20 19:37	NA	
Chemical Oxygen Demand, Total	410.4	**575**		mg/L	5.0	3.8	1	11/14/20 15:45	NA	
Chloride	9056A	**878**		mg/L	60	13	300	11/13/20 15:59	NA	
Chromium, Hexavalent	7196A	0.050	U	mg/L	0.050	0.012	5	11/11/20 13:00	NA	
Color, True	SM 2120 B-2001(2011)	**700**		ColorUnits	50	-	50	11/11/20 21:40	NA	
Cyanide, Total	Kelada-01	**0.022**		mg/L	0.010	0.008	2	11/18/20 12:22	NA	
Hardness, Total as CaCO3	SM 2340 B-1997(2011)	**1010**		mg/L	6.62	-	1	NA	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/11/20 18:36	NA	
Nitrate as Nitrogen	9056A	1.0	U	mg/L	1.0	0.2	10	11/12/20 12:16	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**109**		mg/L	4.0	3.0	20	11/20/20 12:04	11/19/20	
pH of Color Analysis	SM 2120 B-2001(2011)	**7.76**		pH Units	-	-	50	11/16/20 21:45	NA	*
Phenolics, Total Recoverable	9066	**0.0082**		mg/L	0.0050	0.0029	1	11/23/20 17:29	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**2830**		mg/L	40	36	1	11/17/20 16:45	NA	
Sulfate	9056A	**251**		mg/L	6.0	1.2	30	11/13/20 17:12	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85-122	Dibromofluoromethane 80-116	Toluene-d8 87-121
LCS-1120	R2010670-001	99	98	101
Trip Blank	R2010670-003	104	104	106
Method Blank	RQ2014375-07	99	102	102
Lab Control Sample	RQ2014375-04	103	104	104

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014375-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,1-Dichloropropene	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,2,3-Trichloropropane	5.0 U	5.0	0.26	1	11/20/20 10:22	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.45	1	11/20/20 10:22	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/20/20 10:22	
1,3-Dichloropropane	5.0 U	5.0	0.20	1	11/20/20 10:22	
2,2-Dichloropropane	5.0 U	5.0	0.24	1	11/20/20 10:22	
2-Butanone (MEK)	10 U	10	0.78	1	11/20/20 10:22	
2-Chloro-1,3-butadiene	5.0 U	5.0	0.20	1	11/20/20 10:22	
2-Hexanone	10 U	10	0.20	1	11/20/20 10:22	
2-Methyl-1-propanol (Isobutyl Alcohol)	100 U	100	33	1	11/20/20 10:22	
3-Chloro-1-propene	5.0 U	5.0	0.36	1	11/20/20 10:22	
4-Methyl-2-pentanone	10 U	10	0.20	1	11/20/20 10:22	
Acetone	10 U	10	5.0	1	11/20/20 10:22	
Acetonitrile	100 U	100	5.2	1	11/20/20 10:22	
Acrolein	100 U	100	0.90	1	11/20/20 10:22	
Acrylonitrile	100 U	100	0.90	1	11/20/20 10:22	
Benzene	5.0 U	5.0	0.20	1	11/20/20 10:22	
Bromochloromethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
Bromoform	5.0 U	5.0	0.25	1	11/20/20 10:22	
Bromomethane	5.0 U	5.0	0.70	1	11/20/20 10:22	
Carbon Disulfide	10 U	10	0.42	1	11/20/20 10:22	
Carbon Tetrachloride	5.0 U	5.0	0.34	1	11/20/20 10:22	
Chlorobenzene	5.0 U	5.0	0.20	1	11/20/20 10:22	
Chloroethane	5.0 U	5.0	0.23	1	11/20/20 10:22	
Chloroform	5.0 U	5.0	0.24	1	11/20/20 10:22	
Chloromethane	5.0 U	5.0	0.28	1	11/20/20 10:22	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
Dibromomethane	5.0 U	5.0	0.20	1	11/20/20 10:22	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.21	1	11/20/20 10:22	
Dichloromethane	5.0 U	5.0	0.65	1	11/20/20 10:22	
Ethyl Methacrylate	10 U	10	0.20	1	11/20/20 10:22	
Ethylbenzene	5.0 U	5.0	0.20	1	11/20/20 10:22	
Iodomethane	10 U	10	4.3	1	11/20/20 10:22	
Methacrylonitrile	20 U	20	0.52	1	11/20/20 10:22	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014375-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Methyl Methacrylate	10 U	10	0.24	1	11/20/20 10:22	
Propionitrile	100 U	100	1.2	1	11/20/20 10:22	
Styrene	5.0 U	5.0	0.20	1	11/20/20 10:22	
Tetrachloroethene (PCE)	5.0 U	5.0	0.21	1	11/20/20 10:22	
Toluene	5.0 U	5.0	0.20	1	11/20/20 10:22	
Trichloroethene (TCE)	5.0 U	5.0	0.20	1	11/20/20 10:22	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.24	1	11/20/20 10:22	
Vinyl Acetate	10 U	10	1.1	1	11/20/20 10:22	
Vinyl Chloride	5.0 U	5.0	0.20	1	11/20/20 10:22	
cis-1,2-Dichloroethene	5.0 U	5.0	0.23	1	11/20/20 10:22	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/20/20 10:22	
m,p-Xylenes	5.0 U	5.0	0.20	1	11/20/20 10:22	
o-Xylene	5.0 U	5.0	0.20	1	11/20/20 10:22	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/20/20 10:22	
trans-1,3-Dichloropropene	5.0 U	5.0	0.23	1	11/20/20 10:22	
trans-1,4-Dichloro-2-butene	5.0 U	5.0	0.78	1	11/20/20 10:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	11/20/20 10:22	
Dibromofluoromethane	102	80 - 116	11/20/20 10:22	
Toluene-d8	102	87 - 121	11/20/20 10:22	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/20/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2014375-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1,2-Tetrachloroethane	8260C	17.4	20.0	87	76-129
1,1,1-Trichloroethane (TCA)	8260C	16.8	20.0	84	75-125
1,1,2,2-Tetrachloroethane	8260C	19.4	20.0	97	78-126
1,1,2-Trichloroethane	8260C	18.5	20.0	92	82-121
1,1-Dichloroethane (1,1-DCA)	8260C	19.2	20.0	96	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	19.5	20.0	98	71-118
1,1-Dichloropropene	8260C	17.0	20.0	85	76-118
1,2,3-Trichloropropane	8260C	18.7	20.0	94	75-118
1,2-Dibromo-3-chloropropane (DBCP)	8260C	16.6	20.0	83	55-136
1,2-Dibromoethane	8260C	18.8	20.0	94	82-127
1,2-Dichloroethane	8260C	18.6	20.0	93	71-127
1,2-Dichloropropane	8260C	18.9	20.0	94	80-119
1,3-Dichloropropane	8260C	19.2	20.0	96	83-119
2,2-Dichloropropane	8260C	18.7	20.0	93	61-139
2-Butanone (MEK)	8260C	18.1	20.0	91	61-137
2-Chloro-1,3-butadiene	8260C	19.7	20.0	99	68-139
2-Hexanone	8260C	18.5	20.0	93	63-124
2-Methyl-1-propanol (Isobutyl Alcohol)	8260C	318	400	79	51-143
3-Chloro-1-propene	8260C	19.1	20.0	96	61-143
4-Methyl-2-pentanone	8260C	18.3	20.0	92	66-124
Acetone	8260C	19.3	20.0	96	40-161
Acetonitrile	8260C	89.7 J	100	90	46-154
Acrolein	8260C	37.9 J	40.0	95	13-165
Acrylonitrile	8260C	93.8 J	100	94	71-130
Benzene	8260C	18.3	20.0	92	79-119
Bromochloromethane	8260C	18.1	20.0	91	81-126
Bromodichloromethane	8260C	17.1	20.0	85	81-123
Bromoform	8260C	16.6	20.0	83	65-146
Bromomethane	8260C	22.1	20.0	111	42-166
Carbon Disulfide	8260C	23.2	20.0	116	66-128
Carbon Tetrachloride	8260C	16.1	20.0	81	70-127
Chlorobenzene	8260C	18.7	20.0	94	80-121
Chloroethane	8260C	18.4	20.0	92	62-131

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/20/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2014375-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloroform	8260C	18.8	20.0	94	79-120
Chloromethane	8260C	17.8	20.0	89	65-135
Dibromochloromethane	8260C	19.3	20.0	96	72-128
Dibromomethane	8260C	18.1	20.0	91	80-118
Dichlorodifluoromethane (CFC 12)	8260C	15.8	20.0	79	59-155
Dichloromethane	8260C	18.9	20.0	94	73-122
Ethyl Methacrylate	8260C	18.7	20.0	93	68-132
Ethylbenzene	8260C	18.9	20.0	95	76-120
Iodomethane	8260C	22.2	20.0	111	18-160
Methacrylonitrile	8260C	17.9 J	20.0	89	68-123
Methyl Methacrylate	8260C	18.4	20.0	92	68-129
Propionitrile	8260C	89.7 J	100	90	69-126
Styrene	8260C	17.4	20.0	87	80-124
Tetrachloroethene (PCE)	8260C	16.0	20.0	80	72-125
Toluene	8260C	18.4	20.0	92	79-119
Trichloroethene (TCE)	8260C	17.3	20.0	87	74-122
Trichlorofluoromethane (CFC 11)	8260C	17.7	20.0	89	71-136
Vinyl Acetate	8260C	32.1	20.0	161	52-174
Vinyl Chloride	8260C	17.7	20.0	88	74-159
cis-1,2-Dichloroethene	8260C	18.8	20.0	94	80-121
cis-1,3-Dichloropropene	8260C	17.8	20.0	89	77-122
m,p-Xylenes	8260C	37.4	40.0	93	80-126
o-Xylene	8260C	18.6	20.0	93	79-123
trans-1,2-Dichloroethene	8260C	20.8	20.0	104	73-118
trans-1,3-Dichloropropene	8260C	17.8	20.0	89	71-133
trans-1,4-Dichloro-2-butene	8260C	15.4	20.0	77	39-137

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 35-141	2-Fluorobiphenyl 31-118	2-Fluorophenol 10-105
LCS-1120	R2010670-001	97	67	38
Method Blank	RQ2013973-01	53	38	28
Method Blank	RQ2013973-01	56	40	29
Lab Control Sample	RQ2013973-02	82	62	35
Duplicate Lab Control Sample	RQ2013973-03	84	72	37

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670

Project: Hakes C&D Landfill - Part 363 Parameters

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 31-110	Phenol-d6 10-107	p-Terphenyl-d14 10-165
LCS-1120	R2010670-001	58	34	72
Method Blank	RQ2013973-01	42	21	67
Method Blank	RQ2013973-01	35	22	67
Lab Control Sample	RQ2013973-02	53	28	81
Duplicate Lab Control Sample	RQ2013973-03	64	31	89

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
1,2,4-Trichlorobenzene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
1,2-Dichlorobenzene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
1,3,5-Trinitrobenzene	10 U	10	4.4	1	11/18/20 13:29	11/13/20	
1,3-Dichlorobenzene	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
1,3-Dinitrobenzene	10 U	10	1.8	1	11/18/20 13:29	11/13/20	
1,4-Dichlorobenzene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
1,4-Naphthoquinone	50 U	50	1.4	1	11/18/20 13:29	11/13/20	
p-Phenylenediamine	**50 UX**	50	-	1	11/18/20 13:29	11/13/20	
1-Naphthylamine	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
2,3,4,6-Tetrachlorophenol	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
2,4,5-Trichlorophenol	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
2,4,6-Trichlorophenol	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2,4-Dichlorophenol	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
2,4-Dimethylphenol	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2,4-Dinitrophenol	50 U	50	20	1	11/18/20 13:29	11/13/20	
2,4-Dinitrotoluene	10 U	10	2.4	1	11/18/20 13:29	11/13/20	
2,6-Dichlorophenol	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
2,6-Dinitrotoluene	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2-Acetylaminofluorene	10 U	10	4.2	1	11/18/20 13:29	11/13/20	
2-Chloronaphthalene	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2-Chlorophenol	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
5-Nitro-2-methylaniline	10 U	10	1.9	1	11/18/20 13:29	11/13/20	
2-Methylnaphthalene	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
2-Methylphenol	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
2-Naphthylamine	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2-Nitroaniline	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
2-Nitrophenol	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
3,3'-Dichlorobenzidine	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
3,3'-Dimethylbenzidine	50 U	50	1.1	1	11/18/20 13:29	11/13/20	
3- and 4-Methylphenol Coelution	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
3-Methylcholanthrene	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
3-Nitroaniline	10 U	10	2.5	1	11/18/20 13:29	11/13/20	
4,6-Dinitro-2-methylphenol	50 U	50	20	1	11/18/20 13:29	11/13/20	
4-Aminobiphenyl	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
4-Bromophenyl Phenyl Ether	10 U	10	1.7	1	11/18/20 13:29	11/13/20	
4-Chloro-3-methylphenol	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
4-Chloroaniline	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
4-Chlorophenyl Phenyl Ether	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
4-Nitroaniline	10 U	10	2.7	1	11/18/20 13:29	11/13/20	
4-Nitrophenol	50 U	50	6.4	1	11/18/20 13:29	11/13/20	
7,12-Dimethylbenz(a)anthracene	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Acenaphthene	10 U	10	1.4	1	11/18/20 13:29	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthylene	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Acetophenone	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Anthracene	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Benz(a)anthracene	10 U	10	1.6	1	11/18/20 13:29	11/13/20	
Benzo(a)pyrene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Benzyl Alcohol	10 U	10	1.6	1	11/18/20 13:29	11/13/20	
2,2'-Oxybis(1-chloropropane)	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Bis(2-chloroethoxy)methane	10 U	10	1.9	1	11/18/20 13:29	11/13/20	
Bis(2-chloroethyl) Ether	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Bis(2-ethylhexyl) Phthalate	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Butyl Benzyl Phthalate	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Chlorobenzilate	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Chrysene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
Di-n-butyl Phthalate	10 U	10	2.0	1	11/18/20 13:29	11/13/20	
Di-n-octyl Phthalate	10 U	10	3.3	1	11/18/20 13:29	11/13/20	
Diallate	10 U	10	2.0	1	11/18/20 13:29	11/13/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
Dibenzofuran	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Diethyl Phthalate	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
Dimethoate	10 U	10	1.8	1	11/18/20 13:29	11/13/20	
Dimethyl Phthalate	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Diphenylamine	10 U	10	2.7	1	11/18/20 13:29	11/13/20	
Disulfoton	10 U	10	3.0	1	11/18/20 13:29	11/13/20	
Ethyl Methanesulfonate	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
Famphur	10 U	10	5.4	1	11/18/20 13:29	11/13/20	
Fluoranthene	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
Fluorene	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Hexachlorobenzene	10 U	10	1.6	1	11/18/20 13:29	11/13/20	
Hexachlorobutadiene	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Hexachlorocyclopentadiene	10 U	10	2.2	1	11/18/20 13:29	11/13/20	
Hexachloroethane	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
Hexachloropropene	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	11/18/20 13:29	11/13/20	
Isodrin	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
Isophorone	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Isosafrole	10 U	10	1.7	1	11/18/20 13:29	11/13/20	
Kepone	10 U	10	5.0	1	11/18/20 13:29	11/13/20	
Methapyrilene	50 U	50	44	1	11/18/20 13:29	11/13/20	
Methyl Methanesulfonate	10 U	10	1.1	1	11/18/20 13:29	11/13/20	
Methyl Parathion	10 U	10	1.7	1	11/18/20 13:29	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
N-Nitrosodi-n-butylamine	10 U	10	2.1	1	11/18/20 13:29	11/13/20	
N-Nitrosodi-n-propylamine	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
N-Nitrosodiethylamine	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
N-Nitrosodimethylamine	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
N-Nitrosodiphenylamine	10 U	10	2.7	1	11/18/20 13:29	11/13/20	
N-Nitrosomethylethylamine	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
N-Nitrosopiperidine	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
N-Nitrosopyrrolidine	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Naphthalene	10 U	10	1.2	1	11/18/20 13:29	11/13/20	
Nitrobenzene	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
O,O,O-Triethyl Phosphorothioate	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Parathion	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Pentachlorobenzene	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Pentachloronitrobenzene (PCNB)	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
Pentachlorophenol (PCP)	50 U	50	9.8	1	11/18/20 13:29	11/13/20	
Phenacetin	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
Phenanthrene	**1.6 J**	10	1.4	1	11/18/20 13:29	11/13/20	
Phenol	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
Phorate	10 U	10	1.4	1	11/18/20 13:29	11/13/20	
Pronamide	10 U	10	1.8	1	11/18/20 13:29	11/13/20	
Pyrene	10 U	10	1.5	1	11/18/20 13:29	11/13/20	
Safrole	10 U	10	1.3	1	11/18/20 13:29	11/13/20	
Thionazin	10 U	10	1.6	1	11/18/20 13:29	11/13/20	
o-Toluidine	10 U	10	1.0	1	11/18/20 13:29	11/13/20	
p-Dimethylaminoazobenzene	10 U	10	1.3	1	11/18/20 13:29	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	53	35 - 141	11/18/20 13:29	
2-Fluorobiphenyl	38	31 - 118	11/18/20 13:29	
2-Fluorophenol	28	10 - 105	11/18/20 13:29	
Nitrobenzene-d5	42	31 - 110	11/18/20 13:29	
Phenol-d6	21	10 - 107	11/18/20 13:29	
p-Terphenyl-d14	67	10 - 165	11/18/20 13:29	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
1,2,4-Trichlorobenzene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
1,2-Dichlorobenzene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
1,3,5-Trinitrobenzene	10 U	10	4.4	1	11/25/20 20:33	11/13/20	
1,3-Dichlorobenzene	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
1,3-Dinitrobenzene	10 U	10	1.8	1	11/25/20 20:33	11/13/20	
1,4-Dichlorobenzene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
1,4-Naphthoquinone	50 U	50	1.4	1	11/25/20 20:33	11/13/20	
p-Phenylenediamine	**50 UX**	50	-	1	11/25/20 20:33	11/13/20	
1-Naphthylamine	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
2,3,4,6-Tetrachlorophenol	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
2,4,5-Trichlorophenol	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
2,4,6-Trichlorophenol	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2,4-Dichlorophenol	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
2,4-Dimethylphenol	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2,4-Dinitrophenol	50 U	50	20	1	11/25/20 20:33	11/13/20	
2,4-Dinitrotoluene	10 U	10	2.4	1	11/25/20 20:33	11/13/20	
2,6-Dichlorophenol	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
2,6-Dinitrotoluene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2-Acetylaminofluorene	10 U	10	4.2	1	11/25/20 20:33	11/13/20	
2-Chloronaphthalene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2-Chlorophenol	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
5-Nitro-2-methylaniline	10 U	10	1.9	1	11/25/20 20:33	11/13/20	
2-Methylnaphthalene	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
2-Methylphenol	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
2-Naphthylamine	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2-Nitroaniline	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
2-Nitrophenol	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
3,3'-Dichlorobenzidine	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
3,3'-Dimethylbenzidine	50 U	50	1.1	1	11/25/20 20:33	11/13/20	
3- and 4-Methylphenol Coelution	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
3-Methylcholanthrene	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
3-Nitroaniline	10 U	10	2.5	1	11/25/20 20:33	11/13/20	
4,6-Dinitro-2-methylphenol	50 U	50	20	1	11/25/20 20:33	11/13/20	
4-Aminobiphenyl	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
4-Bromophenyl Phenyl Ether	10 U	10	1.7	1	11/25/20 20:33	11/13/20	
4-Chloro-3-methylphenol	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
4-Chloroaniline	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
4-Chlorophenyl Phenyl Ether	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
4-Nitroaniline	10 U	10	2.7	1	11/25/20 20:33	11/13/20	
4-Nitrophenol	50 U	50	6.4	1	11/25/20 20:33	11/13/20	
7,12-Dimethylbenz(a)anthracene	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Acenaphthene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthylene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Acetophenone	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Anthracene	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Benz(a)anthracene	10 U	10	1.6	1	11/25/20 20:33	11/13/20	
Benzo(a)pyrene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Benzyl Alcohol	10 U	10	1.6	1	11/25/20 20:33	11/13/20	
2,2'-Oxybis(1-chloropropane)	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Bis(2-chloroethoxy)methane	10 U	10	1.9	1	11/25/20 20:33	11/13/20	
Bis(2-chloroethyl) Ether	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Bis(2-ethylhexyl) Phthalate	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Butyl Benzyl Phthalate	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Chlorobenzilate	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Chrysene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
Di-n-butyl Phthalate	10 U	10	2.0	1	11/25/20 20:33	11/13/20	
Di-n-octyl Phthalate	10 U	10	3.3	1	11/25/20 20:33	11/13/20	
Diallate	10 U	10	2.0	1	11/25/20 20:33	11/13/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
Dibenzofuran	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Diethyl Phthalate	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
Dimethoate	10 U	10	1.8	1	11/25/20 20:33	11/13/20	
Dimethyl Phthalate	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Diphenylamine	10 U	10	2.7	1	11/25/20 20:33	11/13/20	
Disulfoton	10 U	10	3.0	1	11/25/20 20:33	11/13/20	
Ethyl Methanesulfonate	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
Famphur	10 U	10	5.4	1	11/25/20 20:33	11/13/20	
Fluoranthene	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
Fluorene	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Hexachlorobenzene	10 U	10	1.6	1	11/25/20 20:33	11/13/20	
Hexachlorobutadiene	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Hexachlorocyclopentadiene	10 U	10	2.2	1	11/25/20 20:33	11/13/20	
Hexachloroethane	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
Hexachloropropene	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	11/25/20 20:33	11/13/20	
Isodrin	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
Isophorone	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Isosafrole	10 U	10	1.7	1	11/25/20 20:33	11/13/20	
Kepone	10 U	10	5.0	1	11/25/20 20:33	11/13/20	
Methapyrilene	50 U	50	44	1	11/25/20 20:33	11/13/20	
Methyl Methanesulfonate	10 U	10	1.1	1	11/25/20 20:33	11/13/20	
Methyl Parathion	10 U	10	1.7	1	11/25/20 20:33	11/13/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013973-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
N-Nitrosodi-n-butylamine	10 U	10	2.1	1	11/25/20 20:33	11/13/20	
N-Nitrosodi-n-propylamine	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
N-Nitrosodiethylamine	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
N-Nitrosodimethylamine	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
N-Nitrosodiphenylamine	10 U	10	2.7	1	11/25/20 20:33	11/13/20	
N-Nitrosomethylethylamine	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
N-Nitrosopiperidine	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
N-Nitrosopyrrolidine	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Naphthalene	10 U	10	1.2	1	11/25/20 20:33	11/13/20	
Nitrobenzene	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
O,O,O-Triethyl Phosphorothioate	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Parathion	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Pentachlorobenzene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Pentachloronitrobenzene (PCNB)	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
Pentachlorophenol (PCP)	50 U	50	9.8	1	11/25/20 20:33	11/13/20	
Phenacetin	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
Phenanthrene	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Phenol	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
Phorate	10 U	10	1.4	1	11/25/20 20:33	11/13/20	
Pronamide	10 U	10	1.8	1	11/25/20 20:33	11/13/20	
Pyrene	10 U	10	1.5	1	11/25/20 20:33	11/13/20	
Safrole	10 U	10	1.3	1	11/25/20 20:33	11/13/20	
Thionazin	10 U	10	1.6	1	11/25/20 20:33	11/13/20	
o-Toluidine	10 U	10	1.0	1	11/25/20 20:33	11/13/20	
p-Dimethylaminoazobenzene	10 U	10	1.3	1	11/25/20 20:33	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	56	35 - 141	11/25/20 20:33	
2-Fluorobiphenyl	40	31 - 118	11/25/20 20:33	
2-Fluorophenol	29	10 - 105	11/25/20 20:33	
Nitrobenzene-d5	35	31 - 110	11/25/20 20:33	
Phenol-d6	22	10 - 107	11/25/20 20:33	
p-Terphenyl-d14	67	10 - 165	11/25/20 20:33	

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters **Date Analyzed:** 11/18/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013973-02			RQ2013973-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	58.3	80.5	72	67.3	80.5	84	15-132	15	30
1,2,4-Trichlorobenzene	8270D	30.8	80.0	39	39.5	80.0	49	10-127	23	30
1,2-Dichlorobenzene	8270D	25.3	80.0	32	31.1	80.0	39	23-130	20	30
1,3-Dichlorobenzene	8270D	23.9	80.0	30	28.9	80.0	36	21-90	18	30
1,3-Dinitrobenzene	8270D	62.6	80.0	78	71.3	80.0	89	51-125	13	30
1,4-Dichlorobenzene	8270D	24.2	80.0	30	28.9	80.0	36	10-124	18	30
2,3,4,6-Tetrachlorophenol	8270D	68.6	80.0	86	73.0	80.0	91	42-136	6	30
2,4,5-Trichlorophenol	8270D	60.8	80.0	76	67.5	80.0	84	48-134	10	30
2,4,6-Trichlorophenol	8270D	54.9	80.0	69	60.3	80.0	75	44-135	8	30
2,4-Dichlorophenol	8270D	49.2	80.0	62	55.3	80.0	69	48-127	11	30
2,4-Dimethylphenol	8270D	53.7	80.0	67	59.5	80.0	74	59-113	10	30
2,4-Dinitrophenol	8270D	53.2	80.0	67	59.7	80.0	75	21-154	11	30
2,4-Dinitrotoluene	8270D	67.1	80.0	84	68.2	80.0	85	54-130	1	30
2,6-Dinitrotoluene	8270D	67.8	80.0	85	71.1	80.0	89	51-127	5	30
2-Chloronaphthalene	8270D	46.9	80.0	59	55.5	80.0	69	40-108	16	30
2-Chlorophenol	8270D	37.6	80.0	47	41.1	80.0	51	42-112	8	30
2-Methylnaphthalene	8270D	41.4	80.0	52	50.2	80.0	63	34-102	19	30
2-Methylphenol	8270D	44.7	80.0	56	50.6	80.0	63	47-100	12	30
2-Nitroaniline	8270D	70.3	80.0	88	71.8	80.0	90	52-133	2	30
2-Nitrophenol	8270D	43.8	80.0	55	51.5	80.0	64	43-131	15	30
3,3'-Dichlorobenzidine	8270D	66.4	80.0	83	69.5	80.0	87	43-126	5	30
3- and 4-Methylphenol Coelution	8270D	42.5	80.0	53	46.8	80.0	58	40-92	9	30
3-Nitroaniline	8270D	59.3	80.0	74	58.1	80.0	73	42-111	1	30
4,6-Dinitro-2-methylphenol	8270D	58.1	80.0	73	60.4	80.0	76	36-152	4	30
4-Bromophenyl Phenyl Ether	8270D	64.7	80.0	81	72.0	80.0	90	48-114	11	30
4-Chloro-3-methylphenol	8270D	57.7	80.0	72	61.5	80.0	77	52-113	7	30
4-Chloroaniline	8270D	60.2	80.0	75	62.0	80.0	78	44-109	4	30
4-Chlorophenyl Phenyl Ether	8270D	59.3	80.0	74	64.1	80.0	80	51-107	8	30
4-Nitroaniline	8270D	63.3	80.0	79	66.3	80.0	83	54-133	5	30
4-Nitrophenol	8270D	25.0 J	80.0	31	26.5 J	80.0	33	10-126	6	30
Acenaphthene	8270D	54.7	80.0	68	61.3	80.0	77	52-107	12	30
Acenaphthylene	8270D	57.1	80.0	71	62.5	80.0	78	55-109	9	30
Acetophenone	8270D	96.0	160	60	112	160	70	46-114	15	30

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters **Date Analyzed:** 11/18/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013973-02			RQ2013973-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Anthracene	8270D	71.4	80.0	89	74.0	80.0	92	55-116	3	30
Benz(a)anthracene	8270D	60.9	80.0	76	65.5	80.0	82	61-121	8	30
Benzo(a)pyrene	8270D	80.2	80.0	100	85.6	80.0	107	44-114	7	30
Benzo(b)fluoranthene	8270D	62.9	80.0	79	66.6	80.0	83	62-115	5	30
Benzo(g,h,i)perylene	8270D	80.4	80.0	101	84.3	80.0	105	63-136	4	30
Benzo(k)fluoranthene	8270D	67.9	80.0	85	71.8	80.0	90	49-133	6	30
Benzyl Alcohol	8270D	49.4	80.0	62	50.1	80.0	63	31-109	2	30
2,2'-Oxybis(1-chloropropane)	8270D	37.6	80.0	47	47.4	80.0	59	32-122	23	30
Bis(2-chloroethoxy)methane	8270D	56.2	80.0	70	62.6	80.0	78	55-110	11	30
Bis(2-chloroethyl) Ether	8270D	42.3	80.0	53	49.0	80.0	61	46-102	14	30
Bis(2-ethylhexyl) Phthalate	8270D	63.3	80.0	79	68.5	80.0	86	51-132	8	30
Butyl Benzyl Phthalate	8270D	64.2	80.0	80	67.6	80.0	84	41-148	5	30
Chrysene	8270D	65.9	80.0	82	70.5	80.0	88	57-118	7	30
Di-n-butyl Phthalate	8270D	80.5	80.0	101	84.9	80.0	106	57-128	5	30
Di-n-octyl Phthalate	8270D	66.3	80.0	83	69.7	80.0	87	62-124	5	30
Dibenz(a,h)anthracene	8270D	73.8	80.0	92	75.2	80.0	94	54-135	2	30
Dibenzofuran	8270D	59.6	80.0	74	65.4	80.0	82	55-110	10	30
Diethyl Phthalate	8270D	54.2	80.0	68	56.0	80.0	70	53-113	3	30
Dimethyl Phthalate	8270D	63.6	80.0	80	66.2	80.0	83	51-112	4	30
Fluoranthene	8270D	75.5	80.0	94	79.6	80.0	100	66-127	6	30
Fluorene	8270D	62.8	80.0	78	67.5	80.0	84	54-106	7	30
Hexachlorobenzene	8270D	70.0	80.0	87	76.3	80.0	95	53-123	9	30
Hexachlorobutadiene	8270D	32.3	80.0	40	39.7	80.0	50	16-95	22	30
Hexachlorocyclopentadiene	8270D	16.7	80.0	21	23.2	80.0	29	10-99	32*	30
Hexachloroethane	8270D	22.7	80.0	28	28.1	80.0	35	15-92	22	30
Indeno(1,2,3-cd)pyrene	8270D	76.1	80.0	95	83.8	80.0	105	62-137	10	30
Isophorone	8270D	46.5	80.0	58	51.5	80.0	64	50-116	10	30
N-Nitrosodi-n-propylamine	8270D	54.3	80.0	68	61.3	80.0	77	49-115	12	30
N-Nitrosodimethylamine	8270D	36.0	80.0	45	35.4	80.0	44	31-70	2	30
N-Nitrosodiphenylamine	8270D	80.0	80.0	100	82.9	80.0	104	45-123	4	30
Naphthalene	8270D	36.8	80.0	46	45.5	80.0	57	38-99	21	30
Nitrobenzene	8270D	42.1	80.0	53	50.4	80.0	63	46-108	17	30
Pentachlorophenol (PCP)	8270D	81.0	80.0	101	82.9	80.0	104	29-164	3	30

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/18/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013973-02			RQ2013973-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenanthrene	8270D	66.5	80.0	83	69.4	80.0	87	58-118	5	30
Phenol	8270D	22.8	80.0	28	24.8	80.0	31	10-113	10	30
Pyrene	8270D	67.0	80.0	84	70.3	80.0	88	61-122	5	30

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Extraction Method: EPA 3535A

Sample Name	Lab Code	1,4-Dioxane-d8 64-124
LCS-1120	R2010670-001	86
Method Blank	RQ2014056-01	89
Lab Control Sample	RQ2014056-02	92
Duplicate Lab Control Sample	RQ2014056-03	94

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014056-01	**Basis:**	NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.040 U	0.040	0.027	1	11/17/20 20:09	11/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	89	64 - 124	11/17/20 20:09	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/17/20

Duplicate Lab Control Sample Summary
1,4-Dioxane by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014056-02			RQ2014056-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	8270D SIM	9.15	10.0	91	9.48	10.0	95	58-124	4	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10-164	Tetrachloro-m-xylene 10-147
LCS-1120	R2010670-001	17	23
LCS-1120 RE	R2010670-001	40	55
Method Blank	RQ2013891-01	49	22
Method Blank	RQ2015194-01	45	51
Lab Control Sample	RQ2013891-02	59	24
Duplicate Lab Control Sample	RQ2013891-03	41	17
Lab Control Sample	RQ2015194-02	45	54
Duplicate Lab Control Sample	RQ2015194-03	41	45

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013891-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
4,4'-DDE	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
4,4'-DDT	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Aldrin	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Dieldrin	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Endosulfan I	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Endosulfan II	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Endosulfan Sulfate	**0.023 J**	0.050	0.020	1	11/23/20 10:42	11/12/20	
Endrin	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Endrin Aldehyde	**0.021 J**	0.050	0.020	1	11/23/20 10:42	11/12/20	
Heptachlor	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Heptachlor Epoxide	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Methoxychlor	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
Toxaphene	0.50 U	0.50	0.50	1	11/23/20 10:42	11/12/20	
alpha-BHC	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
alpha-Chlordane	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
beta-BHC	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
delta-BHC	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
gamma-BHC (Lindane)	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	
gamma-Chlordane	0.050 U	0.050	0.020	1	11/23/20 10:42	11/12/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	49	10 - 164	11/23/20 10:42	
Tetrachloro-m-xylene	22	10 - 147	11/23/20 10:42	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2015194-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
4,4'-DDE	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
4,4'-DDT	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Aldrin	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Dieldrin	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Endosulfan I	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Endosulfan II	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Endosulfan Sulfate	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Endrin	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Endrin Aldehyde	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Heptachlor	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Heptachlor Epoxide	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Methoxychlor	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
Toxaphene	0.50 U	0.50	0.50	1	12/13/20 22:42	12/10/20	
alpha-BHC	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
alpha-Chlordane	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
beta-BHC	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
delta-BHC	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
gamma-BHC (Lindane)	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	
gamma-Chlordane	0.050 U	0.050	0.020	1	12/13/20 22:42	12/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	45	10 - 164	12/13/20 22:42	
Tetrachloro-m-xylene	51	10 - 147	12/13/20 22:42	

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters **Date Analyzed:** 11/23/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013891-02			RQ2013891-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	0.205	0.400	51	0.127	0.400	32 *	42-159	47*	30
4,4'-DDE	8081B	0.182	0.400	46 *	0.110	0.400	28 *	47-147	49*	30
4,4'-DDT	8081B	0.167	0.400	42	0.108	0.400	27 *	41-149	43*	30
Aldrin	8081B	0.0779	0.400	19 *	0.0512	0.400	13 *	22-137	41*	30
Dieldrin	8081B	0.223	0.400	56	0.137	0.400	34 *	52-144	48*	30
Endosulfan I	8081B	0.210	0.400	53	0.130	0.400	33 *	52-136	47*	30
Endosulfan II	8081B	0.257	0.400	64	0.168	0.400	42 *	57-138	42*	30
Endosulfan Sulfate	8081B	0.236	0.400	59	0.163	0.400	41	34-156	37*	30
Endrin	8081B	0.219	0.400	55 *	0.139	0.400	35 *	56-143	44*	30
Endrin Aldehyde	8081B	0.206	0.400	52	0.145	0.400	36	10-166	35*	30
Heptachlor	8081B	0.102	0.400	25 *	0.0670	0.400	17 *	32-141	41*	30
Heptachlor Epoxide	8081B	0.208	0.400	52	0.130	0.400	33 *	51-143	46*	30
Methoxychlor	8081B	0.198	0.400	49 *	0.125	0.400	31 *	56-149	45*	30
alpha-BHC	8081B	0.148	0.400	37	0.0967	0.400	24 *	36-151	42*	30
alpha-Chlordane	8081B	0.184	0.400	46 *	0.114	0.400	28 *	50-139	47*	30
beta-BHC	8081B	0.228	0.400	57	0.151	0.400	38 *	55-149	41*	30
delta-BHC	8081B	0.238	0.400	60	0.152	0.400	38	29-159	44*	30
gamma-BHC (Lindane)	8081B	0.162	0.400	41	0.106	0.400	27 *	41-149	42*	30
gamma-Chlordane	8081B	0.215	0.400	54	0.118	0.400	30 *	50-140	58*	30

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters **Date Analyzed:** 12/13/20
Sample Matrix: Water

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2015194-02			RQ2015194-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	0.276	0.400	69	0.224	0.400	56	42-159	21	30
4,4'-DDE	8081B	0.245	0.400	61	0.207	0.400	52	47-147	17	30
4,4'-DDT	8081B	0.299	0.400	75	0.246	0.400	62	41-149	19	30
Aldrin	8081B	0.192	0.400	48	0.168	0.400	42	22-137	13	30
Dieldrin	8081B	0.263	0.400	66	0.219	0.400	55	52-144	18	30
Endosulfan I	8081B	0.245	0.400	61	0.207	0.400	52	52-136	17	30
Endosulfan II	8081B	0.271	0.400	68	0.222	0.400	56 *	57-138	20	30
Endosulfan Sulfate	8081B	0.277	0.400	69	0.230	0.400	57	34-156	19	30
Endrin	8081B	0.307	0.400	77	0.254	0.400	64	56-143	19	30
Endrin Aldehyde	8081B	0.116	0.400	29	0.126	0.400	32	10-166	8	30
Heptachlor	8081B	0.223	0.400	56	0.192	0.400	48	32-141	15	30
Heptachlor Epoxide	8081B	0.253	0.400	63	0.212	0.400	53	51-143	18	30
Methoxychlor	8081B	0.346	0.400	86	0.288	0.400	72	56-149	18	30
alpha-BHC	8081B	0.259	0.400	65	0.173	0.400	43	36-151	40*	30
alpha-Chlordane	8081B	0.244	0.400	61	0.205	0.400	51	50-139	17	30
beta-BHC	8081B	0.273	0.400	68	0.232	0.400	58	55-149	17	30
delta-BHC	8081B	0.268	0.400	67	0.219	0.400	55	29-159	20	30
gamma-BHC (Lindane)	8081B	0.240	0.400	60	0.201	0.400	50	41-149	18	30
gamma-Chlordane	8081B	0.257	0.400	64	0.226	0.400	57	50-140	13	30

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10-152	Tetrachloro-m-xylene 14-129
LCS-1120	R2010670-001	25	37
LCS-1120 RE	R2010670-001	33	69
Method Blank	RQ2013891-01	58	23
Method Blank	RQ2014697-01	43	41
Lab Control Sample	RQ2013891-02	70	36
Duplicate Lab Control Sample	RQ2013891-03	57	23
Lab Control Sample	RQ2014697-02	60	63
Duplicate Lab Control Sample	RQ2014697-03	47	53

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013891-01	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	
Aroclor 1221	2.0 U	2.0	1.0	1	11/23/20 14:17	11/12/20	
Aroclor 1232	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	
Aroclor 1242	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	
Aroclor 1248	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	
Aroclor 1254	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	
Aroclor 1260	1.0 U	1.0	0.50	1	11/23/20 14:17	11/12/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	58	10 - 152	11/23/20 14:17	
Tetrachloro-m-xylene	23	14 - 129	11/23/20 14:17	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014697-01	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	
Aroclor 1221	2.0 U	2.0	1.0	1	12/03/20 00:21	11/30/20	
Aroclor 1232	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	
Aroclor 1242	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	
Aroclor 1248	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	
Aroclor 1254	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	
Aroclor 1260	1.0 U	1.0	0.50	1	12/03/20 00:21	11/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	43	10 - 152	12/03/20 00:21	
Tetrachloro-m-xylene	41	14 - 129	12/03/20 00:21	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/23/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013891-02			RQ2013891-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	1.92	4.00	48 *	1.33	4.00	33 *	49-123	37*	30
Aroclor 1260	8082A	2.88	4.00	72	2.18	4.00	54	30-120	28	30

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 12/03/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2014697-02			RQ2014697-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	2.97	4.00	74	2.52	4.00	63	49-123	17	30
Aroclor 1260	8082A	2.74	4.00	69	2.38	4.00	60	30-120	14	30

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670

Project: Hakes C&D Landfill - Part 363 Parameters

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Chlorinated Herbicides by GC

Analysis Method: 8151A

Extraction Method: Method

Sample Name	Lab Code	DCAA 10-136
LCS-1120	R2010670-001	69
Method Blank	RQ2014036-01	59
Lab Control Sample	RQ2014036-02	84
Duplicate Lab Control Sample	RQ2014036-03	73

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014036-01	**Basis:**	NA

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	0.50 U	0.50	0.14	1	11/18/20 12:50	11/16/20	
2,4,5-TP	0.50 U	0.50	0.12	1	11/18/20 12:50	11/16/20	
2,4-D	0.50 U	0.50	0.12	1	11/18/20 12:50	11/16/20	
Dinoseb	0.50 U	0.50	0.097	1	11/18/20 12:50	11/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	59	10 - 136	11/18/20 12:50	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/18/20

Duplicate Lab Control Sample Summary
Chlorinated Herbicides by GC

Units:ug/L
Basis:NA

			Lab Control Sample		Duplicate Lab Control Sample					
			RQ2014036-02		RQ2014036-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4,5-T	8151A	1.76	2.00	88	1.74	2.00	87	21-125	1	30
2,4,5-TP	8151A	1.67	2.00	83	1.60	2.00	80	21-120	4	30
2,4-D	8151A	2.25	2.00	113	1.88	2.00	94	26-154	18	30
Dinoseb	8151A	1.52	2.00	76	1.53	2.00	76	13-112	<1	30

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

METALS

-3-

BLANKS

Contract: R2010670

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: LCS-1120

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	23.00	U	23.00	U	23.00	U	23.00	U	23.000	U	P
Antimony	4.70	U	4.70	U	5.10	J	4.70	U	4.700	U	P
Arsenic	5.50	U	5.50	U	5.50	U	5.50	U	5.500	U	P
Barium	3.00	U	3.00	U	3.00	U	3.00	U	3.000	U	P
Beryllium	0.13	U	0.13	U	0.13	U	0.13	U	0.130	U	P
Boron	12.00	U	12.00	U	12.00	U	12.00	U	12.000	U	P
Cadmium	0.35	U	0.35	U	0.35	U	0.35	U	0.350	U	P
Mercury	0.077	U	0.077	U	0.077	U	0.077	U	0.077	U	CV
Calcium	220.00	U	220.00	U	220.00	U	220.00	U	220.000	U	P
Chromium	0.59	U	0.59	U	0.59	U	0.59	U	0.590	U	P
Cobalt	0.89	U	0.89	U	0.89	U	0.89	U	0.890	U	P
Copper	3.90	U	3.90	U	3.90	U	3.90	U	3.900	U	P
Iron	61.00	U	61.00	U	61.00	U	61.00	U	61.000	U	P
Lead	2.10	U	2.10	U	2.10	U	2.10	U	2.100	U	P
Magnesium	29.00	U	29.00	U	29.00	U	29.00	U	29.000	U	P
Manganese	3.70	U	3.70	U	3.70	U	3.70	U	3.700	U	P
Nickel	2.60	U	2.60	U	2.60	U	2.60	U	2.600	U	P
Potassium	200.00	U	200.00	U	200.00	U	200.00	U	200.000	U	P
Selenium	6.40	U	6.40	U	6.40	U	6.40	U	6.400	U	P
Silver	0.57	U	0.57	U	0.57	U	0.57	U	0.570	U	P
Sodium	130.00	U	130.00	U	130.00	U	130.00	U	130.000	U	P
Thallium	6.60	U	6.60	U	6.60	U	6.60	U	6.600	U	P
Tin	8.00	U	8.00	U	8.00	U	8.00	U	8.000	U	P
Vanadium	0.67	U	0.67	U	0.67	U	0.67	U	0.670	U	P
Zinc	9.40	U	9.40	U	9.40	U	9.40	U	9.400	U	P

Comments:

METALS

-3-

BLANKS

Contract: R2010670

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: LCS-1120

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			23.00	U	23.00	U	23.00	U			P
Antimony			5.30	J	4.70	U	4.70	U			P
Arsenic			5.50	U	5.50	U	5.50	U			P
Barium			3.00	U	3.00	U	3.00	U			P
Beryllium			0.13	U	0.13	U	0.13	U			P
Boron			12.00	U	12.00	U	12.00	U			P
Cadmium			0.35	U	0.35	U	0.35	U			P
Mercury			0.077	U	0.077	U					CV
Calcium			220.00	U	220.00	U	220.00	U			P
Chromium			0.59	U	0.59	U	0.59	U			P
Cobalt			0.89	U	0.89	U	0.89	U			P
Copper			3.90	U	3.90	U	3.90	U			P
Iron			61.00	U	61.00	U	61.00	U			P
Lead			2.10	U	2.10	U	2.10	U			P
Magnesium			29.00	U	29.00	U	29.00	U			P
Manganese			3.70	U	3.70	U	3.70	U			P
Nickel			2.60	U	2.60	U	2.60	U			P
Potassium			200.00	U	200.00	U	200.00	U			P
Selenium			6.40	U	6.40	U	6.40	U			P
Silver			0.57	U	0.57	U	0.57	U			P
Sodium			130.00	U	130.00	U					P
Thallium			6.60	U	6.60	U	6.60	U			P
Tin			8.00	U	8.00	U	8.00	U			P
Vanadium			0.67	U	0.67	U	0.67	U			P
Zinc			9.40	U	9.40	U	9.40	U			P

Comments:

METALS
-6-
DUPLICATES

SAMPLE NO.: DLCSW

Contract: R2010670

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: LCS-1120

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		1960		1950		1		P
Antimony		476		483		1		P
Arsenic		39		35		11		P
Barium		2020		2020		0		P
Beryllium		49		49		0		P
Boron		946		948		0		P
Cadmium		50		50		0		P
Calcium		2010		2010		0		P
Chromium		200		200		0		P
Cobalt		503		503		0		P
Copper		241		242		0		P
Iron		981		980		0		P
Lead		488		490		0		P
Magnesium		1950		1950		0		P
Manganese		490		491		0		P
Nickel		502		502		0		P
Potassium		18800		18800		0		P
Selenium		968		965		0		P
Silver		47		47		0		P
Sodium		20100		20400		1		P
Thallium		1800		1800		0		P
Tin		4840		4790		1		P
Vanadium		494		495		0		P
Zinc		487		488		0		P

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010670

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: LCS-1120

Solid LCS Source: _____

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2000	1960	98					
Antimony	500	476	95					
Arsenic	40	39	98					
Barium	2000	2020	101					
Beryllium	50	49	98					
Boron	1000	946	95					
Cadmium	50	50	100					
Mercury	1.000	1.030	103					
Calcium	2000	2010	100					
Chromium	200	200	100					
Cobalt	500	503	101					
Copper	250	241	96					
Iron	1000	981	98					
Lead	500	488	98					
Magnesium	2000	1950	98					
Manganese	500	490	98					
Nickel	500	502	100					
Potassium	20000	18800	94					
Selenium	1010	968	96					
Silver	50	47	94					
Sodium	20000	20100	100					
Thallium	2000	1800	90					
Tin	5000	4840	97					
Vanadium	500	494	99					
Zinc	500	487	97					

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010670

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: LCS-1120

Solid LCS Source: _____

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2000	1950	98					
Antimony	500	483	97					
Arsenic	40	35	88					
Barium	2000	2020	101					
Beryllium	50	49	98					
Boron	1000	948	95					
Cadmium	50	50	100					
Calcium	2000	2010	100					
Chromium	200	200	100					
Cobalt	500	503	101					
Copper	250	242	97					
Iron	1000	980	98					
Lead	500	490	98					
Magnesium	2000	1950	98					
Manganese	500	491	98					
Nickel	500	502	100					
Potassium	20000	18800	94					
Selenium	1010	965	96					
Silver	50	47	94					
Sodium	20000	20400	102					
Thallium	2000	1800	90					
Tin	5000	4790	96					
Vanadium	500	495	99					
Zinc	500	488	98					

Comments: _____

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010670-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	2.0	U	mg/L	2.0	1.8	1	11/18/20 17:41	NA	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	0.026	1	11/14/20 20:13	NA	
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	2.0	U	mg/L	2.0	-	1	11/11/20 17:38	NA	
Bromide	9056A	0.10	U	mg/L	0.10	0.04	1	11/12/20 09:36	NA	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	0.5	1	11/19/20 14:12	NA	
Chemical Oxygen Demand, Total	410.4	5.0	U	mg/L	5.0	3.8	1	11/14/20 15:45	NA	
Chloride	9056A	0.20	U	mg/L	0.20	0.05	1	11/13/20 14:51	NA	
Chromium, Hexavalent	7196A	0.010	U	mg/L	0.010	0.003	1	11/11/20 12:57	NA	
Color, True	SM 2120 B-2001(2011)	**1.0**		ColorUnits	1.0	-	1	11/11/20 21:40	NA	
Cyanide, Total	Kelada-01	0.0050	U	mg/L	0.0050	0.0040	1	11/18/20 10:46	NA	
Nitrate as Nitrogen	9056A	0.10	U	mg/L	0.10	0.02	1	11/11/20 15:40	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.20	U	mg/L	0.20	0.15	1	11/20/20 11:43	11/19/20	
Phenolics, Total Recoverable	9066	0.0050	U	mg/L	0.0050	0.0029	1	11/23/20 15:21	NA	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	9	1	11/17/20 16:45	NA	
Sulfate	9056A	0.20	U	mg/L	0.20	0.04	1	11/13/20 14:51	NA	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010670-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Nitrate as Nitrogen	9056A	0.10 U	mg/L	0.10	0.02	1	11/12/20 09:36	

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/11/20 - 11/23/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010670-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	19.6	20.0	98	80-120
Ammonia as Nitrogen, undistilled	350.1	0.500	0.500	100	90-110
Biochemical Oxygen Demand (BOD)	SM 5210 B-2001(2011)	203	198	102	85-115
Bromide	9056A	0.998	1.00	100	80-120
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	10.1	10.0	101	80-121
Chemical Oxygen Demand, Total	410.4	496	500	99	90-110
Chloride	9056A	1.94	2.00	97	80-120
Chromium, Hexavalent	7196A	0.102	0.100	102	80-120
Cyanide, Total	Kelada-01	0.100	0.100	100	90-110
Nitrate as Nitrogen	9056A	1.00	1.00	100	80-120
Nitrogen, Total Kjeldahl (TKN)	351.2	2.38	2.50	95	90-110
Phenolics, Total Recoverable	9066	0.0401	0.0400	100	85-115
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	922	914	101	90-110
Sulfate	9056A	2.02	2.00	101	80-120

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010670-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Nitrate as Nitrogen	9056A	0.990	1.00	99	80-120

Subcontracted Analytical Parameters

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Radium-226

Case Narrative

ALS Environmental

R2010670

Work Order Number: 2011319

1. This report consists of the analytical results and supporting documentation for two water samples received by ALS on 11/14/2020.

2. These samples were prepared and analyzed according to the current revision of SOP 783.

3. The samples were analyzed for the presence of ^{226}Ra according to the current revision of SOP 714. The analyses were completed on 12/15/2020.

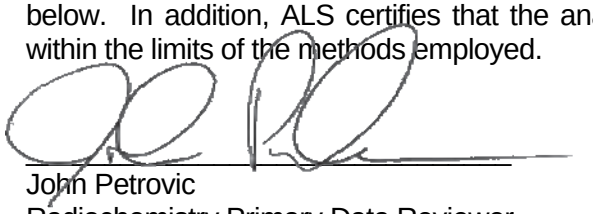
4. The analysis results for these samples are reported in units of pCi/L. Sample 2011319-2 was filtered prior to analysis. Sample 2011319-1 was not filtered prior to analysis.

5. Sample volume was insufficient to allow preparation of a duplicate. A laboratory control sample duplicate (LCSD) was prepared in lieu of a client sample duplicate.

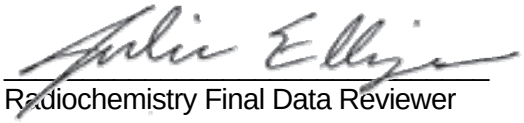
6. ALS uses the following convention for reporting significant digits in the TPU and MDC results. The TPU value is rounded to two significant digits. The MDC value is rounded to the same decimal place as the TPU value. In practice, this could result in an MDC reported value of zero for samples with significant activity, including the batch laboratory control sample.

7. No further anomalous situations were encountered during the preparation or analysis of these samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



John Petrovic — 12/17/20
Radiochemistry Primary Data Reviewer — Date



Radiochemistry Final Data Reviewer — 12/18/20 — Date

1

Section 1

CHAIN OF CUSTODY

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2011319
Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Client PO Number: R2010670

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
LCS-1120	2011319-1		WATER	10-Nov-20	13:20
LCS DISS-1120	2011319-2		WATER	10-Nov-20	13:20

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

2011319

Project Number: R2010670
Project Manager: Janice Jaeger
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Nat U 908.0	Radium 226 903.1	Radium 228 904.0
~~R2010670-001~~	LCS-1120	5	Water	11/10/20	1320	Fort Collins ALS	X	X	X
~~R2010670-002~~	LCS Diss-1120	3	Water	11/10/20	1320	Fort Collins ALS	X	X	X

Diss samples need in lab filter

Feeder Comments:
Report Total Uranium only - none of the isotopes

90 of 162

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
standard edd NPDES H - Test is On Hold P - Test is Authorized for Prep Only	___ RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 X STANDARD Requested FAX Date: ___ Requested Report Date: 11/20/20	___ I. Results Only X II. Results + QC Summaries ___ III. Results + QC and Calibration Summaries X IV. Data Validation Report with Raw Data PQL/MDL/J Y EDD Y	PO# 58R2010670 Bill to

Relinquished By: 11/13/2020/1215 Received By: 11/14/20 0910 Airbill Number: 1730 2933 9263

5 of 14

Ship To: Fort Collins ALS
ALS Laboratory Group
225 Commerce Drive
Fort Collins, CO 80524

PC _____ Date 11/12/20

SMO _____ Date _____

Instructions:

Ice _____
Dry Ice _____
No Ice _____

Shipping:

Overnight _____
2nd Day _____
Ground _____

Bill to Client Account _____

Comments:

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: ALS Rochester Workorder No: 2011319

Project Manager: JME Initials: TM Date: 11/14/20

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO	
2. Are custody seals on **shipping** containers intact?	☑ NONE	☐ YES	☐ NO*	
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*	
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*	
6. Are short-hold samples present?		☐ YES	☑ NO	
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*	
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*	
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*	
10. Are samples in proper containers for requested analyses? (Form 250, Sample Handling Guidelines)		☑ YES	☐ NO*	
11. Are all aqueous samples preserved correctly, if required?	☐ N/A	☐ YES	☑ NO*	
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO	
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO	
14. Were the samples shipped on ice?		☐ YES	☑ NO	
15. Were cooler temperatures measured at 0.1 - 6.0°C? (if gun used: ☐ #3 ☐ #5)	☑ BAS Only	☐ YES	☑ NO	

Cooler #: 1
Temperature (°C): amb
# of custody seals on cooler: 0
External mR/hr reading: 12
Background mR/hr reading: 10

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

11.) bottles for sample 1 read initial pH of 2.2; added 0.5mL HNO3 (lot# 234822) to achieve pH<2.0

All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? ☐ YES ☐ N/A Contact Name Date:

Project Manager Signature / Date: 11/16/2020

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192232528

FedEx Saturday Delivery

ORIGIN ID:ONHA (585) 672-7464
SHD
ALS ENVIRONMENTAL
1565 JEFFERSON RD
BLDG 300 SUITE 360
ROCHESTER, NY 14623
UNITED STATES US

SHIP DATE: 13NOV20
ACTWGT: 12.80 LB
CAD: 0342594/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS LABS-FT. COLLINS
225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511

12-0
amb

FedEx Express

3 of 4
MPS# 1730 2433 4263
Mstr# 1730 2433 4241

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO FTCA

80524
CO-US DEN

Section 2

2

SAMPLE RESULTS SUMMARY

Radium-226 by Radon Emanation - Method 903.1 Sample Results Summary

Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Laboratory Name: **ALS -- Fort Collins**
PAI Work Order: 2011319

Reported on: Wednesday, December 16, 2020 2:30:50 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	DL	Units	Matrix	Prep Batch	Date Analyzed	Flags
2011319-1	LCS-1120	Sample	Ra-226	1.02 +/- 0.48	0.49	NA	pCi/l	WATER	RE201207-2	12/15/2020	
2011319-2	LCS DISS-1120	Sample	Ra-226	0.75 +/- 0.43	0.50	NA	pCi/l	WATER	RE201207-2	12/14/2020	

Comments:

Data Package ID: *RE2011319-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

Section 3

QC RESULTS SUMMARY

Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Method Blank Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RE201207-2MB

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 07-Dec-20
Date Prepared: 07-Dec-20
Date Analyzed: 15-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 30 minutes

Final Aliquot: 995 ml
Result Units: pCi/l
File Name: Manual Entry

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13982-63-3	Ra-226	0.15 +/- 0.17	0.25	1	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	17060	16100	ug	94.4	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: *RE2011319-1*

Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RE201207-2LCS

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 07-Dec-20
Date Prepared: 07-Dec-20
Date Analyzed: 15-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 15 minutes

Final Aliquot: 995 ml
Result Units: pCi/l
File Name: Manual Entry

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13982-63-3	Ra-226	53 +/- 13	0	46.80	113	67 - 120	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	17060	15030	ug	88.1	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *RE2011319-1*

Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RE201207-2LCSD

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 07-Dec-20
Date Prepared: 07-Dec-20
Date Analyzed: 15-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 15 minutes

Final Aliquot: 995 ml
Result Units: pCi/l
File Name: Manual Entry

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13982-63-3	Ra-226	46 +/- 12	0	46.80	98.6	67 - 120	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	17060	15990	ug	93.7	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *RE2011319-1*

Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID:
Lab ID: RE201207-2LCSD

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 07-Dec-20
Date Prepared: 07-Dec-20
Date Analyzed: 15-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 15 minutes

Final Aliquot: 995 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: Manual Entry

CASNO	Analyte	Sample			Duplicate			DER	DER Lim
		Result +/- 2 s TPU	MDC	Flags	Result +/- 2 s TPU	MDC	Flags		
13982-63-3	Ra-226	53 +/- 13	0	P	46 +/- 12	0	P	0.38	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *RE2011319-1*

Section 4

INDIVIDUAL SAMPLE RESULTS

Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS-1120
Lab ID: 2011319-1

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 10-Nov-20
Date Prepared: 07-Dec-20
Date Analyzed: 15-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 30 minutes
Report Basis: Unfiltered

Final Aliquot: 995 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: Manual Entry

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13982-63-3	Ra-226	1.02 +/- 0.48	0.49	1	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	20170	10830	ug	53.7	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *RE2011319-1*

Dissolved Radium-226 by Radon Emanation - Method 903.1

PAI 783 Rev 15

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS DISS-1120
Lab ID: 2011319-2

Sample Matrix: WATER
Prep SOP: PAI 783 Rev 15
Date Collected: 10-Nov-20
Date Prepared: 07-Dec-20
Date Analyzed: 14-Dec-20

Prep Batch: RE201207-2
QCBatchID: RE201207-2-1
Run ID: RE201207-2A
Count Time: 15 minutes
Report Basis: Filtered

Final Aliquot: 995 ml
Prep Basis: Filtered
Moisture(%): NA
Result Units: pCi/l
File Name: Manual Entry

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13982-63-3	Ra-226	0.75 +/- 0.43	0.50	1	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	17900	17610	ug	98.4	40 - 110 %	

Comments: This sample was filtered prior to analysis.

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *RE2011319-1*

Radium-228

Case Narrative

ALS Environmental

R2010670

Work Order Number: 2011319

1. This report consists of the analytical results and supporting documentation for two water samples received by ALS on 11/14/2020.

2. These samples were prepared according to EPA method 904.0.

3. The samples were analyzed for the presence of ^{228}Ra by low background gas flow proportional counting of ^{228}Ac, which is the ingrown progeny of ^{228}Ra, according to EPA method 904.0. The analyses were completed on 12/07/2020.

4. The analysis results for these samples are reported in units of pCi/L. Sample 2011319-2 was filtered through 0.45 micron filters and preserved prior to analysis; sample 2011319-1 was not filtered prior to analysis.

5. A laboratory control sample duplicate (LCSD) was prepared to meet another client's duplicate requirements. The LCSD results are included in this package as an additional QC measure.

6. No anomalous situations were noted during the preparation and analysis of these samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Jean Anderson — 12/15/20
Jean Anderson
Radiochemistry Primary Data Reviewer
Date

Julie Ellyson — 12/18/20
Radiochemistry Final Data Reviewer
Date

1

Section 1

CHAIN OF CUSTODY

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2011319
Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Client PO Number: R2010670

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
LCS-1120	2011319-1		WATER	10-Nov-20	13:20
LCS DISS-1120	2011319-2		WATER	10-Nov-20	13:20

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

2011319

Project Number: R2010670
Project Manager: Janice Jaeger
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Nat U 908.0	Radium 226 903.1	Radium 228 904.0
~~R2010670-001~~	LCS-1120	5	Water	11/10/20	1320	Fort Collins ALS	X	X	X
~~R2010670-002~~	LCS Diss-1120	3	Water	11/10/20	1320	Fort Collins ALS	X	X	X

Diss samples need in lab filter

Footer Comments:
Report Total Uranium only - none of the isotopes

10720162

Special Instructions/Comments
Standard edd

NPDES

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
____ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
X STANDARD
Requested FAX Date: _____
Requested Report Date: 11/20/20

Report Requirements
___ I. Results Only
X II. Results + QC Summaries
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
PQL/MDL/J Y
EDD Y

Invoice Information
PO# 58R2010670
Bill to

Relinquished By: 11/13/2020/1215 Received By: 11/14/20 0910 Airbill Number: 1730 2933 9263

Ship To: Fort Collins ALS
ALS Laboratory Group
225 Commerce Drive
Fort Collins, CO 80524

PC _____ Date 11/12/20

SMO _____ Date _____

Instructions:

Ice _____
Dry Ice _____
No Ice _____

Shipping:

Overnight _____
2nd Day _____
Ground _____

Bill to Client Account _____

Comments:

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: ALS Rochester Workorder No: 2011319

Project Manager: JME Initials: TM Date: 11/14/20

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO	
2. Are custody seals on **shipping** containers intact?	☑ NONE	☐ YES	☐ NO*	
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*	
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*	
5. Is the COC in agreement with samples received? (COC dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*	
6. Are short-hold samples present?		☐ YES	☑ NO	
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*	
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*	
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*	
10. Are samples in proper containers for requested analyses? (Form 250, Sample Handling Guidelines)		☑ YES	☐ NO*	
11. Are all aqueous samples preserved correctly, if required?	☐ N/A	☐ YES	☑ NO*	
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO	
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO	
14. Were the samples shipped on ice?		☐ YES	☑ NO	
15. Were cooler temperatures measured at 0.1 - 6.0°C? (If gun used:) ☐ #3 ☐ #5	☑ Bag Only	☐ YES	☑ NO	

Cooler #: 1
Temperature (°C): amb
# of custody seals on cooler: 0
External mR/hr reading: 12
Background mR/hr reading: 10

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

11.) bottles for sample 1 read initial pH of 2.2; added 0.5mL HNO3 (lot# 234822) to achieve pH<2.0

All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? ☐ YES ☐ N/A Contact Name Date:

Project Manager Signature / Date: 11/16/2020

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192232528

FedEx Saturday Delivery

ORIGIN ID:ONHA (585) 672-7464
SHD
ALS ENVIRONMENTAL
1565 JEFFERSON RD
BLDG 300 SUITE 360
ROCHESTER, NY 14623
UNITED STATES US

SHIP DATE: 13NOV20
ACTWGT: 12.80 LB
CAD: 0342594/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS LABS-FT. COLLINS
225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511

12-0
amb

FedEx Express

3 of 4
MPS# 1730 2433 4263
Mstr# 1730 2433 4241

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO FTCA

80524
CO-US DEN

Section 2

2

SAMPLE RESULTS SUMMARY

Radium-228 Analysis by GFPC Sample Results Summary

Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Laboratory Name: **ALS -- Fort Collins**
PAI Work Order: 2011319

Reported on: Monday, December 14, 2020 6:27:34 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	DL	Units	Matrix	Prep Batch	Date Analyze	Flags
2011319-1	LCS-1120	Sample	Ra-228	1.54 +/- 0.55	0.77	NA	pCi/l	WATER	RA201201-2	12/7/2020	
2011319-2	LCS DISS-1120	Sample	Ra-228	0.81 +/- 0.43	0.76	NA	pCi/l	WATER	RA201201-2	12/7/2020	

Comments:

Data Package ID: *RA2011319-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

Section 3

QC RESULTS SUMMARY 3

Radium-228 Analysis by GFPC

PAI 724 Rev 14

Method Blank Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RA201201-2MB

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 01-Dec-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes

Final Aliquot: 997 ml
Result Units: pCi/l
File Name: RAC1207A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
15262-20-1	Ra-228	0.05 +/- 0.38	0.85	1	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	33930	32210	ug	94.9	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: *RA2011319-1*

Radium-228 Analysis by GFPC

PAI 724 Rev 14

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RA201201-2LCS

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 01-Dec-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes

Final Aliquot: 997 ml
Result Units: pCi/l
File Name: RAC1207A

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
15262-20-1	Ra-228	24.0 +/- 5.6	0.8	23.16	104	70 - 130	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	33930	32310	ug	95.2	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *RA2011319-1*

Radium-228 Analysis by GFPC

PAI 724 Rev 14

Laboratory Control Sample(s)

Lab Name: **ALS -- Fort Collins**
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: RA201201-2LCSD

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 01-Dec-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes

Final Aliquot: 997 ml
Result Units: pCi/l
File Name: RAC1207A

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
15262-20-1	Ra-228	25.2 +/- 5.9	0.7	23.16	109	70 - 130	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	33920	31570	ug	93.1	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *RA2011319-1*

Radium-228 Analysis by GFPC

PAI 724 Rev 14

Duplicate Sample Results (DER)

Lab Name: **ALS -- Fort Collins**
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID:
Lab ID: RA201201-2LCSD

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 01-Dec-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes

Final Aliquot: 997 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: RAC1207A

CASNO	Analyte	Sample			Duplicate			DER	DER Lim
		Result +/- 2 s TPU	MDC	Flags	Result +/- 2 s TPU	MDC	Flags		
15262-20-1	Ra-228	24.0 +/- 5.6	0.8	P	25.2 +/- 5.9	0.7	P	0.142	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: *RA2011319-1*

Section 4

INDIVIDUAL SAMPLE RESULTS

Radium-228 Analysis by GFPC

PAI 724 Rev 14

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS-1120
Lab ID: 2011319-1

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 10-Nov-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes
Report Basis: Unfiltered

Final Aliquot: 997 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: RAC1207A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
15262-20-1	Ra-228	1.54 +/- 0.55	0.77	1	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	34660	28790	ug	83.1	40 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *RA2011319-1*

Dissolved Radium-228 Analysis by GFPC

PAI 724 Rev 14

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS DISS-1120
Lab ID: 2011319-2

Sample Matrix: WATER
Prep SOP: SOP749 Rev 7
Date Collected: 10-Nov-20
Date Prepared: 01-Dec-20
Date Analyzed: 07-Dec-20

Prep Batch: RA201201-2
QCBatchID: RA201201-2-3
Run ID: RA201201-2A
Count Time: 150 minutes
Report Basis: Filtered

Final Aliquot: 997 ml
Prep Basis: Filtered
Moisture(%): NA
Result Units: pCi/l
File Name: RAC1207A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
15262-20-1	Ra-228	0.81 +/- 0.43	0.76	1	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
BARIUM	34640	29130	ug	84.1	40 - 110 %	

Comments: This sample was filtered prior to analysis.

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *RA2011319-1*

Isotopic / Total Uranium

Case Narrative

ALS Environmental

R2010670

Work Order Number: 2011319

1. This report consists of the analytical results and supporting documentation for two water samples received by ALS on 11/14/2020.

2. These samples were prepared according to EPA method 908.0.
3. The samples were analyzed for the presence of isotopic and total uranium according to the current revision of SOP 714. The analyses were completed on 12/08/2020.

4. The total uranium results were determined by adding the isotopic results, and are displayed as the analyte 'URANIUM, TOTAL' for each sample.

5. The analysis results for these samples are reported in units of pCi/L. Sample 2011319-2 was filtered through 0.45 micron filters and preserved prior to analysis; sample 2011319-1 was not filtered prior to analysis.

6. Sample volume was insufficient to allow preparation of a duplicate. A laboratory control sample duplicate (LCSD) was prepared in lieu of a client sample duplicate.

7. This analytical method quantifies U-235 alpha activity in a specific region of interest corresponding to emission energies between those of U-234 and U-238. A potential limitation of this method is that measurable amounts of U-234 in the sample may cause a small amount of characteristic activity in the U-235 region of interest due to poorly resolved alpha activity at the boundary between the two regions. To minimize the potential for a high bias in the U-235 analytical results, the U-235 region of interest has been narrowed and limited to a lower energy region. An 85.1% abundance correction has been made to the final U-235 results.

8. URANIUM, TOTAL activity is reported in the associated method blank above the minimum detectable concentration value, as indicated with a "B3" qualifier on the final reports. The measured blank activity is below the requested MDC. Results are acceptable according to the current revision of SOP 715, and are submitted without further qualification.

9. ALS uses the following convention for reporting significant digits in the TPU and MDC results. The TPU value is rounded to two significant digits. The MDC value is rounded to the same decimal place as the TPU value. In practice, this could result in an MDC reported value of zero for samples with significant activity, including the batch laboratory control sample.

10. No further anomalous situations were encountered during the preparation or analysis of these samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

D Wylde

Dakota Wylde
Radiochemistry Primary Data Reviewer

12/15/20
Date

Julie Ellyson

Radiochemistry Final Data Reviewer

12/18/20
Date

1

Section 1

CHAIN OF CUSTODY

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2011319
Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Client PO Number: R2010670

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
LCS-1120	2011319-1		WATER	10-Nov-20	13:20
LCS DISS-1120	2011319-2		WATER	10-Nov-20	13:20

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

2011319

Project Number: R2010670
Project Manager: Janice Jaeger
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Nat U 908.0	Radium 226 903.1	Radium 228 904.0
~~R2010670-001~~	LCS-1120	5	Water	11/10/20	1320	Fort Collins ALS	X	X	X
~~R2010670-002~~	LCS Diss-1120	3	Water	11/10/20	1320	Fort Collins ALS	X	X	X

Diss samples need in lab filter

Footer Comments:
Report Total Uranium only - none of the isotopes

12500162

Special Instructions/Comments
standard edd

NPDES

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
____ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
X STANDARD
Requested FAX Date: _____
Requested Report Date: 11/20/20

Report Requirements
___ I. Results Only
X II. Results + QC Summaries
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
PQL/MDL/J Y
EDD Y

Invoice Information
PO# 58R2010670
Bill to

Relinquished By: 11/13/2020/1215 Received By: 11/14/20 0910 Airbill Number: 1730 2933 9263

R2010670

Ship To: **Fort Collins ALS**
ALS Laboratory Group
225 Commerce Drive
Fort Collins, CO 80524

PC [illegible] Date 11/12/20

SMO _____ Date _____

Instructions:

Ice _____

Dry Ice _____

No Ice _____

Shipping:

Overnight _____

2nd Day _____

Ground _____

Bill to Client Account _____

Comments:

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: ALS Rochester Workorder No: 2011319

Project Manager: JME Initials: TM Date: 11/14/20

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO	
2. Are custody seals on **shipping** containers intact?	☑ NONE	☐ YES	☐ NO*	
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*	
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*	
6. Are short-hold samples present?		☐ YES	☑ NO	
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*	
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*	
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*	
10. Are samples in proper containers for requested analyses? (Form 250, Sample Handling Guidelines)		☑ YES	☐ NO*	
11. Are all aqueous samples preserved correctly, if required?	☐ N/A	☐ YES	☑ NO*	
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO	
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO	
14. Were the samples shipped on ice?		☐ YES	☑ NO	
15. Were cooler temperatures measured at 0.1 - 6.0°C? (If gun used:) ☐ #3 ☐ #5	☑ Bag Only	☐ YES	☑ NO	

Cooler #: 1
Temperature (°C): amb
# of custody seals on cooler: 0
External mR/hr reading: 12
Background mR/hr reading: 10

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

11.) bottles for sample 1 read initial pH of 2.2; added 0.5mL HNO3 (lot# 234822) to achieve pH<2.0

All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? ☐ YES ☐ N/A Contact Name Date:

Project Manager Signature / Date: 11/16/2020

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192273629

FedEx Saturday Delivery

ORIGIN ID:ONHA (585) 672-7464
SHD
ALS ENVIRONMENTAL
1565 JEFFERSON RD
BLDG 300 SUITE 360
ROCHESTER, NY 14623
UNITED STATES US

SHIP DATE: 13NOV20
ACTWGT: 12.80 LB
CAD: 0342594/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS LABS-FT. COLLINS
225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511

12-0
amb

FedEx Express

3 of 4
MPS# 1730 2433 4263
Mstr# 1730 2433 4241

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO FTCA

80524
CO-US DEN

Section 2

2

SAMPLE RESULTS SUMMARY

Total Uranium by Alpha Spectroscopy Sample Results Summary

Client Name: ALS Environmental
Client Project Name:
Client Project Number: R2010670
Laboratory Name: **ALS -- Fort Collins**
PAI Work Order: 2011319

Reported on: Tuesday, December 15, 2020 12:10:07 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	DL	Units	Matrix	Prep Batch	Date Analyzed	Flags
2011319-1	LCS-1120	Sample	U-234	0.42 +/- 0.15	0.08	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-1	LCS-1120	Sample	U-235	0.077 +/- 0.068	0.082	NA	pCi/l	WATER	AS201130-6	12/8/2020	U
2011319-1	LCS-1120	Sample	U-238	0.181 +/- 0.094	0.070	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-1	LCS-1120	Sample	URANIUM, TOTAL	0.68 +/- 0.19	0.11	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-2	LCS DISS-1120	Sample	U-234	0.37 +/- 0.13	0.07	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-2	LCS DISS-1120	Sample	U-235	0.046 +/- 0.047	0.031	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-2	LCS DISS-1120	Sample	U-238	0.30 +/- 0.12	0.05	NA	pCi/l	WATER	AS201130-6	12/8/2020	
2011319-2	LCS DISS-1120	Sample	URANIUM, TOTAL	0.71 +/- 0.19	0.07	NA	pCi/l	WATER	AS201130-6	12/8/2020	

Comments:

Data Package ID: *UT2011319-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

Section 3

QC RESULTS SUMMARY 3

Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Method Blank Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: AS201130-6MB

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 30-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 09-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes

Final Aliquot: 1000 ml
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.035 +/- 0.030	0.038	0.2	NA	U
15117-96-1	U-235	0.016 +/- 0.022	0.033	0.2	NA	U
7440-61-1	U-238	0.006 +/- 0.019	0.045	0.2	NA	U
7440-61-1	URANIUM, TOTAL	0.057 +/- 0.042	0.056	0.2	NA	B3

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.772	3.90	pCi/l	81.7	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: *UT2011319-1*

Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: AS201130-6LCS

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 30-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 09-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes

Final Aliquot: 1000 ml
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	4.19 +/- 0.74	0.01	4.350	96.2	82 - 122	P
15117-96-1	U-235	0.237 +/- 0.085	0.033	0.2083	114	NA	
7440-61-1	U-238	4.53 +/- 0.79	0.04	4.523	100	78 - 126	P
7440-61-1	URANIUM, TOTAL	8.9 +/- 1.1	0	9.082	98.5	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.772	3.77	pCi/l	79.0	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *UT2011319-1*

Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Lab ID: AS201130-6LCSD

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 30-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 09-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes

Final Aliquot: 1000 ml
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	4.05 +/- 0.74	0.04	4.350	93.0	82 - 122	P
15117-96-1	U-235	0.203 +/- 0.085	0.040	0.2083	97.5	NA	
7440-61-1	U-238	4.29 +/- 0.78	0.05	4.523	94.9	78 - 126	P
7440-61-1	URANIUM, TOTAL	8.5 +/- 1.1	0.1	9.082	94.1	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.772	3.16	pCi/l	66.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *UT2011319-1*

Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID:
Lab ID: AS201130-6LCSD

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 30-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 09-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes

Final Aliquot: 1000 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Analyte	Sample			Duplicate			DER	DER Lim
		Result +/- 2 s TPU	MDC	Flags	Result +/- 2 s TPU	MDC	Flags		
13966-29-5	U-234	4.19 +/- 0.74	0.01	P	4.05 +/- 0.74	0.04	P	0.133	2.13
15117-96-1	U-235	0.237 +/- 0.085	0.033		0.203 +/- 0.085	0.040		0.282	2.13
7440-61-1	U-238	4.53 +/- 0.79	0.04	P	4.29 +/- 0.78	0.05	P	0.208	2.13
7440-61-1	URANIUM, TOTAL	8.9 +/- 1.1	0	P	8.5 +/- 1.1	0.1	P	0.528	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: *UT2011319-1*

Section 4

INDIVIDUAL SAMPLE RESULTS

Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS-1120
Lab ID: 2011319-1

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 10-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 08-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes
Report Basis: Unfiltered

Final Aliquot: 500 ml
Prep Basis: Unfiltered
Moisture(%): NA
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.42 +/- 0.15	0.08	0.2	NA	
15117-96-1	U-235	0.077 +/- 0.068	0.082	0.2	NA	U
7440-61-1	U-238	0.181 +/- 0.094	0.070	0.2	NA	
7440-61-1	URANIUM, TOTAL	0.68 +/- 0.19	0.11	0.2	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	9.544	7.2	pCi/l	75.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *UT2011319-1*

Dissolved Total Uranium by Alpha Spectroscopy

PAI 714 Rev 15

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2011319
Client Name: ALS Environmental
ClientProject ID: R2010670

Field ID: LCS DISS-1120
Lab ID: 2011319-2

Sample Matrix: WATER
Prep SOP: PAI 778 Rev 16
Date Collected: 10-Nov-20
Date Prepared: 30-Nov-20
Date Analyzed: 08-Dec-20

Prep Batch: AS201130-6
QCBatchID: AS201130-6-1
Run ID: AS201130-6UT
Count Time: 360 minutes
Report Basis: Filtered

Final Aliquot: 500 ml
Prep Basis: Filtered
Moisture(%): NA
Result Units: pCi/l
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.37 +/- 0.13	0.07	0.2	NA	
15117-96-1	U-235	0.046 +/- 0.047	0.031	0.2	NA	
7440-61-1	U-238	0.30 +/- 0.12	0.05	0.2	NA	
7440-61-1	URANIUM, TOTAL	0.71 +/- 0.19	0.07	0.2	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	9.544	7.5	pCi/l	78.4	30 - 110 %	

Comments: This sample was filtered prior to analysis.

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Sample specific Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: *UT2011319-1*

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

December 14, 2020 **Analytical Report for Service Request No:** R2010670

Janice Jaeger
ALS Environmental
1565 Jefferson Rd, Building 300
Suite 360
Rochester, NY 14623

RE: Hakes C&D Landfill - Part 363 Parameters

Dear Janice Jaeger,

Enclosed are the results of the sample(s) submitted to our laboratory November 11, 2020
For your reference, these analyses have been assigned our service request number **R2010670.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME)
Project: Hakes C&D Landfill - Part 363 Parameters
Sample Matrix: Water

Service Request: R2010670
Date Received: 11/11/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level II requested by the client.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 11/11/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Organic LC:

Method PFC/537M, 12/08/2020:One or more surrogate recoveries were significantly low (less than 10%) in sample LCS-1120 due to matrix interferences. The samples exhibited severe ion suppression on some internal standards. The low recoveries for the labeled analogs suggested increased variability for the quantitation of the associated native compounds in this matrix. The analyte results in question were flagged with an “X” qualifier to indicate the issue. No further corrective action was required.
Method PFC/537M, 12/08/2020:The lower control criterion was exceeded for one or more surrogates in sample LCS-1120 due to matrix interferences. Due to the presence of non-target background components that affected resolution of the surrogate, accurate quantitation was not optimal. Assuming the associated native analyte performed similar to the labeled analog, the effect on the reported results was minimal. A re-analysis of the sample was performed, but produced similar results. The results from the original analysis were reported. No further corrective action was appropriate.
Method PFC/537M, 12/08/2020:The Relative Percent Difference (RPD) for Perfluorotridecanoic acid (PFTrDA) in the replicate Lab Control Samples (LCS/DLCS) analyses KQ2018387-01/-02 was outside control criteria. The associated spike recoveries of target compounds were in control, which indicated the analysis was in control. The high RPD values indicated possible increased variability for the analysis of these compounds in the associated extraction batch. No further corrective action was taken.

Method PFC/537M, 12/10/2020:Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Approved by  Date 12/14/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

Intra-Network Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

Project Name: Hakes C&D Landfill - Part 363 Parameters
Project Number:
Project Manager: Russell Anderson
Company: Casella Waste Systems, Inc.
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	PFAS PFC/537M
R2010670-001	LCS-1120	2	Water	11/10/20	1320	11/11/20	KELSO	IV
R2010670-004	Field Blank	1	Water	11/10/20	1320	11/11/20	KELSO	IV

Test Comments
PFAS - PFC/537M R2010670-001,4 NYS 21 list

Folder Comments:
Report Total Uanium only - none of the isotopes

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
NPDES pH Checked _____	____RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 X STANDARD Requested FAX Date: _____ Requested Report Date: 11/20/20	___ I. Results Only X II. Results + QC Summaries ___ III. Results + QC and Calibration Summaries X IV. Data Validation Report with Raw Data PQL/MDL/J Y EDD Y	PO# 58R2010670 Bill to

Relinquished By: [signature] 11/13/2020 1320 Received By: [signature] 11/14/20 1125 Airbill Number: _____

PM NH

Cooler Receipt and Preservation Form

Client HLA - Rocklin Service Request ~~K20~~ R2010670

Received: 11/14/20 Opened: 11/14/20 By: BK Unloaded: 11/14/20 By: BK

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below.
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable: tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
NA	3.4	11201	01			773024334375	
NA	2.7	↓	02			4306	

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

PFAS by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Organic Compounds by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ng/L
Lab Code:	R2010670-001	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)								
Perfluorobutane sulfonic acid (PFBS)	**450**		4.3	0.28	1	12/08/20 00:10	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	**270**		4.3	1.3	1	12/08/20 00:10	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	**11**		4.3	0.44	1	12/08/20 00:10	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	**190**		1.7	0.44	1	12/08/20 00:10	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	**0.71**	**J**	4.3	0.30	1	12/08/20 00:10	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	**1700**	**X**	4.3	0.40	1	12/08/20 00:10	11/20/20	
Perfluoropentanoic acid (PFPeA)	**3500**	**X**	4.3	1.7	1	12/08/20 00:10	11/20/20	
Perfluorohexanoic acid (PFHxA)	**3900**	**X**	9.2	8.8	1	12/08/20 00:10	11/20/20	
Perfluoroheptanoic acid (PFHpA)	**820**		4.3	0.63	1	12/08/20 00:10	11/20/20	
Perfluorooctanoic acid (PFOA)	**1200**		1.7	0.35	1	12/08/20 00:10	11/20/20	
Perfluorononanoic acid (PFNA)	**76**		4.3	1.1	1	12/08/20 00:10	11/20/20	
Perfluorodecanoic acid (PFDA)	**56**		4.3	1.2	1	12/08/20 00:10	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	**6.1**		4.3	1.5	1	12/08/20 00:10	11/20/20	
Perfluorododecanoic acid (PFDoDA)	**2.9**	**J**	4.3	1.3	1	12/08/20 00:10	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	4.3	U	4.3	1.3	1	12/08/20 00:10	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	4.3	U	4.3	2.0	1	12/08/20 00:10	11/20/20	
Perfluoroalkyl Sulfonamido Substances								
Perfluorooctane sulfonamide (FOSA)	**2.7**	**J**	4.3	0.52	1	12/08/20 00:10	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	**64**		4.3	1.4	1	12/08/20 00:10	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	**27**		4.3	0.50	1	12/08/20 00:10	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	**260**		4.3	0.55	1	12/08/20 00:10	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	**14**		4.3	0.15	1	12/08/20 00:10	11/20/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	LCS-1120	**Units:**	ng/L
Lab Code:	R2010670-001	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	26	20 - 109	12/08/20 00:10	
18O2-PFHxS	31	26 - 122	12/08/20 00:10	
13C4-PFOS	40	25 - 121	12/08/20 00:10	
13C4-PFBA	7	27 - 124	12/08/20 00:10	*
13C5-PFPeA	7	27 - 138	12/08/20 00:10	*
13C2-PFHxA	7	28 - 132	12/08/20 00:10	*
13C4-PFHpA	12	19 - 139	12/08/20 00:10	*
13C4-PFOA	17	22 - 130	12/08/20 00:10	*
13C5-PFNA	27	20 - 127	12/08/20 00:10	
13C2-PFDA	32	24 - 125	12/08/20 00:10	
13C2-PFUnDA	43	22 - 125	12/08/20 00:10	
13C2-PFDoDA	38	19 - 122	12/08/20 00:10	
13C2-PFTeDA	17	13 - 124	12/08/20 00:10	
13C8-FOSA	38	18 - 109	12/08/20 00:10	
D3-MeFOSAA	51	9 - 123	12/08/20 00:10	
D5-EtFOSAA	58	12 - 126	12/08/20 00:10	
13C2-6:2 FTS	77	10 - 226	12/08/20 00:10	
13C2-8:2 FTS	109	10 - 202	12/08/20 00:10	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	Field Blank	**Units:**	ng/L
Lab Code:	R2010670-004	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	4.4 U	4.4	0.28	1	12/08/20 00:21	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	4.4 U	4.4	1.3	1	12/08/20 00:21	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	4.4 U	4.4	0.44	1	12/08/20 00:21	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	1.8 U	1.8	0.44	1	12/08/20 00:21	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	4.4 U	4.4	0.30	1	12/08/20 00:21	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	4.4 U	4.4	0.40	1	12/08/20 00:21	11/20/20	
Perfluoropentanoic acid (PFPeA)	4.4 U	4.4	1.7	1	12/08/20 00:21	11/20/20	
Perfluorohexanoic acid (PFHxA)	9.2 U	9.2	8.8	1	12/08/20 00:21	11/20/20	
Perfluoroheptanoic acid (PFHpA)	4.4 U	4.4	0.63	1	12/08/20 00:21	11/20/20	
Perfluorooctanoic acid (PFOA)	**0.59 J**	1.8	0.35	1	12/08/20 00:21	11/20/20	
Perfluorononanoic acid (PFNA)	4.4 U	4.4	1.1	1	12/08/20 00:21	11/20/20	
Perfluorodecanoic acid (PFDA)	4.4 U	4.4	1.2	1	12/08/20 00:21	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	4.4 U	4.4	1.5	1	12/08/20 00:21	11/20/20	
Perfluorododecanoic acid (PFDoDA)	4.4 U	4.4	1.3	1	12/08/20 00:21	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	4.4 U	4.4	1.3	1	12/08/20 00:21	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	4.4 U	4.4	2.0	1	12/08/20 00:21	11/20/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	4.4 U	4.4	0.52	1	12/08/20 00:21	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	4.4 U	4.4	1.4	1	12/08/20 00:21	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	4.4 U	4.4	0.50	1	12/08/20 00:21	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.4 U	4.4	0.55	1	12/08/20 00:21	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.4 U	4.4	0.15	1	12/08/20 00:21	11/20/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	11/10/20 13:20
Sample Matrix:	Water	**Date Received:**	11/11/20 09:50
Sample Name:	Field Blank	**Units:**	ng/L
Lab Code:	R2010670-004	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	60	20 - 109	12/08/20 00:21	
18O2-PFHxS	63	26 - 122	12/08/20 00:21	
13C4-PFOS	68	25 - 121	12/08/20 00:21	
13C4-PFBA	82	27 - 124	12/08/20 00:21	
13C5-PFPeA	81	27 - 138	12/08/20 00:21	
13C2-PFHxA	57	28 - 132	12/08/20 00:21	
13C4-PFHpA	70	19 - 139	12/08/20 00:21	
13C4-PFOA	64	22 - 130	12/08/20 00:21	
13C5-PFNA	79	20 - 127	12/08/20 00:21	
13C2-PFDA	67	24 - 125	12/08/20 00:21	
13C2-PFUnDA	73	22 - 125	12/08/20 00:21	
13C2-PFDoDA	69	19 - 122	12/08/20 00:21	
13C2-PFTeDA	88	13 - 124	12/08/20 00:21	
13C8-FOSA	58	18 - 109	12/08/20 00:21	
D3-MeFOSAA	66	9 - 123	12/08/20 00:21	
D5-EtFOSAA	69	12 - 126	12/08/20 00:21	
13C2-6:2 FTS	83	10 - 226	12/08/20 00:21	
13C2-8:2 FTS	88	10 - 202	12/08/20 00:21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Organic Compounds by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters/
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	LCS-1120 R2010670-001	Field Blank R2010670-004	Method Blank KQ2018387-03
13C3-PFBS	20-109	26	60	56
18O2-PFHxS	26-122	31	63	61
13C4-PFOS	25-121	40	68	67
13C4-PFBA	27-124	7*	82	76
13C5-PFPeA	27-138	7*	81	77
13C2-PFHxA	28-132	7*	57	65
13C4-PFHpA	19-139	12*	70	78
13C4-PFOA	22-130	17*	64	64
13C5-PFNA	20-127	27	79	79
13C2-PFDA	24-125	32	67	71
13C2-PFUnDA	22-125	43	73	72
13C2-PFDoDA	19-122	38	69	73
13C2-PFTeDA	13-124	17	88	86
13C8-FOSA	18-109	38	58	59
D3-MeFOSAA	9-123	51	66	75
D5-EtFOSAA	12-126	58	69	84
13C2-6:2 FTS	10-226	77	83	74
13C2-8:2 FTS	10-202	109	88	97

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Client: Casella Waste Systems (Hampden ME) **Service Request:** R2010670
Project: Hakes C&D Landfill - Part 363 Parameters/
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	Lab Control Sample KQ2018387-01	Duplicate Lab Control Sample KQ2018387-02
13C3-PFBS	20-109	61	67
18O2-PFHxS	26-122	75	70
13C4-PFOS	25-121	72	76
13C4-PFBA	27-124	86	86
13C5-PFPeA	27-138	86	86
13C2-PFHxA	28-132	68	61
13C4-PFHpA	19-139	86	76
13C4-PFOA	22-130	74	72
13C5-PFNA	20-127	86	90
13C2-PFDA	24-125	78	77
13C2-PFUnDA	22-125	77	77
13C2-PFDoDA	19-122	88	80
13C2-PFTeDA	13-124	97	97
13C8-FOSA	18-109	70	62
D3-MeFOSAA	9-123	84	81
D5-EtFOSAA	12-126	96	86
13C2-6:2 FTS	10-226	75	79
13C2-8:2 FTS	10-202	102	91

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ2018387-03	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	5.0 U	5.0	0.28	1	12/07/20 23:16	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	5.0 U	5.0	1.3	1	12/07/20 23:16	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	5.0 U	5.0	0.44	1	12/07/20 23:16	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	2.0 U	2.0	0.44	1	12/07/20 23:16	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	5.0 U	5.0	0.30	1	12/07/20 23:16	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	5.0 U	5.0	0.40	1	12/07/20 23:16	11/20/20	
Perfluoropentanoic acid (PFPeA)	5.0 U	5.0	1.7	1	12/07/20 23:16	11/20/20	
Perfluorohexanoic acid (PFHxA)	10 U	10	8.8	1	12/07/20 23:16	11/20/20	
Perfluoroheptanoic acid (PFHpA)	5.0 U	5.0	0.63	1	12/07/20 23:16	11/20/20	
Perfluorooctanoic acid (PFOA)	**0.60 J**	2.0	0.35	1	12/07/20 23:16	11/20/20	
Perfluorononanoic acid (PFNA)	5.0 U	5.0	1.1	1	12/07/20 23:16	11/20/20	
Perfluorodecanoic acid (PFDA)	5.0 U	5.0	1.2	1	12/07/20 23:16	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	5.0 U	5.0	1.5	1	12/07/20 23:16	11/20/20	
Perfluorododecanoic acid (PFDoDA)	5.0 U	5.0	1.3	1	12/07/20 23:16	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	5.0 U	5.0	1.3	1	12/07/20 23:16	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	5.0 U	5.0	2.0	1	12/07/20 23:16	11/20/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	5.0 U	5.0	0.52	1	12/07/20 23:16	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	5.0 U	5.0	1.4	1	12/07/20 23:16	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.0 U	5.0	0.50	1	12/07/20 23:16	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	5.0 U	5.0	0.55	1	12/07/20 23:16	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.0 U	5.0	0.15	1	12/07/20 23:16	11/20/20	

Analytical Report

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ2018387-03	**Basis:**	NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	56	20 - 109	12/07/20 23:16	
18O2-PFHxS	61	26 - 122	12/07/20 23:16	
13C4-PFOS	67	25 - 121	12/07/20 23:16	
13C4-PFBA	76	27 - 124	12/07/20 23:16	
13C5-PFPeA	77	27 - 138	12/07/20 23:16	
13C2-PFHxA	65	28 - 132	12/07/20 23:16	
13C4-PFHpA	78	19 - 139	12/07/20 23:16	
13C4-PFOA	64	22 - 130	12/07/20 23:16	
13C5-PFNA	79	20 - 127	12/07/20 23:16	
13C2-PFDA	71	24 - 125	12/07/20 23:16	
13C2-PFUnDA	72	22 - 125	12/07/20 23:16	
13C2-PFDoDA	73	19 - 122	12/07/20 23:16	
13C2-PFTeDA	86	13 - 124	12/07/20 23:16	
13C8-FOSA	59	18 - 109	12/07/20 23:16	
D3-MeFOSAA	75	9 - 123	12/07/20 23:16	
D5-EtFOSAA	84	12 - 126	12/07/20 23:16	
13C2-6:2 FTS	74	10 - 226	12/07/20 23:16	
13C2-8:2 FTS	97	10 - 202	12/07/20 23:16	

Client:	Casella Waste Systems (Hampden ME)	**Service Request:**	R2010670
Project:	Hakes C&D Landfill - Part 363 Parameters	**Date Analyzed:**	12/07/20
Sample Matrix:	Water	**Date Extracted:**	11/20/20

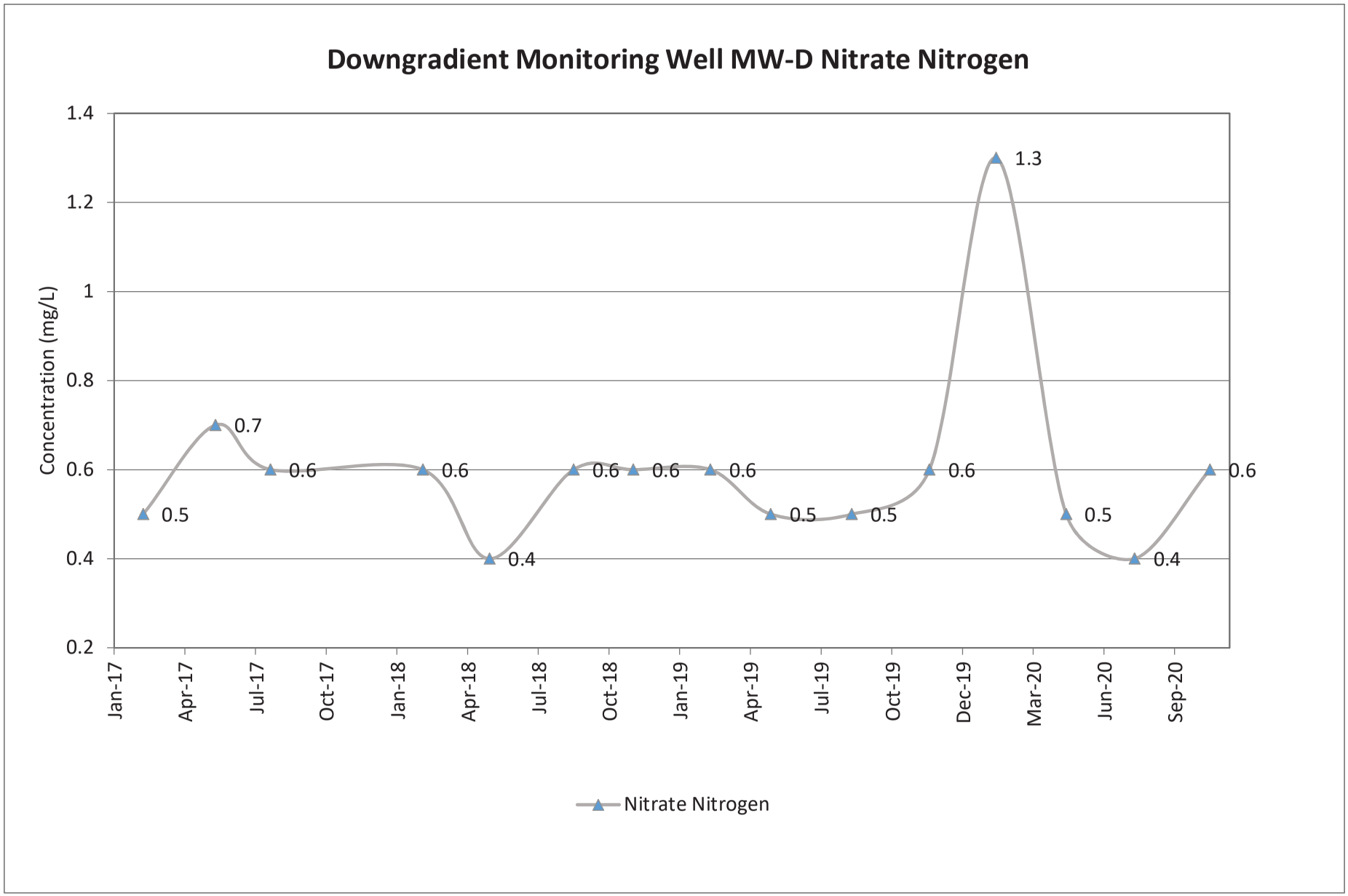
Duplicate Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

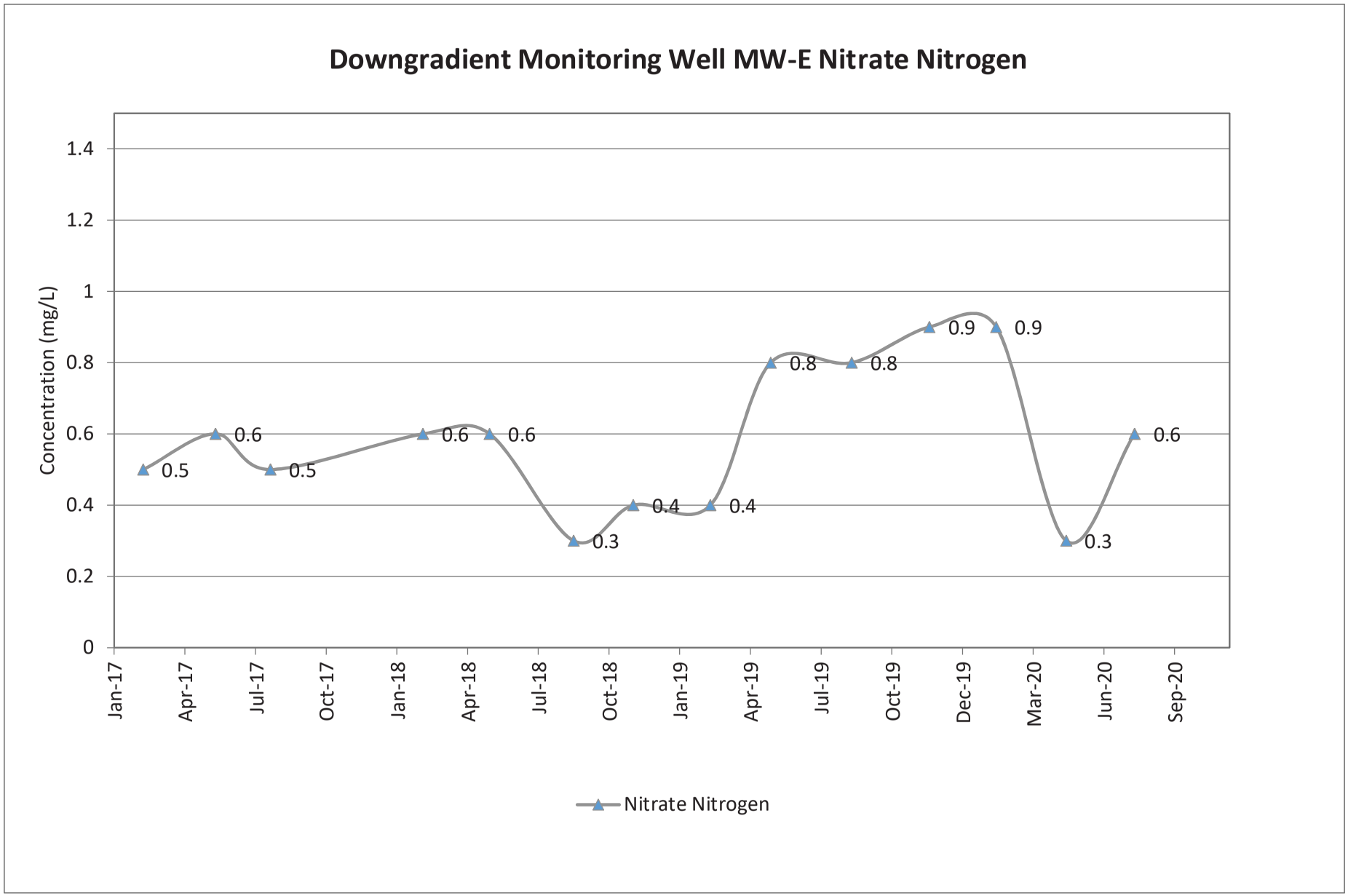
Analysis Method:	PFC/537M	**Units:**	ng/L
Prep Method:	ALS SOP	**Basis:**	NA
		Analysis Lot:	706439

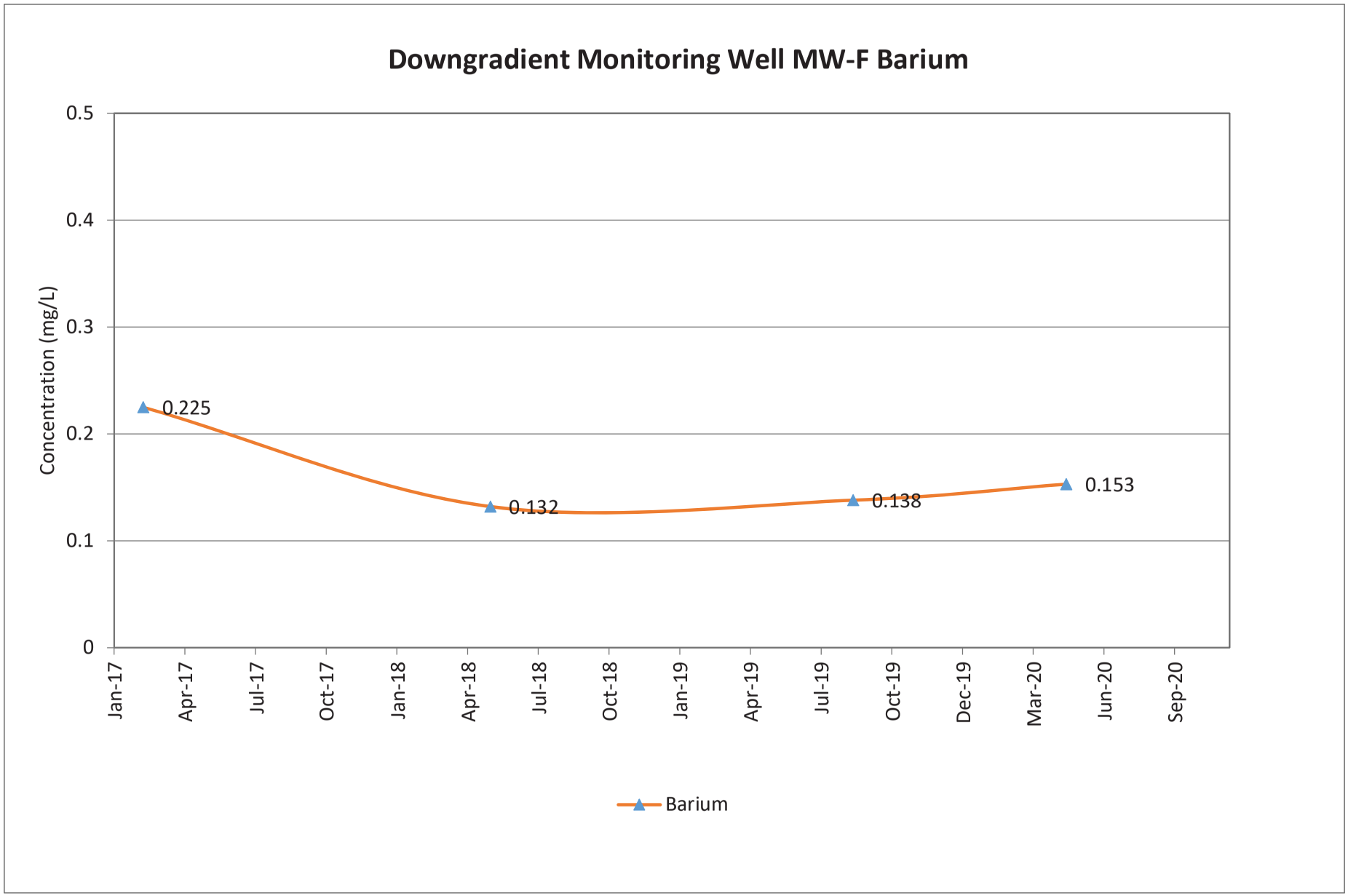
	Lab Control Sample KQ2018387-01			Duplicate Lab Control Sample KQ2018387-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	35.5	30.4	117	27.3	30.4	90	71-142	26	30
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	36.1	30.7	118	32.3	30.7	105	69-137	11	30
N-Ethyl perfluorooctane sulfonamidoacetic acid	33.7	32.0	105	28.9	32.0	90	58-155	15	30
N-Methyl perfluorooctane sulfonamidoacetic acid	33.1	32.0	103	25.0	32.0	78	69-151	28	30
Perfluorobutane sulfonic acid (PFBS)	30.7	28.4	108	24.7	28.4	87	61-140	22	30
Perfluorobutanoic acid (PFBA)	38.5	32.0	120	31.9	32.0	100	51-157	19	30
Perfluorodecane sulfonic acid (PFDS)	36.4	30.9	118	27.5	30.9	89	69-146	28	30
Perfluorodecanoic acid (PFDA)	36.1	32.0	113	28.8	32.0	90	73-136	22	30
Perfluorododecanoic acid (PFDoDA)	30.6	32.0	96	26.7	32.0	84	71-138	13	30
Perfluoroheptane sulfonic acid (PFHpS)	30.6	30.5	100	30.6	30.5	100	62-178	<1	30
Perfluoroheptanoic acid (PFHpA)	30.6	32.0	96	25.4	32.0	79	72-133	19	30
Perfluorohexane sulfonic acid (PFHxS)	30.4	29.2	104	25.7	29.2	88	69-144	17	30
Perfluorohexanoic acid (PFHxA)	36.7	32.0	115	32.3	32.0	101	71-138	13	30
Perfluorononanoic acid (PFNA)	33.9	32.0	106	26.8	32.0	84	69-148	23	30
Perfluorooctane sulfonamide (FOSA)	34.6	32.0	108	29.0	32.0	91	64-135	18	30
Perfluorooctane sulfonic acid (PFOS)	30.8	29.7	103	26.4	29.7	89	71-139	15	30
Perfluorooctanoic acid (PFOA)	33.6	32.0	105	26.9	32.0	84	74-146	22	30
Perfluoropentanoic acid (PFPeA)	34.0	32.0	106	28.9	32.0	90	67-127	16	30
Perfluorotetradecanoic acid (PFTeDA)	30.8	32.0	96	26.2	32.0	82	63-139	16	30
Perfluorotridecanoic acid (PFTrDA)	38.3	32.0	120	27.9	32.0	87	65-140	31 *	30
Perfluoroundecanoic acid (PFUnDA)	34.6	32.0	108	29.0	32.0	91	76-134	18	30

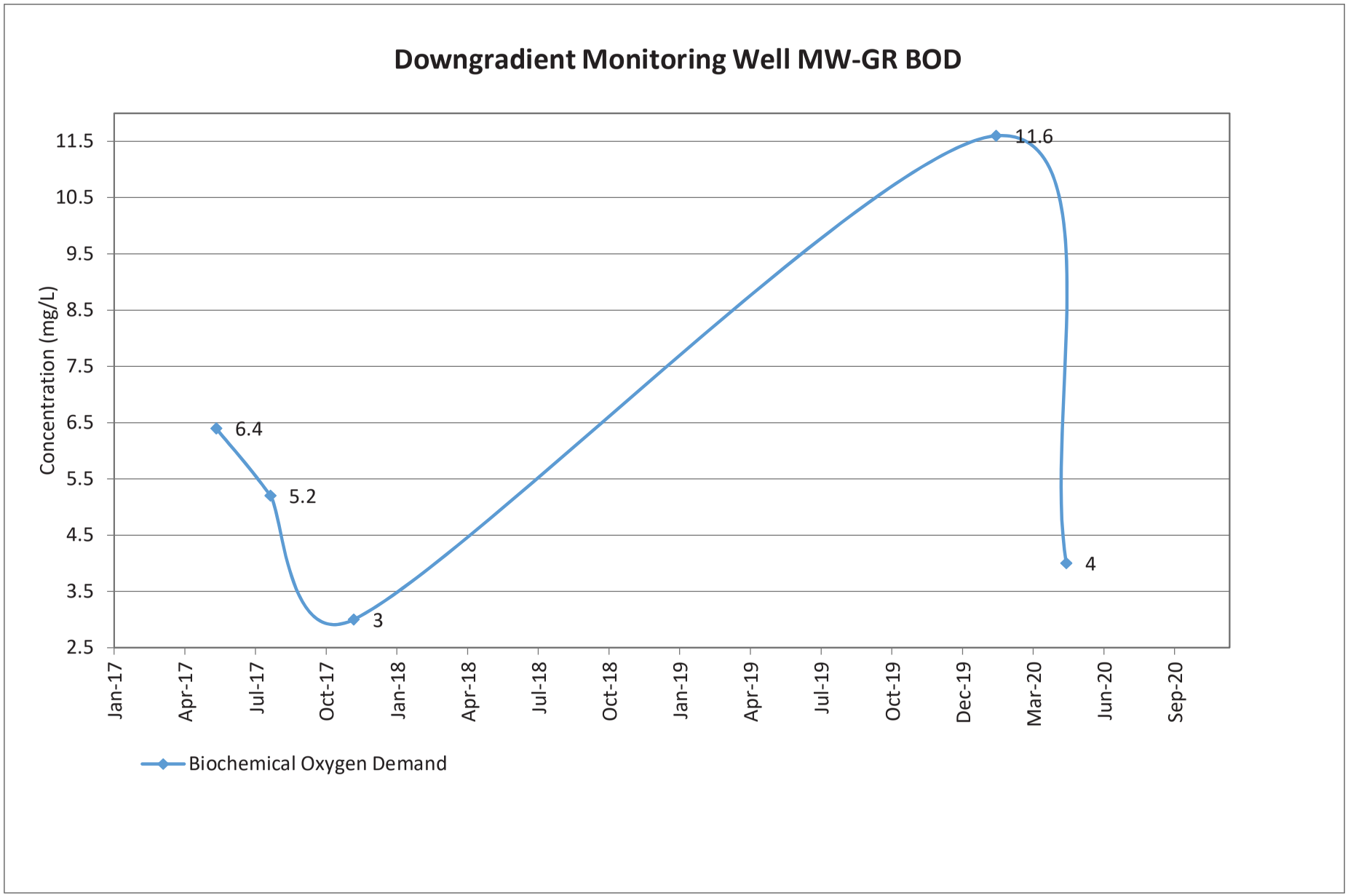
Appendix C

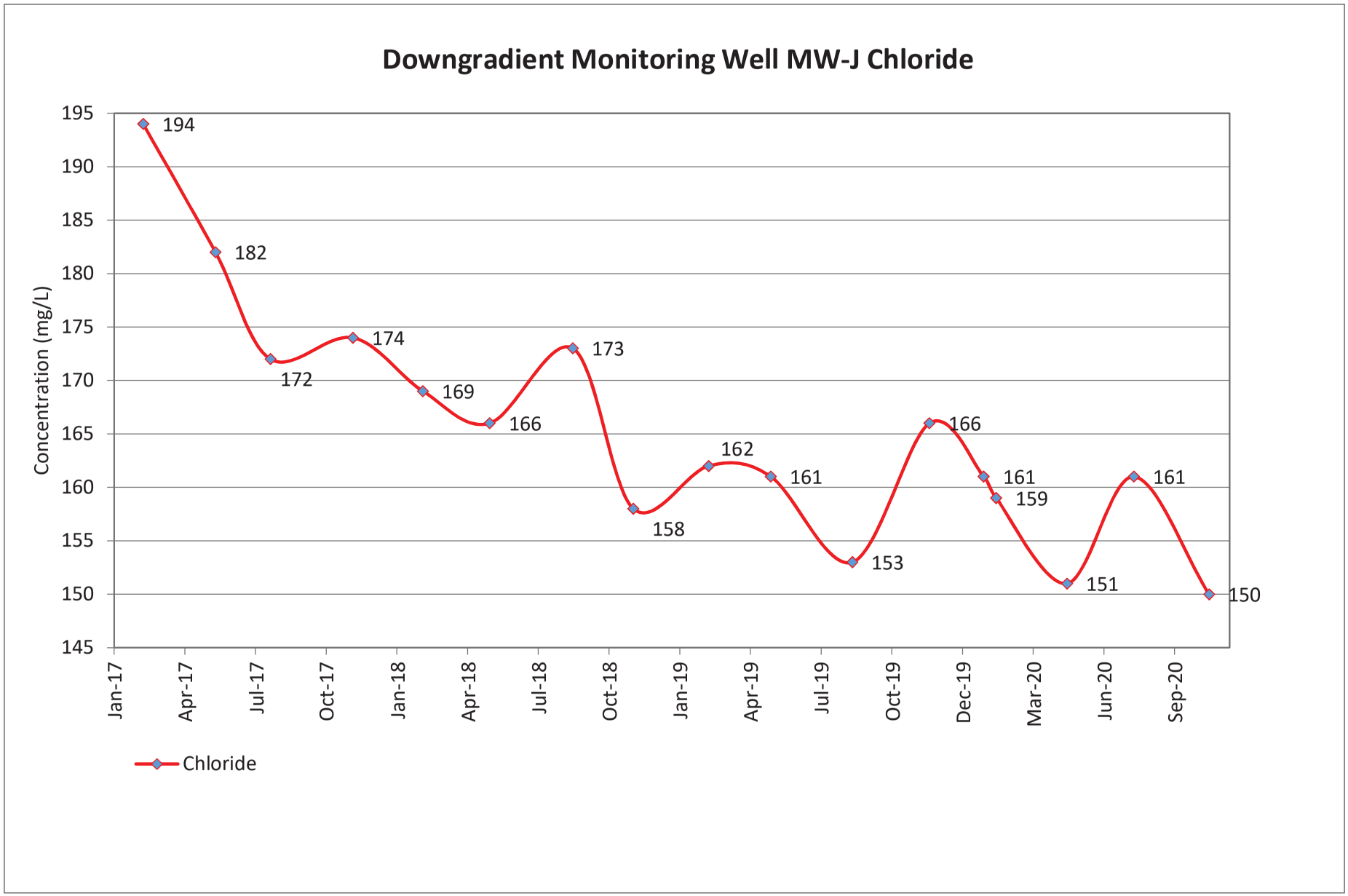
Time Trend Graphs

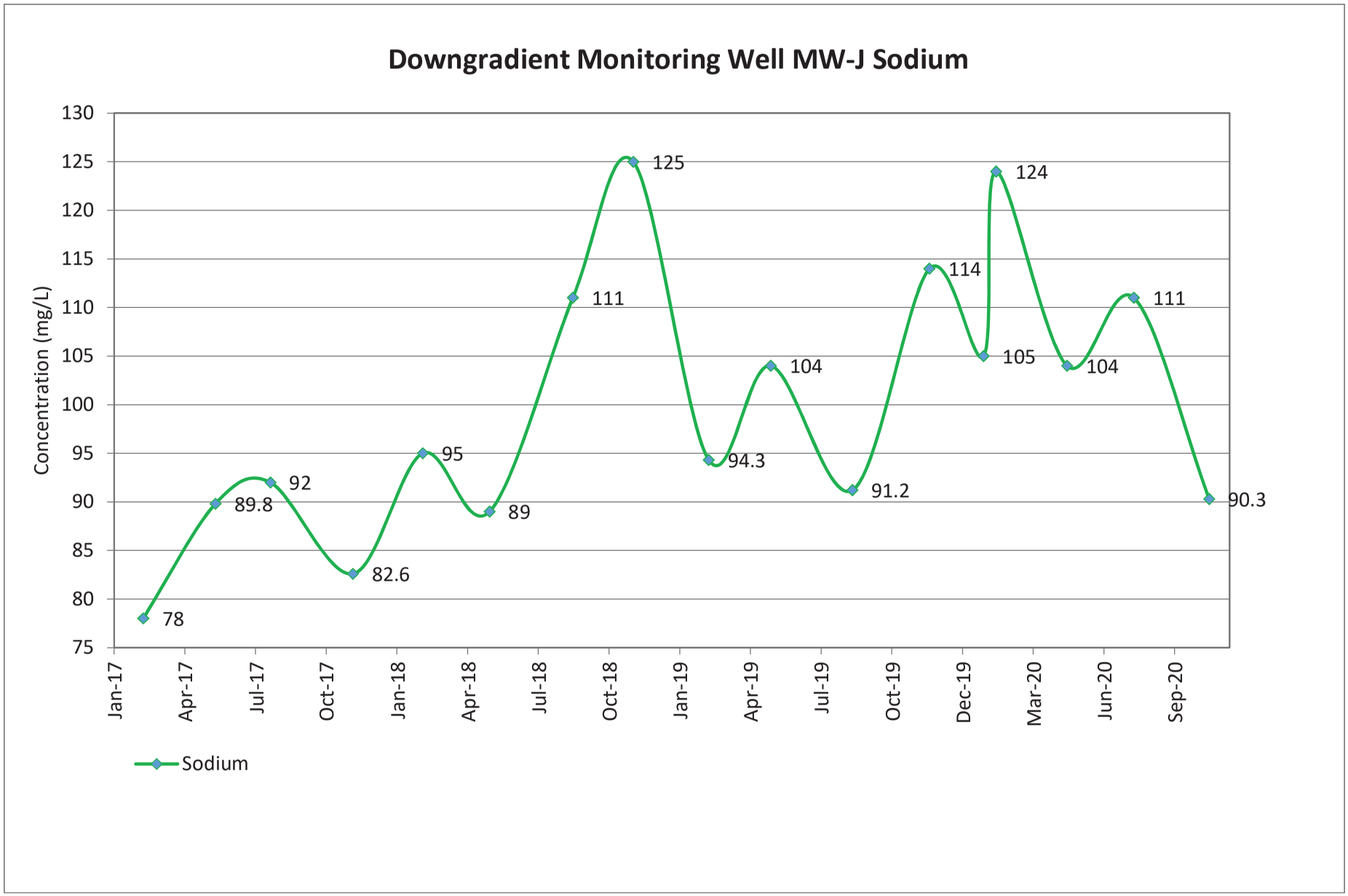

Downgradient Monitoring Well MW-D Nitrate Nitrogen
Concentration (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0.5
0.7
0.6
0.6
0.4
0.6
0.6
0.6
0.5
0.5
0.6
1.3
0.5
0.4
0.6
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Nitrate Nitrogen

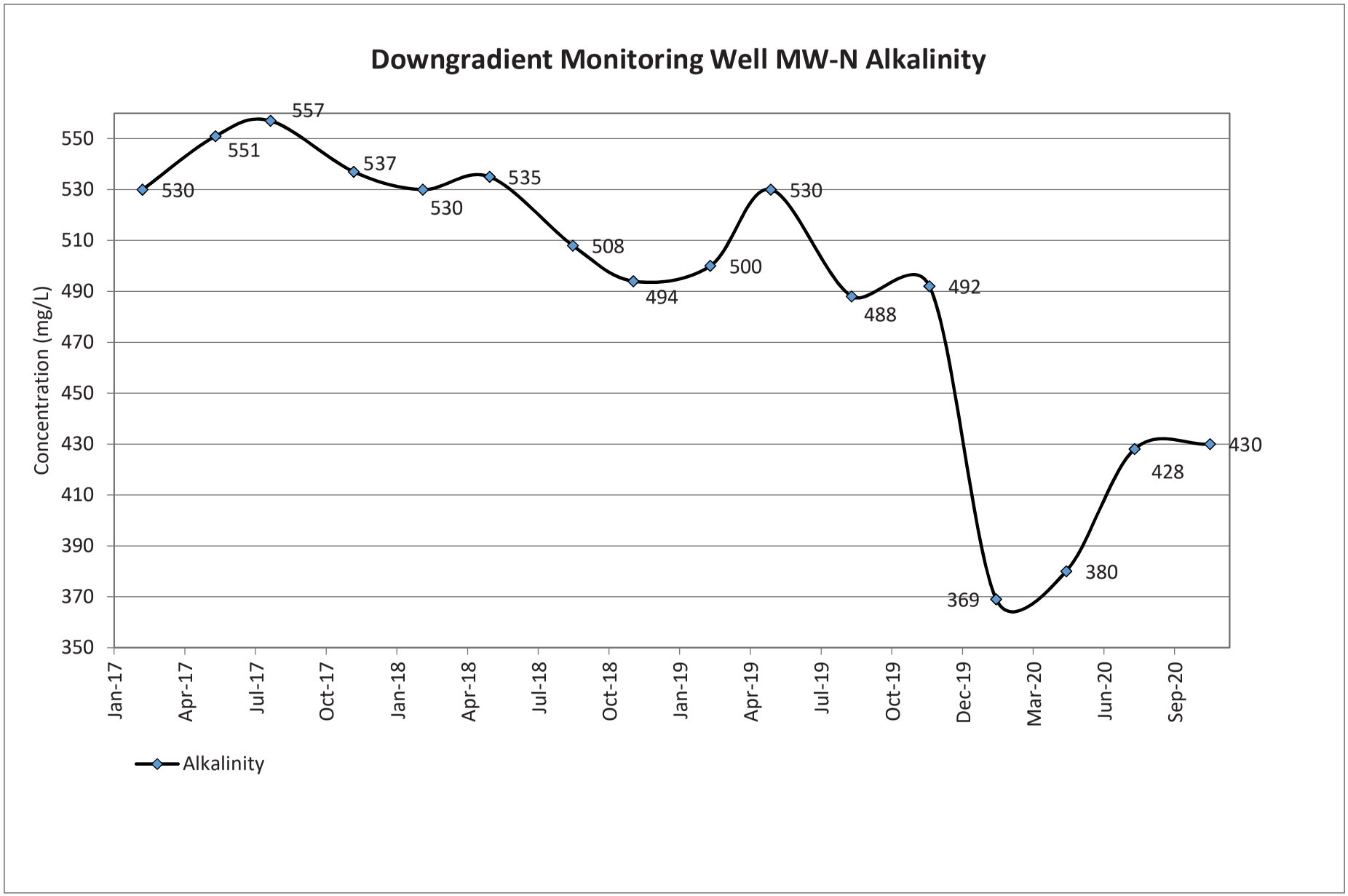

Downgradient Monitoring Well MW-E Nitrate Nitrogen
Concentration (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.5
0.6
0.5
0.6
0.6
0.3
0.4
0.4
0.8
0.8
0.9
0.9
0.3
0.6
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Nitrate Nitrogen

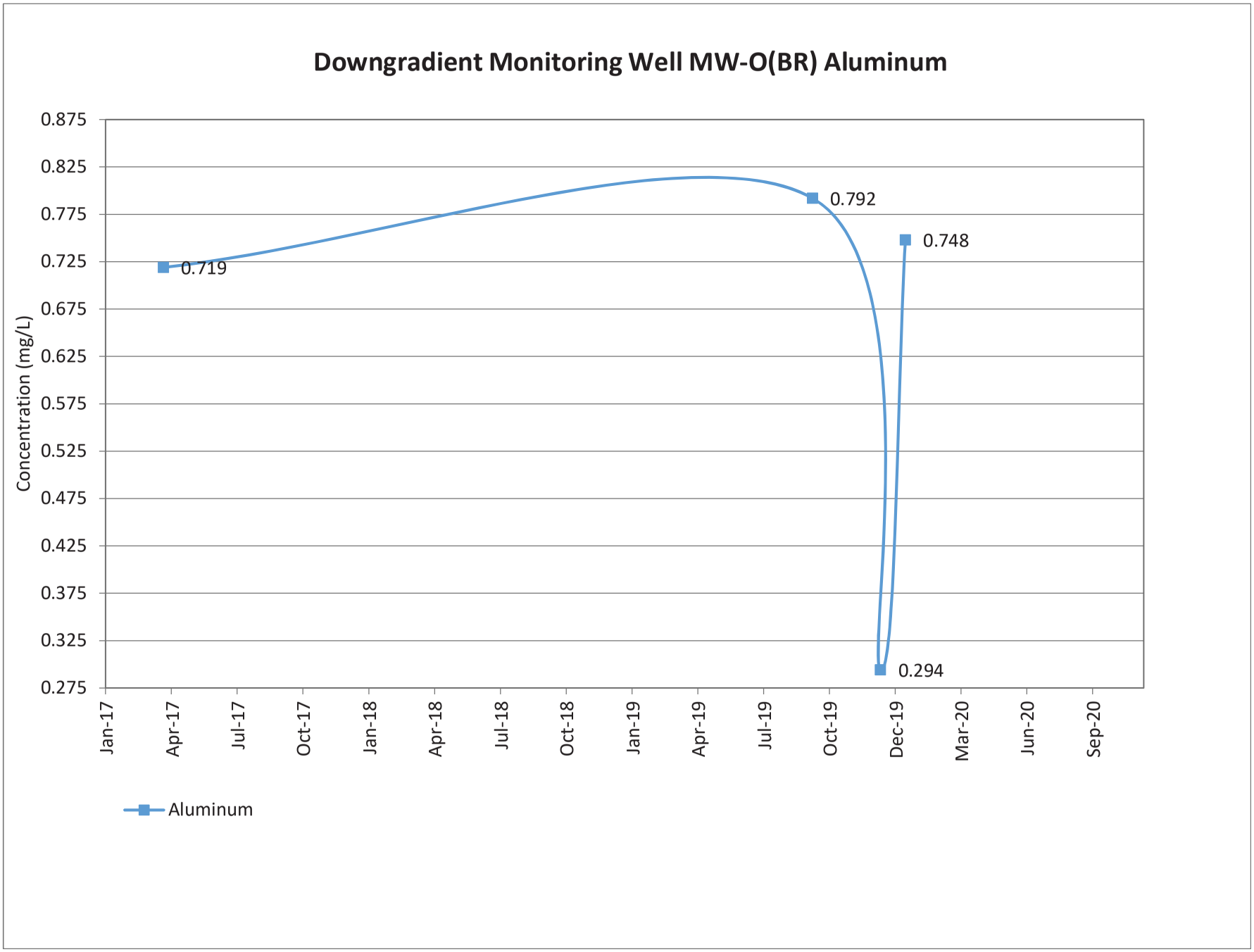

Downgradient Monitoring Well MW-F Barium
Concentration (mg/L)
0.5
0.4
0.3
0.2
0.1
0
0.225
0.132
0.138
0.153
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Barium

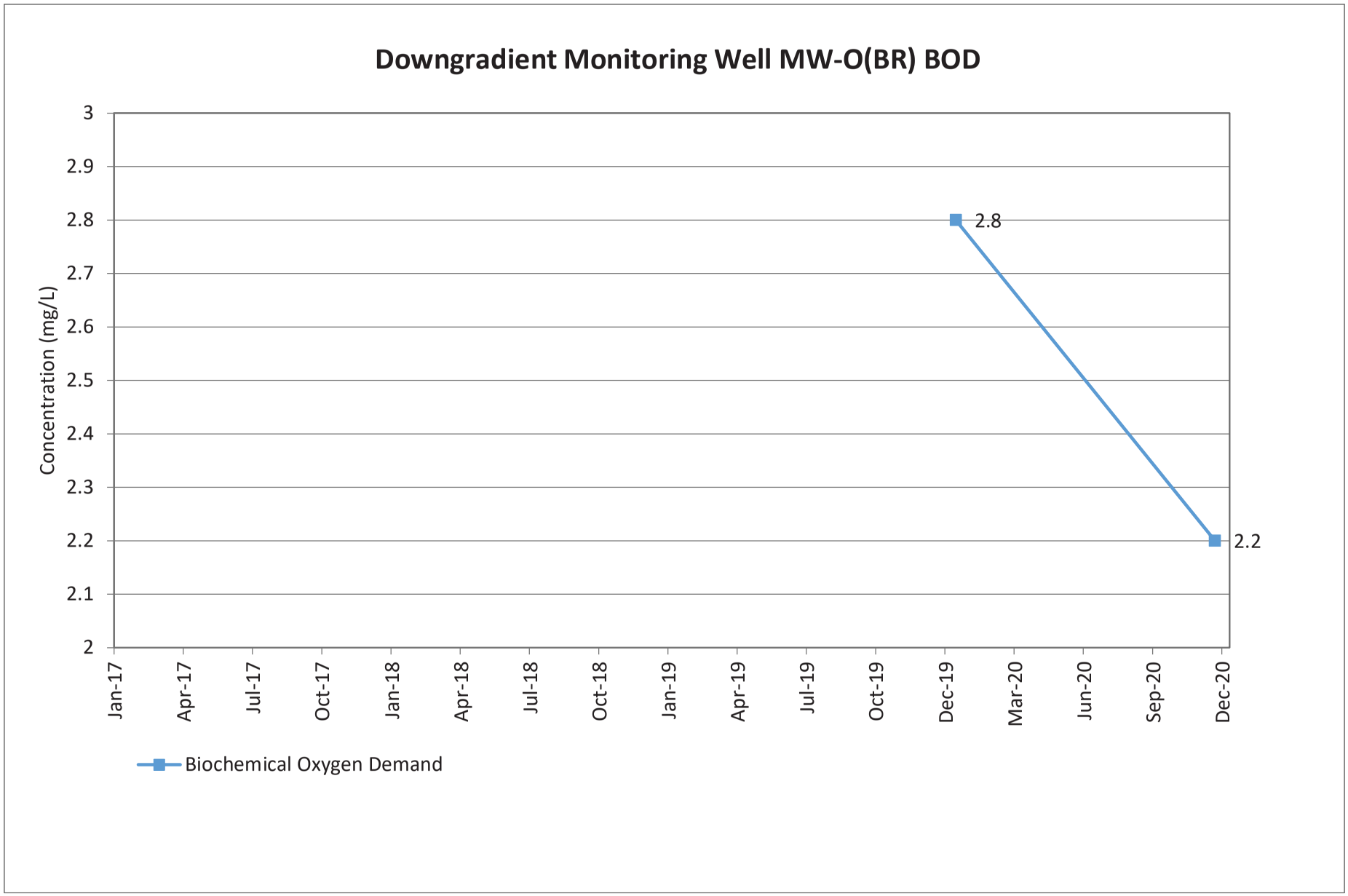

Downgradient Monitoring Well MW-GR BOD
Concentration (mg/L)
11.5
10.5
9.5
8.5
7.5
6.5
5.5
4.5
3.5
2.5
6.4
5.2
3
11.6
4
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Biochemical Oxygen Demand

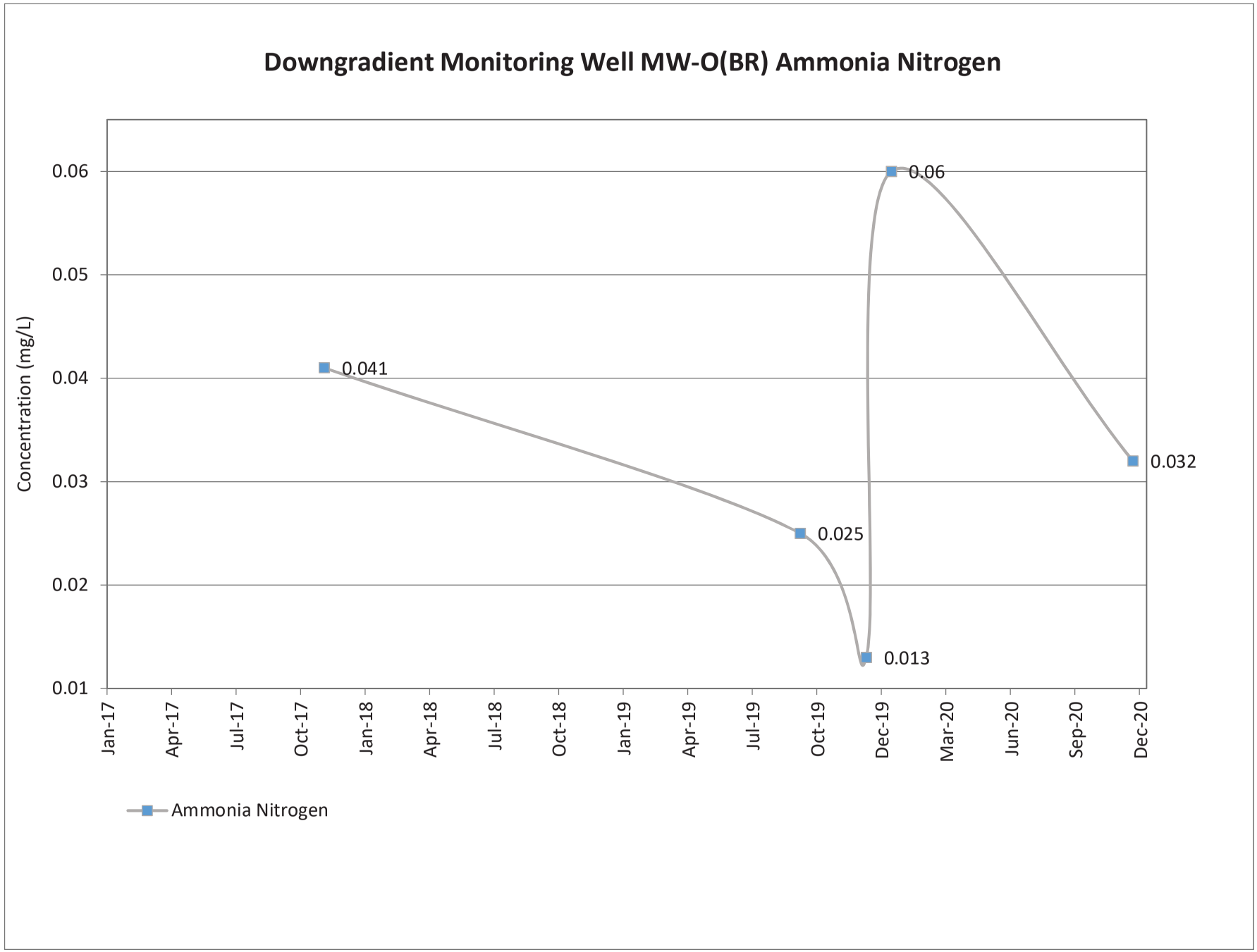

Downgradient Monitoring Well MW-J Chloride
Concentration (mg/L)
195
190
185
180
175
170
165
160
155
150
145
194
182
172
174
169
166
173
158
162
161
153
166
161
159
151
161
150
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Chloride

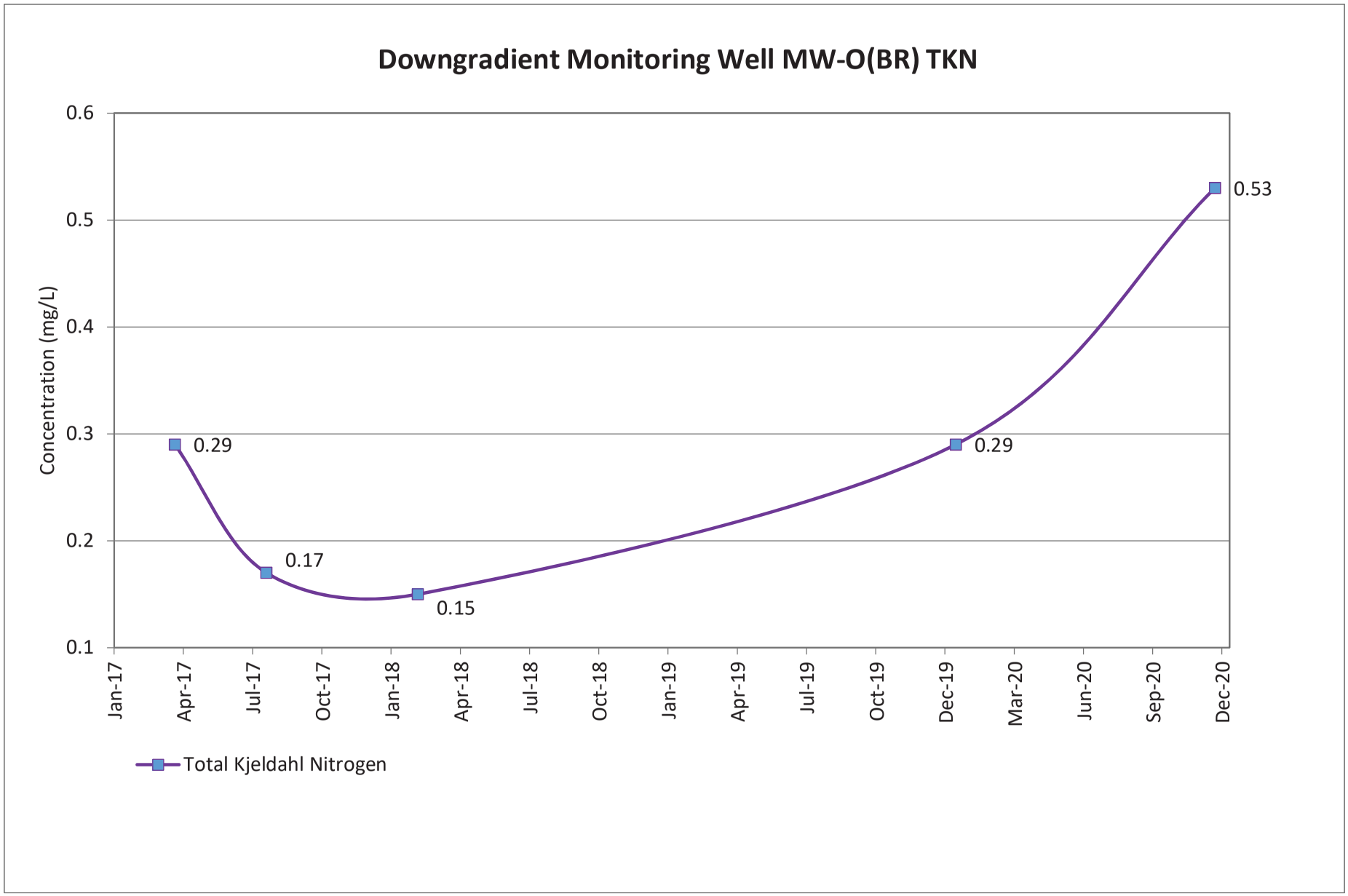

Downgradient Monitoring Well MW-J Sodium
Concentration (mg/L)
130
125
120
115
110
105
100
95
90
85
80
75
78
89.8
92
82.6
95
89
111
125
94.3
104
91.2
114
105
124
104
111
90.3
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Sodium

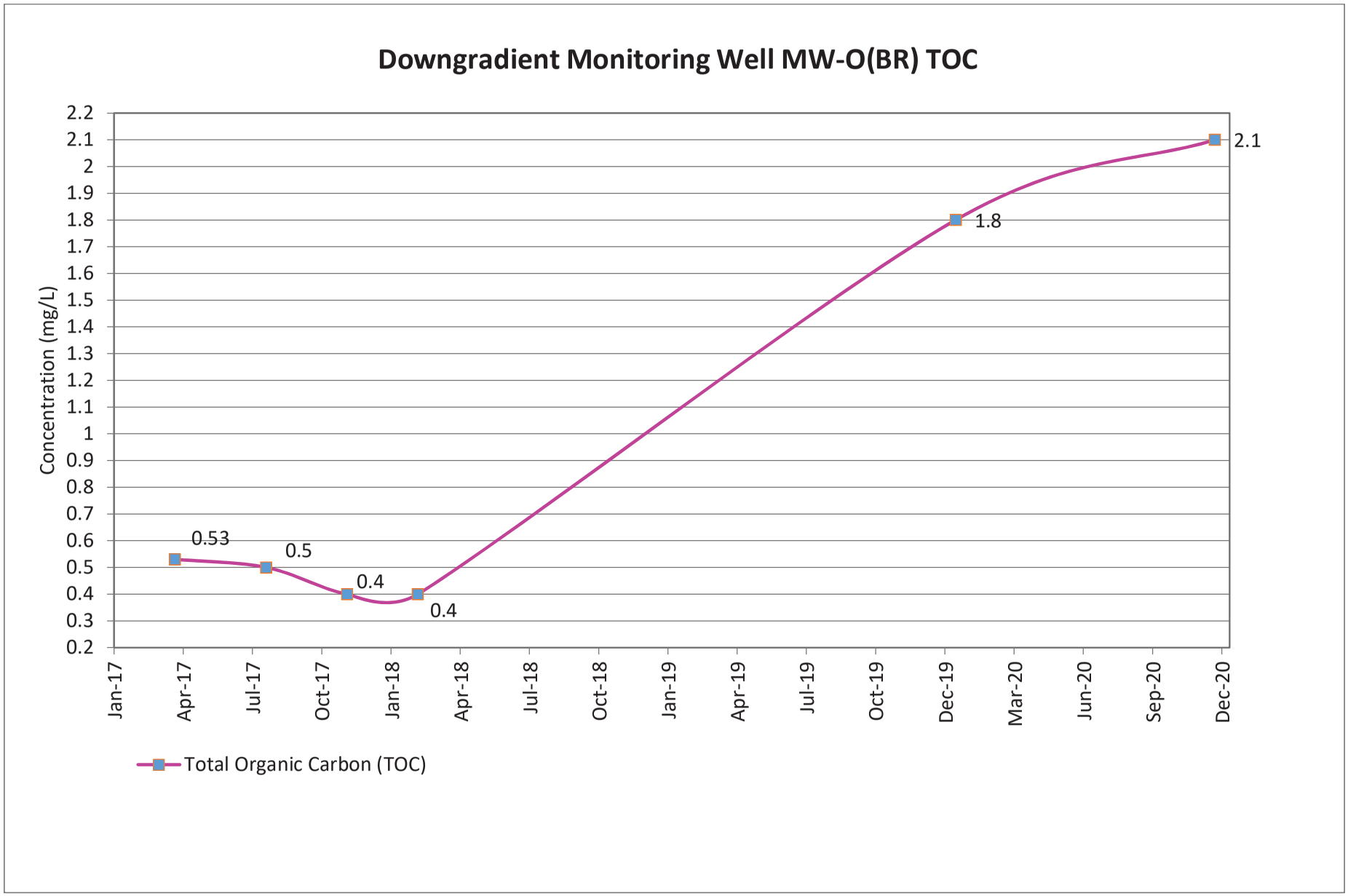

Downgradient Monitoring Well MW-N Alkalinity
Concentration (mg/L)
550
530
510
490
470
450
430
410
390
370
350
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
530
551
557
537
530
535
508
494
500
530
488
492
369
380
428
430
Alkalinity

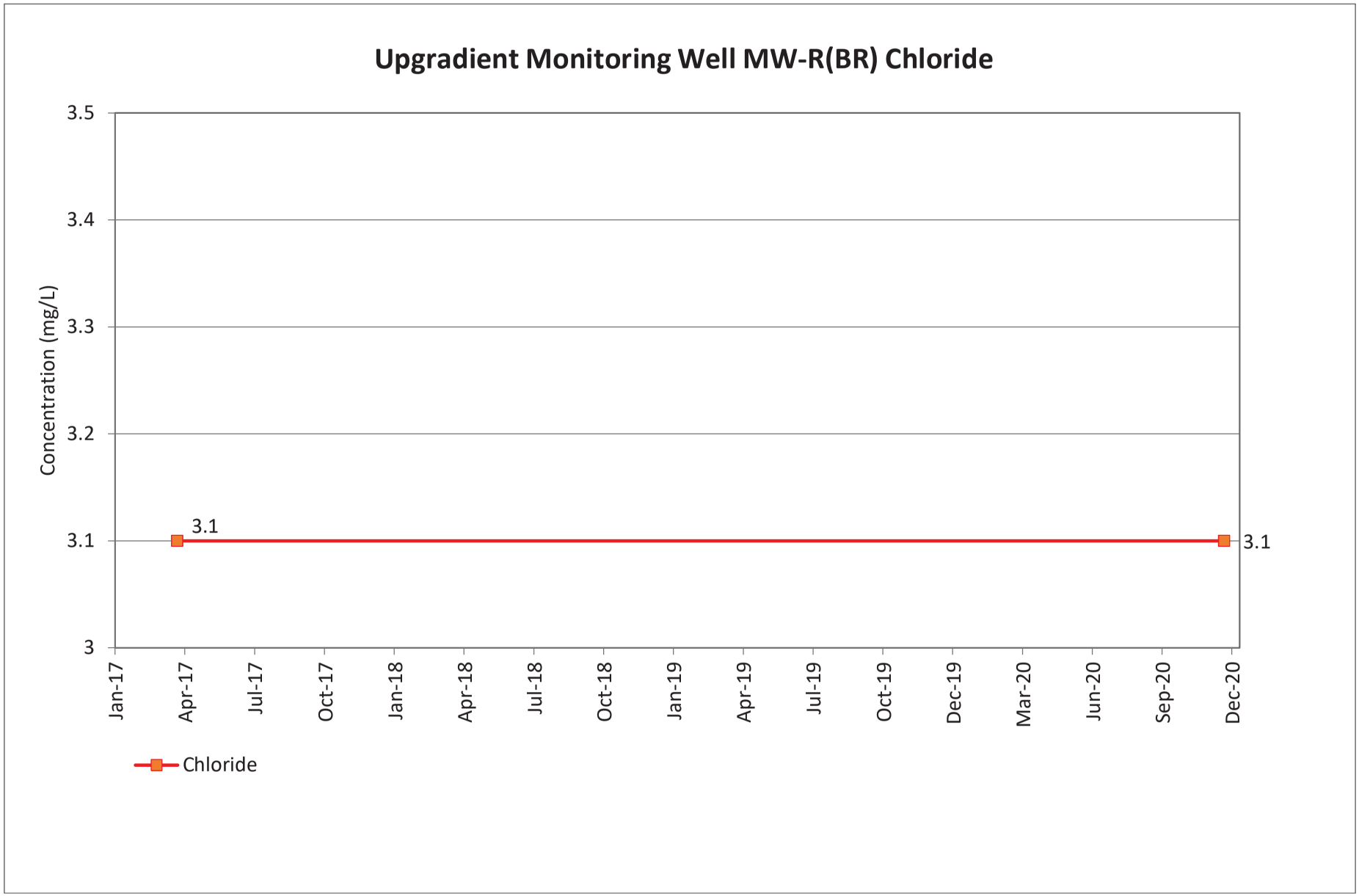

Downgradient Monitoring Well MW-O(BR) Aluminum
Concentration (mg/L)
0.875
0.825
0.775
0.725
0.675
0.625
0.575
0.525
0.475
0.425
0.375
0.325
0.275
0.719
0.792
0.748
0.294
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Aluminum

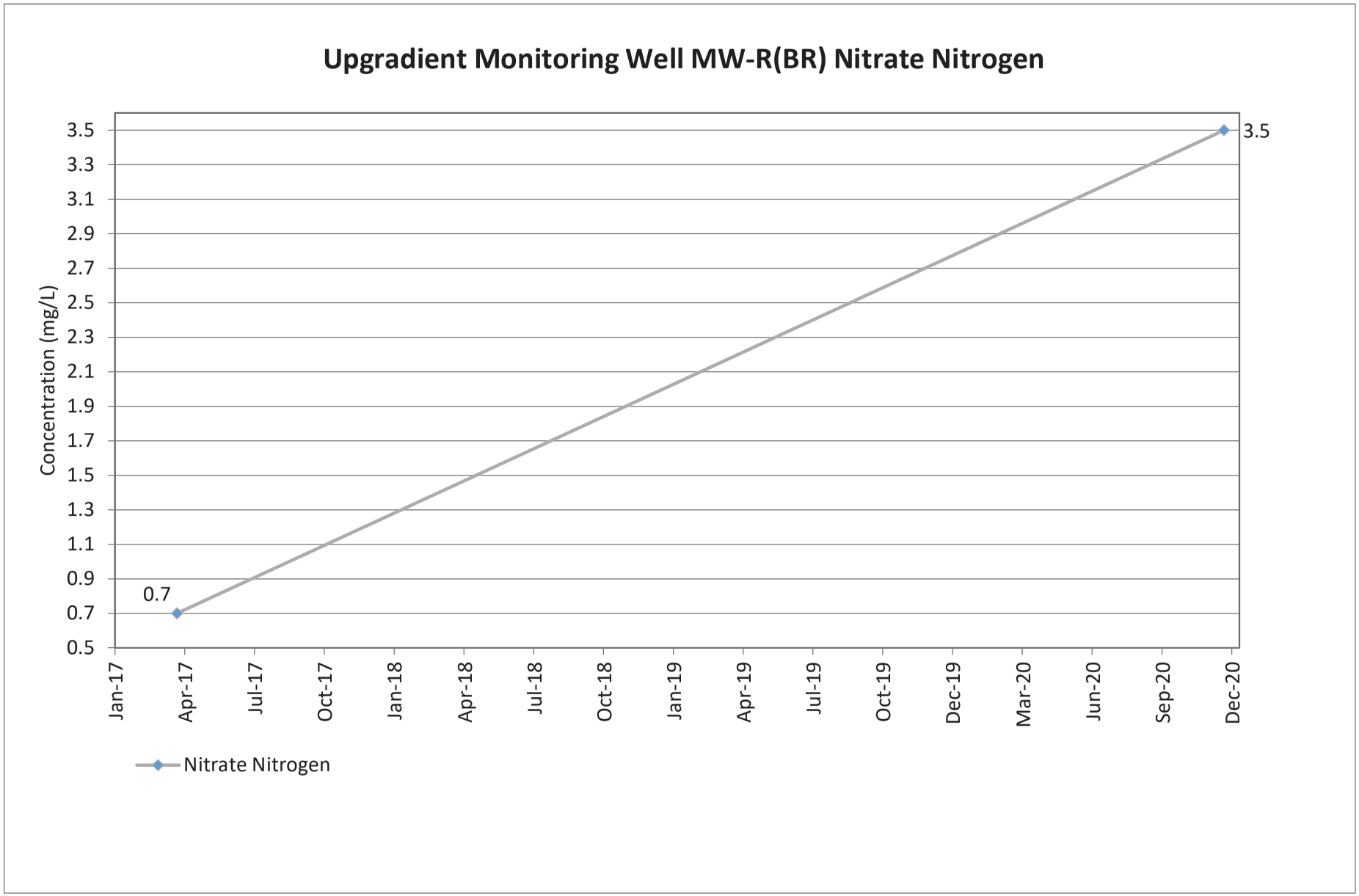

Downgradient Monitoring Well MW-O(BR) BOD
Concentration (mg/L)
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
2.8
2.2
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Biochemical Oxygen Demand

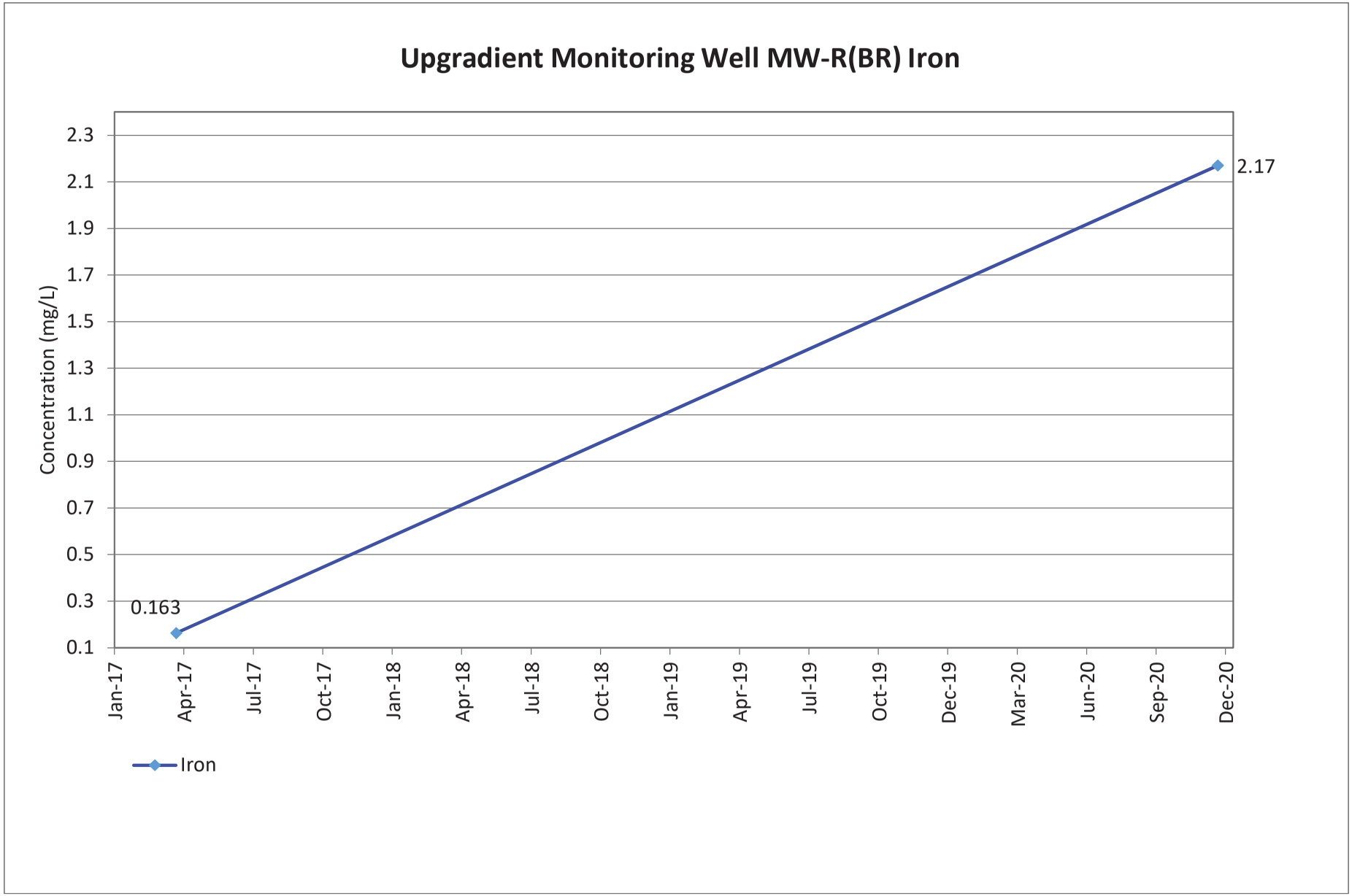

Downgradient Monitoring Well MW-O(BR) Ammonia Nitrogen
Concentration (mg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0.041
0.06
0.025
0.013
0.032
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Ammonia Nitrogen

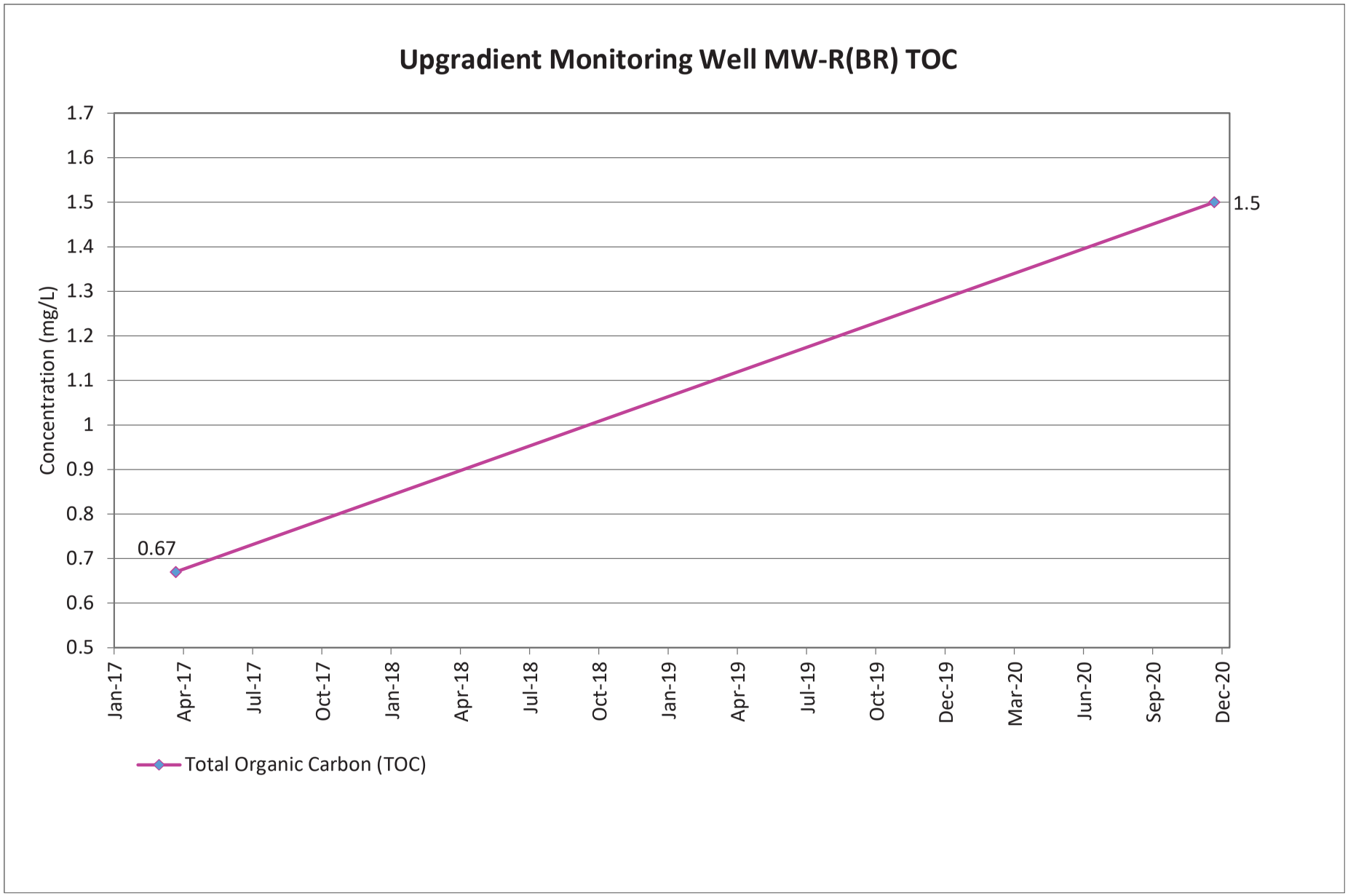

Downgradient Monitoring Well MW-O(BR) TKN
Concentration (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0.29
0.17
0.15
0.29
0.53
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Total Kjeldahl Nitrogen

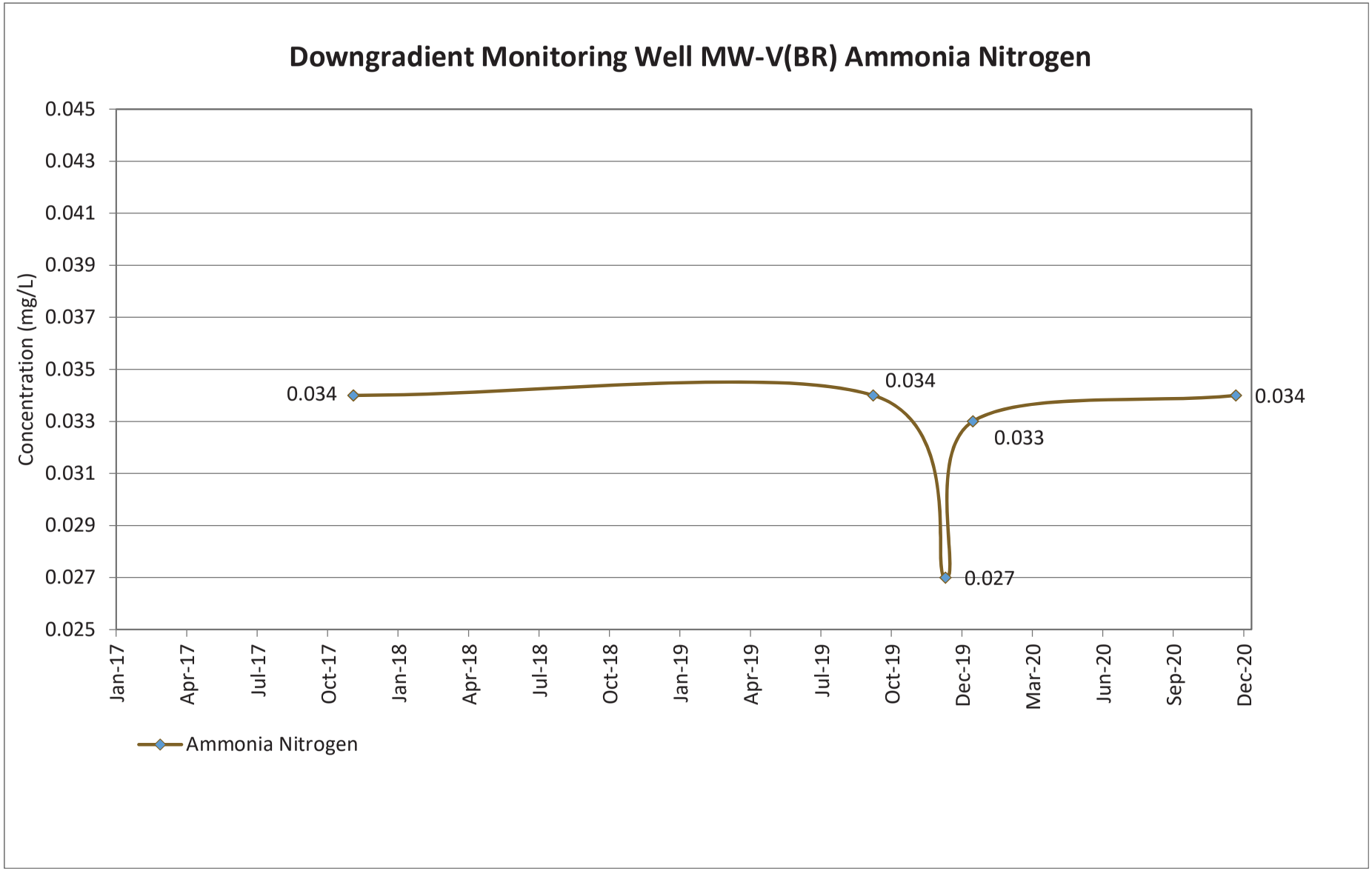

Downgradient Monitoring Well MW-O(BR) TOC
Concentration (mg/L)
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.53
0.5
0.4
0.4
1.8
2.1
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Total Organic Carbon (TOC)

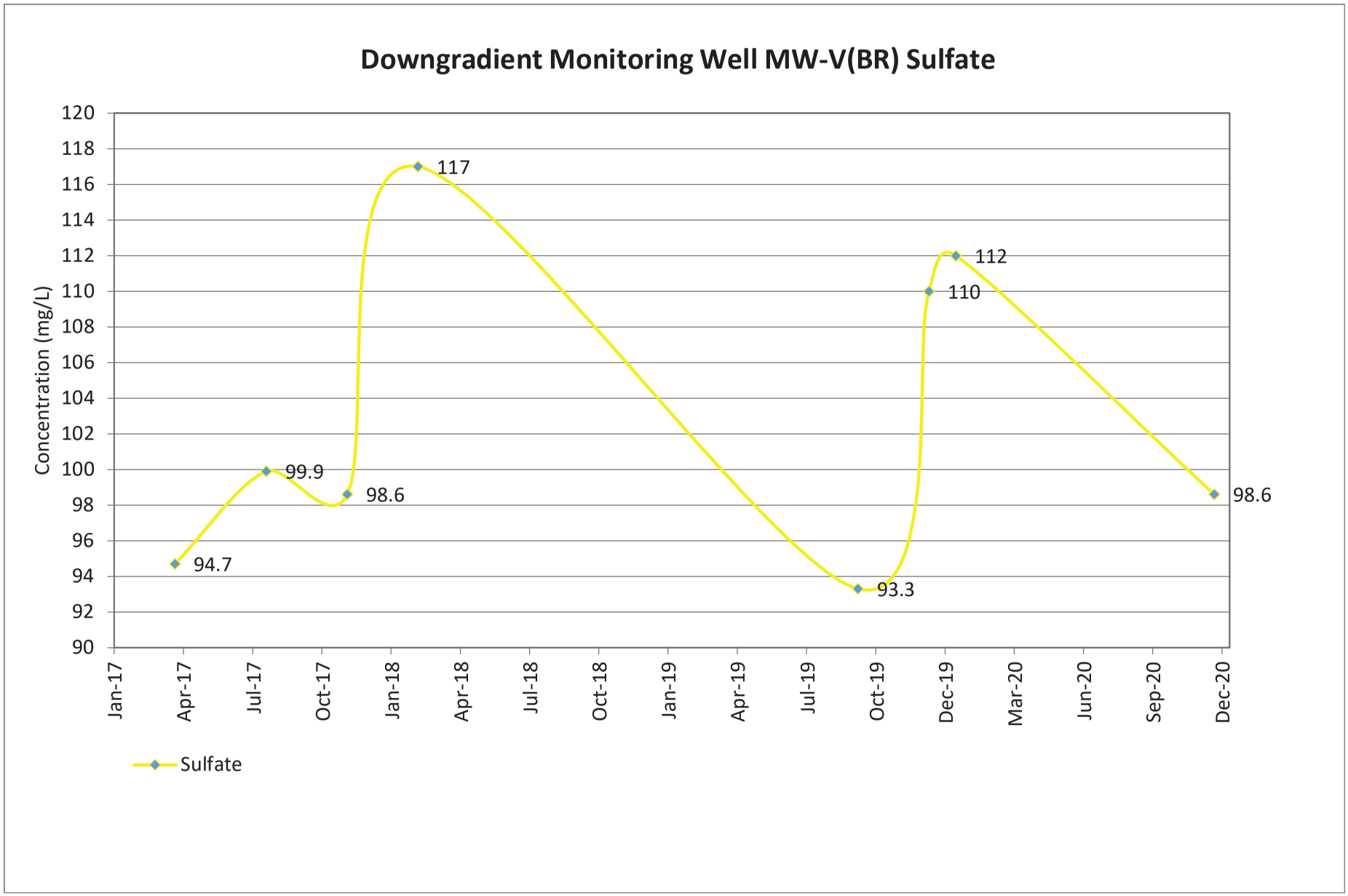

Upgradient Monitoring Well MW-R(BR) Chloride
Concentration (mg/L)
3.5
3.4
3.3
3.2
3.1
3
3.1
3.1
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Chloride


Upgradient Monitoring Well MW-R(BR) Nitrate Nitrogen
Concentration (mg/L)
3.5
3.3
3.1
2.9
2.7
2.5
2.3
2.1
1.9
1.7
1.5
1.3
1.1
0.9
0.7
0.5
0.7
3.5
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Nitrate Nitrogen


Upgradient Monitoring Well MW-R(BR) Iron
Concentration (mg/L)
2.3
2.1
1.9
1.7
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
0.163
2.17
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Iron


Upgradient Monitoring Well MW-R(BR) TOC
Concentration (mg/L)
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.67
1.5
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Total Organic Carbon (TOC)


Downgradient Monitoring Well MW-V(BR) Ammonia Nitrogen
Concentration (mg/L)
0.045
0.043
0.041
0.039
0.037
0.035
0.033
0.031
0.029
0.027
0.025
0.034
0.034
0.033
0.027
0.034
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Ammonia Nitrogen


Downgradient Monitoring Well MW-V(BR) Sulfate
Concentration (mg/L)
120
118
116
114
112
110
108
106
104
102
100
98
96
94
92
90
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
94.7
99.9
98.6
117
93.3
110
112
98.6
Sulfate

ATTACHMENT 3 – WASTE ORIGIN

2021

Annual Landfill Tonnage Report

Section 1 - Owner / Facility Information:

Facility Name: Hakes C&D Landfill

Permit Conditions:

Total Tonnage Received This Year (by waste type and county)

Tonnages were obtained by: X Scale Weight | Truck Count | Estimated | Other (Specify):
Transport (check all that apply): X Road | Rail | Water | Other (Specify):

State	County	Wastes: C&D	Asbestos	Other: Drill Cuttings	Total
NY	Albany	0	0	0	0
	Allegany	0	0	0	0
	Broome	165.67	0	0	165.67
	Bronx	26462.93	0	0	26462.93
	Brooklyn	0	0	0	0
	Cattaraugus	0	0	0	0
	Cayuga	0	0	0	0
	Chautauqua	0	0	0	0
	Chemung	6026.73	0	0	6026.73
	Chenango	0	0	0	0
	Clinton	0	0	0	0
	Columbia	0	0	0	0
	Cortland	11.43	0	0	11.43
	Delaware	268.76	0	0	268.76
	Dutchess	0	0	0	0
	Erie	0	0	0	0
	Essex	0	0	0	0
	Franklin	0	0	0	0
	Fulton	0	0	0	0
	Genesee	0	0	0	0
	Greene	1768.3	0	0	1768.3
	Hamilton	0	0	0	0
	Herkimer	0	0	0	0
	Jefferson	0	0	0	0
	Lewis	0	0	0	0
	Livingston	0	0	0	0
	Madison	0	0	0	0
	Monroe	0	0	0	0
	Montgomery	0	0	0	0
	Nassau	0	0	0	0
	Niagara	0	0	0	0
	Oneida	0	0	0	0
	Onondaga	12.26	0	0	12.26
	Ontario	0	0	0	0
	Orange	715.06	0	0	715.06
	Orleans	0	0	0	0
	Oswego	0	0	0	0
	Otsego	0	0	0	0
	Putnam	0	0	0	0
	Rensselaer	0	0	0	0
	Rockland	99.32	149.93	0	249.25
	St. Lawrence	0	0	0	0
	Saratoga	0	0	0	0
	Schenectady	0	0	0	0
	Schoharie	0	0	0	0
	Schuyler	2359.1	0	0	2359.1
	Seneca	18.32	0	0	18.32
	Steuben	1056.43	0	0	1056.43
	Suffolk	0	0	0	0
	Sullivan	228.61	0	0	228.61
	Tioga	11.11	0	0	11.11
	Tompkins	3706.38	0	0	3706.38
	Ulster	102.09	0	0	102.09
	Warren	0	0	0	0
	Washington	0	0	0	0
	Wayne	0	0	0	0
	Westchester	76843.02	0	0	76843.02
	Wyoming	0	0	0	0
	Yates	92.28	0	0	92.28
	New York	0	0	0	0
CT		699.68	0	0	699.68
MA		4216.89	0	0	4216.89
NJ		294.49	0	0	294.49
PA		0	0	0	0
RI		7.43	0	0	7.43
Kings County, NY		28492.2	0	0	28492.2
Queens County, NY		55839.23	0	0	55839.23
Bradford County, Pa		9.23	0	0	9.23
Tioga County, PA		6.47	0	0	6.47
Susquehanna, PA		0	0	0	0
Sullivan, PA		0	0	0	0
Wyoming, PA		0	0	0	0
Lycoming, PA		0	0	0	0
Other 9		0	0	0	0
Other 10		0	0	0	0
Total Tonnage:		209513.4	149.93	0	209663.35

ATTACHMENT 4 – UNAUTHORIZED WASTE SUPPORTING DOCUMENTS

HAKES C&D LANDFILL
WASTE REFUSAL FORM

Facility Supervisor: CHARLES PLANK Date: 8/3/20 Time: 1:14 pm

Weather: CLOUDY Temperature: 74°

HAULER INFORMATION:

Name:

Address: 1180 Elmira Rd Telephone: 607-358-7771

Newfield NY 14867 Driver: Jeff Waters

Truck #: 1497

LOAD INFORMATION:

Weight of Load Did not dump Tons Scale Ticket #: Did not Dump.

Vehicle Destination: NEWFIELD

Description of Waste Load: C&D

Source of Waste: CASELLA NEWFIELD

Comments: GARBAGE WAS ON TOP OF THE COMPLETE LOAD OF TRAILER

Pictures Taken? ___ No ✓ Yes

Video Tape? ___ No ___ Yes

Inspectors Signature: Charles Plank

Facility Supervisor Signature: Charles Plank

Driver Signature:

MBI 1497

Original – Not Negotiable

STRAIGHT BILL OF LADING

SHORT FORM

Carrier's Pro No.
Shipper's Bill of Lading No.
Consignee's Reference/PO No.
Carrier's Code (SCAC)

MBI

(Name of Carrier) Casella Nenfield

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request;

at 20 From

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Hakes Painted Post Landfill

(Mail or street address of consignee – For purposes of notification only.)

Destination Painted Post State NY Zip _____ County Steuben Delivery Address ★ 8/3/20

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route

Delivering Carrier CID Car or Vehicle Initials 1497 No. 2841

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	209722			
	36.40 Tare	38.000		
	Gross	110.800		
	Net	72,800		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignee shall sign the following statement.

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignee)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT ☐

Received $ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: $ _____

†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE – Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____.

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

Shipper, Per _____ Agent, Per 8-3-20

Permanent post-office address of shipper _____

Jolinda A Speed

From: Jolinda Hatch <jhatch2008@yahoo.com>
ent: Monday, August 3, 2020 1:17 PM
To: Jolinda A Speed
Subject: IMG_6192.jpeg

Sent from my iPhone

ATTACHMENT 5 – COST ESTIMATES AND FINANCIAL ASSURANCE INFORMATION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Materials Management, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5411 I F: (585) 226-2909
www.dec.ny.gov

July 17, 2020

Larry G. Shilling
Casella Waste Systems, Inc.
6653 Herdman Road
Angelica, NY 14709
Via email to: larry.shilling@casella.com

Re: Hakes C&D Landfill
Cell 9A Noise Monitoring Letters (May 20, 2020 & July 11,2020)
Financial Assurance Evaluation, Cell 9A Construction, (April 16, 2020)
Permit ID No. 8-4360-00010/00001

Dear Mr. Schilling:

This Division has completed review of the above-referenced documents. Based on the information presented to the Department and a phone conversation held on July 16, the documents are hereby approved.

Casella may now proceed with the installation of noise monitors as proposed. The Facility Manual is to be updated to accurately reflect the approved operational noise monitoring and calibration procedures. The update needs to stipulate how construction noise will be assessed and subtracted from operational noise, if necessary, during subsequent cell construction. Potential scenarios were discussed during our July 16 phone conversation.

Regarding the financial assurance evaluation, please proceed to update the surety bond based on the cost estimates presented to the Department.

Should you have any questions regarding this letter, please contact me or Yasmin Guevara.

Sincerely,

Gregory B. MacLean

Gregory B. MacLean, P.E.
Regional Materials Management Engineer
(585) 226-5408
greg.maclean@dec.ny.gov

ec: Y. Guevara
B. Zielinski
S. Logan - slogan@mmce.net
R. Anderson - russell.anderson@casella.com
C. Plank - charles.plank@casella.com
M. Leonard - mslpe@verizon.net

McMahon & Mann Consulting Engineering and Geology, P.C.

Donald R. McMahon, P.E., F. ASCE
Michael J. Mann, P.E.
Kenneth L. Fishman, Ph.D., P.E.
Shawn W. Logan, P.E.
Andrew J. Nichols, P.E.
Todd Swackhamer, P.E.
James J. Janora, P.G.
Susanne J.M. George, P.E.
Andrew J. Klettke, P.E.
Kaitlyn M. Murray, P.E.

April 16, 2020
File: 98-047
Sent Via Email

Ms. Yasmin Guevara
Environmental Engineer, Region 8
NYS Department of Environmental Conservation

RE: Financial Assurance Evaluation,
Hakes C&D Landfill, Cell 9A Construction
Painted Post, New York

Dear Ms. Guevara:

Attached is an updated financial assurance evaluation for the Hakes C&D Landfill, provided for your review and approval. The information is provided to satisfy Special Permit Condition 9, requiring that the permittee amend its financial assurance documents prior to commencing operation of Cell 9.

The financial assurance estimate reflects conditions following the 2020 construction season (Cells 1 through Cell 9A constructed and operational). Hakes will update its surety bond to reflect the new amount not less than 60-days prior to the expected start of operation of cell 9A.

Sincerely yours,

McMAHON & MANN CONSULTING ENGINEERING AND GEOLOGY, P.C.

Shawn W. Logan, P.E.

Michael J. Mann, P.E.

Enclosure – Financial Assurance Evaluation

CC:
Greg MacLean, P.E. (NYSDEC)
Larry Shilling (Casella)
Russ Anderson (Casella)

FINANCIAL ASSURANCE EVALUATION

HAKES C&D LANDFILL EXPANSION
TOWN OF CAMPBELL, NEW YORK

FINANCIAL ASSURANCE EVALUATION

HAKES C&D LANDFILL EXPANSION
TOWN OF CAMPBELL, NEW YORK

Financial assurance information was prepared and submitted with the 6 NYCRR Part 360 Solid Waste Management Permit Modification Application (Part 1 Introduction and Administrative Information) dated May 2019. It included cost estimates for closure, post-closure care and custodial care for the existing landfill (Cells 1-8) and the proposed Northern Expansion (Cell 9A through 9C).

According to 360.22(b)(3)(ii), annual cost estimate adjustments that account for inflation and changes in facility conditions must be submitted annually to the DEC for review and approval. In addition, Special Condition 9 requires that prior to commencing operation of Cell 9, the permittee must amend its financial assurance provided to DEC, or establish new financial assurance, in accordance with all the requirements of 6 NYCRR Part 360.22.

The financial assurance estimate provided in the Part 360 application is updated to reflect conditions following the 2020 construction season (Cells 1 through Cell 9A constructed and operational). The following are the updated closure, post-closure, custodial care, and corrective measures cost estimates.

CLOSURE COST ESTIMATE

Requirement:

The closure cost estimate must equal the cost to close the greatest number of landfill cells which, at any given point during the lifetime of the facility, have received waste but have not undergone final closure. According to Section 360.22(b)(2)(i):

- The closure cost estimates must include or reflect the design, materials, equipment, labor, administration, and quality assurance for closure in accordance with the facility specific closure plan.
- The closure cost estimate for a landfill's preliminary closure plan must include the costs of developing final closure, post closure care and custodial care plans as well as the costs to prepare engineering drawings and specifications, bidding documents, and other construction-related documents.
- The closure cost estimate must not incorporate any salvage value that may be realized with the sale of materials, facility structures or equipment, land, or other assets associated with the facility at the time of closure.

Closure Cost Estimate:

The closure cost is estimated based on current site conditions and assuming Cell 9A is constructed to its proposed limits. The permitted landfill (Cells 1 through 8) covers approximately 57.9 acres. Cell 9A will encompass an additional 7.3 acres making the total footprint of the landfill approximately 65.2 acres (this two-dimensional area equates to 68.2 acres when slopes are considered). Twenty-one (21) acres has received final cover leaving approximately 47.2 acres requiring final cover

Figure 1 shows the conceptual final cover plan for Cells 1 through 9A. The estimate assumes that the gas collection and transfer system will be installed while the facility is accepting waste.

The landfill closure will consist of the following components in ascending order:

- A geocomposite/geotextile gas venting layer,
- A geosynthetic clay liner (not required on slopes equal to or greater than 25 percent),
- A geomembrane liner,
- A geocomposite drainage layer,
- A barrier protection layer, and
- A 6-inch topsoil layer.

Attachment 1 includes the closure cost estimate including quantities and costs for each component of the final cover system. The unit costs are based on construction costs from final cover and cell construction at this facility. The estimate also includes costs to prepare final closure, post closure care, and custodial care plans including preparation of engineering drawings and specifications, bidding documents, and other construction related documents. In addition, as required by Section 360.22(b)(2)(v), the total cost estimate has been increased by a contingency factor of 5 percent.

The closure cost is estimated to be approximately $6,575,000 (present value).

POST-CLOSURE CARE COST ESTIMATE

Hakes will operate under the post-closure care period requirements until it can be demonstrated to the NYSDEC that the threat to public health and the environment has been reduced to a level where environmental monitoring and maintenance can be reduced. During the post-closure care period the operational requirements of Section 363-9.6(a)(1) will be followed.

Requirement:

The post-closure care cost estimate should include an estimate of the anticipated length of the post-closure care period considering the types of wastes disposed and the criteria provided in Section 363-9.6(a). In addition, post-closure operational, monitoring, and

maintenance costs should consider costs to replace system components, if necessary, based on their predicted service life.

The landfill only accepts construction and demolition debris as defined by Section 360.2(b)(61). In addition, the environmental monitoring at the facility since 1998 (year Casella purchased) has not indicated any issues with the landfill liner system. Considering these factors, it is expected that the post-closure care period will be 30 years or less.

Cost Estimate:

Attachment 2 includes the post-closure cost estimate for a 30-year period following closure of the landfill, although it is expected that this time frame may be less due to the nature of the waste. The cost estimate is based on meeting the post-closure care requirements in Section 363-9.6(a), specifically 363-9.6(a)(1)(i) through 363-9.6(a)(1)(x).

The post-closure cost is estimated to be approximately $1,745,300 (present value)

CUSTODIAL CARE COST ESTIMATE

Requirement:

The custodial care cost estimate (Section 360.22(b)(2)(iii)) must account for conducting custodial care after the landfill concludes post-closure care activities. This includes annual and periodic costs, as well as replacement costs of landfill components that reach their predicted service life as described in the custodial care plan.

Cost Estimate:

Attachment 3 includes the custodial care cost estimate. The custodial care period is assumed to begin 30-years after closure and extend another 20-years. The cost estimate is based on meeting the custodial care cost operating requirements in Section 363-9.6(b), specifically 363-9.6(b)(1)(i) through 363-9.6(b)(1)(vii).

The custodial care cost is estimated to be approximately $85,850 (present value).

CORRECTIVE MEASURES COST ESTIMATE

Requirement:

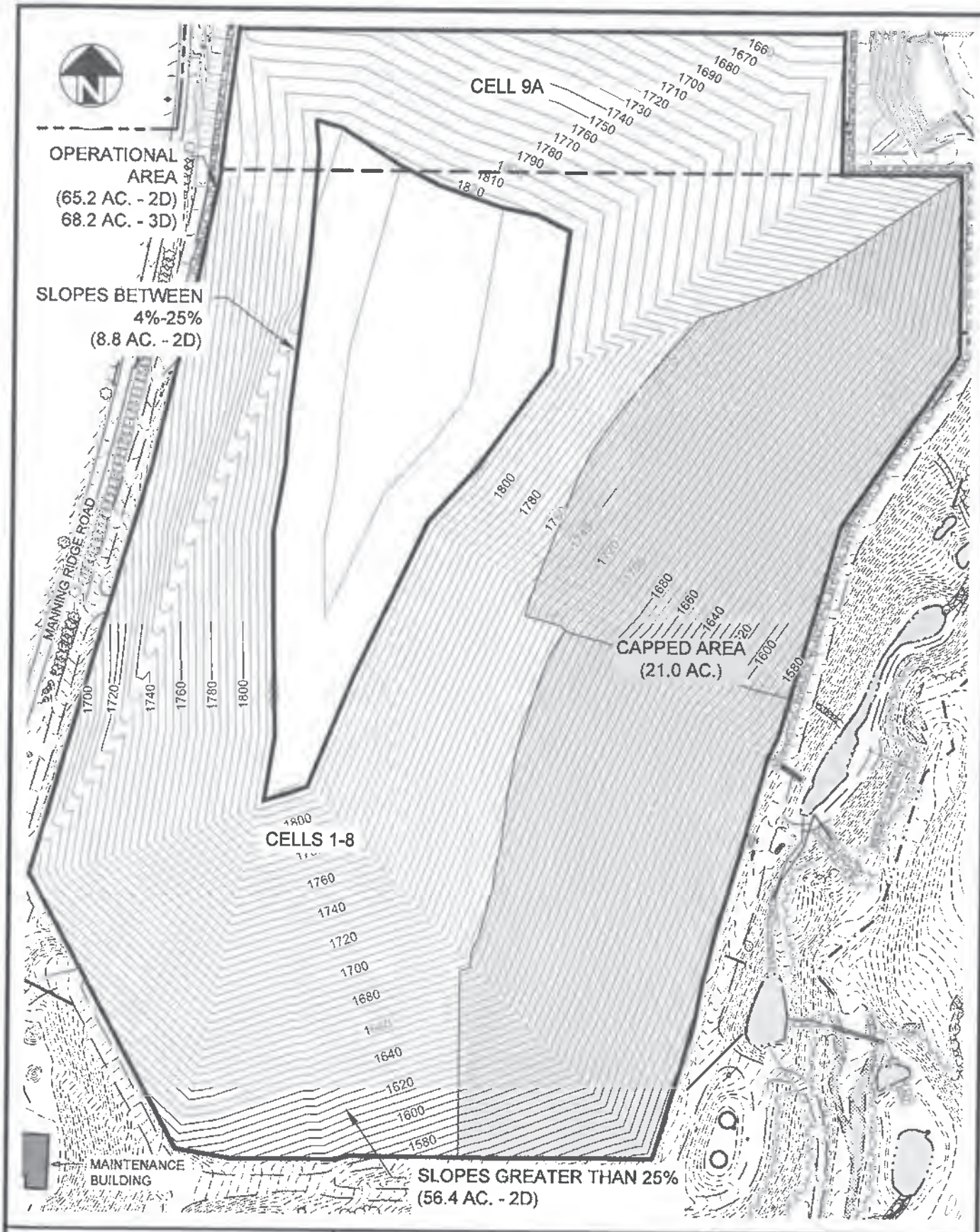
The corrective measures cost estimate, per Section 360.22(b)(2)(iv) must account for the total costs of corrective measures as described in the corrective measures work plan for the entire corrective measures period as described in Subpart 363-10.

Cost Estimate:

This pertains to measures necessary to address situations where a trigger value is exceeded as defined by the regulations. Currently there are no corrective measures

required and none are expected. Therefore, no costs are considered for corrective measures at this time.

FIGURE



MARCH 2020

McMahon & Mann Consulting Engineering and Geology, P.C. 2495 Main Street, Suite 432 Buffalo, NY 14214 (716) 834-6932 www.mmce.net	HAKES C&D LANDFILL FINANCIAL ASSURANCE STEUBEN COUNTY NEW YORK	SITE PLAN DWG. NO. 98047-1170 FIGURE 1

ATTACHMENT 1

Closure Cost Estimate

HAKES C&D LANDFILL
CLOSURE COST ESTIMATE
CELLS 1THROUGH 9A

Estimate Date: March 2020

Final Cover System Component	Layer Thickness (feet)	Estimated Quantity	Unit	Unit Price[1] ($)	Cost
Final Cover Area (Requiring Final Cover)[2]					
Final Cover Area (slope between 4% - 25%)		8.8	acres		
Final Cover Area (slope > 25%)		38.4	acres		
Earthwork Components					
Mobilization (capping completed in 10 acre increments)		5	LS	30,000.00	$150,000
Erosion Control		47.2	acres	2,000.00	$94,400
Subgrade Preparation		47.2	acres	1,000.00	$47,200
Barrier Protection Layer (Processing & Placement)					
Lower 6-inches (2-inch minus material)	0.5	38,075	cy	15.00	$571,120
Upper 12-inches (6-inch minus material)	1.0	76,149	cy	13.00	$989,941
Permanent Topsoil and Seeding		47.2	acres	6,350.00	$299 720
Final Cover Drainage System		47.2	acres	2,500.00	$118,000
Geosynthetics					
Gas Venting Layer (Alternating Layers)					
Geocomposite		1,028,016	ft^2	0.53	$544,848
Geotextile		1,028,016	ft^2	0.38	$390,646
40 mil Textured LDPE		2,056,032	ft^2	0.50	$1,028,016
Drainage Geocomposite		2,056,032	ft^2	0.53	$1,089,697
Geosynthetic Clay Liner		383,328	ft^2	0.67	$256,830
Plan Preparation					
Closure Plan		1	each	50,000.00	$50,000
Post-Closure Plan		1	each	50,000.00	$50,000
Custodial Care Plan		1	each	50,000.00	$50,000
Design/Specifications/CQA/Surveying (Assume 10 percent of construction cost)					$558,042
Contingency (5 percent Cost Estimate)					$286,521
				Total =	**$6,574,981**

Notes:

1. Unit prices are based on costs for construction of Capping Event #2 and Cell 8 Construction at the Hakes Facility. Cost is for supply and install.
2. The estimated area represents the three dimensional area of the final cover of Cells 1 through 9A minus the area of Capping Event #1 and #2.

ATTACHMENT 2

Post-Closure Cost Estimate

HAKES C&D LANDFILL
POST CLOSURE COST ESTIMATE
CELLS 1 THROUGH 9A

Estimate Date: March 2020

1. Maintenance (Section 363-9.6(a)(1)(i) through (iii)):

Maintenance of all slopes, vegetation, drainage strucutures, etc	$	5,000.00
Maintenance of the integrity and effectiveness of the final cover	$	2,500.00
Annual Mowing	$	5,500.00
Total Annual:	**$**	**13,000.00**

2. Environmental Monitoring (Section 363-9.6(a)(1)(iv)(a) through (c):

Explosive gas monitoring - Not required at this site	$	-
Environmental Monitoring (Annual Baseline and Quarterly Routine)	$	65,000.00
Environmental Monitoring Location Maintenance (wells, etc)	$	1,000.00
Record keeping and reporting	$	1,500.00
Total Annual:	**$**	**67,500.00**

3. Leachate System Maintenance (Section 363-9.6(a)(1)(v)):

Leachate Controls and Pump Maintenance	$	2,000.00
Leachate Line and Tank Cleaning	$	17,000.00
Evaluation of liner performance	$	500.00
Leachate Sampling and Analysis (included with Environmental Monitoring)	$	-
Total Annual:	**$**	**19,500.00**

3. Gas Collection System (Section 363-9.6(a)(1)(vi)):

Gas Collection System Maintenance and Operation	$	5,000.00
Total Annual:	**$**	**5,000.00**

4. Inspections (Section 363-9.6(a)(1)(vii)):

Quarterly Inspections	$	4,000.00
Inspection after seismic event or major rainfall	$	500.00
Total Annual:	**$**	**4,500.00**

5. Annual Report (Section 363-9.6(a)(1)(ix) through (x)):

Annual Report - results of maintenance, monitoring, and inspections	$	1,250.00
Annual Report - environmental and facility monitoring	$	4,500.00
Total Annual:	**$**	**5,750.00**

6. Leachate Collection and Treatment (Section 363-9.6(a)(1)(v)):

Year 1 - Projected Leachate Production:							
100 gallons/acre/day x	65.20	acres x	365	days/yr	2,379,800.00	gal/yr	
Year 2 - Projected Leachate Production:							
70 gallons/acre/day x	65.20	acres x	365	days/yr	1,665,860.00	gal/yr	
Year 3 - Projected Leachate Production:							
50 gallons/acre/day x	65.20	acres x	365	days/yr	1,189,900.00	gal/yr	
Year 4 - Projected Leachate Production:							
30 gallons/acre/day x	65.20	acres x	365	days/yr	713,940.00	gal/yr	
Year 5 - Projected Leachate Production:							
20 gallons/acre/day x	65.20	acres x	365	days/yr	475,960.00	gal/yr	
Year 6 through 10 - Projected Leachate Production:							
10 gallons/acre/day x	65.20	acres x	1825	days/ 5yr	1,189,900.00	gal	
Year 11 through 30 - Projected Leachate Production:							
5 gallons/acre/day x	65.20	acres x	7300	days/ 20 yr	2,379,800.00	gal	

Leachate Transportation and Treatment (years 1-5)
6,425,460.00 gallons x $ 0.080 / gallon $ 514,036.80

Leachate Transportation and Treatment (years 6-10)
1,189,900.00 gallons x $ 0.080 / gallon $ 95,192.00

Leachate Transportation and Treatment (years 11-30)
2,379,800.00 gallons x $ 0.080 / gallon $ 190,384.00

Total Annual Costs for Post - Closure Care on Cells 1 through 9:

Years 1 - 5:			
Maintenance[1]		$	13,000.00
Environmental Monitoring[2]		$	67,500.00
Gas Collection System		$	5,000.00
Inspections		$	4,500.00
Annual Report		$	5,750.00
Leachate Transportation and Treatment (average)	$514,036.80 / 5 years	$	102,807.36
	Total Annual:	**$**	**198,557.36**
Years 6 - 10:			
Maintenance[1]		$	6,500.00
Environmental Monitoring[2]		$	33,750.00
Gas Collection System		$	3,750.00
Inspections		$	4,500.00
Annual Report		$	5,750.00
Leachate Transportation and Treatment (average)	$ 95,192.00 / 5 years	$	19,038.40
	Total Annual:	**$**	**73,288.40**
Years 11 - 30:			
Maintenance[1]		$	3,250.00
Environmental Monitoring[2]		$	16,875.00
Gas Collection System		$	2,812.50
Inspections		$	4,500.00
Annual Report		$	5,750.00
Leachate Transportation and Treatment (average)	$190,384.00 / 20 years	$	9,519.20
	Total Annual:	**$**	**42,706.70**

Note:
1. Maintenance costs are projected to remain steady for the first five years following closure and then reduce an additional 50% for years 6 - 10 and then reduce an additional 50% for years 11 - 30.
2. Environmental Monitoring costs are projected to remain steady for the first five years following closure and then reduce an additional 50% for years 6 - 10 and then reduce an additional 50% for years 11 - 30.

---

7. Present Worth of Post Closure Costs:

Assume interest (i) = 4.5 %
Assume Inflation (a) = 2.0 %

Given annual contributions to determine present worth assuming 4.5% interest on money earned and 2.0% inflation rate.

(P/A, 2.5%, 5YR) X ANNUAL COST YEARS 1-5 + (P/A, 2.5%, 5YR) X ANNUAL COST YEARS 6 -10 X (P/F, 2.5%, 5YR) + (P/A, 2.5%, 20YR) X ANNUAL COST YEARS 11 - 30 X (P/F), 2.5%, 10YR)

(P/A, 2.5%, 5YR) = 4.6466
(P/A, 2.5%, 20YR) = 15.6144
(P/F, 2.5%, 5YR) = 0.8842
(P/F, 2.5%, 10YR) = 0.7822

Present Worth = $ 1,745,308.59

ATTACHMENT 3

Custodial Care Cost Estimate

HAKES C&D LANDFILL
CUSTODIAL COST ESTIMATE
CELLS 1 THROUGH 9A

Estimate Date: March 2020

1. Maintenance (Section 363-9.6(b)(1)(i) through (iii)):

Maintenance of all slopes, vegetation, drainage strucutures, etc	$	1,500.00
Maintenance of the integrity and effectiveness of the final cover	$	1,000.00
Mowing (Assumed every 5 years)	$	1,000.00
Total Annual:	**$**	**3,500.00**

2. Environmental Monitoring (Section 363-9.6(b)(1)(iv)(a) through (b):

Baseline Monitoring every 5 years	$	1,000.00
Record keeping and reporting every 5 years	$	1,000.00
Total Annual:	**$**	**2,000.00**

3. Gas Collection System (Section 363-9.6(b)(1)(v)):

Gas Collection System Maintenance and Operation - Assumed not necessary for C&D Waste	$	-
Total Annual:	**$**	**-**

4. Inspections (Section 363-9.6(b)(1)(vi)):

Annual Inspections	$	1,000.00
Inspection after seismic event or major rainfall	$	500.00
Total Annual:	**$**	**1,500.00**

5. Annual Report (Section 363-9.6(b)(1)(vii)):

Annual Report - results of maintenance, monitoring, and inspections	$	1,500.00
Total Annual:	**$**	**1,500.00**

6. Leachate Collection and Treatment:

Year 31 through 51 - Projected Leachate Production:
1 gallons/acre/day x 65.20 acres x 7300 days/20 yr = 475,960.00 gal

Leachate Transportation and Treatment (years 31-50)
475,960.00 gallons x $ 0.080 / gallon = $ 38,076.80

Total Annual Costs for Custodial Care on Cells 1 through 9:

Years 31 through 50

Maintenance			$	3,500.00
Environmental Monitoring			$	2,000.00
Gas Collection System			$	1,000.00
Inspections			$	1,500.00
Annual Report			$	1,500.00
Leachate Transportation and Treatment (average)	$ 38,076.80 /	20 years	$	1,903.84
Total Annual:			**$**	**11,403.84**

7. Present Worth of Custodial Care Costs:

Assume Interest (i) = 4.5 %
Assume Inflation (a) = 2.0 %

Given annual contributions to determine present worth assuming 4.5% interest on money earned and 2.0% inflation rate.

(P/F, 2.5%,30YR) X ANNUAL COST YEARS 31-50 X (P/A, 2.5%, 20YR)

(P/A, 2.5%, 20YR) = 15.6144
(P/F, 2.5%, 30YR) = 0.4821

Present Worth = $ 86,835.81

ATTACHMENT 6 – ADDITIONAL PERMIT REPORTING REQUIREMENTS

<u>SPECIAL CONDITION 53</u>: Annual reports shall be submitted to both the Region 8 Regional Materials Management Engineer, 6274 East Avon-Lima Road, Avon, NY 14414 and the Central Office no later than March 1 of each year for the previous calendar year of operation. The reports shall be in accordance with the requirements of 6 NYCRR Part 360.19(k)(3) and include the following information:

(a) Complaints received and how the facility responded in accordance with the Odor Control Plan;

(b) An evaluation of all water and leachate quality data collected throughout the year. The Department may request at any time that this information be provided in a computer-compatible format to be specified by the Department;

(c) Evaluations of the landfill gas collection and control system, monitoring system, and monitoring data collected throughout the year. A description of proposed and/or actual changes to the landfill gas collection and control system, monitoring system, and monitoring plan shall be included;

(d) A completed copy of the Radiation Monitor Alarm Record form for each instance in which the radiation detector alarms due to an incoming load of waste.

<u>Responses</u>:

(a) Please see Attachment 7 (Complaint Log)

(b) Please see Attachment 2 (Water Quality data). Computer- compatible formats are available upon request.

(c) Quarterly hydrogen sulfide (H_2S) surface emissions monitoring was conducted on March 5, June 11, September 9, and November 17, 2020. The scans were conducted along the perimeter of the landfill and along a grid pattern on the landfill, and where visual observations indicated elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. H_2S concentrations greater than 10 ppmv were not detected during any of the quarterly events. Reports were submitted on March 13, July 1, October 15 and December 18, 2020.

Two vertical gas extraction wells were installed in March 2020, designated GW-20 and GW-21. Lateral collection pipes and portion of a new 8-inch header pipe were installed to connect the two extraction wells to the existing gas collection system. In addition, three horizontal collectors were installed in 2020. GH-7 was installed in March and GH-8 and GH-9 were installed in September. The sulfur treatment system commenced operation in November 2019 and has been operating continuously to remove H_2S from the landfill gas prior to combustion in the existing utility flare.

The gas collection and control system is functioning properly as of December 31, 2020. Hakes is currently evaluating proposed expansion project to the system for 2021.

(d) The radiation detectors did not go off during 2020.

ATTACHMENT 7 – COMPLAINT LOG

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method: ☐ Landfill Office Phone ☐ Email ☐ NYDEC ☐ Text ☐ In Person ☐ Other: _____

Date Complaint Received: _1/27/2020_____ Time Complaint was Received: __1:48 _____ ☐ AM **X** PM

Hakes Manager Contacted Regarding this Complaint: ____YES_____

Date/Time Manager Received Reported Complaint: Date: _1/27/2020____ Time: __1:48_____ ☐ AM **X** PM

Complaint Information:

Name of Person Filing Complaint: ___Joan Plinkas_____

Address: _3851 Erwin Hollow Road Painted Post, NY 14870_____

Telephone number: __607-368-4063_____

Nature of complaint: ☐ Odor ☐ Noise ☐ Litter ☐ Dust **X** Traffic ☐ Other

For Traffic Complaints - Name of Company: __Sky Limits Transport Inc_____ License# :A52001Z_____ Road/Route:_____

Direction traveling: South_____ Truck type **X** tractor trailer ☐ straight/dump trailer

For Odor Complaints; Time odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Duration odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

Is the odor being detected at the caller's residence? ☐ Yes ☐ No

Additional Description of the Event by Complainant: _____

__Sky 528 Didn't stop at the stop sign, talked to the driver and gave him a warning. Reminded all drivers to make sure they are stopping at the stop sign._____

Return call requested? ☐ Yes **X** No, Site visit requested? ☐ Yes **X** No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

Source of Weather Data: __Hakes Weather Station_____

Weather Description: Temperature: _33_____ ^{0}F. Bar. Press. (in-Hg):__29.674_____ Precipitation _____

Wind direction & speed: From the ___SW_____ @ __2_____mph.

General conditions: (Sunny, Cloudy, Fog etc.) __Cloudy_____

Person Filling This Form: _____Charles Plank_____

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____ Site Visit: _____

Return Telephone Call Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Summary of Telephone Call: _____

_____ Sky 528 Didn't stop at the stop sign _____

Site Response Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO _____ Name of Complainant/Contactee _____

Summary of Visit & Communication: _____

_____ Sky 528 Didn't stop at the stop sign, talked to the driver and gave him a warning. Reminded all drivers to make sure they are stopping at the stop sign. _____

Odor Responder Observations:

Was an Odor Detected; ☐ YES ☐ NO Time: _____ ☐ AM ☐ PM

Responder's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: ☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent
☐ None of above

Additional Description: _____

_____

Weather Observations at Time of Response at the Odor Complaint Location:

Weather Description: Temperature: _____°F. Precipitation: _____

Wind direction & speed: From the _____ @ _____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _____

Weather Data at Time of Response From Weather Station

Weather Data Source: _____

Weather Description: Temperature: _____^{0}F. Bar. Press.(in-Hg)_____ Precipitation: _____

Wind direction & speed: From the_____ @ _____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _____

Other Responder Comments Pertaining to Response:

_____

_____

Signature of Responder: _____ Date: 1/27/20

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method: X Landfill Office Phone ☐ Email ☐ NYDEC ☐ Text ☐ In Person ☐ Other: _____

Date Complaint Received: 2/19/2020 Time Complaint was Received: 12:30 ☐ AM X PM

Hakes Manager Contacted Regarding this Complaint: YES

Date/Time Manager Received Reported Complaint: Date: 2/19/2020 Time: 12:52 ☐ AM X PM

Complaint Information:

Name of Person Filing Complaint: Joan Plinkas

Address: 3851 Erwin Hollow Road Painted Post, NY 14870

Telephone number: 607-368-4063

Nature of complaint: ☐ Odor ☐ Noise ☐ Litter ☐ Dust X Traffic ☐ Other

For Traffic Complaints - Name of Company: **Max Services** License#: **KQ 21** Road/Route:

Direction traveling **South** Truck type X tractor trailer ☐ straight/dump trailer

For Odor Complaints; Time odor was detected: ☐ AM ☐ PM

For Odor Complaints; Duration odor was detected ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type:

Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

Is the odor being detected at the caller's residence? ☐ Yes ☐ No

Additional Description of the Event by Complainant:

KQ21 went through stop sign, hauling for Max Services. Talked to driver and reminded all drivers to stop at the stop sign.

Return call requested? ☐ Yes X No, Site visit requested? ☐ Yes X No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

Source of Weather Data: HAKES WEATHER STATION

Weather Description: Temperature: **30** °F. Bar. Press. (in-Hg): **30.289** Precipitation: _____

Vind direction & speed: From the **N** @ **5** mph.

General conditions: (Sunny, Cloudy, Fog etc.) **Clear / Sunny**

Person Filling This Form: Charles Plank

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____ Site Visit: _____

Return Telephone Call Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Summary of Telephone Call: _____

Site Response Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO _____ Name of Complainant/Contactee: _____

Summary of Visit & Communication: _____

Odor Responder Observations:

Was an Odor Detected; ☐ YES ☐ NO Time: _____ ☐ AM ☐ PM

Responder's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: ☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent
☐ None of above

Additional Description _____

_____

Weather Observations at Time of Response at the Odor Complaint Location

Weather Description: Temperature: _____^{0}F. Precipitation: _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Weather Data at Time of Response From Weather Station

Weather Data Source: _____

Weather Description: Temperature: _____^{0}F. Bar. Press.(in-Hg): _____ Precipitation: _____

Wind direction & speed: From the _____ @ _____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _____

Other Responder Comments Pertaining to Response:

_____

_____

Signature of Responder: _____ Date 2/19/20

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method: **X** Landfill Office Phone ☐ Email ☐ NYDEC ☐ Text ☐ In Person ☐ Other: _____

Date Complaint Received: _2/19/2020_____ Time Complaint was Received: _12:28_____ ☐ AM **X** PM

Hakes Manager Contacted Regarding this Complaint: ____YES_____

Date/Time Manager Received Reported Complaint: Date: _2/19/2020_____ Time: _12:28__ ☐ AM **X** PM

Complaint Information:

Name of Person Filing Complaint: ___Lori Close_____

Address: _Woodcock Road Painted Post, NY 14870_____

Telephone number: _607-654-3230_____

Nature of complaint: ☐ Odor ☐ Noise ☐ Litter ☐ Dust **X** Traffic ☐ Other

For Traffic Complaints - Name of Company: __**JR Towing & Truck Repair**__ License#:**JR 911_76271PC**_____ Road/Route:_____

Direction traveling___**S**_____ Truck type **X** tractor trailer ☐ straight/dump trailer

For Odor Complaints; Time odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Duration odor was detected _____ ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

Is the odor being detected at the caller's residence? ☐ Yes ☐ No

Additional Description of the Event by Complainant: **_Lori was riding in her husband car as a passenger, when this gold colored truck almost side swiped them. I (Chuck) contacted Lori Close and had a conversation with her. Going back through scale records we found the truck. I (Chuck) suspended the driver for 3 days.**_____

Return call requested? **X** Yes ☐ No, Site visit requested? ☐ Yes **X** No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

Source of Weather Data: **_Hakes Weather Station**_____

Weather Description: Temperature: **_30_**°F. Bar. Press. (in-Hg):**30.289**_ Precipitation: _____

Wind direction & speed: From the **__N_** @ **_____5_____**mph.

General conditions: (Sunny, Cloudy, Fog etc.) **__Clear / Sunny**_____

Person Filling This Form: ____Charles Plank_____

_____

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____ Site Visit: _____

Return Telephone Call Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Summary of Telephone Call: _____

_____

_____

_____

Site Response Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO _____ Name of Complainant/Contactee: _____

Summary of Visit & Communication: _____

_____

_____

_____

Odor Responder Observations:

Was an Odor Detected; ☐ YES ☐ NO Time: _____ ☐ AM ☐ PM

Responder's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: ☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent

☐ None of above

Additional Description: _____

_____

Weather Observations at Time of Response at the Odor Complaint Location:
Weather Description: Temperature: _____°F. Precipitation: _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Weather Data at Time of Response From Weather Station

Weather Data Source: _____

Weather Description: Temperature: _____°F. Bar. Press.(in-Hg): _____ Precipitation: _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Other Responder Comments Pertaining to Response:

_____

_____

Signature of Responder: _____ Date: 2/19/20

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method ☐ Odor Hotline ☐ Landfill Office Phone ☐ Email ☐ NYDEC X Text ☐ In Person ☐ Other: _____

Date Complaint Received: ____7/27/2020_____ Time Complaint was Received: __6:58_____ ☐ AM X PM

Hakes Manager Contacted Regarding this Complaint: _YES_____

Date/Time Manager Received Reported Complaint: Date: ___7/27/2020___ Time: _6:58_____ ☐ AM X PM

Complaint Information:

Name of Person Filing Complaint: _Dave Franzen_____

Address: 4381 WEST HILL ROAD

Telephone number: _607-368-2110_____

Nature of complaint: X Odor ☐ Noise ☐ Light ☐ Dust ☐ Traffic ☐ Other

For Traffic Complaints - Name of Company:_____ License#:_____ Road/Route:_____

Direction traveling_____ Truck type ☐ tractor trailer ☐ straight/dump trailer

For Odor Complaints, Time odor was detected: In Message below_____ ☐ AM ☐ PM

For Odor Complaints, Duration odor was detected: In Message below___ ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type: __Text message from Dave Franzen: It has stunk over here 4 out of the last 5 days... Something has to be done or my next call is to the EPA__

Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

Is the odor being detected at the caller's residence? X Yes ☐ No

Additional Description of the Event by Complainant: _____

Return call requested? ☐ Yes ☐ No, Site visit requested? ☐ Yes ☐ No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

Source of Weather Data: _____Hakes Landfill Weather Station_____

Weather Description: Temperature: 81.1_°F. Bar. Press. (in-Hg):29.686_ Precipitation: _____0_____

Wind direction & speed: From the ___SSW_____ @ ___5__mph.

General conditions: (Sunny, Cloudy, Fog etc.) __Clear_____

Person Filling This Form: __Charles Plank Operations manager_____

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____YES_____ Site Visit: NO____

Return Telephone Call Completed? X YES ☐ NO Date: _8/3/220___ Time: _Aprox.10____ X AM ☐ PM

Contact Made? X YES ☐ NO Date:8/3/2020___ Time: __Approx. 10 X AM ☐ PM

Summary of Telephone Call: I (Chuck) talked to Mr. Franzen he stated he had odors for a few days when he was about walking and around his home, but hasn't had any odors since his text message on 7/27/2020 @ 6:58pm._____

Site Response Completed? X YES ☐ NO Date: _8/3/2020_____ Time: _12;00_____ ☐ AM X PM

Contact Made? X YES ☐ NO _____ Name of Complainant/Contactee:_Dave Franzen

Summary of Visit & Communication: Chuck was on vacation; Larry Shilling was contacted, and Larry responded the next day... Also, when I returned, I called and talked to Mr. Franzen... He stated he had odors on his property and hasn't for quite some time. We do a site odor observation daily and an off-site observation._____

Odor Responder Observations:

Was an Odor Detected; ☐ YES X NO Time _____ ☐ AM ☐ PM

Responder's Description of Odor Type:_____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: X NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent
☐ None of above

Additional Description:_____

Weather Observations at Time of Response at the Odor Complaint Location:

Weather Description: Temperature: __69.6__°F. Precipitation: ____0_____

Wind direction & speed: From the _NNW____ @ ____3___mph.

General conditions: (Sunny, Cloudy, Fog etc.) _Clear_____

Weather Data at Time of Response From Weather Station

Weather Data Source: ___Hakes Landfill_____

Weather Description: Temperature: _69.6_____°F. Bar. Press.(in-Hg):_____ Precipitation: __0_____

Wind direction & speed: From the _____NNW_____ @ __3_____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _____Clear_____

Other Responder Comments Pertaining to Response:_____

Signature of Responder:_____ Date: 8/3/2020

Hakes C&D Landfill 8/03/20

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	[illegible] D-D	Cool D-D
8/03/20	12:30a	67.5	69.3	67.5	81	61.5	6.0	SSW	3.00	15.0	SSW	67.5	68.7	68.7	29.805	0.00	0.00	0.000	0.052
8/03/20	1:00a	66.8	67.5	66.8	81	60.8	5.0	SSW	2.50	12.0	SW	66.8	67.9	67.9	29.807	0.00	0.00	0.000	0.038
8/03/20	1:30a	66.5	66.9	66.5	80	60.1	6.0	S	3.00	19.0	SW	66.5	67.5	67.5	29.819	0.00	0.00	0.000	0.031
8/03/20	2:00a	66.0	66.5	66.0	81	60.0	6.0	SSW	3.00	16.0	W	66.0	66.9	66.9	29.821	0.00	0.00	0.000	0.021
8/03/20	2:30a	65.7	66.0	65.7	82	60.1	5.0	SSW	2.50	13.0	SSE	65.7	66.6	66.6	29.831	0.00	0.00	0.000	0.015
8/03/20	3:00a	65.5	65.7	65.4	82	59.9	3.0	SSW	1.50	12.0	S	65.5	66.3	66.3	29.842	0.00	0.00	0.000	0.010
8/03/20	3:30a	65.0	65.4	64.9	83	59.7	4.0	SSW	2.00	11.0	SSE	65.0	65.8	65.8	29.847	0.00	0.00	0.000	0.000
8/03/20	4:00a	65.3	65.4	64.9	83	60.0	5.0	S	2.50	12.0	SW	65.3	66.1	66.1	29.849	0.00	0.00	0.000	0.006
8/03/20	4:30a	65.1	65.3	65.1	84	60.1	5.0	S	2.50	12.0	S	65.1	65.9	65.9	29.862	0.00	0.00	0.000	0.002
8/03/20	5:00a	65.2	65.2	65.1	84	60.2	3.0	SSW	1.50	8.0	SSE	65.2	66.0	66.0	29.872	0.00	0.00	0.000	0.004
8/03/20	5:30a	65.0	65.2	65.0	84	60.0	3.0	SSW	1.50	8.0	SW	65.0	65.8	65.8	29.883	0.00	0.00	0.000	0.000
8/03/20	6:00a	64.4	65.0	64.4	85	59.8	3.0	SSW	1.50	7.0	SW	64.4	65.1	65.1	29.895	0.00	0.00	0.012	0.000
8/03/20	6:30a	64.1	64.4	64.0	87	60.2	2.0	SSW	1.00	7.0	SSW	64.1	64.8	64.8	29.905	0.00	0.00	0.019	0.000
8/03/20	7:00a	64.3	64.3	64.1	86	60.0	2.0	SSW	1.00	8.0	SSW	64.3	65.0	65.0	29.919	0.00	0.00	0.015	0.000
8/03/20	7:30a	64.6	64.7	64.3	86	60.3	2.0	S	1.00	6.0	SSW	64.6	65.4	65.4	29.918	0.00	0.00	0.008	0.000
8/03/20	8:00a	64.8	64.9	64.6	85	60.2	2.0	SSW	1.00	8.0	SW	64.8	65.6	65.6	29.938	0.00	0.00	0.004	0.000
8/03/20	8:30a	65.9	65.9	64.7	84	60.9	3.0	SSW	1.50	7.0	S	65.9	66.9	66.9	29.933	0.00	0.00	0.000	0.019
8/03/20	9:00a	66.8	66.8	65.9	81	60.8	3.0	SSW	1.50	11.0	SW	66.8	67.9	67.9	29.941	0.00	0.00	0.000	0.038
8/03/20	9:30a	67.8	67.8	66.8	80	61.4	4.0	SSW	2.00	8.0	SSW	67.8	69.1	69.1	29.941	0.00	0.00	0.000	0.058
8/03/20	10:00a	69.6	69.9	67.8	74	60.9	3.0	S	1.50	10.0	NNW	69.6	70.3	70.3	29.955	0.00	0.00	0.000	0.096
8/03/20	10:30a	70.2	70.2	69.5	71	60.4	3.0	N	1.50	10.0	N	70.2	70.5	70.5	29.956	0.00	0.00	0.000	0.108
8/03/20	11:00a	72.2	72.4	70.2	65	59.8	3.0	N	1.50	9.0	SSW	72.2	72.6	72.6	29.959	0.00	0.00	0.000	0.150
8/03/20	11:30a	72.8	72.9	71.5	66	60.8	4.0	SSW	2.00	10.0	S	72.8	73.5	73.5	29.959	0.00	0.00	0.000	0.163
8/03/20	12:00p	72.3	73.3	72.3	65	59.9	4.0	S	2.00	10.0	S	72.3	72.7	72.7	29.956	0.00	0.00	0.000	0.152
8/03/20	12:30p	73.8	74.2	72.3	62	60.0	3.0	S	1.50	9.0	S	73.8	74.6	74.6	29.956	0.00	0.00	0.000	0.183
8/03/20	1:00p	73.9	74.7	73.1	62	60.1	4.0	SSW	2.00	12.0	SSW	73.9	74.8	74.8	29.952	0.00	0.00	0.000	0.185
8/03/20	1:30p	76.5	76.5	73.9	56	59.6	4.0	SSW	2.00	13.0	WSW	76.5	76.9	76.9	29.945	0.00	0.00	0.000	0.240
8/03/20	2:00p	76.7	77.1	76.5	54	58.8	3.0	S	1.50	9.0	SSW	76.7	76.9	76.9	29.943	0.00	0.00	0.000	0.244
8/03/20	2:30p	76.7	77.9	76.5	56	59.6	5.0	S	2.50	12.0	SW	76.7	77.1	77.1	29.935	0.00	0.00	0.000	0.244
8/03/20	3:00p	77.8	77.8	76.7	51	58.2	4.0	SE	2.00	13.0	S	77.8	77.9	77.9	29.930	0.00	0.00	0.000	0.267
8/03/20	3:30p	79.3	79.3	77.7	49	58.5	4.0	SSE	2.00	13.0	SSE	79.3	79.4	79.4	29.915	0.00	0.00	0.000	0.298
8/03/20	4:00p	79.1	79.3	78.1	49	58.3	5.0	S	2.50	13.0	SSE	79.1	79.2	79.2	29.911	0.00	0.00	0.000	0.294
8/03/20	4:30p	79.6	80.0	78.5	48	58.2	5.0	S	2.50	10.0	S	79.6	79.5	79.5	29.907	0.00	0.00	0.000	0.304
8/03/20	5:00p	78.8	79.8	78.8	48	57.4	6.0	SSW	3.00	11.0	S	78.8	78.8	78.8	29.903	0.00	0.00	0.000	0.288
8/03/20	5:30p	78.3	78.9	78.3	52	59.2	5.0	S	2.50	12.0	S	78.3	78.5	78.5	29.907	0.00	0.00	0.000	0.277
8/03/20	6:00p	78.1	78.3	78.1	52	59.0	5.0	S	2.50	11.0	S	78.1	78.3	78.3	29.908	0.00	0.00	0.000	0.273
8/03/20	6:30p	78.1	78.2	77.9	53	59.6	3.0	S	1.50	9.0	S	78.1	78.4	78.4	29.907	0.00	0.00	0.000	0.273
8/03/20	7:00p	78.0	78.1	77.9	53	59.5	3.0	S	1.50	9.0	SSW	78.0	78.3	78.3	29.904	0.00	0.00	0.000	0.271
8/03/20	7:30p	77.1	78.0	77.1	54	59.2	2.0	SSW	1.00	7.0	SSE	77.1	77.3	77.3	29.898	0.00	0.00	0.000	0.252
8/03/20	8:00p	75.8	77.1	75.8	56	59.0	2.0	SSW	1.00	3.0	SSW	75.8	76.2	76.2	29.901	0.00	0.00	0.000	0.225
8/03/20	8:30p	75.4	75.8	75.4	58	59.6	2.0	SSW	1.00	9.0	SSW	75.4	76.1	76.1	29.907	0.00	0.00	0.000	0.217
8/03/20	9:00p	75.0	75.4	74.8	59	59.7	3.0	S	1.50	5.0	SSE	75.0	75.8	75.8	29.909	0.00	0.00	0.000	0.208
8/03/20	9:30p	74.5	75.0	74.5	61	60.2	3.0	S	1.50	8.0	SE	74.5	75.4	75.4	29.915	0.00	0.00	0.000	0.198
8/03/20	10:00p	73.8	74.5	73.8	62	60.0	3.0	SSE	1.50	7.0	SE	73.8	74.6	74.6	29.920	0.00	0.00	0.000	0.183
8/03/20	10:30p	72.8	73.8	72.8	64	59.9	2.0	S	1.00	4.0	S	72.8	73.4	73.4	29.918	0.00	0.00	0.000	0.163
8/03/20	11:00p	71.8	72.9	71.8	67	60.2	1.0	SSW	0.50	3.0	S	71.8	72.2	72.2	29.908	0.00	0.00	0.000	0.142
8/03/20	11:30p	71.1	71.8	70.7	69	60.4	1.0	SSW	0.50	2.0	SSW	71.1	71.4	71.4	29.906	0.00	0.00	0.000	0.127
8/04/20	12:00a	70.9	71.2	70.2	69	60.2	1.0	S	0.50	3.0	S	70.9	71.2	71.2	29.906	0.00	0.00	0.000	0.123

Bakes C&D Landfill 7/27/20

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	D-D	Cool D-D
7/27/20	12:30a	70.6	71.0	70.5	77	63.0	1.0	ENE	0.50	3.0	NW	70.6	71.5	71.5	29.857	0.00	0.00	0.000	0.117
7/27/20	1:00a	69.4	70.6	69.4	79	62.6	0.0	E	0.00	2.0	ENE	69.4	70.6	70.6	29.852	0.00	0.00	0.000	0.092
7/27/20	1:30a	69.3	69.4	69.2	79	62.5	1.0	SSE	0.50	3.0	SSE	69.3	70.6	70.6	29.848	0.00	0.00	0.000	0.090
7/27/20	2:00a	68.0	69.3	68.0	81	61.9	0.0	SSE	0.00	1.0	SSE	68.0	69.3	69.3	29.842	0.00	0.00	0.000	0.063
7/27/20	2:30a	67.6	68.0	67.6	82	61.9	1.0	SSE	0.50	3.0	SSE	67.6	68.9	68.9	29.829	0.00	0.00	0.000	0.054
7/27/20	3:00a	67.2	67.6	67.2	83	61.9	0.0	S	0.00	3.0	S	67.2	68.5	68.5	29.822	0.00	0.00	0.000	0.046
7/27/20	3:30a	67.0	67.5	67.0	83	61.7	0.0	S	0.00	2.0	S	67.0	68.2	68.2	29.824	0.00	0.00	0.000	0.042
7/27/20	4:00a	66.2	67.0	66.2	85	61.6	0.0	S	0.00	2.0	S	66.2	67.3	67.3	29.821	0.00	0.00	0.000	0.025
7/27/20	4:30a	65.4	66.2	65.4	87	61.4	1.0	S	0.50	2.0	S	65.4	66.4	66.4	29.818	0.00	0.00	0.000	0.008
7/27/20	5:00a	64.9	65.4	64.9	88	61.3	0.0	S	0.00	1.0	S	64.9	65.8	65.8	29.819	0.00	0.00	0.002	0.000
7/27/20	5:30a	64.9	65.0	64.8	89	61.6	0.0	S	0.00	2.0	S	64.9	65.8	65.8	29.817	0.00	0.00	0.002	0.000
7/27/20	6:00a	64.7	65.0	64.7	89	61.4	1.0	S	0.50	3.0	S	64.7	65.6	65.6	29.824	0.00	0.00	0.006	0.000
7/27/20	6:30a	65.4	65.4	64.6	90	62.4	1.0	S	0.50	3.0	S	65.4	66.5	66.5	29.822	0.00	0.00	0.000	0.008
7/27/20	7:00a	67.2	67.2	65.4	87	63.2	2.0	SSE	1.00	5.0	SSE	67.2	68.6	68.6	29.816	0.00	0.00	0.000	0.046
7/27/20	7:30a	70.7	70.7	67.2	83	65.3	4.0	S	2.00	10.0	SSE	70.7	72.2	72.2	29.813	0.00	0.00	0.000	0.119
7/27/20	8:00a	72.9	72.9	70.8	79	66.0	4.0	S	2.00	9.0	SW	72.9	74.6	74.6	29.801	0.00	0.00	0.000	0.165
7/27/20	8:30a	74.5	74.5	72.9	78	67.2	5.0	S	2.50	11.0	SSE	74.5	76.6	76.6	29.797	0.00	0.00	0.000	0.198
7/27/20	9:00a	75.5	75.5	74.5	77	67.8	6.0	SSW	3.00	10.0	S	75.5	77.9	77.9	29.789	0.00	0.00	0.000	0.219
7/27/20	9:30a	77.2	77.2	75.5	76	69.0	6.0	SSW	3.00	12.0	SSW	77.2	79.8	79.8	29.775	0.00	0.00	0.000	0.254
7/27/20	10:00a	80.2	80.2	77.2	72	70.4	7.0	S	3.50	16.0	SSW	80.2	83.4	83.4	29.766	0.00	0.00	0.000	0.317
7/27/20	10:30a	82.8	82.8	80.2	66	70.3	7.0	SSW	3.50	16.0	SSE	82.8	86.8	86.8	29.762	0.00	0.00	0.000	0.371
7/27/20	11:00a	83.6	83.7	82.8	63	69.7	7.0	SSW	3.50	18.0	SSW	83.6	87.7	87.7	29.755	0.00	0.00	0.000	0.387
7/27/20	11:30a	84.7	84.8	83.4	58	68.3	7.0	SSW	3.50	19.0	SW	84.7	88.3	88.3	29.745	0.00	0.00	0.000	0.410
7/27/20	12:00p	86.5	86.5	84.7	55	68.4	7.0	SSW	3.50	16.0	S	86.5	90.8	90.8	29.741	0.00	0.00	0.000	0.448
7/27/20	12:30p	87.5	87.7	86.5	51	67.1	7.0	SSW	3.50	17.0	SSW	87.5	91.1	91.1	29.739	0.00	0.00	0.000	0.469
7/27/20	1:00p	88.1	88.2	87.5	52	68.3	6.0	SSW	3.00	15.0	SSE	88.1	92.3	92.3	29.732	0.00	0.00	0.000	0.481
7/27/20	1:30p	87.6	88.2	87.4	52	67.8	8.0	S	4.00	18.0	SW	87.5	91.6	91.5	29.726	0.00	0.00	0.000	0.471
7/27/20	2:00p	87.8	88.4	87.3	52	68.0	7.0	SSW	3.50	17.0	S	87.8	91.8	91.8	29.717	0.00	0.00	0.000	0.475
7/27/20	2:30p	88.1	88.6	87.8	52	68.3	6.0	SSW	3.00	17.0	SSW	88.1	92.3	92.3	29.706	0.00	0.00	0.000	0.481
7/27/20	3:00p	88.8	88.8	87.7	49	67.2	6.0	SSW	3.00	19.0	WSW	88.8	92.9	92.9	29.698	0.00	0.00	0.000	0.496
7/27/20	3:30p	88.4	89.4	88.4	51	68.0	6.0	SSW	3.00	17.0	SSW	88.4	92.7	92.7	29.685	0.00	0.00	0.000	0.488
7/27/20	4:00p	88.5	88.7	88.1	51	68.1	7.0	SSW	3.50	21.0	SSW	88.5	92.9	92.9	29.681	0.00	0.00	0.000	0.490
7/27/20	4:30p	88.4	88.5	87.8	53	69.1	5.0	SSW	2.50	14.0	SSW	88.4	93.3	93.3	29.678	0.00	0.00	0.000	0.488
7/27/20	5:00p	86.8	89.0	86.8	54	68.2	4.0	S	2.00	16.0	SW	86.8	91.0	91.0	29.671	0.00	0.00	0.000	0.454
7/27/20	5:30p	85.4	87.2	85.4	57	68.4	6.0	SSW	3.00	16.0	SSW	85.4	89.3	89.3	29.674	0.00	0.00	0.000	0.425
7/27/20	6:00p	81.6	85.4	81.6	64	68.2	7.0	SSW	3.50	16.0	SW	81.6	84.3	84.3	29.687	0.00	0.00	0.000	0.346
7/27/20	6:30p	81.8	81.8	81.3	65	68.9	5.0	SSW	2.50	13.0	SW	81.8	84.9	84.9	29.688	0.00	0.00	0.000	0.350
7/27/20	7:00p	81.1	81.9	81.1	67	69.1	5.0	SSW	2.50	14.0	S	81.1	84.0	84.0	29.686	0.00	0.00	0.000	0.335
7/27/20	7:30p	79.8	81.1	79.8	69	68.7	3.0	SSW	1.50	9.0	SSE	79.8	82.3	82.3	29.693	0.00	0.00	0.000	0.308
7/27/20	8:00p	79.0	79.8	79.0	70	68.4	3.0	S	1.50	11.0	SSW	79.0	81.3	81.3	29.684	0.00	0.00	0.000	0.292
7/27/20	8:30p	78.4	79.0	78.4	72	68.6	3.0	S	1.50	9.0	SSW	78.4	80.8	80.8	29.693	0.00	0.00	0.000	0.279
7/27/20	9:00p	77.7	78.4	77.7	74	68.7	2.0	S	1.00	8.0	SSE	77.7	80.1	80.1	29.690	0.00	0.00	0.000	0.265
7/27/20	9:30p	76.7	77.7	76.7	76	68.6	1.0	SW	0.50	5.0	SSW	76.7	79.3	79.3	29.696	0.00	0.00	0.000	0.244
7/27/20	10:00p	75.1	76.7	75.1	81	68.9	2.0	SSW	1.00	5.0	SW	75.1	77.7	77.7	29.696	0.00	0.00	0.000	0.210
7/27/20	10:30p	74.5	75.1	74.5	83	69.0	2.0	SSW	1.00	5.0	SSW	74.5	77.0	77.0	29.697	0.00	0.00	0.000	0.198
7/27/20	11:00p	73.9	74.6	73.9	84	68.8	2.0	SSW	1.00	6.0	SSW	73.9	76.0	76.0	29.702	0.00	0.00	0.000	0.185
7/27/20	11:30p	73.2	73.9	73.2	86	68.8	3.0	S	1.50	8.0	SSW	73.2	75.4	75.4	29.696	0.00	0.00	0.000	0.171
7/28/20	12:00a	72.8	73.2	72.8	86	68.4	2.0	SSW	1.00	4.0	SSW	72.8	74.9	74.9	29.692	0.00	0.00	0.000	0.163

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method: ☐ Landfill Office Phone ☐ Email ☐ NYDEC ☐ Text X In Person ☐ Other: _____
CHUCKS CELL

Date Complaint Received: _11/20/2020_____. Time Complaint was Received: __7:49_ x AM ☐ PM

Hakes Manager Contacted Regarding this Complaint: ____YES_____

Date/Time Manager Received Reported Complaint: Date: _12/20/2020 Time: 7;49____ X AM ☐ PM

Complaint Information:

Name of Person Filing Complaint: _Lori Close_____

Address: ___9973 Woodcock Road Painted Post Ny 14870_____

Telephone number: _1-607-654-3230_____

Nature of complaint: ☐ Odor x Noise ☐ Litter ☐ Dust ☐ Traffic ☐ Other

For Traffic Complaints - Name of Company: _____ License#:_____
Road/Route:_____

Direction traveling_____ Truck type ☐ tractor trailer ☐ straight/dump trailer

For Odor Complaints; Time odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Duration odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type: _____
Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

_____

Is the odor being detected at the caller's residence? ☐ Yes ☐ No

Additional Description of the Event by Complainant: _____

_____

_____

_____

Return call requested? ☐ Yes x No, Site visit requested? ☐ Yes x No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

ource of Weather Data: _Hakes Weather Station_____

Weather Description: Temperature: __49____°F. Bar. Press. (in-Hg):_30.202_____ Precipitation: _____0_____

Wind direction & speed: From the ___South_____ @ ___0-6_____mph

General conditions: (Sunny, Cloudy, Fog etc.) _Cloudy_____

Person Filling This Form: _____Charles Plank_____

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____ Site Visit: _____

Return Telephone Call Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Summary of Telephone Call:__Lori Close called Chucks cell phone to talk about the noise the loggers were creating. Chuck explained to Lori the loggers would be onsite for a few weeks_____

Site Response Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO _____ Name of Complainant/Contactee: _____

Summary of Visit & Communication: _____

Odor Responder Observations:

Was an Odor Detected; ☐ YES ☐ NO Time: _____ ☐ AM ☐ PM

Responder's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: ☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent
☐ None of above

Additional Description: _____

Weather Observations at Time of Response at the Odor Complaint Location

Weather Description: Temperature: _____°F. Precipitation _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Weather Data at Time of Response From Weather Station

Weather Data Source _____

Weather Description: Temperature: _____°F. Bar. Press.(in-Hg) _____ Precipitation _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Other Responder Comments Pertaining to Response

_____

_____

Signature of Responder: _____ Date: 11/20/2020

COMPLAINT RECORD FORM- HAKES LANDFILL

-THIS SECTION COMPLETED BY HAKES PERSONNEL MANAGING COMPLAINT-

Complaint Log:

Complaint received by the following method: ☐ Landfill Office Phone ☐ Email ☐ NYDEC ☐ Text X Chucks Cell ☐ Other:_____

Date Complaint Received: _12/3/2020_____ Time Complaint was Received: __10:59_ x AM ☐ PM

Hakes Manager Contacted Regarding this Complaint: ____YES_____

Date/Time Manager Received Reported Complaint: Date: _12/20/2020 Time: 7;49____ X AM ☐ PM

Complaint Information:

Name of Person Filing Complaint: _Lori Close_____

Address: ___9973 Woodcock Road Painted Post Ny 14870_____

Telephone number: _1-607-654-3230_____

Nature of complaint: ☐ Odor x Noise ☐ Litter ☐ Dust ☐ Traffic ☐ Other

For Traffic Complaints - Name of Company _____ License#:_____
Road/Route:_____

Direction traveling_____ Truck type ☐ tractor trailer ☐ straight/dump trailer

For Odor Complaints; Time odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Duration odor was detected: _____ ☐ AM ☐ PM

For Odor Complaints; Complainant's Description of Odor Type: _____
Note: This should be description of the odor in their own words (i.e. fishy, chemical/solvent, septic, putrid etc.) Avoid them identifying outright as gas, sludge, leachate or garbage unless their description specifically suggests that.

For Odor Complaints; Complainants Description of Intensity & Presence: *do not use numeric scale; description should be: Very Faint, Faint, Distinct/easily noticeable, Strong, Very strong and a presence as fleeting, intermittent to consistent*

_____

Is the odor being detected at the caller's residence? ☐ Yes ☐ No

Additional Description of the Event by Complainant: _____

_____

_____

_____

Return call requested? ☐ Yes x No, Site visit requested? ☐ Yes x No, Property Access Granted? ☐ Yes ☐ No

Weather Data at Time of Complaint:

ɔurce of Weather Data: _Hakes Weather Station_____

Weather Description: Temperature: __36____°F. Bar. Press. (in-Hg):_30.104_____ Precipitation _____0_____

Wind direction & speed: From the ___SSW_____ @ ___0-5_____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _Cloudy_____

Person Filling This Form: _____Charles Plank_____

-THIS SECTION COMPLETED BY RESPONSE PERSONNEL-

Name of Responder(s): Telephone Follow Up: _____ Site Visit: _____

Return Telephone Call Completed? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO Date: _____ Time: _____ ☐ AM ☐ PM

Summary of Telephone Call:__Lori Close called Chucks cell phone to talk about the noise the loggers were creating. Chuck explained to Lori the loggers have a few more days left, and the scope of work will be completed._____

Site Response Completed? ☐ YES ☐ NO Date: _____ Time _____ ☐ AM ☐ PM

Contact Made? ☐ YES ☐ NO _____ Name of Complainant/Contactee: _____

Summary of Visit & Communication: _____

Odor Responder Observations:

Was an Odor Detected; ☐ YES ☐ NO Time: _____ ☐ AM ☐ PM

Responder's Description of Odor Type: _____

Note: This should be description of the odor in their own words (i.e. fishy, chemical, septic, putrid etc.)

Responder's Description of Odor Intensity using N-Butanol Scale: ☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7-8

0 = No Detectable Odor
1 = Very Faint
2-3 = Faint
3-4 = Distinct, easily noticeable
5-6 = Consistently Detectable Strong Distinguishable Odor
7-8 = Very Strong

Responder's Description of Odor Character/Description

☐ Garbage/Rotten
☐ Sludge/Septic
☐ Landfill Gas/Rotten Eggs
☐ Leachate
☐ Barnyard/Manure
☐ Chemical/Solvent
☐ None of above

Additional Description: _____

Weather Observations at Time of Response at the Odor Complaint Location:
Weather Description: Temperature: _____°F. Precipitation _____

Wind direction & speed: From the _____ @ _____mph.

General conditions: (Sunny, Cloudy, Fog etc.) _____

Weather Data at Time of Response From Weather Station

Weather Data Source _____

Weather Description: Temperature: _____°F. Bar. Press.(in-Hg):_____ Precipitation: _____

Wind direction & speed: From the _____ @ _____mph

General conditions: (Sunny, Cloudy, Fog etc.) _____

Other Responder Comments Pertaining to Response

_____

_____

Signature of Responder: _____ Date 12/3/2020