April 27, 2023

Mr. David Denk
Regional Permit Administrator
New York State Department of Environmental Conservation
Region 9 Headquarters
700 Delaware Avenue
Buffalo, New York 14209

Re: Modern Landfill, Inc.
Renewal of NYSDEC Permit No. 9-2924-00016/0043
Model City, New York 14107

Dear Mr. Denk:

On behalf of Modern Landfill, Inc. (Modern), Cornerstone Engineering and Geology, PLLC (Cornerstone) is submitting three (3) copies of an application for renewal of the 6 NYCRR Part 360 Solid Waste Facility Permit # 9-2924-00016/0043. This permit, issued by the New York State Department of Environmental Conservation (NYSDEC) on March 7, 2017 modified the previous permit allowing for subgrade modifications. The current permit is set to expire on October 28, 2023.

This application for renewal is submitted pursuant to the requirements 6NYCRR Parts 360.16(g) and 363-4.1. Enclosed are the following attachments supporting the renewal application:

- Division of Materials Management Application for a Solid Waste Facility Permit – Renewal
- Topographic site location map
- Updated Record of Compliance

To support the renewal application, and pursuant to discussions held during a meeting at the Department's offices in Buffalo on October 13, 2022, additional documents have been revised and included as attachments to this letter. These documents serve as updates and replacements to the previously submitted documents supporting the Solid Waste Management Facility Permit. These include the following:

- Long Environmental Assessment Form (EAF)
- Facility Manual
- Environmental Monitoring Plan

Consistency with State Solid Waste Management Policy/Plan

As required by 6NYCRR Part 360.16(g) a renewal requires a demonstration that the facility is consistent with the state solid waste management policy identified under subdivision (1) of ECL Section 27-0106. Since the time of

Cornerstone Engineering and Geology, PLLC
3136 South Winton Road, Suite 303, Rochester, NY 14623
Tel 877.294.9070 Fax 877.845.1456 tetratech.com

the March 17, 2017 permit modification, there has been no change in the statewide solid waste management policy set forth in ECL Part 27-0106 (1), and no revisions to the current statewide solid waste management plan by the NYSDEC titled *"Beyond Waste – a Sustainable Materials Management Strategy for New York State*", adopted December 27, 2012.

Renewal of the Modern landfill 6 NYCRR Part 360 Permit is consistent with, and will help meet several of the qualitative goals of the Beyond Waste document, including:

- Minimizing the need for long-range export of residual waste
- Maximizing efficiency in infrastructure development
- Continuing to ensure solid waste management facilities are designed and operated in an environmentally sound manner

The permit renewal will provide continued capacity for the management of solid waste generated in New York and thereby reduce the amount of waste that is exported for disposal in other states. New York State's increasing reliance on waste export from many of its densely populated areas represents a significant public policy issue for the NYSDEC, and the Beyond Waste Plan acknowledges that relying on other states to manage one-fifth of the total waste stream and one-third of MSW stream from New York is problematic and potentially unreliable.

Beyond Waste also notes that only about half of the 64 planning units in New York State have disposal facilities within their boundaries and the rest rely on disposal capacity in other in-state planning units or out-of-state facilities. *"Therefore, free movement of waste is critical to these planning units and the facilities that serve them. Restrictions on waste exports would potentially impact about 22 percent of New York State's waste that is currently destined for disposal."* Renewal of the existing Part 360 permit will allow Modern Landfill to continue to provide the critical disposal capacity needed for the management of solid waste generated in New York. This is consistent with NYSDEC policy to reduce the amount of waste that is exported for disposal in other states.

Beyond Waste also explicitly favors the full utilization of existing permitted landfill capacity because they use existing infrastructure, are more efficient and less expensive to design and construct, and generally impact fewer natural resources than new landfill sites. Section 9.4.9 of Beyond Waste specifically notes that, *"…optimizing capacity at existing landfill disposal operations helps establish an existing and perhaps sustainable landfill disposal infrastructure such that the state's land resources can be conserved to the maximum extent possible."*

Finally, the Modern landfill facility has been designed and operated in an environmentally sound manner, in conformance with the requirements of 6 NYCRR Part 360/363 and other applicable regulations.

Facility Enhancements to Maintain Permit Compliance

As discussed in the pre-application meeting on October 13, 2022, the facility is proposing several facility enhancements that will allow Modern Landfill to continue to operate in accordance with their existing permit requirements and the 6 NYCRR Part 363 requirements. These enhancements include:

- A new leachate pre-treatment system, including effluent storage tank is proposed near the existing storage tank. The installation of a forcemain is proposed between the leachate storage tanks and the Town of Lewiston sewer system. The proposed storage tank will provide reserve capacity for treated leachate before it is removed from site via truck or forcemain. The forcemain, which will be approved by the Town of Lewiston, will be constructed along facility roadways or the Town of Lewiston right-of-way for Pletcher Road. The forcemain will tie-in to the existing Town sewer system in front of the business located at 1250 Pletcher Road and will have a total length of approximately 3,500 feet. The proposed enhancements to the leachate

storage and conveyance system are needed to allow the facility to continue to store and mange the generated leachate at the site in accordance with the Part 363 regulations.

- A new landfill gas blower and associated compressor will be installed south of the existing recycling facility to allow the for the continued collection of landfill gas and effective odor control at the facility.
- An enhanced residential drop-off facility will be constructed south of the existing recycling facility. The current facility is not separated from landfill traffic and due to its small size, there is limited opportunity for separation of the various waste and recyclable materials. The new facility location is necessary to allow for safe access by residents.

For each the enhancements described above, the Modern will submit to the Region 9 RMME drawings for construction of the next phase. These drawings will be submitted at least 90 days prior to beginning of construction for Department review and approval.

Additionally, the facility is proposing updated operating hours as follows:

- Proposed waste receiving hours from 7 am to 6 pm Monday through Saturday, and 7 am to noon on Sundays, contingent on the Town of Lewiston's approval. Because the incoming tonnage will not be increased and the total operating hours will increase, the change will effectively result in reduced traffic levels associated with the operations. The change of operating hours will not result in different compliance levels or locations for measured noise levels and therefore will not result in noise impacts.

A SEQR Long EAF, attached to this letter, addresses and shows no significant impacts associated with these enhancements and updates.

Noise Monitoring/Control

The proposed operations, including the enhancements described above, will not result in changes to the noise levels at the facility limits or property limits controlled by the facility Owner. However, as required by 6NYCRR Part 360.19(j), the Owner or operator of a solid waste facility must ensure that noise (other than construction noise) resulting from equipment or operations at the facility does not exceed specific energy equivalent sound levels.

The applicable sound levels apply for properties that are authorized for residential purposes. Because the facility is bordered by properties that do not allow residential uses (Town of Lewiston Light Industrial and Industrial zones, *Ref. Town of Lewiston, Part II General Legislation – Chapter 360 – Zoning*, https://ecode360.com/LE0061) the closest point between operations and a property allowing residential uses or currently used for residential purposes is approximately 900 feet. This property, which is located southeast of the southeast corner of Sect IV Area 3, is in an area zoned Rural Residential (RR) and therefore, an L_{eq} Energy Equivalent Sound Level of 57 decibels (dBA) would apply. That is, during operating hours between 7 AM and 10PM, the sound level at limit of the Rural Residential zone should not exceed 57 dBA. Considering a noise source (81 dBA) representative of waste placement operations at large landfills the calculated noise level at 900-feet would be 55.9 dBA. This calculation conservatively does not take into account sound attenuation from ground cover, elevation differences, or the actual location of the centroid of the noise source coming from multiple pieces of equipment (which would not be at the edge of waste placement operations).

Because the facility operations are not changing (in relation to the noise impacts and requirements) as a result of this renewal and projected noise impacts due to operation of the facility were found to be compliant with noise impact standards found in 6 NYCRR Part 360.19 (j), additional noise monitoring or control at the facility is not expected to be required. Modern plans to perform a noise assessment to confirm.

Compliance Statement

Based on our visual observations of the facility and the onsite operations, discussions with facility personnel, and on our review of facility records and NYSDEC inspection reports, we certify that to the best our knowledge the landfill operations have been undertaken in general compliance with the terms and conditions of the existing permit and will continue to do so under a renewed permit.

We trust these documents are satisfactory and look forward to your prompt review of this application and issuance of a renewed Part 360 permit for the maximum permissible term.

If you have any questions or require additional information, please contact me at 585-450-4007 or at rob.holmes@cornerstoneeg.com.

Sincerely,

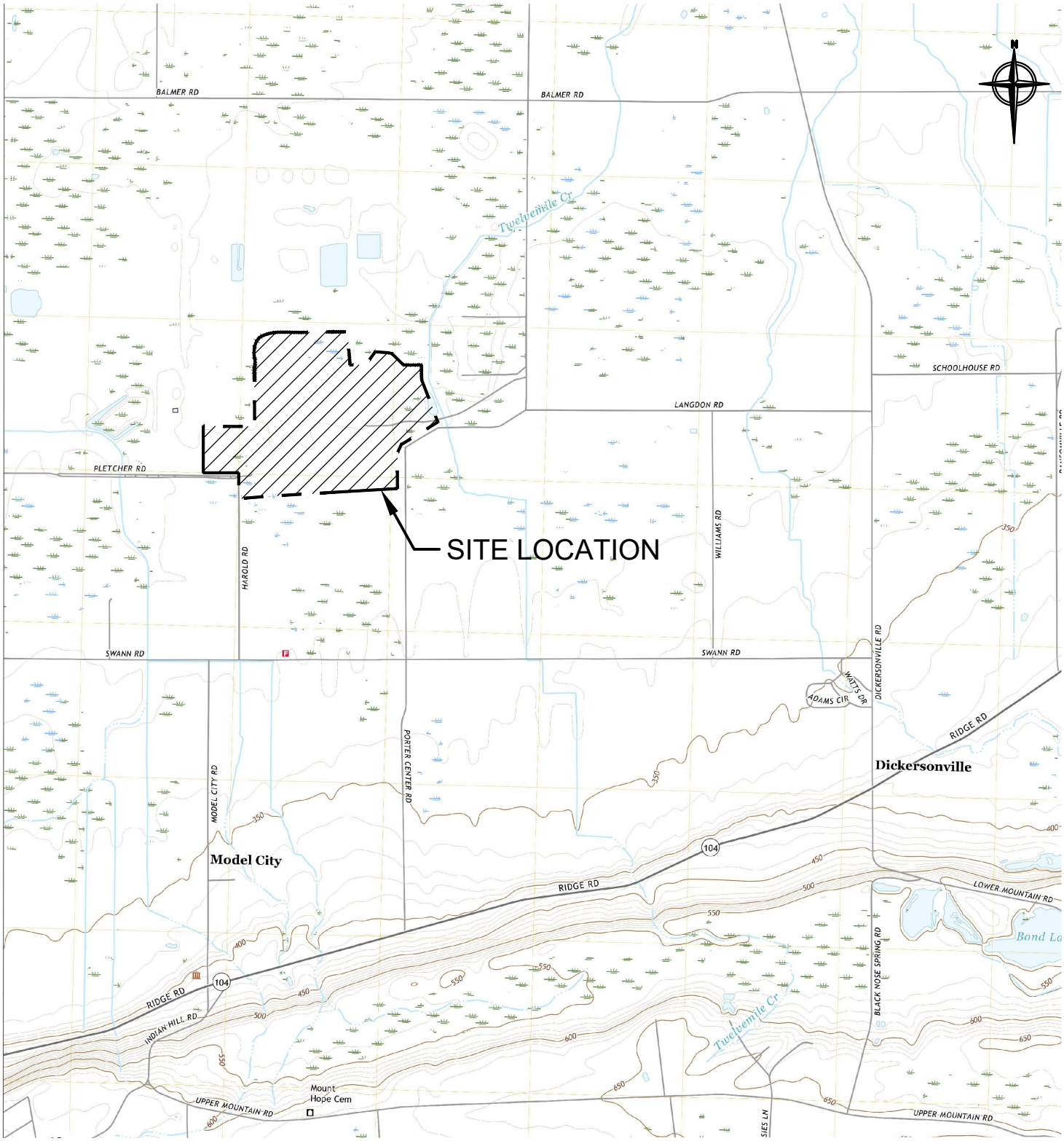
CORNERSTONE ENGINEERING AND GEOLOGY, PLLC

Robert Holmes, P.E.
Client Manager

Attachments: Site Location Map
NYSDEC Application for a Solid Waste Management Facility Permit Form
Record of Compliance – Permit Application Supplement
Long Form EAF
Facility Manual (under stand-alone cover)
Environmental Monitoring Plan (under stand-alone cover)

CC: Peter Grasso, NYSDEC Region 9
Alan Davis, Modern Landfill, Inc.
Krysta Cione, Modern Landfill, Inc.

Attachment 1 – Site Location Map



0 3000 6000

SCALE IN FEET

SOURCE:

USGS 7.5 MINUTE SERIES RANSOMVILLE QUADRANGLE, NEW YORK–NIAGARA COUNTY, 2019.

This drawing represents intellectual property of Cornerstone Engineering and Geology, PLLC. Any modification to the original by other than Cornerstone Engineering and Geology, PLLC personnel violates its original purpose and as such is rendered void. Cornerstone Engineering and Geology, PLLC will not be held liable for any changes made to this document without express written consent of the originator.

Unauthorized alteration or addition to this plan bearing a licensed professional's seal is a violation of Section 7209, Sub–Division 2, of the New York Education Law. Only copies from the original of this plan marked with an original professional's seal shall be considered to be valid true copies.

cornerstone PLLC

PREPARED BY:
CORNERSTONE ENGINEERING AND GEOLOGY, PLLC

ALL PROFESSIONAL ENGINEERING WORK IS PERFORMED BY DULY LICENSED PROFESSIONAL ENGINEERS UNDER THE APPROPRIATE STATE REGISTERED PROFESSIONAL ENTITY.

MODERN LANDFILL PERMIT RENEWAL
LEWISTON, NIAGARA COUNTY, NEW YORK

TOPOGRAPHIC SITE LOCATION MAP

FIGURE NO.
1

PROJECT NO.
4223702

File: R:\PROJECTS\MODERN LANDFILL\4223702 – Permitting Support Services_Project Drawings\223702–FIGURE 1_REGIONAL SITE PLAN.dwg Layout: FIG 1 User: DAVID.STENSHORN Mar 30, 2023 – 9:55am

Attachment 2 – NYSDEC Application for a Solid Waste Management Facility Permit Form

(09/2020)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DEPARTMENT USE ONLY	
DEC APPLICATION NO.	
ACTIVITY NUMBER(S)	

DIVISION OF MATERIALS MANAGEMENT
APPLICATION FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

Please read all instructions before completing this application

Reset Form

Please **TYPE** or **PRINT** clearly

1. APPLICATION TYPE (CHECK ALL APPLICABLE BOXES):

☐ Initial (New) ☐ Modification ☑ Renewal (*Existing permit expiration date:* 10/28/2023)

2. APPLICANT IS:

☑ Facility Owner ☐ Facility Operator

3. IS APPLICATION FILED BY OR ON BEHALF OF A MUNICIPALITY?

☐ YES (*Name of municipality:* _____) ☑ NO

4. FACILITY NAME AND LOCATION (Attach USGS Topo Map showing exact location)

Name: Modern Landfill, Inc.

Address: 1445 Pletcher Road, Model City, NY 14107

Town: Lewiston County: Niagara

Coordinates: NYTM-E 394195 NYTM-N 1169402

Existing solid waste management facility permit number (if applicable): 9-2924-00016/0043

☐ Check here if facility owner, operator and/or real property owner has changed since last application was submitted.

5. FACILITY OWNER'S INFORMATION

Name: Modern Landfill, Inc.

Address: 4746 Model City Road

City/State/Zip: Model City, NY 14107

Phone number: 716-754-8226

Email:

6. FACILITY OPERATOR'S INFORMATION

Name: Modern Landfill, Inc.

Address: 4746 Model City Road

City/State/Zip: Model City, NY 14107

Phone number: 716-754-8226

Email:

7. ENGINEER'S INFORMATION

Name: Robert A. Holmes

NYS Professional Engineer License #: 077317

Firm Name: Cornerstone Engineering and Geology, PLLC

Address: 3136 South Winton Road, Suite 303

City/State/Zip: Rochester, NY 14623

Phone number: 585-450-4007

Email: rob.holmes@cornerstoneeg.com

8. REAL PROPERTY OWNER'S INFORMATION

Name: Modern Landfill, Inc.

Address: 4746 Model City Road

City/State/Zip: Model City, NY 14107

Phone number: 716-754-8226

Email:

☐ Check here if facility owner is not real property owner.
See instruction page for written permission requirement.

9. TYPE OF FACILITY (CHECK ALL APPLICABLE BOXES)

- ☐ Combustion & Thermal Treatment (362-1)
- ☐ C & D Debris Handling & Recovery (361-5)
- ☐ Composting & Other Organics Processing (361-3)
- ☐ Household Hazardous Waste Collection (362-4)
- ☐ Land Application & Associated Storage (361-2)
- ☑ Landfill (363)
- ☐ Regulated Medical Waste (365)
- ☐ Mulch Processing (361-4)
- ☐ Municipal Solid Waste Processing (362-2)
- ☐ Navigational Dredge Material Handling & Recovery (361-9)
- ☐ Nonspecific Facilities (360.17)
- ☐ Recyclables Handling & Recovery (361-1)
- ☐ Research, Development, and Demonstration (360.18)
- ☐ Transfer (362-3)
- ☐ Waste Oil (374-2)
- ☐ Waste Tire Handling & Recovery (361-6)
- ☐ Used Cooking Oil & Yellow Grease (361-8)

10. NAME(S) OF ALL MUNICIPALITIES IN SERVICE AREA:

Municipalities in Erie and Niagara Counties (primarily) and the surrounding areas, including the Tuscarora Native American Reservation and Ontario, Canada.

11. SOLID WASTE ACCEPTED: *Identify facility capacity and throughput of each waste type, as applicable*

815,000 tons per year of residential, commerical, and non-hazardous industrial wastes as approved by the NYSDEC.

FOR MODIFICATION APPLICATION ONLY

12. DOES THE MODIFICATION APPLICATION INVOLVE (CHECK ALL APPLICABLE BOXES):

☐ New waste type ☐ New equipment ☐ Waste acceptance rate increase ☐ Facility expansion (including landfill)

SKIP QUESTION #13 AND #14 IF APPLYING FOR RENEWAL ONLY

13. APPLICATION DESCRIPTION

Include a brief description of new or modification request

14. FACILITY SIZE

a. Facility size proposed (acres) _____

b. Total site area (acres) _____

For modification application ONLY

c. Associated facility size change (acres) _____

For Landfill ONLY

d. Facility size ultimately planned (acres) _____

e. Existing landfill area on this site and adjacent properties (acres) _____

f. Ultimate facility height above ground level (feet) _____

15. IS A VARIANCE REQUESTED FROM ANY PROVISION OF 6 NYCRR PART 360 SERIES?

☐ Yes ☑ No If yes, submit an application for variance and cite specific provision(s) here: _____

16. REAL PROPERTY OWNER CERTIFICATION

☑ Corporation ☐ Partnership ☐ Sole Proprietorship ☐ Municipality/other government entity ☐ Other: _____

I hereby attest that I am the owner of the real property on which the facility is located or the proposed or modified facility will be located and am signing in my individual capacity.

Or if signing in a representative capacity: I hereby attest that I am the (indicate title or capacity) Chief Executive Officer, an authorized representative of the owner of the real property on which the facility is located or the proposed or modified facility will be located). I am duly authorized on behalf of said owner to sign make this certification on this application.

I grant permission for the applicant to apply for the permit, and construct and operate the facility described in the application in accordance with a final DEC permit or approval. I also grant permission for the department to access the above-described real property, including any adjacent areas, during all reasonable times (including but not limited to 7:00 am to 7:00 pm Monday through Friday, and additional facility hours of operation, and as appropriate during emergencies and similar exigent circumstances) without the property owner, applicant or other representative of the property owner or facility present. If the property is posted with "keep out" signs or fenced with an unlocked gate, department staff may still enter the property. Department staff may traverse the property, inspect the facility, take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the property, and conduct other activities necessary to evaluate the permit application or assess the facility's compliance with the permit and any other applicable statutory or regulatory requirements.

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: Michael P McInerney Digitally signed by Michael P. McInerney Date: 2023.04.26 15:24:53 -04'00' Print Name: Michael P. McInerney Date: 04/26/2023

Title or Representation if signing in a representative capacity: Chief Executive Officer

17. APPLICANT CERTIFICATION

☑ Corporation ☐ Partnership ☐ Sole Proprietorship ☐ Municipality/other government entity ☐ Other: _____

I hereby attest that I am the (check one) ☑ President/Vice President ☐ General Partner ☐ Sole Proprietor ☐ Duly Authorized Municipal Representative of (APPLICANT) Modern Landfill Inc. and the legally responsible party for this application as presented to NYSDEC. I affirm that the statements and information provided on this application and all attachments submitted herewith are true, accurate, and complete.

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. I accept full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agree to indemnify and hold harmless the State from any and all causes of action in law or equity, resulting from the said project.

Signature: Michael P McInerney Digitally signed by Michael P. McInerney Date: 2023.04.26 15:24:12 -04'00' Print Name: Michael P. McInerney Date: 04/26/2023

Instructions for the completion of an Application for a Solid Waste Management Facility Permit

General

This application form is prescribed by the New York State Department of Environmental Conservation (DEC) for solid waste management facilities pursuant to the requirements of 6 NYCRR Parts 360, 361, 362, 363, 365, and 621. In order to be determined complete, the application must satisfy the requirements established in Subpart 621.3 and 621.4 and the plans, reports, and other supporting information required by Parts 360, 361, 362, 363, and 365. Applicants should make every effort to enter the information requested in the spaces provided on this form **but may attach additional sheets where space prohibits full and complete answers**. For the purposes of this form, the term "facility" shall mean "solid waste management facility."

Applicant is encouraged to reach out to Regional Permit Administrator for the DEC region (in which the facility is located or is proposed to be located) for a pre-application meeting prior to submitting solid waste management facility application. Submit all application materials to the Regional Permit Administrator for the DEC region. See Part 621 Appendix 1.

If applicable, a certificate of status with the seal of the New York State Department of State to the department and a certificate of doing business under assumed name ("D/B/A") with the county clerk in the county where the facility is located should be submitted by facility owner and operator with the application.

Note: The applicant should retain a copy of the completed application form.

Item Number

1. Check all boxes that pertain to the type of permit sought.
   An initial permit is the first permit the owner or operator receives for the facility. See 360.16
   A permit renewal is used when intending to construct or operate beyond the current permit period. Enter the expiration date of current solid waste management facility permit. See 360.16(g) and 621.13
   A permit modification is used for any change or amendment whatsoever to a current permit. See 360.16(f) and 621.13
   Note: Landfill expansion application should check "Modification".

2. Check the box that describes the applicant's affiliation with the facility. The applicant must either be the owner of the facility or the entity or person responsible for the overall operation of the facility. See 360.2(b)(13)

3. If the application is submitted by or on behalf of a municipality, enter the name of the municipality. See 360.2(b)(179) and (180)

4. Enter the facility's name, address, and solid waste management facility permit number (if applicable). Attach a USGS Topographic Map, or a copy of one, showing the exact location of the facility.
   For renewal and modification applications: Check the box if the facility owner, operator, or real property owner information has changed since the solid waste management facility application was last submitted.

5. Identify the entity or person who owns the facility. See definition of "person", 360.2(b)(198).

6. Identify the entity or person responsible for the overall management and operation of the facility.

7. Identify the individual licensed to practice engineering in the State of New York who is responsible for the design of the facility, and the preparation and certification of any supporting information required to be submitted with this application Include the name of the firm which employs the engineer, where applicable. See 360.6 and 621.3(a)(1)

8. Identify the entity or person who owns the real property on which the facility is situated, or who will own the real property on which the proposed facility will be situated. See 360.2(b). If the facility owner is different from the real property owner, check the box and obtain written permission from the real property owner(s) of land to construct and operate the proposed facility on the real property. See 360.16(c)(1)(iii)

9. Check the box that most closely describes the facility that is the subject of this application. For combination facilities check all applicable boxes. For Research, Development and Demonstration permits and Nonspecific permits, see 360.18 and 360.17 respectively.

10. Enter the name of all municipalities in the existing and/or proposed service area of the facility. See 360.2(b)(246) and 360.16(c)(5) & (d)

11. Enter the specific wastes to be accepted at the facility. See 360.2 for definitions for various types of wastes.
    If applying for a permit renewal or modification, enter the new or existing "approved design capacity" from the current permit. See 360.2(b)(14). For initial permit and modification, enter the proposed "approved design capacity". See 360.2(b)(14) & (15).
    Generally, units must be expressed as tons per day, except that waste oil must be in gallons, waste tires must be number of tires, and land application and composting must be dry tons per day.

12. FOR MODIFICATION APPLICATION ONLY. Check all boxes that pertain to the type of modification sought. Facility expansion includes any vertical or horizontal expansion of the facility footprint. If none of the options is applicable, leave this section blank.

13. This section can be skip if applying for renewal ONLY. Otherwise, enter brief project description.

14. This section can be skip if applying for renewal ONLY.
    a. Enter the area proposed to be occupied by the facility, not including access roads, appurtenances, and land buffer areas. See 360.2(b)(101)
    b. Enter the area of the contiguous property on which the facility is situated, including the area of the facility, access roads, appurtenances, land buffer and unused areas.
    c. FOR MODIFICATION APPLICATION ONLY. Enter the area that is impacted, changed or included by the modification request.
    d. FOR LANDFILL ONLY. For facilities that are to be developed in stages, enter the total facility area that is ultimately proposed, inclusive of all stages.
    e. FOR LANDFILL ONLY. Enter any existing landfill area on the site and on adjacent properties that were subdivided from this site within the previous five years.
    f. FOR LANDFILL ONLY. Enter the heights of the highest point of the proposed facility as measured from existing ground level.

15. Identify all provisions of Part 360 Series regulations from which a variance is sought. The variance request must satisfy the requirements of 360.10 and 621.3(a)(5). Attach documentation as necessary. A variance request that is submitted on behalf of a facility with a current permit must be submitted as an application for a permit modification. Application form for variance request is available on NYSDEC website at: https://www.dec.ny.gov/docs/materials_minerals_pdf/360varapp.pdf

16. The certification block must be completed by the real property owner or an authorized representative of the real property owner.

17. The certification block must be completed by the applicant or an authorized representative. See 360.16(a) and 621.3(a)(2)
    Part 360.16(a) indicates the form must be signed by:
    (1) corporations: by a duly authorized principal executive officer of at least the level of vice president;
    (2) partnership or limited partnership: by a general partner;
    (3) sole proprietorship: by the proprietor; or
    (4) a municipal, State, or other governmental entity: by a duly authorized principal executive officer or elected official.

Attachment 3 – Record of Compliance Form

47-19-2A (8/20)-10e

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

RECORD OF COMPLIANCE-Permit Application Supplement

Please read all instructions on reverse side before completing this application

DEPARTMENT USE ONLY

DEC APPLICATION NUMBER:

1. FULL NAME OF APPLICANT
Modern Landfill, Inc.

2. MAILING ADDRESS (Principal Place of Business)
Street
4746 Model City Road

City/State/Zip Code
Model City, NY / 14107

3. NEW YORK STATE MAILING ADDRESS (If different)
Street
PO Box 209

City/State/Zip Code

4. TYPE OF ORGANIZATION
☐ Individual ☐ Partnership ☐ Company ☑ Corporation ☐ Other

If other than individual, provide Federal Taxpayer ID Number
16-1140103

5. Does the applicant currently hold any permit issued under the Environmental Conservation Law?
☑ Yes ☐ No

6. a. Has the applicant been denied a permit or has the applicant had a permit revoked or suspended under the Environmental Conservation Law? or
b. Is the applicant currently the subject of an enforcement action under the Environmental Conservation Law?
a. ☐ Yes ☑ No b. ☐ Yes ☑ No

7. If any answer to questions 5, 6(a), or 6(b) is YES, provide details on a separate page and attach it to this form.

8. Has the applicant, and if the applicant Is a corporation, has any officer, director, or large stockholder (owner of 25 percent or more of not publicly-traded stock) of the corporation, within the last ten (10) years, been:

a. found in an administrative, civil or criminal proceeding to have violated any provision of the Environmental Conservation Law (ECL), any related order or determination of the Commissioner, any regulation promulgated pursuant to the ECL, the condition of any permit issued thereunder, or any similar statute, regulation, order or permit condition of any other state or federal government agency?
☐ Yes ☑ No

b. an officer, director or large stockholder (owner of 25% or more of not publicly-traded stock) of a corporation which-during the time such person was an officer, director or large stockholder-was determined in an administrative, civil or criminal proceeding to have violated any provision of the Environmental Conservation Law (ECL), any related order or determination of the Commissioner, any regulation promulgated pursuant to the ECL, the condition of any permit issued thereunder, or any similar statute, regulation, order or permit condition of any other state or federal government agency?
☐ Yes ☑ No

c. convicted of a criminal offense under the laws of any state or federal government agency, which involves environmental statutes or regulations, or fraud, bribery, perjury, theft or an offense against public administration as that term is used in Article 195 of the Penal Law, or an offense involving false written statements as those terms are defined in Article 175 of the Penal Law? Out-of-state history may be limited to misdemeanors, felonies and civil penalties assessed at $25,000 or more.
☐ Yes ☑ No

d. an officer, director or large stockholder (owner of 25% or more of not publicly-traded stock) of a corporation which-during the time such person was an officer, director or large stockholder-was convicted of a criminal offense under the laws of any state or federal government agency, which involves environmental statutes or regulations or fraud, **bribery,** perjury, theft, or an offense against public administration as that term is used in Article 195 of the Penal Law, or an offense involving false written statements as those terms are defined in Article 175 of the Penal Law? Out-of- state history may be limited to misdemeanors, felonies and civil penalties assessed at $25,000 or more.
☐ Yes ☑ No

9. If any answer to questions 8a through 8d is YES, provide details on a separate page and attach it to this form.

10. Does the applicant currently owe any regulatory fees pursuant to Article 72 of the Environmental Conservation Law to the Department of Environmental Conservation?
☐ Yes, amount $ ☑ No Under dispute for year(s) Amount $

11. CERTIFICATION (By Applicant who is an **Individual)**
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. 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.

Date: **Signature:** **Print Name:**

ITEMS 12 THROUGH 15 TO BE COMPLETED BY AN APPLICANT OTHER THAN AN INDIVIDUAL

12. SPECIFY UNDER WHAT LAW APPLICANT WAS ORGANIZED 13. STATE 14. DATE OF ORGANIZATION

15. CERTIFICATION (By an Applicant **Other** Than an Individual)
I hereby affirm under penalty of perjury that I am Chief Executive Officer (title) of Modern Landfill, Inc. (entity); that I am authorized by that entity to make this application; that this application was prepared by me or under my supervision and direction; and that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. 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.

Date: 04/26/2023 **Signature:** **Print Name:** Michael P. McInerney

Attachment 4 – Long Form EAF

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Modern Landfill Permit Renewal		
Project Location (describe, and attach a general location map): Modern Landfill, Inc.; 1445 Pletcher Road, Model City, NY 14107 (See EAF Map Attachment and Renewal Application Attachment 2 - Site Location Map)		
Brief Description of Proposed Action (include purpose or need): Modern landfill is requesting a renewal of their existing Solid Waste Facility (SWF) permit. The permit renewal will generally maintain the operating conditions at the landfill so that waste disposal capacity in the area and in New York can be maintained, and the remaining permitted airspace of the facility can be utilized. A small number of enhancements or updates for the operating permit are requested, including: - A leachate pre-treatment system with effluent storage tank - A direct forcemain drain for leachate into the Town of Lewiston Water Pollution Control system - An improved residential waste dropoff and recylcing center - A new centralized blower for the landfill gas collection system - Updated hours for receipt of waste		
Name of Applicant/Sponsor: Modern Landfill, Inc.	Telephone: 716-754-8226 E-Mail: kcione@modern-corp.com	
Address: 4746 Model City Road		
City/PO: Model City	State: NY	Zip Code: 14107
Project Contact (if not same as sponsor; give name and title/role): Krysta Cione	Telephone: 716-754-8226 E-Mail: kcione@modern-corp.com	
Address: 4746 Model City Road		
City/PO: Model City	State: NY	Zip Code: 14107
Property Owner (if not same as sponsor): Modern Landfill, Inc.	Telephone: 716-754-8226 E-Mail:	
Address: 1445 Pletcher Road		
City/PO: Model City	State: NY	Zip Code: 14107

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes☐No	Lewiston Town Board	2023
b. City, Town or Village Planning Board or Commission ☐Yes☑No		
c. City, Town or Village Zoning Board of Appeals ☐Yes☑No		
d. Other local agencies ☐Yes☐No		
e. County agencies ☐Yes☑No		
f. Regional agencies ☐Yes☑No		
g. State agencies ☑Yes☐No	NYSDEC, Part 360/363, Title V Minor Modification	May 2023 for Part 360/363, TBD for Title V minor modification
h. Federal agencies ☐Yes☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes☐No

If Yes, identify the plan(s):

NYS Heritage Areas:West Erie Canal Corridor

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
The permitted limits of waste disposal at Modern Landfill will remain the same. These limits are within the zone designated "I2 Industrial - Housing Not Permitted". Areas of this project that are outside the limits of waste are also in the "I2 Industrial - Housing Not Permitted" zone.

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Lewiston-Porter Central School District

b. What police or other public protection forces serve the project site?
Lewiston Police Department

c. Which fire protection and emergency medical services serve the project site?
Lewiston Fire Company No. 1 and/or Pekin Fire Company; Mount St. Mary's Hospital, Lewiston, NY

d. What parks serve the project site?
Bond Lake Park is approximately 2.7 miles to the southeast; Joseph Davis State Park is approximately 2.7 miles to the west.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Renewal of the operating permit for a solid waste disposal facility within an industrially zoned area.

b. a. Total acreage of the site of the proposed action? Approx. 290 acres
b. Total acreage to be physically disturbed? Approx. 232* acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 455 acres

*No acreage will be disturbed which has not already been permitted as part of existing SWF permit

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated *
- Anticipated commencement date of phase 1 (including demolition) * month _____ year
- Anticipated completion date of final phase April month 2038 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

* phased project is ongoing. Permit action is a renewal of existing project.

f. Does the project include new residential uses? ☐Yes ☑No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No
If Yes,
i. Total number of structures 1
Proposed tank to be no larger than existing tank (1 million gallons)
ii. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; and _____ length
iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑Yes ☐No
If Yes,
i. Purpose of the impoundment: Treatment and storage of leachate via installation of a modular treatment system and secondary effluent tank
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑Other specify: Leachate - See iii
iii. If other than water, identify the type of impounded/contained liquids and their source.
Leachate
iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres
v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):
Leachate storage tank in accordance with Part 363 regulations, including secondary containment.

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
If Yes:
i. What is the purpose of the excavation or dredging? _____
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.
_____
iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____
v. What is the total area to be dredged or excavated? _____ acres
vi. What is the maximum area to be worked at any one time? _____ acres
vii. What would be the maximum depth of excavation or dredging? _____ feet
viii. Will the excavation require blasting? ☐Yes ☐No
ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No
If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No
If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No
If Yes:

i. Total anticipated liquid waste generation per day: 0 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____
The existing permitted facility will generate leachate, as described in existing permit documents. The permit renewal and related enhancements will not generate any additional leachate above that which is already projected to be generated by currently permitted operations.

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑Yes ☐No
If Yes:

- Name of wastewater treatment plant to be used: Lewiston (T) Water Pollution Control system; Buffalo Sewer Auth - via leachate trucking
- Name of district: Town of Lewiston; Buffalo Sewer Auth - via trucks for leachate disposal if additional disposal capacity is needed
- Does the existing wastewater treatment plant have capacity to serve the project? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No

- Do existing sewer lines serve the project site? ☐Yes ☑No
- Will a line extension within an existing district be necessary to serve the project? ☑Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

Lewiston district already serves the site by treating trucked leachate. A sewer line extension (roughly 3,550ft) is requested, to be built by Modern Landfill, which will reduce the need for trucking and associated emissions and allow leachate to be directly pumped from the site into the sewer system.

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

N/A

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

See supplemental information attached at end of document for further description.

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

See supplemental information attached at end of document for further description of construction and its relation to stormwater

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

0 Square feet or _____ acres (impervious surface)

0 Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

N/A

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

N/A

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

New leachate tank - the facility's Title V permit will be updated to include the new tank prior to its construction, if required

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

Existing Title V Permit may require a minor modification for a new leachate tank

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☑Yes ☐No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

The new leachate tank may require a minor modification to the existing Title V permit

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: _____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

No additional energy demand as the centralized blower station will replace the existing blowers located in the LFG-to-energy facility

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other): _____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am - Dusk
- Saturday: 7am - 5:30pm
- Sunday: 7am - 12:00pm
- Holidays: Consistent with hours above

ii. During Operations:

- Monday - Friday: 7am - 6pm
- Saturday: 7am - 6pm
- Sunday: 7am - 12:00pm
- Holidays: Consistent with hours above

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration: Action is permit renewal. Enhancements will not add additional noise. See Supplemental Information.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

Action is permit renewal. Enhancements will not add additional lighting.

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Solid wastes generated by construction of proposed enhancements will be managed by disposal within solid waste cells permitted on-site. To the extent practical, wastes will be recycled or reused.
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

Project is a renewal of existing permit. Accepted waste types and tonnage will not change from existing. See supplemental information attachment for further explanation.

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: _____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Landfill use and other permitted industrial and commercial use as specified in the Town of Lewiston and Town of Porter zoning codes for these areas.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	approx. 30	approx. 36	+6
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	approx. 149 acres	approx. 248 acres	+99
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	approx. 10 acres	approx 6 acres	- 4 acres
• Wetlands (freshwater or tidal)	0 (functional) acres	0	0
• Non-vegetated (bare rock, earth or fill)	approx. 101 acres exposed fill	0 (will be meadow)	-101
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐Yes ☑No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐Yes ☑No

If Yes,

i. Identify Facilities:

_____

e. Does the project site contain an existing dam? ☐Yes ☑No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☑Yes ☐No

If Yes:

i. Has the facility been formally closed? ☐Yes ☑ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

Project is an existing, active solid waste management facility. Renewal of permit as requested will continue these operations as permitted, with no expansion of operational areas. Site is also the site of the former Lewiston Town Dump, which has no related administrative restrictions or actions.

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑Yes ☐No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

See below section for further information on hazardous waste sites. CWM Chemical site, which is adjacent to the north, actively handles and/or disposes of hazardous waste.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐Yes ☑No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): See Supplemental Information Sheet

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑Yes ☐No

If yes, provide DEC ID number(s): 932023, 932045, 932061A, 932061B

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

Site lies adjacent to the Niagara Falls Storage Site, a 191 acre Class A site owned by the US Government and being monitored and remediated for radioactive wastes. Site is adjacent to CWM Chemical site, a 630 acre Class A site being remediated for heavy metals, sludges, and other compounds. Site is adjacent to the U.S. Airforce Plant 68 site, a roughly 1 acre Class 02 site where boron, lithium, and hydrocarbon contamination has been detected.

v. Is the project site subject to an institutional control limiting property uses? ☐Yes ☑No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐Yes ☐No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 20-25 feet

b. Are there bedrock outcroppings on the project site? ☐Yes ☑No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Madalin silt loam, 0-3% slopes	52.2 %
Madalin silt loam, loamy subsoil	23.0 %
Churchville silt loam, 0-2% slopes	8.9 %

d. What is the average depth to the water table on the project site? Average: approx 3 feet

e. Drainage status of project site soils:
- ☐ Well Drained: ____% of site
- ☑ Moderately Well Drained: 4.2 % of site
- ☑ Poorly Drained 94.8 % of site

Final 1% is designated as "Water" classification by USGS

f. Approximate proportion of proposed action site with slopes:
- ☑ 0-10%: 100 % of site
- ☐ 10-15%: ____% of site
- ☐ 15% or greater: ____% of site

Slope % based on USGS report. Actual site grading changes in accordance with permitted waste filling plans.

g. Are there any unique geologic features on the project site? ☐Yes ☑No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑Yes ☐No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑Yes ☐No

Action is a Permit Renewal - operations would continue in the manner approved with no additional surface water impacts.

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑Yes ☐No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 848-30, 848-45 Classification C
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐Yes ☑No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐Yes ☑No

j. Is the project site in the 100-year Floodplain? ☑Yes ☐No

k. Is the project site in the 500-year Floodplain? ☐Yes ☑No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐Yes ☑No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:

Deer	Birds (gulls, falcons, etc)	Raccoons
Skunks	Mice & Rats	Opposums
Rabbits	Insects	Wildlife typical near human activity

n. Does the project site contain a designated significant natural community? ☐Yes ☑No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑No

If Yes:

i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐Yes ☑No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐Yes ☑No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑Yes ☐No

See Supplemental Information Sheet

If Yes, provide county plus district name/number: NIAGc07

b. Are agricultural lands consisting of highly productive soils present? ☐Yes ☑No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐Yes ☑No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐Yes ☑No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Great Lakes Seaway Trail (scenic Highway)

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Scenic byway. Permit Renewal will not cause any visual impacts to this resource, as enhancements will not be visible from the roadway.

iii. Distance between project and resource: Roughly 3.5 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Michael P. McInerney Date 4/26/2023

Signature _____ Title CEO

PRINT FORM

EAF Supplemental Information Sheet for the Modern Landfill Permit Renewal Project

D.2.d.vi - A leachate pre-treatment system with a secondary effluent storage tank is proposed. The treated leachate is proposed for reuse on-site as a dust control measure.

D.2.e – Additional construction related to the permit renewal enhancements will include two areas of construction that will disturb soil – the construction of the new leachate tank, and the construction of the leachate sewer line connection. Limited stormwater generated onsite during construction be managed by on-site stormwater infrastructure under the Site's individual SPDES permit for stormwater. Stormwater generated off-site during utility construction will be managed utilizing Best Management Practices and stormwater controls in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. Construction will be performed along the existing roadway, and stormwater will be directed into existing roadside stormwater infrastructure.

D.2.m – The additional hours will serve to spread out the traffic loading at the site resulting in lower noise impacts associated with traffic. While operational noise that occurs during the new hours is an increase to ambient levels, the projected levels are within Part 360 limits. Furthermore, the additional hours are proposed to primarily allow increase access to the local residential population at the enhanced drop-off center.

D.2.s – As stated, the action associated with the EAF is a Permit Renewal. The permit renewal will involve the construction of certain enhancements to the landfill operations, as listed in Section A, but will not include any modification to the currently permitted landfill waste disposal operations. The permitted tonnage and waste types to be accepted at the landfill will remain the same, and the phased construction plans that are currently permitted will still be followed. The landfill is expected to reach capacity around April 2038 according to the current engineering plans.

E.1.h.i – Spills at the site are managed/controlled/cleaned-up as part of the Facility O&M Program. The site is the location of some minor spills in the DEC Spill Incidents Database, including those with ID Numbers 704026, 890609, 890811, 909009 1203908, 1301855, 1309024, 1400741, 1401271, 1401375, 1403586, 1406992, 1500372, 1501522, 1512404, 1604462, 1608408, 1710364, 1802829, 1805521, 1911156, 2009631, 2101609, and 2203006.

E.3.a – A small portion of the already permitted and constructed site is located within NYS Agricultural District NIAGc07 as stated. Since the associated action is a Permit Renewal with no planned site expansion, no expansion of the site will occur and no impacts to agricultural lands are expected. The only offsite work will involve the enhancement with a new sewer line, which will follow existing roadways and will not impact any agricultural lands or farm operations.

Attachment 5 – Facility Manual (under separate stand-alone cover)

Modern Landfill, Inc.

FACILITY MANUAL

1445 Pletcher Road, Model City, Niagara County, NY 14107

April 2023

Table of Contents

1) INTRODUCTION 1
2) OPERATIONAL OVERVIEW 1
3) PERSONNEL MANAGEMENT 2
3.1 Responsibilities 2
3.2 Employee Training Program 3
3.2.1 Inspection and Maintenance Procedures 4
4) SITE FACILITIES AND EQUIPMENT 4
4.1 Scale house 4
4.2 Training Center 4
4.3 Equipment Maintenance and Repair Building 5
4.4 Leachate Storage Tank 5
4.5 Wheel Wash 5
4.6 Guard House 5
4.7 Residential Drop-off and Recycling Center 5
4.8 Solidification Pits 5
4.9 Equipment 6
5) SUSTAINABILITY PLAN 7
5.1 Materials Recovery Facility (MRF) 7
5.2 Waste Tire Storage Facility 7
5.3 Construction and Demolition (C&D) Debris Processing Facility 7
5.4 Composting Facility 8
5.5 LFG Management 8
6) POST-CONSTRUCTION CARE PLAN 8
7) WASTE CONTROL PLAN 9
7.1 Permitted Wastes 9
7.2 Prohibited Wastes 10
7.3 Industrial Waste Characterization Process 10
7.4 Receipt and Monitoring of Incoming Wastes 11
7.4.1 Unauthorized Wastes 11
7.5 Special Wastes 12

7.5.1 Asbestos 12
7.5.2 Sludge 13
7.5.3 Solidification 13
7.5.4 Drums 14
7.6 Beneficial Use Determinations (BUDs) 14
7.7 Radioactive Waste Handling 14
7.7.1 Radioactive Waste Detection Program 14
7.7.2 Radiation Detection System Operation and Maintenance 15
7.7.3 Acceptance or Rejection of Loads Based on Radioactivity 16
7.8 Waste Placement Operations 17
7.8.1 Wet Weather 17
7.8.2 Windy Weather 17
7.8.3 Winter Weather 18
8) FILL PROGRESSION AND PLACEMENT 18
8.1 Fill Progression 18
8.2 Waste Placement 19
8.2.1 Working Face 20
8.2.2 Placement of the First Lift 21
9) COVER MATERIAL MANAGEMENT PLAN 22
9.1 Operating (Daily) Cover 22
9.1.1 Alternative Operating Cover (AOC) 22
9.2 Intermediate Cover 22
9.3 Interim Cover 23
9.4 Final Cover 23
10) LEACHATE MANAGEMENT PLAN 23
10.1 Landfill Liner and Leachate Collection Systems 24
10.2 Leachate Collection and Conveyance Systems 24
10.3 Leachate Collection System Inspection and Maintenance 25
10.3.1 Collection Lines and Sumps 26
10.3.2 Leachate Storage Tank 27
10.3.3 Secondary Containment and Leak Detection Systems 28
10.4 Condensate Collection and Conveyance System 28
10.5 Recirculation 28

10.6 Leachate Storage and Loadout Facility 29
10.7 Transportation and Disposal 29
10.8 Treatment System 29
11) STORMWATER MANAGEMENT 29
11.1 Design 30
11.2 Maintenance 30
12) POREWATER MANAGEMENT 31
13) ODOR CONTROL PLAN 31
13.1 Soil Cover 32
13.2 Odorous Wastes 32
13.3 Leachate Seeps and Fugitive LFG 32
13.4 LFG Collection System 33
13.5 Complaints and Inspections 33
14) GAS MONITORING AND EMISSION CONTROL PLAN 33
14.1.1 LFG Collection and Control System Infrastructure 33
14.1.2 LFG Collection and Control System Operation 34
14.1.3 Landfill Perimeter Monitoring 34
14.1.4 Landfill Surface Monitoring 34
15) ENVIRONMENTAL MONITORING PLAN 35
16) RECORDKEEPING AND REPORTING 35
16.1 Recordkeeping 35
16.2 Reporting 36
17) EMERGENCY RESPONSE PLAN 36
17.1 Emergency Contact Information 36
17.2 Fires 37
17.3 Detection of Explosive Gases 38
17.4 Unexpected Shutdown of LFG System 38
17.5 Unexpected Shutdown of Leachate Management System 39
17.5.1 Exceedance of Secondary Leachate Collection and Removal System Flow Rate 39
17.5.2 Leachate Storage Tank at Capacity, Downtime, or Interruption of Leachate Disposal 40
17.6 Spills 40
18) CONCEPTUAL CLOSURE, POST-CLOSURE, CUSTODIAL CARE, AND END USE 41
18.1 Conceptual Closure Schedule 41

18.2 Final Closure 41
18.3 Final Cover 41
18.4 LFG Control 42
18.5 Stormwater Management 42
18.5.1 Perimeter Drainage Channels 42
18.5.2 Diversion Swales 42
18.5.3 Downchutes 43
18.5.4 Sediment Basins 43
18.6 Closure Maintenance 43
18.7 Post-Closure Monitoring and Maintenance 43
18.8 Closure and Post-Closure Costs 44
18.9 Custodial Care 44
18.10 Conceptual End Use 45

Tables

Table 1-1 Modern Landfill Personnel 2
Table 4-1 Modern Landfill Equipment 6
Table 4-2 Safety Equipment 7
Table 10-1 Schedule of Leachate Management Facilities 25
Table 16-1 Recordkeeping Summary 35
Table 18-1 Post-Closure Care 43

Appendices

Appendix A Industrial and Special Waste Profile Forms
Appendix B Incoming Waste Inspection Forms
Appendix C Fill Progression Plans
Appendix D Miscellaneous Operation, Maintenance, and Inspection Forms
Appendix E Closure Information

1) INTRODUCTION

Modern Landfill, Inc. (Modern), a Modern Corporation Company, owns and operates a municipal solid waste (MSW) landfill (Modern Landfill) on its approximate 455 acres of property in the Town of Lewiston, Niagara County, New York. The currently-permitted waste footprint encompasses 232.2 acres. Modern Landfill's New York State Department of Environmental Conservation (NYSDEC) Site Number is 32S30. The NYSDEC Part 360 Solid Waste Management Facility Permit ID Number is 9-2924-0016/00043. The physical address of the facility is 1445 Pletcher Road, Model City, New York, 14107. The mailing address of the facility is P.O. Box 209, Model City Road, Model City, New York 14107-0209.

This Facility Manual has been developed in accordance with the requirements of 6 NYCRR Parts 360.16(c)(4) (Permit Application Requirements), 363-4.6 (Facility Manual), 363-7.1 (Operating Requirements), and 363-8 (Recordkeeping and Reporting).

2) OPERATIONAL OVERVIEW

The landfill operates six days per week. Typical hours of support operations are between 6 am and 8 pm on weekdays and Saturdays and 6 am to 12 pm on Sundays. Residential, commercial, and non-hazardous industrial waste is received between 7 am and 6 pm Monday through Saturday and 7 am to 12 pm on Sundays, contingent on the Town of Lewiston's approval. Modern and third-party haul trucks enter through the main gate off Pletcher Road and proceed along the access road to the scale house. The scale operator assesses the contents of the load (including verifying the special waste profile information, if applicable), records the vehicle information and weight in the computerized tracking system, and directs the drivers to the appropriate disposal area in the landfill. To manage queueing of trucks, the scale house may begin to process loads as early as 6 am, however scaled trucks are not permitted to dump at the landfill working face until 7 am. Construction (including cover placement) to support the permitted facility generally occurs during daylight hours and in accordance with Town of Lewiston requirements.

Upon arrival at the working face, trucks are directed to the offloading location. Once a truck has unloaded, it may return to the scale house to be re-weighed prior to leaving the facility or exit if a stored tare weight was used. Landfill compactors spread and compress the waste at the working face in two-foot layers to a maximum lift height of 10 feet. At least six inches of compacted soil or NYSDEC-approved alternative operating cover (AOC) is applied to the waste area as daily cover at the end of each workday to prevent nuisance conditions such as odors and vectors from developing in the active work area.

The landfill also operates a residential drop-off area as part of Modern's Community Recycling Center. The drop-off center will operate during regular landfill hours. Residential customers will access the facility via Pletcher Road, but rather than proceeding to the scale house, will enter the drop-off area via the designated entrance gate and check in at the attendant's kiosk. The attendant will visually inspect the waste load and direct the customer to the appropriate area for disposal: general trash, commingled recycling, green waste, construction and demolition (C&D) debris, e-waste, white goods, tires, scrap metal, or universal waste. Following waste disposal, customers will return to the kiosk and exit the facility. The waste containers will be covered or secured as necessary (i.e., enclosed trailer, compactor, roll-off) when the drop-off center is closed. As each container becomes full, the material will be scaled and deposited in the landfill or otherwise disposed off-site at a permitted facility (e.g., licensed electronics recycling facility). Finished compost will also be available for purchase at the facility.

Other permitted solid waste operations on site include a waste tire storage facility, a Material Recovery Facility (MRF), a C&D debris processing operation, and a food and green waste composting operation. Details on each operation are included in Section 5. Support operations include a scale house, leachate storage and transfer facility, full-service equipment maintenance and repair shop, stormwater management basins, training center, and various field offices and storage buildings. The existing landfill contains a comprehensive network of leachate collection and transfer pipe systems and an extensive landfill gas (LFG) recovery system.

The landfill is operated and maintained in conformance with the rules, regulations, and guidance set forth by the 6 NYCRR Part 360 regulations and the NYSDEC, along with other federal, state, and local rules and regulations identified by applicable permits. Access control, operations, maintenance, inspection, monitoring, record keeping, and reporting shall be in conformance with the requirements of the NYSDEC.

3) PERSONNEL MANAGEMENT

Modern employs a full staff of personnel to perform the daily operations at the landfill. In addition to technicians, engineers, and scale and equipment operators, Modern has internal construction capabilities for minor construction projects. Major construction projects (e.g., baseliner or final cover construction) will be contracted to qualified companies.

3.1 Responsibilities

General staffing of Modern Landfill is described below, along with the main responsibilities for each role.

Table 1-1: Modern Landfill Personnel

Title	Name & Contact Info	Responsibilities
Chief Executive Officer	Michael McInerney mmcinerney@modern-corp.com 603-234-2231	Overall accountability for Modern Landfill's goals, policies, operations
Vice President of Post Collection Operations	Alan Davis adavis@modern-corp.com 716-425-6859	Overall management and operation of Modern Landfill and personnel
Landfill Operations Supervisor	Nate Duncan nduncan@modern-corp.com 716-531-2492	In charge of daily operations, manages scale operators
Landfill Manager	Lori Sullivan loris@modern-corp.com 716-327-8711	Manages daily landfill activities and personnel
Scale Operators	Varies	Operation of scales, bookkeeping, inspection of incoming loads
Engineer	Mark Marsack markm@modern-corp.com 716-754-8226	Project management including leachate and gas transmission

Title	Name & Contact Info	Responsibilities
Environmental Protection Manager	Krysta Cione kcione@modern-corp.com 724-866-7621	Manages environmental permitting and compliance, special waste approvals
Equipment Operators	Various	Operation of on-site equipment including dozers, compactors, haul trucks, loaders, and excavators
Laborers	Various	General site maintenance including litter picking, construction support

3.2 Employee Training Program

The Employee Training Program is structured to provide personnel with training related to their assigned duties during both routine operating and emergency conditions. The following items are covered in the training program:

- An overview of the contents of this Facility Manual;
- An introduction to the layout of the facility and its waste handling and management methods;
- An explanation of the employee's role in the overall landfill operation;
- Proper handling procedures and safety concerns associated with the wastes and equipment on site;
- Inspection and maintenance procedures;
- Safety and emergency response equipment and the roles of each employee during an emergency situation; and,
- Importance of personal safety and protection.

Specific trainings will be provided to employees whose job functions require specialized training, including but not limited to radiation detection system operating procedures, confined space entry, and asbestos management. Employees directly involved with waste receiving and handling at the landfill will be instructed in the proper handling of each type of waste, including the practical implementation of applicable regulatory guidelines and what to do if unauthorized waste is received. Emphasis will be placed on safe handling methods.

New hires at Modern Landfill will be trained prior to performing their job duties. At the completion of an employee's training, a record of the specific trainings completed will be added to an employee's file. In addition to individual trainings, Modern will hold facility-wide trainings where specific needs are identified. Mandatory refresher trainings designed to reinforce landfill policies and procedures will be provided to personnel. As needed, new or modified policies or procedures will be communicated to affected employees and their training records updated accordingly.

The Landfill Manager and select management and operations staff are required to attend and pass the Landfill Operator Training Course sponsored by the NYSDEC and the New York State Association for Solid Waste Management in accordance with 6 NYCRR Part 363-7.1(q). Management personnel will attend conferences, seminars, and training courses as appropriate to remain current with the latest landfill

technologies and practices. The Waste Approval Manager is required to complete the 40-hour OSHA hazardous materials training (updated annually).

Contractors hired to perform work on site are required to complete Modern's Contractor Safety Program and submit their completion certificate to the Landfill Operations Supervisor (or other Modern project manager) prior to their arrival on site. This program covers a variety of topics including specific site hazards and mitigation measures to provide contractors with necessary information to work safely while at the landfill.

3.2.1 Inspection and Maintenance Procedures

Employees will be educated on the importance of preventative and routine maintenance inspections at the landfill. A preventative maintenance schedule has been developed which helps employees track when maintenance is due on each piece of equipment. This training will stress that each employee must constantly be aware of problems that could potentially occur with equipment used and activities performed. Each employee will be trained to perform inspections required for the equipment which he or she will be operating so that he or she will be able to immediately recognize problems and take appropriate action.

Safety and first aid equipment inspections will also be covered in training for new employees, highlighting the need to keep equipment in good working condition. Instructions will be given on reporting defects or deficiencies, and when first aid supplies are low.

4) SITE FACILITIES AND EQUIPMENT

Central to the landfill's operation are the leachate collection and transfer system, LFG collection and control system, and stormwater management system. Other important site structures include the scale house, Training Center, equipment maintenance and repair building, leachate storage tank, wheel wash, guard house, residential drop off and recycling center, solidification pits, and field office and storage units. A composting area, C&D debris processing area, and waste tire processing facility are also located at the site. These areas are described in Section 5.

4.1 Scale house

The scale house is a two-story concrete block building housing the scale control center and offices. A below-grade space is used for records and supplies storage. The building is climate-controlled and equipped with electricity, water, sanitary facilities, and phone and internet service. Inbound and outbound scales are video-monitored and connected to the computerized system for ticketing, waste tracking, and billing purposes. A radiation detection system screens inbound vehicles at the scale. The scale house maintains radio contact with operators at the working face.

4.2 Training Center

The Training Center is a two-story metal building containing offices, employee locker rooms, a break room, and a training room. The training room is equipped with an overhead projector for presentation and instruction. The building is equipped with electricity, water, sanitary facilities, and phone and internet service.

4.3 Equipment Maintenance and Repair Building

The equipment maintenance building is a two-and-a-half story steel frame building complete with electricity, water, sanitary facilities, and phone and internet service. It houses both office and service areas, as well as a parts room. The service area contains tools, equipment, and supplies for the comprehensive maintenance and repair of heavy equipment and other appurtenances at the landfill.

4.4 Leachate Storage Tank

The leachate storage tank is a 1,000,000-gallon aboveground glass-fused-to-steel storage tank located west of the landfill. It is situated on a pea gravel bed inside a cushioned, geomembrane-lined, reinforced concrete ring wall foundation that allows for the detection and containment of leaks. A clay-lined secondary containment berm surrounds the tank and can hold 110% of the tank's volume. Within the secondary containment is the leachate loadout building which houses valves, controls, pumps, and other components designed to transfer leachate to on-road tanker trucks for delivery to local POTWs. A truck loading pad contains and directs spilled liquid back into the tank.

4.5 Wheel Wash

A wheel wash is located east of the scale house to help maintain clean roadway conditions on- and off-site. A flocculent system allows for manual cleaning of accumulated sediments. The unit is operable in cold weather unless it becomes frozen during periods of non-use (i.e., outside of operating hours).

4.6 Guard House

The guard house is located at the main entrance to the facility. It is climate-controlled and equipped with electricity, a restroom, and phone service. A portable toilet is located nearby for truck drivers' use. A guard is on duty from 5:30 pm to 6 am Monday evening through Saturday morning, and from 3 pm on Saturday to 6 am on Monday morning. During this time, the electric access gate will be closed and locked. Access will be granted with security guard permission or through use of a unique passcode assigned to each authorized employee.

4.7 Residential Drop-off and Recycling Center

To serve the local community, a designated drop-off area is located near the landfill entrance. Signage will direct customers to the attendant kiosk at the entrance to the drop-off center. Residents may dispose of trash (including bulky items), green waste, tires, white goods, C&D debris, and recyclables in one location separate from regular landfill truck traffic. In addition, Modern plans to collect electronic, universal, and household hazardous wastes for off-site disposal at approved facilities. The residential area is open concurrent with the main landfill. An attendant is on duty while the drop-off center is open.

4.8 Solidification Pits

As described in more detail in Section 7.5.3, Modern accepts aqueous wastes or wastes exhibiting free liquids for solidification prior to disposal in the landfill. The solidification pits are buried containers located within the landfill footprint into which wastes are discharged and mixed with various

amendments to achieve a final matrix of at least 20 percent solid. Solidified wastes are removed from the pit(s) and hauled to the working face for disposal.

4.9 Equipment

The heavy equipment listed in Table 4-1 is used for waste placement, cover soil management, and construction-related tasks. Table 4-2 lists health and safety and gas monitoring equipment available at the site. Routine maintenance and certain repairs are handled on-site in the maintenance shop, while major repairs that require specialized tools are completed by local private repair shops. If needed, substitute equipment will be obtained on a rental basis to complete critical or time-sensitive tasks. Heavy equipment may be used to respond to emergencies or other hazards as needed (i.e. truck dig-out, fire).

Site vehicles are equipped with fire extinguishers maintained in conformance with state and local fire codes and regulations. In addition, certain vehicles are equipped with roll-bars and safety cages to prevent injury to operators if a rolling incident occurs.

In the event a power outage affects critical operations at the landfill, a trailer-mounted 540 kW emergency generator will power leachate pumps and miscellaneous site lighting. It is stored on site and inspected at least twice a year by trained personnel.

Table 4-1: Modern Landfill Equipment

Equipment	Intended Use(s)
Landfill compactor	Spread, compact waste
Bulldozer	Spread, compact waste and cover soil Maintain roadways Landfill construction
Front end loader	Manage stockpiles Handle palletized materials (with fork attachment) Snow removal
Excavator, mini excavator	Soil excavation Solidification mixing Load haul trucks Landfill construction
Articulated haul trucks	Haul cover material Landfill construction
Water truck	Dust, fire control Landfill construction (i.e., moisture control of secondary clay liner)
Vacuum truck	Liquid waste removal
Fuel truck	Transport fuel
Jet truck	Jet leachate collection pipes
Pipe video equipment	Inspection of leachate collection pipes
Large volume water pumps	Manage stormwater
Pickup truck	Transport personnel
Street sweeper	Clean paved roadways on and off site (i.e., Pletcher Rd, Harold Rd)

Table 4-2: Safety Equipment

Equipment	Intended Use(s)
Three-gas meter – LandTec GEM™ 5000 Flame Ionization Detector (PerkinElmer Photovac MicroFID IS)	Surface monitoring
All landfill employees are required to wear safety shoes and reflective/high visibility outerwear. Level D Personal Protective Equipment (PPE) is available for those working in areas requiring higher levels of protection. Backups for safety equipment are available from Modern Disposal Services, Inc. and other outside vendors if required.	

5) SUSTAINABILITY PLAN

The Sustainability Plan describes how Modern Landfill has been designed and operated in a manner to conserve and sustain natural resources as well as minimize greenhouse gas emissions (GHGs). While GHGs are generated from landfilling MSW, waste is generated regardless of the existence of a landfill. Modern Landfill services primarily Erie and Niagara Counties, which eliminates the need for transporting local wastes long distances to another permitted facility with available capacity.

A Climate Leadership and Community Protection Act (CLCPA) Assessment Technical Memorandum prepared by GHD dated January 17, 2023 describes the GHG emissions and reduction strategies at Modern Landfill. A copy of the memorandum is on file at the site.

5.1 Materials Recovery Facility (MRF)

Modern Landfill has a registered Recyclables Handling and Recovery Facility on-site which diverts up to 200 tons per day of material from the landfill. The MRF accepts paperboard/boxboard, office paper, and single stream recyclables from Niagara and Erie Counties. It operates Monday through Saturday from 7 am to 6 pm.

5.2 Waste Tire Storage Facility

Modern operates a permitted waste tire processing and storage facility adjacent to the landfill. The facility generates tire-derived aggregate (TDA) which is beneficially re-used in the landfill in leachate and gas collection and transmission systems. TDA may also be sold off-site for civil engineering applications in residential, commercial, and institutional building projects. These applications preserve air space in the landfill while reducing the need for virgin building materials. The facility may operate from 7 am to 8:30 pm Monday through Friday and from 7 am to 3 pm on Saturday. A facility manual and engineering report (December 2017) are maintained on file at the site.

5.3 Construction and Demolition (C&D) Debris Processing Facility

Modern is permitted to operate a C&D debris processing area salvaging up to 600 tons of raw C&D debris with a maximum daily throughput of 1,200 tons per day. This operation manufactures AOC for the working face and aggregates used in access road construction. The AOC and road aggregate

materials produced from this operation reduce the need to strip local soil and mine local aggregate. In addition, it preserves air space in the landfill by beneficially reusing wastes that would otherwise be buried. The facility may accept and ship outbound materials from 7 am to 5:30 pm Monday through Friday and 7 am to 3 pm on Saturdays. An Operations and Maintenance Plan specific to the C&D facility is available on site. Updates to this plan will be made as needed.

5.4 Composting Facility

Modern Landfill houses a registered composting facility which handles a maximum throughput of 5,000 cubic yards (CY) per year of food scraps and 10,000 CY per year of yard waste. The facility services Niagara County and operates Monday through Friday from 7 am to 5:30 pm and Saturday 7 am to 3 pm.

5.5 LFG Management

Modern Landfill's gas is collected and transmitted to an adjacent third-party Landfill Gas-to-Energy Facility which runs 24 hours a day, 7 days a week and consists of seven Caterpillar 3516 engines and three Caterpillar 3520 engines. The gas is combusted and converted to energy which is input to the local electricity grid and lessens the demand for natural resource consumption. In addition, the facility also utilizes LFG heating furnaces during the fall and winter months, providing an additional renewable benefit.

6) POST-CONSTRUCTION CARE PLAN

Following construction of new baseliner areas, it is necessary to protect the baseliner geosynthetic and soil layers from damage prior to initial waste filling operations. Placement of the select (i.e., first) lift may occur weeks to months following completion of the cell due to various reasons such as construction certification delays or rate of waste filling over large areas. The primary concern for exposed baseliner systems is frost action during cold weather. While frost does not have a significant effect on the geosynthetic components of the baseliner, the secondary clay liner may be affected by freeze-thaw cycles.

Freezing and thawing of free moisture in soil under low confining stress can result in detrimental permeability impacts to the compacted clay liner. For this reason, Modern Landfill does not anticipate constructing baseliner that will remain exposed for an extended amount of time during the cold weather months. When areas of baseliner are exposed to below-freezing temperatures, the completed primary leachate collection system, typically consisting of a layer of drainage stone overlain by a layer of TDA, serves to insulate the underlying clay. In addition, Modern Landfill's surficial geology generally consists of fine-grained, low-permeability soil and till materials which limit the amount of free moisture below the baseliner system.

Granular drainage layers (i.e., stone and TDA), are susceptible to sedimentation if left unprotected, which negatively impacts the layers' permeability. The contractor for the baseliner construction project will be responsible for stormwater run-on management (i.e. diversion berms, drainage swales) to protect the drainage layers from soil or sediments. Alternatively, sacrificial layers of geosynthetics may be deployed to protect the edges of both drainage and clay liner layers from the effects of stormwater and frost.

Should damage to the baseliner system occur as a result of exposure, the contractor will repair and retest (if necessary) the affected area(s) to the project QA/QC Engineer's satisfaction.

7) WASTE CONTROL PLAN

Modern Landfill is located within the Niagara NYS Planning Unit. The primary service area includes Erie and Niagara Counties and the surrounding areas including the Tuscarora Native American Reservation and Ontario, Canada. As Modern Landfill is a privately-owned and operated facility, the primary service area is not limited by municipal boundaries in the same way that such boundaries may be established for municipally-owned and operated sites. Additionally, service area boundaries are not intended to be permanent or exclusive; competing solid waste facilities exist in the Western New York region which benefits both residents and industries in the area.

Waste is received between 7 am and 6 pm Monday through Saturday and 7 am to 12 pm on Sunday. If an emergency arises, the landfill may remain open outside of these hours to address the emergency, and the NYSDEC's Regional Materials Management Engineer must be notified as soon as possible. Signage at the facility's entrance states the landfill operating hours and informs customers that only non-hazardous materials are accepted at the landfill. Modern's website contains information for customers describing what materials can and cannot be recycled or disposed in their curbside bins (see Section 7.2 for prohibited wastes).

The maximum waste receipts at the landfill shall not exceed 244,500 tons during any one quarter, and annual waste receipts shall not exceed 815,000 tons. Excluded from these limits are materials that are approved for AOC or materials with a beneficial use determination (BUD). In 2022, approximately 805,000 tons of waste were disposed at Modern Landfill. An approximated breakdown of the waste components is as follows:

- MSW – 69.9%
- Industrial waste – 21.9%
- WWTP sludge – 6.1%
- Asbestos – 1.3%
- C&D – 0.8%

The facility's annual report includes the total tons of each waste type received and the service area from which the waste originated. Copies of the annual reports are maintained on-site.

Traffic to the landfill enters via Pletcher Road. Incoming commercial vehicles are weighed and recorded at the scale house. They will be checked for covered loads and proper documentation (e.g., Part 364 permit or registration). Trucks will then proceed via the access road and follow signs to the working face of the landfill. Signage will be in place designating specific areas of the landfill, including solidification and asbestos, to alert drivers of potential hazard areas. Residential customers will be directed to the Community Recycling Center to drop off wastes and/or recyclables and will not be permitted to access the landfill working face.

7.1 Permitted Wastes

Modern Landfill is permitted to accept MSW, friable and non-friable asbestos waste, non-hazardous industrial and commercial solid waste, C&D debris, contaminated soil, and sludge. Liquids, waste

containing free liquids, and wastes with a solid content less than 20 percent may be received for solidification prior to disposal in the landfill with prior approval by the NYSDEC Regional Materials Management Engineer (RMME). Drummed wastes, regardless of solid or liquid content, must be approved for disposal by the RMME. Requests for approvals must be submitted in writing to the RMME from the Waste Approvals Manager. The approval process is described in Section 7.3.

7.2 Prohibited Wastes

Hazardous waste (as defined in 6 NYCRR Part 371 and regulated under Parts 370 through 374), radioactive waste (as defined and in 6 NYCRR Part 380 and regulated under Parts 380, 382, and 383), and regulated medical or infectious wastes are prohibited from disposal in the landfill. Intact drums or containers which have held hazardous waste and are not emptied in accordance with 6 NYCRR Part 371.1(h) are also prohibited. Whole pneumatic tires will not be disposed in the landfill and are to be processed at the Waste Tire Processing Facility.

Specific examples of prohibited wastes include:

- Lead acid batteries;
- Flammables, explosives, herbicides and pesticides;
- Source-separated items subject to product stewardship programs in New York (e.g., source-separated recyclables, rechargeable batteries, mercury-containing products);
- Low-level radioactive wastes, NORM, TENORM, NARM, and wastes (except firebrick) which exhibit > 25 pCi/g of Ra-226;
- Untreated regulated medical wastes;
- Whole cars;
- Fluids produced from an oil or gas production well, including flowback water and production brine;
- E-waste; and,
- Other materials prohibited by law.

Industrial wastes delivered to the landfill by haulers not in possession of a valid Part 364 Waste Transporter Permit will be rejected. Waste that is not properly containerized or covered will also be rejected. Open burning is not permitted unless prior authorization is received from the NYSDEC in accordance with 6 NYCRR Part 215.

7.3 Industrial Waste Characterization Process

Industrial wastes are wastes generated by manufacturing or industrial processes. To be accepted at the landfill, these wastes must:

1) Be certified non-hazardous by the generator and be accompanied by a material safety data sheet (SDS) for components of the waste stream, OR
2) Be characterized as non-hazardous by way of appropriate analytical data (e.g., TCLP and hazardous characteristics data).

To profile an industrial waste for acceptance, the Waste Approvals Manager will request the generator (or its authorized designee) to complete a NYSDEC-issued Form 47-19-7 “Application for Treatment of Disposal of an Industrial Waste Stream” and a Generator Waste Characterization Report. For liquid

wastes to be accepted for solidification, a separate Waste Solidification Profile form must also be completed to describe characteristics of the liquid. If a third-party is signing the profile forms on behalf of a generator, it must submit a completed Third-Party Authorization Form along with the application package. A copy of each blank profile form is included in Appendix A.

The Waste Approvals Manager will review the completed forms along with the supporting documentation (i.e., SDS and/or laboratory data). If the waste is deemed acceptable, the Waste Approvals Manager will sign the profile and assign the waste stream a unique approval number which is then filed electronically and uploaded into the computerized tracking system. Wastes approved for direct landfill disposal will be issued an "MXX-XXXX" approval number, with the first two digits corresponding to the year in which the waste was approved and the final four digits assigned sequentially. Solidification approval numbers are formatted similarly, where an "S" replaces the "M" in the format. If a waste requires approval by the RMME following review and acceptance by the Waste Approvals Manager (see Section 7.1), the profile and supporting information will be sent to the RMME or his or her designee. The waste will not be accepted until the RMME's written approval is received.

Approved waste streams are valid for three years from the date of approval. Modern Landfill is required to send a list of self-approved waste stream applications to the RMME within seven days of approval, and to make available copies of the applications to the RMME on a monthly basis. Records of approved waste streams are filed electronically.

7.4 Receipt and Monitoring of Incoming Wastes

Incoming commercial traffic is received at the scale house. Each vehicle is stopped, assessed for applicable fees and contents of the load, and directed to the working face. At least once weekly, a randomly selected vehicle will be chosen for a load inspection. Each load containing drummed wastes must also be inspected. Scale operators are trained to recognize and reject unacceptable loads, such as loads containing wastes listed in Section 7.2 and/or industrial wastes which are not properly profiled in accordance with Section 7.3. A copy of a blank inspection form is provided in Appendix B. A record of completed inspection logs will be kept on site at the scale house and made available for NYSDEC review.

To successfully operate the landfill and optimize its operating life, the facility will control the quantity and type of inbound wastes. Monitoring incoming wastes will identify and prevent (to the extent possible) the acceptance of unauthorized wastes or wastes that could impact the operation of the landfill in significant amounts (e.g., low permeability wastes or low shear-strength wastes). Details on the monitoring, handling and placement of incoming waste and recordkeeping procedures are included in relevant sections throughout this Manual.

7.4.1 Unauthorized Wastes

Loads deemed unacceptable at the scale house are properly containerized and secured and are returned to the generator. In some instances, the vehicle may be temporarily allowed to park at the facility if, in the opinion of the Waste Approvals Manager, the situation can be readily resolved. Generators who repeatedly deliver unacceptable wastes to the landfill will be prohibited from using the landfill facilities in the future. The NYSDEC will be notified as soon as possible if unauthorized wastes are received at the facility. The Landfill Operations Supervisor will complete an Unauthorized Waste Receipt Form containing pertinent details such as:

- Date of incident;
- Time of incident;
- Hauling company's name and truck number;
- Waste generator;
- Special waste approval number (if applicable);
- Description of unauthorized waste; and,
- Disposition of load.

A copy of the Unauthorized Waste Receipt Form is included in Appendix B. A summary of unauthorized waste receipt occurrences will be included in the facility's annual report.

Equipment operators at the working face are also trained to recognize unacceptable wastes during offloading should the wastes go undetected (i.e., buried in a container) at the scale house. Operators will segregate the waste and alert the scale house to notify the generator and arrange for additional containment measures needed to protect landfill personnel or the environment (i.e., preventing leakage or fire).

The residential drop-off and recycling area will be operated in an area adjacent to the landfill. A full-time attendant will be on-site during operating hours to assist customers with waste disposal. The attendant will be also trained to recognize unacceptable materials (i.e., bulk liquids) and inspect each incoming load. After each customer is assessed a flat fee for the wastes being disposed, the vehicle will proceed to the proper disposal bay or container. The attendant will oversee disposal activities and ensure the vehicle safely leaves the drop-off area.

7.5 Special Wastes

Disposal of certain wastes requires special consideration and handling. For example, landfill operations may request that fine, dusty particulate wastes and large, bulky wastes be scheduled into the landfill in advance to adequately prepare operators for handling the material. Receipt of large amounts of dusty or very lightweight materials may be delayed if windy conditions are forecasted. Appropriate equipment will be made available to handle or maneuver cumbersome wastes.

7.5.1 Asbestos

Prior to accepting asbestos waste, the waste must be pre-approved by landfill personnel. Non-industrial jobs are reviewed and approved by the Landfill Operations Supervisor. The generator (or its authorized designee through a signed Third-Party Authorization Form) must submit an Asbestos Certification describing the source and type of asbestos (e.g. friable, non-friable). Industrial jobs are reviewed and approved by the Waste Approvals Manager as described in Section 7.3. The forms and supporting documentation (e.g., asbestos survey) are reviewed by the appropriate manager and filed electronically.

To be acceptable for disposal, asbestos wastes must be packed and transported by permitted haulers in accordance with US EPA 40 CFR Part 61 Subparts A and M, NESHAP, OSHA 29 CFR 1910, and NYSDOL Code Rule 56. Asbestos loads must be scheduled into the landfill 24 hours in advance. Disposal occurs between 7 am and 4 pm in a designated area of the landfill in accordance with 6 NY CRR Part 363-7.1(k)(1-4)(l).

Asbestos loads that are not properly packed and transported will be rejected at the scale house. Once scaled, the hauler will proceed to the landfill. Signage is posted demarcating the asbestos disposal area. Only trained and properly protected (i.e., wearing a company-provided respirator) employees or third-party haulers are permitted in the off-loading area(s).

At the working face, haulers are directed to approach the disposal location and park as close as possible. Loads are visually inspected at the dumping area and unauthorized waste is reported to the Landfill Manager. As soon as practicable after the waste is unloaded, the waste is covered with a minimum of 18 inches of soil before compaction. If the operator or Landfill Manager believes that the minimum cover requirement is not enough to adequately prevent asbestos fibers from becoming airborne or contacting landfill equipment, additional cover will be placed at his or her discretion prior to placement of regular daily or intermediate cover.

The location of asbestos waste in the landfill is tracked using GPS and updated on the landfill site plan. These records are kept up to date to ensure proper precautions are taken if the asbestos areas are to be disturbed in the future (i.e., digging or drilling). Signage will be moved or added accordingly to inform landfill personnel and haulers of the limits of the asbestos area.

7.5.2 Sludge

Pre-approved digested (or otherwise stabilized) sludge with a solids content of at least 20 percent and containing no free liquids is disposed at the regular working face. Landfill operators will inspect the load during disposal. If the load appears to be excessively wet or odorous, unloading will be stopped and the Landfill Manager or Operations Supervisor notified. Receipt of additional material may be halted until the generator takes appropriate corrective actions.

Sludge waste is not placed within 15 feet of the top of the drainage layer or near the side slopes. Generally, sludges are dispersed throughout the waste mass as much as practicable to promote mixing with the surrounding waste. The creation of large, concentrated areas of sludge is avoided to prevent localized instability within the waste mass.

7.5.3 Solidification

Non-hazardous aqueous wastes, wastes less than 20 percent solid or containing free liquids, or other wastes compatible with the solidification process must be pre-approved by the RMME as well as the Waste Approvals Manager. Solidification takes place in two buried 60 CY steel containers atop the landfill. The solidification pits may be moved to accommodate future landfill operations but will only be located over current or future double-composite lined cells. Generators of wastes for solidification must schedule a solidification appointment with the scale house at least 24 hours in advance to ensure landfill personnel and equipment are available to receive and handle the waste.

Wastes for solidification are weighed and documented at the scale house then directed to the solidification pits. The waste is unloaded, poured, or pumped into the pit(s) and visually inspected by the operator to check against the approved solidification profile. Rinsewater from the tank or waste container is also directed into the pit. If necessary, closed, leakproof containers may be temporarily staged in the solidification area until adequate space is available in the mixing pits.

If the material is stored or hauled in a manner such that it cannot be brought directly to the solidification pit and discharged, the material will be staged near the MRF building after it is scaled.

Landfill personnel will use equipment such as a loader with forks to handle the waste and place it into a haul truck for transport to the solidification pits. An example would be drums stored on pallets brought in a box van.

Absorbent materials such as fly ash, shredder fluff, saw dust, wood chips, or other suitable thickening agents are added to the pits and mixed in by an excavator. Thickening agents are added until the waste is sufficiently solidified and no free liquids are observed in the container. The waste is then loaded into articulated haul trucks by the excavator and transported to the working face for disposal, along with empty drums or totes not returned to the generator or sent to an offsite recycler.

7.5.4 Drums

Disposal of drummed wastes requires pre-approval by the RMME and Waste Approvals Manager. The Landfill Operations Supervisor inspects drums at the scale house upon arrival and checks the contents against the waste profile. A copy of the drum inspection form is provided in Appendix B. If the waste is acceptable, the material will be hauled to the solidification area or the working face, as appropriate.

Empty drums or other containers that previously contained hazardous material must be emptied in accordance with 6 NY CRR Part 371.1(h) prior to disposal.

7.6 Beneficial Use Determinations (BUDs)

Some wastes have physical characteristics which make them desirable for beneficial uses (e.g., access road construction, solidification amendments) at the site rather than landfilled as waste. These materials may include but are not limited to non-hazardous slag, refractory brick, auto fluff, aggregate, and fly or bottom ash. Waste proposed for a BUD must first be approved in writing by the NYSDEC. BUDs are reported with the facility's annual report. Analytical testing or inspections required by the NYSDEC are maintained on file.

7.7 Radioactive Waste Handling

A fixed radiation detection system will be installed near the point of entry to the inbound scale. Commercial waste hauling vehicles will pass through the detectors. Residential loads at the drop-off center will be checked and visually inspected for suspect radioactive materials; when drop-off containers are full, they will pass through the detector when being scaled for final disposal.

7.7.1 Radioactive Waste Detection Program

The fixed radiation detection system is a drive-through system which scans the length of the vehicle as it slowly passes between the two detection units on either side of the scale entrance. The system measures the radiation level emitted by the vehicle in counts per second (cps). The number of cps over the normal "background" radiation level of the area is compared to the investigation alarm set point indicated on the electronic readout in the scale house.

If the alarm sounds, the scale house operator will complete a Radiation Monitor Alarm Record with the information on the readout. If it is possible that the alarm was triggered by the driver due to a recent nuclear medicine procedure, the driver will be instructed to leave the scale and park in a designated area away from the detectors and other vehicle traffic. The driver will then be asked to walk near one of the detectors to measure their radiation level for comparison to the original reading. Alternatively, a

different driver may be used to pass the vehicle through the detectors. If the driver is determined to be the source of the radiation and the truck itself does not sound the alarm, it may pass through. There is no restriction on the driver if he or she triggers the alarm due to a medical procedure. The scale house operator will record the event information on the Radiation Monitor Alarm Record. A copy of the Radiation Monitor Alarm Record is included in Appendix B.

If the alarm sounds due to the waste load, the truck will be passed through the radiation detectors a second time for confirmation and the source of the radiation (as best as can be determined) will be centered between the detectors so that a stabilized reading may be obtained. If the stabilized reading is less than the investigation level, the load will be considered acceptable for disposal in the landfill. If both the initial and stabilized readings are greater than the investigation level, refer to Section 7.7.3.

All instances of alarms due to the waste load must be documented and reported to the NYSDEC using the Radiation Monitor Alarm Record within 24 hours. Recorded information must include the following:

- Date waste was received;
- Transporter name;
- Origin of waste;
- Truck number (or other identification);
- Detector reading;
- Disposition of waste; and,
- Date of disposition.

Verbal or email notification will be made to Modern personnel immediately following the investigation, as well as to NYSDEC officials, if desired by the Department. Each instance must also be documented in the facility's annual report.

If a hauler drives away after triggering the alarm and before the load can be properly investigated, the scale operator or other authorized person will immediately notify the NYSDEC and the New York State Police and provide them with the subject vehicle information.

If the drive-through radiation detection system becomes inoperable, trained personnel will use a handheld Thermo Scientific RadEye SPRD spectroscopic radiation detector to perform the initial scan on inbound vehicles until the system resumes normal operation.

7.7.2 Radiation Detection System Operation and Maintenance

The Operations Manual for the radiation detection system is maintained in the scale house. The Landfill Operations Supervisor and scale operators will receive initial and annual refresher training on the use of the system and landfill radiation detection procedures. This training will include measurement of background radiation, field checks, and annual calibration (performed by an outside contractor or RadComm).

Upon initial installation of the radiation detectors at the site, an average background radiation level will be established by averaging daily background readings over the course of 10 working days. Background radiation measurements will be measured and recorded daily prior to accepting the first waste load. At least once per week, following the daily background check but before accepting waste, the detectors must be manually field-checked using a known radiation source. The results of each source check will be recorded and kept on file at the scale house along with the results of daily background checks.

The landfill uses a 1 µCi cesium-137 source disk as its source for the weekly field checks. When not in use, the source is locked securely in the lowest level of the scale house and retrievable only by authorized and trained personnel. The source is attached to a sawed-off broom handle or other implement to encourage distance between personnel and the source itself while in use. The source will be held within one meter of the detector and the readings allowed to stabilize prior to recording. Should the system detect a faulty reading based on the known source value, a RadComm technician or other trained personnel will be contacted to calibrate the unit. Calibration is required annually at a minimum. Documentation of calibration will be maintained on site.

The investigation alarm setpoint must be set at least two times but no greater than five times the site background radiation levels. The setpoint will be established based on the average site background level as described above. Daily checks of background radiation levels will be checked against the setpoint to determine whether the setpoint is acceptable for that particular day. Should the setpoint be outside the acceptable range, a new background level measurement shall be calculated using the previous 10-working-day readings and the setpoint adjusted accordingly.

The handheld radiation detector will be used in conjunction with RadEye Spectra software to identify sources in vehicles that triggered the alarm. Once the unit is staged in the designated area, the Landfill Operations Supervisor or Environmental Protection Manager will scan the length of the vehicle by slowly walking around it with the portable detector and identify the location of the source within the vehicle (if possible). The detector will be placed near the unknown source(s) for a five-minute count to capture the spectrum. Once the entire vehicle has been scanned, the spectrum(s) will be downloaded to a computer and a report prepared for submission to the NYSDEC. If necessary, a third-party radiation consultant may be retained to investigate the source.

7.7.3 Acceptance or Rejection of Loads Based on Radioactivity

The procedure used to assess and manage waste loads that trigger the alarm is outlined below.

- Investigation alarm setpoint: at least 2x but no greater than 5x background radiation levels
- Rejection level: 25 pCi/g Ra-226 (except for firebrick)

1) If the alarm sounds and the driver is determined not to be the source, the truck will be passed through the detectors a second time. The scale operator should note the approximate location of the source in the vehicle, if possible. Alternatively, the operator may note that the radiation is diffuse throughout the load. Pertinent details will be recorded on the Radiation Monitor Alarm Record.
2) If the monitor reading is less than the rejection level and the load is determined to be diffuse, then the load will be accepted.
3) If the monitor reading is less than the rejection level but the load is determined to have an area of concentration, the load may be accepted or rejected. Further investigation of the load is required and may include handheld detector readings, visual observations, or discussions with the generator (if known) to determine acceptability. The vehicle must be staged in a secure, designated area during the investigation.
4) If the monitor reading is greater than the rejection level (either diffuse or concentrated), the load will be rejected. The vehicle must be staged and secured with proper signage to alert other

personnel of the radioactive waste. It may not leave the facility without written approval from the NYSDEC and a completed Department of Transportation SP-11406 form.

5) Trained landfill personnel may utilize the RadEye handheld detector to obtain a spectrum of the source to request permission to dispose the waste from the NYSDEC. The handheld unit must be properly calibrated (annually at a minimum), and a five-minute background spectrum and source count must be performed prior to investigating the source. Spectrum information in the form of a .csv file, .n42 file, and a screengrab of the RadEye Spectra readout will be provided to the NYSDEC, along with details on the background and source checks and other applicable information pertaining to the investigation.

Medical radionuclides such as iodine-131, iodine-125, technetium-99m, thallium-204, and other short-life nuclides may be disposed in the landfill if they have been excreted from a patient (e.g., into a diaper). Intact residential smoke detectors containing americium-241 are also acceptable into the landfill. Modern will await the NYSDEC's concurrence with the determination of these isotopes before disposing of these materials in the landfill. Medical wastes in vials, syringes, radiopharmaceuticals, or containers from hospitals are not acceptable.

7.8 Waste Placement Operations

Typical waste placement operations will proceed as outlined in Section 8.2. During winter and other inclement weather such as extremely wet or windy conditions, additional provisions are taken to ensure safe and effective landfill operations.

7.8.1 Wet Weather

During periods of wet weather, it may be necessary to tow collection vehicles and/or tractor trailers at the working face, particularly after dumping when less weight is present over the drive axles. Large vehicles equipped with tow hooks and chains will be available in the event equipment operator assistance is needed. Frequent grading and stabilization of roads using gravel or other approved aggregate may be required. Landfill personnel and equipment will be made available as needed to repair roads and control drainage.

Cover requirements during wet weather are the same as under normal operating conditions. Since daily cover soil may be difficult to handle and spread in wet conditions, it may be necessary to use additional material to adequately cover the working face. If ruts from vehicle traffic expose refuse, the tracks must be repaired and covered by the end of the workday. AOC materials will be used in lieu of soils when possible.

During periods of heavy rainfall, the Landfill Manager may decide to modify or temporarily suspend disposal operations. Possible modifications include minimizing the size of the active working face, moving the working face to a more protected area (if available), and altering truck and trailer access to the working face. Stormwater management is discussed in Section 11.

7.8.2 Windy Weather

Modern Landfill's fill progression plan (see Section 8) sequences construction and waste placement such that the active portion of the landfill generally proceeds in a direction perpendicular to the prevailing west winds, sheltering the working face. The working face is generally maintained as small as practicable

during normal operating conditions, but during windy weather extra consideration will be given to the size and location of the active working face. Portable windscreens are strategically placed downwind to help control windblown litter and are moved as needed to capture as much litter as possible within the active area. Laborers manually collect windblown litter around the landfill daily; during and after windy weather, additional personnel may be dispatched and/or laborers may work overtime hours to clean up litter as quickly as possible.

In windy weather where litter cannot be reasonably controlled, the Landfill Manager or Vice President of Post Collection Operations may decide to suspend operations. Modern Landfill does not establish a set point at which operations should cease (i.e., wind speeds of X mph), as several factors affect the blowing of waste and litter control. Such factors include the degree of working face exposure to the prevailing wind direction, nature of wastes being received (e.g., dense soils or lighter dust-type wastes), moisture conditions, and access. Additionally, quickly covering lighter waste materials will help keep the waste from becoming airborne.

7.8.3 Winter Weather

On-site equipment will be used to clear roadways and access areas following heavy snowfall. Where possible, snowbanks created from removal activities should be arranged to promote drainage away from road surfaces when melting occurs. Road salt or sand will be applied to the extent practicable on critical roadways. Snow will be scraped from cover material in active areas as conditions permit. Frozen clumps of cover material may be broken up by tracked equipment.

If winter weather creates hazardous operating conditions, the Landfill Manager or Vice President of Post Collection Operations may close the landfill until it is deemed safe to resume operations. It is expected that weather severe enough to temporarily close the landfill will also prohibit local waste collection activities.

8) FILL PROGRESSION AND PLACEMENT

8.1 Fill Progression

Development of the site will occur in stages based on Modern's airspace needs and operational considerations. The facility's Operation and Maintenance Manual dated December 2009 (last revised April 2012) prepared by Daigler Engineering, P.C. of Grand Island, New York generally described Modern's proposed filling sequences in the following stages:

- Stage 1 – Filling the South Overfill Liner;
- Stage 2 – Filling the Northwest Overfill Liner;
- Stage 3 – Filling the Northeast Overfill Liner;
- Stage 4 – Filling Section IV Area 1A2;
- Stage 5 – Filling Section IV Area 1B;
- Stage 6 – Filling Section IV Areas 1A3 and 2;
- Stage 7 – Filling Section IV Area 3; and,
- Stage 8 – Filling Section IV Area 4.

In accordance with the previously prepared Operation and Maintenance Manual, Modern has developed the site generally consistent with the Stages described above. As part of updating this manual, Modern has revised the proposed stages beginning at Stage 6 to be consistent with Modern's currently proposed site development sequencing. Each Stage depicts the following areas:

- Filling area and grading;
- Interim cover recovered area;
- Interim cover area;
- Borrow area;
- Liner construction area;
- Final cover area; and,
- Proposed capping area.

The revised filling stages (beginning with Stage 6) are described as follows:

- Stage 6 – Filling Section IV Areas 1A3 and 2;
- Stage 7 – Filling Section IV Area 3A;
- Stage 8 – Filling Section IV Area 3B and construction of Sediment Basin;
- Stage 9 – Filling Section IV Area 3C and relocation of Fire Pond;
- Stage 10 – Filling Section IV Area 4A;
- Stage 11 – Filling Section IV Area 4B;
- Stage 12 – Filling the top of the landfill in the South, Northwest, and Northeast Overfill Liner areas; and,
- Stage 13 – Final capping of Stage 12 filling area.

The proposed fill sequence takes into account access to the top of the landfill and filling of future stages by postponing the construction of final cover on access roads until later stages of development (to the extent possible). The proposed capping plan may be modified as future development of the landfill is considered or to allow for settlement of underlying waste.

The phased baseliner construction, waste placement, closure sequence, proposed borrow areas, approximate waste volume, and filling duration for each of the Stages described above are shown on Figures 1 and 2 in Appendix C. The in-place waste density will be monitored through annual surveys of the landfill and waste tonnage accepted during the timeframe between each annual survey. Daily cover, intermediate and interim cover, final cap materials, or other materials placed in the landfill will be accounted for when evaluating the in-place density and the consumption of constructed airspace. A daily waste placement log will be prepared that provides information on the location and elevation of waste placed each day.

8.2 Waste Placement

Landfill personnel use GPS-enabled equipment for construction and waste placement. Survey control points are located throughout the site to be used for grade control during regular operations and construction. The top of waste grading plans, illustrated in the Landfill Filling Progression drawings included in Appendix C, form the basis for generating an electronic three-dimensional surface model file. This file is uploaded into GPS-equipped bulldozers and solid waste compactors that operate at the

working face of the landfill. Using this GPS system allows Modern to achieve grade control and collect internal compaction information during filling.

8.2.1 Working Face

A working face consists of two sub-areas: the tipping area where vehicles deposit their waste loads and the compaction area where compactors spread and compact the waste. The two sub-areas are required to accommodate over-the-road waste hauling vehicles which cannot safely maneuver in soft, irregular areas where waste is pushed, graded, and compacted. In addition, it is common for up to three solid waste compactors to be operating at one time in a relatively confined area, so the use of a tipping area creates a safer environment for the drivers. The tipping area will be designated adjacent to the compaction area by the Landfill Manager on a daily basis so that hauling vehicles can safely enter and exit the space. Off-loaded waste will be pushed to the compaction area by solid waste compactors or bulldozers.

At times, more than one working face is preferred or required. The Landfill Manager will determine the number and size of the working face(s) based on the incoming waste rate, types of waste being managed, site and weather conditions, proximity to outside slopes or other site elements, and in consideration of other waste handling information that may be provided by the Waste Approvals Manager or operations managers.

Waste is typically spread in two foot thick layers prior to compaction (except for first lift material placed above the double composite liner system, which requires a minimum five foot lift thickness and other special considerations as discussed in Section 8.2.2). Placement will generally begin at the low end of the cell, with daily placement generally perpendicular to the overall cell fill progression alignment. Before the end of the working day, a minimum of six inches of daily cover material will be graded over the waste to control odors and vectors. Alternatively, a Posi-Shell or similar synthetic cover system may be used.

Daily or intermediate cover soil will be removed from the working face prior to the placement of additional waste. In the event the Posi-Shell (or similar) cover system is employed for daily cover, the incoming waste stream will be placed and compacted immediately above this material. In areas where the six to twelve inch thick daily or intermediate cover soil layer has been placed, it will be stripped from the waste surface to the greatest extent possible and stockpiled adjacent to the working face for reuse as daily or intermediate cover, as appropriate. The removal of daily or intermediate cover soils will help to minimize leachate seeps and perched leachate conditions by maintaining flow paths to the leachate collection and removal system. Due to the relatively thin and brittle nature of the Posi-Shell (or similar) cover system, its presence is not expected to restrict leachate or LFG flow once broken up by waste placement activities.

The following list summarizes conditions of waste placement:

- The working face width will be restricted to the smallest area practicable based upon peak daily incoming waste rate and other conditions as described above;
- The tipping area will be graded to provide a relatively level and smooth surface;
- Separate operable and monitored sub-cells within the active portion of the landfill will be available in the event the current working face becomes inoperable;
- Cell height will be a maximum of ten feet;

- Waste will be spread and compacted in layers not to exceed two feet in thickness with each layer compacted with a minimum of three passes of the landfill compactors;
- Under no circumstances shall waste fill be pushed from the top edge of the lined perimeter embankment to the floor of the landfill;
- A minimum of six inches of daily cover, approved AOC, or a Posi-Shell or similar synthetic cover system will be applied at the end of each workday;
- A minimum of 12 inches of cover will be applied to areas where no additional waste will be placed for 30 days or more; and,
- Exterior slopes shall be no steeper than 3:1; however, interim external slopes may exceed this slope if demonstrated to the NYSDEC's satisfaction that the slope will settle to 3:1 or less prior to final closure.

The mobile C&D debris salvaging area may at times be operated in an area of the landfill that will not disturb filling operations at the working face. Incoming trucks of mixed waste containing a significant amount of C&D debris will unload in the designated salvaging area. C&D debris will be separated from the solid waste to be deposited at the working face. Salvaged C&D debris will be transported to the C&D Processing Facility where the debris is handled according to the C&D Processing Facility's O&M Manual.

8.2.2 Placement of the First Lift

Special precautions will be taken during placement of the first lift of waste over the baseliner to avoid damage to the soil and geosynthetic components, the leachate collection system piping, and containment berms. These procedures include:

- Staging an employee on the cell floor throughout the placement of the initial five-foot lift to identify unacceptable wastes (i.e., metal pipes, large metal items, timbers) that may be present, and to assist in the removal of such materials from the first lift;
- The vehicular approach to the work area should be in a direction parallel to and between leachate collection pipes. No wheeled vehicles shall travel over leachate collection pipes until the five-foot lift of select waste has been placed, and then only as necessary for placement and compaction of the first lift. Access roads shall be constructed as close as practicable to the working face;
- Ramps constructed for the purpose of access to the base areas shall be between lateral leachate collection pipes, avoiding as much as possible relevant components of the leachate collection pipe network (i.e., headers, cleanouts, and side risers); and
- Special care shall be taken during placement of waste materials near operational or perimeter berms to avoid damage to the berm and keep waste placement away from the top of the exterior berms. Waste placement activities will take place within the inside edge of the top of the perimeter berm to allow for proper containment of leachate and LFG, and future construction of the final cover system tie-in at perimeter berm locations.

The performance of the liner system after the placement of the first lift will, in part, be evaluated by monitoring the flow from the secondary leachate collection and removal system. Procedures that will be implemented in the event of exceedances of the Allowable Secondary System Flow Rate are detailed in the Emergency Response Plan (see Section 17). Special maintenance/inspection procedures to evaluate the performance of the leachate collection and removal system after the first lift of waste has been placed are described in Section 10.3.1.

No sludge, C&D debris, industrial waste, or other waste that can "blind" the drainage layer are permitted within 15 feet of the top of the drainage layer.

9) COVER MATERIAL MANAGEMENT PLAN

The operation and closure of Modern Landfill requires several types of cover soils which are described in the following sections. On-site soils will be excavated for use as operating (i.e., daily), intermediate, interim, and final cover material in accordance with 6 NY CRR Part 363-7.1(b)(c)(d). Proper use of operating, intermediate, and interim cover is crucial in controlling odors, vectors, and windblown litter from the landfill. Section 13 describes the landfill's odor control plan. In lieu of soil, a Posi-Shell or similar synthetic cover system may be used.

9.1 Operating (Daily) Cover

Operating or daily cover is a minimum six-inch thick layer of compacted soil (or other approved material) applied over exposed solid waste at the end of each working day to control vectors, odors, blowing litter, fires, and scavenging. The material will be tracked in place using a bulldozer. There is no specific density requirement for daily cover, however compaction to approximately 80-85 percent of the material's maximum dry density (as determined by the Modified Proctor Test) is expected during spreading and placement.

Cover soil is typically obtained from on-site borrow areas or stockpiles created from subgrade excavation. The estimated permeability of this material is $1x10^{-5}$ cm/s or less. To the extent practicable, daily cover is stripped prior to waste placement on the next operating day to promote leachate percolation through the waste mass. This material is stockpiled within the limits of the active area for reuse.

9.1.1 Alternative Operating Cover (AOC)

AOC materials include but are not limited to non-hazardous contaminated soils; fly, bottom, or incinerator ash; auto fluff; foundry sand; and processed C&D materials. Except for contaminated soil, these materials may be used as daily cover if approved by the NYSDEC pursuant to 6 NY CRR Part 363-6.21(c). Modern may utilize contaminated soil as daily cover upon internal inspection and determination that the soil meets the performance criteria in 6 NY CRR Part 363-7.1(b).

As these materials would otherwise be disposed of as waste, AOC materials must be stored within lined landfill limits and precipitation which contacts them must be managed as leachate. Tracking out of the landfill footprint will be avoided. Approval and inspection documentation for AOC materials are filed electronically.

9.2 Intermediate Cover

Intermediate cover is a minimum 12-inch thick layer of compacted soil applied over waste where no additional filling has or will occur within 30 calendar days. Where required, it will be applied and maintained on external slopes of the landfill for every 20 feet of vertical rise. Intermediate cover soils are usually sourced from on-site borrow areas or excavations. The soil is placed and compacted with a bulldozer and, weather permitting, seeded to establish vegetation. Seeding aids in erosion control and

manages against substantial sediment loss. The anticipated density and permeability of the intermediate cover layer is consistent with the operating cover properties (see Section 9.1).

One of the primary functions of intermediate cover is to maximize stormwater runoff and minimize leachate generation. To minimize perched leachate and horizontal flow through the waste mass, in-place intermediate cover is stripped to the extent practicable prior to placement of additional waste. Cover soils which have contacted waste must be kept within the limits of the lined landfill area and may be used as daily cover.

9.3 Interim Cover

Areas of the landfill that are not anticipated to receive additional waste within 12 months or where final grades have been reached may be covered with an interim cover consisting of a minimum 12 inches of low-permeability soil and three inches of topsoil. The interim cover layer has no permeability or density requirement. Spreading and placement by the bulldozer generally achieves 80-85 percent of the material's maximum dry density (as determined by the Modified Proctor Test).

Seeding for vegetation will occur as soon as practicable to minimize erosion and protect the soil. If weather conditions do not favor germination and growth, temporary seeding (including winter seed varieties) will be applied. Appropriate control measures to intercept sediment-laden runoff and manage soil movement will be installed and maintained as needed until a substantive growth is established. Active seeding must also continue until adequate vegetation is established.

9.4 Final Cover

Final cover must be placed over cells in which waste has reached the final design elevation within five years of final waste placement, except in the case of final closure. Final closure must be completed within one year of the last waste receipt. The final cover system is designed, installed, and maintained in accordance with 6 NYCRR Parts 363-6 and 363-9. The final cover system generally consists of (from bottom to top) six inches (minimum) of prepared soil cover, a gas venting geocomposite layer, a geosynthetic clay liner (on slopes less than 25%), a 40-mil LLDPE textured geomembrane liner, a drainage geocomposite layer, and a minimum 12-inch thick barrier protection soil layer followed by at least six inches of topsoil and seasonally appropriate vegetative cover.

Final cover soils are typically sourced from on-site borrow areas or construction excavations. The material is spread and tracked in place by a bulldozer. There is no minimum density requirement for the compacted soil. The maximum permeability is estimated to be $1x10^{-5}$ cm/s. Particle size will not exceed six inches, unless placed within six inches of the geomembrane liner where it shall not exceed two inches. Topsoil must be of sufficient quality to establish and maintain vegetative growth.

10) LEACHATE MANAGEMENT PLAN

Monitoring and inspection of the landfill leachate facilities is critical to ensure proper operation and maintenance of the landfill. The operation and maintenance programs for leachate collection and conveyance systems will be in accordance with 6 NYCRR Part 363-7.1(f) and (g). Monitoring and inspection forms are included in Appendix D. Sampling of the leachate and the subsequent analysis program are described in the facility's Environmental Monitoring Plan.

The existing landfill leachate management system includes the baseliner systems with a network of leachate collection laterals and headers, double-walled and single-walled forcemains, leachate pump stations, metering and sampling stations, valve boxes, junction manholes, leak detection risers, and a 1,000,000-gallon above ground storage tank and loadout facility.

Leachate seeps and perched leachate are controlled and managed as described in Section 13.3.

10.1 Landfill Liner and Leachate Collection Systems

The landfill liner system provides for the initial element of leachate management at the site. Section I, Section II, and Section III Area 1 are single soil-lined landfill cells with primary leachate collection systems. Section III Areas 2, 3, 4 and Section IV are double composite-lined cells. The double liner system for Section IV Areas 1 and 2 generally consists of the following components, from bottom to top:

- Prepared subgrade;
- Geocomposite porewater drain (where shown on applicable construction drawings);
- Minimum 24-inch thick low-permeability secondary soil liner;
- 80-mil (nominal) HDPE textured secondary geomembrane liner;
- Geocomposite drainage layer with embedded 4-inch diameter leachate collection pipe;
- Minimum 12-inch thick structural fill layer (on slopes of 25% or less) with embedded 4-inch diameter leachate collection pipe;
- GCL (on slopes of 25% or less);
- 80-mil (nominal) HDPE textured primary geomembrane liner;
- Geotextile cushion;
- 8-inch diameter leachate collection pipe;
- Minimum 12 to 24-inch (24-inch where no TDA is placed) nominal ¾ inch drainage stone layer; and,
- TDA drainage layer.

10.2 Leachate Collection and Conveyance Systems

Leachate flows by gravity to collection sumps located at low points in the various landfill cells. Leachate generated from Section I, Section II, and Section III Areas 1 and 4 is pumped through Meter Building No. 1 near the northwest corner of Section III Area 4 and into a common forcemain. Leachate from the NWOF flows by gravity to the Section III Area 4 primary sump and is pumped with the Section III Area 4 leachate. Leachate from Section III Areas 2 and 3 and the NEOF is directed to a sump located in the northeast corner of Section III Area 2 near Meter Building No. 2 and pumped through Meter Building No. 1 to a common forcemain. Leachate generated from Section IV Area 1A1 and the northern portion of Section IV Area 1A3 flows to a sump located at Section IV Area 1A1 and is pumped via forcemain to the common header. Leachate generated from Section IV Areas 1A2, the southern portion of 1A3, and 1B flows to a sump located in Area 1A2. Leachate generated in Section IV Areas 2A, 2B1, and 2B2 flows to a sump located in Section IV Area 2A.

Submersible leachate pumps in the collection sumps are designed to accumulate leachate while minimizing accumulation of leachate over the primary liner. The primary and secondary leachate pumps operate using a liquid level pressure transducer. The transducer is housed within a 12-inch diameter section of HDPE pipe secured to the inside top of pipe. Each transducer is calibrated to turn off the

pump when the liquid level is three inches above its mounting, turn on the pump when the liquid is 13 inches above its mounting, and trigger a high-liquid level alarm when there is 25 inches of liquid above its mounting. This high level equates to two feet of head above the lowermost portion of the primary liner. During high-level conditions, a red alarm light located on the meter building or at the pump control station is activated to alert landfill personnel.

The submersible pumps are automatically activated by the liquid level controls to transfer the leachate to the storage tank; however, each pump may also be manually activated or deactivated. Modern has installed controls that will deactivate landfill sump pumps when 1) liquid collects in the sump within the meter building, 2) liquid collects in the sump within the loadout piping area in the loadout building, and 3) the above ground storage tank's high-level alarm is activated. Manual valves in each of the individual forcemains within the meter building allow each forcemain to be closed if necessary. Check valves prevent leachate backflow into the individual forcemains.

Flow meters located in the meter buildings and sideriser pipes measure the quantity of leachate delivered to the storage tank from each landfill area. The meters are checked daily for proper operation or when abnormal operations are identified. Under normal operating conditions, leachate flows through the common forcemain directly into the storage tank. If necessary, manual valves in the loadout building can be positioned to allow leachate to be pumped directly into a staged tanker truck on the loading pad from the common forcemain. The loadout facility is described in further detail in Section 10.6.

10.3 Leachate Collection System Inspection and Maintenance

On a daily basis, components of the leachate management system will be inspected to observe the operating condition of the system and to note unusual flow patterns that may suggest the possibility of obstructed pipes or other abnormalities. A summary of the leachate collection system maintenance program is provided in Table 10-1. Details of each item are provided in the following sections.

Table 10-1: Schedule of Leachate Management Facilities

Item	Activity Frequency	Reporting Frequency[1]
Record leachate quantities		
1. Primary leachate flow meters	Daily[2]	Quarterly
2. Secondary leachate flow meters	Daily	Quarterly
3. Condensate flow meter & no. of gas extraction wells in operation	Daily	Quarterly
4. Total leachate removed for off-site treatment and disposal	Daily	Quarterly
5. Total leachate removed for recirculation	Daily	Quarterly
Inspect condition & possibility of obstructed pipe		
6. Primary collection sumps	Daily	N/A
7. Secondary collection sumps	Daily	N/A
8. Metering/valve chambers	Daily	N/A
9. Pump station/truck loading facility	Daily	N/A
10. Leachate storage tank	Weekly	N/A
Check leak detection risers for presence of leachate		
11. Riser pipes along double containment forcemains	Weekly	Quarterly
12. Storage tank leak detection system	Weekly	Quarterly

Item	Activity Frequency	Reporting Frequency[1]
Storage Tank		
13. Record liquid level in tank	Daily	Quarterly
14. Drain and clean tank	Biennially	Biennially
15. Inspect secondary containment & remove accumulated water	Weekly	Quarterly
16. Cleaning of primary leachate collection system	Semi-annually	Semi-annually[3]

Notes:
1) Frequency of documentation by Modern and provided to the NYSDEC where required.
2) Monday through Friday only; no readings or inspections are performed on Saturdays or Sundays
3) Written confirmation will be provided to the NYSDEC within 30 days of completion

10.3.1 Collection Lines and Sumps

The collection line maintenance program will enforce a regular inspection of the collection system and help ensure the maximum leachate head above the liner meets the system's design intent. Maintenance is divided in to two separate programs: Special Maintenance and Periodic Maintenance. Both programs include cleaning of the leachate collection lines by jetting and, if necessary, flushing. In the jetting process, water is pumped through a hose connected to a special nozzle which directs a high-pressure stream of water in several directions; the force of the water is used both the propel the nozzle through the line and to dislodge materials which may have built up within the pipe. Flushing operations are intended to interduce large volumes of water to the pipe from the upgradient end to wash materials down to the sump where they can be removed from the system. Non-perforated clean-out riser pipes are placed on the downgradient end of most lateral and header pipes. Cleanout risers specified for the upgradient ends of the header or lateral pipes are flushing points, while those on the downgradient ends are jetting points. The jetting and flushing of the pipe network will require a suitable specified submersible pump be placed in the sump during cleaning operations to agitate and remove wash water and entrained solids from the pipe system.

At minimum, Special Maintenance and/or inspections of the leachate collection system are required in the following circumstances:

- Immediately after construction is completed;
- After the first two lifts of waste (15 feet) have been placed; and,
- When problems are identified with system performance.

The first two items in the Special Maintenance program (after construction and after the first two lifts are placed) provide an opportunity to verify the continuity and integrity of the system at critical construction stages. These tasks involve the use of a jetting tool that is forced along the length of the entire pipe. If defects are found, repairs can be made relatively easily and quickly. If problems arise with the system later, maintenance specific to the problem will be identified and performed as soon as practicable. A report will be provided to the NYSDEC describing the repairs and results.

Under normal operating conditions, adequate flow capacity of the individual forcemains is maintained by regularly pumping leachate through the forcemains above common recommended scour velocities (> 2 fps as presented in Attachment 5 of the October 3, 1994 relocation evaluation submittal). Periodic maintenance will consist, at a minimum, of jetting or flushing accessible primary leachate collection pipes two times per year. This activity and evidence of clogging or system failure will be reported to the

NYSDEC. If clogging is found to be an issue, increasing the frequency of line cleaning and/or changing the method of cleaning (i.e., using mechanical methods) may be necessary. If needed, the common forcemain may be accessed for flushing via a wye fitting located inside the meter building.

The leachate sump pumps are submersible dewatering pumps which are suitable for continuous operation. Modern maintains spare pumps on-site in the equipment and maintenance building as a contingency in the case of pump failure. Pump maintenance will be performed in accordance with the recommendations of the manufacturer. A maintenance log documenting repair or replacement of any components will be kept on site.

Sump risers will be visually inspected daily to check for abnormalities. The quantity of leachate pumped from each primary and secondary collection sump is also recorded daily. An example daily report is provided in Appendix D.

The flow rate of liquid into the secondary leachate collection system will be determined by averaging the daily recorded flow over a 30-day period for each calendar month. The actual flow rate into the secondary system will be provided in units of gallons per acre per day. The measured flow rates will be compared to allowable secondary system flow rates which will vary depending on many factors, including whether the landfill cell is under start-up or long-term operating conditions. If the measured flow rate is above the allowable secondary system flow rate, actions must be taken as prescribed in Section 17.5.1.

10.3.2 Leachate Storage Tank

The liquid level in the 1,000,000-gallon storage tank will be measured by a level indicator and recorded daily. The relationship between the leachate level and the number of gallons of liquid in the tank can be determined as follows:

$$V = \pi \times (D^2/4) \times h \times 7.48$$

where: V = volume (gallons)
$\pi = 3.14159$
D = tank inside diameter (ft)
h = height of liquid (ft)
7.48 = unit conversion (gal/ft^3)

Assuming that the average inside D is approximately equal to 69.94 ft and inserting the constants, the equation reduces to:

$$V\ (gal) = 28{,}737.1 \times h\ (ft)$$

This equation has the following limitations in estimating the volume of liquid in the tank:

- Assumes the tank inside diameter is constant at 69.94 ft;
- Neglects internal tank sump volume; and,
- Assumes the liquid level indicator gives the actual depth of liquid in the tank.

At a minimum, the tank will be emptied, cleaned, and inspected once every other year, or when abnormal conditions are suspected (i.e., leachate is observed in the tank leak detection system). Repairs will be made as necessary following the report received by the third-party inspection contractor. Records of the cleaning and subsequent maintenance and repairs will be kept on file at the site.

10.3.3 Secondary Containment and Leak Detection Systems

The leak detection points (i.e., monitoring risers for the forcemains and storage tank) will be inspected on a weekly basis. The secondary containment for the portion of the individual forcemains west of Section I can be visually inspected for the presence of liquid where the containment pipe enters the north wall. The secondary containment for the individual forcemain of Section III Area 2,3 located east of Section II, can be visually inspected for the presence of liquid where the containment pipe enters the Section III Area 2,3 side riser station. The secondary containment for both the NEOF and the NWOF can be visually inspected within their respective metering vaults where the pipe penetrates the vault wall.

The double-contained portion of the individual forcemains will be inspected for leakage at the leak detection point within the meter building. Operation of the single-contained individual forcemains within the lined landfill cells will be monitored by regular inspection of the system, including review of flow meter data to identify abnormal conditions such as a broken or obstructed forcemain. If necessary, jetting, repair, or replacement of the forcemain in question would be performed.

Procedures for inspecting the leak detection monitoring risers along the common forcemain and adjacent to the storage tank are summarized as follows:

- Open the detection riser cover and check for the presence of liquid;
- Measure the depth of the liquid (if observed), record, and obtain a sample;
- Test the sample for pH, specific conductivity, color, and odor and record the results;
- Pump out liquid and transfer into the leachate storage tank;
- If no liquid is present, note the observation; and,
- Close and lock riser cover.

The storage tank secondary containment stormwater collection sump will be inspected weekly and after precipitation events. The liquid in the sump will be visually inspected for the presence of leachate. Non-contaminated stormwater in the sump will be pumped to nearby surface water features as needed.

10.4 Condensate Collection and Conveyance System

Condensate generate by the gas recovery system is temporarily stored in condensate sumps positioned across the landfill gas collection and control system network. The temporary sumps are evacuated by submersible pumps and condensate is conveyed to the leachate storage tank for removal and treatment with the leachate. If necessary, condensate may be manually diverted into a separate temporary storage unit (e.g., Baker tank) located adjacent to the leachate tank within the secondary containment structure. Records of condensate generation and monitoring are maintained separately from the leachate.

10.5 Recirculation

Leachate may be recirculated over double-lined portions of the landfill with active gas collection mechanisms in accordance with 6 NYCRR Part 363-7.1(h). Generally, leachate will be hauled in a tanker from the leachate loadout facility to an interior area of the landfill where at least 10 to 20 feet of waste has been placed. The leachate will be introduced into the surface of the waste and/or into permeable zones (e.g., TDA, stone) constructed within the waste. Historic leachate collection rates in active cells where leachate recirculation has occurred typically average between 500 to 600 gallons per acre per day

(gpad). The design impingement rate for Section IV is conservatively set at 1,000 gpad. A leachate recirculation tracking field sheet is included in Appendix D.

10.6 Leachate Storage and Loadout Facility

Leachate is temporarily stored in the 1,000,000-gallon above ground storage tank until it can be transported off site for disposal at a permitted wastewater treatment facility (see Section 10.7). The leachate loadout facility includes a loadout building and truck loading pad. On a periodic basis, a tanker truck staged on the loading pad will connect to the leachate discharge hose and a series of valves will be opened which discharges leachate from the storage tank into the truck.

A 20hp stationary pump within the loadout building pumps the leachate from the tank to the truck. Motorized control valves (normally closed) prevent accidental discharge. The loading pad contains a trench drain for the transport of stormwater and spilled liquids to a sump located in the loadout building. The liquids collected in the sump will be automatically pumped back into the storage tank via 2hp pump with float controls. Daily records of quantities of leachate hauled off site are maintained in the scale house.

10.7 Transportation and Disposal

Modern contracts a third-party hauler(s) to transport and dispose leachate at local wastewater treatment plants. Modern Landfill currently disposes of leachate at the Town of Lewiston Water Pollution and Control Center and the Buffalo Sewer Authority. Other facilities may be used if the facility issues Modern a discharge permit. Copies of the discharge permits for facilities accepting leachate are maintained on file.

If the wastewater treatments plants are unable to handle the leachate load or hauling is interrupted, refer to Section 17.5.2. New uses, treatments, or disposal methods are being investigated including a direct connection to the Town of Lewiston's sanitary sewer system. Direct discharge will only proceed in accordance with a permit issued by the Town.

10.8 Treatment System

The facility may install a leachate pre-treatment system to meet applicable federal, state, and/or local discharge guidelines. The pre-treatment system selected for the landfill will be capable of reducing the concentration of constituents of concern below the required discharge levels and sized appropriately to handle the volume of leachate generated at the landfill's current and projected size. Treated leachate will be hauled to local wastewater treatment plants for disposal, discharged into the sanitary sewer system, or reused on site for dust control. Provisions and/or permitting for the design and addition of a treatment system will be performed on an as-needed basis.

11) STORMWATER MANAGEMENT

The following sections describe stormwater management around the landfill. In addition to the designed stormwater system, stormwater accumulated in secondary containments around outdoor bulk storage tanks is managed in accordance with the facility's Stormwater Pollution Prevention Plan (SWPPP). A copy of the monthly storage tank inspection form is included in Appendix D.

11.1 Design

The site-wide stormwater management system includes diversion swales, channels, culverts, and sediment basins. The design of these control structures is intended to help ensure the safe and efficient collection, conveyance and temporary storage/treatment of stormwater runoff to facilitate attenuation of peak stormwater discharges and reduce sediment transport. Receiving waters for stormwater runoff at the site include Twelve Mile Creek and tributaries of Four Mile Creek. These creeks eventually discharge northward toward Lake Ontario.

The stormwater drainage system includes temporary and permanent controls and must accommodate the phased development of the site (see Section 8.1). The site lies within two major drainage sheds. At any one time as landfilling progresses, approximately half the site lies in the western shed and the other half lies in the eastern shed. The western drainage shed discharges to tributaries of Four Mile Creek. Stormwater in the eastern shed discharges to Twelve Mile Creek.

The planned construction (as shown in the Final Grading Plan, see Appendix C) includes four permanent sediment basins to manage stormwater runoff and stormwater quality for the closed facility. The specific stormwater management objectives include:

- Conveyance of runoff to minimize erosion;
- Extended stormwater detention;
- Maintenance of stormwater quality;
- Sediment collection; and,
- Control of discharge rates associated with storm events.

During landfill operation, efforts will be made wherever possible to minimize the amount of leachate generated during or due to storm events. Compacted intermediate or final cover will be graded to direct water to the outer slopes or into designed stormwater channels or features. Stormwater is removed either by gravity drainage or pumping.

To determine whether collected stormwater around the active landfill area(s) must be managed as leachate, a conductivity measurement will be taken by landfill personnel using a calibrated water quality meter. If the observed conductivity measurement is less than 2500 micro-Siemens per centimeter (µS/cm), the water may be treated as stormwater. If the measured conductivity is 2500 µS/cm or greater, the water must be managed as leachate. The landfill will maintain compliance with the conditions of its SPDES permit and SWPPP (under separate cover).

11.2 Maintenance

The stormwater management system must be regularly inspected and maintained to ensure it remains fully functional. Routine inspections will be performed in accordance with the MSGP and the landfill's SWPPP. These inspections will alert landfill personnel as to when maintenance on any part of the stormwater management system is needed. Subsequent inspections will evaluate the effectiveness of required repairs made. A routine stormwater inspection form is provided in Appendix D.

Maintenance includes routine and as-needed removal of sediments and litter that have the potential to impede downchutes, swales, culverts, and basin inlet structures. It may also involve periodic structural repairs following significant settlement or erosion.

Sediments removed from stormwater management structures may be allowed to dry and used as daily cover material or disposed in the landfill. Collected windblown litter will be disposed in the landfill. Flushing of culverts or regrading of swales to restore peak design flow capacity will be performed on an as-needed basis. The frequency of such maintenance activities will depend on factors such as frequency and intensity of rainfall, amount of exposed soil, and amount of blowing litter.

12) POREWATER MANAGEMENT

A porewater drain system consisting of a series of groundwater pumping wells and a geocomposite drainage layer has been installed beneath the double composite lined cells since the construction of Section III Area 2 and will continue to be installed where needed as landfill cell construction progresses. The purpose of the porewater drainage system is to reduce groundwater head pressure on the lined cells throughout construction and the initial lifts of waste placement so as not to breach the liner system through hydraulic uplift.

Porewater accumulates in collection sump where it is pumped to the surface by a submersible sump pump fitted with a pressure transducer. The transducers operate similar to those installed for the primary and secondary leachate systems. Active porewater management (i.e., pumping) in any given area of the landfill will be dependent upon the stage of cell construction and waste elevations in accordance with a particular cell's design and observed groundwater conditions.

Meter readings for the porewater removal system are recorded daily while in operation. Meter readings are taken manually from the control panel and entered into a spreadsheet to calculate flow rates. The discharge from the porewater drainage system enters either the landfill's stormwater management system or leachate management system. It is sampled on a quarterly basis and the analytical results are reported in Modern Landfill's Quarterly Environmental Monitoring Report and/or State Pollutant Discharge Elimination System (SPDES) Quarterly Discharge Monitoring Reports. Each porewater discharge is analyzed for Part 360 routine parameters. Baseline parameters are substituted once annually on a rotating quarterly basis.

Porewater from Section IV Areas 1A1 and 1A2/1B is sampled individually prior to being combined with the primary and secondary leachate at each location. This mixing is a conservative approach to handling porewater resulting from historic detection in the porewater at these locations. Porewater from Section IV Area 2A and bedrock pumping well BW-4 (when actively pumping) is discharged to the stormwater management system after being sampled on a quarterly basis for pH, priority pollutant metals, total cyanide, and total phenolics in compliance with the SPDES permit in addition to the routine/baseliner parameters described above.

13) ODOR CONTROL PLAN

The two primary means of controlling odors at the landfill are daily application of sufficient amounts of cover material and maintenance of an effective LFG collection system. Properly training landfill personnel on recognizing and mitigating the causes of odors allows them to effectively manage odors caused by waste, LFG, and leachate. It should be noted that no singular method can prevent one hundred percent of on- and off-site odors, and complaints from the surrounding community may be

received from time to time. Any complaints will be taken seriously and efforts will be made as soon as practicable to implement corrective actions.

13.1 Soil Cover

Operating cover is placed over the active working area as soon as practicable but no later than the close of each workday as described in Section 9.1. AOCs should continually be evaluated by operators during placement to ensure the material consistently controls odors. Ruts or gaps caused by vehicular or equipment traffic should be repaired as soon as practicable. Large stones or other debris that could provide an avenue for odor (i.e., waste odor in the active area and waste and/or gas from areas with intermediate cover) to escape should be removed. The minimum thickness of daily operating (six inches) and intermediate and final cover (12 inches) should always be maintained.

13.2 Odorous Wastes

If sludge or other special wastes are particularly odorous, priority will be given to disposing and covering those wastes. The waste may either be buried in the waste mass or covered with a thicker layer of cover soil or AOC material. Stockpiling processed C&D materials for extended periods is discouraged due to potential odors resulting from decomposition.

The Landfill Operations Supervisor and Landfill Manager will monitor incoming wastes for potential odors. If a certain waste stream becomes problematic over an extended period, even with special handling, acceptance of that waste will be discontinued. If a change in waste characteristics occurs which causes increased odors from the landfill, additional odor control measures such as earlier cover placement, application of an odor neutralizing spray, or additional LFG collection infrastructure may be utilized.

13.3 Leachate Seeps and Fugitive LFG

Landfill leachate seeps are minimized with proper waste and cover placement. Landfill operators will ensure that daily operating and intermediate cover materials are stripped prior to adding waste lifts within 30 feet of outer slopes. Lifts within 30 feet of outer slopes will be sloped inward to the extent possible to discourage leachate outbreaks. Outbreaks that do occur are documented by personnel performing weekly (at minimum) site inspections. Landfill personnel may remediate seeps in the following ways:

- Excavate leachate-contaminated soil and replace it with compacted, low-permeability soil. The excavated soil is moved to the working face;
- Excavate the area to the source of the leachate and backfill with a coarse aggregate to direct leachate back into the waste mass. The excavated material is moved to the working face and the area is covered with compacted, low-permeability soil; or,
- Excavate severe outbreaks to the source and install a perforated pipe backfilled with stone or TDA. A pump placed in the pipe will pump the leachate back into the waste mass or the leachate collection system.

Areas of remediated leachate seeps will be monitored for recurrence during subsequent inspections. If numerous reoccurring seeps become a problem, landfill personnel will investigate the cause and determine the appropriate remedial action(s).

13.4 LFG Collection System

An effective LFG collection system is the best way to control LFG emissions and LFG-related odors. Modern Landfill's LFG is collected and combusted at a LFG-to-Energy facility located adjacent to the landfill. The facility is owned and operated by a third party. Modern works closely with the facility to ensure that the system operates properly with minimal downtime. An enclosed flare serves as an emergency backup in the event of plant shutdown.

If areas in the landfill are found to be generating excess LFG, Modern may install additional collection points such as vertical wells or horizontal collectors in those areas to mitigate emissions and odors. The Gas Monitoring and Emission Control Plan is presented in Section 14.

13.5 Complaints and Inspections

While this Odor Control Plan attempts to mitigate sources of landfill and LFG odors, Modern recognizes that, due to the nature of the landfill business, complaints may occasionally be received by the surrounding community.

Complaints are logged along with the date, time, weather conditions (including wind speed and direction), location of the complaint, and conditions at the landfill at the time of the complaint. Recording site conditions is important to help determine whether the source of off-site odors is the landfill and not another off-site source. The Landfill Manager will investigate the source of the odor, and, if the odor is determined to be a result of landfill operation, remediate the problem as soon as practicable and document the date, time, and nature of the repair. A copy of the complaint log is provided in Appendix D.

14) GAS MONITORING AND EMISSION CONTROL PLAN

LFG has the potential to migrate through the subsurface in areas where soils are unsaturated and pore space is available. Modern Landfill manages LFG to minimize the potential for adverse effects on health, safety, or property, and to comply with various regulations. A LFG monitoring program is conducted as part of the facility's compliance with both Part 360 and applicable air regulations. The Emergency Response Plan identifies the procedures taken to respond to suspected or observed LFG migration.

14.1.1 LFG Collection and Control System Infrastructure

Modern has installed (and is regularly adding) active gas collection system components (i.e., horizontal collectors and vertical extraction wells) designed to create negative pressures in the landfill and an inward gradient to limit the potential for gas migration. The adjacent LFG-to-energy facility maintains enough engines to handle the existing and projected LFG flows. The LFG-to-energy facility is separately owned, operated, and maintained. An enclosed flare, operated by Modern personnel, is located adjacent to the leachate storage tank as a backup should the plant be offline.

Horizontal collectors will be installed as waste filling progresses to capture gas during initial stages of development. Typically, collectors will be spaced 100 ft horizontally and 20 ft vertically and sloped to drain into the waste mass. The collectors will terminate at least 100 ft from the limits of waste. Each collector is comprised of a perforated horizontal pipe embedded in a porous media (e.g., TDA) which

transitions to a solid pipe to prevent oxygen intrusion near the edges of the waste mass (if applicable). The solid ends will be fitted with a wellhead at the exterior face of the slope. The collectors will be connected to vertical extraction wells throughout the interior of the waste mass. As waste filling progresses in the cell, each horizontal collector in the waste mass will be connected to a solid HDPE pipe so that vacuum may be applied to the system and capture gas generated from the early stages of waste decomposition. As the waste mass rises, a tee or wye connection will be added to connect the new horizontal collectors to the existing solid HDPE pipe.

Vertical wells consist of a column of porous media such as TDA directly connecting to the primary leachate collection layer and perforated and solid HDPE piping terminating in a wellhead at the top of the waste mass. The wellhead assemblies are capable of measuring LFG flow rate, pressure, and qualities such as temperature, composition, and concentrations. LFG flow may be adjusted at the wellheads to actively balance gas collection from portions of the landfill which may be producing variable LFG concentrations. This allows for optimal collection and control across the landfill wellfield.

Wells are constructed at a general spacing of 200 ft from the bottom-up by excavating through a completed waste lift and backfilling the excavation with TDA. Horizontal collector pipes are installed every 20 ft vertically and pass through the vertical TDA columns, which promotes drainage and increases efficiency in moving gas through the collection system.

As installation of gas collection system components is performed on an as-needed basis, the design and permitting efforts associated with the construction and installation of new LFG system infrastructure will be performed on an as-needed basis as well.

14.1.2 LFG Collection and Control System Operation

The procedures for operating the landfill gas collection and control system during periods of startup, shutdown, and malfunction are presented in the Startup, Shutdown, and Malfunction (SSM) Plan. A copy of the plan is kept on file and updated as needed.

Operation and maintenance of the enclosed flare will be in accordance with the manufacturer's operation and maintenance manual for the system. Testing will be according to the facility's Title V permit.

14.1.3 Landfill Perimeter Monitoring

Monitoring of the landfill perimeter includes measuring the lower explosive limit (LEL) of methane at shallow gas probes and in below-grade spaces in select buildings situated near the perimeter of the waste as described in the Environmental Monitoring Plan.

The atmosphere of the building spaces will be monitored at the entrance of the building first. Once a clear atmosphere is determined, the atmosphere at the floor level and at the breathing zone will be measured. Any measurement greater than 25 percent of the LEL of methane will trigger the Emergency Response Plan.

14.1.4 Landfill Surface Monitoring

Modern will conduct quarterly surface testing as required by its current Title V Permit. The latest procedure for landfill surface monitoring is presented in the Surface Emissions Monitoring Plan (SEMP)

(June 2005) and is included in the Gas Collection and Control System (GCCS) Plan (December 2022) as Appendix D. Modern's Title V Permit requires the SEMP and the GCCS. As of the writing of this document, the procedures are summarized below. Copies of both the SEMP and GCCS are on file at the site.

Monitoring with a micro flame ionization detector (microFID) (or approved equivalent) to measure the concentration of methane in part per million (ppm) will be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover. Modern may establish an alternative traversing pattern that ensures equivalent coverage. If any reading of 500 ppm or more above background is recorded, the remedial actions will be taken in accordance with the provisions of the approved current Title V permit.

15) ENVIRONMENTAL MONITORING PLAN

An Environmental Monitoring Plan (EMP) under separate cover describes the routine environmental monitoring and sampling at the landfill. The monitoring program includes groundwater, surface water, leachate, LFG, and condensate media. Sampling protocol for the various media and data quality objectives are described in the site analytical plan within the EMP.

16) RECORDKEEPING AND REPORTING

16.1 Recordkeeping

Modern maintains records of operation, inspections, and maintenance activities at the landfill. Records will be kept in hard copy or electronically for at least seven years from the date they were generated and may be produced upon request. Table 16-1 presents a summary of records maintained at the landfill and the frequency at which the records are generated.

Table 16-1: Recordkeeping Summary

Item	Frequency
Log of solid waste received including waste type, quantity, origin, hauler, and date received	Daily
Quantities of AOC and BUD materials	Daily
Special waste profile information and approvals	As necessary
Random incoming waste load inspection log	Weekly
Record of the location and elevation of each day's operation at the working face	Daily
Record of unauthorized wastes received and their final disposition	As necessary
Record of routine self-inspections	Weekly
NYSDEC facility inspections	Weekly, as necessary
Record of asbestos waste disposal locations	As necessary
Record of surface emission monitoring results	Quarterly, or as necessary
Environmental monitoring data	Quarterly, or as necessary
Petroleum bulk storage inspections	Monthly

Item	Frequency
Permits and supporting information	As necessary
Radioactive waste detection program	Daily, weekly, annually, as necessary
Record of running hours for landfill equipment	Daily
Complaint log	As necessary
Equipment maintenance activities performed	Daily, or as necessary
Record documentation reports and drawings for construction activities	As necessary
Record of fuel usage	Daily
Record of leachate loads hauled to local POTWs	Daily
Record of leachate pumped to storage tank	Daily
Record of leachate tank cleaning and inspection	Biannually
Aerial topographic survey	Annually
Inspections of safety equipment, first aid kits, etc.	Annually, or as necessary
Employee training records	As necessary
Annual and quarterly reports	Annually, quarterly, respectively
Closure and post-closure inspections	As described in Section 18

Note:
1) Table 10-1 presents other leachate management system-related inspections and associated records

Sample inspection logs and other required forms are presented in Appendix D. Forms related to the environmental monitoring program are included in the facility's EMP. Forms related to the stormwater management and inspection program are provided in the facility's SWPPP. Additional forms may be used as deemed appropriate. Some recordkeeping is also performed electronically through data spreadsheets or other computer data entry.

16.2 Reporting

Modern Landfill must submit quarterly and annual reports to the NYSDEC each calendar year on forms prescribed by the Department. The annual report must be submitted no later than March 1st for the previous calendar year. Quarterly reports will, at a minimum, contain water quality monitoring results in accordance with 6 NYCRR Part 363-4.6(f)(10) and typically be submitted in the months of March, May, August, and November.

17) EMERGENCY RESPONSE PLAN

17.1 Emergency Contact Information

Emergency coordinators at Modern Landfill and their contact information are:

Primary Coordinator: Lori Sullivan, Landfill Manager
Phone: 716-327-8711

Secondary Coordinators: Alan Davis, VP of Post Collection Operations
Phone: 716-425-6859

Nate Duncan, Landfill Operations Supervisor
Phone: 716-531-2492

Krysta Cione, Environmental Protection Manager
Phone: 724-866-7621

Brian Woolson, Maintenance Manager
Phone: 716-535-5173

At least one emergency coordinator will be on-site or on-call during landfill hours of operation. He or she has the authority to commit the necessary resources in carrying out the provisions of this plan. The Emergency Coordinator is responsible for contacting additional support personnel (i.e., spill response team or fire department) if necessary to respond to an event. In the event of an emergency, the Emergency Coordinator will secure the area before taking appropriate action to mitigate the situation (i.e., remove combustible material, use fire extinguishers). If facility evacuation is necessary, the Emergency Coordinator will activate the alarm, direct employees to the evacuation routes, and oversee rollcalls at the assembly area(s).

Emergency events at the landfill may include fire or explosion, spills, unscheduled shutdowns of the facility and/or the gas or leachate management systems, or power failures. The Emergency Coordinator will maintain a record of incidents and follow-up actions.

17.2 Fires

The possibility of a fire, either within the landfill or a piece of equipment, is a potential hazard with the daily operation of a landfill. The most probable cause for a fire at the facility is due to a “hot load”, where waste containing combusting materials is delivered to the working face. Other causes of landfill fires include:

- Over-pulling on the LFG extraction system and increasing the oxygen levels within the waste mass;
- “Leaky” cover areas where settlement has created voids which allow air into insulated pockets of waste where decomposition heat is trapped;
- Exothermic reactions within the waste mass; and,
- Smoking (prohibited at the working face).

In the event of a fire, every effort will be made to prevent injury and minimize damage to the environment and landfill property. Portable fire extinguishers are readily available at the site and may be used to extinguish small fires. The facility’s water truck or earth-moving equipment may also be used to douse or suffocate fires, if the Emergency Coordinator deems the fire manageable. For large fires, the fire department should be contacted by calling 911.

If smoking or smoldering wastes are discovered at the working face, the material will be segregated and doused with water or covered with soil. The waste will not be landfilled until it has cooled. The waste hauler and generator will be notified.

Excessive settlement, venting of smoke through the cover soils, and elevated temperature at gas wells may be indicative of a subsurface fire. If a deep-seated fire is suspected, NYSDEC must be notified immediately. Specialized crews may need to be employed to handle a deep-seated landfill fire.

17.3 Detection of Explosive Gases

As described in the Environmental Monitoring Plan, the potential for LFG migration at Modern Landfill is minimized and likely limited to the waste mass by subsurface geologic materials, clay and slurry cut-off walls in certain areas of the site, and clay and synthetically-lined cells. Additionally, Modern maintains an active gas recovery system which is designed to create negative pressures across the landfill. While gas migration is not expected due to these reasons, it is still necessary to monitor for LFG in accordance with regulations and to protect the local environment.

Monitoring for LFG migration will be performed quarterly as described in the EMP. Evaluation of the monitoring results is described as follows:

- Twenty-five percent of the lower explosive limit (LEL) is the threshold criteria in buildings or structures (this excludes the gas control and recovery system).
- Twenty-five percent of the LEL is the threshold criteria on site and at the property boundary.

If LFG concentrations exceed these criteria during any monitoring event, the following contingency program must be followed:

- Corrective actions must be taken as soon as practicable to ensure the safety of personnel and the environment.
- The NYSDEC must be notified within 24 hours of the detection; the methane or explosive gas levels and the description of the corrective actions taken must be reported within seven days.
- A complete round of monitoring for combustible gas in on-site gas monitoring locations will be conducted weekly for one month.
- If gas concentrations are found to be consistently above the threshold criteria, a field investigation will be conducted to identify the source and extent of gas migration.
    - The field investigation will consist of the installation of hand auger borings near the wells in question and measurement for combustible gases. The field investigation should be completed within one month.
    - Upon completion of the field investigation, a report will be completed within four weeks evaluating the need for remedial measures. This report will be submitted to the NYSDEC.
    - If a remedial system is deemed necessary following acceptance by the NYSDEC, the designed system would be installed within six months, weather conditions permitting.

17.4 Unexpected Shutdown of LFG System

The SSM Plan (under separate cover) details the procedures for handling startup, shutdown, and malfunctions of the LFG system or its components. The plan includes the actions to take, details to record, and parties to notify in the case of each event (planned or unplanned). The components included in the SSM Plan are:

- Vertical collection wells;
- Horizontal collectors;
- Lateral and header piping;
- LFG mover equipment;

- LFG flare;
- Condensate/leachate sumps and traps;
- Temperature monitoring and recording equipment;
- Flare flow monitoring and recording equipment; and,
- LFG header flow control valves.

Malfunctions addressed include but are not limited to loss of power, well and pipe failures, buildup of liquid in piping, and flow or temperature monitoring devices.

17.5 Unexpected Shutdown of Leachate Management System

17.5.1 Exceedance of Secondary Leachate Collection and Removal System Flow Rate

The volume of liquid removed from the secondary leachate collection and removal system (SLCRS) can be used as an indicator of leakage from the primary liner system. As described in Section 10.3, the SLCRS is monitored daily to determine the amount of leachate collected by the system in gpad. To evaluate the integrity of the primary liner, a record of the 30-day running average of the SLCRS is kept for each isolated double-lined landfill cell.

The action leakage rate (ALR) as determined by the NYSDEC is 20 gpad. If the observed secondary leakage rate exceeds 20 gpad on a rolling 30-day average, the following actions will be taken:

1) Notify the NYSDEC in writing within 72 hours from the time of the exceedance.
2) Sample and analyze secondary leachate for baseline parameters.
3) Evaluate operational procedures to determine whether there is a potential for liner-damaging occurrences.
4) Submit to the NYSDEC a preliminary written assessment within 14 days of the determination. At a minimum, the assessment should include a description of any short-term remedial actions taken or planned, the amount of liquid observed, and the suspected cause, considering precipitation events and the possible location, size, and cause of potential leaks.
5) Investigate and determine, to the extent practicable, the location, size, and cause of the suspected leak(s).
6) Determine whether waste receipt in the cell should cease, if waste should removed from the cell, or if the cell should be closed.
7) Determine any short- or long-term actions to be taken to reduce the leakage rate.
8) Within 30 days of NYSDEC notification of the exceedance, submit to the NYSDEC results of items 2, 5, 6, and 7.
9) As long as the flow rate exceeds 20 gpad, submit a monthly summary of the results of any remedial actions taken to reduce the leakage rate to an allowable level in writing to the NYSDEC.
10) Evaluate any potential environmental impact of the leak.
11) Implement the appropriate corrective action as determined by the steps above or required by the NYSDEC.

17.5.2 Leachate Storage Tank at Capacity, Downtime, or Interruption of Leachate Disposal

A gauge in the leachate storage tank indicates the level of leachate present in the tank at any given time. Modern employs third-party haulers to remove and haul leachate on a daily basis. At the time of this writing, Modern Landfill's leachate is accepted at two local wastewater treatment plants. Generally, Modern maintains a significant amount of freeboard within the tank; however, during periods of heavy or sustained precipitation, significant snow melts, or receiving plant or hauler interruptions, the leachate tank may near full capacity. If the tank reaches its capacity, one or more of the following measures may be taken:

- Increase the number and frequency of tanker trucks hauling;
- Temporarily cease pumping from the primary leachate collection system; and
- Recirculate leachate in accordance with the procedures described in Section 10.5.

When primary leachate pumps are turned off to manage leachate flow to the storage tank, they will be restarted as soon as possible to minimize the amount of leachate buildup over the liner system. Per 6 NYCRR 363-7.1(f)(2), leachate head over the primary liner system is not to exceed one foot, except during and within a seven-day period following storm events and in designed sump areas. Should Modern be unable to reduce leachate head below one foot during the specified time frame, the NYSDEC will be notified in writing. The notification should include a description of the circumstances and an estimated schedule for resuming normal operations.

The procedures described above also apply to situations of scheduled downtime of the tank, such as during biannual inspections or repair work. If desired, leachate may be pumped directly from the landfill sumps into tanker trucks by temporarily deactivating the pumps and turning two valves on the common forcemain in the loadout building to manually divert flow away from the tank and to the loadout pad. This procedure requires personnel actively managing the pumps and overseeing leachate transfer at the loadout area.

17.6 Spills

Modern maintains a Standard Operating Procedure for responding to and reporting (if necessary) spills at the landfill. Structural measures for the control of spills include concrete, steel, or earthen containment systems in the vicinity of leachate loading facility, fuel tank areas, and maintenance areas. In addition, a supply of desiccant materials is available at the maintenance building to control and capture materials that might be spilled outside the existing structural features.

In the event of a spill, an employee should take every measure to stop, contain, and/or clean up the spill using available spill kit materials as soon and safely as possible. Attempts shall be made to prevent the spill from reaching a drain, ditch, or other waterbody. If required, mobile equipment, including earth-moving machinery and vacuum trucks owned by Modern, are available to control and recover spilled materials and clean up impacted area(s). For reportable spills, spill closure information (e.g., Modern scale ticket for used absorbents or petroleum-impacted soil) will be provided as soon as practicable to the NYSDEC.

18) CONCEPTUAL CLOSURE, POST-CLOSURE, CUSTODIAL CARE, AND END USE

To be consistent with the intent of the landfill design with respect to environmental protection, the final closure design must minimize infiltration, control erosion, safely collect or vent LFG, and properly route stormwater drainage. In addition, the closure maintenance program must allow for adequate final cover inspection and repair, as well as manage stormwater, LFG, and leachate as necessary.

Prior to final closure of the site at the completion of landfilling, a closure investigation will be conducted. The investigation will consist of an explosive gas survey around the perimeter of the landfill and in any structures on the landfill property, a surface leachate investigation, and a vector investigation. The results of this investigation will be compiled and presented in a closure investigation report submitted to the NYSDEC for review and approval.

This section contains a brief overview of each of the landfill's existing and proposed environmental control systems including the leachate management system; the landfill gas management system; the stormwater management system; and the final cover system. Each of these systems will continue to operate in some capacity after closure, and as such the functionality of each system and anticipated long-term use are discussed.

18.1 Conceptual Closure Schedule

The remaining landfill capacity and expected site life is updated annually and submitted to the NYSDEC as part of the facility's annual report. The rate at which certain areas of the landfill are brought to final grade depends on actual waste receipts at the site. The primary objective of the proposed plan is to cover one area while landfilling proceeds in other sections according to the fill progression plan; that is, there is no point at which the entire landfill must be closed (i.e., closure activities will be sequential). As cells are being filled, the final cover system will be installed within five years of reaching the final design elevation in previous cells, in accordance with 6 NYCRR Part 363-9.3(a).

18.2 Final Closure

Final closure of the landfill must be completed within one year of the last waste receipt. Final closure is comprised of the following elements:

1) Placement of final cover;
2) Completion of the active gas recovery system;
3) Completion of drainage facilities and final grading to promote proper drainage;
4) Seeding of final-covered areas for establish vegetative cover; and,
5) Closure of the active gas recovery/flare system.

18.3 Final Cover

Final cover will consist of the following components in accordance with 6 NYCRR Parts 363-6.16 through 6.18, listed from bottom to top:

1) Minimum six-inch thick soil layer over the solid waste;
2) Gas venting geocomposite layer;

3) GCL (on slopes less than 25%);
4) 40-mil LLDPE textured geomembrane liner;
5) Drainage geocomposite layer (where required on steeper slopes);
6) Minimum 12-inch thick barrier protection soil layer; and,
7) At least six inches of topsoil and seasonally appropriate vegetative cover.

The peak elevation of the final cover system is 476 ft (Modern Site Datum, MSD).

18.4 LFG Control

LFG gas will be controlled by the installation of the final cover system, horizontal collectors, and vertical recovery wells. Horizontal collectors will be spaced approximately 100 ft horizontally and 20 ft vertically and sloped inward to drain into the waste mass. The vertical wells will be spaced at an approximate distribution of one per acre of final cover. They will be installed to a maximum depth no closer than 15 feet above the top of the baseliner system and consist of a column of TDA and sections of perforated and/or solid PVC pipe. Recovery wells will be connected to an active collection header directing the gas to the energy plant. Condensate generated in the LFG collection system will be drained back to the leachate collection system for treatment and disposal.

18.5 Stormwater Management

The drainage, erosion, and sedimentation control elements shown on Sheet PD-8 of the plans entitled 'Modern Landfill, Inc. Proposed Landfill Subgrade Modification" dated September 2016 (included in Appendix C) illustrate the permanent channels and other structures that will divert stormwater away from working areas, through one of the four sediment basins, and eventually off site to the regional drainage pattern. Elements of the stormwater management system are described below.

18.5.1 Perimeter Drainage Channels

Perimeter drainage channels will consist of flat-bottomed channels. Channels subject to erosive stormwater velocities will be lined with riprap to minimize erosion and maintain flow capacities. These channels will be maintained as needed to promote unimpeded flow to the sedimentation basins. The permanent landfill perimeter channels will be built along the limits of engineered embankments in a sequential manner as required by landfill operations.

18.5.2 Diversion Swales

Side-slope diversion swales will be located across portions of the interim and final cover systems. These swales consist of compacted soil ridges constructed on top of the cover system to intercept overland flow. The permanent side slope diversion swales are spaced at even intervals of approximately 100 ft horizontally to manage the overland flow and excessive velocities and contributing to erosive channelization.

The V-shaped swales will be constructed with an approximate two percent slope. The swales will be constructed using the same or similar material as the barrier protection layer. Once final cover grade is achieved, a six-inch topsoil layer will be applied to support vegetative growth.

18.5.3 Downchutes

Up to six downchute structures will be constructed as part of the final cover system. The downchutes are intended to safely convey flow from the side-slope diversion swales down the steeper side slopes to the perimeter drainage channels and ultimately the sedimentation basins.

18.5.4 Sediment Basins

The sedimentation basins will act as interim holding areas for sediment-laden runoff. Stormwater runoff entering the basins will be temporarily retained to allow particulates to settle, reducing the quantity of sediment leaving the site. Additionally, the basins control the rate at which stormwater discharges from the site to the outlying watershed. The sediment basins will be cleaned when the remaining capacity is reduced by sedimentation buildup (i.e., at or near 50 percent capacity).

18.6 Closure Maintenance

Upon final closure of a particular area of the landfill, the subject area would only require the operation of gas control systems, groundwater monitoring, surface water management, vegetation maintenance, and leachate monitoring. Leachate management would continue as necessary along with routine maintenance activities (i.e., pump repair).

18.7 Post-Closure Monitoring and Maintenance

The post-closure care period is a minimum of 30 years or as determined by the NYSDEC. During this period, regular inspections and maintenance of landfill slopes, cover system components, stormwater management infrastructure, and site access will be necessary. These activities are summarized in Table 18-1. In accordance with 6 NYCRR Part 363-9.6(a)(2), a detailed post-closure plan will be submitted to the NYSDEC for approval prior to the last receipt of waste and at least every five years during the post-closure care period.

Table 18-1: Post-Closure Care

Component	Action	Frequency
Final cover	Inspection, regrading, and slope re-stabilization	During routine visits and after major rainfalls as needed
Drainage structures	Inspection, cleaning, and repair	During routine visits and after major rainfalls as needed
Vegetation	Mowing, re-seeding, fertilization, and mulching	Semi-annually to annually, or as needed
Gas venting system	Inspection	Quarterly
Leachate collection systems	Inspection and cleaning	Weekly and semi-annually, respectively
Groundwater, surface water, and gas monitoring systems	Inspection	During scheduled monitoring visits outlined in the Environmental Monitoring Plan[1]

Note:
1) The Environmental Monitoring Plan is prepared under separate cover

The final cover system and LFG, leachate, and stormwater management systems will be inspected quarterly and after any seismic event or 5-year, 24-hour rainfall event. Groundwater monitoring wells, perimeter fencing, and site roads will also be inspected quarterly. After the first five years of the post-closure period, the inspection frequency may be reduced as approved by the NYSDEC.

Records of inspections will be maintained on file at the site for a minimum of seven years from the date the inspections are completed. Summaries of the inspection (as well as maintenance activities) will be included in the facility's annual report.

Maintenance activities will include both routine and as-needed maintenance of the final cover system and remaining facility components. Spot repairs of top soil and barrier protection soil may be needed if visual indicators such as cracks, subsidence, and ponding water are observed during site inspections. Routine maintenance of the leachate collection system will consist of annual flushing of system pipes to identify clogged and/or failed pipes.

18.8 Closure and Post-Closure Costs

Closure and post-closure cost estimates have been prepared and updated annually to reflect changing conditions at the site and to account for inflation. The breakdown of closure and post-closure costs is provided in the facility's annual report each year. The facility maintains financial assurance in the amount calculated in each updated estimate. Should significant changes occur which would affect the required maintenance and monitoring activities at the end of the active life of the landfill, the estimates will be updated accordingly and financial assurance obtained as necessary. A copy of the 2022 closure cost included with the facility's annual report is included in Appendix E.

18.9 Custodial Care

It is anticipated that after 30 years of post-closure care, the landfill will be functionally stable and will not present a threat to human health and the environment at the point of exposure. This is based on experience of the industry, and the functional lifetime of the critical components (e.g., geomembrane cap) of the landfill which will extend well beyond the 30-years.

Additionally, the landfill systems will be monitored and managed by Modern with a goal to cease maintenance at the end of the 30-year period. More specifically, it is anticipated that the following systems will be functionally stable and ceasing maintenance will not impact human health and the environment at potential points of exposure:

- leachate collection system;
- LFG monitoring system;
- groundwater monitoring system; and
- the cover system.

At the end of the post-closure period, potential impacts to human health and the environment will be assessed considering leachate quality and quantity, gas composition and production, cover integrity, and groundwater quality. Additionally, potential impacts to human health and the environment will be assessed in the context of the proposed end-use for the facility.

It is anticipated that this justification will be able to be made based on the 30 years of historical monitoring that has occurred at the site in the period after closure. Analysis of this monitoring will be

submitted as part of the justification. This evaluation will consider groundwater quality, LFG emissions, leachate management, settlement, vegetation cover, surface water, and the end use of the landfill. Should continued care beyond the anticipated 30-year post-closure period be necessary, Modern is committed to working with the NYSDEC to actively maintain the site in a manner that appropriately mitigates impacts to human health or the environment.

18.10 Conceptual End Use

Modern Landfill will become open green space habitable for local wildlife upon final closure. Modern may also install solar arrays in select areas of the closed landfill. These end uses are unlikely to compromise the integrity of the final cover system or impact the environmental monitoring or control systems. The final site grades have been selected to provide accessibility to monitoring points during the post-closure period and beyond.

APPENDIX A

Industrial and Special Waste Profile Forms

47-19-7 (10/86) - Text 12
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE • BUREAU OF HAZARDOUS WASTE OPERATIONS
50 WOLF ROAD, ALBANY, NEW YORK 12233-4017

FOR STATE USE ONLY		
SITE NO. 32S30	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

APPLICATION FOR TREATMENT OR DISPOSAL OF AN INDUSTRIAL WASTE STREAM

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

1. NAME OF PROJECT/FACILITY MODERN LANDFILL, INC.	2. COUNTY NIAGARA	3. SITE NUMBER 32S30
4. NAME OF OWNER RICHARD WASHUTA	5. ADDRESS (Street, City, State, Zip Code) 4746 Model City Road, Model City, NY 14107	6. TELEPHONE NO. (716) 754-8226
6. NAME OF OPERATOR RICHARD WASHUTA	8. ADDRESS (Street, City, State, Zip Code) Pletcher & Harold Road, Model City, NY 14107	9. TELEPHONE NO. (716) 754-8226

10. METHOD OF TREATMENT OR DISPOSAL

SANITARY LANDFILL - D90

11. COMPANY GENERATING WASTE	12. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code)

13. REPRESENTATIVE OF WASTE GENERATOR	14. MAILING ADDRESS OF REPRESENTATIVE	15. TELEPHONE NO.

16. DESCRIPTION OF PROCESS PRODUCING WASTE:

17. EXPECTED ANNUAL WASTE PRODUCTION	18. WASTE HAULED IN ☐ Drums ☐ Bulk Tank ☐ Roll-Off Container ☐ Other

19. WASTE COMPOSITION 19A. Average Percent Solids	19b. Physical State ☐ Liquid ☐ Slurry ☐ Sludge ☐ Solid ☐ Contained Gas	19c. pH Range to

19d. COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	ppm
1)					
2)					
3)					
4)					

20. IS AN ANALYSIS OF WASTE ATTACHED? ☐ YES ☐ NO	21. WAS A TCLP TEST CONDUCTED ON THE WASTE? ☐ Yes ☐ No If "yes",	22. **MATERIAL IS:** ☐ **Hazardous** ☒ **Non-Hazardous**

23. DETAIL ALL HAZARD AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

24. WHERE WAS MATERIAL DISPOSED OF PREVIOUSLY?

25. NAME OF WASTE TRANSPORTER	26. ADDRESS (Street, City, State, Zip Code)	27. NYSDEC PERMIT No.	28. TELEPHONE NO.

29. CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR	DATE
b. SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY	DATE

MODERN LANDFILL, INC
PO BOX 209
MODEL CITY, NY 14107

GENERATOR WASTE CHARACTERIZATION REPORT

INSTRUCTIONS: Please complete all sections of this report as a fillable pdf or in blue or black ink. Return the completed report, the analytical data report (if required), and the Application for Disposal of an Industrial Waste Stream (47-19-7 form) to Modern. A separate form is required for each waste stream.

GENERATOR INFORMATION:

Generator Name: _____

Generating Facility Address: _____

Technical Contact: _____ Phone: _____ Email: _____

Alternate Contact: _____ Phone: _____ Email: _____

INVOICING INFORMATION: ☐ Same as generator

Contracting Firm: _____

Contact: _____ Phone: _____ Email: _____

Do you have an existing account with Modern Landfill? ☐ Yes ☐ No

Billing Address: _____

TRANSPORTER INFORMATION:

Hauler Name: _____ NYSDEC Permit No: _____

Contact: _____ Phone: _____ Email: _____

If Modern is not hauling, is Modern Landfill on your Transporter Permit? ☐ Yes ☐ No

WASTE INFORMATION:

Common name of waste: _____

State waste code(s) if applicable: _____

Description of process generating this waste: _____

_____

One-time disposal or recurring? ☐ One-time ☐ Recurring

Is this waste hazardous under US EPA 40 CFR 261 & 6 NY-CRR Part 371.1 (d)? ☐ Yes ☐ No

Is this waste radioactive under US EPA 40 CFR 191.12? ☐ Yes ☐ No

WASTE CHARACTERISTICS:

Is the waste less than 20% solids?*	☐ Yes	☐ No	Does the waste contain free liquids?*	☐ Yes	☐ No
Is the flashpoint at least 140°F?	☐ Yes	☐ No	Is the pH between 2 and 12.5?	☐ Yes	☐ No
Is the waste reactive (CN^-/S^{2-}?)	☐ Yes	☐ No	Does the waste contain ≥50 ppm PCBs?	☐ Yes	☐ No

** If the answer to either of these questions is "yes", you must also complete a Waste Solidification Profile.*

Color(s): _____ Odor: ☐ None ☐ Mild ☐ Strong

GENERATOR CERTIFICATION:

I. I certify that this profile and any attachment(s) accurately represent all components of the waste stream and that the information contained herein is true and complete, to the best of my knowledge:

☐ Yes ☐ No

II. I certify that the waste represented by this profile is not a listed hazardous waste, does not contain a listed hazardous waste, and does not exhibit any characteristics of a hazardous waste as defined by 40 CFR 261:

☐ Yes ☐ No

III. I understand that it is my responsibility as the Generator (or its authorized agent) to make this hazardous waste determination in accordance with 40 CFR 262.11. If at any time upon receipt by Modern the material deviates from the components or characteristics certified herein, Modern reserves the right to reject such waste until the waste stream conforms to this profile, or to require completion of a new waste profile appropriately characterizing the waste:

☐ Yes ☐ No

Printed Name: _____

Title: _____

Company: _____

Signature: _____

Date: _____

Modern Landfill, Inc.

THIRD PARTY AUTHORIZATION FORM

FOR SPECIAL WASTE DISPOSAL

Date: _____

Note: This Authorization is only valid for 3 years from the above date.

To Whom It May Concern:

Please be advised that _____ has been appointed to work as our agent for the purpose of managing waste materials that we may generate and is hereby authorized to:

- ☐ Complete and sign Special Waste Profile forms
- ☐ Complete and sign Special Waste Profile recertification forms
- ☐ Amend Special Waste Profile(s), if necessary
- ☐ Sign Contracts to dispose and/or transport material
- ☐ Sign certifications necessary to comply with landfill requirements
- ☐ Sign manifests to initiate shipment to disposal facilities

Name of Third-Party Authorized Agent:	Title:
Name of Company:	Telephone Number:

Our authorized agent will notify us prior to any action stated above and will provide us with copies of any documents bearing our name.

Name of Generator Company:	Mailing Address:
Generator Contact (Print Name):	Title:
Signature:	Telephone Number:

Modern Landfill, Inc.

WASTE SOLIDIFICATION PROFILE

Generator Name: _____

Facility Address: _____

Technical Contact: _____ **Phone:** _____

Alternate Contact: _____ **Phone:** _____

Waste Information *(please attach additional sheets if necessary)*

Common name of waste: _____

Description of process generating this waste: _____

_____

Waste Constituents	Percentage of Waste

Waste Phase	Percentage of Waste
Solid	
Sludge	
Liquid	
Other	

Is the waste layered? ☐ Yes ☐ No

If yes, how many layers? __ / Not applicable

Describe the layers, constituents, and phases:

_____

_____

_____

_____

IS THIS WASTE	YES	NO
A characteristic hazardous waste?	☐	☐
A listed hazardous waste?	☐	☐
Hazardous under US EPA Guidelines & 6NYCRR Part 371 (d)?	☐	☐
A medical/biological waste?	☐	☐
An etiological waste?	☐	☐
PCB contaminated?	☐	☐
Radioactive?	☐	☐
Sewage/septic?	☐	☐

	YES	NO
Is a TCLP analysis attached?	☐	☐
Was the analysis completed by a NYSDOH-certified lab?	☐	☐
Are Safety Data Sheets attached?	☐	☐

Certification

I certify that the information contained within this Waste Profile, including all attached information, is complete, factual, and is an accurate representation of any known or suspected hazards.

Signature: _____ **Title:** _____

Printed Name: _____ **Company:** _____

Date: _____

ASBESTOS CERTIFICATION

Instructions: Complete one form for each physical location for projects involving **friable** and **non-friable** asbestos.

Contractor Name: _____

Generating/Project Location: _____

Customer Name: _____

Contact Name: _____ Phone # _____

Waste Profile # _____

1 What type of structure is the Generating Location? (Check one)

[ ] Structures at a single demolition or renovation site that are under the control of the same owner or operator (including residential homes/multi-family apartments, institutions, schools, hospitals, government centers)

[ ] Commercial/ Business Facility (stores, offices, restaurants, warehouses)

Has an "Asbestos Survey" been completed prior to all Construction, Demolition, or Renovation activities identifying all asbestos containing materials contained within the structure?

[ ] **YES**

[ ] **NO** – please explain:

_____

_____

2 Was greater than 1% Asbestos Containing Material (ACM) identified within this structure?

[ ] **YES** [ ] **NO** (if no waste is considered C&D, questionnaire is complete. Refer to NYS Part 360 regulations for C&D debris definition)

2A Is the ACM friable asbestos? [ ] **YES (RACM)** [ ] **NO**

3 Is the ACM non-friable asbestos? [ ] **YES** [ ] **NO**

3A. If there is Category I non-friable ACM (gaskets, flooring, asphalt roofing), will it be cut, grinded, sanded or otherwise rendered friable in the course of renovation or demolition [ ] **YES (RACM)** [ ] **NO**

3B. If there is Category II non-friable ACM, will it be crumbles, pulverized or reduced to powder during the project? [ ] **YES** [ ] **NO**

4 Will project/waste profile include more than the NESHAP threshold of RACM (>260 linear ft on pipe or >160 sq. ft other facility components) [ ] **NO** [ ] **YES** (waste shipment required with shipments)

As generator, I hereby certify the information provided to be complete and accurate and to the best of my knowledge. If I am agent signing on behalf of the generator, I have completed the third party form and have certified that conditions noted in the document are accurate and complete.

Name (Print) Signature

Title Company

MODERN

4746 Model City Road, P.O. Box 209, Model City, NY 14107-0209

716-754-8226 1-800-662-0012 Fax: 716-754-8964

MODERN Landfill NON-HAZARDOUS WASTE & ASBESTOS WASTE SHIPMENT RECORDS

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

0016200

Section I GENERATOR (Generator completes Section I, a-q)

a: Generator's US EPA ID Number:	**b: Manifest Document Number:** 0016200
c: Generator's Name and Location: **d: Generators Phone:**	**e: Generator's Mailing Address:** **f: Phone:**
If owner of the generating facility differs from the generator, provide: **g. Owner's Name:**	**h. Owner's Phone:**

i. Waste Profile #:	j. Exp. Date	k. Waste Shipping Name and Description	l. Containers No.	l. Containers Type	m. Total Quantity	n. Unit Wt/Vol

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

o. Generator Authorized Agent Name (Print)	**p. Signature**	**q. Date**

Section II TRANSPORTER (Generator completes Sec. II, a-b; Transporter completes Sec. II, c-e)

a: Transporter's Name and Address:

b: Phone:

c. Transporter Authorized Agent Name (Print)	**d. Signature**	**e. Date**

Section III DESTINATION (Generator completes Sec. III, a-c; Destination Site completes Sec. III, d-g)

a: Disposal Facility and Site Address: **b: Phone:**	**c: US EPA Number**	**d: Discrepancy Indication Space:**

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

e: Authorized Agent Name (Print)	**f. Signature**	**q. Date**

Section IV ASBESTOS (Generator completes Sec. IV, a-d; Operator completes Sec. IV, e-g)

a: Operator's Name and Address: **b: Phone:**	**c: Special Handling Instructions and Additional Information:**
d: Friable, Non-Friable or Both:	**e: Percentage Friable/NonFriable:** 100% Friable

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

e. Operator's Name and Title (Print)	**f. Signature**	**g. Date**

*Operator refers to the company which owns, leases, operates, controls or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

DESTINATION RETURN

APPENDIX B

Incoming Waste Inspection Forms

Modern Landfill

Radiation Monitor Alarm Record

This form must be completed and submitted to the Waste Approvals Manager and Landfill Operations Supervisor if the radiation detector alarm sounds.

Date: _____ **Time:** _____

Hauler: _____ **Part 364 permit no.:** _____

Truck no.: _____ **Trailer no.:** _____ **License plate:** _____

Driver: _____

Waste origin (generating facility): _____

Material hauled: _____

Special waste approval number (if applicable): _____

Radiation background reading: _____ (cps)

Radiation monitor reading: _____ (cps)

Scale house operator name & signature: _____

Notes: _____

Management Response

Responder name & signature: _____

Observations: _____

_____

Resolution date: _____ **NYSDEC notified?** Y N

Additional pages attached? Y N

Revised April 2023

Modern Landfill

Weekly Random Load Inspection Form

This form must be completed and filed at least once per week during a random waste load inspection.

Date: _____ **Time:** _____

Hauler: _____ **Part 364 permit no.:** _____

Truck no.: _____ **Trailer no.:** _____ **License plate:** _____

Driver: _____

Waste origin (generating facility): _____

Special waste approval number (if applicable): _____

Description of waste: _____

_____

Quantity & type of waste: _____

ARE ANY OF THE FOLLOWING PRESENT IN THIS LOAD?

Identifiable hazardous waste	Y	N
Bulk or free liquids	Y	N
Waste of unknown origin	Y	N
Smoldering or burning waste	Y	N
Waste different from ID by generator	Y	N
Unapproved ind/comm waste	Y	N

If the answer to any of these questions is YES, refer to the "Unauthorized Wastes" section of the Facility Manual and send a copy of this completed form and any supporting documentation to the Waste Approvals Manager. You must also complete and submit an Unauthorized Waste Receipt Record form to the Waste Approvals Manager and Landfill Operations Supervisor.

Name & signature: _____

Modern Landfill

Unauthorized Waste Receipt Record

This form must be completed and submitted to the Waste Approvals Manager and Landfill Operations Supervisor if unauthorized waste is received at the landfill.

Date: _____ **Time:** _____

Hauler: _____ **Part 364 permit no.:** _____

Truck no.: _____ **Trailer no.:** _____ **License plate:** _____

Waste origin (generating facility): _____

Special waste approval number (if applicable): _____

Material hauled: _____

Description of unauthorized waste: _____

_____

_____

_____

Waste load returned to generator? Y N

Comments: _____

_____

Name & signature: _____

Modern Landfill

Drummed Waste Inspection Form

This form must be completed and filed whenever drummed waste is received at the facility.

Date: _____ **Time:** _____

Hauler: _____ **Part 364 permit no.:** _____

Waste origin (generating facility): _____

Special waste approval number (if applicable): _____

Description of waste: _____

_____

Quantity & type of waste: _____

ARE ANY OF THE FOLLOWING PRESENT IN THIS LOAD?

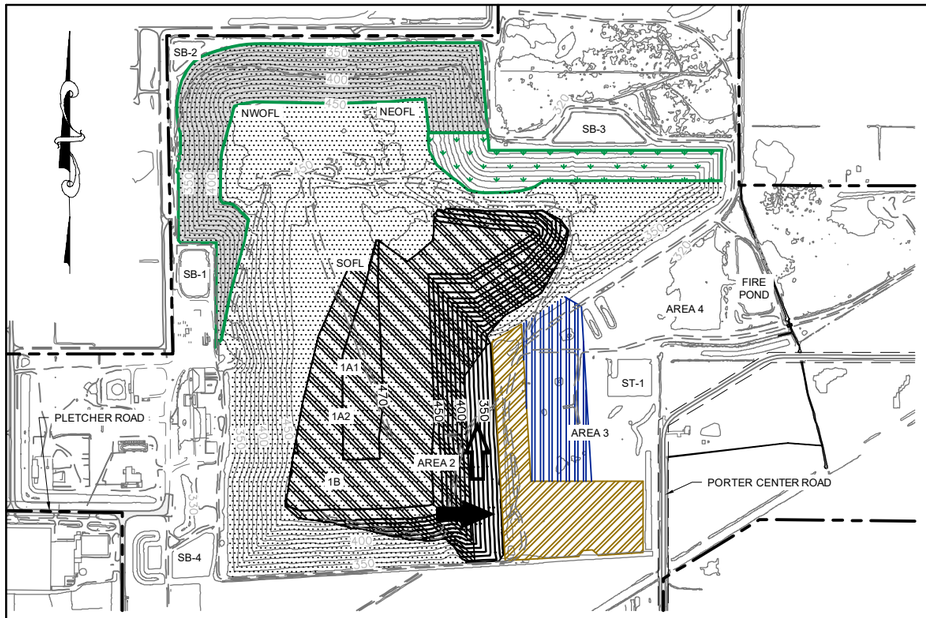
Identifiable hazardous waste	Y	N	
Bulk or free liquids*	Y	N	**Only mimimal liquids generated from separation during transport shall be acceptable*
Waste of unknown origin	Y	N	
Smoldering or burning waste	Y	N	
Waste different from ID by generator	Y	N	
Unapproved ind/comm waste	Y	N	

If the answer to any of these questions is YES (except for wastes containing bulk or free liquids approved for solidification), refer to the "Unauthorized Wastes" section of the Facility Manual and send a copy of this completed form and any supporting documentation to the Waste Approvals Manager. You must also complete and submit an Unauthorized Waste Receipt Record form to the Waste Approvals Manager and Landfill Operations Supervisor.

Name & signature: _____

APPENDIX C

Fill Progression Plans



STAGE 6: SECTION IV AREA 2

1

SCALE: 1" = 500'

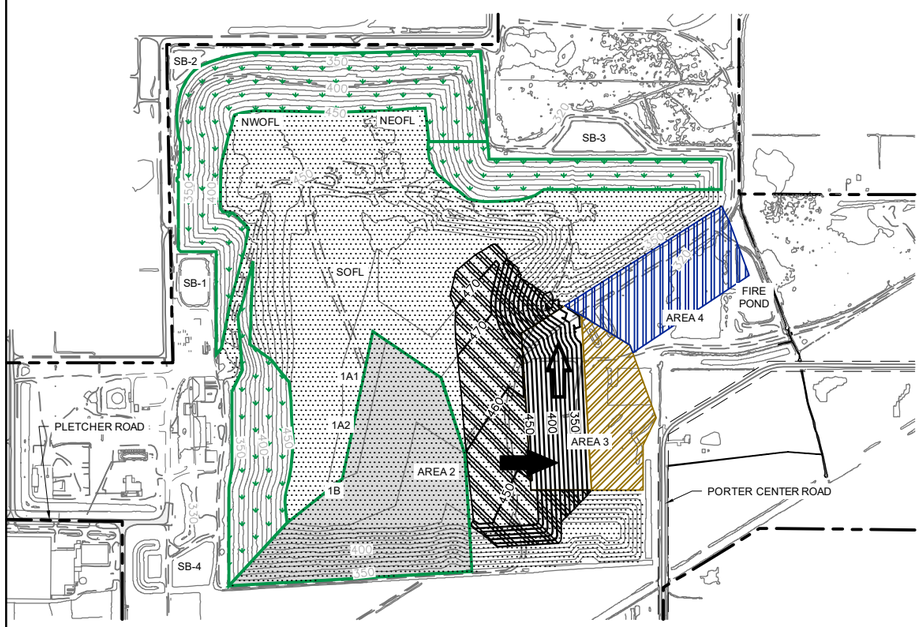
NET WASTE VOLUME:	±1,940,200 CY
ESTIMATED SITE LIFE:	±1.9 YEARS
ESTIMATED END DATE:	NOVEMBER 2024

STAGE 7: SECTION IV AREA 3A

2

SCALE: 1" = 500'

NET WASTE VOLUME:	±2,281,000 CY
ESTIMATED SITE LIFE:	±2.3 YEARS
ESTIMATED END DATE:	FEBRUARY 2027

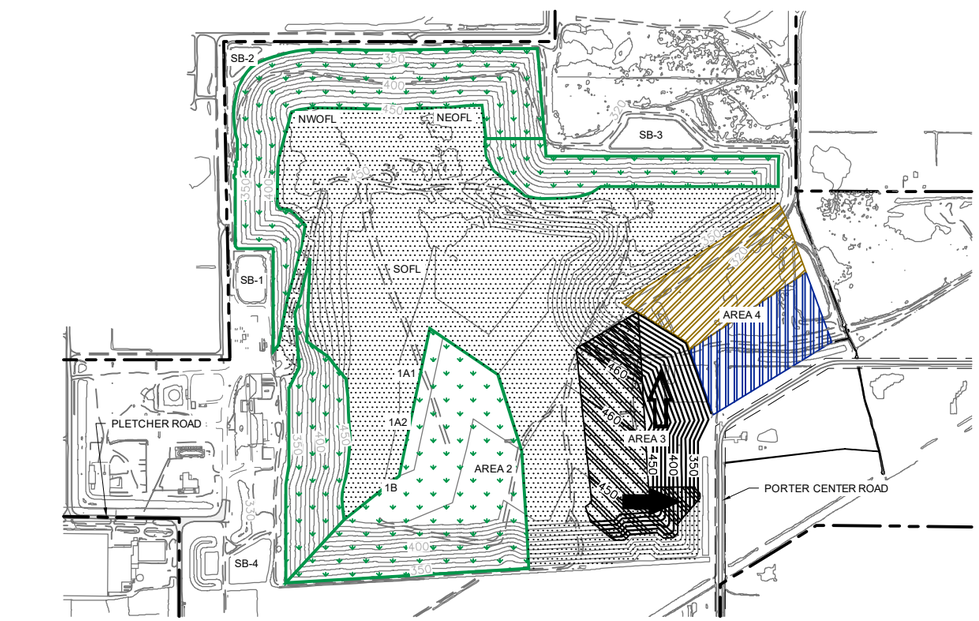


STAGE 8: SECTION IV AREA 3B

3

SCALE: 1" = 500'

NET WASTE VOLUME:	±2,559,900 CY
ESTIMATED SITE LIFE:	±2.6 YEARS
ESTIMATED END DATE:	SEPTEMBER 2029

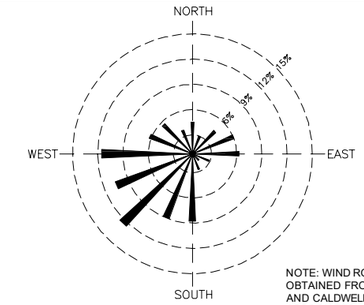


STAGE 9: SECTION IV AREA 3C

4

SCALE: 1" = 500'

NET WASTE VOLUME:	±2,200,000 CY
ESTIMATED SITE LIFE:	±2.0 YEARS
ESTIMATED END DATE:	JANUARY 2032



WIND ROSE

NOTE: WIND ROSE OBTAINED FROM BROWN AND CALDWELL ASSOCIATES. DATED: JULY 2003

NOTES:

1. THE BASE MAP WAS PROVIDED TO SANBORN HEAD ENGINEERING, P.C. (SANBORN HEAD) BY MODERN LANDFILL, INC. (MODERN) OF MODEL CITY, NEW YORK IN A DIGITAL FILE TITLED "ACAD-MODERN_LOCAL GRIDv2010.dwg" ON OCTOBER 16, 2019.
2. THE EXISTING CONTOURS WERE PROVIDED TO SANBORN HEAD BY MODERN IN A DIGITAL FILE TITLED "modern landfill surface v2 20220412.xml" ON APRIL 21, 2022.

2.1. THE EXISTING TOP OF FILL CONTOURS (WITHIN LANDFILL FOOTPRINT) WERE PROVIDED TO SANBORN HEAD BY MODERN IN A DIGITAL FILE TITLED "052-A0001-D02-2B2 FILLING PLAN-R0.dwg" ON DECEMBER 16, 2021.

2.1.1. THIS DIGITAL FILE WAS CREATED BY ENSOL AND THE EXISTING TOP OF FILL CONTOURS WERE OBTAINED BY LOWERING EXISTING TOPOGRAPHY (05-07-21) 1.5' AND COMBINING WITH THE DESIGN 1A3 TOP OF WASTE SURFACE. SANBORN HEAD MODIFIED THE SURFACE PROVIDED BY ENSOL BY COMBINING IT WITH THE DESIGN 2B2 TOP OF WASTE SURFACE PROVIDED BY ENSOL.

2.1.2. PROPOSED FILL GRADES SHOULD BE CONSIDERED APPROXIMATE.

HORIZONTAL DATUM: MODERN SITE SPECIFIC
VERTICAL DATUM: MODERN SITE SPECIFIC*

*SUBTRACT 2.49 FEET FROM MODERN SITE SPECIFIC ELEVATIONS FOR VERTICAL TRANSLATION TO NAVD88

LEGEND:

450	10-FOOT TOP OF WASTE ELEVATION CONTOUR IN ACTIVE FILL AREA
	INTERIM COVER RECOVERED
	INTERIM COVER
	BORROW AREA
	LINER CONSTRUCTION
	FINAL COVER
	PROPOSED CAPPING AREA
	DIRECTION OF INITIAL FILL PLACEMENT
	DIRECTION OF SUBSEQUENT FILL PLACEMENT
SB-5	EXISTING SEDIMENT BASIN DESIGNATION
ST-1	EXISTING SEDIMENT TRAP DESIGNATION
	ACCESS ROAD

WASTE VOLUMES AND SITE LIFE ESTIMATE

STAGE NO.	DESCRIPTION	APPROXIMATE NET WASTE VOLUME (CY)	LINER CONSTRUCTION AREA (ACRES)	ESTIMATED LIFE (YEARS)
6	SECTION IV AREA 2	1,940,200	COMPLETE	1.9
7	SECTION IV AREA 3A	2,281,000	15.0	2.3
8	SECTION IV AREA 3B	2,559,900	10.5	2.6
9	SECTION IV AREA 3C	2,200,000	8.9	2.0

1. THE REMAINING WASTE VOLUME FOR STAGE 6 IS BASED ON AN AERIAL SURVEY PERFORMED ON APRIL 12, 2023.
2. THE ESTIMATED LIFE OF EACH STAGE IS GENERALLY BASED ON A WASTE ACCEPTANCE RATE OF 1,000,000 TONS PER YEAR, AN IN-PLACE WASTE DENSITY OF 1.0 TON PER CUBIC YARD, AND WASTE VOLUME REDUCTIONS ASSOCIATED WITH SELECT WASTE AND THE FIRST LIFT.

SANBORN HEAD

SANBORN, HEAD ENGINEERING, P.C.

GRAPHICAL SCALE
500' 250' 0 500' 1,000'

NO.	DATE	DESCRIPTION	BY

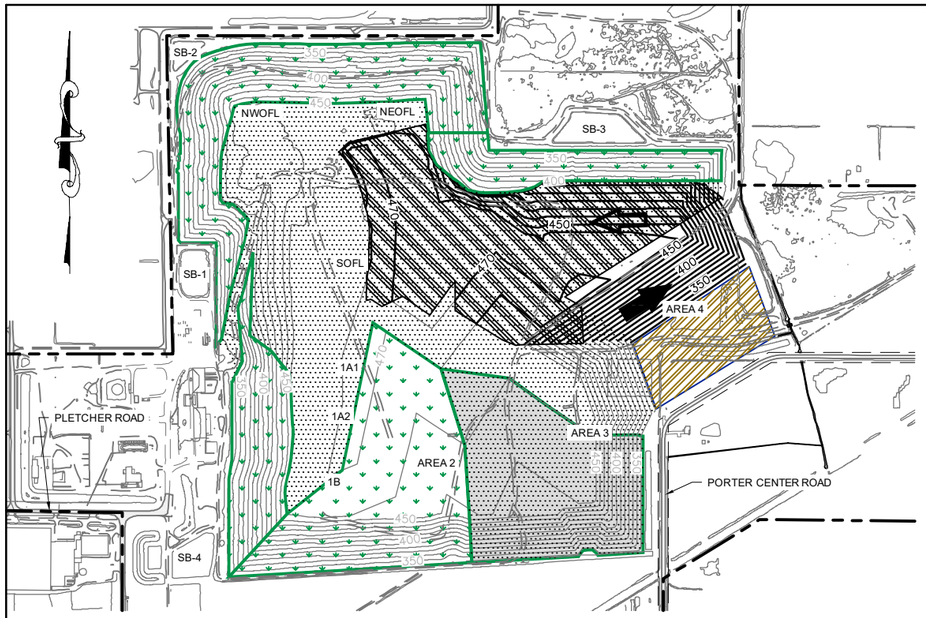
DRAWN BY: J. SHERIDAN
DESIGNED BY: J. GRACE
REVIEWED BY: R. ST. MICHEL / J. GRACE
PROJECT MGR: R. ST. MICHEL
PIC: B. BEAUDOIN
DATE: APRIL 2023

LANDFILL FILLING PROGRESSION
MODERN LANDFILL, INC.
TOWN OF LEWISTON, NIAGARA COUNTY, NEW YORK

LANDFILL FILLING PROGRESSION
STAGES 6 THROUGH 9

PROJECT NUMBER: 4684.00

FIGURE NUMBER: 1 OF 2

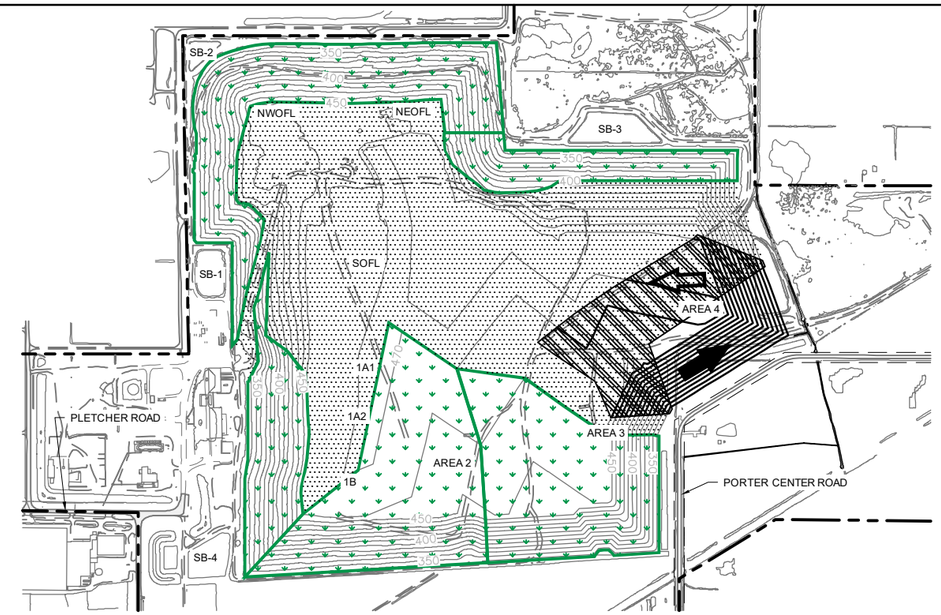


STAGE 10: SECTION IV AREA 4A

1

SCALE: 1" = 500'

NET WASTE VOLUME:	±3,645,500 CY
ESTIMATED SITE LIFE:	±3.4 YEARS
ESTIMATED END DATE:	AUGUST 2035

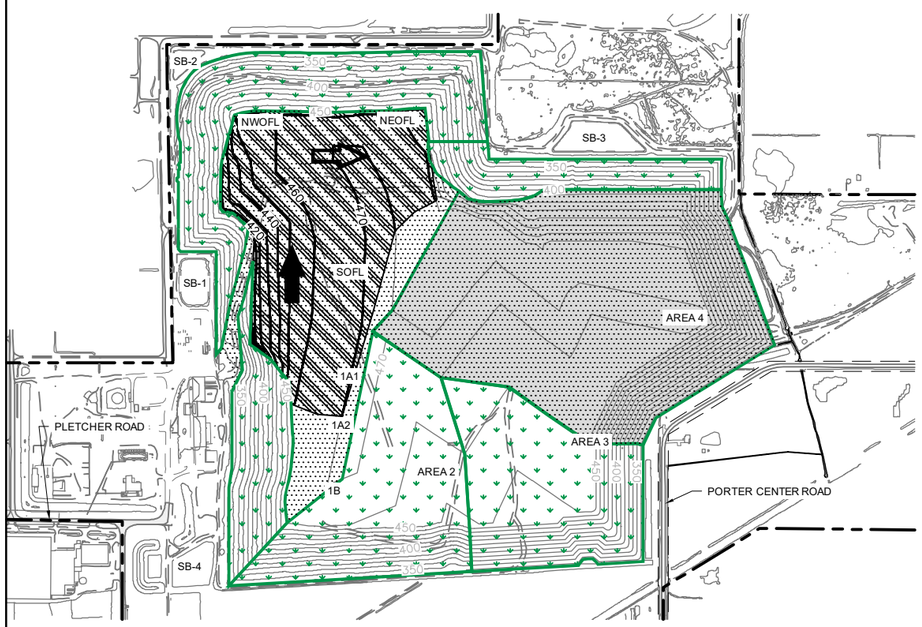


STAGE 11: SECTION IV AREA 4B

2

SCALE: 1" = 500'

NET WASTE VOLUME:	±2,716,900 CY
ESTIMATED SITE LIFE:	±2.5 YEARS
ESTIMATED END DATE:	FEBRUARY 2038

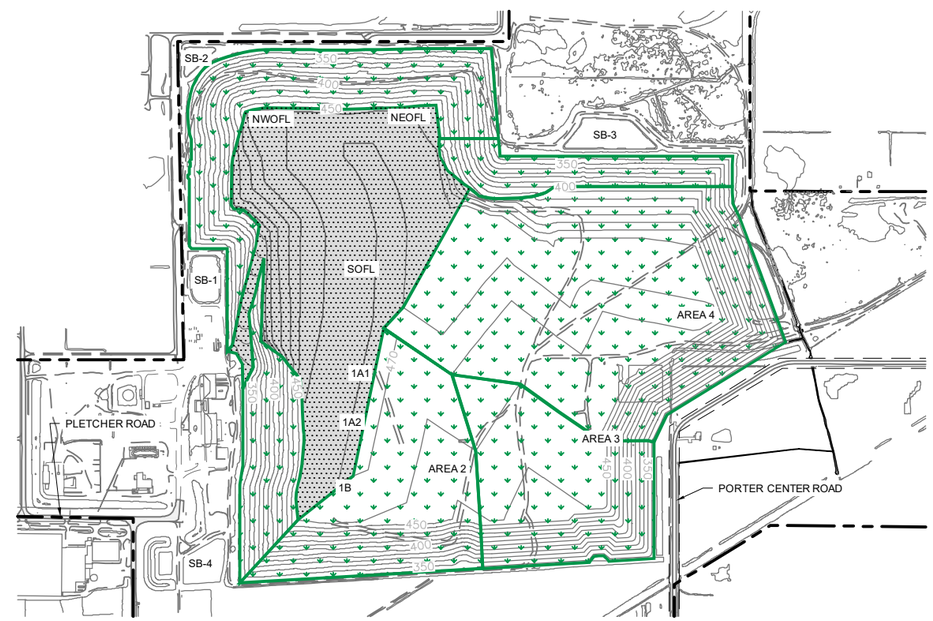


STAGE 12: NORTH FILL BUILDOUT

3

SCALE: 1" = 500'

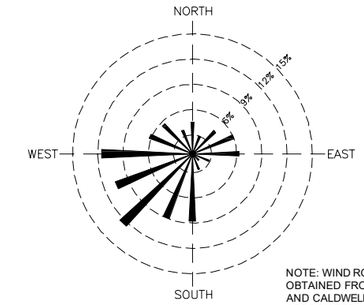
NET WASTE VOLUME:	±189,700 CY
ESTIMATED SITE LIFE:	±0.2 YEARS
ESTIMATED END DATE:	APRIL 2038



STAGE 13: NORTH FILL CAPPING

4

SCALE: 1" = 500'



WIND ROSE

NOTE: WIND ROSE OBTAINED FROM BROWN AND CALDWELL ASSOCIATES. DATED: JULY 2003

NOTES:

1. SEE FIGURE 1 FOR ADDITIONAL NOTES AND LEGEND INFORMATION.

450	10-FOOT TOP OF WASTE ELEVATION CONTOUR IN ACTIVE FILL AREA
	INTERIM COVER RECOVERED
	INTERIM COVER
	BORROW AREA
	LINER CONSTRUCTION
	FINAL COVER
	PROPOSED CAPPING AREA
	DIRECTION OF INITIAL FILL PLACEMENT
	DIRECTION OF SUBSEQUENT FILL PLACEMENT
SB-5	EXISTING SEDIMENT BASIN DESIGNATION
ST-1	EXISTING SEDIMENT TRAP DESIGNATION
	ACCESS ROAD

WASTE VOLUMES AND SITE LIFE ESTIMATE

STAGE NO.	DESCRIPTION	APPROXIMATE NET WASTE VOLUME (CY)	LINER CONSTRUCTION AREA (ACRES)	ESTIMATED LIFE (YEARS)
10	SECTION IV AREA 4A	3,645,500	12.0	3.4
11	SECTION IV AREA 4B	2,716,900	9.7	2.5
12	SECTION IV NORTH FILL BUILDOUT	189,700	COMPLETE	0.2

1. THE REMAINING WASTE VOLUME FOR STAGE 6 IS BASED ON AN AERIAL SURVEY PERFORMED ON APRIL 12, 2023.
2. THE ESTIMATED LIFE OF EACH STAGE IS GENERALLY BASED ON A WASTE ACCEPTANCE RATE OF 1,000,000 TONS PER YEAR, AN IN-PLACE WASTE DENSITY OF 1.0 TON PER CUBIC YARD, AND WASTE VOLUME REDUCTIONS ASSOCIATED WITH SELECT WASTE AND THE FIRST LIFT.

SANBORN HEAD

SANBORN, HEAD ENGINEERING, P.C.

GRAPHICAL SCALE

500' 250' 0 500' 1,000'

NO.	DATE	DESCRIPTION	BY

DRAWN BY: J. SHERIDAN
DESIGNED BY: J. GRACE
REVIEWED BY: R. ST. MICHEL / J. GRACE
PROJECT MGR: R. ST. MICHEL
PIC: B. BEAUDOIN
DATE: APRIL 2023

LANDFILL FILLING PROGRESSION
MODERN LANDFILL, INC.
TOWN OF LEWISTON, NIAGARA COUNTY, NEW YORK

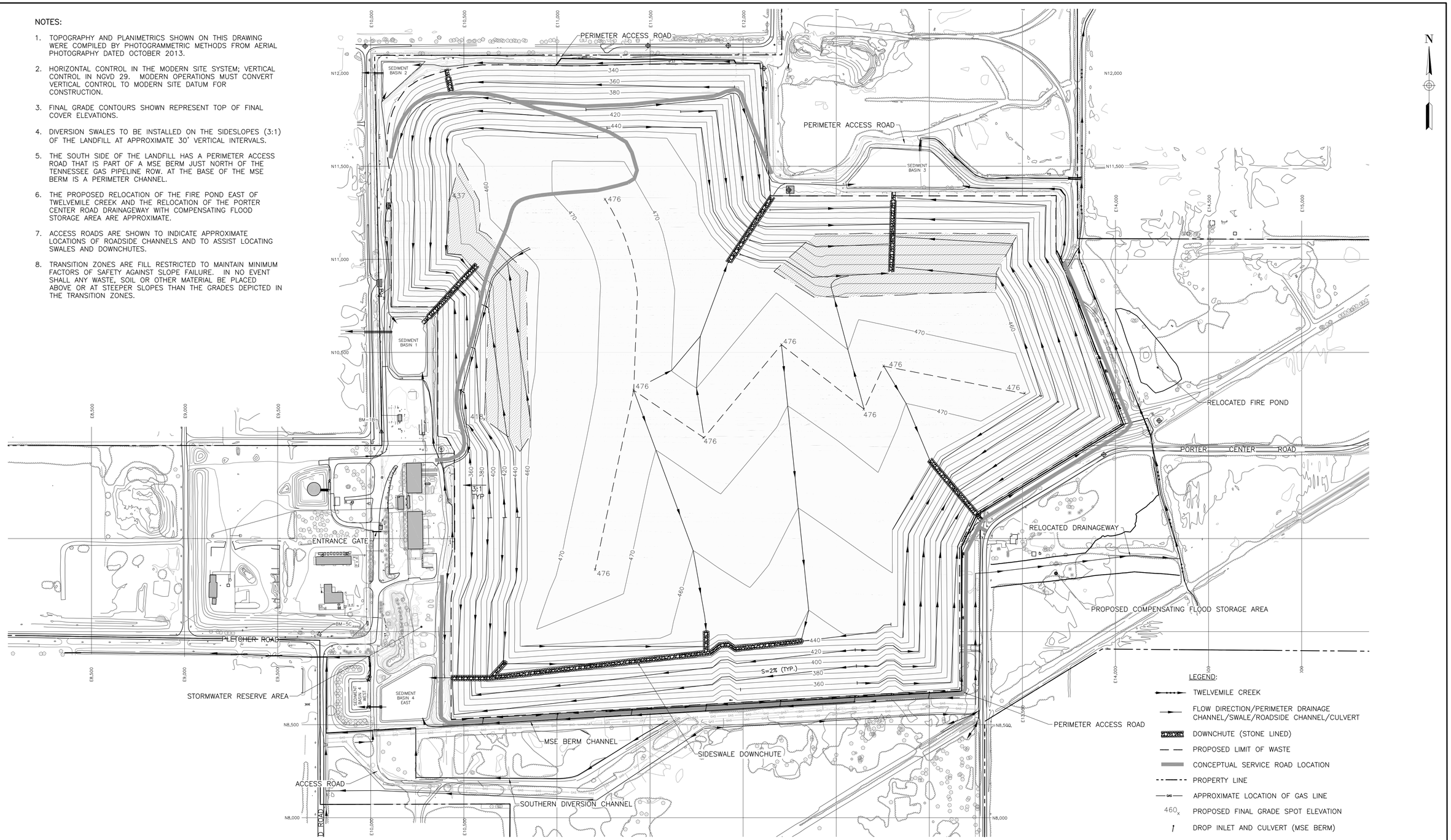
LANDFILL FILLING PROGRESSION
STAGES 10 THROUGH 13

PROJECT NUMBER: 4684.00

FIGURE NUMBER: 2 OF 2

NOTES:

1. TOPOGRAPHY AND PLANIMETRICS SHOWN ON THIS DRAWING WERE COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED OCTOBER 2013.
2. HORIZONTAL CONTROL IN THE MODERN SITE SYSTEM; VERTICAL CONTROL IN NGVD 29. MODERN OPERATIONS MUST CONVERT VERTICAL CONTROL TO MODERN SITE DATUM FOR CONSTRUCTION.
3. FINAL GRADE CONTOURS SHOWN REPRESENT TOP OF FINAL COVER ELEVATIONS.
4. DIVERSION SWALES TO BE INSTALLED ON THE SIDESLOPES (3:1) OF THE LANDFILL AT APPROXIMATE 30' VERTICAL INTERVALS.
5. THE SOUTH SIDE OF THE LANDFILL HAS A PERIMETER ACCESS ROAD THAT IS PART OF A MSE BERM JUST NORTH OF THE TENNESSEE GAS PIPELINE ROW. AT THE BASE OF THE MSE BERM IS A PERIMETER CHANNEL.
6. THE PROPOSED RELOCATION OF THE FIRE POND EAST OF TWELVEMILE CREEK AND THE RELOCATION OF THE PORTER CENTER ROAD DRAINAGEWAY WITH COMPENSATING FLOOD STORAGE AREA ARE APPROXIMATE.
7. ACCESS ROADS ARE SHOWN TO INDICATE APPROXIMATE LOCATIONS OF ROADSIDE CHANNELS AND TO ASSIST LOCATING SWALES AND DOWNCHUTES.
8. TRANSITION ZONES ARE FILL RESTRICTED TO MAINTAIN MINIMUM FACTORS OF SAFETY AGAINST SLOPE FAILURE. IN NO EVENT SHALL ANY WASTE, SOIL OR OTHER MATERIAL BE PLACED ABOVE OR AT STEEPER SLOPES THAN THE GRADES DEPICTED IN THE TRANSITION ZONES.



NO.	REVISION	BY	DATE

DAIGLER ENGINEERING, P.C.
CIVIL & GEO-ENVIRONMENTAL ENGINEERING
2620 GRAND ISLAND BLVD. (716) 773-6872
GRAND ISLAND, NEW YORK 14072 (716) 773-6873 FAX

JAMES A. DAIGLER, P.E.
NYSPE NO. 061689

DATE: September, 2016

SCALE: 1"=250'

PREPARED FOR: MODERN LANDFILL, INC.		
DES. BY:	DRW. BY:	CHK. BY:
DWG. PD-10 FINAL GRADING AND DRAINAGE PLAN REVISED NGVD 29.dwg		

FINAL GRADING AND DRAINAGE PLAN
PROPOSED LANDFILL FOOTPRINT MODIFICATION

TOWN OF LEWISTON | NIAGARA COUNTY | STATE OF NEW YORK

SHEET PD-8

Q:\Modern Landfill\01-4716 PERMIT MODIFICATION\ACAD\2016 REVISIONS\PD-8 FINAL GRADING AND DRAINAGE PLAN REVISED 2016.dwg 9/4/2016 12:11 PM

APPENDIX D

Miscellaneous Operation, Maintenance, and Inspection Forms

Modern Landfill

Complaint Log

This form must be completed and filed whenever a complaint is received at the facility. Notify the Landfill Operations Supervisor or the Environmental Protection Manager after logging a complaint.

Date: _____ **Time:** _____

Complainant: _____

Wind direction: _____ **Weather conditions:** _____

Details of complaint: _____

_____

_____

_____

Comments: _____

_____

_____

Noted by: _____

Modern Landfill Inc. **Weekly Site Inspection Form** **Section:** _____

Date: _____ Day: Su( ) M( ) Tu( ) W( ) Th( ) F( ) Sa( ) Wind: Still( ) Moderate( ) High( )

Time: _____ Weather: Br. Sun( ) Clear( ) Overcast( ) Rain ( ) Snow( ) Humidity: Dry( ) Moderate( ) Humid( )

Inspector: _____ Temperature: <32( ) 32-50( ) 50-70( ) 70-85( ) >85( )

Inspection Items	Action	Satisfactory/ Unsatisfactory	Comments	Inspection Items	Action	Satisfactory/ Unsatisfactory	Comments
1.General Site Conditions -Detectable odor -Liner -Vectors -Noise Levels	Visual Inspection			**8. Site Drainage** - Conditions of Diversion channels -Condition of Downchutes -Condition of Drainage channels -Erosion	Visual Inspection		
2. Active Disposal Area -Elevation (Approximate peak)	Visual Inspection			**9. Sedimentation Pond** -Erosion -Sideslopes -Silt Levels -Capacity	Visual Inspection		
3. Site Access	Visual Inspection			**10. Groundwater Monitoring Wells**	Visual Inspection		
4. Access and Haul Roads	Visual Inspection			**11. Equipment Storage** -Areas	Visual Inspection		
5. Vegetation and Final Cover -Bare Spots -Erosion -Settlement -Water Ponding -Protruding Objects	Visual Inspection			**12. Recyclable Materials** -Storage	Visual Inspection		
6. Daily Cover	Visual Inspection			**13. Gas Venting System** -Main Gas Vents -Perimeter Gas Vents	Visual Inspection		
7. Leachate Collection System -Condition of Sumps -Condition of Pumping equipment -Leachate Breakouts -Leak Detection at Leachate -Storage Tanks	Visual Inspection						

Description of remediation activity (if required)

Use additional Sheets if Necessary

_____

_____

_____

Stormwater Routine Site Inspection Report

General Information
Date of Inspection
Inspector's Name(s)
Type of Inspection: ❑ Regular 7-day ❑ Monthly ❑ During storm event ❑ Post-storm event
Weather Information
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: _____ Storm Duration (hrs): _____ Approximate Amount of Precipitation (in): _____ **Was flow observed from any of the detention ponds listed in the SWPPP?** ❑Yes ❑No
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature: _____

Site-specific BMPs

Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.

#	BMP/Activity	Yes or No	BMP/Activity Maintenance Required?	Corrective Action Needed and Notes
Access Roadways				
1	The access roads are in good repair? (i.e. no pavement failure, potholes, gullies)	❑Yes ❑No	❑Yes ❑No	
2	Spills or leaks are observed on the access road?	❑Yes ❑No	❑Yes ❑No	
3	Litter is observed on the access roads?	❑Yes ❑No	❑Yes ❑No	
4	Tire wash facility is in operation?	❑Yes ❑No	❑Yes ❑No	
5	Drag out from the tire wash facility is being controlled?	❑Yes ❑No	❑Yes ❑No	
Stockpiles of Cover Soils and Bud Materials on and off the Landfill				
6	Silt fence, haybales, or containment berms are properly installed around stockpiles	❑Yes ❑No	❑Yes ❑No	
7	Accumulated sediment has been removed from behind the silt fence, haybales or containment berms	❑Yes ❑No	❑Yes ❑No	
8	Is stormwater drainage diverted around the stockpile?	❑Yes ❑No	❑Yes ❑No	
9	Is the material in the stockpile contained within the stockpile area?	❑Yes ❑No	❑Yes ❑No	
Landfill Cover				
10	Are all slopes with intermediate cover and are not actively worked for 14 days been properly stabilized?	❑Yes ❑No	❑Yes ❑No	

#	BMP/Activity	Yes or No	BMP/Activity Maintenance Required?	Corrective Action Needed and Notes
11	Are landfill areas covered with 6 inches of daily cover sloped to direct stormwater back into the landfill?	❑Yes ❑No	❑Yes ❑No	
12	Are sideslope drainage swales and downchutes in good working order?	❑Yes ❑No	❑Yes ❑No	
13	Is cover vegetation in good condition?	❑Yes ❑No	❑Yes ❑No	
14	Erosions rills or sloughing are observed in the landfill cover?	❑Yes ❑No	❑Yes ❑No	
Stormwater Management Ponds				
15	The inlet and outlet structure protection is adequately maintained to limit erosion?	❑Yes ❑No	❑Yes ❑No	
16	Are the ponds being maintained to keep accumulated sediment to less than 50% of the working capacity of the pond?	❑Yes ❑No	❑Yes ❑No	
17	Are pipes and drainageways leading to the ponds free of debris and sediment?	❑Yes ❑No	❑Yes ❑No	
18	Surface sheen or debris is observed in the stormwater management ponds?	❑Yes ❑No	❑Yes ❑No	
19	Odor is noted from the pond water?	❑Yes ❑No	❑Yes ❑No	
Landfill Construction				
20	Are construction activities occurring?	❑Yes ❑No	If No, skip to Question 24	
21	Are construction activity inspections being performed at least weekly?	❑Yes ❑No	❑Yes ❑No	
22	Has the prime contractor developed and implemented an Erosion and Sediment control plan prior to beginning construction?	❑Yes ❑No	❑Yes ❑No	
23	For completed construction activities has a final inspection been performed documenting that the disturbed area has been stabilized, that temporary erosion and sediment controls have been removed and permanent stormwater quantity and quality controls are in place.	❑Yes ❑No	❑Yes ❑No	
Vehicle Service and Maintenance				
24	Vehicles are parked on paved surface or stabilized gravel area?	❑Yes ❑No	❑Yes ❑No	
31	Leaking vehicles are moved indoors or equipped with drip pans?	❑Yes ❑No	❑Yes ❑No	
32	Vehicle maintenance is performed indoors?	❑Yes ❑No	❑Yes ❑No	
33	Vehicle and equipment washing occurs on the vehicle tire wash pad?	❑Yes ❑No	❑Yes ❑No	

#	BMP/Activity	Yes or No	BMP/Activity Maintenance Required?	Corrective Action Needed and Notes
34	There is drag out from the vehicle tire wash pad or the maintenance building?	❑Yes ❑No	❑Yes ❑No	
35	Litter and mud/sediment is regularly removed from the tire wash pad?	❑Yes ❑No	❑Yes ❑No	
Vehicle Fueling				
37	A monthly tank inspection has been completed as part of the SPCC plan?	❑Yes ❑No	❑Yes ❑No	
38	Spills or releases are not observed around the fueling area?	❑Yes ❑No	❑Yes ❑No	
39	Stormwater from the secondary containment area is visually screened and logged prior to discharge?	❑Yes ❑No	❑Yes ❑No	
40	The discharge valve for the secondary containment area is closed and locked when not in use?	❑Yes ❑No	❑Yes ❑No	

Daily Readings

Date			Condensate Sump Monitoring		
	Volume in Tank (ft)		CS	Pump Counter	
	Outside Level gauge		CS-1a, CS-1b		
Start Time	Out of Service		CS-2		
	Inside Level gauge		CS-3		
			CS-4		
	LOB004L		CS-5R		
			CS-6a, CS-6b		
LOB	**Readings**	**Time**	**MDC**	**Comments**	
Condensate			LOB001L		
Containment Pump			LOB002L		
Loadout Meter			LOB003L		
MTB	**Readings**	**Time**		**Comments**	
Section 1 *(+ MH#6)*			MTB001L		
Section 2 *(MH#2)*	0		MTB002L		
Section 3 Area 2&3	0		MTB003L		
Section 3 Area 1 *(MH#3)*	0		MTB004L		
Section 3 Aera IV Prim *(SR)*			MTB005L		
Section 3 IV Sec *(SR)*			MTB006L		
SRB	**Readings**	**Time**		**Comments**	
Section 3 Area 2&3 Prim			SRB001L		
Section 3 Area 2&3 Sec			SRB002L		
NWV	**Readings**	**Time**		**Level (ft.)**	**Comments**
NWOFL Primary			NWV001L		
NWOFL Secondary			NWV002L		
NEV	**Readings**	**Time**		**Level (ft.)**	**Comments**
NEOFL Primary			NEV001L		
NEOFL Secondary			NEV002L		
41A	**Readings**	**Time**		**Level (in.)**	**Comments**
Primary			41A001L		
Secondary			41A002L		
Porewater			41A003L		
41B	**Readings**	**Time**		**Level (in.)**	**Comments**
Primary			41B001L		
Secondary			41B002L		
Porewater			41B003L		
42A	**Readings**	**Time**		**Level (in.)**	**Comments**
Primary			42A001L		
Secondary			42A002L		
Porewater			42A003L		
Fire Pond	**Readings**	**Time**	**Comments**		
Meter					
Flare locks / chains are secure	Yes	No	**Comments**		

Modern Landfill Meter Analysis-Detail

Date Range: 3/3/2023 thru 4/3/2023
Meter ID's:
41A001L,41A002L,41A003L,41B001L,41B002L,41B003L,42A001L,42A002L,42A003L,LOB001L,LOB002L,LOB003L,LOB004L,LOB999L,MTB001L,MTB002L,MTB003L,MTB004L,MTB005L,MTB006L,NEV001L,NEV002L,NWV001L,NWV002L,SRB001L,SRB002L

Section IV Area 1A1 Primary

MeterID	Date	Time	Reading (gal)	Delta (gal)	Notes
41A001L	3/3/23	7:22	52,403,620	0	Pump installed MS, running by hand until transducer comes in.
41A001L	3/6/23	7:08	52,437,044	33,424	
41A001L	3/7/23	7:26	52,437,064	20	
41A001L	3/8/23	7:33	52,437,896	832	
41A001L	3/9/23	7:24	52,448,516	10,620	
41A001L	3/10/23	7:20	52,448,720	204	
41A001L	3/13/23	7:24	52,448,736	16	
41A001L	3/14/23	7:30	52,448,736	0	
41A001L	3/15/23	7:22	52,448,736	0	
41A001L	3/16/23	7:21	52,448,740	4	
41A001L	3/17/23	7:25	52,448,748	8	
41A001L	3/20/23	7:25	52,448,752	4	
41A001L	3/21/23	7:20	52,448,752	0	
41A001L	3/22/23	9:57	52,448,752	0	
41A001L	3/23/23	7:19	52,448,752	0	
41A001L	3/24/23	7:20	52,448,752	0	
41A001L	3/27/23	7:24	52,448,752	0	
41A001L	3/28/23	7:21	52,448,752	0	
41A001L	3/29/23	7:19	52,448,752	0	
41A001L	3/30/23	7:18	52,448,752	0	
41A001L	3/31/23	7:20	52,448,752	0	
41A001L	4/3/23	7:24	52,448,752	0	

Section IV Area 1A1 Primary Total: 45,132 Gallons

Section IV Area 1A1 Secondary

MeterID	Date	Time	Reading (gal)	Delta (gal)	Notes
41A002L	3/3/23	7:22	231,597	0	
41A002L	3/6/23	7:08	233,231	1,634	
41A002L	3/7/23	7:26	233,232	1	
41A002L	3/8/23	7:33	233,232	0	
41A002L	3/9/23	7:24	233,232	0	
41A002L	3/10/23	7:20	233,232	0	
41A002L	3/13/23	7:24	233,232	0	
41A002L	3/14/23	7:30	233,232	0	
41A002L	3/15/23	7:22	233,232	0	
41A002L	3/16/23	7:21	233,232	0	
41A002L	3/17/23	7:25	233,232	0	
41A002L	3/20/23	7:25	233,232	0	
41A002L	3/21/23	7:20	233,232	0	
41A002L	3/22/23	9:57	233,232	0	
41A002L	3/23/23	7:19	233,232	0	
41A002L	3/24/23	7:20	233,232	0	
41A002L	3/27/23	7:24	233,232	0	
41A002L	3/28/23	7:21	233,232	0	
41A002L	3/29/23	7:19	233,232	0	
41A002L	3/30/23	7:18	233,233	1	
41A002L	3/31/23	7:20	233,233	0	
41A002L	4/3/23	7:24	233,233	0	

Section IV Area 1A1 Secondary Total: 1,636 Gallons

Report Generated: 4/3/2023

Modern Landfill SPCC Plan (Appendix F): Monthly Tank Inspection Report

PBS registration #9-600472

Each tank system or drum, 55 gallons or larger, must be inspected. Please mark each box with a Y (yes), N (no), or NA (not applicable). Comments and/or deficiencies should be noted in the designated area. If additional space is needed, use the reverse side of this form.

Inspector's Name: _____ Date of Inspection: _____ Additional pages attached? _____

TANK/CONTAINER	Tank 001L	Tank 002L	Tank 003L	Tank 004L	Tank 006L	Tank 007L	Tank 008L	Tank 009L	Baler D-1	Compactor D-2	Mobile Fuelers	IBC Tote	Drums	Deficiencies or Concerns	Corrective Actions & Initials
Product **Capacity (gallons)**	gasoline 550	used oil 2,000	hyd oil 550	motor oil 550	diesel 12,000	hyd oil 275	hyd oil 275	hyd oil 275	hyd oil 300	hyd oil 200	various 6,200 tot.	used oil 330	various 6 x 55		
In Service?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	NA		
Leaks															
Corrosion/discoloration															
Cracks/bulges/pitting															
Paint/sealant in good condition															
Legible labels & warning signs on container/fill port															
Notice to tank truck drivers posted															
Level gauge, overfill protection present/functional															
Overall foundation integrity is sound															
Foundation settlement/cracking															
Seam separation															
Secondary Containment System															
Cracks, gaps, punctures, corrosion															
Excessive vegetation/solids															
Paint/sealant in good condition															
Depth of liquid in secondary containment (inches)															
Liquid is clean (e.g. no sheen, no odor)															
Clean liquid drained in accordance with the SWPPP[1]															
Pipes/Valves/Pumps/Emergency Response Equip.															
Leakage/stained soil															
Fill ports correctly color-coded & in good condition															
Drainage valves closed /locked															
Fire extinguishers charged & not expired															
Spill kits available															
Spill kits complete per SPCC plan															
Other observations															

Note:
1) If yes, complete & attach the SWPPP Appendix J - Discharge Screening form.

I hereby certify that this inspection was performed in a manner consistent with the requirements of 6 NYCRR Part 613.

_____	_____	1445 Pletcher Road, Youngstown, New York
Signature	**Date**	**Address**

Modern Landfill Inc.

Surface Emissions Monitoring - Sampling Data

Date		Quarter Sampled	1st	2nd	Cover Condition	Some Vegetation	No Vegetation
			3rd	4th		Heavy Vegetation	Under Construction

Ambient Weather Conditions	Full Sun	Partly Cloudy	Raining	Outside Temp	Wind Speed	Wind Direction
	Partly Sunny	Mostly Cloudy	Snowing	ºF	mph	

Upwind Background Methane Level	ppm	Downwind Background Methane Level	ppm
Upwind Location		Downwind Location	

Test Number	Methane Concentration*	Retest? X	Test Number	Methane Concentration*	Retest? X	Test Number	Methane Concentration*	Retest? X	Test Number	Methane Concentration*	Retest? X
1			31			61			91		
2			32			62			92		
3			33			63			93		
4			34			64			94		
5			35			65			95		
6			36			66			96		
7			37			67			97		
8			38			68			98		
9			39			69			99		
10			40			70			100		
11			41			71			101		
12			42			72			102		
13			43			73			103		
14			44			74			104		
15			45			75			105		
16			46			76			106		
17			47			77			107		
18			48			78			108		
19			49			79			109		
20			50			80			110		
21			51			81			111		
22			52			82			112		
23			53			83			113		
24			54			84			114		
25			55			85			115		
26			56			86			116		
27			57			87			117		
28			58			88			118		
29			59			89			119		
30			60			90			120		

*** Retest if methane concentrations are higher than 500 ppm. Retests must be performed within 10 calendar daysUse Surface Monitoring Retest Form #1. Cover repairs not related to failing test results must be documented and kept on file.**

Samplers Name (Print)	Samplers Name (Signature)

Modern Landfill Inc.

Surface Emissions Monitoring - Sampling Data

Test Area Key

Test Number 1		Test Number 2		Test Number 3		Test Number 4	
Beginning	Ending	Beginning	Ending	Beginning	Ending	Beginning	Ending
Test Location		Test Location		Test Location		Test Location	
Corresponding Map Number		Corresponding Map Number		Corresponding Map Number		Corresponding Map Number	

Test Number 5		Test Number 6		Test Number 7		Test Number 8	
Beginning	Ending	Beginning	Ending	Beginning	Ending	Beginning	Ending
Test Location		Test Location		Test Location		Test Location	
Corresponding Map Number		Corresponding Map Number		Corresponding Map Number		Corresponding Map Number	

Test Number 9		Test Number 10		Test Number 11		Test Number 12	
Beginning	Ending	Beginning	Ending	Beginning	Ending	Beginning	Ending
Test Location		Test Location		Test Location		Test Location	
Corresponding Map Number		Corresponding Map Number		Corresponding Map Number		Corresponding Map Number	

Test Number 13		Test Number 14		Test Number 15		Test Number 16	
Beginning	Ending	Beginning	Ending	Beginning	Ending	Beginning	Ending
Test Location		Test Location		Test Location		Test Location	
Corresponding Map Number		Corresponding Map Number		Corresponding Map Number		Corresponding Map Number	

Test Number 17		Test Number 18		Test Number 19		Test Number 20	
Beginning	Ending	Beginning	Ending	Beginning	Ending	Beginning	Ending
Test Location		Test Location		Test Location		Test Location	
Corresponding Map Number		Corresponding Map Number		Corresponding Map Number		Corresponding Map Number	

Modern Landfill Inc.

No Exceedance This Quarter ☐

Surface Emissions Monitoring - Retest and Confirmation

Initial Exceedance Test			First Retest			Second Retest		
Test #	Test Date	Location	Test #	Retest Date	Methane Concentration	Test #	Retest Date	Methane Concentration

Corrective action and first retest must be performed within 10 calendar days of initial failed test. If retest passes, perform confirmation test 30 days after initial test date. If retest fails, additional corrective action and second retest must be performed within 10 calender days of the first retest.

Notes:

Confirmation test						
Test #	Test Date	Elevation	North*	East*	Test Date	Methane Concentration

* North and East locations are referenced in the Modern Landfill Site Grid and Site Datum

Modern Lanfill : Leachate Line Cleaning Log

Start Date: _____ End Date: _____

LF Cell	Pipe ID	Total Length (ft)	Length Cleaned (ft)	Date Cleaned	Cleaned By (name)	Comments / Notes
Section II	2B	648				
	2C	715				
	2D	708				
	2E	704				
	2F	1306				
Section III Area 2	32B	1147				
	32C	1157				
	32D	1176				
	32E	1191				
	32F	1181				
	32G	1150				
	32H	1082				
	32I	688				
Section III Area 3	33A	1105				
	33B	1050				
	33C	976				
	33D	908				
	33E	849				
	33F	789				
	33G	722				
	33H	661				
	33I	602				
	33J	543				
	33K	470				
	33L	408				
	33M/33N	1454				
	33N					33M & 33N are combined
Section III Area 4	34A	607				
	34A1	600				
	34B	496				
	34C	471				
	34D	462				
	34E	1236				
NWOFL	NWA	711				
	NWB	474				
	NWC	865				
NEOFL	NEA	738				
	NEB	404				
	NEC	677				
SOFL	SOG	1396				

LF Cell	Pipe ID	Total Length (ft)	Length Cleaned (ft)	Date Cleaned	Cleaned By (name)	Comments / Notes
S IV 1A1	44AA	1193				
	41AB	1191				
	41AB1	193				
Section IV Area 1A2	41AC	1187				
	41AD	1191				
	41AE	1188				
	*41AF	1147				
	*41AG	1030				
	41AH	372				
	41AI/41BI	966				
Section IV Area 1B	*41BA	954				
	*41BB	951				
	*41BC	935				
	*41BD	919				
	*41BE	903				
	*41BF	882				
	*41BG	864				
	*41BH	848				
	41BI					combined with 41AI (968)
Section IV Area 2A	42AA	81				
	42AB	522				
	42AC	759				
	42AD	841				
	42AE	921				
	42AF	962				
	42AG	756				
	42AH	961				
	42AI	676				
	42AJ	213				
	**42AK					overlaps 42AI (566)
	**42AL					overlaps 42AI (700)
	**42AM					overlaps 42AI (712)
	**42AN					overlaps 42AJ (224)
	**42AO					overlaps 42AJ (105)
IV 2B	***42BA	1272				
	***42BB	1376				

Landfill cell abreviations: NWOFL = northwest overfill liner, NEOFL = northeast overfill liner, IV1A1 = Section IV Area 1A1

* = line length was added to in 2015 construction season

** = Additional header cleanout to be used if the total length cannot be reached using 42AI or 42AJ upgradient cleanouts

*** = Added cleanouts in 2022

Field Data Sheet - **Leachate Recirc**

Date:_____

Operator:_____

Load	Start Reading	End Reading	Gallons
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Field Data Sheet - **Leachate Recirc**

Date:_____

Operator:_____

Load	Start Reading	End Reading	Gallons
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Location: \\str1\Group Folders\Engineering\Templates FDSLR Version 0.1, 112715

Field Data Sheet - **Leachate Recirc**

Date:_____

Operator:_____

Load	Start Reading	End Reading	Gallons
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Location: \\str1\Group Folders\Engineering\Templates FDSLR Version 0.1, 112715

Field Data Sheet - **Leachate Recirc**

Date:_____

Operator:_____

Load	Start Reading	End Reading	Gallons
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Location: \\str1\Group Folders\Engineering\Templates FDSLR Version 0.1, 112715

MDS SPILL INCIDENT REPORT

DATE:_____TRUCK#:_____DRIVER:_____

TIME OF SPILL:_____TIME REPORTED TO DISPATCH:_____

LOCATION OF SPILL:_____

_____

TYPE OF MATERIAL SPILLED:_____

ESTIMATED AMOUNT SPILLED:_____

WHAT IS IT SPILLED ON TO:_____

WHAT CAUSED THE SPILL:_____

_____

DESCRIPTION OF CLEAN UP: _____

DEC # 1-800-457-7362

TIME REPORTED TO DEC:_____SPILL#:_____AGENT_____

CALLED IN BY:_____ATTENDING SUPERVISOR:_____

REMARKS:_____

_____

WORK ORDER NUMBER:_____SCALE TICKET#:_____

Forward report to dispatch for disposal of waste at appropriate site. **ALL** spills are to be reported to safetyincidenttracking@modern-corp.com by the end of the day.

APPENDIX E

Closure Information

MEMORANDUM

To: File

From: Krysta Cione

cc: Alan Davis, Mark Marsack, Nate Duncan

Date: 2/27/23

Re: Modern Landfill, Inc.

Updated Closure Costs – 2022 Annual Report

In accordance with Condition #62 of our Permit #9-2924-00016/00043, Modern Landfill, Inc. has updated its closure and post-closure cost estimates for inclusion in the 2022 Annual Report. During the calendar year of 2022, no baseliner construction or final closure (i.e., capping) activities occurred. (Modern did construct a slurry wall and an extension to the MSE berm in 2022.)

Modern began placing waste in Section IV Area 2B2 in summer of 2022, following receipt of NYSDEC approval to do so on July 15, 2022. Area 2B2 was constructed in 2021 and the corresponding acreage for the cell was included in the 2021 annual report.

As no significant changes occurred in 2022 that would impact the closure and post-closure costs at the facility, this update reflects inflation by adjusting the previous year's approved cost estimate per 6 NYCRR section 373-2.8(c)(2).

The 2021 closure cost estimate totaled $23,478,599 and the post-closure estimate was $9,790,193. The total closure and post-closure cost estimate is $33,268,792. A breakdown of each amount is included in the appended tables.

According to the U.S. Bureau of Economic Analysis, Table 4: "Price Indexes for Gross Domestic Product and Related Measures- Percent Change from Preceding Period,"

MODERN
■ 4746 Model City Road, P.O. Box 209, Model City, NY 14107-0209
■ 716-754-8226 ■ 1-800-330-7107 ■ Fax: 716-754-8964

the annual percent change from 2021 to 2022 was 7.0. Using this inflation factor, the 2022 total closure and post-closure cost estimate was calculated as follows:

$33,268,792 x 1.07 = **$35,597,607.44**

Financial surety in this amount will be procured following NYSDEC approval.

MODERN
■ 4746 Model City Road, P.O. Box 209, Model City, NY 14107-0209
■ 716-754-8226 ■ 1-800-330-7107 ■ Fax: 716-754-8964

Modern Landfill, Inc.

Landfill Closure Cost Estimate for end of calendar year 2021

Basis: March 1, 2018 by JPG

updated for reduced BPL thickness, for added IV1A32B1 baseliner area, 033021 for financial factor and reduction of 6A final cover area, 020922 add 6.2 acre IV2B2 baseliner area, 021822 apply cost factor per the Implicit Price Deflator for GDP

	Item	Quantities	Units	Unit Cost	Total Cost
I	Mobilization (non geosynthetics only)	7	%		$363,405
II	Final Cover Installation				
	Subgrade Preparation	839,894	SY	$0.24	$199,592
	Gas Venting Geocomposite	7,559,049	SF	$0.65	$4,892,972
	Geomembrane Liner (Total)				
	a. Textured	7,559,049	SF	$0.51	$3,867,209
	Geosynthetic Clay Liner	3,321,233	SF	$0.65	$2,145,517
	Geocomposite Drainage Layer	4,119,190	SF	$0.65	$2,666,352
	Misc. Geosynthetic work & mobilizations	1	LS	$273,030.00	$273,030
	Barrier Protection Layer	279,965	CY	$5.60	$1,567,803
	Topsoil	7,559,049	SF	$0.09	$671,915
	Seeding	7,559,049	SF	$0.06	$464,882
	Certification	173.5	ACRE	$15,000.00	$2,602,978
III	Gas Collection System	31	Well	$4,250.00	$131,750
IV	Drainage System	1	LS	$1,629,180.48	$1,629,180
V	Contingency	5	%		$1,055,659.02

Total Estimated Closure Cost	$23,478,599

Cost Per Acre For Closure	$135,298.47

MODERN LANDFILL, INC.

POST CLOSURE COST UPDATE

Date of basis spreadsheet by other: March 7, 2018.

11/18/20 update forconstructed Section IV Area 1A3/2B1 baseliner area

2/9/22 update for constructed Section IV Area 2B2 baseliner area

2/18/22 update to apply 2021 cost factor per the Implicit Price Deflator for GDP

	Item	Annual Quantities	Units	Annual Unit Cost	Annual Cost	Total Cost
I.	Environmental Monitoring					
	(Quarterly, Except where noted)					
	GW Well Sampling/Testing	86	Sample	$310.00	$26,660.00	$799,800.00
	Surface Water/Sediment	18	Sample	$517.00	$9,306.00	$279,180.00
	Landfill Gas	72	Test	$46.00	$3,312.00	$99,360.00
	Leachate	16	Sample	$772.00	$12,352.00	$370,560.00
	Condensate	1	Sample	$221.00	$221.00	$6,630.00
	Data Validation	1	Each	$4,600.00	$4,600.00	$138,000.00
	Inspections (Annual)	4	Each	$800.00	$3,200.00	$96,000.00
	Reporting (Annual)	1	Each	$19,000.00	$19,000.00	$570,000.00
II.	Leachate Collection/Treatment					
	Pipe Cleaning (1st 5 years)	2	Each	$226,547.00	$453,094.00	$2,265,470.00
	Pipe Cleaning (last 25 years,every 5 yrs)	1	Each	$226,546.90	$226,546.90	$1,132,734.50
	Leachate Treatment	99796	Gallon	$0.040	$3,991.86	$119,755.77
	System Closure	1	Lump Sum	$7,000.00	NA	$7,000.00
	Tank Cleaning (every 2 years)	1	Per Event	$14,700.00	NA	$220,500.00
III.	Final Cover Maintenance					
	Topsoil					
	0-5 years	967.50	CY	$4.80	$4,644.00	$23,220.00
	5-10 years	483.75	CY	$4.80	$2,322.00	$11,610.00
	10-30 years	48.75	CY	$11.50	$560.63	$11,212.50
	Seeding					
	0-5 years	1.6	ACRE	$2,679.00	$4,286.40	$21,432.00
	5-10 years	0.8	ACRE	$2,679.00	$2,143.20	$10,716.00
	10-30 years	0.1	ACRE	$2,679.00	$267.90	$5,358.00
	Drainage System	6.8	ACRE	$700.00	$4,760.00	$142,800.00
IV.	General					
	Mowing (two times per year)	367	ACRE	$32.67	$11,989.89	$359,696.70
	Site Security	1	Each	$11,440.00	$11,440.00	$343,200.00
	Gates, Signs, fences	809	Ft	$18.50	$14,966.50	$448,995.00
	Electricity Usage (site wide)	1	Per Year	$12,538.00	$12,538.00	$376,140.00
V.	Gas Flare System					
	System Maintenance	1	Each	$7,900.00	$7,900.00	$237,000.00
	Condensate Treatment	709000	Gallon	$0.040	$28,360.00	$850,800.00
	System Closure	1	Lump Sum	$1,000.00	NA	$1,000.00
VI.	Post Closure Contingency	1	Lump Sum	5%	NA	$447,408.52

Total Estimated 30 Year Post Closure Cost	$9,790,193

Table 4. Price Indexes for Gross Domestic Product and Related Measures: Percent Change from Preceding Period

Line		2020	2021	2022	Seasonally adjusted at annual rates																Line
					2019				2020				2021				2022				
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	**Gross domestic product (GDP)**	**1.3**	**4.5**	**7.0**	**1.5**	**2.3**	**1.3**	**1.3**	**1.8**	**-1.3**	**3.5**	**2.5**	**5.2**	**6.3**	**6.2**	**6.8**	**8.3**	**9.0**	**4.4**	**3.5**	1
2	**Personal consumption expenditures**	**1.1**	**4.0**	**6.2**	**0.8**	**2.5**	**1.0**	**1.5**	**1.5**	**-1.8**	**3.4**	**1.6**	**4.5**	**6.4**	**5.6**	**6.2**	**7.5**	**7.3**	**4.3**	**3.2**	2
3	Goods	-0.7	4.9	8.5	-1.3	1.8	-1.4	0.2	-0.8	-5.4	4.0	0.5	5.8	9.0	7.6	9.3	12.6	10.6	2.7	-1.5	3
4	Durable goods	-0.9	5.6	6.4	0.3	-1.1	-1.9	-2.6	-1.2	-2.7	4.8	2.1	1.3	14.7	10.0	8.2	8.3	2.4	3.5	-3.1	4
5	Nondurable goods	-0.7	4.5	9.8	-2.1	3.3	-1.2	1.6	-0.6	-6.8	3.7	-0.4	8.6	5.6	6.1	9.9	15.2	15.7	2.3	-0.5	5
6	Services	2.0	3.6	5.0	1.8	2.8	2.2	2.1	2.5	0.0	3.1	2.3	3.9	5.1	4.6	4.6	4.9	5.6	5.2	5.6	6
7	**Gross private domestic investment**	**1.3**	**3.6**	**8.2**	**2.5**	**2.1**	**0.7**	**-0.2**	**1.8**	**1.0**	**2.4**	**2.7**	**3.3**	**2.8**	**6.8**	**8.8**	**9.9**	**9.9**	**7.6**	**3.7**	7
8	Fixed investment	1.4	4.0	8.5	2.5	2.0	0.8	0.0	1.6	1.7	2.1	2.6	3.5	4.2	7.3	8.8	10.0	10.3	7.7	4.5	8
9	Nonresidential	0.8	1.7	6.5	2.5	2.0	0.1	-0.8	1.3	2.0	-0.1	1.4	0.7	0.4	4.6	7.7	6.9	8.5	7.6	3.5	9
10	Structures	1.3	4.1	16.3	4.1	5.7	2.9	2.1	2.0	-1.0	0.0	-1.6	1.3	8.1	10.2	22.8	16.7	17.5	20.1	6.7	10
11	Equipment	-0.5	0.4	6.2	1.4	-0.3	-1.6	-0.9	0.9	0.2	-2.4	-1.5	3.6	-4.4	4.3	6.5	7.6	9.2	5.9	6.2	11
12	Intellectual property products	1.8	1.6	2.4	2.7	2.6	0.4	-2.3	1.4	5.7	2.1	5.8	-2.7	1.3	2.3	2.1	1.9	3.9	3.7	-0.5	12
13	Residential	3.3	11.1	14.1	2.3	2.0	3.2	2.5	2.5	1.0	9.3	6.6	12.4	15.5	15.0	12.0	18.9	15.2	8.1	7.7	13
14	Change in private inventories	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
15	**Net exports of goods and services**	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
16	Exports	-2.4	11.5	9.5	-3.3	3.5	-2.4	-1.3	-1.8	-17.6	13.2	6.2	20.5	18.6	9.3	6.2	17.3	20.0	-9.7	-6.0	16
17	Goods	-3.9	14.2	11.5	-5.2	2.6	-4.0	-1.2	-4.2	-21.9	16.0	7.0	26.1	24.4	11.1	7.0	22.9	26.7	-14.0	-10.7	17
18	Services	0.4	6.0	5.1	0.4	5.3	0.7	-1.5	3.0	-8.9	8.3	4.7	9.7	7.2	5.7	4.6	5.8	6.0	1.3	5.3	18
19	Imports	-2.2	7.4	7.5	-4.6	2.3	-4.1	-1.3	-1.2	-12.2	8.1	2.8	12.9	12.7	6.1	6.3	13.5	13.2	-4.1	-5.5	19
20	Goods	-2.8	7.8	7.8	-5.8	2.5	-4.8	-2.0	-1.8	-13.7	8.8	2.6	14.5	13.5	6.1	6.6	15.5	13.9	-5.8	-7.9	20
21	Services	0.7	5.1	6.1	1.2	1.0	-1.0	1.6	1.6	-4.4	5.0	4.3	5.0	8.8	6.5	4.8	4.1	10.0	4.7	6.6	21
22	**Government consumption expenditures and gross investment**	**1.9**	**5.3**	**7.5**	**0.9**	**0.8**	**1.0**	**1.5**	**3.2**	**0.0**	**3.2**	**3.7**	**6.9**	**6.8**	**6.0**	**7.2**	**8.7**	**11.6**	**3.6**	**3.0**	22
23	Federal	1.1	3.4	4.9	4.3	-2.6	1.0	1.6	1.4	0.3	2.6	2.4	4.1	4.1	4.4	4.3	5.7	6.0	4.8	2.9	23
24	National defense	1.1	3.7	5.2	1.3	1.3	1.2	1.8	1.0	-1.1	3.0	2.5	5.2	4.3	4.4	4.5	6.6	7.5	2.7	2.9	24
25	Nondefense	1.1	3.0	4.6	9.0	-8.3	0.7	1.4	2.0	2.3	2.1	2.4	2.6	3.8	4.4	4.2	4.5	4.1	7.6	2.8	25
26	State and local	2.4	6.5	9.0	-1.1	3.0	1.1	1.5	4.3	-0.2	3.6	4.6	8.8	8.5	7.0	9.0	10.6	15.0	2.9	3.1	26
	Addenda:																				
27	Final sales of domestic product	1.4	4.6	7.0	1.4	2.3	1.4	1.3	1.8	-1.2	3.4	2.5	5.2	6.5	6.3	6.8	8.3	9.1	4.4	3.6	27
28	Gross domestic purchases	1.3	4.2	6.8	1.1	2.1	1.0	1.2	1.8	-1.0	3.2	2.2	4.7	5.9	5.9	6.8	8.1	8.5	4.8	3.2	28
29	Final sales to domestic purchasers	1.3	4.2	6.8	1.1	2.1	1.0	1.2	1.8	-0.9	3.1	2.2	4.8	6.1	5.9	6.8	8.1	8.5	4.8	3.4	29
30	Final sales to private domestic purchasers	1.2	4.0	6.7	1.2	2.4	1.0	1.1	1.5	-1.1	3.1	1.9	4.3	6.0	5.9	6.7	8.0	7.9	5.0	3.4	30
31	Gross national product (GNP)	1.3	4.5	.....	1.5	2.3	1.3	1.3	1.8	-1.3	3.5	2.5	5.2	6.2	6.2	6.8	8.3	9.0	4.4	.....	31
32	GDP excluding food and energy [1]	1.5	4.1	6.1	1.7	2.4	1.5	1.1	2.2	-0.6	3.1	2.3	4.3	5.9	5.6	6.2	6.6	7.3	5.2	3.8	32
33	Gross domestic purchases excluding food and energy [1]	1.4	3.9	6.1	1.5	1.8	1.3	1.1	2.1	-0.3	3.0	2.2	4.0	5.7	5.4	6.0	7.0	6.9	5.0	3.8	33
34	PCE excluding food and energy [1]	1.3	3.5	5.0	1.5	2.1	1.6	1.2	1.9	-1.0	3.2	1.5	3.2	6.0	4.8	4.8	5.6	4.7	4.7	3.9	34
35	Market-based PCE [2]	1.1	3.6	6.5	0.9	2.1	0.8	1.5	1.3	-1.0	2.8	1.1	4.0	5.8	5.2	6.2	8.2	8.0	4.5	3.0	35
36	Market-based PCE excluding food and energy [1,2]	1.3	2.9	5.0	1.7	1.7	1.4	1.3	1.8	0.1	2.4	0.9	2.5	5.2	4.3	4.6	6.1	5.0	5.0	3.8	36
	Implicit price deflators:																				
37	GDP	1.3	4.5	7.0	1.6	2.2	1.3	1.5	1.6	-1.5	3.5	2.6	5.1	6.4	6.2	6.8	8.4	9.1	4.4	3.5	37
38	Gross domestic purchases	1.2	4.2	6.8	1.2	2.1	1.0	1.4	1.6	-1.2	3.2	2.2	4.6	6.0	5.9	6.8	8.2	8.6	4.8	3.3	38
39	GNP	1.3	4.5	.....	1.5	2.2	1.3	1.5	1.6	-1.5	3.5	2.6	5.1	6.3	6.2	6.8	8.3	9.1	4.4	.....	39

1. Food excludes personal consumption expenditures for purchased meals and beverages, which are classified in food services.

2. This index is a supplemental measure that is based on household expenditures for which there are observable price measures. It excludes most implicit prices (for example, financial services furnished without payment) and the final consumption expenditures of nonprofit institutions serving households.

Source: U.S. Bureau of Economic Analysis

Attachment 6 – Environmental Monitoring Plan (under separate stand-alone cover)

Environmental Monitoring Plan
Modern Landfill, Inc.
Updated 2023

Submitted to:

Modern Landfill Inc.
4746 Model City Road
P.O. Box 209
Model City, New York
14107-0209

Submitted by:

Environmental Solutions
28 Dock Street
Shelburne, Nova Scotia
B0T 1W0

File No. 01-04 **April 2023**

25 April 2023 File No. 01-04

Ms. Krysta Cione
Environmental Protection Manager
Modern Landfill, Inc.
4746 Model City Road
P.O. Box 209
Model City, New York 14107-0209

RE: Updated Environmental Monitoring Plan

Dear Ms. Cione:

We are pleased to provide Modern Landfill, Inc. (Modern) with a copy of the revised environmental monitoring plan for the Modern Landfill site, titled, *Environmental Monitoring Plan Modern Landfill, Inc. - Updated 2023.* To facilitate the review of this document, the following itemizes what changes were made:

- ◊ a section discussing the critical stratigraphic section has been added (Section2.0);
- ◊ Drawing 1, referenced on page 7, has been created to show all the environmental monitoring locations on a site plan that shows the most recent topography;
- ◊ Table 2 (Page 12) has been updated to show which monitoring wells have been decommissioned since the last environmental monitoring plan (EMP) was submitted and to include new proposed monitoring wells;
- ◊ Section 3.0 all figures have been updated to present current and proposed monitoring locations;
- ◊ Section 3.2.1 two additional GSS groundwater monitoring wells have been added in case groundwater flow continues to the northeast in the northeast corner of the site (Page 15);

- ◊ the collection of sediment samples has been removed from Section 3.3 (page 24);
- ◊ Section 3.4 updated to state new cells will have ports for sampling the leachate collection system independently (Page 26);
- ◊ Section 3.4.2 has been updated to address establishing existing water quality for the new parameters (radionuclides, 1,4-dioxane and PFAS) that have been added to the Expanded parameter list (Page 26);
- ◊ Section 3.4.2 the Primary Leachate sample from the leachate storage tank will be analyzed annually for the Expanded parameter list (Page 27)
- ◊ Section 3.4.2 the analysis of secondary leachate collection samples has been changed to the Baseline parameter list (Page 27);
- ◊ Section 3.5.2 the Baseline monitoring event for all the groundwater monitoring wells will now be at a fixed quarter. These samples will be collected in the Third Quarter (Page 29);
- ◊ Section 3.5.2 the Baseline monitoring event for all the surface water monitoring locations will now be at a fixed quarter. These samples will be collected in the Second Quarter (Page 29);
- ◊ Section 3.5.2 the Baseline event for the pore water drains will be at a fixed quarter. These samples will be collected in the Third Quarter. The pore water drains will no longer be sampled in the First Quarter (Page 29);
- ◊ Section 3.5.3 notification changed to 24 hours for NYSDEC and seven days for local officials (Page 32);
- ◊ Section 3.5.3 added notification to landowners within 500 feet downgradient of any part of the plume and changed the initiation of assessment of remedial measures from 90 days to 30 days (Page 33);

- ◊ Section 3.5.3 added remedial alternative assessment and selection (Pages 32-34);
- ◊ Section 3.6 the lower explosive limit (LEL) criteria has been changed from ten percent to twenty-five percent (Page 38)
- ◊ Section 3.7 Table 4 has been updated to reflect the changes to the monitoring programme (Page 40);
- ◊ Section 4.4 has been updated to reflect the current ALS Field Services Supervisor (Page 55); and
- ◊ Section 5.0 the references have been updated.

We trust this is sufficient for your present purposes. If you have any questions or require any additional information, please do not hesitate to call.

Yours truly,
Environmental Solutions

Louise Lindsay, M. Sc., P. Ag.
Senior Hydrogeologist

Enclosure

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1

2.0 CRITICAL STRATIGRAPHIC SECTION. 2

3.0 ENVIRONMENTAL MONITORING PLAN. 7

3.1 Introduction.. . . . . **7**

3.2 Groundwater Sampling. **8**

3.2.1 Monitoring Network. **11**

3.2.2 Monitoring Well Installation Details.. . . . . **16**

3.2.3 Well Abandonment. **22**

3.3 Surface Water and Sediment Sampling. **24**

3.4 Leachate Sampling. **26**

3.4.1 Sampling Locations.. . . . . **26**

3.4.2 Analytical Requirements. **26**

3.5 Water Quality Monitoring Program. **28**

3.5.1 Existing Water Quality.. . . . . **28**

3.5.2 Operational Water Quality. **29**

3.5.3 Contingency Water Quality.. . . . . **31**

3.6 Landfill Gas Migration Monitoring Program. **35**

3.7 Schedule. **40**

3.8 Reporting. **43**

4.0 SITE ANALYTICAL PLAN. **44**

4.1 Introduction **44**

TABLE OF CONTENTS (Continued)

Page No.

4.2 Data Quality Objectives. **46**
4.2.1 Site Specific Data Quality Objectives. **48**

4.3 Analytical Quality Assurance and Analytical Quality Control. **51**

4.4 Field Sampling Procedures. **52**

4.5 Laboratory Procedures. **56**

4.6 Data Quality Assessment. **57**
4.6.1 Introduction. **57**
4.6.2 Data Validation. **57**
4.6.3 Data usability Analysis. **58**

5.0 REFERENCES. 60

APPENDICES

Appendix A - ALS Quality Assurance Manual
Appendix B - Data Validator Documentation

LIST OF DRAWINGS

Drawing 1 - Site Plan with Monitoring Locations

LIST OF FIGURES

Figure 1 - Groundwater Monitoring Network. **10**
Figure 2 - Typical Monitoring Well Installation. **21**
Figure 3 - Surface Water and Sediment Sampling Locations. **25**
Figure 4 - Landfill Gas Monitoring Locations. **36**
Figure 5 - Environmental Monitoring Plan Organizational Chart. **45**

TABLE OF CONTENTS (Continued)

Page No.

LIST OF TABLES

Table 1 - Hydrogeological Stratigraphy. **2**
Table 2 - Summary of Groundwater Monitoring Well Network. **12**
Table 3 - Bentonite Hydration Times. **19**
Table 4 - Schedule for Quarterly Environmental Monitoring. **41**

1.0 INTRODUCTION

Modern Landfill, Inc. (Modern) owns and operates a municipal solid waste landfill in the Town of Lewiston, Niagara County, New York. Modern's site is 455 acres in size, while the permitted waste footprint encompasses 232.2 acres of the property. The currently planned and permitted areal extent of landfill liner construction and waste placement occupies about 252 acres. Approximately, 56 acres of the landfill baseliner system remain to be constructed over the next several years pursuant to Moderns current Part 360 Solid Waste Management Facility Permit (# 9-2924-0016/00043).

The planning and design of the Section IV expansion to Modern's original 117 acre landfill footprint occurred between 1999 and 2001. The construction of Section IV as previously permitted would have required the demolition of the operating Material Recovery Facility (MRF) and the relocation of the Tennessee Gas Pipeline that traverses the site in an east to west orientation. Since the preparation of that initial design for Section IV, Modern acquired additional property to the south and those new circumstances prompted a redesign of Section IV's footprint to avoid the demolishing the MRF and moving the high pressure natural gas pipeline. The proposed "footprint swap" (SWAP area) reconfigured the solid waste footprint in Section IV, but maintained the permitted total waste acreage and solid waste volume.

This update of the currently approved Environmental Monitoring Plan is submitted as part of Modern's permit renewal and has been modified to comply with the current 6 NYCRR Part 363-4.6(f) requirements.

2.0 CRITICAL STRATIGRAPHIC SECTION

The Critical Stratigraphic Section for the Modern site has been defined from the ground surface down, to include the following units:

- Brown Clayey Till;
- Glaciolacustrine Clay;
- Glaciolacustrine Sand & Silt;
- Pre-Wisconsin Till; and
- Upper Queenston Shale.

The Glaciolacustrine Sand and Silt and the Upper Bedrock hydrostratigraphic units have been identified as water-bearing and transmissive units versus the lower bedrock, the two tills, and the Glaciolacustrine Clay, which are restrictive or impeding units. This perspective was developed on the basis of the geological information, measured hydraulic conductivity values, hydraulic head distributions and both analytical and numerical modelling. For detailed information, please see previously submitted reports (Wehran, 1991; Eckenfelder, 2001; and Environmental Solutions, 2012). Table 1, below, presents the summary of hydraulic characteristics of the critical stratigraphic section derived from those investigations.

Table 1
Modern Landfill Site
Hydrogeological Stratigraphy

Hydrogeologic Unit	Hydraulic Characteristics	Geometric Mean Hydraulic Conductivity (cm/s)
Recent Alluvium/Fill	Relatively Transmissive	5.8×10^{-5}
Brown Clayey Till	Restrictive	3.6×10^{-6}
Glaciolacustrine Clay	Restrictive	5.9×10^{-8}*

Hydrogeologic Unit	Hydraulic Characteristics	Geometric Mean Hydraulic Conductivity (cm/s)
Glaciolacustrine Sand & Silt	Relatively Transmissive	3.0×10^{-5}
Pre-Wisconsin Till	Restrictive	4.4×10^{-6}
Upper Queenston Shale	Relatively Transmissive	2.1×10^{-4}

Notes: * - lab test results

The Glaciolacustrine Sand and Silt unit is, therefore, considered "the first water-bearing unit" into which facility derived contaminants that escape from a solid waste management facility might reasonably be expected to enter and cause contamination during the active life or within 30 years following closure of the facility.

The following provides a brief description of the key characteristics of each of these geologic units:

- **Alluvium (Recent) and Fill**

  A relatively thin layer of alluvial deposits confined within a wide, shallow flood plain existed over some portions of the northern portion of the site. These alluvial deposits consist of laminated clayey silt and fine sand. They are dense, hard, and similar to the underlying till from which they were probably derived. The alluvium varies in thickness from zero to eight feet. Due to development of the site and regrading of the property, this floodplain has been extensively modified. It was not found in the southern expansion area.

Over the years, much of the site has been regraded and, as a result, one can often find in various areas several feet of fill overlying virgin materials. In many cases, the fill is virtually indistinguishable from the underlying glacial deposit since, it is essentially reworked till.

- **Brown Clayey Till**

Brown Clayey Till is found at or within five feet of the surface across the Modern Landfill site, except in areas which have been excavated and backfilled for roadways or other access. The till is predominantly composed of clay and silt-sized particles with minor amounts of sand and gravel and occasional cobbles. The thickness of the Brown Clayey Till varies considerably across the facility, and ranges from about four to as much as 20 feet.

Isolated lenses of glaciofluvial sand and gravel occur within this till layer. The character of these lenses varies from silty fine sand to gravelly fine sand and silt. All the larger lenses encountered were saturated. An extensive study of these 'sand lenses' on Modern's, Chemical Waste Management's and the Department of Energy's properties has been conducted by the United States Army Corps of Engineers (USACE). The conclusion of their work was that these are isolated lenses that are not hydraulically interconnected. A report by one of their consultants presents the results of this evaluation in Appendix B of *Groundwater Flow and Contaminant Transport Modeling Report* for the Niagara Falls Storage Site (HydroGeoLogic, December 2007).

- **Glaciolacustrine Clay**

Immediately underlying the upper Brown Clayey Till is a glaciolacustrine silty clay deposit. The Glaciolacustrine Clay's thickness ranges from 0 to 30 feet across the site. It is present across the entire site area, except where

it thins out or has been excavated. It is thickest in the northwest area of the site and thins out in the south eastern portion of the site.

The Glaciolacustrine Clay is typically a gray silty clay with traces of fine sand and occasional thin seams/layers of saturated gray or brown silts. The upper surface of the Glaciolacustrine Clay is typically marked by a thin transition zone from the overlying Brown Clayey Till. This contact can be readily identified by a reduction in the blow counts (N) with depth recorded during the standard penetration test and by color change from a reddish brown to brown gray. The Glaciolacustrine Clay is typically very soft to firm, and exhibits a high natural moisture content. Minor amounts of gravel sized dropstones are scattered throughout.

The N values increase in the lower portion of the unit due to the increased frequency of the silt/sand layers in a transitional zone to the underlying Glaciolacustrine Sand and Silt. The thin layers of silt are generally one inch or less in thickness and occur at intervals from one to twelve inches or more. In most cases, the basal few feet of the Glaciolacustrine Clay can be differentiated from the upper portion by an increase in thickness and frequency of red-brown silt layers. In addition, partings of fine or medium sand are more common in this basal zone.

- **Glaciolacustrine Sand & Silt**

Underlying the Glaciolacustrine Clay is a varied sequence of sand and silts referred to as the Glaciolacustrine Sand & Silt unit . As indicated in the literature and observed in the field samples, this unit is apparently a deep water deposit, laid down within a proglacial lake that developed during the retreat phase of the ice sheet.

Data collected from borings indicate that this unit is fairly consistent across the site and is absent occasionally in limited areas. These data also indicate

that the unit is locally variable in structure and composition. Materials range in size from fine to coarse sand and fine to coarse gravels which flowed into the augers during drilling, to dense, wet alternating layers of fine sand and silt. This unit generally thins to the south and southeastern areas of the site.

- **Pre-Wisconsin Till**

Immediately underlying the Glaciolacustrine Sand & Silt is a relatively thin layer of lodgement till identified as the Pre-Wisconsin Till. This till is typically red-brown in color, dense to hard, saturated and well indurated. The till matrix is predominantly sand and silt, the more indurated, deeper portions have larger amounts of silt and clay, with a corresponding reduction of the sand size fraction as observed during the field investigations. The upper portion of the till varies in density; it generally exhibits a relatively sharp contract (increase of blow counts) in comparison to the overlying materials. The lower portions of the till are generally more dense than the upper reaches and have an increasing number and size of clasts. These clasts are most often composed of red and green Queenston shale. This till unit is generally continuous across the site.

- **Queenston Shale**

The entire Modern Landfill site and surrounding areas are underlain by shale of the Queenston Formation. The Queenston Shale consists of layers of brick-red sandy shale, greenish-grey shale, and greenish-grey sandstone. The upper layers are primarily shale while the lower layers are interbedded with thin layers of sandstone, one to eight inches thick. This shale is highly fissile, and separates easily along bedding planes on partings into thin, less than one inch pieces. The upper five to ten feet is generally highly weathered and broken into small fragments. In many places this weathered rock is difficult to distinguish from the overlying till.

3.0 ENVIRONMENTAL MONITORING PLAN

3.1 INTRODUCTION

The following section discusses the proposed Environmental Monitoring Plan which has been developed to comply with 6 NYCRR Part 363-4.6(f). This Environmental Monitoring Plan addresses the following items:

- Groundwater monitoring system and sampling program;
- Surface water sampling;
- Leachate sampling;
- Gas migration monitoring;
- Water Quality monitoring which includes provisions for characterizing existing water quality, operational water quality and contingency water quality;
- Site Analytical Plan which is presented as a separate section;
- Data Quality Assessment; and
- Reporting of data.

Site reconnaissance data, site specific hydrogeological data and the numerical modeling of future site conditions have been employed in the design of this Environmental Monitoring Plan.

Drawing 1 (attached) presents all the environmental monitoring locations.

3.2 GROUNDWATER SAMPLING

The first water bearing unit of the Critical Stratigraphic Section is the Glaciolacustrine Sand and Silt; consequently, previous Environmental Monitoring Plans have primarily emphasized monitoring that groundwater zone. Two previous site investigations (Wehran, April 1990 and April 1991) indicated some limited discontinuities in the Pre-Wisconsin Till unit; consequently, the Glaciolacustrine Sand and Silt unit would be in hydraulic connection with the Upper Bedrock at these locations. A subsequent evaluation of the continuity of the Pre-Wisconsin Till has shown that there are very few locations where this till might be absent (see Section 3.2.1, below); therefore, consistent with recent practice, this Environmental Monitoring Plan continues to emphasize the monitoring of the Glaciolacustrine Sand and Silt unit and to a lesser degree the upper fractured bedrock.

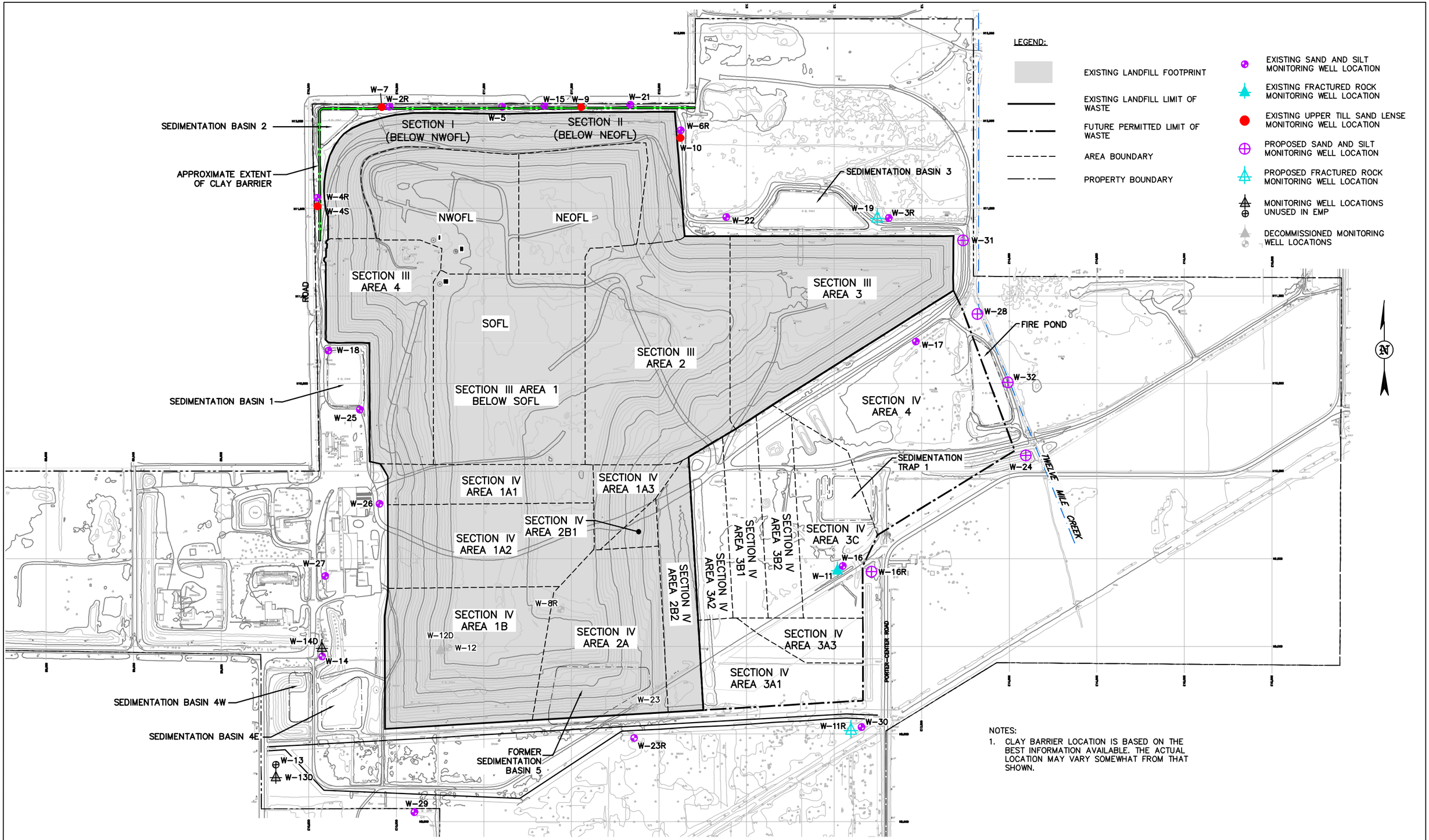
The upper Brown Clayey Till unit is not monitored with the exception of areas where sandy lenses were documented in the till. Originally, although these lenses did not appear to be continuous, monitoring wells were installed in encountered lenses of sufficient size to bear water. More recently, the United States Army Corps of Engineers (USACE) have conducted a detailed study of these lenses and concluded they are not continuous. A report by one of their consultants presents the results of this evaluation in Appendix B of *Groundwater Flow and Contaminant Transport Modeling Report* for the Niagara Falls Storage Site (HydroGeoLogic, December 2007). This practice of installing shallow monitoring wells where sandy lenses are encountered in the upper Brown Clayey Till will continue at new down gradient locations along the south eastern portion of the expansion area (see below for additional discussion).

As discussed in the previously approved EMP, leachate levels within Section III of the existing facility should always be below the bottom of the Brown Clay Till. In most cases, the top calculated elevation of the potential leachate mound is at least two feet below the bottom of the Brown Clayey Till. Considering the strong downward gradient in the Brown Clayey Till and the fact that any leachate build-up in Section III should be at a lower elevation than this unit, additional groundwater monitoring of this unit was not warranted.

The older sections of the landfill, Section I, Section II, and Section III Area 1 are based in the Glaciolacustrine Clay unit which is below the Brown Clayey Till. These sections have leachate collection systems and therefore, leachate mounds should not build up in them either; however, if a leachate mound should develop it would most likely migrate through the sandy lenses before moving through the till. Therefore, these lenses were monitored under the previous EMP and will continue to be monitored under this updated EMP. It should be noted that a clay barrier was installed on the western side of Section I and the northern side of Sections I and II. The approximate location of this barrier is shown on Figure 1, below. This barrier should prevent migration of leachate in those directions.

The baseliner of the southern expansion area will be completed in the Glaciolacustrine Clay unit in the west portion of the expansion area and the upper Brown Clayey Till/Pre-Wisconsin Till unit in the eastern portion of the expansion area. Consistent with the discussion presented above, additional monitoring of the upper Brown Clayey till in the west portion of the expansion area is not warranted. Sand lenses observed within the upper Brown Clayey Till in the eastern portion of the expansion area, however, will be targeted for monitoring as potential mounding of leachate in this area could potentially enter these sand lenses. Accordingly, during installation of future monitoring wells in the eastern portion of the expansion area, sandy lenses observed in the upper Brown Clayey Till, which are of sufficient size to bear water, will be screened by an independent monitoring well and this well will become part of the operational groundwater monitoring program.

The Modern property is bounded to the north by the Chemical Waste Management (CWM) hazardous waste management facility and to the west by the Department of Energy's (DOE) Niagara Falls Storage Site (NFSS) which contains radioactive wastes and residues. In terms of the proposed Section IV expansion, the CWM property is located more than 2000 feet down/crossgradient and consequently groundwater flow on this site should not have any effect on the expansion area. The DOE property is located approximately 500 feet downgradient of Area 1 of Section IV and groundwater flow at the DOE property is not expected to have any affect on groundwater monitoring for Modern's site.



NOTES:

1. CLAY BARRIER LOCATION IS BASED ON THE BEST INFORMATION AVAILABLE. THE ACTUAL LOCATION MAY VARY SOMEWHAT FROM THAT SHOWN.

#	REVISION	BY	DATE
	DECOMMISSIONED WELLS W-12 □ W-12D	AMW	3/20/13

ENVIRONMENTAL SOLUTIONS

SHELBURNE NOVA SCOTIA

DATE□ APRIL 2023

PREPARED FOR□ MODERN LANDFILL, INC.			
DES. BY□KFP/AMW	DRW. BY□ AMW	CHK. BY□ LEL	
DWG□ F01□GW MONITORING WELL ARRAY.DWG	TOWN OF LEWISTON	NIAGARA COUNTY	STATE OF NEW YORK

GROUNDWATER MONITORING WELL ARRAY

FIGURE 1

As part of the groundwater monitoring program, Modern currently monitors the hydraulic head data in all the Glaciolacustrine Sand & Silt and the shallow bedrock piezometer and monitoring wells on their property on a quarterly basis. The United States Army Corps of Engineers (USACE) on behalf of DOE no longer monitor hydraulic heads on the DOE property and CWM is now only monitoring heads annually in October. In February of 2012, Modern received permission from the Department to reduce monitoring of the hydraulic heads on the shallow wells and piezometers at Modern from quarterly to annually. These are the wells and piezometers which are screened in sand lenses within Upper Brown Clayey Till. Since most of CWM's wells are screened in the shallow overburden, it was agreed that Modern would take water level measurements in their shallow wells/piezometers in October; however, since there are few shallow wells/piezometers and since the data are very useful for determining vertical gradients, Modern continues to measure them quarterly.

The measurement dates are co-ordinated between CWM and Modern so that the data are collected simultaneously. These data are also shared; consequently, any significant changes in the relationship of groundwater flow between these properties will be identified.

As part of the development of Section IV, it is necessary to reduce the hydraulic heads in both the overburden material and the upper bedrock. In order to accomplish this reduction, a combination of pore water drains and bedrock pumping wells are being utilized. When the pore water drains are operating, they will be sampled as part of the operational water quality monitoring.

3.2.1 Monitoring Network

Previously, Modern had an Environmental Monitoring Plan that utilized a three scenario approach for groundwater monitoring. The first scenario (Phase I), was designed to monitor Sections I, II, and III while the Section III pore water drains were actively pumping. The second scenario (Phase II) for groundwater monitoring was designed to monitor groundwater quality if the pore water drain sumps were shut down and groundwater flow reverted back to its pre-pumping flow direction. A similar phased approach for groundwater monitoring

was utilized in the development of the previously permitted Environmental Monitoring Plan which included Section IV. In the early years of this century, groundwater flow returned to pre-pumping conditions since the Section III pore water drains were shut down. The currently utilized hydraulic head suppression system which uses a combination of bedrock pumping wells and pore water drains, has a more localized effect and is shut down as soon the uplift pressures are met; consequently, a phased approach to the groundwater monitoring is no longer necessary.

The monitoring wells, both existing and proposed, are based upon the existing hydrogeologic reports as well as water level measurements collected to document the effects of the hydraulic head suppression system on groundwater flow. Information from studies, both at the Modern site and in adjacent areas, has yielded a clear understanding of site conditions. This understanding has allowed the design of the monitoring system to be optimized in terms of the units of interest in the Critical Stratigraphic Section and the proper density of monitoring points to provide an adequate program for groundwater monitoring at the landfill.

Based upon the requirements of 6 NYCRR Part 363-4.6 and the results of the numerical modeling of a liner leak (Wehran, April 1991), the spacing of the wells should be adequate to monitor a potential impact from the landfill. Table 2, below, summarizes all the groundwater monitoring points, both existing and proposed, for the groundwater monitoring program. Figure 1, above, shows the locations of these monitoring wells.

TABLE 2
MODERN LANDFILL, INC.
SUMMARY OF GROUNDWATER MONITORING WELLS
USED IN THE ENVIRONMENTAL MONITORING PLAN

Monitoring Well	Zone Monitored	Comments
W-11	Upper Fractured Bedrock	Existing Upgradient Well. To be decommissioned 2027-2028.

Monitoring Well	Zone Monitored	Comments
W-11R	Upper Fractured Bedrock	Proposed Upgradient Well. To be installed ~2027
W-19	Upper Fractured Bedrock	Proposed Downgradient well
W-2R	Glaciolacustrine Sand and Silt	Existing Well, Downgradient
W-3R	Glaciolacustrine Sand and Silt	Existing Well, installed October 1995, Downgradient
W-4R	Glaciolacustrine Sand and Silt	Existing Well, installed October 1995, Downgradient
W-5	Glaciolacustrine Sand and Silt	Existing Well, Downgradient
W-6R	Glaciolacustrine Sand and Silt	Existing Well, installed October 1995, Downgradient
W-14	Glaciolacustrine Sand and Silt	Existing Well, installed January 2000, Upgradient, Phase III
W-15	Glaciolacustrine Sand and Silt	Existing Well, installed September 2001, Downgradient
W-16	Glaciolacustrine Sand and Silt	Existing Background Well. To be decommissioned 2027-2028.
W-16R	Glaciolacustrine Sand and Silt	Proposed Background Well. To be installed ~ 2027.
W-17	Glaciolacustrine Sand and Silt	Existing Background Well. To be decommissioned 2029 - 2030.
W-18	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Downgradient.
W-21	Glaciolacustrine Sand and Silt	Existing Well, installed September 2001, Downgradient.
W-22	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Downgradient.
W-23R	Glaciolacustrine Sand and Silt	Existing Well, installed 2014, Upgradient.
W-24	Glaciolacustrine Sand and Silt	Proposed, Upgradient Well

Monitoring Well	Zone Monitored	Comments
W-25	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Downgradient.
W-26	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Downgradient.
W-27	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Downgradient.
W-28	Glaciolacustrine Sand and Silt	Proposed, Upgradient* Well. To be installed ~ 2029
W-29	Glaciolacustrine Sand and Silt	Existing Well, installed 2006, Upgradient.
W-30	Glaciolacustrine Sand and Silt	Existing Well, installed 2009, Upgradient.
W-31♦	Glaciolacustrine Sand and Silt	Proposed, Downgradient Well. To be installed ~ 2029.
W-32 ♦	Glaciolacustrine Sand and Silt	Proposed, Downgradient Well. To be installed ~ 2029.
W-4S	Sand/Silt Lenses in Upper Till	Existing Well, Downgradient.
W-7	Sand/Silt Lenses in Upper Till	Existing Well, Downgradient.
W-9	Sand/Silt Lenses in Upper Till	Existing Well, Downgradient.
W-10	Sand/Silt Lenses in Upper Till	Existing Well, Downgradient.

Notes: * - if groundwater flow continues to the northeast (NE) in the extreme NE corner of the site, this well will become a downgradient well.

♦ - these wells will only be installed if groundwater flow continues to the northeast (NE) in the extreme NE corner of the site.

In an earlier Environmental Monitoring Plan, additional Upper Bedrock monitoring wells, W-19 and W-20, were proposed. These additional bedrock monitoring wells were proposed because the isopach of the Pre-Wisconsin till (Wehran, April 1990; and April, 1991) showed that in the northern portions of both Section III Area 3 and Section III Area 4, the till thins and the Glaciolacustrine Sand and Silt unit is in contact with the Upper Bedrock. More recent work has found errors in the original isopachs; consequently, all the borehole data have been

reviewed and a new isopach of the Pre-Wisconsin Till was prepared and submitted with the *Response to Comments* (Daigler Engineering, May 2011). Based on the new isopach, there is no hole in the Pre-Wisconsin Till in the northern portion of Section III Areas 1 and 4; consequently, the proposed monitoring well (W-20) at the northwest corner of Sedimentation Basin 1 has been removed. In the northeast corner of Section III Area 3, the borehole data does not show a complete absence of the Pre-Wisconsin Till; however, at PZ-8D and PZ-9M it appears to be very thin (0.1 and 0.3 feet thick, respectively). Consequently, a shallow bedrock monitoring well, PZ-19, is still proposed to the west of W-3R.

The Section IV expansion area which is under development, is upgradient of the existing facility. As the development of this area continues, the abandonment and replacement of existing monitoring wells will be completed in a phased approach consistent with the regulatory requirements.

In recent years shallow groundwater flow in the Glaciolacustrine Sand and Silt unit on the northeastern edge of Section III Area 3 and Section IV Area 4 has frequently been to the northeast which is not consistent with historic flow directions. This change in flow direction has also been observed occasionally in the Upper Bedrock unit. As a consequence, enquiries have been made to try to determine the cause of this change in flow direction. The New York State Mines and Wells mapping shows an active clay mine north and east of Porter Center Road. This facility is relatively close to Modern and if they are pumping at this quarry, then, this is likely the cause of the change in groundwater flow direction in the northeast corner of Modern's property.

Because of this change in groundwater flow, the location of proposed monitoring well, W-28, has been moved and two additional groundwater monitoring wells, W-31 and W-32 are proposed for the Glaciolacustrine Sand and Silt unit. The location of these proposed wells are shown on Figure 1. W-31 and W-32 will only be installed if the groundwater continues to flow consistently to the northeast.

As noted above, for the development of Section IV, it is necessary to reduce the hydraulic heads in both the overburden material and the upper bedrock and a combination of pore water drains and bedrock pumping wells are being utilized. When the pore water drains are operating, they will be sampled as part of the operational water quality monitoring. Currently, three pore water drains, Section IV Area 1A1, Section IV Area 1A2 (which includes flow

from the Section IV Area 1B) and Section IV Area 2A are operational and being sampled as part of the environmental monitoring programme. As new areas of Section IV are constructed, their pore water drains will be added to the monitoring network. When stability with respect to up-lift has been reached the pore water drains will be shut-off and the monitoring will stop.

The Section IV Area 1A1 pore water drain, had water in it for the first time in the Third Quarter of 2007; consequently, samples were collected for the NYSDEC Expanded parameter list. The results were generally consistent with previous pore water drain analyses with the exception that ethyl benzene was measured at a concentration of 7.3 µg/L. It was sampled and analyzed for the Baseline Parameter list in the First Quarter 2008 and ethyl benzene was non detect; however, measurable concentration of two other volatile organic compounds (VOCs) were found: benzene at 6.4 µg/L and 2-butanone at 7.4J µg/L. The 2-butanone result is flagged as estimated since the calculated concentration is below the practical quantitation limit (PQL). The porewater drain results for the Second Quarter 2008 had measurable concentrations of benzene (8.7 µg/L) and all other VOCs were non detect. In the Third Quarter, the lab accidently did not sample for VOCs.

Because of these VOC hits, an investigation was initiated to identify the source of the volatile organic compounds and to determine whether the source could be eliminated or remediated. As well, it was decided the discharge from the Section IV Area 1A1 Pore Water Drain Sump would be re-directed from the open drainage ditch which leads to Sedimentation Basin No. 2 to the landfill's primary leachate collection system. A letter report which summarized the investigation to determine the source of these constituents, the analytical results of the investigation, the findings and the recommendations, was submitted to the Department on the 19th of January 2012.

In 2012, a letter, dated the 1st of October, was received from Ms. Mary McIntosh of the NYSDEC indicating she was in agreement with the conclusions and recommendation of our January report and that the monitoring of the Section IV 1A1 Pore Water Drain could revert back to the normal monitoring programme described in the Environmental Monitoring Plan. As a result of those recommendations, the outfall for the Section IV Area 1A1 Pore Water Drain Sump is now permanently discharging into the leachate collection system.

3.2.2 Monitoring Well Inspection and Installation Details

Additional wells have been proposed for the groundwater monitoring network to complement those which presently exist. All existing monitoring wells included in the Environmental

Monitoring Program will be periodically inspected. The inspections will include the following:

- Check lock to ensure it is in place and functional. Lubricate as necessary;
- Inspect protective casing to ensure it is firmly in place and has not been damaged or heaved due to frost. Make sure the vent hole and the drain hole are open and clear of any debris or dirt;
- Make sure the well identification label can be read and repair as necessary;
- Inspect the concrete surface seal to ensure it is intact and drains away from the well;
- Inspect the well cap to ensure it is in place and in good repair;
- Inspect the well to ensure it is in firmly place and has not heaved; and
- Inspect any dedicated sampling equipment (i.e., tubing and/or valves) to ensure they are in good repair and not damaged or fragile with age. Replace as necessary.

These inspections may result in the necessity for occasional well replacement due to damage.

Because of various site operation projects, including ditching, upgrading roads and the construction of berms, *et cetera*, monitoring wells and piezometers occasionally require reconstruction maintenance so that they may remain functional for use in the environmental monitoring programme. In some cases the riser will need to be reduced and in some cases extended. When extending the riser no PVC glues or solvents will be used. At locations where the risers need to be extended the existing surface seal will be removed and replaced at the new ground surface elevation. This will ensure that when the well is ready to be abandoned, a buried seal will not compromise the abandonment procedure.

As a result of the need for additional wells and the possibility of replacement wells, well installation procedures are addressed in this section of the report. Any wells to be installed during the course of the program (including the proposed wells) will be installed in accordance with the requirements of NYCRR Part 363-4.4(k). The schedule for any wells requiring replacement will follow that mandated in 363-4.4(k)(5).

Drilling Operations

Boreholes for monitoring well installation will be advanced through the overburden and upper Bedrock using a method that will ensure continuous samples of material are obtained. All drilling equipment will be steam cleaned prior to initial site use and between holes.

Monitoring Well Installation

Well screens and risers must be constructed of materials selected to last for the required monitoring period of the facility without contributing contaminants to, or removing contaminants from, the groundwater. In this case, it is proposed to use two inch inside diameter (I.D.) threaded, flush joint, schedule 40 PVC. The screened PVC sections will be factory constructed, non solvent welded/bonded continuous slot wire wrap screens. Joints, caps and end plugs will be secured by welds, threads with Teflon tape, or force fittings. Solvents and glues or other adhesives will not be used. Caps will be vented to allow for proper pressure equalization.

The length of the screened section at each well will be determined on a case-by-case basis depending upon the thickness of the stratigraphic unit to be screened at that location. Screened sections will, under no circumstances, exceed a length of twenty feet, without the approval of the NYSDEC.

During the construction of any new monitoring wells, the borehole will have an inside diameter at least two inches larger than the outside diameter of the well riser pipe and screen. This will allow the proper use of a Tremie pipe. A side discharge Tremie pipe will be used when backfilling the annular space with cement/bentonite grout to minimize any potential displacement of the fine sand pack or bentonite seal. If any water is used during drilling operations, it will be potable water of known chemistry, unless otherwise approved by the Department.

The sand pack surrounding the well screen will consist of clean, inert, siliceous material. Grain size will be based upon a representative sieve analysis of the zone to be screened. The sand pack will also be compatible with the slot size of the screen. For monitoring wells in the overburden, it is proposed to use a slot width of 0.006 inch in conjunction with a "00" sized silica sand filter pack around the screen. This sand pack will minimize the amount of fine materials entering the well and will not inhibit water inflow to the well.

The overburden materials at the Modern site are very fine grained. The Glaciolacustrine Sand and Silt unit, which is the most transmissive of the overburden units and consequently the zone of main concern for groundwater monitoring, has a silt content ranging from 2 to over 30 percent (based on grain size analyses). Considering the high silt and clay content in this the most transmissive unit, the choice of 0.006 inch slot width and "00" sized silica sand for any overburden wells is appropriate.

From experience on site, the upper fractured zone of the Queenston formation is very friable and the fractured zone contains a considerable quantity of fine grained material. Consequently, the proposed monitoring well specifications are also appropriate for bedrock monitoring wells.

The sand pack will be placed in the annular space around the well screen and extend two feet or 20 percent of the screen length (whichever is greater) above the top, and six inches below the bottom of the screen. The sand pack material will be placed using the Tremie method to avoid bridging and will be checked for proper placement. A finer grained sand pack material (100 percent passing the No. 30 sieve and less than 2 percent passing the No. 200 sieve) six inches thick will be placed at the top of the sand pack between the sand and the bentonite seal.

Bentonite will be placed above the sand pack using the Tremie method to form a seal at least three feet thick. A 6 to 12 inch fine grained sand pack will be placed over the bentonite seal to minimize grout infiltration. Sufficient time will be allotted to allow for full hydration of the bentonite prior to emplacement of overlying materials. The time for hydration varies with the type of bentonite and the type of material used for grout above the seal. Table 3, below, presents the minimum time, in hours, recommended for proper hydration of the different types of bentonite.

TABLE 3
MODERN LANDFILL, INC.
BENTONITE HYDRATION TIMES

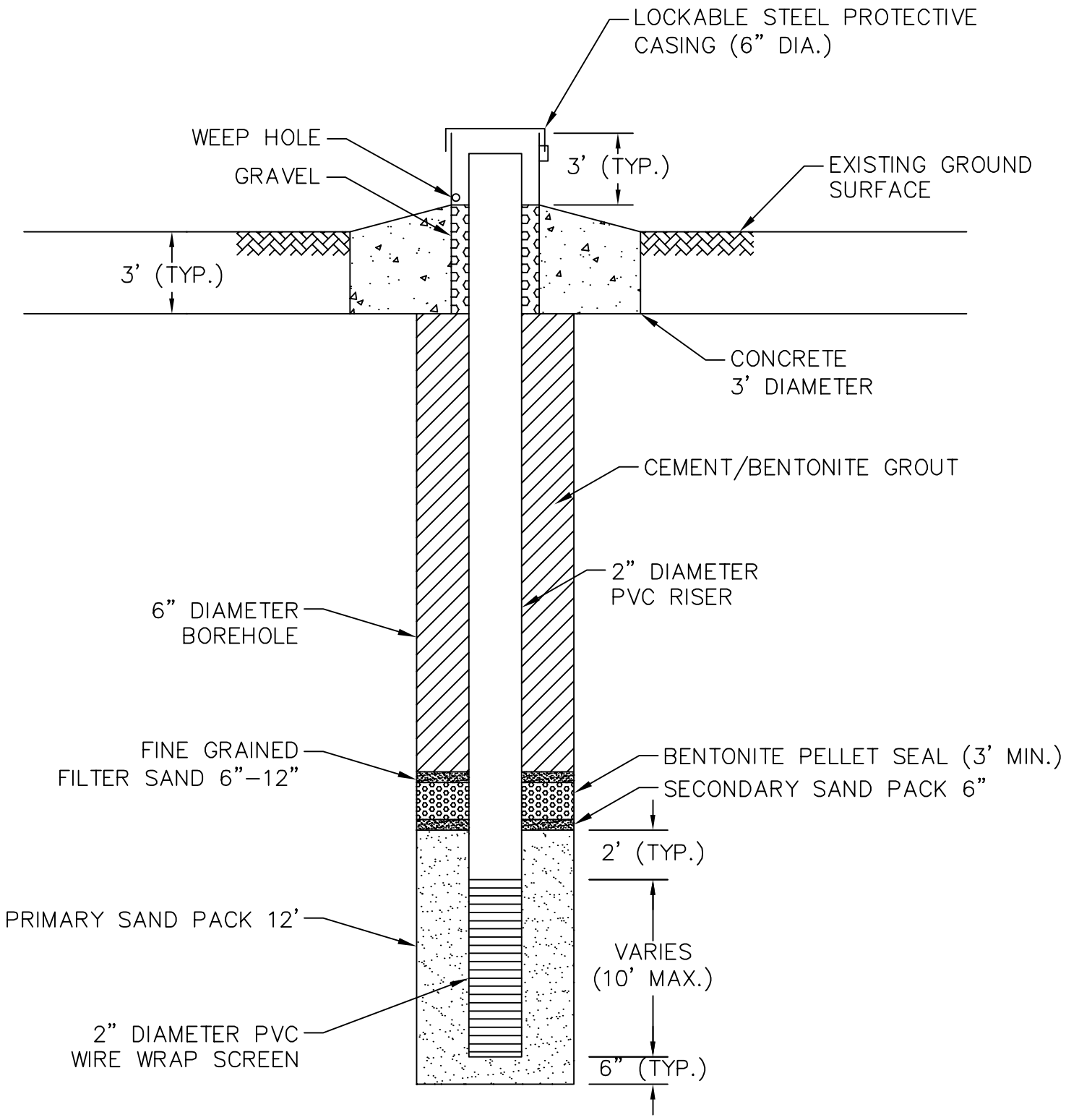
Bentonite Form	Cement/Bentonite Grout	Bentonite Grout
Pellets	2 - 4 h	0.5 h
3/4 inch chips	4 - 8 h	1.0 h

1/4 inch chips	2 - 4 h	0.5 h
Slurry	4 - 6 h	0.75 - 1.0 h

Grout of cement/bentonite, bentonite alone, or other suitable, low permeability material will be used to completely fill the remaining annular space to the surface seal. The grout mixture will set up without being diluted by formation water and will displace water during placement to ensure a continuous seal. Auger flights or casing will be left in the hole before grouting to prevent caving and be withdrawn as grouting occurs. The grout mixture will be placed under pressure using the Tremie method and must be appropriate for the groundwater chemistry of the site. It is proposed to use a bentonite/cement grout mixture (94 pounds Type 1 Portland cement, six gallons potable water, five to six percent powdered bentonite by weight) for well installations at the Modern site.

A protective steel casing, at least two inches larger in diameter than the well casing, will be placed over the well casing or riser pipe and secured in a surface well seal to adequately protect the well casing. A distinctive, readily visible marker will be permanently affixed to the protective casing or near the well to identify the well number and ensure visibility in all conditions. A drain hole will be drilled at the base of the protective casing. A vent hole will be located near the top of the protective casing to prevent explosive gas build up and to allow water levels to respond naturally to barometric pressure changes. The annulus of the protective casing will be filled with gravel. A locking cap will be installed with one to two inches clearance between the top of the well cap and the bottom of the locking cap when in the locked position and a weather resistant padlock will be placed on the protective casing.

A concrete surface seal designed to last throughout the planned life of the monitoring well will be constructed. In order to prevent cracking, it is recommended that air entrained (approximately 5 percent) concrete or equivalent be used. The surface seal will extend below the frost depth to prevent potential well damage. The seal will be constructed by pouring the concrete into a sonotube form approximately three feet in diameter. The seal will be shaped to prevent surface runoff from ponding and entering the well casing. In areas where traffic may cause damage to the well, bumper guards or other suitable protection for the well will be constructed. Any damaged or deteriorated surface seals will be reported, and repaired or replaced in an appropriate manner.



SCALE: N.T.S.

ENVIRONMENTAL SOLUTIONS SHELBURNE NOVA SCOTIA	PREPARED FOR MODERN LANDFILL, INC.	TYPICAL MONITORING WELL CONSTRUCTION MODERN LANDFILL INC.			FIGURE 2
	DATE APRIL 2023				
	DWG F02 MW DETAIL.DWG	TOWN OF LEWISTON	NIAGARA COUNTY	STATE OF NEW YORK	

All new wells will be surveyed for horizontal and vertical control (nearest one hundredth foot) with respect to an existing benchmark. Figure 2, below, illustrates a typical monitoring well installation.

Monitoring Well Development

All wells will be developed as soon as possible after installation, but not before the well seal and grout have set. The well will be allowed to sit for a minimum of 48 hours before development. Water will not be introduced into the well for development without prior approval of the NYSDEC. Any contaminated water withdrawn during development will be properly managed. Currently the groundwater at Modern's site is not contaminated; therefore, water withdrawn during the development of new wells or the purging of existing wells will be discharged to the ground surface downgradient and away from the immediate vicinity of the well (minimum 20 feet). Should at anytime contamination be found, evacuated water from affected wells will be contained and properly disposed.

Efforts will be made to ensure that development does not disturb the strata above the water-bearing zone or damage the well and that the entire saturated screened interval will be developed. Multiple attempts at well developing may be required to increase the likelihood that sediment free water can be obtained particularly in the fine grained deposits found at the Modern site.

In order to try to minimize turbidity in monitoring wells installed in fine grained materials, the well installation and development techniques recommended by D.G. Paul, et al (1987) will be followed. In some instances their recommended well installation techniques may not be possible to achieve. In terms of well development, gentle bailing will be used. Surging, which has been documented to increase turbidity in wells in fine-grained materials will be avoided.

3.2.3 Well Abandonment

All soil borings, rock cores or other installations that are not completed as monitoring wells or piezometers must be fully sealed in a manner appropriate for the geologic conditions to prevent contaminant migration through the borehole.

Well/Piezometer abandonment procedures will include the following steps:

- Review existing boring and well construction logs to determine borehole diameter and depth;
- Breakup and remove the surface seal and protective casing;
- Over drill and remove the PVC well casing and related well construction materials to the diameter indicated on the boring log. The well should be overdrilled to a depth of approximately one foot greater than the total depth of the well;
- The screened interval of the borehole be be sealed separately and tested to ensure its adequacy before sealing the remainder of the borehole.
- Utilizing a cement/bentonite grout mix (94 pounds Type 1 Portland cement, six gallons potable water, five to six percent powdered bentonite by weight), Tremie grout the borehole to within five feet of the existing ground surface or to the proposed base liner grade;
- Top off the grouted borehole with natural soils.
- Document the abandoned piezometer/well locations and procedures used and submit written report to Modern Inc. and NYSDEC.

3.3 SURFACE WATER AND SEDIMENT SAMPLING

Surface water at the Modern site has been monitored at seven locations. Five of the locations monitor sedimentation basins. Namely; Sedimentation Basin #1 (SW-1), Sedimentation Basin #2 (SW-2), Sedimentation Basin #3 (SW-3), Sedimentation Basin #4 (SW-6) and Sedimentation Basin #5 (SW-7). It should be noted that due to Section IV construction, Sedimentation Basin #5 (SW-7) was decommissioned in the summer of 2014; consequently, it is no longer sampled. The other two monitoring locations are on Twelve Mile Creek. SW-4 is the upstream sampling station and SW-5 is the downstream station on the creek.

Figure 3, below, illustrates the surface water sampling locations for both operational and contingency monitoring. Sampling locations, SW-1, SW-2, SW-3 and SW-6 monitor the existing four sedimentation basins. The monitoring points are located at the outfall of each basin. As shown on Figure 3, Sedimentation Basin 4 is composed of two basins, the sampling location for both basins is SW-6 which is located at the outfall of Sedimentation Basin 4W. Sampling points, SW-4 and SW-5, are designated monitoring locations for Twelve Mile Creek. Currently no additional sedimentation basins are planned. If in the future additional sedimentation basins are proposed, they will be evaluated to determine whether they need to be added to the Environmental Monitoring Plan.

In 2010, a request was submitted to the NYSDEC to reduce the monitoring requirements for the winter sampling event. This request included the elimination of surface water sampling for the first quarter. In correspondence from Ms. Mary McIntosh, dated 11th of February 2010, the Department approved this request.

At all surface water monitoring stations, a surface water sample will be collected in the second, third and fourth quarter sampling events. Detailed sampling protocols and requirements are presented in Appendix A.

#	REVISION	BY	DATE
	DECOMMISSIONED WELLS W-12 W-12D	AMW	3/20/13

ENVIRONMENTAL SOLUTIONS

SHELBURNE NOVA SCOTIA

DATE APRIL 2023

PREPARED FOR MODERN LANDFILL, INC.			SURFACE WATER SAMPLING LOCATIONS
DES. BY KFP/AMW	DRW. BY AMW	CHK. BY LEL	
DWG F03 SW SAMPLE POINTS.DWG	TOWN OF LEWISTON	NIAGARA COUNTY	STATE OF NEW YORK

FIGURE 3

3.4 LEACHATE SAMPLING

3.4.1 Sampling Locations

The Primary Leachate sample has been collected from the main leachate storage tank and will continue to be collected from that location for the existing landfill sections. As new sections of the landfill are developed, each new cell will have independent primary leachate and secondary leachate collection system sampling ports. Samples are and will continue to be collected from each of the secondary leachate collection systems. Currently, samples are collected from the Section III Area 2,3; Section III Area 4; Section IV Area 1A1; Section IV Area 1A2/2B; NWOFL; NEOFL and Section IV Are 2A secondary leachate collection systems. As new areas of Section IV are developed, their primary and secondary leachate collection systems will be added to the monitoring programme.

3.4.2 Analytical Requirements

For more than 30 years, samples have been collected from the primary and the secondary leachate collection systems semi-annually. These samples have been be analyzed for the NYSDEC Expanded parameter list.

More recently, the NYSDEC Expanded parameter list has been updated and now includes radionuclides, (Part 363-4.6(h) Table 3A), 1,4-dioxane and PFAS (Part 363-4.6(h) Table 3B). As a consequence, the primary leachate sample will now be sampled for those parameters. A sample of the primary leachate will be collected the first quarter after this EMP is approved to analyze for those new parameters. Once it has been determined whether these analytes are in the leachate, a detailed plan will be submitted to the Department to determine existing water quality operational trigger concentrations for those analytes.

At a minimum, this plan will include:

- based on the site hydrogeology, operational history and development, etc., the selection of a representative number of upgradient and downgradient monitoring wells to establish the existing water quality for the new parameters in the upper water bearing unit of the stratigraphic section;

- the selected monitoring wells will be sampled twice and analyzed for the new parameters. One of the sampling events will be conducted as close as possible to the seasonal groundwater low;

- the resulting analytical data will be analyzed using the Gibbons (1990) statistical method previously used at Modern Landfill. This method was presented in detail in the 'Site Hydrogeologic Report and Plans' (Wehran EnviroTech, April 1991); and

- a schedule for the execution of the determination of the existing water quality operational trigger concentrations for any of the new parameters found in the leachate.

The Primary Leachate sample collected from the main leachate storage tank has been analyzed twice a year for the NYSDEC Expanded parameter list. Decades of data have been collected for the Primary Leachate. An assessment of the last ten years of the semi-volatile organic data required for the Expanded parameter list shows that the majority of those compounds are not detect. Based on this assessment which is provided under separate cover, the Primary Leachate sample taken from the leachate storage tank will now be analyzed for the Expanded parameter list annually.

As new cells of the landfill are constructed, each cell's primary leachate collection system will be sampled separately on a semi-annually basis and analyzed for the NYSDEC Expanded parameter list.

The existing seven secondary leachate collection systems will be analyzed semi-annually for the NYSDEC Baseline parameter list. As new cells are constructed their secondary leachate collections systems will be added to this leachate sampling programme and analyzed semiannually.

3.5 WATER QUALITY MONITORING PROGRAM

A part of the Environmental Monitoring Plan is the establishment of a Water Quality Monitoring Program. This program consists of the following four elements:

- Existing water quality;
- Operational water quality;
- Contingency water quality; and
- Reporting requirements.

3.5.1 Existing Water Quality

Modern has been monitoring groundwater quality at the site since 1979. Since that time, the monitoring program has been expanded and updated and currently a database exists which extends, for most wells, over twenty years. This extensive database has provided a good understanding of existing groundwater quality both upgradient and downgradient of the site. Table 2, above, lists the hydrostratigraphic units monitored by each of the monitoring wells. This existing database provided the basis to establish site specific statistical trigger concentrations to indicate whether impacts to groundwater quality from the landfill have occurred during the monitoring program. As noted above, the statistical method and the associated trigger concentration has been previously submitted to the Department.

The groundwater quality at the Modern site has been described in previous reports as being high in sulfate and chloride concentrations largely due to recharge to the Glaciolacustrine Sand and Silt from the underlying bedrock. This general condition of the groundwater has not significantly changed over time. A review of the historical data for the upgradient/background wells indicates that ambient water quality at the site exceeds some of the Title 6 NYCRR Part 703 Standards. Specifically, total bromide, total magnesium, total dissolved solids, total sodium, sulphate, turbidity, and total iron have been observed in most monitoring wells at levels above the standards, while some wells have exceedances for total arsenic, total boron, chloride, manganese, and colour. Sporadic exceedances for, cadmium, lead, and total phenols also occur. The concentrations of some of the metals (most notably sodium, thallium, potassium, and iron) are also occasionally high and likely reflects the high turbidity.

Based on the years of monitoring data, downgradient water quality has historically been similar to that seen in the upgradient wells. Occasional exceedances of standards for some of the above noted constituents are common. This is to be expected when dealing with groundwater exhibiting this general chemical profile.

The groundwater quality of the Upper Bedrock is similar to that for the Glaciolacustrine Sand and Silt unit with elevated concentrations of chloride, iron, manganese, total phenols and sulfate being common.

All the groundwater data obtained to date at the Modern site has been provided to the NYSDEC in periodic Environmental Monitoring Reports and previous major submissions. In these reports, the acquired data has been compared to pre-existing data.

3.5.2 Operational Water Quality

Operational water quality monitoring of the existing groundwater wells as proposed in this Environmental Monitoring Plan is currently on-going. The installation and monitoring of the proposed wells will be conducted, as development of Section IV requires (See Section 3.2.1). The following outlines the operational water quality monitoring program.

Monitoring

In a letter, dated the 11th of February 2010, the Department gave Modern permission to reduce the winter sampling event. As a consequence, the groundwater monitoring wells and surface water sampling stations are not being monitored in the first quarter.

Each year, operational water quality data will be obtained quarterly throughout the operational life of the landfill (defined as including the operational period, closure and post-closure). For groundwater, in the Third Quarter of each year, the monitoring wells will be sampled and analyzed for the NYSDEC Baseline parameters indicated in Part 363-4.6(h) Table 2A and 2B. For the other two quarters, the groundwater samples will be analyzed for the NYSDEC Routine parameters (Part 363-4.6(h) Table 1). For the surface water sampling locations, the Baseline event will be conducted in the Second Quarter and the other two quarters Routine parameters will be analyzed. Consistent with the groundwater monitoring wells, the pore water drains will not be sampled in the First Quarter and the Baseline event will be conducted in the Third Quarter of each year.

A critical component of the operational water quality program is to determine whether a significant increase of parameter levels from existing water quality has occurred. According to Title 6 NYCRR Part 363, a significant increase has occurred if:

- The groundwater quality for selected parameters at any down gradient monitoring well exceeds the existing statistical trigger prediction limit. Modern is using the methodology of Robert Gibbons (1990) to calculate the appropriate trigger values; or

- The groundwater quality for any parameter at any monitoring well exceeds the existing water quality value for that parameter and exceeds the water quality standards for that parameter as specified in Part 701, 702 or 703 of Title 6 NYCRR.

If it is determined that there is a significant increase from existing water quality levels for one or more of the parameters during field sampling for the Routine parameters, excluding the field parameters, at any monitoring well then, within 14 days of this finding, the department will be notified. This notification will indicate which parameters have shown significant increases from existing water quality levels. As a consequence of determining that a significant increase has occurred all monitoring points or an approved subset will be analyzed for the Baseline parameters during the next quarterly sampling event. Subsequent sampling and analysis for Baseline parameters will be conducted at least semi-annually until the significant increase is determined not to be landfill-derived or the NYSDEC determines such monitoring is not needed to protect public health or the environment.

If it is determined that there is a significant increase from existing water quality levels for one or more of the parameters during field sampling for the Baseline parameters, excluding the field parameters, at any monitoring well, then, within 14 days of this finding, the department will be notified. This notification will indicate which parameters have shown significant increases from existing water levels and will establish a contingency monitoring program within 90 days, as discussed below.

If a source other than the facility is thought to have caused the contamination or if the significant increase is a result of error in sampling, analysis, or natural variation in groundwater quality, either a separate report documenting this information will be submitted to the department for approval or it will be incorporated into the quarterly environmental monitoring report. If a successful demonstration is made, documented and approved by the

NYSDEC, then operational water quality monitoring will be continued. If, after 90 days, from the date when the NYSDEC was notified a successful demonstration is not made, then the contingency monitoring program will be initiated as discussed below.

3.5.3 Contingency Water Quality

A contingency monitoring program will be implemented if a significant increase in existing water quality, as discussed above, has been deemed to have occurred. It is understood that all contingency water quality monitoring plans must be approved by the NYSDEC. Contingency monitoring will consist of the following:

Within 90 days of triggering the contingency water quality monitoring program, a minimum of one sample from each monitoring well (upgradient and downgradient) or a selected subset will be collected and analyzed for the NYSDEC Expanded parameter list (Part 363-4.6(h)). If any constituents are detected above trigger concentrations in the downgradient wells as a result of the Expanded parameter analysis, a minimum of two independent samples from each well (upgradient and downgradient) or a selected subset will be collected within 30 days of obtaining the results of the Expanded parameter analysis and analyzed for the detected constituents. These independent samples will be collected within two weeks of each other and then compared to the existing groundwater quality values established above. If an increase in the existing water quality values in the upgradient wells is indicated by this comparison, the existing water quality values for these parameters will be revised to be the geometric mean of the results of each parameter for which analyses were performed in the upgradient wells within each hydrogeologic flow regime. If it can be shown that any of the Expanded parameters are not reasonably expected to be in, or derived from, the waste contained in the landfill based on the leachate sampling being performed, then the NYSDEC will be requested to allow them to be deleted from the analytical program. After obtaining the results from the initial or subsequent sampling above, a report will be prepared within 14 days, notifying the NYSDEC which of the Expanded parameters have been detected.

Within 90 days, and then on a quarterly basis all wells will be resampled and analyzed for all Baseline parameters, and for those Expanded parameters that were detected. In addition, all wells will be sampled and analyzed for the Expanded parameters once annually. At least one sample from each upgradient and downgradient well will be collected and analyzed during these sampling events. These may be reduced based on site specific conditions.

If the concentrations of any of the Expanded parameters are shown to be at or below existing water quality values for two consecutive sampling events, the NYSDEC will be notified of this finding and, if approved by the department, that parameter may be removed from the contingency water quality monitoring program. If the concentrations of all the Expanded parameters are shown to be at or below existing water quality values for two consecutive sampling events, the department will be notified and with their approval monitoring will return to operational water quality.

If, however, the concentrations of any Expanded parameters are above existing water quality trigger values, but all concentrations are below the established groundwater protection standard, then contingency monitoring will continue.

A report of these findings will be submitted for approval to the department. If it can be successfully demonstrated that the landfill is not the source of the contamination then they may return to operational monitoring if the Expanded parameters are at or below existing water quality.

If one or more Expanded parameters are detected at significant levels above the established groundwater protection standard in any sampling event, the NYSDEC will be notified, within 24 hours of this finding, which Expanded parameters that have exceeded the groundwater protection standard. All appropriate local government officials (Town of Lewiston and the County Health Department) identified in the Contingency Plan will be contacted to inform them of the notice within seven days of the detection.

A groundwater protection standard for each Expanded parameter detected in the groundwater will be established. For parameters for which a maximum contaminant level (MCL) has been established in Section 1412 of the Safe Drinking Water Act under 40 CFR Part 141 or for which a standard has been established pursuant to Title 6 NYCRR Part 701, 702, or 703 whichever is more stringent will be the groundwater protection standard. For parameters for which MCLs or standards have not been established, the existing water quality concentration for the parameter established from the sampling of the monitoring wells will be the groundwater protection standard. For parameters for which the existing water quality level is higher than the MCL or standard identified above, the existing water quality concentration will be the groundwater protection standard.

Should the contingency monitoring program continue, a report of all water quality monitoring results will be submitted to the department within 90 days of the conclusion of the sample collection. The report will include all the requirements of Part 363-4.6(f)(10)

In addition to the monitoring requirements for a contingency program, the following steps will be taken to address the situation that caused the start of contingency monitoring:

- The nature and extent of the release will be characterized by installing additional monitoring wells as necessary;

- If contamination is confirmed at least one additional monitoring well will be installed at the facility boundary in the direction of contaminant migration, and sampled to establish existing water quality;

- If it is determined by the sampling of the additional well(s) that contaminants have migrated off-site then all persons who own the land or reside on the land that is directly over any part of the plume of contamination or within 500 feet downgradient of any part of the plume will be notified; and

- An assessment of possible remedial measures will be initiated within 30 days unless it can be demonstrated that a source other than the landfill caused the contamination, or that the significant increase resulted from error in sampling, analysis, or natural variation in groundwater quality.

- The remedial assessment will include a list of possible remedial alternatives including, but not limited to, closure in accordance with Subpart 363-9 and landfill reclamation in accordance with Subpart 363-11 and an assessment of the effectiveness of each remedial alternative.

  The assessment of each listed remedial alternative will include, at a minimum:
  - ◊ the alternative's performance, reliability and ease of implementation;
  - ◊ the alternative's potential impacts including safety effects, cross-media effects and control of any probable residual contamination;
  - ◊ the time required to begin and complete each remedial alternative;
  - ◊ the cost of each remedial alternative; and

- ◊ an identification of any State and local permits or other public health or environmental requirements that may affect the corrective measure implementation.

- The remedial alternatives assessment will be discussed in a public meeting and with the department before the selection of the remedial alternative. Notification of the public meeting will be by local newspaper, direct mailing to property owners within 1,000 feet of the landfill footprint and by the publishing of the notice in the environmental notice bulletin. This notification will be published not less than two weeks nor more than six weeks before the meeting and will include the date, time, place and purpose of the meeting, and the name and address of the owner or the owner's representative. A responsiveness summary, which addresses comments received at the public meeting, will be included with the remedial assessment report.

- Based on the results of the remedial assessment, a preferred remedial alternative will be selected and within 14 days of completion of the remedial assessment report, a report detailing the chosen remedial alternative that complies with the requirements of Part 363-10.1will be submitted to the department.

3.6 LANDFILL GAS MIGRATION MONITORING PROGRAM

The potential for landfill gas migration at the Modern Landfill is minimized by the subsurface geologic materials, the clay cut-off wall placed at the northern margin of Sections I and II of the site and the western margin of Section I and the relatively high groundwater table. Figure 1 shows the approximate location of the cut-off wall. Gas can migrate through the subsurface in the area where soils are unsaturated and pore spaces are available. At the landfill site, groundwater is found within two to three feet of the ground surface (during dry periods) thereby effectively limiting the potential landfill gas migration pathway.

Further, Modern has constructed an active gas recovery system in Sections I, II, III and Section IV Areas 1A1, 1A2, 1A3, 1B, 2A, 2B1 and 2B2 which is designed to create negative pressures in the landfill. This condition will result in gas flow to this system which is positioned entirely within the landfill. This in conjunction with the baseliner and side liner makes it unlikely that gas will migrate away from these sections. An active gas recovery system is also proposed for the remainder of Section IV.

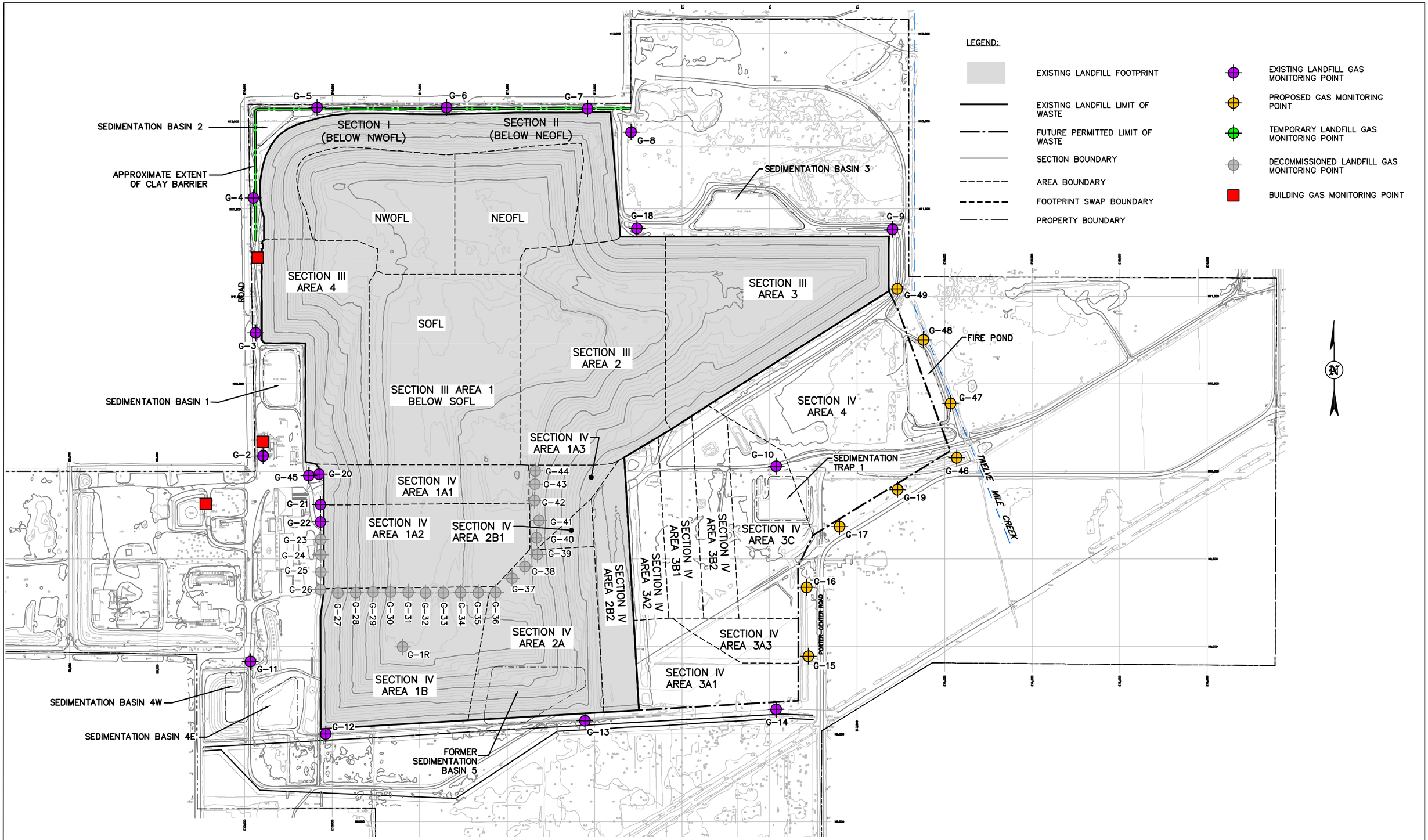
While migration of landfill gas from the landfill is expected to be minimal for the reasons indicated above, it is still necessary to monitor for methane in accordance with the regulations and in response to the need to protect the local environment. To accomplish this monitoring, a program of on-site testing for gas migration is detailed below.

Monitoring for gas migration will be performed quarterly. Monitoring will be performed at the following locations:

- Perimeter gas wells as shown on Figure 4, below; and
- Landfill buildings or structures

In addition, limited bar hole probes will be taken around the perimeter of the landfill. These probes will be used to monitor landfill gas prior to the installation of the active gas recovery wells.

Because of the volatile organic compounds (VOCs) found in the Section IV Area 1A1 pore water drain, an additional 26 gas monitoring wells were installed around the perimeter of Section IV Area 1A1 and 1A2 in 2010 to try to determine the source of the VOCs. These locations are also shown on Figure 4. The results of the assessment were submitted to the Region 9 geologist in a letter report (19th of January 2012). This report recommended the decommissioning of G-23 through G-44 temporary wells and that G-20, G-21, G-22 and G-45



#	REVISION	BY	DATE
	DECOMMISSIONED WELLS W-12 - W-12D	AMW	3/20/13

ENVIRONMENTAL SOLUTIONS

SHELBURNE *NOVA SCOTIA*

DATE: APRIL 2023

PREPARED FOR: MODERN LANDFILL, INC.			LANDFILL GAS MONITORING LOCATIONS
DES. BY: KFP/AMW	DRW. BY: AMW	CHK. BY: LEL	
DWG: F04:LFG MON LOCS.DWG	TOWN OF LEWISTON	NIAGARA COUNTY	STATE OF NEW YORK

FIGURE 4

should continue to be monitored as part of the quarterly environmental monitoring. In a letter dated, 1st of October 2012, Ms. Mary McIntosh agreed with these recommendations.

Gas condensate from the active gas recovery system will be sampled annually and analyzed for the NYSDEC Baseline parameters.

The instrument of choice for use in the gas monitoring program is the O_2/LEL meter. This instrument measures the concentration of combustible gases in terms of the lower explosive limit (LEL) of the calibration gas (in this case methane). The readout of the instrument is in "percent LEL" and this reading is what the criteria for the Gas Monitoring Program will be based upon.

Actual measurements in each well will be obtained as follows:

- An ambient air measurement will be obtained from within five feet of the well;
- The well cap will be removed to allow access;
- The well will be sounded to ascertain the presence of water;
- Tubing connected to the instrument will be lowered into the hole to a point one foot above either the bottom of the well or the top of any water present;
- An immediate reading of the gas concentration within the well will be obtained;
- The well will be purged of one well volume of available gas using the internal fan of the meter (minimum purging time will be ten minutes); and
- A reading at the end of purging will be taken.

The initial measurement will represent the total concentration of combustible vapors which has collected over time in the well casing. Measurements taken after purging will be more indicative of the actual concentration of migrating combustible gas which is in the soil surrounding the well.

Evaluation of Monitoring Results

Soil gas (especially methane) can occur naturally in soil as the result of the decomposition of organic material (e.g., roots, microscopic fauna). While the quantity of gas produced in this manner is relatively small, it is not an insignificant factor when trying to establish criteria for determining movement of methane away from the landfill. Gas migration from a landfill on the other hand, generally occurs in significant quantities as the "front" migrates from the landfill margin. Because of these considerations, the program discussed in the subsequent paragraphs has been developed.

Twenty-five percent of the lower explosive limit will be the criteria employed in evaluating monitoring results for structures. This excludes the gas control and recovery system. The lower explosive limit will be the threshold criteria at the property boundary. In the event that gas concentrations exceed these criteria during any monitoring event, then the contingency program described below will be undertaken:

- A complete round of monitoring for combustible gas in all on-site gas monitoring locations will be conducted weekly for one month.

- If gas concentrations are found to be consistently above the threshold criteria, a field investigation will be conducted to identify the source and extent of gas migration:

  - The field investigation will consist of the installation of hand auger borings near the wells in question and measurement for combustible gases. The field investigation should be completed within one month.

  - Upon completion of the field investigation, a report will be completed within four weeks evaluating the need for remedial measures. This report will be submitted to the NYSDEC.

  - If a remedial system is deemed necessary following acceptance by the NYSDEC, the designed system would be installed within six months, weather conditions permitting.

The above represents a guideline schedule and may, upon discovery of new and currently unknown information, require modification to facilitate a proper investigation and evaluation.

Monitoring Gas After Closure

At the time of closure, a monitoring program will be instituted to determine levels of gases escaping the landfill. The meter used to detect gas emissions greater than 25 percent of the lower explosive limit will be used at gas monitoring wells. If a high gas level is detected, the contingency plan described above will go in effect.

3.7 SCHEDULE

The schedule for the various monitoring programs and the analytical requirements for each media for each sampling event are provided in Table 4, below. Please note, if this revised EMP is approved prior to 2024, the schedule will be adjusted to start at that time.

TABLE 4
MODERN LANDFILL, INC.
2024-2025 SCHEDULE FOR QUARTERLY ENVIRONMENTAL MONITORING

Sampling Locations	FEB 2024	May 2024	AUG 2024	NOV 2024	FEB 2025	MAY 2025	AUG 2025	NOV 2025
GROUNDWATER: W-2R, W-3R, W-4R, W-4S, W-5, W-6R, W-7, W-9, W-10, W-11, W-14, W-15, W-16, W-17, W-18, W-21, W-22, W-23R,W-25, W-26, W-27, W-29 and W-30.	NA	R	B	R	NA	R	B	R
PORE WATER DRAINS: Section IV Area 1A1 Section IV Area 1A2 Section IV Area 2A	NA	R	B	R	NA	R	B	R
SURFACE WATER: SEDIMENTATION BASINS (**4**)	NA	B	R	R	NA	B	R	R
CREEK (**2**)	NA	B	R	R	NA	B	R	R
LEACHATE (1)	NA	NA	NA	E	NA	NA	NA	E

Sampling Locations	FEB 2024	May 2024	AUG 2024	NOV 2024	FEB 2025	MAY 2025	AUG 2025	NOV 2025
SECONDARY LEACHATE*:								
- Section III - Area 2,3	NA	B	NA	B	NA	B	NA	B
- Section III Area 4	NA	B	NA	B	NA	B	NA	B
- Section IV - Area 1A1	NA	B	NA	B	NA	B	NA	B
- Section IV - Area 1A2	NA	B	NA	B	NA	B	NA	B
- NWOFL	NA	B	NA	B	NA	B	NA	B
- NEOFL	NA	B	NA	B	NA	B	NA	B
- Section IV Area 2A	NA	B	NA	B	NA	B	NA	B
GAS CONDENSATE	NA	NA	B	NA	NA	NA	B	NA

Notes: **B** = Baseline Parameters **R** = Routine Parameters **E** = Expanded Parameters

NA = no analyses required * - Secondary Leachate Collection System
na - not available

The Baseline rotation for wells 5, 6R, 7, 9, 10, 15 & 21 has been changed to Second and Fourth quarters for this two year cycle. It will change back to First and Third quarters during the next two year cycle.

For this two year cycle, the biannual leachate analyses have been changed to the First and Third quarters. It will change back to the Second and Fourth quarters for the next two year cycle.

For this two year cycle, the annual condensate analyses have been scheduled for the Second quarter. They will be collected in the Third quarter during the next two-year cycle.

3.8 REPORTING

The results of all environmental monitoring conducted at the site will be submitted on a quarterly basis to the Department within 60 days of the end of the quarter. At a minimum, the quarterly reports will contain:

- A table showing the sample collection dates, the field data forms, the groundwater elevation data from the sampling date, the analytical results, designation of up and downgradient wells, applicable water quality standards, NYS Department of Health guidance values, statistical triggers, QA/QC notations (full QA/QC documentation will be made available to the Department upon request), method detection limits, and Chemical Abstracts Service (CAS) numbers for all compounds;

- Tables or graphical representations comparing current and historical water quality to upgradient water quality.

- A summary of any contraventions of state water quality standards or any significant increases in water quality above existing water quality;

- All Analytical Quality Assurance and Analytical Quality Control (AQA/AQC) documentation will be submitted;

- The Data Quality Assessment including data validation and data usability results;

- A discussion of the results including any elevation of parameters above background concentration or trigger values; and

- Any proposed modifications to the sampling and analysis schedule.

In addition to the quarterly reports, any determination of contamination will be reported to the department within 14 days of such finding. Finally, an "Annual Report" will be compiled and submitted within 90 days after the 1st of January. This report will contain, in addition to the normal quarterly report content, a description of any changes in water quality which have occurred during the course of the preceding year and provide a table summarizing the last five years groundwater quality data.

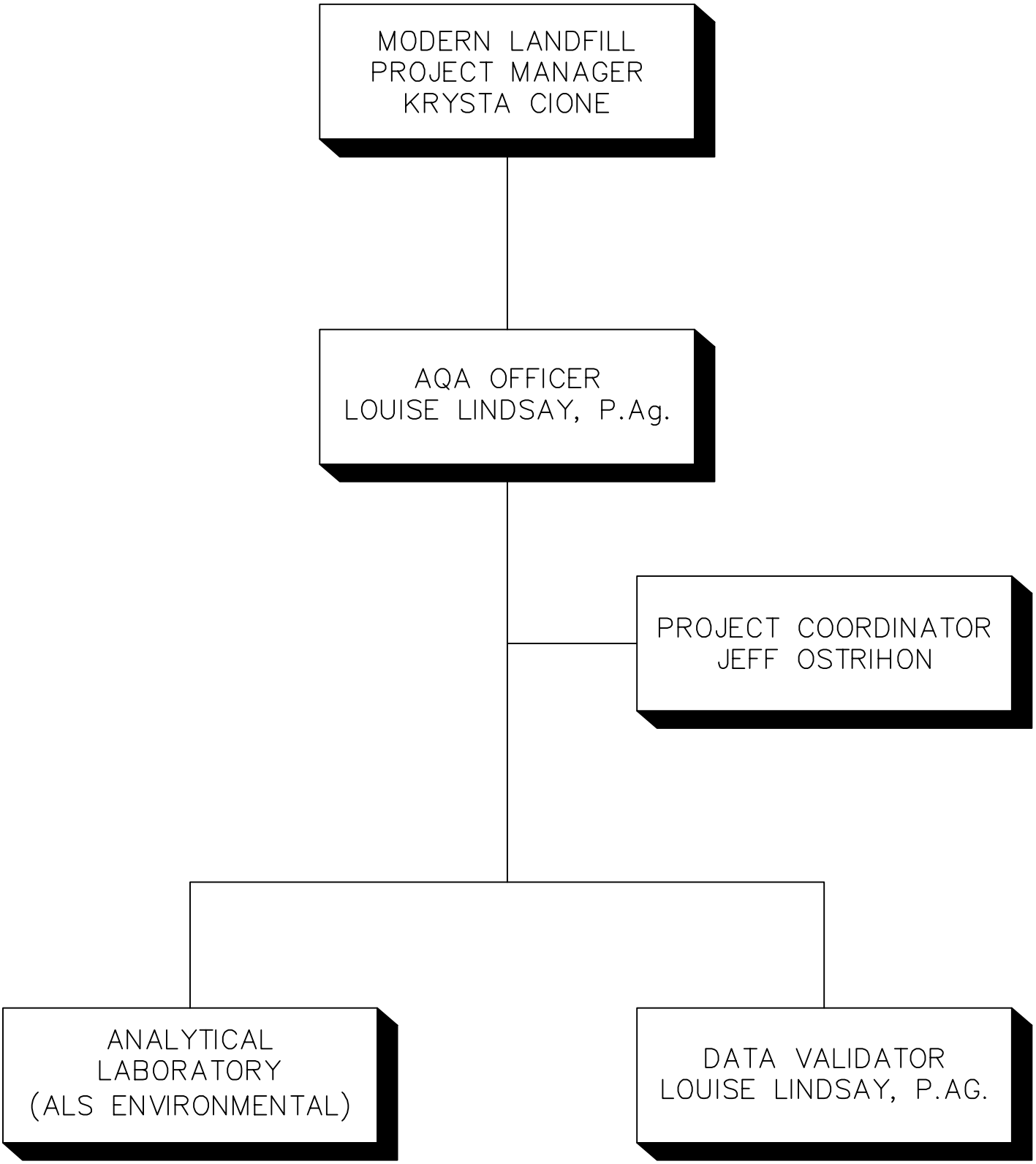
4.0 SITE ANALYTICAL PLAN

4.1 INTRODUCTION

This site analytical plan has been developed to complement the Environmental Monitoring Plan. It pertains to all water monitoring programmes including existing, operational and contingency. Its purpose is to ensure that all monitoring data obtained is the best possible quality and representative of conditions at the site.

Because Modern routinely tenders the analytical work associated with the Environmental Monitoring Plan, the laboratory performing this work may change; however, ALS Environmental (ALS) has been, and is currently, contracted for these services. A copy of their Quality Assurance Manual is included in Appendix A. Sampling of the environmental monitoring points is also conducted by the laboratory doing the analyses. ALS's standard operating procedures (SOP) for sampling are included in Appendix A and referenced in the following sections. Thus should the laboratory change, the NYSDEC would be notified and Appendix A to this Environmental Monitoring Plan would be revised and submitted to the NYSDEC for their approval. Since ALS's SOP for sampling is a procedure that is used company wide at all sites, sampling protocols that are specific to Modern's site are discussed below in Section 4.4.

The personnel responsible for implementing the EMP are illustrated in Figure 5.



ENVIRONMENTAL SOLUTIONS SHELBURNE NOVA SCOTIA	PREPARED FOR: MODERN LANDFILL, INC.	ENVIRONMENTAL MONITORING PLAN ORGANIZATIONAL CHART MODERN LANDFILL INC.			FIGURE 5
	DATE: APRIL 2023				
	DWG: F05:ORG CHART.DWG	TOWN OF LEWISTON	NIAGARA COUNTY	STATE OF NEW YORK	

4.2 DATA QUALITY OBJECTIVES

The data quality objectives of this program are to collect environmental data that is of sufficient precision, accuracy, representativeness, completeness and comparability that it can be used to evaluate whether the facility is having an adverse impact on the environment. These indicators of data quality are defined as follows:

- Precision

  Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average value. Precision is usually stated in terms of standard deviation but other estimates such as the coefficient of variation (relative standard deviation), range (maximum value minus minimum value), relative range and relative percent difference are common.

  The overall precision of measurement data is a mixture of sampling and analytical factors. Analytical precision is much easier to control and quantify than sampling precision. There are more historical data related to individual method performance. In contrast, sampling precision is unique to each site.

  Analytical "within-batch" precision is measured using replicate/duplicate samples or QC analyses and is expressed as the relative percent difference (RPD) between the measurements. The "batch-to-batch" precision is determined from the variance observed in the analysis of standard solutions or laboratory control samples from multiple analytical batches. As well, the comparison of field duplicate results and the calculation of their RPD helps determine the precision of the matrix specific results.

  Sampling precision may also be determined by collecting and analyzing collocated or field replicate samples and then creating and analyzing laboratory replicates from one or more of the field samples. The analytical results from the collocated or field replicate samples provide data on overall measurement precision; analysis results from the laboratory replicates provide data on analytical precision. Subtracting the analytical precision from the measurement precision defines the sampling precision.

- Accuracy

  Accuracy measures the bias in a measurement system; it is difficult to measure for the entire data collection activity. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation and analysis techniques. Sampling accuracy may be assessed by evaluating the results of field and trip blanks.

  Analytical accuracy may be assessed through use of known and unknown QC samples and matrix spikes. Accuracy is determined by calculating the mean value of results from on-going analyses of laboratory-fortified blanks, standard reference materials, and standard solutions. In addition, laboratory-fortified (i.e. matrix-spiked) samples are also measured which indicates the accuracy or bias caused by the actual sample matrix. Accuracy is expressed as percent recovery (% Rec.) of the measured value, relative to the true or expected value. If a measurement process produces results whose mean is not the true or expected value, the process is said to be biased.

- Representativeness

  Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter which is most concerned with the proper design of the sampling program. The representativeness criterion is best satisfied by making certain that sampling locations are selected properly and a sufficient number of samples are collected.

  Representativeness is addressed by describing sampling techniques and the rationale used to select sampling locations. Sampling locations can be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches). Either way, the rationale used to determine sampling locations must be explicitly explained. If a sampling grid is being utilized, it should be shown on a map of the site. The type of sample, such as a grab or composite sample, as well as the relevant standard operating procedure (SOP) for sample collection, should be specified.

  An example of the way representativeness is ensured in a sampling program is the use of proper groundwater sampling techniques. The SOPs for groundwater sampling require that a well be purged a certain number of well volumes prior to sampling, to be assure that the sample is representative of the underlying aquifer at a point in time.

  Representativeness can be assessed by the use of collocated samples. By definition, collocated samples are collected so that they are equally representative of a given point in

space and time. In this way, they provide both precision and representativeness information.

- Completeness

  Completeness is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is essentially the same for all data uses: that a sufficient amount of valid data be generated. It is important that critical samples are identified and plans are made to achieve valid data for them. Considering the sampling procedures, the analytical methods chosen and the AQA/AQC program, it is anticipated that the data will be virtually complete for Modern's environmental monitoring program.

- Comparability

  Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. Sample data should be comparable with other measurement data for similar samples and sample conditions. This goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. Comparability is limited by the above parameters because only when precision and accuracy are known can data sets be compared with confidence.

4.2.1 Site-Specific Data Quality Objectives

In addition to the general data quality objectives outlined above, the Environmental Monitoring Plan includes site specific data quality objectives including the following:

- Groundwater

  - To satisfy the needs of the data users which include, but are not limited to the NYSDEC, Modern Landfill Inc., their neighbours, environmental professionals, the general public and other interested parties;

  - The standards and guidelines which will apply to the groundwater data collected at the Modern Site will be 40 CFR 141.11-141.16, Title 6 NYCRR Part 703 and the statistical three standard deviation threshold established using the existing water quality data

  - Both Routine and Baseline parameter sampling will be used to determine whether the landfill is in compliance with NYS regulations, whether the landfill is having an impact on the groundwater and to protect Modern's liability by determining whether off site activities are impacting groundwater migrating onto the Modern Site.

- Surface Water and Sediment

  - The data users include, but are not limited to, the NYSDEC, Modern Landfill Inc., their neighbours, environmental professionals, the general public and other interested parties;

  - The surface water data will be used to determine whether discharges from the site are having an adverse impact on the environment and whether the surface water quality is in compliance with the appropriate regulations and guidelines

  - The four sedimentation basins are man-made water bodies and are not classified as surface water. The guidelines for the sedimentation basins will be those defined in Modern's State Pollutant Discharge Elimination System (SPDES) Permit

  - Twelve Mile Creek is classified as a Class C waterbody and therefore the guidelines for samples from Twelvemile Creek will be Class C requirements under Title 6 NYCRR Part 701 and 702

- Leachate

  - The data users include but are not limited to the NYSDEC, Modern Landfill Inc., the disposal facility (i.e., waste water treatment plant), their neighbours, environmental professionals, the general public and other interested parties;

  - The leachate data is used to determine its need for treatment and disposal, to develop an understanding of what contaminants could be released from the site and to compare its water quality to the water quality of the secondary collection systems to determine if there has been leakage into the secondary systems.

- Field Sampling

  - because the monitoring wells on Modern's site are screened in fine grained materials, both high turbidity and slow recharge can affect sample quality and volume. To combat this problem, the sampling protocol has been adjusted in the following ways:

    - only gentle purging techniques are used to minimize turbidity;

    - the wells are all purged on one day and sampled the next day, within 24 hours of purging. This allows time for the wells to recharge so that a full sample set can be collected and for fines in the water column to settle; and

- monitoring well, W-2R, historically appeared to have gout contamination. More recently W-15 and W-27 have had elevated pH. As a consequence, the field staff now purge both wells twice to ensure fresh formation water is sampled.

- for environmental monitoring programmes all samples collected are grab samples. Composite samples might be collected under special circumstances; for instance, confirmatory soil sampling after the remediation of a spill.

- Analytical Methods

  - The actual analytical methods with their quantitation limits which will be used for all sampling conducted under this site analytical plan are included in Appendix A.

  - because of sample matrix there are specific re-occurring analytical problems. The following summarizes the problem and the adjustments made to address them where possible:

    - the analysis of volatile organic compounds (VOCs) on a preserved Primary Leachate sample always has matrix interference with the acid (HCl) resulting in a pH of >2. This can cause a holding time exceedance since the 14 day holding time for preserved samples is invalid if the pH is above 2. To address this problem, the lab now sets up this analysis for a seven day holding time and issues unpreserved vials for the leachate VOCs;

    - the concentration of calcium (Ca), magnesium (Mg), and sodium (Na) and occasionally iron (Fe) in the groundwater samples are typically high which dilutes out the matrix spike for these analytes and results in qualified results. The laboratory has added notes to Modern's file so that analytical staff are aware of the high concentrations of these metals so that they can try to avoid too low spikes in the future; and

    - as of February 2011 the detection limit for lead has been reduced so that it is less than the current water quality guideline.

4.3 ANALYTICAL QUALITY ASSURANCE AND ANALYTICAL QUALITY CONTROL

The objective of the analytical quality assurance and analytical quantity control (AQA/AQC) plan for Modern's Environmental Monitoring Plan is to facilitate the collection of environmental monitoring data that meets the data quality objectives. The AQA/AQC plan includes the following:

- The use of a laboratory certified under the New York State Department of Health's Environmental Laboratory Approval Program (ELAP). The designated laboratory certificates were recently submitted under separates cover with their Quality Assurance Manual ;

- Field samplers trained by the ELAP laboratory;

- The laboratory AQA/AQC plan is included in their Quality Assurance Manual (Appendix A);

- The collection of quality control samples including background samples, collocated or replicate samples, field blanks and trip blanks. In all cases these quality control samples will be submitted to the laboratory as blind samples. There will be one trip blank for each sample shipping container, one field blank for every 20 aqueous samples and one blind duplicate for every 20 aqueous samples, one matrix spike and one matrix spike duplicate for every twenty samples.

- Following published EPA analytical methods which include quality control samples such as method blanks, laboratory control samples, matrix spikes, matrix spike duplicates, etc.; and

- Chain-of-custody documentation.

It should be noted that Modern Landfill is not required to follow the New York Analytical Services Protocol (ASP) protocol or its' deliverables as part of their monitoring programme. If additional QA/QC documentation is required by the data validator, it is requested from the laboratory on an as needed basis.

The project Analytical Quality Assurance Officer will be Ms. Louise Lindsay, M.Sc., P.Ag. Ms. Lindsay has over thirty years experience in sampling, analysis, data management, data interpretation, data usability assessments and reporting. Ms. Lindsay has been a quality assurance and quality control (QA/QC) officer on a major New York State Superfund project and consequently is very familiar with the responsibilities of a quality assurance officer. Ms. Lindsay has been the Senior Hydrogeologist associated with the Modern Landfill Site for more than 25 years and therefore is very familiar with the hydrogeology and environmental monitoring. As author of this Environmental Monitoring Plan, she is familiar with the site analytical plan.

4.4 FIELD SAMPLING PROCEDURES

Field sampling will be conducted by the designated laboratory. A copy of the company's standard operating procedures (SOP) including associated quality assurance procedures is included in Appendix A. This document is used company wide for work in New York and as such includes generic SOPs. Specific adjustments of their field sampling procedures which will be followed for sampling at the Modern Landfill are discussed here. The field sampling procedures of this project will adhere to those presented in Section 363-4.6(g)(3) of the Title 6 NYCRR Part 363 and are summarized below.

Sampling and Handling

The upgradient monitoring wells, as designated on Table 2, will be sampled first during each monitoring event. Table 4, above, shows the number of samples and types of samples to be collected each quarter. All samples collected are grab samples.

All samples will be collected and stored in the order of the parameter's volatilization sensitivity using methods, consistently applied, which ensure sample integrity. Specifically, samples will be collected in the following order:

1. Volatile Organics
2. Field Parameters
3. Semi-Volatile Organics
4. Remaining Organic Parameters
5. Metals (Whole and Filtered)
6. Phenols and Cyanides
7. Remaining Parameters

All sampling equipment will be constructed of inert materials designed to obtain samples with minimal agitation and contact with the atmosphere. The equipment will be cleaned and protected during transport to avoid contamination and checked before use. Dedicated equipment will be constructed of appropriate inert materials. The specific equipment which will be used is included in Appendix A.

Samples will be properly preserved and delivered to the laboratory with proper chain of custody within all appropriate holding times for the parameters to be analyzed. Container requirements, preservatives and holding times are summarized in ALS's Quality Assurance Manual .

Monitor Well Sampling Techniques

Monitoring well sampling techniques will be consistently performed each time a well is sampled, and will comply with the following:

- Ambient air in the well will be checked for the presence of explosive or organic vapors before each well is evacuated;

- Standing water in each well will be checked for immiscible layers or other contaminants that are lighter or heavier than water (floaters or sinkers). If present, floaters or sinkers will be sampled and analyzed separately;

- Wells will be evacuated to replace stagnant water in the well and the sand pack and ensure the water sampled is fresh water representative of the formation. Evacuation methods, including pumping rate, depth of pump intake, and method of determining sufficiency of evacuation will be consistently applied each time the well is sampled. Evacuation methods which will create the least possible turbidity in the well and will not lower the water in the well below the top of the sand pack will be used whenever feasible. In general, bailing will be used to purge and sample wells.

  Evacuated water will be disposed appropriately. Currently the groundwater at Modern's site is not contaminated; therefore, water withdrawn during the development of new wells or the purging of existing wells will be discharged to the ground surface downgradient and away from the immediate vicinity of the well (minimum 20 feet). Should at anytime contamination be found, evacuated water from affected wells will be contained and properly disposed.

- During evacuation of each well the sampler will monitor specific conductance, temperature and pH with time in order to ensure fresh formation water. Groundwater samples will be obtained no more than 24 hours after well evacuation. The maximum 24 hour delay between purging and sampling the monitoring wells at the Modern site is based on past problems with very turbid samples and insufficient recharge to allow the collection of an adequate volume of sample for analysis. Where possible wells will be sampled immediately after purging.

- Field analysis will be performed after volatile organic samples have been collected, either within the borehole using a probe or from the next sample collected. All field test equipment will be calibrated at the beginning of each sampling day and checked and recalibrated according to the manufacturer's specifications. Calibration data will be reported with analytical results.

- Groundwater samples will not be filtered, unless otherwise approved by the department. If, due to site-specific conditions, sample turbidity cannot be reduced to 50 nephelometric turbidity units (NTUs) or less by good sampling technique or well redevelopment, it may be necessary to request approval to collect both filtered and unfiltered samples for analyses of the inorganic parameters. All other analyses required will be on the unfiltered samples.

Surface Water and Sediment Sampling Techniques

Surface water and sediment sampling methods will be consistently applied to all samples, and will comply with the following:

- Surface water samples collected from shallow water will not include bottom sediment. In shallow moving water, downstream samples will be collected first to avoid disturbances from the bottom sediments.

  Each water body over three feet deep that is sampled will be checked for stratification, and each stratum will be checked for contamination using field parameters. Each stratum showing evidence of contamination will be separately analyzed. If no stratum shows such evidence, a composite sample having equal parts of water from each stratum will be analyzed.

- In flowing water bodies discharge measurements will be made during each sampling event.

- If sediment samples are collected, in areas where less than four inches of water covers the sediment to be sampled, a trowel or stainless steel spoon will be used. Care will be taken not to disturb the sample or cause any sample washing.

- If sediment is sampled, when the depth of water is greater than four inches, or washing of the sample is a problem, a revolving bucket sampler will be used to obtain a three-inch deep sediment sample. This sampler minimizes washing and contact of sediment with water. This device is good for softer sediments, but is difficult to use when the sediment is composed of dense clay or gravel. In this case, a hand corer will be utilized to obtain a sample.

- The sediment will be transferred directly to a sample container if a grab sample is requested. When composite samples are necessary, the sediment will be transferred to a stainless steel bowl or bucket. Additional samples will be added until all locations or sufficient volumes have been sampled. A representative sample will then be obtained and transferred to the sample bottles using a small spoon or spatula.

Leachate Sampling Techniques

Leachate samples from both the primary and secondary collection systems will be collected from the sample ports. Prior to collection, the sumps/building will be monitored with an O_2/LEL meter for explosive gases. The sample ports will be purged prior to sample collection to facilitate the

collection of a representative sample. Care will be taken to collect a representative sample. A detailed description of the sampling protocol is provided in Appendix A.

Field Sampling Quality Assurance and Quality Control

The identification and correction of deficiencies in the sample collection process will be conducted in a similar manner in which laboratory deficiencies are identified. This process will include:

- Equipment blanks collected at a rate of one per each twenty samples collected. Equipment blanks will only be collected if sampling equipment is decontaminated in the field;

- Periodic audits will be conducted to ensure that samplers are consistently following the proper sampling procedures. Currently, Mr. Kyle Lee, who is ALS Analytical Services' (ALS) Field Services Supervisor, does periodic assessments of all sampling staff to ensure that they are consistently following the sampling procedures. Mr. Lee has more than 10 years sampling experience and is a senior sampler with ALS. He trains all new sampling staff and works with the other samplers on Modern's site periodically to ensure that consistent practices are followed. An independent audit of the samplers will be conducted by the data validator once every two to three years.

- During the report generation process, field logs and field analysis results are reviewed for any deviations from historical trends, for any unusual field observations or comments about either the sample condition or site conditions in the area of the sampling, and for completeness and consistency of work; and

- Should deficiencies be detected, they are identified, along with the actions taken to prevent such deficiencies from occurring again, in a "Field Sampling Narrative" which is then included as part of the report.

- If deficiencies in the field sampling process warrant a modification to the site analytical plan, the analytical quality assurance officer will notify the NYSDEC Regional Office in writing of any proposed changes and the rationale for these changes. Once the NYSDEC has concurred with these changes, the appropriate section or appendix of the site analytical plan will be revised and submitted to the NYSDEC, the laboratory and the data validator.

4.5 LABORATORY PROCEDURES

The laboratory selected to do the analytical work will be ELAP certified. A detailed discussion of the laboratory quality assurance program, standard operating procedures and the laboratory plan specific to the Modern Landfill Site is provided in their Quality Assurance Manual (Appendix A).

4.6 DATA QUALITY ASSESSMENT

4.6.1 Introduction

A data quality assessment of the results of each monitoring event will be conducted. This assessment will include data validation and the determination of data usability. The results of the data quality assessment will be included in the quarterly monitoring reports.

4.6.2 Data Validation

For those sampling events for which only Routine parameters are analyzed, the data validation will be performed by the laboratory that performed the analyses. For those sampling events for which Baseline or Expanded parameters are analyzed, the data validation will be performed by a qualified person other than the laboratory that performed the analyses. The data validator has been identified as Ms. Louise Lindsay of Environmental Solutions. A copy of Ms. Lindsay's resume is provided in Appendix B.

Data validation will be performed on all analytical data for the facility at a rate of not less than twenty percent of the data generated. The data validation will consist of the following:

- Determination of Completeness

  The laboratory data package will be reviewed to ensure that it includes:

  - All sample chain of custody forms;
  - The case narrative including all sample/analyses summaries;
  - A QA/AQC summary forms including all supporting documentation;
  - calibration data;
  - Instrument and method performance data;
  - Documentation of attainment of the contract specific method detection limits for the target analytes in all required matrices;
  - extraction, digestion and clean-up logs, if requested;
  - All data report forms and examples of the calculations used in determining final concentrations, if requested; and

- All raw data used in the identification and qualification of the contract-specified target compounds, if requested.

If the data package is found to be incomplete, the data validator will request the laboratory provide the documentation to remove the deficiencies.

- Determination of Compliance with the Site Analytical Plan

  The laboratory data package will be reviewed to determine that the data has been produced and reported in a manner consistent with the requirements of the SAP. All data reporting forms are completely filled out for all samples submitted and include all QA/QC data. All analytical problems have been reported in the case narrative along with actions taken by the laboratory to correct these problems.

- Completion of the Validator's Report

  The validator's report will discuss the completeness of the data package and compliance with the approved SAP, descriptions of deviations from required protocols, any failures to reconcile the reported data with the raw data from which it was derived, and the degree to which the data has been compromised by problems occurring during the analyses. The validator's report will include the laboratory case narrative (with sample and analysis summary sheets), and data summary forms with validator qualifiers.

4.6.3 Data Usability Analysis

A data usability analysis will be performed on all analytical data for the facility and will consist of the following:

- An assessment to determine if the data quality objectives were met;
- A comparison of the analytical data with the results from previous sampling events for consistency;
- An evaluation of field duplicate results to indicate whether the samples are representative;
- A comparison of the results of all field blanks, trip blanks, equipment rinsate blanks, and method blanks with full data sets to provide information concerning contaminants that may have been introduced during sampling, shipping, or analyzing;

- An evaluation of matrix effects to assess the performance of the analytical method with respect to the sample matrix, and determine whether the data have been biased high or low due to matrix effects. This evaluation utilizes the matrix spike, matrix spike duplicate data for both the lab QC sample and the field duplicate sample results;

- A comparison of precision, accuracy, representativeness, comparability, completeness, and defensibility of the data generated with that required to meet the data quality objectives established in this plan. This evaluation utilizes the various analytical QC information including, but not limited to, surrogate recoveries, blank spike recoveries, laboratory control sample data and relative percent difference calculations; and

- Integration of the field and laboratory data with geological, hydrogeological, and meteorological data to provide information about the extent of contamination, if it occurs.

5.0 REFERENCES

Adams, J. I., 1961, Tests on glacial tills, In Penner, E. and Butler, J. (eds.), Proceedings of the 14th Canadian Soil Mechanics Conference, National Regulatory Commission of Canada, Associate Commission of Soil and Snow Mechanics, Technical Memorandum: v. 69, p. 37-54.

Calkin, P. E., and Barnett, P. J., 1990, Glacial geology of the eastern Lake Erie basin; Guidebook for AMQUA/CANQUA Meeting, Waterloo University, Waterloo, Ontario, Canada, May 1-7.

Calkin, P.E., and Brett, C.E., 1978, Ancestral Niagara River drainage: Stratigraphic and paleontologic settings: Geological Society of America Bulletin, v. 89, p. 1140-1154.

Calkin, P. E., B. H. Muller, T. F. Drexhage, "Quarternary Stratigraphy and Bluff Erosion, Western Lake Ontario, New York," from Buhler, E.J. and P.E. Calkin, Eds., "Geology of the Northern Appalachian Basin of Western New York; Field Trips Guide Book for New York State Geologic Survey," 54th Annual Meeting, Amherst, New York, October, 1982.

Dreimanis, A., 1976, Tills: Their origins and properties, In Legget, R.F. (ed.), Glacial Till, Royal Society of Canada: LeDroit Commercial Printers, Ottawa, p. 11-49.

Eckenfelder, “Addendum to the Southern Expansion Area Site Investigation Report”, Modern Landfill, Inc., October 2001.

Environmental Solutions, “Footprint SWAP Area Supplemental Hydrogeological Investigation Report”, Modern Landfill, Inc., December 2012.

Feenstra, B. H. 1972, Quaternary geology of the Niagara area, southern Ontario: Ontario Division of Mines, Preliminary map, p. 764.

Gibbons, Robert D. (1990), "General Statistical Procedure for Ground-Water Detection Monitoring at Waste Disposal Facilities", Groundwater, 28(2) 235-243.

Golder Associates, "Report on Hydrogeologic Characterization, Chemical Waste Management, Inc., Model City, New York Facility, Volume 1, March 1985.

Johnston, R.H., "Groundwater in the Niagara Falls Area, New York, Bulletin GW-53," New York Water Resources Commission, 1964.

Hvorslev, M. J., (1951), Time log and soil permeability in groundwater observations. U.S. Army Corps of Engineers, Waterways Exp. Sta. Bull. 36, Vicksburg, Miss.

Kantrowitz and Snavely (1982), Availability of Groundwater from Aquifers in Upstate New York: U.S. Geological Survey Open-File Report 84-437, 2 sheets, Scale 1:750,000.

Kindle, E.M. and Taylor P.B., 1913, Niagara Folio, New York: U.S. Geological Survey Geological Atlas, Folio No. 190, 25 p.

Kindle, 1914. Geologic Atlas of the United States, Niagara Falls, Folio 190 - Field Edition, U.S. Geological Survey, Washington, D.C.

Kindle, E.M. and Taylor, F.B., 1913, "Geologic Areas of the United States, Niagara Falls, Folio 190-Field Edition," U.S. Geological Survey, Washington, D.C., 1941.

Kmet, P., K. Quinn, and Slavik, "Analysis of Design Parameters Affecting the Collection Efficiency of Clay Lined Landfills", 1981.

Konikow, L.F., and Bredehoeft, J.D., "Computer model of two-dimensional solute transport and dispersion in groundwater, in Technical Water Resource Investigation", Book 7, Chapter C2, 90 pp, U.S. Geological Survey, Reston, Virginia, 1978.

Lallemand-Barres, A., and Peaudecerf, P., "Recherche des relations entre la valeur de la dispersivite macrosopique d'un milieu aquifere, ses autres, caracteristiques et les conditions de mesure, Etude bibliographique", Bull. Bur. Rech. Geol. Min. Fr., 2nd Series, Section III, 4, 277-284, 1978.

McDonald, M.G. and A.W. Harbaugh, "A Modular Three-Dimensional Finite-Difference Ground-Water Flow Model," U.S. Geological Survey Open-File Report 83-875, 1984.

McDonald, M.G. and Harbaugh, A.W., A Modular Three-Dimensional Finite-Difference Ground-Water Flow Model, Open File Report 83-875, 527 pp, U.S. Geological Survey, Reston, Virginia, 1985.

Miller, Todd S. (1988) "Potential Yield of Wells in Unconsolidated Aquifers in Upstate New York - Niagara Sheet" Water Resources Investigation Report U.S. Dept. of Interior 88-4076.

Muller, E.H., V.K. Prest, 1985, "Glacial Lakes in the Ontario Basin Quaternary Evolution of the Great Lakes," Geological Association of Canada Special Paper 30, p. 214-229.

Reister, Steven, Town of Lewiston Water Superintendent, Personal Communication.

Salomon, N.L., 1976, Stratigraphy of glacial deposits along the south shore of Lake Ontario, New York: M.S. thesis, Syracuse University, 78 p.

Smith, A., 1990, Glacial Stratigraphy of Niagara County, New York: M.A. thesis, State University of New York at Buffalo, 69 p.

United States Department of Agriculture Soil Conservation Service, "Soil Survey of Niagara County, New York", October, 1972.

United States Department of Commerce, National Oceanic and Atmospheric Administration" Climatological Data Annual Summary, New York", 1982.

United States Department of Interior, Water and Power Resources Services (1977), "Ground Water Manual," John Wiley & Sons, New York, 480 p.

Van Elburg, H., Englelen, G.B. and Haneker, C.J., 1986, Flow Net Free University, Institute of Earth Sciences, the Netherlands.

Wehran Engineering, "Drilling and Monitoring Well Installation for Modern Landfill, Inc., Lewiston, New York," June 1986.

Wehran Engineering, "Engineering Investigation of Inactive Hazardous Waste Sites in the State of New York, Phase I Investigation, Town of Lewiston Landfill, Lewiston, New York, Site Code: 932076," for NYSDEC, January 1987.

Wehran Engineering, "Engineering Report for the Proposed Operations Modification, Modern Landfill, Inc.," December 1985.

Wehran Engineering, "Engineering Report for the Sanitary Landfill Facility Design prepared for Modern Landfill, Inc., Town of Lewiston, County of Niagara, State of New York," March 1986.

Wehran Engineering, "Engineering Report, Modern Landfill, Inc., Sanitary Landfill, Town of Lewiston, Niagara County, New York," August 1979.

Wehran Engineering, "Hydrogeologic Investigation, Chem-Trol Pollution Services, Inc. Townships of Porter and Lewiston, Niagara County, New York," 1977.

Wehran Engineering, "Inspection and Testing of Existing Monitoring Wells at Modern Sanitary Landfill, Inc. Sanitary Landfill", July, 1990.

Wehran Engineering, "Supplemental Groundwater Monitoring Program for Modern Landfill, Inc., Lewiston, New York," March 1986, Revised August 1986.

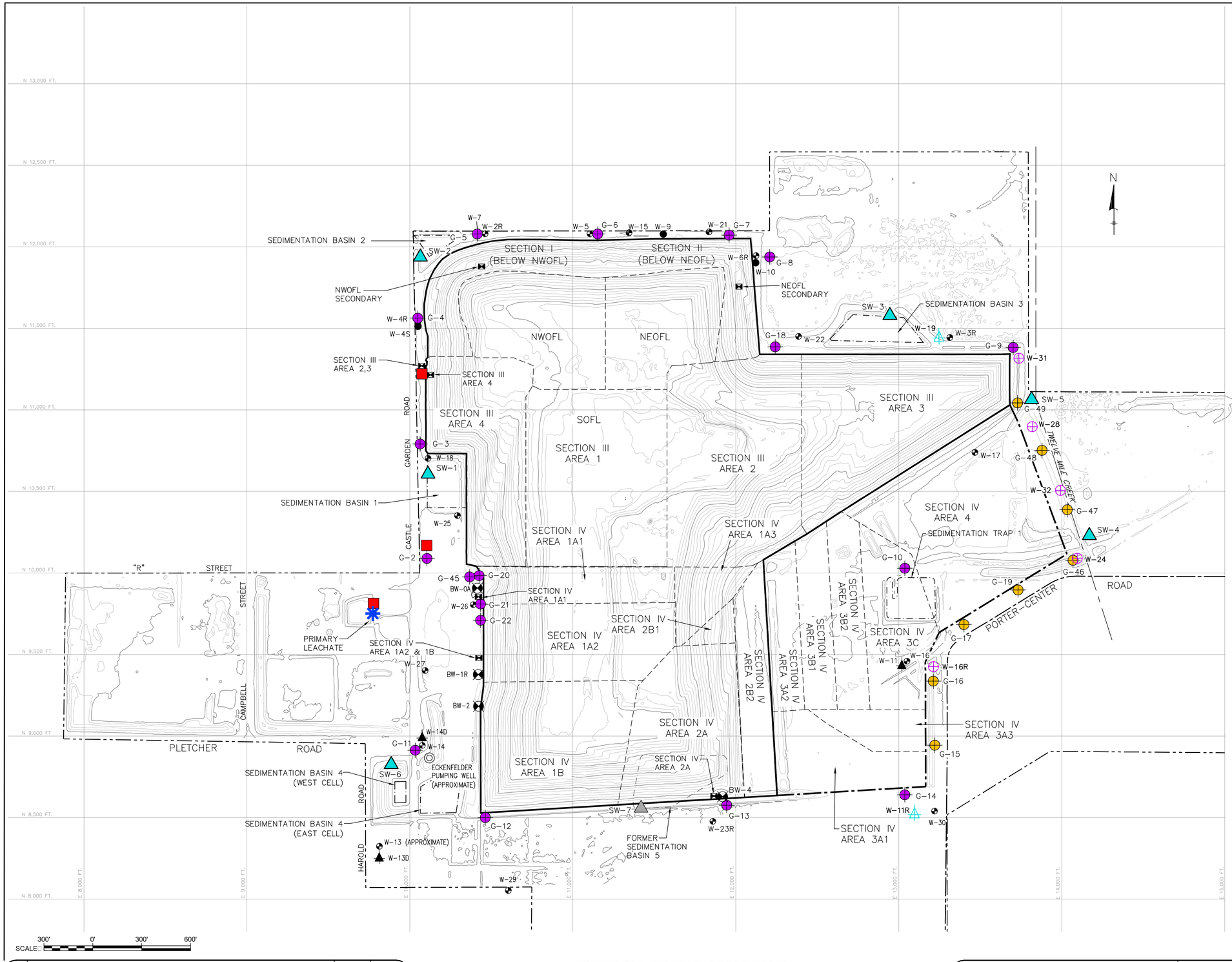
Wehran Engineering, "Well Replacement and Baseline Sampling Report for MW-1, MW-2, and MW-3 prepared for Modern Landfill, Inc., Lewiston, New York", March 1990.

Wehran Engineering, "Work Plan for the Supplemental Hydrogeological Investigation of the Modern Landfill, Inc. Sanitary Landfill," prepared for Modern Landfill, Inc., Lewiston, New York, March 1989, revised August 1989.

Wehran Engineering, "Revised Draft Environmental Impact Statement for the Modern Landfill, Inc. Sanitary Landfill, Lewiston, Niagara County, New York, NYSDEC Identification No. 932-07-0090" prepared for Modern Landfill, Inc., Model City, New York, June 1982.

Wehran EnviroTech, "Supplemental Hydrogeologic Investigation" for Modern Landfill, Inc. Sanitary Landfill, Lewiston, Niagara County, New York (April 1990).

Wehran EnviroTech, April, 1991. "Landfill Expansion Application Volume V Hydrogeologic Site Investigation Report and Plans" prepared for Modern Landfill, Inc. Model City, New York.



LANDFILL LEGEND:

- ECKENFELDER BEDROCK PUMPING WELL
- EXISTING LANDFILL LIMIT OF WASTE
- FUTURE PERMITTED LIMIT OF WASTE
- SECTION BOUNDARY
- AREA BOUNDARY
- FOOTPRINT SWAP BOUNDARY
- PROPERTY BOUNDARY

MONITORING WELL LEGEND:

- ECKENFELDER BEROCK PUMPING WELL
- EXISTING UPPER TILL MONITORING WELL LOCATION
- EXISTING SAND AND SILT MONITORING WELL LOCATION
- EXISTING FRACTURED ROCK MONITORING WELL LOCATION
- EXISTING FRACTURED ROCK PUMPING WELL LOCATION
- PROPOSED FRACTURED ROCK MONITORING WELL LOCATION

SURFACE WATER AND SEDIMENT LEGEND:

- EXISTING SURFACE WATER/SEDIMENT SAMPLING LOCATION
- FORMER SURFACE WATER/SEDIMENT SAMPLING LOCATION

LANDFILL GAS MONITORING LEGEND:

- EXISTING LANDFILL GAS MONITORING POINT
- PROPOSED GAS MONITORING POINT
- PROPOSED SAND AND SILT MONITORING WELL LOCATION
- BUILDING GAS MONITORING POINT

PORE WATER DRAIN, SECONDARY AND LEACHATE MONITORING LEGEND:

- EXISTING PORE WATER DRAIN/SECONDARY SAMPLING LOCATION
- EXISTING PRIMARY LEACHATE SAMPLING LOCATION

NOTES:

1. WELL SURVEY DATA BY MODERN LANDFILL, INC. DATED 05/22/06. AMENDED 9/22/09.
2. WELL SURVEY DATA FOR ON-PROPERTY WELLS ONLY.
3. WELL CLUSTER LOCATIONS ON MAP SHOWN AT EXAGGERATED SCALE FOR CLARITY. REFER TO WELL LOCATIONS TABLE FOR TRUE LOCATION

#	REVISION	BY	DATE
4	ADDED SEDIMENTATION BASIN 5 AND SEDIMENTATION TRAP 1□ADDED PZ-36 TOPZ47 □DECOMMISSIONED PZ-35M	JCD	12/8/10
3	ADDED BW-1R AND PZ-35M□DECOMMISSIONED BW-1	AMW	9/22/09
2	DECOMMISSIONED BW-0,BW-1A, SP-1M, SP-1D, GW-1A, GW-1B, GW-2A, AND GW-2B. ADDED VP-4 M,D, VP-9 M,D, VP-12 M,D, PZ-29 D,M,S, PZ-30 D,S, PZ-31 D,M,S, PZ-32, PZ-33, PZ-34, W-30, SB-10, SB-11, SB-23, AND BW-2. ADDED LANDFILL FOOTPRINT.SECTION 4 - AREAS 1A2, 1B, 2, 3, AND 4. UPDATED PROPERTY LINE REFERENCES.	AMW	5/14/09
1	ADDED NOTES 1 □ 2, ADDED SECTION IV AREA 1A1 LIMIT LINE, DECOMMISSION GW-4A, GW-4B	KFP	4/26/07

ENVIRONMENTAL SOLUTIONS

SHELBURNE NOVA SCOTIA

DATE□APRIL 2023

PREPARED FOR□ MODERN LANDFILL, INC.			ENVIRONMENTAL MONITORING SITE PLAN	DRAWING 1
DES. BY□	DRW. BY□KFP	CHK. BY□		
DWG□ DWG 1□ENV MON SITE PLAN.DWG			TOWN OF LEWISTON / NIAGARA COUNTY / STATE OF NEW YORK	

APPENDIX A

ALS Quality Assurance Manual

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
SM 2320B-1997(2011)	Alkalinity, Bicarbonate		Water	NA	2.0			mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Bicarbonate		Solid	NA	200			mg/L	76-110	NA	20
SM 2320B-1997(2011)	Alkalinity, Carbonate		Water	NA	2.0			mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Carbonate		Solid	NA	200			mg/L	76-110	NA	20
SM 2320B-1997(2011)	Alkalinity, Total		Water	1.8	2.0	2.0	4.0	mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Total		Solid	120	200			mg/L	76-110	NA	20
350.1 LL	Ammonia	7664-41-7	Water	0.0025	0.010			mg/L	90-110	90-110	20
350.1	Ammonia	7664-41-7	Water	0.026	0.050	0.05	0.10	mg/L	90-110	90-110	20
350.1	Ammonia	7664-41-7	Solid	3.1	5.00			mg/kg	69-142	17-163	30
ASTM D482	Ash, Percent		Water	NA	0.10			%	61-114	NA	10
ASTM D482	Ash, Percent		Non-Aq	NA	0.10			%	61-114	NA	10
ASTM D482	Ash, Percent		Solid	NA	0.10			%	61-114	NA	10
SM 5210B	Biological Oxygen Demand		Water	NA	2.0			mg/L	85-115	NA	20
SM 5210B	Biological Oxygen Demand		Solid	NA	200			mg/kg	85-115	NA	30
9056A	Bromide	24959-67-9	Water	0.34 (0.034)	1.0 (0.1)	0.05 (0.5)	0.1 (1)	mg/L	80-120	80-120	15
9056A	Bromide	24959-67-9	Solid	2.7	10			mg/Kg	80-120	54-121	15
300.0	Bromide	24959-67-9	Water	0.34 (0.034)	1.0 (0.1)	0.05 (0.5)	0.1 (1)	mg/L	90-110	90-110	20
26A	Bromide (as HBr)	24959-67-9	Water	0.05	0.10			mg/L	85-115	85-115	20
SM 5210B	Carbonaceous Biological Oxygen Demand		Water	NA	2.0			mg/L	85-115	NA	20
SM 5210B	Carbonaceous Biological Oxygen Demand		Solid	NA	200			mg/kg	85-115	NA	30
410.4	Chemical Oxygen Demand-HL		Water	NA	50			mg/L	90-110	90-110	20
410.4	Chemical Oxygen Demand-LL		Water	3.8	5.0	5.00	10.00	mg/L	90-110	90-110	20
SM 5220B Modified	Chemical Oxygen Demand		Solid	162	200			mg/Kg	50-143	10-127	30
9056A	Chloride	16887-00-6	Solid	12	30			mg/Kg	80-120	48-164	15
300.0	Chloride	16887-00-6	Water	0.41 (0.041)	2.0 (0.2)	0.1 (1.0)	0.2 (2.0)	mg/L	90-110	90-110	20
9056A	Chloride	16887-00-6	Water	0.41 (0.041)	2.0 (0.2)	0.1 (1.0)	0.2 (2.0)	mg/L	80-120	80-120	15
26A	Chloride (as HCl)	16887-00-6	Water	0.10	0.30			mg/L	85-115	79-122	20
SM 409A	Chlorine Demand		Water	NA	5.0			mg/L	NA	NA	20
SM 4500-Cl F-2000(2011)	Chlorine Residual (Free)		Water	NA	0.10			mg/L	70-130	70-130	20
SM 4500-Cl F-2000(2011)	Chlorine Residual (Total)		Water	NA	0.10			mg/L	70-130	70-130	20
SM 10200 H (fluor)	Chlorophyll a	479-61-8	Water	NA	0.4			ug/L	NA	NA	20
218.6 LL	Chromium, Hexavalent	18540-29-9	Water	0.01	0.02	0.015	0.020	ug/L	90-110	90-110	20
218.6	Chromium, Hexavalent	18540-29-9	Water	0.0019	0.01	0.005	0.01	**mg/L**	90-110	90-110	20
218.7	Chromium, Hexavalent	18540-29-9	DW	0.01	0.03			ug/L	85-115	85-115	15
7199	Chromium, Hexavalent	18540-29-9	Water	0.0019	0.01	0.005	0.01	mg/L	85-115	10-170	20
3060/7199	Chromium, Hexavalent	18540-29-9	Solid	0.042	0.40	0.20	0.40	mg/Kg	80-120	75-125	20
7196A	Chromium, Hexavalent	18540-29-9	Water	0.0024	0.01			mg/L	80-120	85-115	20
SM 3500-Cr B-2009(2011)	Chromium, Hexavalent	18540-29-9	Water	0.0024	0.01			mg/L	80-120	42-157	20
SM 2120B-2001(2011)	Color (True or Apparent)		Water	NA	1.0			CU	NA	NA	±5 units
120.1	Conductivity		Water	NA	NA			umhos/cm	90-110	NA	20
9045D	Corrosivity		Water	NA	NA			SU	NA	NA	±0.10
9045D	Corrosivity		Non-Aq	NA	NA			SU	NA	NA	±0.10
9045D	Corrosivity		Solid	NA	NA			SU	NA	NA	±0.10
9012B	Cyanide, Residual	57-12-5	Solid	NA	0.5			mg/kg	0-10	NA	30
9012B	Cyanide, Residual		Water	NA	0.01			mg/L	0-10	NA	
Kelada-01	Cyanide, Total	57-12-5	Water	0.004	0.005	0.005	0.010	mg/L	90-110	90-110	20
335.4	Cyanide, Total	57-12-5	Water	0.0035	0.01	0.005	0.010	mg/L	90-110	90-110	20
9012B	Cyanide, Total	57-12-5	Water	0.0035	0.01	0.005	0.010	mg/L	85-115	77-119	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
9012B	Cyanide, Total	57-12-5	Solid	0.17	0.30			mg/Kg	85-115	10-159	30
SM 4500 CN E-1999(2011)	Cyanide, Total	57-12-5	Water	0.0035	0.01			mg/L	85-115	40-149	20
SM 4500 CN E	Cyanide, Weak Acid Dissociable	57-12-5	Water	0.007	0.01			mg/L	85-115	57-111	20
ASTM D1475 (Wt/Vol Cup)	Density/ Specific Gravity		Water	NA	NA			g/mL	0.05 units	NA	10
ASTM D1475 (Wt/Vol Cup)	Density/ Specific Gravity		Non-Aq	NA	NA			g/mL	0.05 units	NA	10
SM 3500-FE D	Ferrous Iron	15438-31-0	Water	0.021	0.10	0.05	0.10	mg/L	67-129	11-180	20
SM 3500-FE D	Ferrous Iron	15438-31-0	Solid	NA	10			mg/kg	67-129	11-180	30
1010A (Closed Cup)	Flash Point		Water	NA	NA			degree C	24.5-29.9 C	NA	10
1010A (Closed Cup)	Flash Point		Non-Aq	NA	NA			degree C	24.5-29.9 C	NA	10

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
300.0	Fluoride	16984-48-8	Water	0.0097	0.10	0.05	0.10	mg/L	90-110	90-110	20
9056A	Fluoride	16984-48-8	Water	0.0097	0.10	0.05	0.10	mg/L	80-120	80-120	15
9056A	Fluoride	16984-48-8	Solid	2	20			mg/Kg	80-120	50-148	15
26A	Fluoride (as HF)	16984-48-8	Water	NA	0.10			mg/L	80-121	10-187	20
1311/89-9	Glycols, TCLP		Solid	NA	1.0			mg/L	80-120	52-110	20
SM 2340B-1997(2011)	Hardness, Total Calculation		Water	NA	6.62			mg/L	NA	NA	20
SM 2340C-1997(2011)	Hardness, Total		Water	0.63	2.0			mg/L	85-112	71-128	20
OSHA VI 6	Hydrogen Peroxide	7722-84-1	Air	1.3	5			ug	90-130	81-145	20
SOP	Hydrogen Peroxide	7722-84-1	Water	0.26	1			mg/L	75-126	75-125	20
300.0	Nitrate as N	14797-55-8	Water	0.19 (0.019)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	90-110	90-110	20
9056A	Nitrate as N	14797-55-8	Water	0.19 (0.019)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	80-120	80-120	15
9056A	Nitrate as N	14797-55-8	Non-Aq	3	10			mg/Kg	80-120	45-150	15
9056A	Nitrate as N	14797-55-8	Solid	3	10			mg/Kg	80-120	45-150	15
353.2Calc	Nitrate as N	14797-55-8	Water	NA	0.05			mg/L	90-110	90-110	20
353.2Calc	Nitrate as N	14797-55-8	Solid	NA	5.0			mg/Kg	90-110	51-137	30
26A (DI)	Nitrate as N	14797-55-8	Water	0.05	0.10			mg/L	85-115	81-134	30
353.2	Nitrate/Nitrite as N		Water	0.0015	0.05			mg/L	90-110	90-110	20
353.2	Nitrate/Nitrite as N		Solid	0.28	5.0			mg/kg	90-110	55-136	30
353.2 LL	Nitrate/Nitrite as N		Water	0.0015	0.002			mg/L	90-110	90-110	20
300.0	Nitrite as N	14797-65-0	Water	0.14 (0.014)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	90-110	90-110	20
353.2	Nitrite as N	14797-65-0	Water	0.007	0.01			mg/L	90-110	90-110	20
9056A	Nitrite as N	14797-65-0	Water	0.14 (0.014)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	80-120	80-120	15
9056A	Nitrite as N	14797-65-0	Solid	4	10			mg/Kg	80-120	55-134	15
351.2	Nitrogen, Total Kjeldahl	7727-37-9	Water	0.15	0.20	0.25	0.50	mg/L	90-110	90-110	20
351.2 LL	Nitrogen, Total Kjeldahl	7727-37-9	Water	0.098	0.10			mg/L	90-110	90-110	20
351.2 Modified	Nitrogen, Total Kjeldahl	7727-37-9	Non-Aq	21	30			mg/Kg	30-158	30-158	30
351.2 Modified	Nitrogen, Total Kjeldahl	7727-37-9	Solid	21	30			mg/Kg	64-126	10-200	30
1664A (SGT-HEM)	Oil and Grease, Nonpolar (Total Petroleum Hydrocarbons)		Water	1.6	5.0			mg/L	64-132	64-132	34
1664A (HEM)	Oil and Grease, Total		Water	1.6	5.0			mg/L	78-114	78-114	18
365.1	Orthophosphate	14265-44-2	Water	0.0049	0.01			mg/L	90-110	90-110	20
365.1 LL	Orthophosphate	14265-44-2	Water	0.0049	0.005			mg/L	90-110	90-110	20
HACH 10360	Oxygen, Dissolved	7782-44-7	Water	NA	0.20			mg/L	NA	NA	20
9095B	Paint Filter test		Solid	NA	NA			%	NA	NA	30
ASTM E203	Percent Water (Water Content)		Water	NA	0.10			%	90-110	NA	20
ASTM E203	Percent Water (Water Content)		Non-Aq	NA	0.10			%	90-110	NA	20
ASTM E203	Percent Water (Water Content)		Solid	NA	0.10			%	90-110	NA	20
9040C	pH		Water	NA	NA			SU	NA	NA	±0.10
9040C	pH		non-Aq	NA	NA			SU	NA	NA	±0.10
9045D	pH		Solid	NA	NA			SU	NA	NA	±0.10
SM 4500-H+ B-2000(2011)	pH		Water	NA	NA			SU	NA	NA	±0.10
420.4	Phenolics, Total (in-line distillation)	108-95-2	Water	0.0029	0.005	0.0035	0.005	mg/L	90-110	90-110	20
420.4 LL	Phenolics, Total (in-line distillation)	108-95-2	Water	0.00097	0.002			mg/L	90-110	90-110	20
9066	Phenolics, Total	108-95-2	Water	0.0029	0.005	0.0035	0.005	mg/L	85-115	49-137	20
9066 LL	Phenolics, Total	108-95-2	Water	0.00097	0.002			mg/L	85-115	49-137	20
9066	Phenolics, Total	108-95-2	Non-Aq	0.056	0.10			mg/Kg	72-113	72-113	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
9066	Phenolics, Total	108-95-2	Solid	0.056	0.10			mg/kg	59-128	72-113	30
365.1	Phosphorus, Total	7723-14-0	Water	0.013	0.05			mg/L	90-110	90-110	20
365.1 Modified	Phosphorus, Total	7723-14-0	Non-Aq	7.6	10.0			mg/Kg	83-111	10-113	30
365.1 Modified	Phosphorus, Total	7723-14-0	Solid	7.6	10.0			mg/kg	83-111	10-113	30
365.1 LL	Phosphorus, Total	7723-14-0	Water	0.0036	0.005			mg/L	90-110	90-110	20
ALS SOP	REDOX (ORP)		Water	NA	NA			mV	NA	NA	20
ALS SOP	REDOX (ORP)		Solid	NA	NA			mV	NA	NA	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
ALS SOP	Solids, Dry Weight Percent (DWPS)		Solid	NA	1.0			%	NA	NA	20
SM 2540G	Solids, Percent Volatile		Solid	NA	NA			%	NA	NA	30
SM 2540F	Solids, Settleable		Water	NA	0.10			mg/L	NA	NA	20
SM 2540B-1997(2011)	Solids, Total (TS)		Water	10	10			mg/L	90-110	NA	20
SM 2540B	Solids, Total (TS)		Non-Aq	NA	10			mg/kg	90-110	NA	20
SM 2540C-1997(2011)	Solids, Total Dissolved (TDS)		Water	9	10			mg/L	90-110	NA	10
SM 2540D-1997(2011)	Solids, Total Suspended (TSS)		Water	NA	1.0			mg/L	90-110	NA	10
SM 2540E-1997(2011)	Solids, Total Suspended Fixed		Water	NA	1.0			mg/L	NA	NA	10
SM 2540E-1997(2011)	Solids, Total Volatile (TVS)		Water	NA	10			mg/L	84-116	NA	10
SM 2540E-1997(2011)	Solids, Volatile Dissolved (VDS)		Water	NA	10			mg/L	80-120	NA	10
SM 2540E-1997(2011)	Solids, Volatile Suspended (VSS)		Water	NA	1.0			mg/L	NA	NA	10
300.0	Sulfate	14808-79-8	Water	0.39 (0.039)	2.0 (0.2)	0.1 (1)	0.2 (2)	mg/L	90-110	90-110	20
9056A	Sulfate	14808-79-8	Water	0.39 (0.039)	2.0 (0.2)	0.1 (1)	0.2 (2)	mg/L	80-120	80-120	15
9056A	Sulfate	14808-79-8	Non-Aq	13	30			mg/Kg	80-120	53-154	15
9056A	Sulfate	14808-79-8	Solid	13	30			mg/Kg	80-120	53-154	15
26A	Sulfate (H2SO4)	14808-79-8	Water	0.1	0.2			mg/L	65-137	17-177	20
9030B/9034	Sulfide, Acid Soluble		Water	0.94	1.0	1	2	mg/L	10-125	10-109	20
9030B/9034	Sulfide, Acid Soluble		Solid/Non-Aq	14	20	20	40	mg/Kg	10-135	10-120	30
SM 4500-S2 F-2000(2011)	Sulfide, Total		Water	0.28	1.0	1	2	mg/L	67-143	56-147	20
SM 4500-SO32 B-2000(2011)	Sulfite	14265-45-3	Water	NA	2.0			mg/L	NA	NA	20
ALS SOP	Trimethylamine (TMA)	75-50-3	Water	0.012	0.10			mg/L	80-120	75-125	20
ALS SOP	TMAH	75-59-2	Water	0.058	0.10			mg/L	80-120	75-125	20
Lloyd Kahn	Total Inorganic Carbon		Solid	NA	300			mg/kg	NA	NA	30
SM 5310C	Total Inorganic Carbon		Water	0.44	1.0			mg/L	78-118	78-118	20
9060A	Total Organic Carbon	7440-44-0	Water	0.45	1.0	0.50	1.00	mg/L	80-121	48-135	20
Lloyd Kahn	Total Organic Carbon	7440-44-0	Non-Aq	109	300			mg/Kg	75-127	27-162	30
Lloyd Kahn	Total Organic Carbon	7440-44-0	Solid	109	300	150	300	mg/Kg	75-127	27-162	30
SM 5310B-2000(2011)	Total Organic Carbon	7440-44-0	Water	0.45	1.0			mg/L	80-121	48-135	20
SM 5310C-2000(2011)	Total Organic Carbon	7440-44-0	Water	0.45	1.0	0.50	1.00	mg/L	80-121	48-135	20
180.1	Turbidity		Water	0.06	0.10			NTU	NA	NA	10
SM 5910B	UV 254		Water	0.0063	NA			cm-1	NA	NA	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
1631E	Mercury	7439-97-6	Water	0.24	1.0	NA	NA	ng/L	77-128	71-125	24
200.7	Aluminum	7429-90-5	Water	39	100	200.00	400.00	ug/L	85-115	70-130	20
200.7	Antimony	7440-36-0	Water	5.4	60	30.00	40.00	ug/L	85-115	70-130	20
200.7	Arsenic	7440-38-2	Water	4.2	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Barium	7440-39-3	Water	4.3	20	20.00	40.00	ug/L	85-115	70-130	20
200.7	Beryllium	7440-41-7	Water	0.14	3	2.50	5.00	ug/L	85-115	70-130	20
200.7	Boron	7440-42-8	Water	5.8	200	200.00	400.00	ug/L	85-115	70-130	20
200.7	Cadmium	7440-43-9	Water	0.61	5	2.50	5.00	ug/L	85-115	70-130	20
200.7	Calcium	7440-70-2	Water	110	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Chromium	7440-47-3	Water	0.91	10	5.00	10.00	ug/L	85-115	70-130	20
200.7	Cobalt	7440-48-4	Water	0.6	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Copper	7440-50-8	Water	1.3	20	10.00	20.00	ug/L	85-115	70-130	20
200.7	Gallium	7440-55-3	Water	1.7	200	NA	NA	ug/L	85-115	70-130	20
200.7	Germanium	7440-56-4	Water	7	100	NA	NA	ug/L	85-115	70-130	20
200.7	Gold	7440-57-5	Water	2	50	NA	NA	ug/L	85-115	70-130	20
200.7	Hafnium	7440-58-6	Water	12	100	NA	NA	ug/L	85-115	70-130	20
200.7	Indium	7440-74-6	Water	11	100	NA	NA	ug/L	85-115	70-130	20
200.7	Iron	7439-89-6	Water	20	100	100.00	200.00	ug/L	85-115	70-130	20
200.7	Lead	7439-92-1	Water	2.8	5	5.00	10.00	ug/L	85-115	70-130	20
200.7	Lithium	7439-93-2	Water	11	100	NA	NA	ug/L	85-115	70-130	20
200.7	Magnesium	7439-95-4	Water	68	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Manganese	7439-96-5	Water	1.7	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Molybdenum	7439-98-7	Water	3.7	25	12.50	25.00	ug/L	85-115	70-130	20
200.7	Nickel	7440-02-0	Water	2.1	40	20.00	40.00	ug/L	85-115	70-130	20
200.7	Palladium	7440-05-3	Water	2.8	100	NA	NA	ug/L	85-115	70-130	20
200.7	Platinum	7440-06-4	Water	4.7	100	NA	NA	ug/L	85-115	70-130	20
200.7	Potassium	7440-09-7	Water	180	2000	1000.00	2000.00	ug/L	85-115	70-130	20
200.7	Rhenium	7440-15-5	Water	1.5	100	NA	NA	ug/L	85-115	70-130	20
200.7	Rutheniuim	7440-18-8	Water	2.1	100	NA	NA	ug/L	85-115	70-130	20
200.7	Selenium	7782-49-2	Water	4.9	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Silicon	7440-21-3	Water	118	1000	NA	NA	ug/L	85-115	70-130	20
200.7	Silver	7440-22-4	Water	0.78	10	5.00	10.00	ug/L	85-115	70-130	20
200.7	Sodium	7440-23-5	Water	100	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Strontium	7440-24-6	Water	0.9	100	50.00	100.00	ug/L	85-115	70-130	20
200.7	Tantalum	7440-25-7	Water	6.1	100	NA	NA	ug/L	85-115	70-130	20
200.7	Thallium	7440-28-0	Water	6.5	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Tin	7440-31-5	Water	13	500	250.00	500.00	ug/L	85-115	70-130	20
200.7	Titanium	7440-32-6	Water	2.5	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Tungsten	7440-33-7	Water	29	100	NA	NA	ug/L	85-115	70-130	20
200.7	Vanadium	7440-62-2	Water	0.71	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Zinc	7440-66-6	Water	6.3	20	20.00	40.00	ug/L	85-115	70-130	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
200.8	Aluminum	7429-90-5	Water	2.3	10	5	10	ug/L	85-115	70-130	20
200.8	Antimony	7440-36-0	Water	0.17	1	1	2	ug/L	85-115	70-130	20
200.8	Arsenic	7440-38-2	Water	0.32	1	0.50	1	ug/L	85-115	70-130	20
200.8	Barium	7440-39-3	Water	0.27	1	1.00	2	ug/L	85-115	70-130	20
200.8	Beryllium	7440-41-7	Water	0.078	1	0.50	1	ug/L	85-115	70-130	20
200.8	Cadmium	7440-43-9	Water	0.38	1	0.50	1	ug/L	85-115	70-130	20
200.8	Chromium	7440-47-3	Water	0.56	2	2.00	4	ug/L	85-115	70-130	20
200.8	Cobalt	7440-48-4	Water	0.051	1	0.50	1	ug/L	85-115	70-130	20
200.8	Copper	7440-50-8	Water	0.66	1	1.00	2	ug/L	85-115	70-130	20
200.8	Copper	7440-50-8	DW	0.16	1	NA	NA	ug/L	85-115	70-130	20
200.8	Lead	7439-92-1	Water	0.57	1	1.00	2	ug/L	85-115	70-130	20
200.8	Lead	7439-92-1	DW	0.085	1	NA	NA	ug/L	85-115	70-130	20
200.8	Manganese	7439-96-5	Water	0.44	1	1.00	2	ug/L	85-115	70-130	20
200.8	Molybdenum	7439-98-7	Water	0.29	1	1.00	2	ug/L	85-115	70-130	20
200.8	Nickel	7440-02-0	Water	0.26	1	1.00	2	ug/L	85-115	70-130	20
200.8	Selenium	7782-49-2	Water	0.6	2	1.00	2	ug/L	85-115	70-130	20
200.8	Silver	7440-22-4	Water	0.15	1	0.50	1	ug/L	85-115	70-130	20
200.8	Thallium	7440-28-0	Water	0.031	1	0.50	1	ug/L	85-115	70-130	20
200.8	Uranium	7440-61-1	Water	0.034	1	NA	NA	ug/L	85-115	70-130	20
200.8	Vanadium	7440-62-2	Water	0.32	2	2	4	ug/L	85-115	70-130	20
200.8	Zinc	7440-66-6	Water	2.5	5	5	10	ug/L	85-115	70-130	20
245.1	Mercury	7439-97-6	Water	0.077	0.200	0.10	0.20	ug/L	85-115	70-130	20
6010C	Aluminum	7429-90-5	Solid	12	20	15	20	mg/kg	80-120	75-125	20
6010C	Antimony	7440-36-0	Solid	0.54	6	3	6	mg/kg	80-120	75-125	20
6010C	Arsenic	7440-38-2	Solid	0.7	1	0.8	1	mg/kg	80-120	75-125	20
6010C	Barium	7440-39-3	Solid	1.5	2	2	4	mg/kg	80-120	75-125	20
6010C	Beryllium	7440-41-7	Solid	0.06	0.3	0.25	0.5	mg/kg	80-120	75-125	20
6010C	Boron	7440-42-8	Solid	0.79	20	10	20	mg/kg	80-120	75-125	20
6010C	Cadmium	7440-43-9	Solid	0.24	0.5	0.25	0.5	mg/kg	80-120	75-125	20
6010C	Calcium	7440-70-2	Solid	32	100	50	100	mg/kg	80-120	75-125	20
6010C	Chromium	7440-47-3	Solid	0.35	1	0.5	1	mg/kg	80-120	75-125	20
6010C	Cobalt	7440-48-4	Solid	0.46	5	2.5	5	mg/kg	80-120	75-125	20
6010C	Copper	7440-50-8	Solid	0.63	2	1	2	mg/kg	80-120	75-125	20
6010C	Iron	7439-89-6	Solid	13	20	20	40	mg/kg	80-120	75-125	20
6010C	Lead	7439-92-1	Solid	0.4	5	2.5	5	mg/kg	80-120	75-125	20
6010C	Magnesium	7439-95-4	Solid	13	100	50	100	mg/kg	80-120	75-125	20
6010C	Manganese	7439-96-5	Solid	1.5	2	2.0	4	mg/kg	80-120	75-125	20
6010C	Molybdenum	7439-98-7	Solid	0.39	2.5	1.25	2.5	mg/kg	80-120	75-125	20
6010C	Nickel	7440-02-0	Solid	0.66	4	2	4	mg/kg	80-120	75-125	20
6010C	Potassium	7440-09-7	Solid	50	200	100	200	mg/kg	80-120	75-125	20
6010C	Selenium	7782-49-2	Solid	0.54	1	1.0	2	mg/kg	80-120	75-125	20
6010C	Silicon	7440-21-3	Solid	38	100	NA	NA	mg/kg	80-120	75-125	20
6010C	Silver	7440-22-4	Solid	0.09	1	0.5	1	mg/kg	80-120	75-125	20
6010C	Sodium	7440-23-5	Solid	52	100	100	200	mg/kg	80-120	75-125	20
6010C	Strontium	7440-24-6	Solid	0.11	10	5	10	mg/kg	80-120	75-125	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
6010C	Thallium	7440-28-0	Solid	0.65	1	1.0	2	mg/kg	80-120	75-125	20
6010C	Tin	7440-31-5	Solid	5.8	50	25	50	mg/kg	80-120	75-125	20
6010C	Titanium	7440-32-6	Solid	0.4	5	2.5	5	mg/kg	80-120	75-125	20
6010C	Vanadium	7440-62-2	Solid	0.71	5	2.5	5	mg/kg	80-120	75-125	20
6010C	Zinc	7440-66-6	Solid	1.4	2	2	4	mg/kg	80-120	75-125	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
6010C	Aluminum	7429-90-5	Water	23	100	200	400	ug/L	80-120	75-125	20
6010C	Antimony	7440-36-0	Water	4.7	60	30	60	ug/L	80-120	75-125	20
6010C	Arsenic	7440-38-2	Water	5.5	10	10	20	ug/L	80-120	75-125	20
6010C	Barium	7440-39-3	Water	3	20	20	40	ug/L	80-120	75-125	20
6010C	Beryllium	7440-41-7	Water	0.13	3	2.5	5	ug/L	80-120	75-125	20
6010C	Boron	7440-42-8	Water	12	200	200	400	ug/L	80-120	75-125	20
6010C	Cadmium	7440-43-9	Water	0.35	5	2.5	5	ug/L	80-120	75-125	20
6010C	Calcium	7440-70-2	Water	220	1000	500	1000	ug/L	80-120	75-125	20
6010C	Chromium	7440-47-3	Water	0.59	10	5	10	ug/L	80-120	75-125	20
6010C	Cobalt	7440-48-4	Water	0.89	50	25	50	ug/L	80-120	75-125	20
6010C	Copper	7440-50-8	Water	3.9	20	10	20	ug/L	80-120	75-125	20
6010C	Iron	7439-89-6	Water	61	100	100	200	ug/L	80-120	75-125	20
6010C	Lead	7439-92-1	Water	2.1	50	5.0	10	ug/L	80-120	75-125	20
6010C	Magnesium	7439-95-4	Water	29	1000	500	1000	ug/L	80-120	75-125	20
6010C	Manganese	7439-96-5	Water	3.7	10	10	20	ug/L	80-120	75-125	20
6010C	Molybdenum	7439-98-7	Water	2.9	25	12.5	25	ug/L	80-120	75-125	20
6010C	Nickel	7440-02-0	Water	2.6	40	20	40	ug/L	80-120	75-125	20
6010C	Potassium	7440-09-7	Water	200	2000	1000	2000	ug/L	80-120	75-125	20
6010C	Selenium	7782-49-2	Water	6.4	10	10	20	ug/L	80-120	75-125	20
6010C	Silicon	7440-21-3	Water	363	1000	NA	NA	ug/L	80-120	75-125	20
6010C	Silver	7440-22-4	Water	0.57	10	5	10	ug/L	80-120	75-125	20
6010C	Sodium	7440-23-5	Water	130	1000	500	1000	ug/L	80-120	75-125	20
6010C	Strontium	7440-24-6	Water	1.8	100	50	100	ug/L	80-120	75-125	20
6010C	Thallium	7440-28-0	Water	6.6	10	10	20	ug/L	80-120	75-125	20
6010C	Tin	7440-31-5	Water	8	500	250	500	ug/L	80-120	75-125	20
6010C	Titanium	7440-32-6	Water	6	50	25	50	ug/L	80-120	75-125	20
6010C	Vanadium	7440-62-2	Water	0.67	50	25	50	ug/L	80-120	75-125	20
6010C	Zinc	7440-66-6	Water	9.4	20	20	40	ug/L	80-120	75-125	20
1311/6010C (TCLP)	Arsenic	7440-38-2	Solid	NA	0.500	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Barium	7440-39-3	Solid	NA	1.000	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Beryllium	7440-41-7	Solid	NA	0.005	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Cadmium	7440-43-9	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Calcium	7440-70-2	Solid	NA	1.000	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Chromium	7440-47-3	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Copper	7440-50-8	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Lead	7439-92-1	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Molybdenum	7439-98-7	Solid	NA	0.050	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Nickel	7440-02-0	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Selenium	7782-49-2	Solid	NA	0.500	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Silver	7440-22-4	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Thallium	7440-28-0	Solid	NA	0.010	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Vanadium	7440-62-2	Solid	NA	0.050	NA	NA	mg/L	80-120	75-125	20
1311/6010C (TCLP)	Zinc	7440-66-6	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/7470A (TCLP)	Mercury	7439-97-6	Solid	NA	0.0003	NA	NA	mg/L	80-120	75-125	20

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
6020A	Antimony	7440-36-0	Solid	0.025 (0.13)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Arsenic	7440-38-2	Solid	0.043 (0.22)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Barium	7440-39-3	Solid	0.0087 (0.044)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Beryllium	7440-41-7	Solid	0.0026 (0.013)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Cadmium	7440-43-9	Solid	0.026 (0.13)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Chromium	7440-47-3	Solid	0.11 (0.51)	(0.2) 1.0	(0.15) 0.75	(0.2) 1.0	mg/kg	80-120	75-125	20
6020A	Cobalt	7440-48-4	Solid	0.0012 (0.0057)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Copper	7440-50-8	Solid	0.052 (0.26)	(0.1) 0.5	(0.06) 0.3	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Lead	7439-92-1	Solid	0.0096 (0.048)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Manganese	7439-96-5	Solid	0.15 (0.75)	(0.5) 2.5	(0.5) 2.5	(1.0) 5.0	mg/kg	80-120	75-125	20
6020A	Molybdenum	7439-98-7	Solid	0.011 (0.052)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Nickel	7440-02-0	Solid	0.023 (0.12)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Selenium	7782-49-2	Solid	0.025 (0.13)	(0.2) 1.0	(0.1) 0.5	(0.2) 1.0	mg/kg	80-120	75-125	20
6020A	Silver	7440-22-4	Solid	0.0415 (0.21)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Thallium	7440-28-0	Solid	0.0012 (0.0059)	(0.1) 0.5	(0.05) 0.25	(0.1) 0.5	mg/kg	80-120	75-125	20
6020A	Vanadium	7440-62-2	Solid	0.047 (0.24)	(0.2) 1.0	(0.1) 0.5	(0.2) 1.0	mg/kg	80-120	75-125	20
6020A	Zinc	7440-66-6	Solid	0.46 (2.3)	(1.0) 5.0	(1.0) 5.0	(2.0) 10	mg/kg	80-120	75-125	20
6020A	Aluminum	7429-90-5	Water	2.3	10	5.0	10	ug/L	80-120	75-125	20
6020A	Antimony	7440-36-0	Water	0.17	1	1.0	2	ug/L	80-120	75-125	20
6020A	Arsenic	7440-38-2	Water	0.32	1	0.5	1	ug/L	80-120	75-125	20
6020A	Barium	7440-39-3	Water	0.27	1	1.0	2	ug/L	80-120	75-125	20
6020A	Beryllium	7440-41-7	Water	0.078	1	0.5	1	ug/L	80-120	75-125	20
6020A	Cadmium	7440-43-9	Water	0.38	1	0.5	1	ug/L	80-120	75-125	20
6020A	Chromium	7440-47-3	Water	0.56	2	2	4	ug/L	80-120	75-125	20
6020A	Cobalt	7440-48-4	Water	0.051	1	0.5	1	ug/L	80-120	75-125	20
6020A	Copper	7440-50-8	Water	0.66	1	1.0	2	ug/L	80-120	75-125	20
6020A	Lead	7439-92-1	Water	0.57	1	1.0	2	ug/L	80-120	75-125	20
6020A	Manganese	7439-96-5	Water	0.44	1	1.0	2	ug/L	80-120	75-125	20
6020A	Molybdenum	7439-98-7	Water	0.29	1	1.0	2	ug/L	80-120	75-125	20
6020A	Nickel	7440-02-0	Water	0.26	1	1.0	2	ug/L	80-120	75-125	20
6020A	Selenium	7782-49-2	Water	0.6	2	1	2	ug/L	80-120	75-125	20
6020A	Silver	7440-22-4	Water	0.15	1	0.5	1	ug/L	80-120	75-125	20
6020A	Thallium	7440-28-0	Water	0.031	1	0.5	1	ug/L	80-120	75-125	20
6020A	Uranium	7440-61-1	Water	0.034	1	0.5	1	ug/L	80-120	75-125	20
6020A	Vanadium	7440-62-2	Water	0.32	2	2	4	ug/L	80-120	75-125	20
6020A	Zinc	7440-66-6	Water	2.5	5	5.0	10	ug/L	80-120	75-125	20
7470A	Mercury	7439-97-6	Water	0.077	0.2	0.10	0.20	ug/L	80-120	75-125	20
7471B	Mercury	7439-97-6	Solid	0.0130	0.033	0.0167	0.033	mg/kg	80-120	75-125	35

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
522	1,4-DIOXANE	123-91-1	Water	0.02	0.04			ug/L	70-130	70-130	30
522-SURR	1,4-DIOXANE-D8	17647-74-4	Water	NA	NA			%	70-130	70-130	NA
608.3	4,4'-DDD	72-54-8	Water	0.02	0.05	0.025	0.05	ug/L	31-141	31-141	39
608.3	4,4'-DDE	72-55-9	Water	0.02	0.05	0.025	0.05	ug/L	30-145	30-145	35
608.3	4,4'-DDT	50-29-3	Water	0.02	0.05	0.025	0.05	ug/L	25-160	25-160	42
608.3	ALDRIN	309-00-2	Water	0.02	0.05	0.025	0.05	ug/L	42-140	42-140	35
608.3	ALPHA-BHC	319-84-6	Water	0.02	0.05	0.025	0.05	ug/L	37-140	34-140	36
608.3	ALPHA-CHLORDANE	5103-71-9	Water	0.02	0.05	0.025	0.05	ug/L	45-140	45-140	35
608.3	BETA-BHC	319-85-7	Water	0.02	0.05	0.025	0.05	ug/L	17-147	17-147	44
608.3	CHLORDANE	57-74-9	Water	0.125	0.25	0.200	0.25	ug/L	28-143	28-143	30
608.3	DELTA-BHC	319-86-8	Water	0.02	0.05	0.025	0.05	ug/L	19-140	19-140	52
608.3	DIELDRIN	60-57-1	Water	0.02	0.05	0.025	0.05	ug/L	36-146	36-146	49
608.3	ENDOSULFAN I	959-98-8	Water	0.02	0.05	0.025	0.05	ug/L	45-153	45-153	28
608.3	ENDOSULFAN II	33213-65-9	Water	0.02	0.05	0.025	0.05	ug/L	10-202	10-202	53
608.3	ENDOSULFAN SULFATE	1031-07-8	Water	0.02	0.05	0.025	0.05	ug/L	26-144	26-144	38
608.3	ENDRIN	72-20-8	Water	0.02	0.05	0.025	0.05	ug/L	30-147	30-147	48
608.3	ENDRIN ALDEHYDE	7421-93-4	Water	0.02	0.05	0.025	0.05	ug/L	10-103	10-94	30
608.3	ENDRIN KETONE	53494-70-5	Water	0.02	0.05	0.025	0.05	ug/L	59-143	48-162	30
608.3	GAMMA-BHC (LINDANE)	58-89-9	Water	0.02	0.05	0.025	0.05	ug/L	32-140	32-140	39
608.3	GAMMA-CHLORDANE	5566-34-7	Water	0.02	0.05	0.025	0.05	ug/L	45-140	45-140	35
608.3	HEPTACHLOR	76-44-8	Water	0.02	0.05	0.025	0.05	ug/L	34-140	34-140	43
608.3	HEPTACHLOR EPOXIDE	1024-57-3	Water	0.02	0.05	0.025	0.05	ug/L	37-142	37-142	26
608.3	METHOXYCHLOR	72-43-5	Water	0.02	0.05	0.025	0.05	ug/L	56-149	38-162	30
608.3	PCB1016	12674-11-2	Water	0.5	1.0	0.50	1.00	ug/L	50-140	50-140	36
608.3	PCB1221	11104-28-2	Water	1.0	2.0	1.00	2.00	ug/L	15-178	15-178	48
608.3	PCB1232	11141-16-5	Water	0.5	1.0	0.50	1.00	ug/L	10-215	10-215	25
608.3	PCB1242	53469-21-9	Water	0.5	1.0	0.50	1.00	ug/L	39-150	39-150	29
608.3	PCB1248	12672-29-6	Water	0.5	1.0	0.50	1.00	ug/L	38-158	38-158	35
608.3	PCB1254	11097-69-1	Water	0.5	1.0	0.50	1.00	ug/L	29-140	29-140	45
608.3	PCB1260	11096-82-5	Water	0.5	1.0	0.50	1.00	ug/L	10-140	10-140	38
608.3	MIREX	2385-85-5	Water	0.02	0.05			ug/L	27-197	10-200	30
608.3	TOXAPHENE	8001-35-2	Water	0.5	0.5	0.50	1.00	ug/L	41-140	41-140	41
608.3-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA		0.20	%	10-156	10-156	NA
608.3-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Water	NA	NA		0.20	%	13-131	13-131	NA
610	ACENAPHTHENE	83-32-9	Water	0.05	0.1			ug/L	10-124	10-124	30
610	ACENAPHTHYLENE	208-96-8	Water	0.05	0.1			ug/L	10-139	10-139	30
610	ANTHRACENE	120-12-7	Water	0.05	0.1			ug/L	10-126	10-126	30
610	BENZO(A)ANTRACENE	56-55-3	Water	0.05	0.1			ug/L	12-135	12-135	30
610	BENZO(A)PYRENE	50-32-8	Water	0.05	0.07			ug/L	10-128	10-128	30
610	BENZO(B)FLUORANTHENE	205-99-2	Water	0.05	0.1			ug/L	10-150	10-150	30
610	BENZO(G,H,I)PERYLENE	191-24-2	Water	0.05	0.1			ug/L	10-116	10-116	30
610	BENZO(K)FLUORANTHENE	207-08-9	Water	0.05	0.1			ug/L	10-159	10-159	30
610	CHRYSENE	218-01-9	Water	0.05	0.1			ug/L	10-199	10-199	30
610	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	0.05	0.1			ug/L	10-110	10-110	30
610	FLUORANTHENE	206-44-0	Water	0.05	0.1			ug/L	14-123	14-123	30
610	FLUORENE	86-73-7	Water	0.05	0.1			ug/L	10-142	10-142	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
610	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	0.05	0.1			ug/L	10-116	10-116	30
610	NAPHTHALENE	91-20-3	Water	0.05	0.1			ug/L	10-122	10-122	30
610	PHENANTHRENE	85-01-8	Water	0.05	0.1			ug/L	10-155	10-155	30
610	PYRENE	129-00-0	Water	0.05	0.1			ug/L	10-140	10-140	30
610-SURR	P-TERPHENYL-SURR	92-94-4	Water	NA	NA			%	29-151	29-151	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
624.1	1,1,1,2-TETRACHLOROETHANE	630-20-6	Water	0.2	1.0			ug/L	76-129	68-146	30
624.1	1,1,1-TRICHLOROETHANE	71-55-6	Water	0.2	1.0			ug/L	70-130	52-162	36
624.1	1,1,2,2-TETRACHLOROETHANE	79-34-5	Water	0.2	1.0			ug/L	60-140	46-157	61
624.1	1,1,2-TRICHLOROETHANE	79-00-5	Water	0.2	1.0			ug/L	70-130	52-150	45
624.1	1,1,2-TRICHLOROTRIFLUOROETHANE	76-13-1	Water	0.2	1.0			ug/L	67-124	50-147	30
624.1	1,1-DICHLOROETHANE	75-34-3	Water	0.2	1.0			ug/L	70-130	59-155	40
624.1	1,1-DICHLOROETHENE	75-35-4	Water	0.2	1.0			ug/L	50-150	1-234	32
624.1	1,1-DICHLOROPROPENE	563-58-6	Water	0.2	1.0			ug/L	76-118	76-118	30
624.1	1,2,3-TRICHLOROBENZENE	87-61-6	Water	0.25	1.0			ug/L	67-136	59-129	30
624.1	1,2,3-TRICHLOROPROPANE	96-18-4	Water	0.26	5.0			ug/L	75-118	75-122	30
624.1	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.34	1.0			ug/L	75-132	69-122	30
624.1	1,2,4-TRIMETHYLBENZENE	95-63-6	Water	0.2	1.0			ug/L	81-126	73-133	30
624.1	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Water	0.45	1.0			ug/L	55-136	37-150	30
624.1	1,2-DIBROMOETHANE	106-93-4	Water	0.2	1.0			ug/L	82-127	67-127	30
624.1	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (C	354-23-4	Water	0.2	1.0			ug/L	79-139	67-156	30
624.1	1,2-DICHLOROBENZENE	95-50-1	Water	0.2	1.0			ug/L	65-135	18-190	57
624.1	1,2-DICHLOROETHANE	107-06-2	Water	0.2	1.0			ug/L	70-130	49-155	49
624.1	1,2-DICHLOROETHENE, TOTAL	540-59-0	Water	0.35	2.0			ug/L	75-128	75-128	30
624.1	1,2-DICHLOROPROPANE	78-87-5	Water	0.2	1.0			ug/L	35-165	1-210	55
624.1	1,3,5-TRICHLOROBENZENE	108-70-3	Water	0.27	1.0			ug/L	67-130	67-130	30
624.1	1,3,5-TRIMETHYLBENZENE	108-67-8	Water	0.2	1.0			ug/L	81-128	81-131	30
624.1	1,3-DICHLOROBENZENE	541-73-1	Water	0.2	1.0			ug/L	70-130	59-156	43
624.1	1,4-DICHLOROBENZENE	106-46-7	Water	0.2	1.0			ug/L	65-135	18-190	57
624.1	1,4-DIOXANE	123-91-1	Water	13	40.0			ug/L	44-154	44-154	30
624.1	1-CHLORO-4-(TRIFLUOROMETHYL) BENZENE (=4-CHLOROBENZOFLUORIDE)	98-56-6	Water	0.22	10.0			ug/L	70-129	48-148	30
624.1	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (C	306-83-2	Water	0.2	1.0			ug/L	79-128	79-128	30
624.1	2,2-DICHLOROPROPANE	594-20-7	Water	0.24	1.0			ug/L	61-139	46-138	30
624.1	2,3,6-TRICHLOROTOLUENE	2077-46-5	Water	0.59	5.0			ug/L	25-200	25-200	30
624.1	2,4,5-TRICHLOROTOLUENE	6639-30-1	Water	0.75	5.0			ug/L	24-190	24-190	30
624.1	2,4-,2,5-, and 2,6-DICHLOROTOLUENE COELU	CASID39497	Water	0.59	1.5			ug/L	47-145	47-145	30
624.1	2,4-DICHLOROBENZOTRIFLUORIDE	320-60-5	Water	0.49	1.0			ug/L	48-169	48-169	30
624.1	2,5-DICHLOROBENZOTRIFLUORIDE	320-50-3	Water	0.3	1.0			ug/L	67-131	64-131	30
624.1	2-BUTANONE (MEK)	78-93-3	Water	0.78	5.0			ug/L	61-137	61-137	30
624.1	2-CHLOROBENZOTRIFLUORIDE	88-16-4	Water	0.2	1.0			ug/L	47-164	47-164	30
624.1	2-CHLOROETHYLVINYL ETHER	110-75-8	Water	0.53	10.0			ug/L	1-225	1-305	71
624.1	2-CHLOROTOLUENE	95-49-8	Water	0.2	1.0			ug/L	79-124	79-126	30
624.1	2-HEXANONE	591-78-6	Water	0.2	5.0			ug/L	63-124	56-132	30
624.1	2-METHYL-1,3-DIOXOLANE	497-26-7	Water	1.5	5.0			ug/L	68-124	68-124	30
624.1	2-METHYL-1-PROPANOL (ISOBUTYL ALCOH	78-83-1	Water	33	100.0			ug/L	51-143	51-143	30
624.1	2-METHYL-2-PROPANOL (TERT-BUTYL ALC	75-65-0	Water	16	100.0			ug/L	49-141	49-141	30
624.1	2-PROPANOL	67-63-0	Water	3.4	20.0			ug/L	52-136	52-136	30
624.1	3,4- and 2,3-DICHLOROTOLUENE COELUTIO	CASID39496	Water	0.62	1.0			ug/L	48-143	48-143	30
624.1	3,4-DICHLOROBENZOTRIFLUORIDE	328-84-7	Water	0.33	1.0			ug/L	47-175	47-175	30
624.1	3-CHLOROBENZOTRIFLUORIDE	98-15-7	Water	0.2	1.0			ug/L	49-179	49-179	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
624.1	3-CHLOROTOLUENE	108-41-8	Water	0.2	1.0			ug/L	49-170	49-170	30
624.1	4-CHLOROTOLUENE	106-43-4	Water	0.2	1.0			ug/L	79-125	72-132	30
624.1	4-ISOPROPYLTOLUENE	99-87-6	Water	0.2	1.0			ug/L	78-133	78-133	30
624.1	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Water	0.2	5.0			ug/L	66-124	60-141	30
624.1	ACETONE	67-64-1	Water	2.1	5.0			ug/L	40-161	35-183	30
624.1	ACETONITRILE	75-05-8	Water	5.2	5.0			ug/L	46-154	46-154	30
624.1	ACROLEIN	107-02-8	Water	0.9	10.0			ug/L	60-140	40-160	60
624.1	ACRYLONITRILE	107-13-1	Water	0.9	10.0			ug/L	60-140	40-160	60
624.1	AMYLACETATE	628-63-7	Water	0.62	2.0			ug/L	37-129	37-129	30
624.1	BENZENE	71-43-2	Water	0.2	1.0			ug/L	65-135	37-151	61
624.1	BROMODICHLOROMETHANE	75-27-4	Water	0.2	1.0			ug/L	65-135	35-155	56
624.1	BROMOFORM	75-25-2	Water	0.25	1.0			ug/L	70-130	45-169	42
624.1	BROMOMETHANE	74-83-9	Water	0.7	1.0			ug/L	15-185	1-242	61
624.1	CARBON DISULFIDE	75-15-0	Water	0.42	10.0			ug/L	66-128	59-140	30
624.1	CARBON TETRACHLORIDE	56-23-5	Water	0.34	1.0			ug/L	70-130	70-140	41
624.1	CHLOROBENZENE	108-90-7	Water	0.2	1.0			ug/L	65-135	37-160	53
624.1	CHLOROETHANE	75-00-3	Water	0.23	1.0			ug/L	40-160	14-230	78
624.1	CHLOROFORM	67-66-3	Water	0.24	1.0			ug/L	70-135	51-138	54
624.1	CHLOROMETHANE	74-87-3	Water	0.28	1.0			ug/L	1-205	1-273	60
624.1	CIS-1,2-DICHLOROETHENE	156-59-2	Water	0.23	1.0			ug/L	80-121	77-127	30
624.1	CIS-1,3-DICHLOROPROPENE	10061-01-5	Water	0.2	1.0			ug/L	25-175	1-227	58
624.1	CYCLOHEXANE	110-82-7	Water	0.26	1.0			ug/L	69-120	52-145	30
624.1	DIBROMOCHLOROMETHANE	124-48-1	Water	0.2	1.0			ug/L	70-135	53-149	50
624.1	DIBROMOMETHANE	74-95-3	Water	0.2	1.0			ug/L	80-118	77-119	30
624.1	DICHLORODIFLUOROMETHANE	75-71-8	Water	0.21	1.0			ug/L	59-155	49-154	30
624.1	DICHLOROMETHANE (METHYLENE CHLORI	75-09-2	Water	0.65	1.0			ug/L	60-140	1-221	28
624.1	EPICHLOROHYDRIN	106-89-8	Water	2.2	5.0			ug/L	55-136	55-136	30
624.1	ETHYL ACETATE	141-78-6	Water	1.9	2.0			ug/L	57-127	18-138	30
624.1	ETHYLBENZENE	100-41-4	Water	0.2	1.0			ug/L	60-140	37-162	63
624.1	IODOMETHANE	74-88-4	Water	4.3	5.0			ug/L	18-160	18-160	30
624.1	ISOPROPYLACETATE	108-21-4	Water	0.2	2.0			ug/L	55-126	31-132	30
624.1	ISOPROPYLBENZENE	98-82-8	Water	0.2	1.0			ug/L	77-128	77-128	30
624.1	M+P XYLENE	179601-23-1	Water	0.2	2.0			ug/L	80-126	80-126	30
624.1	METHYL-TERT-BUTYL ETHER	1634-04-4	Water	0.2	1.0			ug/L	75-118	75-119	30
624.1	NAPHTHALENE	91-20-3	Water	0.24	5.0			ug/L	59-140	57-153	30
624.1	N-BUTYL ACETATE	123-86-4	Water	0.2	1.0			ug/L	71-129	61-139	30
624.1	N-BUTYLBENZENE	104-51-8	Water	0.2	1.0			ug/L	78-133	78-133	30
624.1	N-HEPTANE	142-82-5	Water	0.26	1.0			ug/L	57-134	47-141	30
624.1	N-PROPYLBENZENE	103-65-1	Water	0.2	1.0			ug/L	78-131	78-131	30
624.1	O-XYLENE	95-47-6	Water	0.2	1.0			ug/L	79-123	79-123	30
624.1	SEC-BUTYLBENZENE	135-98-8	Water	0.2	1.0			ug/L	75-129	75-129	30
624.1	STYRENE	100-42-5	Water	0.2	1.0			ug/L	80-124	74-136	30
624.1	TERT-BUTYLBENZENE	98-06-6	Water	0.2	1.0			ug/L	76-126	68-127	30
624.1	TETRACHLOROETHENE	127-18-4	Water	0.21	1.0			ug/L	70-130	64-148	39
624.1	TETRAHYDROFURAN	109-99-9	Water	1.3	10.0			ug/L	65-128	72-125	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
624.1	TOLUENE	108-88-3	Water	0.2	1.0			ug/L	70-130	47-150	41
624.1	TOTAL XYLENES	1330-20-7	Water	0.4	2.0			ug/L	78-121	78-121	30
624.1	TRANS-1,2-DICHLOROETHENE	156-60-5	Water	0.2	1.0			ug/L	70-130	54-156	45
624.1	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Water	0.23	1.0			ug/L	50-150	17-183	86
624.1	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Water	0.78	1.0			ug/L	39-137	27-155	30
624.1	TRICHLOROETHENE	79-01-6	Water	0.2	1.0			ug/L	65-135	70-157	48
624.1	TRICHLOROFLUOROMETHANE	75-69-4	Water	0.24	1.0			ug/L	50-150	17-181	84
624.1	VINYL CHLORIDE	75-01-4	Water	0.2	1.0			ug/L	5-195	1-251	66
624.1-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Water	NA	NA			%	73-125	73-125	NA
624.1-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Water	NA	NA			%	85-122	85-122	NA
624.1-SURR	TOLUENE-D8-SURR	2037-26-5	Water	NA	NA			%	87-121	87-121	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
625.1	1,2,3,4-TETRACHLOROBENZENE		Water	1.5	5			ug/L	25-127	25-127	30
625.1	1,2,3,5/1,2,4,5-TETRACHLOROBENZENE		Water	1.2	5			ug/L	15-132	15-132	30
625.1	1,2,4-TRICHLOROBENZENE	120-82-1	Water	1.2	5.0	5.0	10.0	ug/L	44-142	44-142	50
625.1	1,2-DIPHENYLHYDRAZINE	122-66-7	Water	1.4	5.0	5.0	10.0	ug/L	51-110	32-116	30
625.1	1,4-DIOXANE	123-91-1	Water	1	5.0			ug/L	26-62	26-62	30
625.1	1-METHYL-2-PYRROLIDINONE	872-50-4	Water	1	20.0			ug/L	10-76	10-76	30
625.1	1-METHYLNAPHTHALENE	90-12-0	Water	1.5	5.0	5.0	10.0	ug/L	43-103	41-112	30
625.1	2,2'-OXYBIS(1-CHLOROPROPANE)	108-60-1	Water	1.4	5.0	5.0	10.0	ug/L	36-166	36-166	76
625.1	2,3,4-TRICHLOROPHENOL	15950-66-0	Water	1.1	5.0			ug/L	30-130	30-130	30
625.1	2,3,5-TRICHLOROPHENOL	933-78-8	Water	1.4	5.0			ug/L	30-130	30-130	30
625.1	2,3,6-TRICHLOROPHENOL	933-75-5	Water	1	5.0			ug/L	30-130	30-130	30
625.1	2,4,5-TRICHLOROPHENOL	95-95-4	Water	1.1	5.0	5.0	10.0	ug/L	48-134	48-134	30
625.1	2,4,6-TRICHLOROPHENOL	88-06-2	Water	1.4	5.0	5.0	10.0	ug/L	37-144	37-144	58
625.1	2,4-DICHLOROPHENOL	120-83-2	Water	1.3	5.0	5.0	10.0	ug/L	39-135	39-135	50
625.1	2,4-DIMETHYLPHENOL	105-67-9	Water	1.4	5.0	5.0	10.0	ug/L	32-120	32-120	58
625.1	2,4-DINITROPHENOL	51-28-5	Water	20	50.0	25.0	50.0	ug/L	1-191	1-191	132
625.1	2,4-DINITROTOLUENE	121-14-2	Water	2.4	5.0	5.0	10.0	ug/L	39-139	39-139	42
625.1	2,4-DI-T-PENTYLPHENOL	120-95-6	Water	1	5.0			ug/L	57-128	57-128	30
625.1	2,5-DICHLOROPHENOL	538-78-8	Water	1	5.0			ug/L	30-130	30-130	30
625.1	2,6-DICHLOROPHENOL	87-65-0	Water	1.2	10.0	5.0	10.0	ug/L	44-138	44-138	30
625.1	2,6-DINITROTOLUENE	606-20-2	Water	1.4	5.0	5.0	10.0	ug/L	50-158	50-158	48
625.1	2-CHLORONAPHTHALENE	91-58-7	Water	1.4	5.0	5.0	10.0	ug/L	60-120	60-120	24
625.1	2-CHLOROPHENOL	95-57-8	Water	1.1	5.0	5.0	10.0	ug/L	23-134	23-134	61
625.1	2-METHYLNAPHTHALENE	91-57-6	Water	1.3	5.0	5.0	10.0	ug/L	34-105	34-102	30
625.1	2-METHYLPHENOL	95-48-7	Water	1	5.0	5.0	10.0	ug/L	47-100	37-102	30
625.1	2-NITROANILINE	88-74-4	Water	1.4	5.0	25.0	50.0	ug/L	52-133	40-136	30
625.1	2-NITROPHENOL	88-75-5	Water	1.5	5.0	5.0	10.0	ug/L	29-182	29-182	55
625.1	2-PHENOXYETHANOL	122-99-6	Water	1	5.0			ug/L	48-117	48-117	30
625.1	3,3'-DICHLOROBENZIDINE	91-94-1	Water	1.2	5.0	5.0	10.0	ug/L	1-262	1-200	108
625.1	3,4-DICHLOROPHENOL	95-77-2	Water	1.1	5.0			ug/L	30-130	30-130	30
625.1	3,5-DICHLOROPHENOL	591-35-5	Water	1.6	5.0			ug/L	30-130	30-130	30
625.1	3+4 CHLOROPHENOL COELUTION		Water	1.5	10.0			ug/L	30-130	30-130	30
625.1	3+4-METHYLPHENOL (M,P-CRESOL)	106-44-5 + 108-39	Water	1.2	5.0	10.0	20.0	ug/L	40-92	30-95	30
625.1	3-NITROANILINE	99-09-2	Water	2.5	5.0	25.0	50.0	ug/L	42-111	19-117	30
625.1	4,4-Butylide(6-TERT-BUTYL-3-CRESOL) (SAN	85-60-9	Water	1	5.0			ug/L	43-153	43-153	30
625.1	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	20	50.0	25.0	50.0	ug/L	1-181	1-181	203
625.1	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	1.7	5.0	5.0	10.0	ug/L	53-127	53-127	43
625.1	4-CHLORO-3,5-DIMETHYLPHENOL	88-04-0	Water	1	5.0			ug/L	58-119	58-119	30
625.1	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	1.1	5.0	5.0	10.0	ug/L	22-147	22-147	73
625.1	4-CHLOROANILINE	106-47-8	Water	1	5.0	5.0	10.0	ug/L	44-109	19-111	30
625.1	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	1.5	5.0	5.0	10.0	ug/L	25-158	25-158	61
625.1	4-NITROANILINE	100-01-6	Water	2.7	5.0	5.0	10.0	ug/L	54-133	18-143	30
625.1	4-NITROPHENOL	100-02-7	Water	6.4	50.0	25.0	50.0	ug/L	1-132	1-132	131
625.1	ACENAPHTHENE	83-32-9	Water	1.4	5.0	5.0	10.0	ug/L	47-145	47-145	48
625.1	ACENAPHTHYLENE	208-96-8	Water	1.4	5.0	5.0	10.0	ug/L	33-145	33-145	74
625.1	ACETOPHENONE	98-86-2	Water	1.3	5.0	10.0	20.0	ug/L	46-114	40-113	30
625.1	ALPHA-TERPINEOL, TOTAL	98-55-5	Water	2.4	10.0			ug/L	48-114	41-127	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
625.1	ANILINE	62-53-3	Water	1	5.0			ug/L	32-100	11-101	30
625.1	ANTHRACENE	120-12-7	Water	1.3	5.0	5.0	10.0	ug/L	27-133	27-133	66
625.1	ATRAZINE	1912-24-9	Water	2.1	5.0	10.0	20.0	ug/L	61-164	50-165	30
625.1	BENZIDINE	92-87-5	Water	13	100.0	50.0	100.0	ug/L	10-99	10-146	30
625.1	BENZALDEHYDE	100-52-7	Water	3.7	5.0			ug/L	45-132	32-133	30
625.1	BENZO(A)ANTHRACENE	56-55-3	Water	1.6	5.0	5.0	10.0	ug/L	33-143	33-143	53
625.1	BENZO(A)PYRENE	50-32-8	Water	1.2	5.0	5.0	10.0	ug/L	17-163	17-163	72
625.1	BENZO(B)FLUORANTHENE	205-99-2	Water	1.2	5.0	5.0	10.0	ug/L	24-159	24-159	71
625.1	BENZO(G,H,I)PERYLENE	191-24-2	Water	1	5.0	5.0	10.0	ug/L	1-200	1-200	97
625.1	BENZO(K)FLUORANTHENE	207-08-9	Water	1.3	5.0	5.0	10.0	ug/L	11-162	11-162	63
625.1	BENZOIC ACID	65-85-0	Water	55	50.0	50.0	100.0	ug/L	10-94	10-94	30
625.1	BENZYL ALCOHOL	100-51-6	Water	1.6	5.0	5.0	10.0	ug/L	31-109	31-109	30
625.1	BIPHENYL	92-52-4	Water	1.4	5.0	5.0	10.0	ug/L	39-106	10-126	30
625.1	BIS(1-CHLOROISOPROPYL) ETHER	108-60-1	Water	1.4	5.0	5.0	10.0	ug/L	36-166	36-166	76
625.1	BIS(-2-CHLOROETHOXY)METHANE	111-91-1	Water	1.9	5.0	5.0	10.0	ug/L	33-184	33-184	54
625.1	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	1.3	5.0	5.0	10.0	ug/L	12-158	12-158	108
625.1	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	7.8	10.0	10.0	20.0	ug/L	8-158	8-158	82
625.1	BUTYL BENZYL PHTHALATE	85-68-7	Water	1.4	5.0	5.0	10.0	ug/L	1-152	1-152	60
625.1	CARBAZOLE	86-74-8	Water	1.6	5.0	5.0	10.0	ug/L	56-139	39-144	30
625.1	CHRYSENE	218-01-9	Water	1.2	5.0	5.0	10.0	ug/L	17-168	17-168	87
625.1	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	1.1	5.0	5.0	10.0	ug/L	1-200	1-200	126
625.1	DIBENZOFURAN	132-64-9	Water	1.4	5.0	5.0	10.0	ug/L	55-110	46-119	30
625.1	DIETHYLPHTHALATE	84-66-2	Water	1.1	5.0	5.0	10.0	ug/L	1-120	1-120	100
625.1	DIMETHYL PHTHALATE	131-11-3	Water	1.3	5.0	5.0	10.0	ug/L	1-120	1-120	183
625.1	DIMETHYLTEREPHTHALATE	120-61-6	Water	1	5.0	5.0	10.0	ug/L	60-125	60-125	30
625.1	DI-N-BUTYLPHTHALATE	84-74-2	Water	1.7	5.0	5.0	10.0	ug/L	1-120	1-120	47
625.1	DI-N-OCTYL PHTHALATE	117-84-0	Water	3.3	5.0	5.0	10.0	ug/L	4-146	4-146	69
625.1	ETHYL ACRYLATE	140-88-5	Water	1	5.0			ug/L	31-81	31-81	30
625.1	FLUORANTHENE	206-44-0	Water	1.5	5.0	5.0	10.0	ug/L	26-137	26-137	66
625.1	FLUORENE	86-73-7	Water	1.3	5.0	5.0	10.0	ug/L	59-121	59-121	38
625.1	HEXACHLOROBENZENE	118-74-1	Water	1.6	5.0	5.0	10.0	ug/L	1-152	1-152	55
625.1	HEXACHLOROBUTADIENE	87-68-3	Water	1	5.0	5.0	10.0	ug/L	24-120	24-120	62
625.1	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	2.2	5.0	5.0	10.0	ug/L	10-99	10-103	30
625.1	HEXACHLOROETHANE	67-72-1	Water	1.1	5.0	5.0	10.0	ug/L	40-120	40-120	52
625.1	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	1.8	5.0	5.0	10.0	ug/L	1-171	1-171	99
625.1	ISOPHORONE	78-59-1	Water	1.4	5.0	5.0	10.0	ug/L	21-196	21-196	93
625.1	N,N-DIMETHYLANILINE	121-69-7	Water	1	20.0			ug/L	27-118	27-118	30
625.1	N,N-DIMETHYLFORMAMIDE	68-12-2	Water	3.2	5.0			ug/L	5-26	5-26	30
625.1	NAPHTHALENE	91-20-3	Water	1.2	5.0	5.0	10.0	ug/L	21-133	21-133	65
625.1	NITROBENZENE	98-95-3	Water	1.5	5.0	5.0	10.0	ug/L	35-180	35-180	62
625.1	N-NITROSODIMETHYLAMINE	62-75-9	Water	1	5.0	5.0	10.0	ug/L	31-70	20-80	30
625.1	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Water	1.2	5.0	5.0	10.0	ug/L	1-200	1-200	87
625.1	N-NITROSODIPHENYLAMINE	86-30-6	Water	2.7	5.0	5.0	10.0	ug/L	45-123	43-127	30
625.1	OCTACHLOROCYCLOPENTENE	706-78-5	Water	1.5	5.0			ug/L	37-139	25-144	30
625.1	PENTACHLOROBENZENE	608-93-5	Water	1.4	5.0			ug/L	38-127	38-127	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
625.1	PENTACHLOROPHENOL	87-86-5	Water	9.7	50.0	25.0	50.0	ug/L	14-176	14-176	86
625.1	PHENANTHRENE	85-01-8	Water	1.4	5.0	5.0	10.0	ug/L	54-120	54-120	39
625.1	PHENOL	108-95-2	Water	1	5.0	5.0	10.0	ug/L	5-120	5-120	64
625.1	PYRENE	129-00-0	Water	1.5	5.0	5.0	10.0	ug/L	52-120	52-120	49
625.1	PYRIDINE	110-86-1	Water	1	5.0			ug/L	10-123	10-123	30
625.1	TRIPHENYL PHOSPHATE	115-86-6	Water	1	20.0			ug/L	58-142	58-142	30
625.1-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA			%	35-141	35-141	NA
625.1-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA			%	31-118	31-118	NA
625.1-SURR	2-FLUOROPHENOL-SURR	367-12-4	Water	NA	NA			%	10-105	10-105	NA
625.1-SURR	NITROBENZENE-d5-SURR	4165-60-0	Water	NA	NA			%	31-110	31-110	NA
625.1-SURR	PHENOL-d6-SURR	13127-88-3	Water	NA	NA			%	10-107	10-107	NA
625.1-SURR	TERPHENYL-d14-SURR	1718-51-0	Water	NA	NA			%	10-165	10-165	NA
625.1 LL	**see 8270D LL for compounds, MRLs, and SURR.**								Same as 625	Same as 625	

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
680	MONOCHLOROBIPHENYLS, TOTAL	27323-18-8	Water	0.0035	0.005			ug/L	28-111	34-137	30
680	DICHLOROBIPHENYLS, TOTAL	25512-42-9	Water	0.003	0.005			ug/L	31-119	37-139	30
680	TRICHLOROBIPHENYLS, TOTAL	25323-68-6	Water	0.0028	0.005			ug/L	30-121	10-173	30
680	TETRACHLOROBIPHENYLS, TOTAL	26914-33-0	Water	0.0063	0.01			ug/L	26-122	14-153	30
680	PENTACHLOROBIPHENYLS, TOTAL	25429-29-2	Water	0.0066	0.01			ug/L	33-120	10-180	30
680	HEXACHLOROBIPHENYLS, TOTAL	26601-64-9	Water	0.0073	0.01			ug/L	24-119	11-160	30
680	HEPTACHLOROBIPHENYLS, TOTAL	28655-71-2	Water	0.012	0.02			ug/L	17-118	53-120	30
680	OCTACHLOROBIPHENYLS, TOTAL	55722-26-4	Water	0.011	0.02			ug/L	11-115	57-125	30
680	NONACHLOROBIPHENYLS, TOTAL	53742-07-7	Water	0.012	0.02			ug/L	50-125	50-125	30
680	DECACHLOROBIPHENYLS, TOTAL (PCB 209	2051-24-3	Water	0.021	0.03			ug/L	10-112	29-162	30
680-SURR	4-4'-DDT-SURR	50-29-3	Water	NA	NA			%	30-194	57-200	NA
680-SURR	GAMMA-BHC-SURR	58-89-9	Water	NA	NA			%	46-130	55-133	NA
680	MONOCHLOROBIPHENYLS, TOTAL	27323-18-8	Solid	0.2	0.33			ug/kg	10-108	10-149	30
680	DICHLOROBIPHENYLS, TOTAL	25512-42-9	Solid	0.14	0.33			ug/kg	13-121	13-121	30
680	TRICHLOROBIPHENYLS, TOTAL	25323-68-6	Solid	0.13	0.33			ug/kg	25-118	10-121	30
680	TETRACHLOROBIPHENYLS, TOTAL	26914-33-0	Solid	0.23	0.67			ug/kg	19-119	19-119	30
680	PENTACHLOROBIPHENYLS, TOTAL	25429-29-2	Solid	0.15	0.67			ug/kg	15-168	10-110	30
680	HEXACHLOROBIPHENYLS, TOTAL	26601-64-9	Solid	0.19	0.67			ug/kg	10-180	10-180	30
680	HEPTACHLOROBIPHENYLS, TOTAL	28655-71-2	Solid	0.38	1.0			ug/kg	15-181	10-110	30
680	OCTACHLOROBIPHENYLS, TOTAL	55722-26-4	Solid	0.34	1.0			ug/kg	25-150	10-160	30
680	NONACHLOROBIPHENYLS, TOTAL	53742-07-7	Solid	0.44	1.3			ug/kg	30-130	30-130	30
680	DECACHLOROBIPHENYLS, TOTAL (PCB 209	2051-24-3	Solid	0.67	1.7			ug/kg	39-137	39-137	30
680-SURR	4-4'-DDT-SURR	50-29-3	Solid	NA	NA			%	10-138	10-138	NA
680-SURR	GAMMA-BHC-SURR	58-89-9	Solid	NA	NA			%	10-110	10-110	NA
NY 310-13	FUEL OIL #2	68476-30-2	Water	NA	1000			ug/L	34-138	70-136	30
NY 310-13	FUEL OIL #4	68476-31-3	Water	NA	1000			ug/L	50-150	50-150	30
NY 310-13	FUEL OIL #6	68476-33-5	Water	NA	1000			ug/L	50-150	50-150	30
NY 310-13	GASOLINE	8006-61-9	Water	NA	Present			ug/L	50-150	50-150	30
NY 310-13	KEROSENE	8008-20-6	Water	NA	1000			ug/L	50-150	50-150	30
NY 310-13	LUBE OIL	NA	Water	NA	Present			ug/L	50-150	50-150	30
NY 310-13	N-DODECANE	112-40-3	Water	NA	1000			ug/L	50-150	50-150	30
NY 310-13	FUEL OIL #2	68476-30-2	Solid	NA	200			mg/kg	53-145	53-145	30
NY 310-13	FUEL OIL #4	68476-31-3	Solid	NA	200			mg/kg	50-150	50-150	30
NY 310-13	FUEL OIL #6	68476-33-5	Solid	NA	200			mg/kg	50-150	50-150	30
NY 310-13	GASOLINE	8006-61-9	Solid	NA	Present			mg/kg	50-150	50-150	30
NY 310-13	KEROSENE	8008-20-6	Solid	NA	200			mg/kg	50-150	50-150	30
NY 310-13	LUBE OIL	NA	Solid	NA	Present			mg/kg	50-150	50-150	30
NY 310-13	N-DODECANE	112-40-3	Solid	NA	200			mg/kg	50-150	50-150	30
NY 310-13	FUEL OIL #2	68476-30-2	Non-Aq	NA	1000			mg/kg	46-150	46-150	30
NY 310-13	FUEL OIL #4	68476-31-3	Non-Aq	NA	1000			mg/kg	50-150	50-150	30
NY 310-13	FUEL OIL #6	68476-33-5	Non-Aq	NA	1000			mg/kg	50-150	50-150	30
NY 310-13	GASOLINE	8006-61-9	Non-Aq	NA	1000			mg/kg	50-150	50-150	30
NY 310-13	KEROSENE	8008-20-6	Non-Aq	NA	1000			mg/kg	50-150	50-150	30
NY 310-13	LUBE OIL	NA	Non-Aq	NA	1000			mg/kg	50-150	50-150	30
NY 310-13	N-DODECANE	112-40-3	Non-Aq	NA	1000			mg/kg	50-150	50-150	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8015C	MINERAL SPIRITS	64475-85-0	Water	NA	1000			ug/L	50-150	50-150	30
8015C-SURR	O-TERPHENYL-SURR	84-15-1	Water	NA	NA			%	50-150	50-150	NA
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Water	75	100			ug/L	10-120	10-120	30
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Water	75	100			ug/L	50-150	50-150	30
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Water	NA	NA			%	30-132	30-132	NA
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Solid	32000	40000			ug/kg	29-124	10-200	50
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Solid	32000	40000			ug/kg	50-150	50-150	50
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Solid	NA	NA			%	22-159	22-159	NA
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Non-Aq	NA	40000			ug/kg	50-104	41-113	50
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Non-Aq	NA	40000			ug/kg	50-150	50-150	50
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Non-Aq	NA	NA			%	55-116	55-116	NA
8015C GLY	ETHYLENE GLYCOL	107-21-1	Water	4200	5000			ug/L	58-125	50-137	30
8015C GLY	PROPYLENE GLYCOL	57-55-6	Water	4800	5000			ug/L	66-121	61-130	30
8015C GLY-SURR	CYCLOHEXANOL-SURR	108-93-0	Water	NA	NA			%	59-134	59-134	NA
8015C GLY	ETHYLENE GLYCOL	107-21-1	Solid	4300	5000			ug/kg	27-181	27-181	30
8015C GLY	PROPYLENE GLYCOL	57-55-6	Solid	2200	5000			ug/kg	53-149	53-149	30
8015C GLY-SURR	CYCLOHEXANOL-SURR	108-93-0	Solid	NA	NA			%	46-136	46-136	NA
8015C GLY	ETHYLENE GLYCOL	107-21-1	Non-Aq	28000	50000			ug/kg	58-125	55-115	30
8015C GLY	PROPYLENE GLYCOL	57-55-6	Non-Aq	16300	50000			ug/kg	66-121	64-120	30
8015C GLY-SURR	CYCLOHEXANOL-SURR	108-93-0	Non-Aq	NA	NA			%	59-134	59-134	NA
8015C SILOX	HEXAMETHYLCYCLOTRISILOXANE	541-05-9	Non-Aq	2300	50000			ug/kg	10-192	10-192	20
8015C SILOX	N,N-DIMETHYLFORAMIDE	68-12-2	Non-Aq	13000	50000			ug/kg	44-173	44-173	20
8015C SILOX	OCTAMETHYLCYCLOTETRASILOXANE	556-67-2	Non-Aq	2400	50000			ug/kg	39-168	39-168	20
8015C SILOX	OCTAMETHYLTRISILOXANE	107-51-7	Non-Aq	1900	50000			ug/kg	76-128	76-128	20
8015C Alc	1,4-DIOXANE	123-91-1	Water	930	1000			ug/L	77-131	63-151	30
8015C Alc	1-BUTANOL (N-BUTANOL)	71-36-3	Water	380	1000			ug/L	78-119	64-149	30
8015C Alc	2-ETHOXYETHANOL (CELLOSOLVE)	110-80-5	Water	410	1000			ug/L	67-128	60-157	30
8015C Alc	2-METHOXYETHANOL (METHYL CELLOSOL\	109-86-4	Water	390	1000			ug/L	53-143	48-159	30
8015C Alc	2-METHYL-1-PROPANOL (ISOBUTLYL ALCOH	78-83-1	Water	270	1000			ug/L	83-116	62-149	30
8015C Alc	2-PROPANOL (ISOPROPANOL)	67-63-0	Water	440	1000			ug/L	77-124	64-151	30
8015C Alc	DIETHYL ETHER	60-29-7	Water	600	1000			ug/L	44-162	15-182	30
8015C Alc	DIISOPROPYL ETHER	108-20-3	Water	810	1000			ug/L	26-188	10-198	30
8015C Alc	ETHANOL	64-17-5	Water	470	1000			ug/L	71-128	57-152	30
8015C Alc	ETHYL ACETATE	141-78-6	Water	700	1000			ug/L	76-126	48-155	30
8015C Alc	METHANOL	67-56-1	Water	940	1000			ug/L	67-133	56-157	30
8015C Alc	PYRIDINE	110-86-1	Water	550	1000			ug/L	77-122	62-149	30
8015C Alc	2-HEXANONE-OPTIONAL SURR	591-78-6	Water	NA	NA			%	85-121	85-121	NA
8015C SVO	1-BUTANOL (N-BUTANOL)	71-36-3	Non-Aq	430	10000			ug/kg	72-134	72-134	30
8015C SVO	1-METHOXY-2-PROPANOL	107-98-2	Non-Aq	240	10000			ug/kg	50-150	50-150	30
8015C SVO	1-METHOXY-2-PROPYL ACEATE	108-65-6	Non-Aq	190	10000			ug/kg	74-118	74-118	30
8015C SVO	1-METHYL-2-PYRROLIDINONE	872-50-4	Non-Aq	26000	50000			ug/kg	50-138	50-138	30
8015C SVO	2-ETHOXYETHYL ACETATE	111-15-9	Non-Aq	150	10000			ug/kg	75-118	75-118	30
8015C SVO	2-METHOXYETHANOL (METHYL CELLOSOL\	109-86-4	Non-Aq	730	10000			ug/kg	57-130	57-130	30
8015C SVO	2-METHOXYETHYL ACETATE	110-49-6	Non-Aq	200	10000			ug/kg	72-119	72-119	30
8015C SVO	2-PROPANOL	67-63-0	Non-Aq	310	10000			ug/kg	68-124	68-124	30
8015C SVO	CYCLOHEXANONE	108-94-1	Non-Aq	110	10000			ug/kg	50-150	50-150	30
8015C SVO	ETHANOL	64-17-5	Non-Aq	430	10000			ug/kg	50-150	50-150	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8015C SVO	ETHYL 2-HYDROXYPROPIONATE	97-64-3	Non-Aq	150	10000			ug/kg	52-132	52-132	30
8015C SVO	GAMMA-BUTYROLACTONE	96-48-0	Non-Aq	18000	50000			ug/kg	47-138	47-138	30
8015C SVO	METHANOL	67-56-1	Non-Aq	4700	10000			ug/kg	56-142	56-142	30
8015C SVO	N-BUTYL ACETATE	123-86-4	Non-Aq	510	10000			ug/kg	40-150	40-150	30
8015C SVO	PHENOL	108-95-2	Non-Aq	1400	10000			ug/kg	64-131	64-131	30
8015C SVO	2-HEXANONE-OPTIONAL SURR	591-78-6	Non-Aq	NA	NA			%	80-120	80-120	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8015C RSK	ACETYLENE	74-86-2	Water	0.53	2.0			ug/L	59-146	59-146	30
8015C RSK	ETHANE	74-84-0	Water	0.17	1.0	0.50	1.0	ug/L	76-126	76-126	30
8015C RSK	ETHYLENE	74-85-1	Water	0.35	1.0	0.50	1.0	ug/L	73-129	67-132	30
8015C RSK	METHANE	74-82-8	Water	0.75	1.0	0.90	1.0	ug/L	75-128	46-143	30
8015C RSK	PROPANE	74-98-6	Water	0.28	1.0	0.50	1.0	ug/L	73-131	73-131	30
8081B	4,4'-DDD	72-54-8	Water	0.02	0.05	0.025	0.050	ug/L	42-159	38-157	30
8081B	4,4'-DDE	72-55-9	Water	0.02	0.05	0.025	0.050	ug/L	47-147	10-200	30
8081B	4,4'-DDT	50-29-3	Water	0.02	0.05	0.025	0.050	ug/L	41-149	19-154	30
8081B	ALDRIN	309-00-2	Water	0.02	0.05	0.025	0.050	ug/L	22-137	26-149	30
8081B	ALPHA-BHC	319-84-6	Water	0.02	0.05	0.025	0.050	ug/L	36-151	27-154	30
8081B	ALPHA-CHLORDANE	5103-71-9	Water	0.02	0.05	0.025	0.050	ug/L	50-139	35-160	30
8081B	BETA-BHC	319-85-7	Water	0.02	0.05	0.025	0.050	ug/L	55-149	32-184	30
8081B	CHLORDANE, TECHNICAL	57-74-9	Water	0.13	0.25	0.200	0.250	ug/L	28-143	28-143	30
8081B	DELTA-BHC	319-86-8	Water	0.02	0.05	0.025	0.050	ug/L	29-159	10-182	30
8081B	DIELDRIN	60-57-1	Water	0.02	0.05	0.025	0.050	ug/L	52-144	41-164	30
8081B	ENDOSULFAN I	959-98-8	Water	0.02	0.05	0.025	0.050	ug/L	52-136	47-149	30
8081B	ENDOSULFAN II	33213-65-9	Water	0.02	0.05	0.025	0.050	ug/L	57-138	51-148	30
8081B	ENDOSULFAN SULFATE	1031-07-8	Water	0.02	0.05	0.025	0.050	ug/L	34-156	10-170	30
8081B	ENDRIN	72-20-8	Water	0.02	0.05	0.025	0.050	ug/L	56-143	48-165	30
8081B	ENDRIN ALDEHYDE	7421-93-4	Water	0.02	0.05	0.025	0.050	ug/L	10-166	10-94	30
8081B	ENDRIN KETONE	53494-70-5	Water	0.02	0.05	0.025	0.050	ug/L	59-143	48-162	30
8081B	GAMMA-BHC (LINDANE)	58-89-9	Water	0.02	0.05	0.025	0.050	ug/L	41-149	43-164	30
8081B	GAMMA-CHLORDANE	5566-34-7	Water	0.02	0.05	0.025	0.050	ug/L	50-140	35-165	30
8081B	HEPTACHLOR	76-44-8	Water	0.02	0.05	0.025	0.050	ug/L	32-141	29-168	30
8081B	HEPTACHLOR EPOXIDE	1024-57-3	Water	0.02	0.05	0.025	0.050	ug/L	51-143	29-180	30
8081B	METHOXYCHLOR	72-43-5	Water	0.02	0.05	0.025	0.050	ug/L	56-149	38-162	30
8081B	MIREX	2385-85-5	Water	0.02	0.05			ug/L	27-197	10-200	30
8081B	TOXAPHENE	8001-35-2	Water	0.5	0.5	0.500	1.0	ug/L	19-147	46-130	30
8081B-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA	0.050	0.100	ug/L	10-164	10-164	NA
8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Water	NA	NA	0.05	0.10	ug/L	10-147	10-147	NA
8081B	4,4'-DDD	72-54-8	Solid	0.84	1.7	1.7	3.3	ug/kg	33-149	10-165	30
8081B	4,4'-DDE	72-55-9	Solid	0.84	1.7	1.7	3.3	ug/kg	38-147	10-200	30
8081B	4,4'-DDT	50-29-3	Solid	0.84	1.7	1.7	3.3	ug/kg	37-146	10-200	30
8081B	ALDRIN	309-00-2	Solid	0.84	1.7	1.7	3.3	ug/kg	25-146	10-171	30
8081B	ALPHA-BHC	319-84-6	Solid	0.84	1.7	1.7	3.3	ug/kg	28-145	10-149	30
8081B	ALPHA-CHLORDANE	5103-71-9	Solid	0.84	1.7	1.7	3.3	ug/kg	37-114	10-175	30
8081B	BETA-BHC	319-85-7	Solid	0.84	1.7	1.7	3.3	ug/kg	38-144	10-162	30
8081B	CHLORDANE, TECHNICAL	57-74-9	Solid	4.2	8.3	8.3	17.0	ug/kg	40-145	40-145	30
8081B	DELTA-BHC	319-86-8	Solid	0.84	1.7	1.7	3.3	ug/kg	30-153	10-157	30
8081B	DIELDRIN	60-57-1	Solid	0.84	1.7	1.7	3.3	ug/kg	40-140	10-200	30
8081B	ENDOSULFAN I	959-98-8	Solid	0.84	1.7	1.7	3.3	ug/kg	35-116	10-174	30
8081B	ENDOSULFAN II	33213-65-9	Solid	0.84	1.7	1.7	3.3	ug/kg	39-122	10-185	30
8081B	ENDOSULFAN SULFATE	1031-07-8	Solid	0.84	1.7	1.7	3.3	ug/kg	31-132	10-155	30
8081B	ENDRIN	72-20-8	Solid	0.84	1.7	1.7	3.3	ug/kg	40-144	10-200	30
8081B	ENDRIN ALDEHYDE	7421-93-4	Solid	0.84	1.7	1.7	3.3	ug/kg	10-109	10-148	30
8081B	ENDRIN KETONE	53494-70-5	Solid	0.84	1.7	1.7	3.3	ug/kg	38-122	10-197	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8081B	GAMMA-BHC (LINDANE)	58-89-9	Solid	0.84	1.7	1.7	3.3	ug/kg	32-145	10-170	30
8081B	GAMMA-CHLORDANE	5566-34-7	Solid	0.84	1.7	1.7	3.3	ug/kg	34-123	10-176	30
8081B	HEPTACHLOR	76-44-8	Solid	0.84	1.7	1.7	3.3	ug/kg	34-142	12-160	30
8081B	HEPTACHLOR EPOXIDE	1024-57-3	Solid	0.84	1.7	1.7	3.3	ug/kg	37-113	10-180	30
8081B	METHOXYCHLOR	72-43-5	Solid	0.84	1.7	1.7	3.3	ug/kg	41-152	10-200	30
8081B	MIREX	2385-85-5	Solid	0.84	1.7			ug/kg	38-142	10-200	30
8081B	TOXAPHENE	8001-35-2	Solid	19	33	33	33	ug/kg	36-123	33-122	30
8081B-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Solid	NA	NA	1.67	3.33	ug/kg	10-145	10-145	NA
8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Solid	NA	NA	1.670	3.330	ug/kg	10-123	10-123	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
1311/8081B (TCLP)	4,4'-DDE	72-55-9	Solid	NA	1			ug/L		same as water	30
1311/8081B (TCLP)	4,4'-DDT	50-29-3	Solid	NA	1			ug/L			30
1311/8081B (TCLP)	ALPHA-BHC	319-84-6	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	BETA-BHC	319-85-7	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	CHLORDANE	57-74-9	Solid	NA	2.5			ug/L			30
1311/8081B (TCLP)	ENDRIN	72-20-8	Solid	NA	1			ug/L			30
1311/8081B (TCLP)	GAMMA-BHC (LINDANE)	58-89-9	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	HEPTACHLOR	76-44-8	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	HEPTACHLOR EPOXIDE	1024-57-3	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	METHOXYCHLOR	72-43-5	Solid	NA	5			ug/L			30
1311/8081B (TCLP)	TOXAPHENE	8001-35-2	Solid	NA	10			ug/L			30
1311/8081B-SURR	DECACHLOROBIPHENYL (DCB) -SURR	2051-24-3	Solid	NA	NA			%			NA
1311/8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Solid	NA	NA			%			NA
8082A	PCB 1016	12674-11-2	Water	0.5	1.0	0.50	1.0	ug/L	49-123	32-142	30
8082A	PCB 1221	11104-28-2	Water	1	2.0	1.0	2.0	ug/L	45-125	45-125	30
8082A	PCB 1232	11141-16-5	Water	0.5	1.0	0.50	1.0	ug/L	64-133	50-150	30
8082A	PCB 1242	53469-21-9	Water	0.5	1.0	0.50	1.0	ug/L	67-132	65-118	30
8082A	PCB 1248	12672-29-6	Water	0.5	1.0	0.50	1.0	ug/L	75-135	56-119	30
8082A	PCB 1254	11097-69-1	Water	0.5	1.0	0.50	1.0	ug/L	55-154	55-154	30
8082A	PCB 1260	11096-82-5	Water	0.5	1.0	0.50	1.0	ug/L	30-120	28-142	30
8082A	PCB 1268	11100-14-4	Water	0.5	1.0	0.50	1.0	ug/L	56-156	56-156	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA	0.05	0.10	ug/L	10-152	10-152	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Water	NA	NA	0.05	0.10	ug/L	14-129	14-129	NA
8082A LL	PCB 1016	12674-11-2	Water	0.025	0.05			ug/L	24-119	13-146	30
8082A LL	PCB 1221	11104-28-2	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1232	11141-16-5	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1242	53469-21-9	Water	0.025	0.05			ug/L	65-118	65-118	30
8082A LL	PCB 1248	12672-29-6	Water	0.025	0.05			ug/L	56-119	56-119	30
8082A LL	PCB 1254	11097-69-1	Water	0.025	0.05			ug/L	60-143	60-143	30
8082A LL	PCB 1260	11096-82-5	Water	0.025	0.05			ug/L	23-115	10-135	30
8082A LL	PCB 1262		Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1268	11100-14-4	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA			%	10-125	10-125	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Water	NA	NA			%	18-126	18-126	NA
8082A	PCB 1016	12674-11-2	Solid	17	33	33	67	ug/kg	41-127	26-137	30
8082A	PCB 1221	11104-28-2	Solid	17	67	33	67	ug/kg	25-137	25-137	30
8082A	PCB 1232	11141-16-5	Solid	17	33	33	67	ug/kg	56-164	56-164	30
8082A	PCB 1242	53469-21-9	Solid	17	33	33	67	ug/kg	41-141	41-141	30
8082A	PCB 1248	12672-29-6	Solid	17	33	33	67	ug/kg	76-126	76-126	30
8082A	PCB 1254	11097-69-1	Solid	17	33	33	67	ug/kg	58-139	58-139	30
8082A	PCB 1260	11096-82-5	Solid	17	33	33	67	ug/kg	37-127	30-156	30
8082A	PCB 1268	11100-14-4	Solid	17	33	33	67	ug/kg	63-120	63-120	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Solid	NA	NA	1.67	3.33	ug/kg	22-128	22-128	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Solid	NA	NA	1.67	3.33	ug/kg	14-119	14-119	NA
8082A	PCB 1016	12674-11-2	Non-Aq	200 (2000)	200 (2000)			ug/kg	40-140	40-140	30
8082A	PCB 1221	11104-28-2	Non-Aq	400 (4000)	400 (4000)			ug/kg	70-130	50-150	30
8082A	PCB 1232	11141-16-5	Non-Aq	200 (2000)	200 (2000)			ug/kg	70-130	50-150	30
8082A	PCB 1242	53469-21-9	Non-Aq	200 (2000)	200 (2000)			ug/kg	70-130	50-150	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8082A	PCB 1248	12672-29-6	Non-Aq	200 (2000)	200 (2000)			ug/kg	74-133	33-154	30
8082A	PCB 1254	11097-69-1	Non-Aq	200 (2000)	200 (2000)			ug/kg	32-159	32-159	30
8082A	PCB 1260	11096-82-5	Non-Aq	200 (2000)	200 (2000)			ug/kg	53-127	24-160	30
8082A	PCB 1268	11100-14-4	Non-Aq	200 (2000)	200 (2000)			ug/kg	70-130	50-150	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Non-Aq	NA	NA			%	44-131	44-131	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SUR	877-09-8	Non-Aq	NA	NA			%	33-139	33-139	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8151A	2,4,5-T	93-76-5	Water	0.14	0.5	0.50	1	ug/L	21-125	21-125	30
8151A	2,4,5-TP (SILVEX)	93-72-1	Water	0.12	0.5	0.50	1	ug/L	21-120	21-120	30
8151A	2,4-D	94-75-7	Water	0.12	0.5	0.50	1	ug/L	26-154	26-154	30
8151A	DICAMBA	1918-00-9	Water	0.12	0.5	0.50	1	ug/L	22-125	22-125	30
8151A	DINOSEB	88-85-7	Water	0.097	0.5	0.50	1	ug/L	13-112	10-152	30
8151A	PENTACHLOROPHENOL	87-86-5	Water	0.12	0.5	0.50	1	ug/L	18-127	10-117	30
8151A-SURR	DCAA-SURR	19719-28-9	Water	NA	NA	0.25	0.50	ug/L	10-136	10-136	NA
8151A	2,4,5-T	93-76-5	Solid	5	10	10.0	20	ug/kg	19-127	19-127	30
8151A	2,4,5-TP (SILVEX)	93-72-1	Solid	4.5	10	10.0	20	ug/kg	18-122	11-133	30
8151A	2,4-D	94-75-7	Solid	6.5	10	10	20	ug/kg	24-165	24-165	30
8151A	DICAMBA	1918-00-9	Solid	3.1	10	10.0	20	ug/kg	26-128	10-136	30
8151A	PENTACHLOROPHENOL	87-86-5	Solid	6.3	10	10.0	20	ug/kg	10-103	10-103	30
8151A-SURR	DCAA-SURR	19719-28-9	Solid	NA	NA	5.00	10.00	ug/kg	10-151	10-151	NA
1311/8151A (TCLP)	2,4,5-TP (SILVEX)	93-72-1	Solid	NA	5.0			ug/L		same as water	30
1311/8151A (TCLP)	2,4-D	94-75-7	Solid	NA	5.0			ug/L			30
1311/8151A (TCLP)	PENTACHLOROPHENOL	87-86-5	Solid	NA	10			ug/L			30
1311/8151A-SURR	DCAA-SURR	19719-28-9	Solid	NA	NA			%			NA
8260C	1,1,1,2-TETRACHLOROETHANE	630-20-6	Water	0.2	1.0	1	5	ug/L	76-129	68-146	30
8260C	1,1,1-TRICHLOROETHANE	71-55-6	Water	0.2	1.0	1	5	ug/L	75-125	74-127	30
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	Water	0.2	1.0	1	5	ug/L	78-126	72-122	30
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Water	0.2	1.0	1	5	ug/L	67-124	50-147	30
8260C	1,1,2-TRICHLOROETHANE	79-00-5	Water	0.2	1.0	1	5	ug/L	82-121	82-121	30
8260C	1,1-DICHLOROETHANE	75-34-3	Water	0.2	1.0	1	5	ug/L	80-124	74-132	30
8260C	1,1-DICHLOROETHENE	75-35-4	Water	0.2	1.0	1	5	ug/L	71-118	71-118	30
8260C	1,1-DICHLOROPROPENE	563-58-6	Water	0.2	1.0	1	5	ug/L	76-118	76-118	30
8260C	1,2,3-TRICHLOROBENZENE	87-61-6	Water	0.25	1.0	1	5	ug/L	67-136	59-129	30
8260C	1,2,3-TRICHLOROPROPANE	96-18-4	Water	0.26	1.0	1	5	ug/L	75-118	75-122	30
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.34	1.0	1	5	ug/L	75-132	69-122	30
8260C	1,2,4-TRIMETHYLBENZENE	95-63-6	Water	0.2	1.0	1	5	ug/L	81-126	73-133	30
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Water	0.45	2.0	1	5	ug/L	55-136	37-150	30
8260C	1,2-DIBROMOETHANE	106-93-4	Water	0.2	1.0	1	5	ug/L	82-127	67-127	30
8260C	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Water	0.2	1.0			ug/L	72-124	67-156	30
8260C	1,2-DICHLOROBENZENE	95-50-1	Water	0.2	1.0	1	5	ug/L	80-119	77-120	30
8260C	1,2-DICHLOROETHANE	107-06-2	Water	0.2	1.0	1	5	ug/L	71-127	68-130	30
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	Water	0.35	2.0	2	10	ug/L	75-128	75-128	30
8260C	1,2-DICHLOROPROPANE	78-87-5	Water	0.2	1.0	1	5	ug/L	80-119	79-124	30
8260C	1,3,5-TRICHLOROBENZENE	108-70-3	Water	0.27	5.0			ug/L	67-130	67-130	30
8260C	1,3,5-TRIMETHYLBENZENE	108-67-8	Water	0.2	1.0	1	5	ug/L	81-128	81-131	30
8260C	1,3-DICHLOROBENZENE	541-73-1	Water	0.2	1.0	1	5	ug/L	83-121	83-121	30
8260C	1,3-DICHLOROPROPANE	142-28-9	Water	0.2	1.0	1	5	ug/L	83-119	79-117	30
8260C	1,4-DICHLOROBENZENE	106-46-7	Water	0.2	1.0	1	5	ug/L	79-119	82-120	30
8260C	1,4-DIOXANE	123-91-1	Water	13	40			ug/L	44-154	44-154	30
8260C	1-BUTANOL (N-BUTANOL)	71-36-3	Water	23	50			ug/L	48-148	48-148	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8260C	1-CHLORO-4-(TRIFLUOROMETHYL) BENZENE (=4-CHLOROBENZOFLUORIDE)	98-56-6	Water	0.22	1			ug/L	70-129	48-148	30
8260C	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Water	0.2	1.0			ug/L	79-128	79-128	30
8260C	2,2-DICHLOROPROPANE	594-20-7	Water	0.24	1.0	1	5	ug/L	61-139	46-138	30
8260C	2,3,6-TRICHLOROTOLUENE	2077-46-5	Water	0.59	5.0			ug/L	25-200	25-200	30
8260C	2,4,5-TRICHLOROTOLUENE	6639-30-1	Water	0.75	5.0			ug/L	24-190	24-190	30
8260C	2,4-, 2,5-, and 2,6-DICHLOROTOLUENE COEL	CASID39497	Water	0.59	1.5			ug/L	47-145	47-145	30
8260C	2,4-DICHLOROBENZOTRIFLUORIDE	320-60-5	Water	0.49	1.0			ug/L	48-169	48-169	30
8260C	2,5-DICHLOROBENZOTRIFLUORIDE	320-50-3	Water	0.3	1.0			ug/L	67-131	64-131	30
8260C	2-BUTANONE (MEK)	78-93-3	Water	0.78	5.0	1	5	ug/L	61-137	61-137	30
8260C	2-CHLORO-1,3-BUTADIENE (CHLOROPRENE	126-99-8	Water	0.2	1.0			ug/L	68-139	68-139	30
8260C	2-CHLOROBENZOTRIFLUORIDE	88-16-4	Water	0.2	1.0			ug/L	47-164	47-164	30
8260C	2-CHLOROETHYLVINYL ETHER	110-75-8	Water	0.53	1.0	1	5	ug/L	19-162	19-162	30
8260C	2-CHLOROTOLUENE	95-49-8	Water	0.2	1.0	1	5	ug/L	79-124	79-126	30
8260C	2-HEXANONE	591-78-6	Water	0.2	5.0	1	5	ug/L	63-124	56-132	30
8260C	2-METHYL-1-PROPANOL (ISOBUTLYL ALC)	78-83-1	Water	33	40			ug/L	51-143	51-143	30
8260C	2-METHYL-2-PROPANOL (TERTBUTYL ALC)	75-65-0	Water	16	40			ug/L	49-141	49-141	30
8260C	2-NITROPROPANE	79-46-9	Water	1.8	2.0			ug/L	23-164	23-164	30
8260C	2-PROPANOL	67-63-0	Water	3.4	40			ug/L	52-136	52-136	30
8260C	3,4- and 2,3-DICHLOROTOLUENE COELUTIO	CASID39496	Water	0.62	1			ug/L	48-143	48-143	30
8260C	3,4-DICHLOROBENZOTRIFLUORIDE	328-84-7	Water	0.33	1			ug/L	47-175	47-175	30
8260C	3-CHLORO-1-PROPENE (ALLYL CHLORIDE)	107-05-1	Water	0.36	1.0			ug/L	61-143	49-156	30
8260C	3-CHLOROBENZOTRIFLUORIDE	98-15-7	Water	0.2	1.0			ug/L	49-179	49-179	30
8260C	3-CHLOROTOLUENE	108-41-8	Water	0.2	1.0			ug/L	49-170	49-170	30
8260C	4-CHLOROTOLUENE	106-43-4	Water	0.2	1.0	1	5	ug/L	79-125	72-132	30
8260C	4-ISOPROPYLTOLUENE	99-87-6	Water	0.2	1.0	1	5	ug/L	78-133	78-133	30
8260C	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Water	0.2	5.0	1	5	ug/L	66-124	60-141	30
8260C	ACETONE	67-64-1	Water	5	5.0	10	20	ug/L	40-161	35-183	30
8260C	ACETONITRILE	75-05-8	Water	5.2	10			ug/L	46-154	46-154	30
8260C	ACROLEIN	107-02-8	Water	0.9	10			ug/L	13-165	13-165	30
8260C	ACRYLONITRILE	107-13-1	Water	0.9	10			ug/L	71-130	69-131	30
8260C	BENZENE	71-43-2	Water	0.2	1.0	1	5	ug/L	79-119	76-129	30
8260C	BROMOBENZENE	108-86-1	Water	0.2	1.0	1	5	ug/L	79-121	79-121	30
8260C	BROMOCHLOROMETHANE	74-97-5	Water	0.2	1.0	1	5	ug/L	81-126	80-122	30
8260C	BROMODICHLOROMETHANE	75-27-4	Water	0.2	1.0	1	5	ug/L	81-123	78-133	30
8260C	BROMOFORM	75-25-2	Water	0.25	1.0	1	5	ug/L	65-146	58-133	30
8260C	BROMOMETHANE	74-83-9	Water	0.7	1.0	1	5	ug/L	42-166	10-184	30
8260C	CARBON DISULFIDE	75-15-0	Water	0.42	1.0	1	5	ug/L	66-128	59-140	30
8260C	CARBON TETRACHLORIDE	56-23-5	Water	0.34	1.0	1	5	ug/L	70-127	65-135	30
8260C	CHLOROBENZENE	108-90-7	Water	0.2	1.0	1	5	ug/L	81-120	76-125	30
8260C	CHLOROETHANE	75-00-3	Water	0.23	1.0	1	5	ug/L	62-131	58-146	30
8260C	CHLOROFORM	67-66-3	Water	0.24	1.0	1	5	ug/L	79-120	75-130	30
8260C	CHLOROMETHANE	74-87-3	Water	0.28	1.0	1	5	ug/L	65-135	55-160	30
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	Water	0.23	1.0	1	5	ug/L	80-121	77-127	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	Water	0.2	1.0	1	5	ug/L	77-122	52-134	30
8260C	CYCLOHEXANE	110-82-7	Water	0.26	1.0	1	5	ug/L	69-120	52-145	30
8260C	CYCLOHEXANONE	108-94-1	Water	4.6	20			ug/L	22-178	10-123	30
8260C	DIBROMOCHLOROMETHANE	124-48-1	Water	0.2	1.0	1	5	ug/L	72-128	72-128	30
8260C	DIBROMOMETHANE	74-95-3	Water	0.2	1.0	1	5	ug/L	80-118	77-119	30
8260C	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Water	0.21	1.0	1	5	ug/L	59-155	49-154	30
8260C	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Water	0.2	1.0			ug/L	72-130	71-140	30
8260C	DICHLOROMETHANE	75-09-2	Water	0.65	1.0	1	5	ug/L	73-122	73-122	30
8260C	DIETHYL ETHER	60-29-7	Water	0.2	1.0			ug/L	79-127	78-127	30
8260C	DIISOPROPYL ETHER (DIPE)	108-20-3	Water	0.2	1.0			ug/L	71-134	63-147	30
8260C	ETHYL METHACRYLATE	97-63-2	Water	0.2	2.0			ug/L	68-132	63-138	30
8260C	ETBE	637-92-3	Water	0.2	1.0			ug/L	40-128	40-128	30
8260C	ETHYL ACETATE		Water	0.76	2.0			ug/L	57-127	18-138	30
8260C	ETHYLBENZENE	100-41-4	Water	0.2	1.0	1	5	ug/L	76-120	72-134	30
8260C	HEXACHLOROBUTADIENE	87-68-3	Water	0.33	2.0	2	5	ug/L	54-172	54-172	30
8260C	IODOMETHANE	74-88-4	Water	4.3	5.0			ug/L	18-160	18-160	30
8260C	ISOPROPYLBENZENE	98-82-8	Water	0.2	1.0	1	5	ug/L	77-128	77-128	30
8260C	M+P-XYLENE	179601-23-1	Water	0.2	2.0	2	10	ug/L	80-126	80-126	30
8260C	METHACRYLONITRILE	126-98-7	Water	0.52	2.0			ug/L	68-123	67-131	30
8260C	METHYL ACETATE	79-20-9	Water	0.33	2.0	1	5	ug/L	61-133	26-121	30
8260C	METHYL METHACRYLATE	80-62-6	Water	0.24	2.0			ug/L	68-129	64-129	30
8260C	METHYLCYCLOHEXANE	108-87-2	Water	0.2	1.0	1	5	ug/L	51-129	45-146	30
8260C	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Water	0.2	1.0	1	5	ug/L	75-118	75-119	30
8260C	NAPTHALENE	91-20-3	Water	0.24	1.0	1	5	ug/L	59-140	57-153	30
8260C	N-BUTYLACETATE	123-86-4	Water	0.2	1.0			ug/L	71-129	61-139	30
8260C	N-BUTYLBENZENE	104-51-8	Water	0.2	1.0	1	5	ug/L	78-133	78-133	30
8260C	N-HEPTANE	142-82-5	Water	0.26	1.0			ug/L	57-134	47-141	30
8260C	N-PROPYLBENZENE	103-65-1	Water	0.2	1.0	1	5	ug/L	78-131	78-131	30
8260C	O-XYLENE	95-47-6	Water	0.2	1.0	1	5	ug/L	79-123	79-123	30
8260C	PROPIONITRILE	107-12-0	Water	1.2	5.0			ug/L	69-126	66-129	30
8260C	SEC-BUTYLBENZENE	135-98-8	Water	0.2	1.0	1	5	ug/L	75-129	75-129	30
8260C	STYRENE	100-42-5	Water	0.2	1.0	1	5	ug/L	80-124	74-136	30
8260C	TAME	994-05-8	Water	0.2	1.0			ug/L	69-123	58-131	30
8260C	TERT-BUTYLBENZENE	98-06-6	Water	0.2	1.0	1	5	ug/L	76-126	68-127	30
8260C	TETRACHLOROETHENE	127-18-4	Water	0.21	1.0	1	5	ug/L	72-125	72-125	30
8260C	TETRAHYDROFURAN	109-99-9	Water	1.3	2.0			ug/L	48-141	48-141	30
8260C	TOLUENE	108-88-3	Water	0.2	1.0	1	5	ug/L	79-119	79-119	30
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	Water	0.2	1.0	1	5	ug/L	73-118	73-118	30
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Water	0.23	1.0	1	5	ug/L	71-133	71-133	30
8260C	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Water	0.78	1.0			ug/L	39-137	27-155	30
8260C	TRICHLOROETHENE	79-01-6	Water	0.2	1.0	1	5	ug/L	74-122	74-122	30
8260C	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Water	0.24	1.0	1	5	ug/L	71-136	71-136	30
8260C	VINYL ACETATE	108-05-4	Water	1.1	2.0			ug/L	52-174	48-172	30
8260C	VINYL CHLORIDE	75-01-4	Water	0.2	1.0	1	5	ug/L	74-159	74-159	30
8260C	XYLENES, TOTAL	1330-20-7	Water	0.23	3.0	3	15	ug/L	78-121	78-121	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Water	NA	NA			%	73-125	73-125	NA
8260C-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Water	NA	NA			%	85-122	85-122	NA
8260C-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Water	NA	NA			%	89-119	89-119	NA
8260C-SURR	TOLUENE-D8-SURR	2037-26-5	Water	NA	NA			%	87-121	87-121	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8260C	1,1,1,2-TETRACHLOROETHANE	630-20-6	Solid	0.2	5.0	2.5	5	ug/kg	69-127	41-124	30
8260C	1,1,1-TRICHLOROETHANE	71-55-6	Solid	0.2	5.0	2.5	5	ug/kg	68-123	44-124	30
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	Solid	0.44	5.0	2.5	5	ug/kg	78-121	41-155	30
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Solid	0.2	5.0	2.5	5	ug/kg	54-121	40-117	30
8260C	1,1,2-TRICHLOROETHANE	79-00-5	Solid	0.2	5.0	2.5	5	ug/kg	84-117	48-124	30
8260C	1,1-DICHLOROETHANE	75-34-3	Solid	0.2	5.0	2.5	5	ug/kg	76-123	41-138	30
8260C	1,1-DICHLOROETHENE	75-35-4	Solid	0.29	5.0	2.5	5	ug/kg	65-115	46-124	30
8260C	1,1-DICHLOROPROPENE	563-58-6	Solid	0.2	5.0	2.5	5	ug/kg	66-119	33-131	30
8260C	1,2,3-TRICHLOROBENZENE	87-61-6	Solid	0.52	5.0	2.5	5	ug/kg	60-128	10-169	30
8260C	1,2,3-TRICHLOROPROPANE	96-18-4	Solid	0.2	5.0	2.5	5	ug/kg	78-115	39-160	30
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	Solid	0.42	5.0	2.5	5	ug/kg	62-130	10-169	30
8260C	1,2,4-TRIMETHYLBENZENE	95-63-6	Solid	0.2	5.0	2.5	5	ug/kg	67-121	15-141	30
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Solid	0.75	5.0	2.5	5	ug/kg	54-135	30-136	30
8260C	1,2-DIBROMOETHANE	106-93-4	Solid	0.2	5.0	2.5	5	ug/kg	77-117	38-129	30
8260C	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Solid	0.22	5.0			ug/kg	76-135	64-144	30
8260C	1,2-DICHLOROBENZENE	95-50-1	Solid	0.2	5.0	2.5	5	ug/kg	75-116	11-152	30
8260C	1,2-DICHLOROETHANE	107-06-2	Solid	0.2	5.0	2.5	5	ug/kg	74-116	49-119	30
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	Solid	0.4	10	5.0	10	ug/kg	77-119	51-125	30
8260C	1,2-DICHLOROPROPANE	78-87-5	Solid	0.2	5.0	2.5	5	ug/kg	79-112	60-126	30
8260C	1,3,5-TRICHLOROBENZENE	108-70-3	Solid	0.31	5.0			ug/kg	74-117	10-162	30
8260C	1,3,5-TRIMETHYLBENZENE	108-67-8	Solid	0.2	5.0	2.5	5	ug/kg	66-122	21-148	30
8260C	1,3-DICHLOROBENZENE	541-73-1	Solid	0.2	5.0	2.5	5	ug/kg	72-118	13-151	30
8260C	1,3-DICHLOROPROPANE	142-28-9	Solid	0.2	5.0	2.5	5	ug/kg	82-111	54-128	30
8260C	1,4-DICHLOROBENZENE	106-46-7	Solid	0.22	5.0	2.5	5	ug/kg	72-117	10-151	30
8260C	1,4-DIOXANE	123-91-1	Solid	20	100			ug/kg	59-147	49-188	30
8260C	1-BUTANOL (N-BUTANOL)	71-36-3	Solid	84	250			ug/kg	10-144	10-177	30
8260C	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Solid	3.1	5.0			ug/kg	73-127	55-129	30
8260C	2,2-DICHLOROPROPANE	594-20-7	Solid	0.2	5.0	2.5	5	ug/kg	53-131	27-130	30
8260C	2-BROMO-2-CHLORO-1,1,1-TRIFLUOROETHA	151-67-7	Solid	0.2	5.0			ug/kg	40-140	33-150	30
8260C	2-BUTANONE (MEK)	78-93-3	Solid	2	5.0	2.5	5	ug/kg	67-129	13-176	30
8260C	2-CHLORO-1,3-BUTADIENE	126-99-8	Solid	0.2	5.0			ug/kg	57-147	57-147	30
8260C	2-CHLOROETHYLVINYL ETHER	110-75-8	Solid	0.46	5.0	2.5	5	ug/kg	10-167	10-167	30
8260C	2-CHLOROTOLUENE	95-49-8	Solid	0.2	5.0	2.5	5	ug/kg	70-120	28-138	30
8260C	2-HEXANONE	591-78-6	Solid	0.36	5.0	2.5	5	ug/kg	68-118	12-163	30
8260C	2-METHYL-1-PROPANOL (ISOBUTLYL ALC)	78-83-1	Solid	3.9	100			ug/kg	10-122	10-159	30
8260C	2-METHYL-2-PROPANOL (TERTBUTYL ALC)	75-65-0	Solid	9.8	100			ug/kg	10-117	10-167	30
8260C	2-NITROPROPANE	79-46-9	Solid	4	10			ug/kg	10-144	10-144	30
8260C	2-PROPANOL	67-63-0	Solid	17	100			ug/kg	10-140	10-179	30
8260C	3-CHLOROPROPENE (ALLYL CHLORIDE)	107-05-1	Solid	0.24	5.0			ug/kg	66-147	60-160	30
8260C	4-CHLOROTOLUENE	106-43-4	Solid	0.2	5.0	2.5	5	ug/kg	72-120	22-135	30
8260C	4-ISOPROPYLTOLUENE	99-87-6	Solid	0.2	5.0	2.5	5	ug/kg	58-128	11-141	30
8260C	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Solid	0.23	5.0	2.5	5	ug/kg	64-123	38-148	30
8260C	ACETONE	67-64-1	Solid	4.7	5.0	10.0	20	ug/kg	32-154	11-183	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C	ACETONITRILE	75-05-8	Solid	11	25			ug/kg	36-400	29-400	30
8260C	ACROLEIN	107-02-8	Solid	1.2	25			ug/kg	30-147	10-164	30
8260C	ACRYLONITRILE	107-13-1	Solid	0.89	25			ug/kg	71-124	33-152	30
8260C	BENZENE	71-43-2	Solid	0.2	5.0	2.5	5	ug/kg	77-114	51-123	30
8260C	BROMOBENZENE	108-86-1	Solid	0.2	5.0	2.5	5	ug/kg	78-116	16-166	30
8260C	BROMOCHLOROMETHANE	74-97-5	Solid	0.2	5.0	2.5	5	ug/kg	78-117	46-129	30
8260C	BROMODICHLOROMETHANE	75-27-4	Solid	0.2	5.0	2.5	5	ug/kg	72-118	39-122	30
8260C	BROMOFORM	75-25-2	Solid	0.5	5.0	2.5	5	ug/kg	55-134	16-135	30
8260C	BROMOMETHANE	74-83-9	Solid	2.1	5.0	2.5	5	ug/kg	10-150	10-150	30
8260C	CARBON DISULFIDE	75-15-0	Solid	0.29	5.0	2.5	5	ug/kg	44-139	44-139	30
8260C	CARBON TETRACHLORIDE	56-23-5	Solid	0.26	5.0	2.5	5	ug/kg	51-123	46-137	30
8260C	CHLOROBENZENE	108-90-7	Solid	0.2	5.0	2.5	5	ug/kg	79-115	25-129	30
8260C	CHLOROETHANE	75-00-3	Solid	0.41	5.0	2.5	5	ug/kg	10-140	10-166	30
8260C	CHLOROFORM	67-66-3	Solid	0.2	5.0	2.5	5	ug/kg	76-115	55-118	30
8260C	CHLOROMETHANE	74-87-3	Solid	1.4	5.0	2.5	5	ug/kg	10-131	10-139	30
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	Solid	0.2	5.0	2.5	5	ug/kg	79-113	42-129	30
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	Solid	0.2	5.0	2.5	5	ug/kg	66-117	14-139	30
8260C	CYCLOHEXANE	110-82-7	Solid	0.26	5.0	2.5	5	ug/kg	67-122	28-126	30
8260C	CYCLOHEXANONE	108-94-1	Solid	3.9	100			ug/kg	46-121	10-193	30
8260C	DIBROMOCHLOROMETHANE	124-48-1	Solid	0.2	5.0	2.5	5	ug/kg	68-121	36-125	30
8260C	DIBROMOMETHANE	74-95-3	Solid	0.2	5.0	2.5	5	ug/kg	29-115	29-115	30
8260C	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Solid	0.33	5.0	2.5	5	ug/kg	51-144	51-144	30
8260C	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Solid	0.21	5.0			ug/kg	66-145	60-148	30
8260C	DICHLOROMETHANE	75-09-2	Solid	2.8	5.0	3.0	5	ug/kg	72-118	49-125	30
8260C	DIETHYL ETHER	60-29-7	Solid	0.25	5.0			ug/kg	78-127	64-133	30
8260C	DIISOPROPYL ETHER	108-20-3	Solid	0.41	5.0			ug/kg	66-124	52-133	30
8260C	ETBE	637-92-3	Solid	0.2	5.0			ug/kg	63-120	46-155	30
8260C	ETHYL METHACRYLATE	97-63-2	Solid	0.2	5.0			ug/kg	68-119	10-200	30
8260C	ETHYLBENZENE	100-41-4	Solid	0.2	5.0	2.5	5	ug/kg	64-118	23-132	30
8260C	HEXACHLOROBUTADIENE	87-68-3	Solid	0.47	5.0	2.5	5	ug/kg	33-143	10-159	30
8260C	IODOMETHANE	74-88-4	Solid	5.2	10			ug/kg	10-192	10-165	30
8260C	ISOPROPYLBENZENE	98-82-8	Solid	0.2	5.0	2.5	5	ug/kg	60-123	18-133	30
8260C	M+P-XYLENE	179601-23-1	Solid	0.37	10	5.0	10	ug/kg	68-118	20-135	30
8260C	METHACRYLONITRILE	126-98-7	Solid	0.23	5.0			ug/kg	70-118	24-152	30
8260C	METHYL ACETATE	79-20-9	Solid	0.84	5.0	2.5	5	ug/kg	31-122	10-200	30
8260C	METHYL METHACRYLATE	80-62-6	Solid	0.2	5.0			ug/kg	67-120	27-162	30
8260C	METHYLCYCLOHEXANE	108-87-2	Solid	0.31	5.0	2.5	5	ug/kg	70-124	12-134	30
8260C	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Solid	0.2	5.0	2.5	5	ug/kg	76-118	62-130	30
8260C	NAPTHALENE	91-20-3	Solid	0.55	5.0	2.5	5	ug/kg	68-127	10-188	30
8260C	N-BUTYLACETATE	123-86-4	Solid	0.2	5.0			ug/kg	62-118	10-200	30
8260C	N-BUTYLBENZENE	104-51-8	Solid	0.2	5.0	2.5	5	ug/kg	54-131	10-168	30
8260C	N-HEPTANE	142-82-5	Solid	0.65	5.0			ug/kg	39-146	10-155	30
8260C	N-PROPYLBENZENE	103-65-1	Solid	0.2	5.0	2.5	5	ug/kg	59-126	20-139	30
8260C	O-XYLENE	95-47-6	Solid	0.2	5.0	2.5	5	ug/kg	71-116	26-137	30
8260C	PROPIONITRILE	107-12-0	Solid	1.2	25			ug/kg	68-126	39-158	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C	SEC-BUTYLBENZENE	135-98-8	Solid	0.2	5.0	2.5	5	ug/kg	54-128	11-140	30
8260C	STYRENE	100-42-5	Solid	0.2	5.0	2.5	5	ug/kg	74-117	15-160	30
8260C	TAME	994-05-8	Solid	0.2	5.0			ug/kg	64-121	46-126	30
8260C	TERT-BUTYLBENZENE	98-06-6	Solid	0.2	5.0	2.5	5	ug/kg	58-123	19-148	30
8260C	TETRA HYDROFURAN	109-99-9	Solid	1.9	5.0			ug/kg	63-126	56-146	30
8260C	TETRACHLOROETHENE	127-18-4	Solid	0.23	5.0	2.5	5	ug/kg	58-124	21-137	30
8260C	TOLUENE	108-88-3	Solid	0.2	5.0	2.5	5	ug/kg	72-116	11-152	30
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	Solid	0.2	5.0	2.5	5	ug/kg	73-114	34-128	30
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Solid	0.2	5.0	2.5	5	ug/kg	57-135	17-155	30
8260C	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Solid	0.22	5.0			ug/kg	35-149	10-162	30
8260C	TRICHLOROETHENE	79-01-6	Solid	0.22	5.0	2.5	5	ug/kg	69-118	23-140	30
8260C	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Solid	0.26	5.0	2.5	5	ug/kg	52-127	47-129	30
8260C	VINYL ACETATE	108-05-4	Solid	0.78	10			ug/kg	47-159	10-159	30
8260C	VINYL CHLORIDE	75-01-4	Solid	0.46	5.0	2.5	5	ug/kg	59-153	59-153	30
8260C	XYLENE, TOTAL	1330-20-7	Solid	0.52	15.0	7.5	15	ug/kg	70-117	23-136	30
8260C-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Solid	NA	NA			%	67-128	67-128	NA
8260C-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Solid	NA	NA			%	31-154	31-154	NA
8260C-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Solid	NA	NA			%	63-138	63-138	NA
8260C-SURR	TOLUENE-D8-SURR	2037-26-5	Solid	NA	NA			%	66-138	66-138	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C (MeOH)	1,1,1,2-TETRACHLOROETHANE	630-20-6	Non-Aq	water MDL*100	500	250	500	ug/kg	same as soil	same as soil	30
8260C (MeOH)	1,1,1-TRICHLOROETHANE	71-55-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1,2,2-TETRACHLOROETHANE	79-34-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1,2-TRICHLOROETHANE	79-00-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1-DICHLOROETHANE	75-34-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1-DICHLOROETHENE	75-35-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,1-DICHLOROPROPENE	563-58-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2,3-TRICHLOROBENZENE	87-61-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2,3-TRICHLOROPROPANE	96-18-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2,4-TRICHLOROBENZENE	120-82-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2,4-TRIMETHYLBENZENE	95-63-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2-DIBROMOETHANE	106-93-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	1,2-DICHLOROBENZENE	95-50-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2-DICHLOROETHANE	107-06-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,2-DICHLOROETHENE, TOTAL	540-59-0	Non-Aq	water MDL*100	500	500	1000	ug/kg			30
8260C (MeOH)	1,2-DICHLOROPROPANE	78-87-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,3,5-TRIMETHYLBENZENE	108-67-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,3-DICHLOROBENZENE	541-73-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,3-DICHLOROPROPANE	142-28-9	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,4-DICHLOROBENZENE	106-46-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	1,4-DIOXANE	123-91-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	1-BUTANOL (N-BUTANOL)	71-36-3	Non-Aq	water MDL*100	250			ug/kg			30
8260C (MeOH)	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	2,2-DICHLOROPROPANE	594-20-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
826OC (MeOH)	2-BROMO-2-CHLORO-1,1,1-TRIFLUOROETHA	151-67-7	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	2-BUTANONE (MEK)	78-93-3	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	2-CHLORO-1,3-BUTADIENE	126-99-8	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	2-CHLOROETHYLVINYL ETHER	110-75-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	2-CHLOROTOLUENE	95-49-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	2-HEXANONE	591-78-6	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	2-METHYL-1-PROPANOL (ISOBUTYL ALCOH	78-83-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	2-METHYL-2-PROPANOL (TERT-BUTYL ALCOHOL)	75-65-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	2-NITROPROPANE	79-46-9	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	2-PROPANOL	67-63-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	3-CHLOROPROPENE (ALLYL CHLORIDE)	107-05-1	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	4-CHLOROTOLUENE	106-43-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	4-ISOPROPYLTOLUENE	99-87-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	ACETONE	67-64-1	Non-Aq	water MDL*100	2500	250	2000	ug/kg			30
8260C (MeOH)	ACETONITRILE	75-05-8	Non-Aq	water MDL*100	10000			ug/kg			30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C (MeOH)	ACROLEIN	107-02-8	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	ACRYLONITRILE	107-13-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	BENZENE	71-43-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	BROMOBENZENE	108-86-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	BROMOCHLOROMETHANE	74-97-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	BROMODICHLOROMETHANE	75-27-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	BROMOFORM	75-25-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	BROMOMETHANE	74-83-9	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CARBON DISULFIDE	75-15-0	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	CARBON TETRACHLORIDE	56-23-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CHLOROBENZENE	108-90-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CHLOROETHANE	75-00-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CHLOROFORM	67-66-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CHLOROMETHANE	74-87-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CIS-1,2-DICHLOROETHENE	156-59-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CIS-1,3-DICHLOROPROPENE	10061-01-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	CYCLOHEXANE	110-82-7	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	CYCLOHEXANONE	108-94-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	DIBROMOCHLOROMETHANE	124-48-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	DIBROMOMETHANE	74-95-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	DICHLOROMETHANE	75-09-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	DIETHYL ETHER	60-29-7	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	DIISOPROPYL ETHER	108-20-3	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	ETHYL METHACRYLATE	97-63-2	Non-Aq	water MDL*100	1000			ug/kg			30
8260C (MeOH)	ETHYL TERT-BUTYL ETHER (ETBE)	637-92-3	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	ETHYLBENZENE	100-41-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	HEXACHLOROBUTADIENE	87-68-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	IODOMETHANE	74-88-4	Non-Aq	water MDL*100	1000			ug/kg			30
8260C (MeOH)	ISOPROPYLBENZENE	98-82-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	M+P-XYLENE	179601-23-1	Non-Aq	water MDL*100	500	500	1000	ug/kg			30
8260C (MeOH)	METHACRYLONITRILE	126-98-7	Non-Aq	water MDL*100	2500			ug/kg			30
8260C (MeOH)	METHYL ACETATE	79-20-9	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	METHYL METHACRYLATE	80-62-6	Non-Aq	water MDL*100	1000			ug/kg			30
8260C (MeOH)	METHYLCYCLOHEXANE	108-87-2	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260C (MeOH)	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	NAPTHALENE	91-20-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	N-BUTYLACETATE	123-86-4	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	N-BUTYLBENZENE	104-51-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	N-HEPTANE	142-82-5	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	N-PROPYLBENZENE	103-65-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	O-XYLENE	95-47-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	PROPIONITRILE	107-12-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260C (MeOH)	SEC-BUTYLBENZENE	135-98-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	STYRENE	100-42-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TAME	994-05-8	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	TERT-BUTYLBENZENE	98-06-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8260C (MeOH)	TETRACHLOROETHENE	127-18-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TETRAHYDROFURAN	109-99-9	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	TOLUENE	108-88-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TRANS-1,2-DICHLOROETHENE	156-60-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Non-Aq	water MDL*100	500			ug/kg			30
8260C (MeOH)	TRICHLOROETHENE	79-01-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	VINYL ACETATE	108-05-4	Non-Aq	water MDL*100	1000			ug/kg			30
8260C (MeOH)	VINYL CHLORIDE	75-01-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260C (MeOH)	XYLENES, TOTAL	1330-20-7	Non-Aq	water MDL*100	1000	750	1500	ug/kg			30
8260C (MeOH)-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Non-Aq	NA	NA			%			NA
8260C (MeOH)-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Non-Aq	NA	NA			%			NA
8260C (MeOH)-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Non-Aq	NA	NA			%			NA
8260C (MeOH)-SURR	TOLUENE-D8-SURR	2037-26-5	Non-Aq	NA	NA			%			NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
1311/8260C (TCLP)	1,1-DICHLOROETHENE (1,1-DCE)	75-35-4	Solid	NA	50 (5.0)			ug/L	same as water		30
1311/8260C (TCLP)	1,2-DICHLOROETHANE	107-06-2	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	1,4-DICHLOROBENZENE	106-46-7	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	2-BUTANONE (MEK)	78-93-3	Solid	NA	100 (10)			ug/L			30
1311/8260C (TCLP)	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Solid	NA	100 (10)			ug/L			30
1311/8260C (TCLP)	BENZENE	71-43-2	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	CARBON TETRACHLORIDE	56-23-5	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	CHLOROBENZENE	108-90-7	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	CHLOROFORM	67-66-3	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	HEXACHLOROBUTADIENE	87-68-3	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	TETRACHLOROETHENE (PCE)	127-18-4	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	TRICHLOROETHENE (TCE)	79-01-6	Solid	NA	50 (5.0)			ug/L			30
1311/8260C (TCLP)	VINYL CHLORIDE	75-01-4	Solid	NA	50 (5.0)			ug/L			30
1311/8260C-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Solid	NA	NA			%			NA
1311/8260C-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Solid	NA	NA			%			NA
1311/8260C-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Solid	NA	NA			%			NA
1311/8260C-SURR	TOLUENE-D8-SURR	2037-26-5	Solid		NA			%			NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D/SPE	1,4-DIOXANE	123-91-1	Water	0.027	0.04	0.027	0.04	ug/L	58-124	33-146	30
8270D/SPE -SURR	1,4-DIOXANE-D8	17647-74-4	Water	NA	NA	100		%	64-124		30
8270D	1,2,3,4-TETRACHLOROBENZENE	634-66-2	Water	1.5	5			ug/L	25-127	25-127	30
8270D	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Water	1.2	10	5	10	ug/L	15-132	15-132	30
8270D	1,2,4-TRICHLOROBENZENE	120-82-1	Water	1.2	10	5	10	ug/L	10-127	10-127	30
8270D	1,2-DICHLOROBENZENE	95-50-1	Water	1.2	10	5	10	ug/L	23-130	17-105	30
8270D	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	122-66-7	Water	1.4	10	5	10	ug/L	51-110	32-116	30
8270D	1,3,5-TRINITROBENZENE	99-35-4	Water	4.4	10			ug/L	37-199	37-199	30
8270D	1,3-DICHLOROBENZENE	541-73-1	Water	1.1	10	5	10	ug/L	21-90	21-99	30
8270D	1,3-DINITROBENZENE	99-65-0	Water	1.8	10			ug/L	51-125	36-139	30
8270D	1,4-DICHLOROBENZENE	106-46-7	Water	1.2	10	5	10	ug/L	10-124	10-124	30
8270D	1,4-NAPHTHOQUINONE	130-15-4	Water	1.4	50			ug/L	10-155	10-155	30
8270D	1-METHYL-2-PYRROLIDINONE	872-50-4	Water	1	10			ug/L	10-76	10-76	30
8270D	1-METHYLNAPHTHALENE	90-12-0	Water	1.5	10	5	10	ug/L	43-103	41-112	30
8270D	1-NAPHTHYLAMINE	134-32-7	Water	1	10			ug/L	10-125	10-125	30
8270D	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Water	1.2	10	5	10	ug/L	42-136	42-136	30
8270D	2,3,4-TRICHLOROPHENOL	15950-66-0	Water	1.1	5			ug/L	30-130	30-130	30
8270D	2,3,5-TRICHLOROPHENOL	933-78-8	Water	1.4	5			ug/L	30-130	30-130	30
8270D	2,3,6-TRICHLOROPHENOL	933-75-5	Water	1	5			ug/L	30-130	30-130	30
8270D	2,4,5-TRICHLOROPHENOL	95-95-4	Water	1.1	10	5	10	ug/L	48-134	48-134	30
8270D	2,4,6-TRICHLOROPHENOL	88-06-2	Water	1.4	10	5	10	ug/L	44-135	44-135	30
8270D	2,4-DICHLOROPHENOL	120-83-2	Water	1.3	10	5	10	ug/L	48-127	40-130	30
8270D	2,4-DIMETHYLPHENOL	105-67-9	Water	1.4	10	5	10	ug/L	59-113	42-121	30
8270D	2,4-DINITROPHENOL	51-28-5	Water	20	50	25	50	ug/L	21-154	21-168	30
8270D	2,4-DINITROTOLUENE	121-14-2	Water	2.4	10	5	10	ug/L	54-130	37-143	30
8270D	2,5-DICHLOROPHENOL	538-78-8	Water	1	5			ug/L	30-130	30-103	30
8270D	2,6-DICHLOROPHENOL	87-65-0	Water	1.2	10	5	10	ug/L	44-138	44-138	30
8270D	2,6-DINITROTOLUENE	606-20-2	Water	1.4	10	5	10	ug/L	51-127	39-136	30
8270D	2-ACETYLAMINOFLUORENE	53-96-3	Water	4.2	10			ug/L	47-143	47-143	30
8270D	2-CHLORONAPHTHALENE	91-58-7	Water	1.4	10	5	10	ug/L	40-108	40-108	30
8270D	2-CHLOROPHENOL	95-57-8	Water	1.1	10	5	10	ug/L	42-112	37-112	30
8270D	2-METHYL-5-NITROANILINE (5-NITRO-O-TOLUIDINE)	99-55-8	Water	1.9	10			ug/L	43-150	43-150	30
8270D	2-METHYLNAPHTHALENE	91-57-6	Water	1.3	10	5	10	ug/L	34-102	34-102	30
8270D	2-METHYLPHENOL	95-48-7	Water	1	10	5	10	ug/L	47-100	37-102	30
8270D	2-NAPHTHYLAMINE	91-59-8	Water	1.4	10			ug/L	10-100	10-100	30
8270D	2-NITROANILINE	88-74-4	Water	1.4	10	5	10	ug/L	52-133	40-136	30
8270D	2-NITROPHENOL	88-75-5	Water	1.5	10	5	10	ug/L	43-131	27-143	30
8270D	2-PICOLINE	109-06-8	Water	1.3	10			ug/L	10-98	10-98	30
8270D	3,4-DICHLOROPHENOL	95-77-2	Water	1.1	5			ug/L	30-130	30-130	30
8270D	3,3'-DICHLOROBENZIDINE	91-94-1	Water	1.2	10	5	10	ug/L	43-126	11-131	30
8270D	3,3'-DIMETHYLBENZIDINE	119-93-7	Water	1.1	50			ug/L	10-79	10-79	30
8270D	3+4-CHLOROPHENOL		Water	1.5	10			ug/L	30-130	30-130	30
8270D	3+4-METHYLPHENOL	106-44-5 + 108-39	Water	1.2	10	5	10	ug/L	40-92	30-95	30
8270D	3,5-DICHLOROPHENOL	591-35-5	Water	1.6	5			ug/L	30-130	30-130	30
8270D	3-METHYLCHOLANTHRENE	56-49-5	Water	1.5	10			ug/L	35-118	35-118	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D	3-NITROANILINE	99-09-2	Water	2.5	10	5	10	ug/L	42-111	19-117	30
8270D	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	20	50	25	50	ug/L	36-152	25-154	30
8270D	4-AMINOBIPHENYL	92-67-1	Water	1.2	10			ug/L	10-119	10-119	30
8270D	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	1.7	10	5	10	ug/L	48-114	39-115	30
8270D	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	1.1	10	5	10	ug/L	52-113	41-126	30
8270D	4-CHLOROANILINE	106-47-8	Water	1	10	5	10	ug/L	44-109	19-111	30
8270D	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	1.5	10	5	10	ug/L	51-107	41-111	30
8270D	4-NITROANILINE	100-01-6	Water	2.7	10	5	10	ug/L	54-133	18-143	30
8270D	4-NITROPHENOL	100-02-7	Water	6.4	50	25	50	ug/L	10-126	10-126	30
8270D	4-NITROQUINOLINE-1-OXIDE	56-57-5	Water	17	50			ug/L	10-175	10-175	30
8270D	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Water	1	10			ug/L	10-153	10-153	30
8270D	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Water	50	50			ug/L	40-150	40-150	30
8270D	ACENAPHTHENE	83-32-9	Water	1.4	10	5	10	ug/L	52-107	43-117	30
8270D	ACENAPHTHYLENE	208-96-8	Water	1.4	10	5	10	ug/L	55-109	45-119	30
8270D	ACETOPHENONE	98-86-2	Water	1.3	10	5	10	ug/L	46-114	40-113	30
8270D	alpha-TERPINEOL	98-55-5	Water	2.4	10			ug/L	48-114	41-127	30
8270D	ANILINE	62-53-3	Water	1	10			ug/L	32-100	11-101	30
8270D	ANTHRACENE	120-12-7	Water	1.3	10	5	10	ug/L	55-116	45-127	30
8270D	ARAMITE	140-57-8	Water	5.1	10			ug/L	52-123	10-191	30
8270D	ATRAZINE	1912-24-9	Water	2.1	10	5	10	ug/L	61-164	50-165	30
8270D	BENZALDEHYDE	100-52-7	Water	3.7	10	5	10	ug/L	45-132	32-133	30
8270D	BENZIDINE	92-87-5	Water	13	100	50	200	ug/L	10-99	10-146	30
8270D	BENZO(A)ANTHRACENE	56-55-3	Water	1.6	10	5	10	ug/L	61-121	46-126	30
8270D	BENZO(A)PYRENE	50-32-8	Water	1.2	10	5	10	ug/L	44-114	44-114	30
8270D	BENZO(B)FLUORANTHENE	205-99-2	Water	1.2	10	5	10	ug/L	62-115	41-127	30
8270D	BENZO(G,H,I)PERYLENE	191-24-2	Water	1	10	5	10	ug/L	63-136	50-143	30
8270D	BENZO(K)FLUORANTHENE	207-08-9	Water	1.3	10	5	10	ug/L	49-133	46-139	30
8270D	BENZOIC ACID	65-85-0	Water	36	50	50	100	ug/L	10-94	10-94	30
8270D	BENZYL ALCOHOL	100-51-6	Water	1.6	10	5	10	ug/L	31-109	31-109	30
8270D	BIPHENYL	92-52-4	Water	1.4	10	5	10	ug/L	39-106	10-126	30
8270D	BIS(1-CHLOROISOPROPYL)ETHER	108-60-1	Water	1.4	10	5	10	ug/L	32-122	21-126	30
8270D	BIS(-2-CHLOROETHOXY)METHANE	111-91-1	Water	1.9	10	5	10	ug/L	55-112	41-118	30
8270D	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	1.3	10	5	10	ug/L	46-102	33-108	30
8270D	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	7.8	10	10	20	ug/L	51-132	41-132	30
8270D	BUTYL BENZYL PHTHALATE	85-68-7	Water	1.4	10	5	10	ug/L	41-148	41-148	30
8270D	CAPROLACTAM	105-60-2	Water	1	10	5	10	ug/L	10-41	10-48	30
8270D	CARBAZOLE	86-74-8	Water	1.6	10	5	10	ug/L	56-139	39-144	30
8270D	CHLOROBENZILATE	510-15-6	Water	1.3	10			ug/L	43-143	43-143	30
8270D	CHRYSENE	218-01-9	Water	1.2	10	5	10	ug/L	57-118	47-126	30
8270D	DIALLATE	2303-16-4	Water	2	10			ug/L	35-159	35-159	30
8270D	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	1.1	10	5	10	ug/L	54-135	43-136	30
8270D	DIBENZOFURAN	132-64-9	Water	1.4	10	5	10	ug/L	55-110	46-119	30
8270D	DIETHYLPHTHALATE	84-66-2	Water	1.1	10	5	10	ug/L	53-113	36-122	30
8270D	DIMETHOATE	60-51-5	Water	1.8	10			ug/L	50-155	50-155	30
8270D	DIMETHYL PHTHALATE	131-11-3	Water	1.3	10	5	10	ug/L	51-112	33-123	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D	DI-N-BUTYL PHTHALATE	84-74-2	Water	1.7	10	5	10	ug/L	57-128	43-130	30
8270D	DI-N-OCTYL PHTHALATE	117-84-0	Water	3.3	10	5	10	ug/L	62-124	40-139	30
8270D	DINOSEB	88-85-7	Water	1	50			ug/L	62-143	62-143	30
8270D	DIPHENYLAMINE	122-39-4	Water	2.7	10			ug/L	40-150	40-150	30
8270D	DISULFOTON	298-04-4	Water	3	10			ug/L	34-141	34-141	30
8270D	ETHYL METHANESULFONATE	62-50-0	Water	1.1	10			ug/L	28-118	28-118	30
8270D	FAMPHUR	52-85-7	Water	5.4	10			ug/L	50-150	50-150	30
8270D	FLUORANTHENE	206-44-0	Water	1.5	10	5	10	ug/L	62-127	43-135	30
8270D	FLUORENE	86-73-7	Water	1.3	10	5	10	ug/L	54-106	43-113	30
8270D	HEXACHLOROBENZENE	118-74-1	Water	1.6	10	5	10	ug/L	53-123	42-125	30
8270D	HEXACHLOROBUTADIENE	87-68-3	Water	1	10	5	10	ug/L	16-95	10-111	30
8270D	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	2.2	10	5	10	ug/L	10-99	10-103	30
8270D	HEXACHLOROETHANE	67-72-1	Water	1.1	10	5	10	ug/L	15-92	12-101	30
8270D	HEXACHLOROPHENE	70-30-4	Water	150	500			ug/L	40-180	40-180	30
8270D	HEXACHLOROPROPENE	1888-71-7	Water	1	10			ug/L	27-114	27-114	30
8270D	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	1.8	10	5	10	ug/L	62-137	49-140	30
8270D	ISODRIN	465-73-6	Water	1.5	10			ug/L	60-119	60-119	30
8270D	ISOPHORONE	78-59-1	Water	1.4	10	5	10	ug/L	50-116	40-111	30
8270D	ISOSAFROLE	120-58-1	Water	1.7	10			ug/L	37-126	37-126	30
8270D	KEPONE	143-50-0	Water	5	10			ug/L	50-150	50-150	30
8270D	METHAPYRILENE	91-80-5	Water	44	50			ug/L	10-118	10-118	30
8270D	METHYL METHANESULFONATE	66-27-3	Water	1.1	10			ug/L	10-101	10-101	30
8270D	METHYL PARATHION	298-00-0	Water	1.7	10			ug/L	49-159	49-159	30
8270D	NAPHTHALENE	91-20-3	Water	1.2	10	5	10	ug/L	38-99	37-108	30
8270D	NITROBENZENE	98-95-3	Water	1.5	10	5	10	ug/L	46-108	35-112	30
8270D	N-NITROSODIETHYLAMINE	55-18-5	Water	1.4	10			ug/L	40-123	40-123	30
8270D	N-NITROSODIMETHYLAMINE	62-75-9	Water	1	10	5	10	ug/L	31-70	20-80	30
8270D	N-NITROSODI-N-BUTYLAMINE	924-16-3	Water	2.1	10			ug/L	40-130	40-130	30
8270D	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Water	1.2	10	5	10	ug/L	49-115	35-108	30
8270D	N-NITROSODIPHENYLAMINE	86-30-6	Water	2.7	10	5	10	ug/L	45-123	43-127	30
8270D	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Water	1.2	10			ug/L	43-120	43-120	30
8270D	N-NITROSOMORPHOLINE	59-89-2	Water	1.4	10			ug/L	40-127	40-127	30
8270D	N-NITROSOPIPERIDINE	100-75-4	Water	1.4	10			ug/L	40-127	40-127	30
8270D	N-NITROSOPYRROLIDINE	930-55-2	Water	1	10			ug/L	47-123	47-123	30
8270D	OCTACHLOROCYCLOPENTENE	706-78-5	Water	1.5	5			ug/L	37-139	25-144	30
8270D	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Water	1.4	10			ug/L	38-123	38-123	30
8270D	o-TOLUIDINE	95-53-4	Water	1	10			ug/L	38-129	38-129	30
8270D	PARATHION (ETHYL)	56-38-2	Water	1.4	10			ug/L	43-149	43-149	30
8270D	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Water	1.3	10			ug/L	42-129	42-129	30
8270D	PENTACHLOROBENZENE	608-93-5	Water	1.4	10			ug/L	38-127	38-127	30
8270D	PENTACHLOROETHANE	76-01-7	Water	1.2	10			ug/L	26-96	26-96	30
8270D	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Water	1.5	10			ug/L	47-151	47-151	30
8270D	PENTACHLOROPHENOL (PCP)	87-86-5	Water	9.7	50	25	50	ug/L	29-164	29-164	30
8270D	PHENACETIN	62-44-2	Water	1.5	10			ug/L	38-165	38-165	30
8270D	PHENANTHRENE	85-01-8	Water	1.4	10	5	10	ug/L	58-118	46-123	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D	PHENOL	108-95-2	Water	1	10	5	10	ug/L	10-113	10-113	30
8270D	PHORATE	298-02-2	Water	1.4	10			ug/L	40-124	40-124	30
8270D	p-PHENYLENEDIAMINE	106-50-3	Water	IND	50			ug/L	40-150	40-150	30
8270D	PRONAMIDE	23950-58-5	Water	1.8	10			ug/L	38-167	38-167	30
8270D	PYRENE	129-00-0	Water	1.5	10	5	10	ug/L	61-122	44-129	30
8270D	PYRIDINE	110-86-1	Water	1	10			ug/L	10-123	10-123	30
8270D	SAFROLE	94-59-7	Water	1.3	10			ug/L	36-122	36-122	30
8270D	SULFOTEPP	3689-24-5	Water	1.3	10			ug/L	41-152	41-152	30
8270D	THIONAZIN	297-97-2	Water	1.6	10			ug/L	47-142	47-142	30
8270D-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA	10.00	20.00	ug/L	35-141	35-141	NA
8270D-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA	5.00	10.00	ug/L	31-118	31-118	NA
8270D-SURR	2-FLUOROPHENOL-SURR	367-12-4	Water	NA	NA	10.00	20.00	ug/L	10-70	10-70	NA
8270D-SURR	NITROBENZENE-D5-SURR	4165-60-0	Water	NA	NA	5.00	10.00	ug/L	31-110	31-110	NA
8270D-SURR	PHENOL-D6-SURR	13127-88-3	Water	NA	NA	10.00	20.00	ug/L	10-107	10-107	NA
8270D-SURR	TERPHENYL-D14 -SURR	1718-51-0	Water	NA	NA	5.00	10.00	ug/L	10-165	10-165	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Solid	78	330	330	670	ug/kg	10-115	10-115	30
8270D	1,2,4-TRICHLOROBENZENE	120-82-1	Solid	78	330	167	330	ug/kg	17-80	11-89	30
8270D	1,2-DICHLOROBENZENE	95-50-1	Solid	80	330	167	330	ug/kg	14-77	14-77	30
8270D	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	122-66-7	Solid	120	330	167	330	ug/kg	26-97	10-101	30
8270D	1,3,5-TRINITROBENZENE	99-35-4	Solid	160	330			ug/kg	NA	NA	30
8270D	1,3-DICHLOROBENZENE	541-73-1	Solid	77	330	167	330	ug/kg	12-75	10-75	30
8270D	1,3-DINITROBENZINE	99-65-0	Solid	100	330			ug/kg	21-141	21-141	30
8270D	1,4-DICHLOROBENZENE	106-46-7	Solid	78	330	167	330	ug/kg	13-74	10-84	30
8270D	1,4-NAPHTHOQUINONE	130-15-4	Solid	63	1700			ug/kg	NA	NA	30
8270D	1,4-PHENYLENEDIAMINE	106-50-3	Solid	1500	1700			ug/kg	40-150	40-150	30
8270D	1-METHYL-2-PYRROLIDINONE	872-50-4	Solid	97	330			ug/kg	23-141	23-141	30
8270D	1-METHYLNAPHTHALENE	90-12-0	Solid	76	330	167	330	ug/kg	20-88	10-93	30
8270D	1-NAPHTHYLAMINE	134-32-7	Solid	66	330			ug/kg	NA	NA	30
8270D	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Solid	69	330	167	330	ug/kg	29-100	10-123	30
8270D	2,4,5-TRICHLOROPHENOL	95-95-4	Solid	280	330	330	670	ug/kg	29-97	12-109	30
8270D	2,4,6-TRICHLOROPHENOL	88-06-2	Solid	58	330	167	330	ug/kg	26-97	13-149	30
8270D	2,4-DICHLOROPHENOL	120-83-2	Solid	70	330	167	330	ug/kg	25-90	16-98	30
8270D	2,4-DIMETHYLPHENOL	105-67-9	Solid	72	330	167	330	ug/kg	26-89	10-98	30
8270D	2,4-DINITROPHENOL	51-28-5	Solid	650	1700	833	1700	ug/kg	10-128	10-129	30
8270D	2,4-DINITROTOLUENE	121-14-2	Solid	130	330	167	330	ug/kg	30-111	10-124	30
8270D	2,6-DICHLOROPHENOL	87-65-0	Solid	58	330	167	330	ug/kg	40-150	40-150	30
8270D	2,6-DINITROTOLUENE	606-20-2	Solid	96	330	167	330	ug/kg	28-105	13-112	30
8270D	2-ACETYLAMINOFLUORENE	53-96-3	Solid	76	330			ug/kg	NA	NA	30
8270D	2-CHLORONAPHTHALENE	91-58-7	Solid	79	330	167	330	ug/kg	21-88	10-94	30
8270D	2-CHLOROPHENOL	95-57-8	Solid	81	330	167	330	ug/kg	18-87	14-99	30
8270D	2-METHYL-5-NITROANILINE(5-NITRO-O-TOLUIDINE)	99-55-8	Solid	56	330			ug/kg	40-150	40-150	30
8270D	2-METHYLNAPHTHALENE	91-57-6	Solid	72	330	167	330	ug/kg	21-83	10-90	30
8270D	2-METHYLPHENOL	95-48-7	Solid	71	330	167	330	ug/kg	22-86	10-86	30
8270D	2-NAPHTHYLAMINE	91-59-8	Solid	65	330			ug/kg	NA	NA	30
8270D	2-NITROANILINE	88-74-4	Solid	98	330	833	1700	ug/kg	27-105	10-109	30
8270D	2-NITROPHENOL	88-75-5	Solid	95	330	167	330	ug/kg	20-88	10-90	30
8270D	2-PICOLINE	109-06-8	Solid	61	330			ug/kg	NA	NA	30
8270D	3,3'-DICHLOROBENZIDINE	91-94-1	Solid	69	330	167	330	ug/kg	NA	NA	30
8270D	3,3'-DIMETHYLBENZIDINE	119-93-7	Solid	64	1700			ug/kg	10-95	10-95	30
8270D	3+4-METHYLPHENOL	106-44-5 + 108-39-4	Solid	63	330	167	330	ug/kg	27-92	11-101	30
8270D	3-METHYLCHOLANTHRENE	56-49-5	Solid	93	330			ug/kg	NA	NA	30
8270D	3-NITROANILINE	99-09-2	Solid	70	330	833	1700	ug/kg	27-98	10-104	30
8270D	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Solid	140	1700	833	1700	ug/kg	11-96	10-123	30
8270D	4-AMINOBIPHENYL	92-67-1	Solid	63	330			ug/kg	NA	NA	30
8270D	4-BROMOPHENYL-PHENYLETHER	101-55-3	Solid	120	330	167	330	ug/kg	25-96	10-99	30
8270D	4-CHLORO-3-METHYLPHENOL	59-50-7	Solid	72	330	167	330	ug/kg	29-92	10-108	30
8270D	4-CHLOROANILINE	106-47-8	Solid	78	330	167	330	ug/kg	21-72	10-91	30
8270D	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Solid	79	330	167	330	ug/kg	25-92	10-95	30
8270D	4-NITROANILINE	100-01-6	Solid	70	330	833	1700	ug/kg	27-102	10-137	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D	4-NITROPHENOL	100-02-7	Solid	110	1700	833	1700	ug/kg	10-130	10-130	30
8270D	4-NITROQUINOLINE-1-OXIDE	56-57-5	Solid	650	1700			ug/kg	NA	NA	30
8270D	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Solid	120	330			ug/kg	NA	NA	30
8270D	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Solid	600	1700			ug/kg	NA	NA	30
8270D	ACENAPHTHENE	83-32-9	Solid	74	330	167	330	ug/kg	25-92	10-100	30
8270D	ACENAPHTHYLENE	208-96-8	Solid	87	330	167	330	ug/kg	27-93	10-102	30
8270D	ACETOPHENONE	98-86-2	Solid	75	330	500	1000	ug/kg	23-87	12-99	30
8270D	ANILINE	62-53-3	Solid	73	330			ug/kg	14-72	10-94	30
8270D	ANTHRACENE	120-12-7	Solid	92	330	167	330	ug/kg	32-106	10-129	30
8270D	ARAMITE	140-57-8	Solid	120	330			ug/kg	NA	NA	30
8270D	ATRAZINE	1912-24-9	Solid	130	330	333	667	ug/kg	NA	NA	30
8270D	BENZALDEHYDE	100-52-7	Solid	65	330	167	333	ug/kg	NA	NA	30
8270D	BENZIDINE	92-87-5	Solid	240	3300	1670	3300	ug/kg	10-130	10-130	30
8270D	BENZO(A)ANTHRACENE	56-55-3	Solid	97	330	167	330	ug/kg	33-109	10-122	30
8270D	BENZO(A)PYRENE	50-32-8	Solid	120	330	167	330	ug/kg	34-115	10-122	30
8270D	BENZO(B)FLUORANTHENE	205-99-2	Solid	110	330	167	330	ug/kg	31-107	10-112	30
8270D	BENZO(G,H,I)PERYLENE	191-24-2	Solid	87	330	167	330	ug/kg	30-127	10-136	30
8270D	BENZO(K)FLUORANTHENE	207-08-9	Solid	120	330	167	330	ug/kg	34-111	10-112	30
8270D	BENZOIC ACID	65-85-0	Solid	400	1700	833	1700	ug/kg	10-105	10-142	30
8270D	BENZYL ALCOHOL	100-51-6	Solid	81	330	333	667	ug/kg	21-100	10-101	30
8270D	BIPHENYL	92-52-4	Solid	81	330	167	330	ug/kg	26-88	10-99	30
8270D	BIS(1-CHLOROISOPROPYL)ETHER (2,2-OXYBIS(1-CHLOROPROPANE)	108-60-1	Solid	130	330	167	330	ug/kg	10-82	10-87	30
8270D	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Solid	88	330	167	330	ug/kg	17-85	16-93	30
8270D	BIS(2-CHLOROETHYL)ETHER	111-44-4	Solid	86	330	167	330	ug/kg	10-79	10-79	30
8270D	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Solid	88	500	833	1700	ug/kg	31-115	10-116	30
8270D	BUTYL BENZYL PHTHALATE	85-68-7	Solid	82	330	167	330	ug/kg	31-115	10-128	30
8270D	CAPROLACTAM	105-60-2	Solid	86	330	167	330	ug/kg	28-99	10-112	30
8270D	CARBAZOLE	86-74-8	Solid	95	330	167	330	ug/kg	23-129	10-138	30
8270D	CHLOROBENZILATE	510-15-6	Solid	120	330			ug/kg	NA	NA	30
8270D	CHRYSENE	218-01-9	Solid	120	330	167	330	ug/kg	34-108	10-113	30
8270D	DIALLATE	2303-16-4	Solid	110	330			ug/kg	NA	NA	30
8270D	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	98	330	167	330	ug/kg	23-122	10-130	30
8270D	DIBENZOFURAN	132-64-9	Solid	65	330	167	330	ug/kg	27-94	10-102	30
8270D	DIETHYL PHTHALATE	84-66-2	Solid	70	330	330	667	ug/kg	26-101	10-101	30
8270D	DIMETHOATE	60-51-5	Solid	110	330			ug/kg	NA	NA	30
8270D	DIMETHYL PHTHALATE	131-11-3	Solid	74	330	167	330	ug/kg	27-98	10-113	30
8270D	DI-N-BUTYLPHTHALATE	84-74-2	Solid	100	330	167	330	ug/kg	33-114	10-119	30
8270D	DI-N-OCTYL PHTHALATE	117-84-0	Solid	97	330	167	330	ug/kg	32-116	10-121	30
8270D	DINOSEB	88-85-7	Solid	82	1700			ug/kg	NA	NA	30
8270D	DIPHENYLAMINE	122-39-4	Solid	220	330			ug/kg	21-89	21-89	30
8270D	DISULFOTON	298-04-4	Solid	120	330			ug/kg	NA	NA	30
8270D	ETHYL METHANESULFONATE	62-50-0	Solid	72	330			ug/kg	NA	NA	30
8270D	FLUORANTHENE	206-44-0	Solid	120	330	167	330	ug/kg	34-111	10-125	30
8270D	FLUORENE	86-73-7	Solid	76	330	167	330	ug/kg	27-95	10-109	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D	HEXACHLOROBENZENE	118-74-1	Solid	100	330	167	330	ug/kg	30-104	10-106	30
8270D	HEXACHLOROBUTADIENE	87-68-3	Solid	80	330	167	330	ug/kg	10-142	10-142	30
8270D	HEXACHLOROCYCLOPENTADIENE	77-47-4	Solid	72	330	167	330	ug/kg	10-133	10-133	30
8270D	HEXACHLOROETHANE	67-72-1	Solid	85	330	167	330	ug/kg	10-129	10-129	30
8270D	HEXACHLOROPHENE	70-30-4	Solid	8100	17000			ug/kg	40-150	40-150	30
8270D	HEXACHLOROPROPENE	1888-71-7	Solid	53	330			ug/kg	NA	NA	30
8270D	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	110	330	167	330	ug/kg	33-121	10-124	30
8270D	ISODRIN	465-73-6	Solid	140	330			ug/kg	NA	NA	30
8270D	ISOPHORONE	78-59-1	Solid	90	330	167	330	ug/kg	NA	NA	30
8270D	ISOSAFROLE	120-58-1	Solid	83	330			ug/kg	NA	NA	30
8270D	METHAPYRILENE	91-80-5	Solid	1180	1700			ug/kg	NA	NA	30
8270D	METHYL METHANESULFONATE	66-27-3	Solid	75	330			ug/kg	NA	NA	30
8270D	METHYL PARATHION	298-00-0	Solid	170	330			ug/kg	NA	NA	30
8270D	NAPHTHALENE	91-20-3	Solid	85	330	167	330	ug/kg	18-81	10-89	30
8270D	NITROBENZENE	98-95-3	Solid	85	330	167	330	ug/kg	14-80	10-77	30
8270D	N-NITROSODIETHYLAMINE	55-18-5	Solid	70	330			ug/kg	NA	NA	30
8270D	N-NITROSODIMETHYLAMINE	62-75-9	Solid	110	330	167	330	ug/kg	15-76	10-67	30
8270D	N-NITROSODI-N-BUTYLAMINE	924-16-3	Solid	110	330			ug/kg	NA	NA	30
8270D	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Solid	88	330	167	330	ug/kg	15-78	10-76	30
8270D	N-NITROSODIPHENYLAMINE	86-30-6	Solid	220	330	330	670	ug/kg	29-108	16-178	30
8270D	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Solid	71	330			ug/kg	NA	NA	30
8270D	N-NITROSOMORPHOLINE	59-89-2	Solid	86	330			ug/kg	NA	NA	30
8270D	N-NITROSOPIPERIDINE	100-75-4	Solid	82	330			ug/kg	NA	NA	30
8270D	N-NITROSOPYRROLIDINE	930-55-2	Solid	85	330			ug/kg	NA	NA	30
8270D	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Solid	84	330			ug/kg	NA	NA	30
8270D	o-TOLUIDINE	95-53-4	Solid	53	330			ug/kg	NA	NA	30
8270D	PARATHION (ETHYL)	56-38-2	Solid	160	330			ug/kg	NA	NA	30
8270D	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Solid	120	330			ug/kg	NA	NA	30
8270D	PENTACHLOROBENZENE	608-93-5	Solid	65	330			ug/kg	NA	NA	30
8270D	PENTACHLOROETHANE	76-01-7	Solid	72	330			ug/kg	NA	NA	30
8270D	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Solid	83	330			ug/kg	NA	NA	30
8270D	PENTACHLOROPHENOL (PCP)	87-86-5	Solid	110	1700	833	1700	ug/kg	13-117	10-118	30
8270D	PHENACETIN	62-44-2	Solid	116	330			ug/kg	NA	NA	30
8270D	PHENANTHRENE	85-01-8	Solid	96	330	167	330	ug/kg	33-103	10-137	30
8270D	PHENOL	108-95-2	Solid	78	330	167	330	ug/kg	10-144	10-144	30
8270D	PHORATE	298-02-2	Solid	84	330			ug/kg	NA	NA	30
8270D	PRONAMIDE	23950-58-5	Solid	110	330			ug/kg	NA	NA	30
8270D	PYRENE	129-00-0	Solid	130	330	167	330	ug/kg	33-111	10-118	30
8270D	PYRIDINE	110-86-1	Solid	40	330			ug/kg	10-120	10-120	30
8270D	SAFROLE	94-59-7	Solid	73	330			ug/kg	NA	NA	30
8270D	SULFOTEPP	3689-24-5	Solid	76	330			ug/kg	NA	NA	30
8270D	THIONAZIN	297-97-2	Solid	110	330			ug/kg	NA	NA	30
8270D-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid	NA	NA	333.00	667.00	ug/kg	10-109	10-109	NA
8270D-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid	NA	NA	167.00	333.00	ug/kg	10-102	10-102	NA
8270D-SURR	2-FLUOROPHENOL-SURR	367-12-4	Solid	NA	NA	333.00	667.00	ug/kg	10-88	10-88	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid	NA	NA	167.00	333.00	ug/kg	10-95	10-95	NA
8270D-SURR	PHENOL-D6-SURR	13127-88-3	Solid	NA	NA	333.00	667.00	ug/kg	10-145	10-145	NA
8270D-SURR	TERPHENYL-D14-SURR	1718-51-0	Solid	NA	NA	167.00	333.00	ug/kg	10-106	10-106	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,2,4-TRICHLOROBENZENE	120-82-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,2-DICHLOROBENZENE	95-50-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,2-DIPHENYLHYDRAZINE	122-66-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,3,5-TRINITROBENZENE	99-35-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,3-DICHLOROBENZENE	541-73-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,3-DINITROBENZINE	99-65-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,4-DICHLOROBENZENE	106-46-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1,4-NAPHTHOQUINONE	130-15-4	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	1-METHYL-2-PYRROLIDINONE	872-50-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1-METHYLNAPHTHALENE	90-12-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	1-NAPHTHYLAMINE	134-32-7	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,4,5-TRICHLOROPHENOL	95-95-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,4,6-TRICHLOROPHENOL	88-06-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,4-DICHLOROPHENOL	120-83-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,4-DIMETHYLPHENOL	105-67-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,4-DINITROPHENOL	51-28-5	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	2,4-DINITROTOLUENE	121-14-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-161	50-161	30
8270D	2,6-DICHLOROPHENOL	87-65-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2,6-DINITROTOLUENE	606-20-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-ACETYLAMINOFLUORENE	53-96-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-CHLORONAPHTHALENE	91-58-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-CHLOROPHENOL	95-57-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-METHYL-5-NITROANILINE(5-NITRO-O-TOLUIDINE)	99-55-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-METHYLNAPHTHALENE	91-57-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-METHYLPHENOL	95-48-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-NAPHTHYLAMINE	91-59-8	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	2-NITROANILINE	88-74-4	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	2-NITROPHENOL	88-75-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	2-PICOLINE	109-06-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	3,3'-DICHLOROBENZIDINE	91-94-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	3,3'-DIMETHYLBENZIDINE	119-93-7	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	3+4-METHYLPHENOL	106-44-5 + 108-39	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	3-METHYLCHOLANTHRENE	56-49-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	3-NITROANILINE	99-09-2	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	4-AMINOBIPHENYL	92-67-1	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	4-BROMOPHENYL-PHENYLETHER	101-55-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	4-CHLORO-3-METHYLPHENOL	59-50-7	Non-Aq	water MDL * 10000	100000			ug/kg	39-168	39-168	30
8270D	4-CHLOROANILINE	106-47-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	4-NITROANILINE	100-01-6	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	4-NITROPHENOL	100-02-7	Non-Aq	water MDL * 10000	500000			ug/kg	28-164	28-164	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D	4-NITROQUINOLINE-1-OXIDE	56-57-5	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	ACENAPHTHENE	83-32-9	Non-Aq	water MDL * 10000	100000			ug/kg	30-175	30-175	30
8270D	ACENAPHTHYLENE	208-96-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ACETOPHENONE	98-86-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	alpha-TERPINEOL	98-55-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ANILINE	62-53-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ANTHRACENE	120-12-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ARAMITE	140-57-8	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	ATRAZINE	1912-24-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZALDEHYDE	100-52-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZIDINE	92-87-5	Non-Aq	water MDL * 10000	1000000			ug/kg	50-150	50-150	30
8270D	BENZO(A)ANTHRACENE	56-55-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZO(A)PYRENE	50-32-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZO(B)FLUORANTHENE	205-99-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZO(G,H,I)PERYLENE	191-24-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZO(K)FLUORANTHENE	207-08-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BENZOIC ACID	65-85-0	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	BENZYL ALCOHOL	100-51-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BIPHENYL	92-52-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BIS(1-CHLOROISOPROPYL)ETHER (2,2-OXYBIS(1-CHLOROPROPANE)	108-60-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BIS(2-CHLOROETHYL)ETHER	111-44-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	BUTYL BENZYL PHTHALATE	85-68-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	CAPROLACTAM	105-60-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	CARBAZOLE	86-74-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	CHLOROBENZILATE	510-15-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	CHRYSENE	218-01-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DIALLATE	2303-16-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DIBENZO(A,H)ANTHRACENE	53-70-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DIBENZOFURAN	132-64-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DIETHYL PHTHALATE	84-66-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DIMETHOATE	60-51-5	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	DIMETHYL PHTHALATE	131-11-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DI-N-BUTYLPHTHALATE	84-74-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DI-N-OCTYL PHTHALATE	117-84-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DINOSEB	88-85-7	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	DIPHENYLAMINE	122-39-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	DISULFOTON	298-04-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ETHYL METHANESULFONATE	62-50-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ETHYL PARATHION	56-38-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	FLUORANTHENE	206-44-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D	FLUORENE	86-73-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROBENZENE	118-74-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROBUTADIENE	87-68-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROCYCLOPENTADIENE	77-47-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROETHANE	67-72-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROPHENE	70-30-4	Non-Aq	water MDL * 10000	5000000			ug/kg	50-150	50-150	30
8270D	HEXACHLOROPROPENE	1888-71-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	INDENO(1,2,3-CD)PYRENE	193-39-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ISODRIN	465-73-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ISOPHORONE	78-59-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ISOSAFROLE	120-58-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	METHAPYRILENE	91-80-5	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	METHYL METHANESULFONATE	66-27-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	METHYL PARATHION	298-00-0	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	NAPHTHALENE	91-20-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	NITROBENZENE	98-95-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSODIETHYLAMINE	55-18-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSODIMETHYLAMINE	62-75-9	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSODI-N-BUTYLAMINE	924-16-3	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Non-Aq	water MDL * 10000	100000			ug/kg	47-145	47-145	30
8270D	N-NITROSODIPHENYLAMINE	86-30-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSOMORPHOLINE	59-89-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSOPIPERIDINE	100-75-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	N-NITROSOPYRROLIDINE	930-55-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	o-TOLUIDINE	95-53-4	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PENTACHLOROBENZENE	608-93-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PENTACHLOROETHANE	76-01-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PENTACHLOROPHENOL (PCP)	87-86-5	Non-Aq	water MDL * 10000	500000			ug/kg	10-164	10-164	30
8270D	PHENACETIN	62-44-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PHENANTHRENE	85-01-8	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PHENOL	108-95-2	Non-Aq	water MDL * 10000	100000			ug/kg	16-157	16-157	30
8270D	PHORATE	298-02-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PRONAMIDE	23950-58-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	PYRENE	129-00-0	Non-Aq	water MDL * 10000	100000			ug/kg	49-172	49-172	30
8270D	PYRIDINE	110-86-1	Non-Aq	water MDL * 10000	500000			ug/kg	50-150	50-150	30
8270D	SAFROLE	94-59-7	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	SULFOTEPP	3689-24-5	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D	THIONAZIN	297-97-2	Non-Aq	water MDL * 10000	100000			ug/kg	50-150	50-150	30
8270D-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Non-Aq	NA	NA			%	10-180	10-180	NA
8270D-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Non-Aq	NA	NA			%	49-157	49-157	NA
8270D-SURR	2-FLUOROPHENOL-SURR	367-12-4	Non-Aq	NA	NA			%	59-113	59-113	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D-SURR	NITROBENZENE-D5-SURR	4165-60-0	Non-Aq	NA	NA			%	66-143	66-143	NA
8270D-SURR	PHENOL-D6-SURR	13127-88-3	Non-Aq	NA	NA			%	35-125	35-125	NA
8270D-SURR	TERPHENYL-D14-SURR	1718-51-0	Non-Aq	NA	NA			%	72-172	72-172	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D LL	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Water	0.22	1.0			ug/L	25-123	50-150	30
8270D LL	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.14	1.0			ug/L	35-101	35-101	30
8270D LL	1,2-DICHLOROBENZENE	95-50-1	Water	0.13	1.0			ug/L	47-100	45-107	30
8270D LL	1,3-DICHLOROBENZENE	541-73-1	Water	0.14	1.0			ug/L	43-97	41-101	30
8270D LL	1,4-DIBROMOBENZENE	106-37-6	Water	0.064	0.4			ug/L	40-140	40-140	30
8270D LL	1,4-DICHLOROBENZENE	106-46-7	Water	0.18	1.0			ug/L	46-96	45-101	30
8270D LL	1,4-DIOXANE	123-91-1	Water	0.14	1.0			ug/L	21-68	21-68	30
8270D LL	1-BROMOHEXANE	111-25-1	Water	0.069	0.4			ug/L	40-140	40-140	30
8270D LL	1-METHYLNAPHTHALENE	90-12-0	Water	0.054	0.2	0.10	0.20	ug/L	48-123	47-128	30
8270D LL	2,4,5-TRICHLOROPHENOL	95-95-4	Water	0.3	1.0			ug/L	42-132	42-132	30
8270D LL	2,4,6-TRICHLOROPHENOL	88-06-2	Water	0.25	1.0			ug/L	45-128	45-128	30
8270D LL	2,4-DICHLOROPHENOL	120-83-2	Water	0.18	1.0			ug/L	44-124	44-124	30
8270D LL	2,4-DIMETHYLPHENOL	105-67-9	Water	0.26	1.0			ug/L	32-124	10-191	30
8270D LL	2,4-DINITROPHENOL	51-28-5	Water	0.56	1.0			ug/L	10-156	10-156	30
8270D LL	2,4-DINITROTOLUENE	121-14-2	Water	0.19	1.0			ug/L	59-152	48-168	30
8270D LL	2,6-DINITROTOLUENE	606-20-2	Water	0.26	1.0			ug/L	59-152	46-165	30
8270D LL	2-CHLORONAPHTHALENE	91-58-7	Water	0.21	1.0			ug/L	44-106	39-131	30
8270D LL	2-CHLOROPHENOL	95-57-8	Water	0.24	1.0			ug/L	38-108	38-108	30
8270D LL	2-METHYLNAPHTHALENE	91-57-6	Water	0.05	0.20	0.10	0.20	ug/L	45-112	45-112	30
8270D LL	2-METHYLPHENOL	95-48-7	Water	0.18	1.0			ug/L	44-110	34-111	30
8270D LL	2-NITROANILINE	88-74-4	Water	0.14	1.0			ug/L	61-171	10-200	30
8270D LL	2-NITROPHENOL	88-75-5	Water	0.23	1.0			ug/L	53-125	30-150	30
8270D LL	3,3-DICHLOROBENZIDINE	91-94-1	Water	0.14	1.0			ug/L	40-140	40-140	30
8270D LL	3+4 METHYLPHENOL	106-44-5 + 108-39	Water	0.19	1.0			ug/L	35-106	28-106	30
8270D LL	3-NITROANILINE	99-09-2	Water	0.33	1.0			ug/L	40-140	40-140	30
8270D LL	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	0.45	1.0			ug/L	30-144	30-144	30
8270D LL	4-BROMOCHLOROBENZENE	106-39-8	Water	0.05	0.4			ug/L	40-140	40-140	30
8270D LL	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	0.15	1.0			ug/L	56-129	56-129	30
8270D LL	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	0.23	1.0			ug/L	50-120	16-171	30
8270D LL	4-CHLOROANILINE	106-47-8	Water	0.2	1.0			ug/L	40-140	40-140	30
8270D LL	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	0.22	1.0			ug/L	58-129	45-147	30
8270D LL	4-NITROANILINE	100-01-6	Water	0.12	1.0			ug/L	40-140	40-140	30
8270D LL	4-NITROPHENOL	100-02-7	Water	0.52	1.0			ug/L	10-82	10-86	30
8270D LL	ACENAPHTHENE	83-32-9	Water	0.055	0.20	0.10	0.20	ug/L	48-118	24-158	30
8270D LL	ACENAPHTHYLENE	208-96-8	Water	0.053	0.20	0.10	0.20	ug/L	48-121	41-140	30
8270D LL	ACETOPHENONE	98-86-2	Water	0.21	1.00			ug/L	40-140	40-140	30
8270D LL	ANTHRACENE	120-12-7	Water	0.071	0.20	0.10	0.20	ug/L	52-124	27-150	30
8270D LL	ATRAZINE	1912-24-9	Water	0.21	1.00			ug/L	40-140	40-140	30
8270D LL	BENZALDEHYDE	100-52-7	Water	0.19	1.00			ug/L	46-200	40-140	30
8270D LL	BENZO(A)ANTHRACENE	56-55-3	Water	0.13	0.20	0.15	0.20	ug/L	54-120	36-140	30
8270D LL	BENZO(A)PYRENE	50-32-8	Water	0.12	0.20	0.15	0.20	ug/L	57-124	10-154	30
8270D LL	BENZO(B)FLUORANTHENE	205-99-2	Water	0.13	0.20	0.15	0.20	ug/L	57-117	30-151	30
8270D LL	BENZO(G,H,I)PERYLENE	191-24-2	Water	0.15	0.20	0.16	0.20	ug/L	47-154	10-174	30
8270D LL	BENZO(K)FLUORANTHENE	207-08-9	Water	0.11	0.20	0.15	0.20	ug/L	59-123	18-145	30
8270D LL	BIPHENYL	92-52-4	Water	0.15	1.00			ug/L	40-140	40-140	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D LL	BIS(1-CHLOROISOPROPYL)ETHER	108-60-1	Water	0.21	1.00			ug/L	39-151	54-122	30
8270D LL	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Water	0.2	1.00			ug/L	38-141	43-115	30
8270D LL	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	0.16	1.00			ug/L	42-115	42-115	30
8270D LL	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	3.9	5.0			ug/L	23-173	10-162	30
8270D LL	BUTYL BENZYL PHTHALATE	85-68-7	Water	0.18	5.0			ug/L	10-159	10-159	30
8270D LL	CAPROLACTAM	105-60-2	Water	0.2	1.0			ug/L	40-140	40-140	30
8270D LL	CARBAZOLE	86-74-8	Water	0.24	1.0	1.00	2.00	ug/L	39-147	10-162	30
8270D LL	CHRYSENE	218-01-9	Water	0.089	0.20	0.10	0.20	ug/L	58-124	39-141	30
8270D LL	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	0.095	0.20	0.10	0.20	ug/L	43-147	10-173	30
8270D LL	DIBENZOFURAN	132-64-9	Water	0.053	0.20	0.10	0.20	ug/L	49-117	39-137	30
8270D LL	DIETHYL PHTHALATE	84-66-2	Water	0.33	5.0			ug/L	10-133	10-133	30
8270D LL	DIMETHYL PHTHALATE	131-11-3	Water	0.22	5.0			ug/L	10-157	10-157	30
8270D LL	DI-N-BUTYL PHTHALATE	84-74-2	Water	0.12	5.0			ug/L	22-126	22-126	30
8270D LL	DI-N-OCTYL PHTHALATE	117-84-0	Water	0.23	5.0			ug/L	48-134	10-166	30
8270D LL	FLUORANTHENE	206-44-0	Water	0.14	0.20	0.15	0.20	ug/L	50-117	45-154	30
8270D LL	FLUORENE	86-73-7	Water	0.065	0.20	0.10	0.20	ug/L	47-107	33-152	30
8270D LL	HEXACHLOROBENZENE	118-74-1	Water	0.07	0.20			ug/L	49-118	44-143	30
8270D LL	HEXACHLOROBUTADIENE	87-68-3	Water	0.28	1.0			ug/L	34-107	34-107	30
8270D LL	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	0.61	1.0			ug/L	10-97	10-163	30
8270D LL	HEXACHLOROETHANE	67-72-1	Water	0.15	1.0			ug/L	28-96	28-96	30
8270D LL	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	0.11	0.20	0.15	0.20	ug/L	55-129	10-167	30
8270D LL	ISOPHORONE	78-59-1	Water	0.27	1.0			ug/L	57-130	57-130	30
8270D LL	NAPHTHALENE	91-20-3	Water	0.058	0.20	0.10	0.20	ug/L	37-114	30-133	30
8270D LL	NITROBENZENE	98-95-3	Water	0.065	0.20	0.10	0.20	ug/L	37-122	26-155	30
8270D LL	N-NITROSODI-N-PROPYLAMINE	621-64-7	Water	0.29	1.00			ug/L	40-140	40-140	30
8270D LL	N-NITROSODIPHENYLAMINE	86-30-6	Water	0.28	1.00			ug/L	40-140	40-140	30
8270D LL	PENTACHLOROPHENOL	87-86-5	Water	0.89	1.0			ug/L	10-139	10-139	30
8270D LL	PHENANTHRENE	85-01-8	Water	0.1	0.20	0.15	0.20	ug/L	54-116	29-170	30
8270D LL	PHENOL	108-95-2	Water	0.08	1.0			ug/L	12-51	10-73	30
8270D LL	PYRENE	129-00-0	Water	0.11	0.20	0.15	0.20	ug/L	56-123	40-166	30
8270D LL	PYRIDINE	110-86-1	Water	0.45	2.50			ug/L	10-84	10-84	30
8270D LL-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA	0.20	0.40	ug/L	37-117	37-117	NA
8270D LL-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA	0.10	0.20	ug/L	27-133	27-133	NA
8270D LL-SURR	2-FLUOROPHENOL-SURR	321-60-8	Water	NA	NA	0.20	0.40	ug/L	10-104	10-104	NA
8270D LL-SURR	NITROBENZENE-D5-SURR	4165-60-0	Water	NA	NA	0.10	0.20	ug/L	31-167	31-167	NA
8270D LL-SURR	PHENOL-D6-SURR	13127-88-3	Water	NA	NA	0.20	0.40	ug/L	10-83	10-83	NA
8270D LL-SURR	P-TERPHENYL-SURR	1718-51-0	Water	NA	NA	0.10	0.20	ug/L	25-151	25-151	NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS (%Rec)	MS (%Rec)	(% RPD)
8270D LL	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Solid	14	33.0			ug/kg	31-127	10-101	30
8270D LL	1,2,4-TRICHLOROBENZENE	120-82-1	Solid	12	33.0			ug/kg	10-115	10-127	30
8270D LL	1,2-DICHLOROBENZENE	95-50-1	Solid	11	33.0			ug/kg	14-141	10-112	30
8270D LL	1,2-DIPHENYLHYDRAZINE	122-66-7	Solid	17	33.0			ug/kg	33-166	10-155	30
8270D LL	1,3,5-TRINITROBENZENE	99-35-4	Solid	8.9	33.0			ug/kg	NA	NA	30
8270D LL	1,3-DICHLOROBENZENE	541-73-1	Solid	9.4	33.0			ug/kg	11-138	11-138	30
8270D LL	1,3-DINITROBENZINE	99-65-0	Solid	15	33.0			ug/kg	21-141	10-127	30
8270D LL	1,4-DICHLOROBENZENE	106-46-7	Solid	11	33.0			ug/kg	12-139	12-139	30
8270D LL	1,4-DIOXANE	123-91-1	Solid	34	67.0			ug/kg	24-101	13-91	30
8270D LL	1,4-NAPHTHOQUINONE	130-15-4	Solid	14	170.0			ug/kg	NA	NA	30
8270D LL	1-METHYLNAPHTHALENE	90-12-0	Solid	1.7	6.6	3.3	6.6	ug/kg	13-119	10-131	30
8270D LL	1-NAPHTHYLAMINE	134-32-7	Solid	20	33.0			ug/kg	NA	NA	30
8270D LL	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Solid	12	33.0			ug/kg	37-156	10-123	30
8270D LL	2,4,5-TRICHLOROPHENOL	95-95-4	Solid	7.6	33.0			ug/kg	16-123	13-123	30
8270D LL	2,4,6-TRICHLOROPHENOL	88-06-2	Solid	7.4	33.0			ug/kg	18-126	10-134	30
8270D LL	2,4-DICHLOROPHENOL	120-83-2	Solid	7.8	33.0			ug/kg	17-128	10-132	30
8270D LL	2,4-DIMETHYLPHENOL	105-67-9	Solid	14	33.0			ug/kg	17-125	12-127	30
8270D LL	2,4-DINITROPHENOL	51-28-5	Solid	9.7	33.0			ug/kg	10-118	10-123	30
8270D LL	2,4-DINITROTOLUENE	121-14-2	Solid	15	33.0			ug/kg	16-189	16-189	30
8270D LL	2,6-DICHLOROPHENOL	87-65-0	Solid	6.9	33.0			ug/kg	40-150	40-150	30
8270D LL	2,6-DINITROTOLUENE	606-20-2	solid	16	33.0			ug/kg	53-131	53-171	30
8270D LL	2-ACETYLAMINOFLUORENE	53-96-3	Solid	23	33.0			ug/kg	NA	NA	30
8270D LL	2-CHLORONAPHTHALENE	91-58-7	Solid	13	33.0			ug/kg	13-116	10-124	30
8270D LL	2-CHLOROPHENOL	95-57-8	Solid	8	33.0			ug/kg	10-122	10-122	30
8270D LL	2-METHYLNAPHTHALENE	91-57-6	Solid	1.9	6.6	3.3	6.6	ug/kg	13-116	10-128	30
8270D LL	2-METHYLPHENOL	95-48-7	Solid	7.5	33.0			ug/kg	12-123	12-123	30
8270D LL	2-NAPHTHYLAMINE	91-59-8	Solid	15	170.0			ug/kg	NA	NA	30
8270D LL	2-NITROANILINE	88-74-4	Solid	17	33.0			ug/kg	35-126	14-169	30
8270D LL	2-NITROPHENOL	88-75-5	Solid	7.8	33.0			ug/kg	10-152	10-163	30
8270D LL	2-PICOLINE	109-06-8	Solid	27	33.0			ug/kg	NA	NA	30
8270D LL	3+4 METHYLPHENOL	106-44-5 + 108-39	Solid	8.2	33.0			ug/kg	14-119	14-119	30
8270D LL	3,3'-DICHLOROBENZIDINE	91-94-1	Solid	19	33.0			ug/kg	25-121	NA	30
8270D LL	3-METHYLCHOLANTHRENE	56-49-5	Solid	13	33.0			ug/kg	NA	NA	30
8270D LL	3-NITROANILINE	99-09-2	Solid	7.5	33.0			ug/kg	22-69	10-104	30
8270D LL	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Solid	12	33.0			ug/kg	10-150	10-150	30
8270D LL	4-AMINOBIPHENYL	92-67-1	Solid	17	170.0			ug/kg	NA	NA	30
8270D LL	4-BROMOPHENYL-PHENYLETHER	101-55-3	Solid	14	33.0			ug/kg	36-165	36-165	30
8270D LL	4-CHLORO-3-METHYLPHENOL	59-50-7	Solid	15	35.0			ug/kg	23-128	17-131	30
8270D LL	4-CHLOROANILINE	106-47-8	Solid	9.5	33.0			ug/kg	12-78	10-91	30
8270D LL	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Solid	14	33.0			ug/kg	34-151	10-169	30
8270D LL	4-NITROANILINE	100-01-6	Solid	17	33.0			ug/kg	27-102	10-137	30
8270D LL	4-NITROPHENOL	100-02-7	Solid	26	33.0			ug/kg	12-115	10-124	30
8270D LL	4-NITROQUINOLINE-1-OXIDE	56-57-5	Solid	21	170.0			ug/kg	NA	NA	30
8270D LL	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Solid	14	33.0			ug/kg	NA	NA	30
8270D LL	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Solid	33	33.0			ug/kg	NA	NA	30
8270D LL	ACENAPHTHENE	83-32-9	Solid	1.7	6.6	3.3	6.6	ug/kg	17-115	10-126	30
8270D LL	ACENAPHTHYLENE	208-96-8	Solid	1.8	6.6	3.3	6.6	ug/kg	15-123	10-132	30
8270D LL	ACETOPHENONE	98-86-2	Solid	11	33.0			ug/kg	36-106	36-106	30
8270D LL	ANILINE	62-53-3	Solid	8.1	33.0			ug/kg	13-94	10-94	30
8270D LL	ANTHRACENE	120-12-7	Solid	4.1	6.6	5.0	6.6	ug/kg	37-117	10-129	30
8270D LL	ARAMITE	140-57-8	Solid	29	33.0			ug/kg	NA	NA	30
8270D LL	ATRAZINE	1912-24-9	Solid	8.7	33.0			ug/kg	46-157	NA	30
8270D LL	BENZIDINE	92-87-5	Solid	69	167.0			ug/kg	10-63		30
8270D LL	BENZO(A)ANTHRACENE	56-55-3	Solid	5	6.6	6.0	6.6	ug/kg	39-105	10-120	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D LL	BENZO(A)PYRENE	50-32-8	Solid	2.7	6.6	3.3	6.6	ug/kg	38-130	10-141	30
8270D LL	BENZO(B)FLUORANTHENE	205-99-2	Solid	3.5	6.6	3.6	6.6	ug/kg	36-120	10-132	30
8270D LL	BENZO(G,H,I)PERYLENE	191-24-2	Solid	2.8	6.6	3.3	6.6	ug/kg	36-140	10-149	30
8270D LL	BENZO(K)FLUORANTHENE	207-08-9	Solid	3.8	6.6	5.0	6.6	ug/kg	40-125	10-137	30
8270D LL	BENZALDEHYDE	100-52-7	Solid	15	33.0			ug/kg	10-131	NA	30
8270D LL	BENZYL ALCOHOL	100-51-6	Solid	29	50.0			ug/kg	35-141	35-141	30
8270D LL	BIPHENYL	92-52-4	Solid	8.2	33.0			ug/kg	19-133		
8270D LL	BIS(1-CHLOROISOPROPYL)ETHER	108-60-1	Solid	15	33.0			ug/kg	32-112	10-144	30
8270D LL	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Solid	14	33.0			ug/kg	38-133	38-133	30
8270D LL	BIS(2-CHLOROTHYL)ETHER	111-44-4	Solid	14	33.0			ug/kg	30-121	30-121	30
8270D LL	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Solid	30	600.0			ug/kg	23-200	10-200	30
8270D LL	BUTYL BENZYL PHTHALATE	85-68-7	Solid	17	170.0			ug/kg	41-117	10-125	30
8270D LL	CAPROLACTAM	105-60-2	Solid	25	33.0			ug/kg	36-111		
8270D LL	CARBAZOLE	86-74-8	Solid	6.6	33.0	16.7	33.0	ug/kg	36-128	10-200	30
8270D LL	CHLOROBENZILATE	510-15-6	Solid	21	33.0			ug/kg	NA	NA	30
8270D LL	CHRYSENE	218-01-9	Solid	2.7	6.6	3.3	6.6	ug/kg	40-120	10-135	30
8270D LL	DIALLATE	2303-16-4	Solid	17	33.0			ug/kg	NA	NA	30
8270D LL	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	2.7	6.6	3.3	6.6	ug/kg	22-146	10-145	30
8270D LL	DIBENZOFURAN	132-64-9	Solid	3	6.6			ug/kg	22-114	10-125	30
8270D LL	DIETHYL PHTHALATE	84-66-2	Solid	18	200.0			ug/kg	28-190	28-190	30
8270D LL	DIMETHOATE	60-51-5	Solid	26	33.0			ug/kg	NA	NA	30
8270D LL	DIMETHYL PHTHALATE	131-11-3	Solid	15	170.0			ug/kg	30-106	17-106	30
8270D LL	DI-N-BUTYL PHTHALATE	84-74-2	Solid	16	500.0			ug/kg	10-200	10-200	30
8270D LL	DI-N-OCTYL PHTHALATE	117-84-0	Solid	29	170.0			ug/kg	39-130	10-141	30
8270D LL	DINOSEB	88-85-7	Solid	9.1	170.0			ug/kg	NA	NA	30
8270D LL	DIPHENYLAMINE	122-39-4	Solid	36	33.0			ug/kg	21-89	21-89	30
8270D LL	DISULFOTON	298-04-4	Solid	22	33.0			ug/kg	NA	NA	30
8270D LL	ETHYL METHANESULFONATE	62-50-0	Solid	8.8	33.0			ug/kg	NA	NA	30
8270D LL	FLUORANTHENE	206-44-0	Solid	4.9	6.6	5.0	6.6	ug/kg	41-110	10-129	30
8270D LL	FLUORENE	86-73-7	Solid	1.7	6.6	3.3	6.6	ug/kg	25-106	10-116	30
8270D LL	HEXACHLOROBENZENE	118-74-1	Solid	2.4	6.6			ug/kg	36-122	10-127	30
8270D LL	HEXACHLOROBUTADIENE	87-68-3	Solid	13	33.0			ug/kg	10-120	10-133	30
8270D LL	HEXACHLOROCYCLOPENTADIENE	77-47-4	Solid	23	33.0			ug/kg	10-104	10-104	30
8270D LL	HEXACHLOROETHANE	67-72-1	Solid	12	33.0			ug/kg	10-110	10-118	30
8270D LL	HEXACHLOROPROPENE	1888-71-7	Solid	11	33.0			ug/kg	NA	NA	30
8270D LL	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	2.9	6.6	3.3	6.6	ug/kg	41-137	10-154	30
8270D LL	ISODRIN	465-73-6	Solid	10	33.0			ug/kg	NA	NA	30
8270D LL	ISOPHORONE	78-59-1	Solid	15	33.0			ug/kg	37-145	37-145	30
8270D LL	ISOSAFROLE	120-58-1	Solid	9.8	33.0			ug/kg	NA	NA	30
8270D LL	METHAPYRILENE	91-80-5	Solid		170.0			ug/kg	NA	NA	30
8270D LL	METHYL METHANESULFONATE	66-27-3	Solid	9.1	33.0			ug/kg	NA	NA	30
8270D LL	METHYL PARATHION	298-00-0	Solid	20	33.0			ug/kg	NA	NA	30
8270D LL	NAPHTHALENE	91-20-3	Solid	2.3	6.6	3.3	6.6	ug/kg	10-115	10-128	30
8270D LL	NITROBENZENE	98-95-3	Solid	2.7	6.6			ug/kg	10-115	10-123	30
8270D LL	N-NITROSODI-N-BUTYLAMINE	924-16-3	Solid	15	33.0			ug/kg	NA	NA	30
8270D LL	N-NITROSODI-N-PROPYLAMINE	621-64-7	Solid	12	33.0			ug/kg	34-115	34-115	30
8270D LL	N-NITROSODIETHYLAMINE	55-18-5	Solid	7.5	33.0			ug/kg	NA	NA	30
8270D LL	N-NITROSODIMETHYLAMINE	62-75-9	Solid	15	33.0			ug/kg	10-115	10-115	30
8270D LL	N-NITROSODIPHENYLAMINE	86-30-6	Solid	11	33.0			ug/kg	48-135	16-178	30
8270D LL	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Solid	12	33.0			ug/kg	NA	NA	30
8270D LL	N-NITROSOMORPHOLINE	59-89-2	Solid	9.2	33.0			ug/kg	NA	NA	30

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8270D LL	N-NITROSOPIPERIDINE	100-75-4	Solid	9.9	33.0			ug/kg	NA	NA	30
8270D LL	N-NITROSOPYRROLIDINE	930-55-2	Solid	9.2	33.0			ug/kg	NA	NA	30
8270D LL	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Solid	9.5	33.0			ug/kg	NA	NA	30
8270D LL	o-TOLUIDINE	95-53-4	Solid	11	33.0			ug/kg	NA	NA	30
8270D LL	PARATHION (ETHYL)	56-38-2	Solid	18	33.0			ug/kg	NA	NA	30
8270D LL	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Solid	9.5	33.0			ug/kg	NA	NA	30
8270D LL	PENTACHLOROBENZENE	608-93-5	Solid	13	33.0			ug/kg	NA	NA	30
8270D LL	PENTACHLOROETHANE	76-01-7	Solid	12	33.0			ug/kg	NA	NA	30
8270D LL	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Solid	17	33.0			ug/kg	NA	NA	30
8270D LL	PENTACHLOROPHENOL	87-86-5	Solid	29	33.0			ug/kg	10-97	10-97	30
8270D LL	PHENACETIN	62-44-2	Solid	20	33.0			ug/kg	NA	NA	30
8270D LL	PHENANTHRENE	85-01-8	Solid	3.5	6.6	3.6	6.6	ug/kg	37-112	10-130	30
8270D LL	PHENOL	108-95-2	Solid	8.8	33.0			ug/kg	14-140	14-120	30
8270D LL	PHORATE	298-02-2	Solid	15	33.0			ug/kg	NA	NA	30
8270D LL	PRONAMIDE	23950-58-5	Solid	17	33.0			ug/kg	NA	NA	30
8270D LL	PYRENE	129-00-0	Solid	3.2	6.6	3.3	6.6	ug/kg	33-124	10-140	30
8270D LL	PYRIDINE	110-86-1	Solid	24	67.0			ug/kg	10-141	10-141	30
8270D LL	SAFROLE	94-59-7	Solid	7.4	33.0			ug/kg	NA	NA	30
8270D LL	SULFOTEPP	3689-24-5	Solid	15	33.0			ug/kg	NA	NA	30
8270D LL	THIONAZIN	297-97-2	Solid	17	33.0			ug/kg	NA	NA	30
8270D LL-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid	NA	NA			ug/kg	19-107	19-107	NA
8270D LL-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid	NA	NA		6.67	ug/kg	10-115	10-115	NA
8270D LL-SURR	2-FLUOROPHENOL-SURR	321-60-8	Solid	NA	NA			ug/kg	10-97	10-97	NA
8270D LL-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid	NA	NA		6.67	ug/kg	10-130	10-130	NA
8270D LL-SURR	PHENOL-D6-SURR	13127-88-3	Solid	NA	NA			ug/kg	17-135	17-135	NA
8270D LL-SURR	P-TERPHENYL-D14-SURR	1718-51-0	Solid	NA	NA		6.67	ug/kg	10-130	10-130	NA
1311/8270D (TCLP)	1,4-DICHLOROBENZENE	106-46-7	Solid/Non-Aq	NA	100			ug/L	same as water		30
1311/8270D (TCLP)	2,4,5-TRICHLOROPHENOL	95-95-4	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	2,4,6-TRICHLOROPHENOL	88-06-2	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	2,4-DINITROTOLUENE	121-14-2	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	2-METHYLPHENOL	95-48-7	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	3+4 METHYLPHENOL	106-44-5 + 108-39	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	HEXACHLOROBENZENE	118-74-1	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	HEXACHLOROBUTADIENE	87-68-3	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	HEXACHLOROETHANE	67-72-1	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	NITROBENZENE	98-95-3	Solid/Non-Aq	NA	100			ug/L			30
1311/8270D (TCLP)	PENTACHLOROPHENOL	87-86-5	Solid/Non-Aq	NA	500			ug/L			30
1311/8270D (TCLP)	PYRIDINE	110-86-1	Solid/Non-Aq	NA	500			ug/L			30
1311/8270D-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid/Non-Aq	NA	NA			%			NA
1311/8270D-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid/Non-Aq	NA	NA			%			NA
1311/8270D-SURR	2-FLUOROPHENOL-SURR	367-12-4	Solid/Non-Aq	NA	NA			%			NA
1311/8270D-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid/Non-Aq	NA	NA			%			NA
1311/8270D-SURR	PHENOL-D6-SURR	13127-88-3	Solid/Non-Aq	NA	NA			%			NA
1311/8270D-SURR	TERPHENYL-D14-SURR	1718-51-0	Solid/Non-Aq	NA	NA			%			NA

ALS/ROCHESTER DATA QUALITY OBJECTIVES											
METHOD	**ANALYTE**	**CAS No.**	**MATRIX**	**MDL**	**MRL**	**LOD**	**LOQ**	**UNITS**	**LCS (%Rec)**	**MS (%Rec)**	**(% RPD)**
8315A	FORMALDEHYDE	50-00-0	Water	6.1	20.0			ug/L	70-134	41-160	30
HPLC	2-CHLOROBENZOIC ACID (o-chlorobenzoic ac	118-91-2	Water	0.0032	0.03			mg/L	70-130	79-113	30
HPLC	2-OXOPROPANOIC ACID (PYRUVIC)	127-17-3	Water	0.016	0.5	0.1	0.2	mg/L	73-122	39-130	30
HPLC	3-CHLOROBENZOIC ACID (m-chlorobenzoic a	535-80-8	Water	0.0031	0.03			mg/L	70-130	73-121	30
HPLC	4-CHLOROBENZOIC ACID (p-chlorobenzoic ac	74-11-3	Water	0.0033	0.03			mg/L	70-130	63-130	30
HPLC	ACETIC ACID	64-19-7	Water	0.56	1.0	2.0	4.0	mg/L	80-130	10-179	30
HPLC	BENZOIC ACID	65-85-0	Water	0.037	0.10			mg/L	70-130	69-131	30
HPLC	BUTYRIC ACID	107-92-6	Water	0.32	2.0	1.0	2.0	mg/L	86-128	39-161	30
HPLC	CHLORENDIC ACID	115-28-6	Water	0.031	0.25			mg/L	70-130	39-174	30
HPLC	FORMIC ACID	64-18-6	Water	0.19	1.0			mg/L	81-114	69-119	30
HPLC	LACTIC ACID	50-12-5	Water	0.14	1.0	1.0	2.0	mg/L	75-125	48-147	30
HPLC	PROPIONIC ACID	79-09-4	Water	0.19	1.0	1.0	2.0	mg/L	63-153	49-162	30
HPLC HQ LL	HYDROQUINONE	123-31-9	Water	NA	5.0			ug/l		52-146	20
METHOD 18	1,1,1,3,3,3-HEXAMETHYLDISILAZANE	999-97-3	Air	NA	0.0039			mg	75-125	70-130	30
METHOD 18	1-METHOXY-2-PROPANOL	107-98-2	Air	NA	0.0046			mg	75-125	70-130	30
METHOD 18	1-METHOXY-2-PROPYLACETATE	108-65-6	Air	NA	0.0048			mg	75-125	70-130	30
METHOD 18	1-METHYL-2-PYRROLIDINONE	872-50-4	Air	NA	0.0052			mg	75-125	70-130	30
METHOD 18	2,2,4-TRIMETHYLPENTANEDIOL-1,3-MONOISOBUTYLRATE	25265-77-4	Air	NA	0.0048			mg	75-125	70-130	30
METHOD 18	2-HEPTANONE	110-43-0	Air	NA	0.0041			mg	75-125	70-130	30
METHOD 18	2-PROPANOL	67-63-0	Air	NA	0.0039			mg	75-125	70-130	30
METHOD 18	3-METHOXY-3-METHYL-1-BUTANOL	56539-66-3	Air	NA	0.0046			mg	75-125	70-130	30
METHOD 18	4-METHYL-2-PENTANOL	108-11-2	Air	NA	0.0040			mg	75-125	70-130	30
METHOD 18	4-METHYL-2-PENTANONE	108-10-1	Air	NA	0.004			mg	75-125	70-130	30
METHOD 18	alpha-TERPINEOL	98-55-5	Air	NA	0.005			mg	75-125	70-130	30
METHOD 18	CYCLOHEXANONE	108-94-1	Air	NA	0.0047			mg	75-125	70-130	30
METHOD 18	DIMETHYL SULFOXIDE (DMSO)	67-68-5	Air	NA	0.0055			mg	75-125	70-130	30
METHOD 18	ETHANOL	64-17-5	Air	NA	0.004			mg	75-125	70-130	30
METHOD 18	ETHYLENE GLYCOL	107-21-1	Air	NA	0.011			mg	75-125	70-130	30
METHOD 18	ETHYL 3-ETHOXYPROPIONATE (EEP)	763-69-9	Air	NA	0.0048			mg	75-125	70-130	30
METHOD 18	ETHYL2-HYDROXYPROPIONATE	97-64-3	Air	NA	0.0052			mg	75-125	70-130	30
METHOD 18	GAMMA-BUTYROLACTONE (GBL)	96-48-0	Air	NA	0.0057			mg	75-125	70-130	30
METHOD 18	N-BUTYL ACETATE	123-86-4	Air	NA	0.0044			mg	75-125	70-130	30
METHOD 18	PROPYLENE GLYCOL	57-55-6	Air	NA	0.01			mg	75-125	70-130	30
METHOD 18	STODDARD SOLVENT	8052-41-3	Air	NA	0.037			mg	75-125	70-130	30

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Field Sampling

DOCUMENT ID: FLD-SAMPLING, REV 4

Approved By: _____ Date: 4/14/2023
Quality Manager, Vicky Collom

Approved By: Kyle Lee _____ Date: 4/14/2023
Supervisor, Kyle Lee

Approved By: _____ Date: 4/14/2023
Laboratory Supervisor, Bill Allgeier

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

TABLE OF CONTENTS

1) Scope and Applicability 3
2) Summary of Procedure 3
3) Definitions 3
4) Health and Safety Warnings 3
5) Cautions 5
6) Interferences 5
7) Personnel Qualifications and Responsibilities 5
8) Sample Collection, Containers, Preservation, and Storage 6
9) Apparatus and Equipment 7
10) Standards and Reagents 7
11) Procedure 8
12) Troubleshooting 19
13) Data Acquisition 19
14) Calculation and Data Reduction Requirements 19
15) Quality Control, Acceptance Criteria, and Corrective Action 19
16) Data Records Management 19
17) Contingencies for Handling Out of Control Data 20
18) Method Performance 20
19) Summary of Changes 20
20) References and Related Documents 20
21) Appendix 20

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

1) Scope and Applicability

1.1 This SOP is based upon standard field sampling practices. See the References and Related Documents section for a listing of references upon which these practices are based.

1.2 This SOP is applicable to the sampling procedures for groundwater, surface water, sewers, landfill leachate, surface soil, soil boring, soil test pits, wipes, drums – liquids and solids, and tanks.

1.3 This SOP is applicable to procedures for the analysis of field parameters including, Temperature, pH, Conductivity, Turbidity. See SMO-pH, GEN-120.1 (conductivity), and SMO-180.1 (turbidity) for more details than are given in this SOP. The meters used are listed here.

2) Summary of Procedure

Not applicable.

3) Definitions

3.1 Bottle Set – a group of bottles or jars to be filled by the field sampling technician. The bottle set, usually provided by the laboratory, must be of the correct size and material needed for the analytical tests. Bottles will contain chemical preservatives if applicable. The term bottle set may be used to describe the bottles for the entire sampling event or for the individual sampling location. Depending upon the analyses required, the set may contain many different bottles of different types with different chemical preservatives. See SMO-BPS for more information regarding bottle sets and the preservation required for each analytical test.

3.2 Chain of Custody – Custody Record – document containing the location ID, time and date of sampling, sampling technician, number of containers and test(s) required. The Chain of Custody will document the date and time of transfer of the sample from each person until (and including) receipt at the lab. Custody Records will be maintained in a different format after receipt by the lab. See SMO-GEN, SMO-ICOC for more information regarding Chain of Custody.

4) Health and Safety Warnings

4.1 Safety of all personnel is of utmost importance when undergoing a sampling project. To ensure that the event is completed safely and thoroughly, a work plan is necessary for each site. Historical data such as previous test results, site records, known waste generation, and health agency reports are reviewed and summarized. This summary aids in defining work objectives, necessary equipment, and personnel requirements. Evaluation of these areas formulate the Site Safety Plan.

4.2 The Site Safety Plan at ALS encompasses many variables which affect the health of the workers while at the sampling location. Chain of command is defined, with each member of the sampling crew responsible for individual tasks in the field. Personnel are trained to handle the specific situations which may occur at each site along with the hazardous properties of each chemical known or suspected to be present.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

4.3 Personal Protective Equipment (PPE) for each task is defined, and guidelines for different levels of protection are set. Decontamination procedures are discussed as well as any site specific medical monitoring requirements. Age, general health and varying tolerances to heat or cold climates for each individual is assessed. Site safety plans are discussed completely by the site safety officer in a meeting with personnel before beginning activities on site. Any problems or concerns can then be addressed and resolved before a potential problem arises in the field.

4.4 All workers at ALS receive required client training before participating in sampling activities at a specific site. In addition to the client's in-house training, all crew members have attended the OSHA 40-hour Hazardous Waste Emergency Response training course and subsequent annual 8-hour refreshers. This course involves site assessment, hazards associated with the work site, and level of personal protection which should be implemented under various conditions found at the site. All crew leaders undergo an additional 8-hour supervisory course which stresses proper procedures for implementing site and work plans at the site.

4.5 ALS also has an in-house safety training program which reinforces the safety requirements as set by OSHA. New crew members are continuously supervised for the first three months of their employment. A trained and qualified crew leader teaches each new member about safety procedures involved in each of our routine (monthly or quarterly) sampling events. After the three-month training period is completed, a new technician is supervised if new jobs arise that requires skill or safety considerations not previously encountered.

4.6 Crew members are also trained in the use of air monitoring equipment. This is extremely important since exposure limits and the choice of PPE is based on the quality of the air in and around the work area in the field. A QRAE II meter or equivalent is normally utilized.

4.7 The QRAE II is used as a continuous monitor of work areas when H2S, combustible gases, CO or oxygen deficiency may be present. When levels of any of these three parameters reach a predetermined level that is set by the operator, an alarm sounds. This meter is used when assessing air quality safety levels in an enclosed area such as a closed room or sewer. It is also used during containerized material sampling when presence of combustible gases is suspected. Crew members will immediately evacuate the area and re-evaluate the situation if any of these alarms are sounded.

4.8 By using air monitoring devices in conjunction with historical data on a site, permissible exposure limits (PELs) can be set for the workers. In turn, these PELs are utilized to provide adequate levels of protection. In addition, these devices identify the presence of a situation which is immediately dangerous to life or health (IDLH). Examples of IDLH situations are less than 19.5% or greater than 25% oxygen in a manhole or an organic concentration exceeding the known Threshold Limit Value – Ceiling (TLV-C).

4.9 TLV-Cs are concentrations which must not be exceeded even instantaneously or short-term. In case of an IDLH situation, crew members are trained to evacuate the area immediately and re-evaluate the situation before attempting any more work. All crew members received the NIOSH "Pocket Guide to Chemical Hazards." This is useful as a quick reference to exposure limits, symptoms of exposure, and medical treatments necessary for various chemicals.

4.10 Levels of protection and personal protective clothing and equipment are chosen to protect the technicians from suffering any injury from contact with chemicals as well as to prevent the cross contamination of other sampling points or off-site areas.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Levels of protection range from "A" to "D" with "D" being PPE necessary for less contaminated area and "A" for highly contaminated areas. These levels are usually modified according to site specific conditions. Once a level of protection is outlined, it may be upgraded it the situation at the site worsens. Downgrading is acceptable only if the site safety officer is contracted and the downgrade is justifiable. A copy of the levels of personal protection, referenced from "OSHA Manual for Hazardous Waste Site Activities, is included.

4.11 Chemicals, reagents and standards must be handled as described in the ALS safety policies, approved methods and in MSDSs where available. The MSDS information for the preservatives are included on the sampling instructions included with each bottle set.

4.12 Sodium Hydroxide (NaOH) is a strong caustic and a severe health and contact hazard. Use nitrile or latex gloves while handling pellets or preparing solutions.

4.13 Hydrochloric acid (HCl), Nitric Acid (HNO3) and Sulfuric acid (H2SO4) are severe health, reactivity, and contact hazard. Always wear gloves and use caution when handling.

4.14 Waste Management and Pollution Prevention

- It is the laboratory's practice to minimize the amount of solvents, acids and reagent used to perform this method wherever feasible. Standards are prepared in volumes consistent with methodology and only the amount needed for routine use is kept on hand. The threat to the environment from solvent and reagents used in this method can be minimized when disposed of properly.
- The laboratory will comply with all Federal, State and local regulations governing waste management, particularly the hazardous waste identification rules and land disposal restrictions as specified in the EH&S Manual.
- Excess, unused sample and testing byproducts are disposed following the procedures in the SOP SMO-SPLDIS.

5) Cautions

Be sure all equipment is cleaned and maintained according to the procedures in this SOP.

6) Interferences

6.1 Contamination by carryover can occur when high level samples immediately precede samples containing significantly lower levels of contamination. Be sure to clean the equipment thoroughly between samples and when possible, sampling should be performed in order from least contaminated locations to areas of progressively higher contamination.

6.2 Significant error can be associated with sampling design and field activities. Be sure all pertinent information is documented including anomalies and other observations.

7) Personnel Qualifications and Responsibilities

- It is the responsibility of the field personnel to follow this SOP.
- Training – see ADM-TRAINING.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

8) Sample Collection, Containers, Preservation, and Storage

8.1 Sample bottles must be of the material suitable, and contain the correct chemical preservatives, for the analytical tests required. The bottle set (see Definitions Section) will be provided with the chemical preservatives in the bottles such that the sampling technician only needs to fill the bottles as described in the procedure. Be sure the location label on the bottles corresponds to the location being sampled and the Chain of Custody.

8.2 Samples must be placed in a cooler and iced immediately.

8.3 The sample coolers are always located within sight of the crew members or secured in a locked vehicle when stored in the field. The sample coolers are transported back to the lab in a company vehicle within 6-8 hours of sampling or shipped via overnight carrier. Upon arrival at the lab, the samples are checked for temperature, preservation, and integrity according to SMO-GEN.

8.4 Samples are stored and transported to the laboratory in coolers which are supplied with ice packs, as requested. These ice packs are required to cool the samples to the required 0-6° C. Care is then taken not to expose vials directly to the ice packs since they are easily broken.

8.5 All sample containers that are used have been purchased and certified clean by the manufacturer. The bottles are labeled with information such as client, site, job number, sample ID number, test parameters, and preservatives. These containers correspond to a particular sample location by matching up the job number and sample ID number of the bottle set. These are both noted on the chain of custody and in the field log or field sheet.

8.6 During all procedures involving purging, sampling and handling of samples, the technicians wear a pair of Nitrile gloves. These gloves will be changed and discarded after every well to avoid cross-contamination of wells. If a crew member inadvertently touches any possible source of contamination when sampling or purging, the gloves will be changed. Not only does this prevent contamination of the samples but is also serves to protect the crew member from coming into contact with any substances which may be present in the sample.

8.7 The Chain of Custody Form is included with each bottle set, along with a Bottle Set Order Form which indicates the bottles included in that order and what parameters each bottle is intended for to aid the sampling team. Upon completion of sampling, the crew member fills out the Chain of Custody in order to properly identify the sample for the laboratory. Time and date of sampling, preservation used, analysis required, filtering status, and bottle set composition are completed on the chain. Any dry wells or partial bottle sets are also noted. The crew member completes all remaining sections on the Chain of Custody and signs his/her name. The form is sealed in a plastic bag and placed in the cooler with the samples for transport back to the laboratory. Each sample location is assigned a sample ID number at the laboratory and is documented on the Chain of Custody.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

9) Apparatus and Equipment

- Portable 2 cycle pumps
- Polyethylene tubing
- Polyethylene disposable 1.66" bailers
- 3/16" diameter polypropylene rope.
- Dedicated Teflon bottom filling bailers are used to obtain samples at some sites
- QED in line filter (0.45u) connected to a QED transfer vessel
- Myron 6P portable pH meter, or equivalent with thermo-compensator probe.
- Myron Ultrameter 6P meter, or equivalent, for Specific Conductivity
- LaMotte 20/20WE Turbidity meter
- A Kemmerer Depth Sampler
- YSI Pro ODO Optical Dissolved Oxygen Meter
- Stainless steel bucket
- Weighted tube
- Composite sampling from sewers should be done with an automatic ISCO sampler
- Coolers, bottle sets, chains of custody,
- Safety equipment – respirators, Tyvek suits, nitrile gloves, safety glasses, hard hats, bug suits, first aid kit, fire extinguisher
- Stainless steel trowel or spoon
- Non-sparking drum wrench
- COLIWASA (Combined Liquid Waste Separator)
- Plastic Drop cloth
- Tank Samplers
- Teledyne/Gurley or similar – rotating element current flow meter
- Solinst and Heron Water Level Indicators
- MiniRAE 2000 HNU
- Bladder Pumps various types –see Procedure Section
- Calibrated bucket to measure purge volumes.
- QED MP50 Micro Purge Pump
- Waterra HydroLift II
- Geopump II Peristaltic Pump

10) Standards and Reagents

Reagents and standards are obtained from the SMO or WetChem group and are documented in the laboratory. The standards and reagents for the field analyses are listed in the lab SOPs.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

11) Procedure

11.1 GROUNDWATER SAMPLING

Groundwater sampling protocols vary from site to site. ALS field technicians are familiar with many methods of sampling based on different site requirements. The purging and sampling procedures detailed in this document are basic and can be modified to comply with any accepted sampling method including, but not limited to the following:

- Wattera Inertial Sampling Devices
- Geopump Bladder Pumps
- Geomons Bladder Pumps
- QED Bladder Pumps
- QED Micro Purge Bladder Pumps
- Grundfos Redi-Flow II Submersible Pumping Systems
- Low Flow MNA Sampling (utilizing systems listed above)
- Geo Pump Variable Speed Peristaltic Pumps

11.1.1 Well Observations

11.1.1.1 Upon arrival at each well, the sampling team will make observations as to the condition of the well and any outside factors which may affect it. Well labels, locks, surface seal integrity, and other area conditions which may influence sampling are noted. These observations as well as date, time, weather, and crew members present are noted in the field log.

11.1.1.2 If required by the site safety plan, a multi-gas meter will be used to monitor the surrounding air for total concentration of organic or toxic gases present. Both “breathing zone” and “headspace” readings are obtained and recorded in the field log. The breathing zone is the air near the well that comes into contact with sampling team members under ordinary sampling conditions. The headspace is the region just inside the well casing itself. These readings will then be used to determine the level of protection necessary for the field crew to proceed with the sampling event. Details on selection of protection are listed in the site safety section.

11.1.2 Well Measurements

11.1.2.1 The first step in preparation for purging is to determine the volume of water within the well. Depth to bottom is measured by a Heron electronic water level indicator. The indicator is slowly lowered into each well. Once contact with bottom has been made, the tape is placed against the side of the inner riser and read to the nearest 0.01 foot. If no riser is present, this depth measurement will be taken from the top of the protective outer casing.

11.1.2.2 Static water level (depth to water) is also taken by using a Heron water level indicator. After being decontaminated, the probe is lowered into the well casing until contact with water occurs. This contact will be signaled by a buzzer/light alarm on the take up reel

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

of the water level indicator. Depth to water is then measured and recorded, taking care to measure from the same reference point on the casing or riser. If no reference point is marked on the riser or casing, measurement will be taken from the North side of the riser.

11.1.3 NAPL Detection

11.1.3.1 Detection of immiscible layers in wells may occur if requested by the client with the initiation of this sampling protocol. Normally, this is only used if there has been history of NAPL at the site prior to ALS sampling. An interface probe will be used to determine the presence of no-aqueous phase liquid or “floaters” or “sinkers” within the well. Floaters are relatively insoluble organic liquids which are less dense than water and tend to spread across the potentiometric surface. Sinkers are relatively insoluble organic liquids which are denser than water and tend to migrate vertically in the water column.

11.1.3.2 The interface probe is capable of measuring oil layers less than 0.01’ in thickness. This probe is sensitive to conductivity and differentiates between layers of oil and water. When the probe comes into contact with water, an oscillating tone registers; for hydrocarbon a solid tone is heard. Measurements are taken and recorded in the same manner as the static water level. When monitoring for immiscible layers, this procedure will take place as soon as the crew arrives.

11.1.4 Equipment Preparation

11.1.4.1 1.66” diameter disposable polyethylene bailers may be used to purge wells. Their use ensures no cross contamination occurs between wells as may happen with non-dedicated bailers.

11.1.4.2 Electric submersible pumps may also be used to purge deeper wells. These pumps are attached to disposable polyethylene tubing, Upon completion of purging the well, the pump is retrieved and the tubing is discarded or bagged and saved for dedicated reuse at that location during the next quarter. Tubing may sometimes be stored in the well between sampling events. Before using the pump at the next well location, the pump and cables are then decontaminated according to site decontamination specifications.

11.1.5 Purging

11.1.5.1 Disposable bailers are fastened to a new 3/16” diameter polypropylene rope and lowered into the well, taking care not to lower the bailer too quickly or to agitate the water excessively. The bailer, once filled, is raised to the surface and its contents are poured into a calibrated bucket to record purge volume and then discarded on the ground, making sure that no purge water pools by the base of the well. This process is then repeated until purging is complete. If requested by the client, this purge water may be containerized for disposal into a treatment system. The rope is then cut from the bailer and discarded. The disposable bailer is bagged and disposed of properly prior to leaving the sampling site. Purge observations and actual purge volume will be noted in the

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

field log.

11.1.5.2 For wells that are deeper or have high purge volumes, a submersible pump may be used to remove purge water. Regardless of the purge device, all purging is completed using a chase-down method to remove water from the top of the water column downward. The pump or tubing is lowered as the water level is drawn down to remove all stagnant water from each well.

11.1.6 Sample Collection

11.1.6.1 Sampling of wells will be performed within a 24-hour period from the time of purge. This period allows wells to recharge to a level where there is adequate sample volume for each parameter required. In cases where recharge is sufficient on the day of purging, sampling may take place on that day. Whenever possible, wells are sampled in the same order as they are purged, allowing a similar elapsed time to sample for each well. If a well has not recharged sufficiently to obtain a representative sample within 24 hours, it is considered a dry will and is noted as dry on the chain of custody and the field logs.

11.1.6.2 Dedicated Teflon, stainless steel bottom filling bailers, or disposable polyethylene bailers are used to obtain samples depending on site protocol. These bailers are sometimes stored in the well casing itself and used only for the well in which they are stored. If a dedicated bailer is not required, disposable polyethylene bailer is normally utilized to obtain the sample.

11.1.6.3 The sample bailer is connected to a 3/16" polyethylene rope. The bailer is then slowly lowered into the well, taking care not to agitate the water in any manner which would cause the loss of volatiles from the sample. The bailer is lowered into the water column until it has filled completely. It is then raised to the surface and the bottle is filled. All samples are collected in order of the parameters' volatilization sensitivity (see Table 1). A recommended list is provided each project.

11.1.6.4 For all samples, but particularly VOAs, the sample container is tipped at an angle and the sample water is gently poured down the neck of the container until full. This minimizes both agitation of sample and contact of the sample with surrounding atmosphere. The sample bottles are then capped and placed in a cooler. When vials are filled, a check for air bubbles is made after capping. This is done by inverting the vial and tapping gently. If air bubbles appear, the cap is removed, more water is added, and the process is repeated. This procedure is then repeated until all aliquots have been filled.

11.1.6.5 When the client requests analysis of dissolved metals, field filtering is performed within 3 hours of sample collection using a QED disposable in line filter (0.45u) connected to a QED transfer vessel. Different sites may have different criterion for filtering based on turbidity, therefore client confirmation on field filtering should be obtained on a case by case basis. The unfiltered sample is placed into the decontaminated transfer vessel and the vessel is then

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

pressurized to force the sample through the filter and into the dissolved metals bottle. The transfer vessel is then decontaminated before use at the next well location. A new QED filter is used for every sample that is filtered.

11.1.7 FIELD PARAMETERS

11.1.7.1 Immediately after all sampling of a well has been completed (collected according to the order in Table 1), use the field bottle to make field measurements. The temperature is measured using a thermo-compensator attached to a Myron 6P portable pH meter, or equivalent. The themo-compensators are calibrated versus an NBS calibrated lab thermometer. Sample is poured into the reservoir of the Myron and once the temperature reading has stabilized, it is recorded in the field logs or field sheets. All temperatures are recorded in degrees Celsius unless requested by the client.

11.1.7.2 The pH is taken using a Myron 6P portable pH meter, or equivalent. This meter is calibrated using 4.0, 7.0, and 10.0 buffers. The calibrations are performed every 4-hours in the field and are recorded in the field logs or field sheets. If the expected pH of the sample is above 7.0, the meter will be calibrated using the 7.0 buffer and 10.0 buffer, and checking with the 4.0 buffer, in that order. If the pH is expected to be below 7.0, the meter is calibrated using the7.0 buffer and 4.0 buffer, and checked with the 10.0 buffer, in that order. All buffers are replaced daily. If a combination pH/temperature meter is used, pH and temperature will be taken simultaneously because this meter is equipped with both a pH and thermo-compensator probe. The pH is then recorded in the field log or field sheet. During calibration, pH meter readings must lock in within 0.1 pH unit of the standard used, or the meter will be recalibrated or replaced.

11.1.7.3 Specific conductivity is measured using a Myron Ultrameter 6P, or equivalent. The meter is calibrated every four hours using a 1413 umhos/cm standard of Potassium Iodide (KI). Readings are recorded in the field log or field sheet. If the meter does not calibrate with in ± 5% of the standard value, it will be recalibrated or replaced. Meters are rinsed with DI water before and after each reading to avoid any erroneous measurements.

11.1.7.4 Turbidity will be measured using a LaMotte 20/20WE turbidity meter, or equivalent. The meter is calibrated every four hours using 0 and 10 NTU standards.

11.1.7.5 After field measurements are complete, the field technician will also note the color, clarity, and other observable physical characteristics of the sample.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

11.1.8 EQUIPMENT DECONTAMINATION

11.1.8.1 Sampling equipment which comes into contact with the well water and is not dedicated must be decontaminated both before and after use on every well. Non-dedicated purge or sample bailers are generally decontaminated at the ALS laboratory by field crew members. The bailers are thoroughly disassembled for cleaning purposes. Equipment is decontaminated using the following procedure:

- DI rinse
- Low phosphate detergent wash
- DI rinse, three times

11.1.8.2 The equipment is allowed to dry completely and is placed in a plastic bag for storage or transport to the site. These decontamination procedures may be modified by the client at the initiation of work at a new site.

11.1.8.3 Equipment requiring cleaning in the field will be decontaminated using the same steps as above, with care being taken to collect wash water from cleaning for later disposal if required by site protocol. Among equipment included for this method of decontamination are static water level indicator, interface probe, and any field decontaminated bailers.

11.1.8.4 ALS technicians normally prefer the use of as much disposable, single use equipment as possible versus utilizing equipment that requires decontamination between wells. Use of disposable equipment greatly decreases the possibility of cross-contamination between sample points.

11.2 SURFACE WATER SAMPLING

11.2.1 Streams

11.2.1.1 When obtaining a stream sample, the goal is not only to obtain the most representative sample possible, but to cause as little disturbance to the sediment and banks of the stream as possible. This reduces the chance of releasing any contaminants in the sediment to areas downstream. Upon entering the stream, the technician must have already located his or her sampling point and will approach the point from downstream direction. This assures that the representative stream water will be collected and does not disturb the sediment from upstream of the sampling point. If a series of sampling points are positioned along the same stream the technician will start with the point farthest downstream and work upstream for subsequent samples.

11.2.1.2 Samples will be taken from the center of the stream at mid-depth. This is accomplished by slowly lowering the sample container into the water until mid-depth is reached. Depth of water is first measured and recorded along with observations of stream conditions in the field log or field sheets. The sample container is then uncapped with the mouth of the container facing upstream. The container is allowed to fill and is then capped underwater if

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

possible. This process is repeated with each sample container until the bottle set is complete. If the stream depth is marginal, the technician should make sure that no bottom sediments are included during the filling of bottles.

11.2.1.3 In situations where the depth, flow rate, or substrate of the stream prevents safe sampling by the above method, an alternate technique may be utilized. A pond sampling device which utilizes an extension handle can be safely used from the stream bank. At the end of this handle is a plate where a liter amber or plastic bottle can be attached. The bottle is opened and dipped into the stream using the pond sampler. The water is then distributed to the bottle set. This step is then repeated until the bottle set is complete. The bottle is then released from the plate and is discarded. If addition stream points are sampled, a new amber glass or plastic bottle will be used for each point.

11.2.1.4 In some cases, stream depth is too shallow to obtain a representative sample. In this event, an alternate point where deeper water exists should be located. If no deeper area is located, a depression may be dug by the sampler so that sufficient sample volume may form. This depression must be formed far enough in advance of sampling so that any sediment stirred up has a chance to settle or migrate downstream. This procedure will only be utilized after the client is notified and permission is given to initiate sampling in this manner.

11.2.2 Ponds, Lakes, Rivers

11.2.2.1 In most cases sampling will require the use of the sturdy boat appropriate for the size of the body of water to be sampled. Since safety should be of the utmost concern, the personnel should have adequate floatation garments on when sampling from a boat. Two crew members will always be present when sampling from a boat. One crew member performs the actual sampling while the other navigates, takes notes, and stabilizes the boat. Under no circumstances should both crew members try to obtain samples at once. This may lead to the boat drifting off course or capsizing. In some cases, if the pond or area to be sample is known to contain large amounts of chemicals, or if the area is partially frozen over, this method of sampling may be altered to insure the safety of the sampling crew.

11.2.2.2 In some river sampling, a field technician may be able to wade into the river to obtain a sample. In this case the technician should be cautious and note any slippery rocks, current changes or drop offs which could lead to a fall.

11.2.2.3 During all times the technician will be tied off at the shoreline by another crew member. In case of a fall, the person can then be pulled to safety. If at any time the sampling appears to be too risky or is proper floatation equipment or vessel is not available, the sampling should be reevaluated.

11.2.2.4 Shallow rivers can be sampled in the same manner as the stream sampling, but ponds, larger rivers, and lakes require a different

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

technique to obtain a representative sample. While in general, streams are mixing as they flow, larger bodies of water can become thermally or chemically stratified. This requires discreet sampling in different areas of each stratum to obtain an accurate sample.

11.2.2.5 A Kemmerer Depth Sampler is similar to a Van Dorn except that it suspended vertically. The Kemmerer is also available in either stainless steel or Teflon. As with the Van Dorn, a messenger is sent down the attached rope and trips the end seals on the cylinder, thus holding a discreet sample inside. Due to its construction, the Kemmerer is preferred for sampling liquids with strong acids, bases, or solvents.

11.2.2.6 If it is necessary to measure DO in the field, or if a flow-through cell is being used for low flow MNA sampling, a YSI Pro ODO Optical Dissolved Oxygen Meter or equivalent Dissolved Oxygen Meter is normally utilized. Alternately, a LaMotte Winkler Method titration kit may be used.

11.3 Sewer Sampling

11.3.1 Representative samples from sewer pipes should be taken from manholes where the sewer line is straight and where no laterals are entering at or above invert. The sewer, where possible, should not have excessive sediment and be well mixed.

11.3.2 Grab sampling can be done from the surface with a small stainless-steel bucket and rope. The bucket should be small enough size to fit in the sewer pipe and not make contact with the pipe walls or invert. In no case should the pail be allowed to carry downstream of the manhole. The first sampling with the pail is discarded to rinse the pail. Samples are transferred to the bottles.

11.3.3 Disposable gloves should be worn when sampling and transferring the wastewater. Grab sampling may also be done with a peristaltic style pump. A weighted tube is lowered to above the invert and the pump operated to rinse the line three times (repetitive forward the reverse motion). The pump is then operated to fill aliquot bottles directly. Care should be taken to not leave the pump off for more than a few seconds between aliquots to avoid settling of solids in the tube line. Tubing should be a minimum of 3/8" I.D. and made of polyethylene or Teflon material. The latter is necessary when sampling for organic parameters. Certain parameters such as O/G and Volatiles will not be taken via peristaltic pump use due to this method being incompatible with obtaining a representative sample.

11.3.4 Composite sampling from sewers should be done with an automatic ISCO sampler. The appropriate tubing should be placed in the waste stream to minimize the intake of sediment. An appropriately sized stainless steel or other nontoxic weight should be attached at the end of the tubing to maintain the intake in a well-mixed section of the sewer.

11.3.5 For time proportional composites, the frequency of sampling should match the variation anticipated in wastewater concentration and flow. A minimum of every hour should be utilized. For industrialized effluents a frequency between 15 and 30 minutes is generally representative, but the client should be consulted to determine if the plant processes dictate a higher frequency. The sample volume should be such that the total sample collected over the composite period is 2-3 gallons. The composite container should be

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

appropriate for the analysis intended and kept at or near 4˚C when preservation by cooling is necessary. Compositing proportional to flow may be required where flow rates vary considerably. Set the samples to collect samples with volume of wastewater passing such that the frequency of the samples does not exceed one hour.

11.3.6 Discrete sampling over an extended period of time can be done automatically with automatic ISCO samplers. 500mL polyethylene bottles are normally used, and the number of bottles filled per sampling set at 1-4 depending on the aliquot's needs. Preservatives should be added to the bottles before sampling where possible.

11.4 LEACHATE SAMPLING

11.4.1 Leachate collection manholes are the most commonly sampled source of leachate. Due to the nature of the leachate, care must be taken when removing the manhole cover or lid. Technicians will remain upwind and perform monitoring of gases to determine the level of protection necessary to undertake the sampling.

11.4.2 Depth to bottom of the manhole and depth to leachate will be taken from a reliable reference point and documented. Liquid levels in the leachate tanks vary greatly due to daily or weekly removal of leachate, so the level of leachate in the tank is important. The technician will consult with the client to discuss times and depths at which samples can be taken. It is important not to sample when the leachate level is too low because a non-representative sample may be obtained.

11.4.3 A dedicated bottom loading stainless steel bailer or a baked amber bottle is lowered into the leachate manhole or tank, making sure that it does not come near the bottom of the manhole. Raise the sampling container out of the manhole and distribute the sample contents into the bottle set in the order of the parameter's volatilization sensitivity. When sampling is complete, the rope is cut off and is discarded. The bailer is double wrapped in plastic bags for disposal prior to leaving the site. The manhole or tank cover is then replaced.

11.4.4 Leachate seeps are often sampled and are probably the most time-consuming leachate sampling due to the small amount of leachate that is usually available for collection. Once a seep sampling point has been established, the technician must try to locate a ponded area in which to obtain a sample. If no ponding is evident, the technician may dig a small depression below the seep and allow it to fill with leachate. The client will be informed at all times before this man-made depression is sampled. If a client requests a leachate sample, the dimensions and procedures for making the depression will be noted in the field log or field sheet. A small bottle or a disposable glass pipette may be used to collect very small amounts to transfer them to the bottle sets. All observations and sampling methods are noted in the field log or field sheet.

11.4.5 All equipment used for sampling leachate should be labeled "for leachate sampling only" and any disposable equipment should be disposed of promptly and properly. One technician should do the sampling; the other technician should remove the bottles from the coolers and open them for filling. Holding of sample containers by a second technician allows a neater pouring job into the sample container with less spillage. This is of importance

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

when the samples arrive at the lab. This decreases the chance of volatilization in the sample receipt area of the laboratory and contamination of the area due to spilled leachate within each cooler.

11.5 SOIL SAMPLING

11.5.1 SURFACE SOIL SAMPLING –

11.5.1.1 This consists of obtaining a sample of soil from 0-6" depth range. This method is used for all samples except for soil volatiles, which are covered in the next section. This is usually accomplished by the use of a stainless-steel trowel or spoon. Any debris covering the area to be sampled such as rocks, grass, and twigs will first be removed. The trowel or spoon will then be used to collect the desired amount of soil. This sample will be transferred directly to the 16 or 32 ounce wide-mouth glass sample jar. No large chunks of rocks should be included in the sample.

11.5.1.2 When collecting soil for Volatile Organic Compound (VOC) testing, EPA SW 846 Method 5035 will be utilized. See instructions in Appendix.

11.5.2 BORINGS

11.5.2.1 ALS does not have or provide equipment for deep borings (>1 foot in depth). Clients will normally have to contract additional services in order to obtain these deeper samples. ALS technicians can be on site during subcontracted deep borings/excavations to properly obtain and containerize these samples for analysis.

11.5.3 TEST PITS

11.5.3.1 Test pits are used in certain situations to retrieve soil samples from particular depths. The client will provide a backhoe on site to accomplish the test pit excavation. Field personnel will carefully identify the integrity of the walls of the test pit to avoid possible caving in of the sides. Air monitoring with a trace gas analyzer will be done at all times before sampling to assure proper level of protection. If the test pit is less than three feet in depth, the technician may enter the pit itself to obtain a sample. If a greater depth is encountered, the sample from the desired depth must be taken directly from the bucket of the backhoe or from the excavated soil pile itself. Under no circumstances will the technician enter a test pit deeper than three feet. If air readings or established background on the site indicate a high level of contamination, the sampling will take place solely from excavated material from the bucket, regardless of pit depth.

11.5.3.2 Samples will be collected with the use of a decontaminated stainless-steel trowel or spoon. The soil will be disturbed as little as possible and transferred to the sample container as quickly as possible and capped immediately. The technician shall record the depth of the pit, depth of the sample, location of the sample, appearance and any other pertinent observations.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

11.6 DRUM SAMPLING

Prior to sampling any containerized material, the technician must locate as much background data as possible. Areas of concern are the age of the container, condition of the container, known or suspected contents, health effects of the contents, and any other historical information available. The client should be the primary source for this information, but visual observation by the technician is equally essential. The information encountered while opening the sampling the contents of the container, and any site-related physical hazards associated with the sampling event must be documented in the field log or field sheets. Clients must also label drums or designate a code to be written on the drums to ensure proper sample identification.

11.6.1 Liquids

11.6.1.1 After background information is complete, the technician will proceed with the opening of the drums. Drums will be opened with a non-sparking drum wrench. If a drum appears to be bulging outward, a sign of built-up pressure inside the drum, it will not be opened by field personnel. Drums which are badly deteriorated should not be opened to prevent possible rupturing of already weakened walls. In both of these cases, a technician must contact the client, and the client must arrange for the drums to be opened. Only after the drums are opened will the technician continue sampling.

11.6.1.2 A multi gas meter will be used to assess the quantity of gases which may affect the health and safety of the field crew members. Readings will be taken in the breathing zone and directly over the bung of the drum. Gas readings will determine appropriate safety measures to be utilized by the field crew during sampling activities.

11.6.1.3 The drums are ready to be sampled as soon as all safety precautions have been met. A disposable glass COLIWASA (Combined Liquid Waste Sampler) is generally used to obtain a liquid sample from a drum. This consists of a hollow tube approximately 4´ long and ¾” in diameter. Inside this tube is a small glass rod with a beaded end. This end fits tightly in the base of the tube, which is tapered. When the glass rod is raised, the bottom opening is uncovered, and sample can flow into the tube. Once filled, the inner rod is lowered, trapping the sample inside. The sample is then carefully transferred to the bottle set. Crew members will note the depth of the liquid in the drum, appearance and any sign of layering.

11.6.1.4 During this sampling, appropriate protective gear will be worn. If vented hoods are available at a client’s site, drums should be sampled while under the running vented hood area. This will greatly decrease the chance of any contact with gases or fumes produced be these drum contents.

11.6.1.5 The client will be responsible for the disposal of any contaminated equipment, clothing, or protective plastic sheeting. Clients will be contacted before sampling commences to coordinate the disposal details.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

11.6.2 Solids

Following the removal of the bung or top of the drum, a split spoon sampler, trowel, or stainless-steel spoon will be utilized depending upon the volume and consistency of the material to be sampled. Once and adequate sample is removed, it will be transferred to a sample container as quickly as possible to prevent any volatilization from the sample. Any excess material from the drum will be replaced as soon as the sampling is complete. Observations as to sample appearance, equipment used, and drum identification numbers will be documented in the field log or field sheets.

11.7 TANKS

11.7.1 Following the same background checks and safety precautions as with drum sampling, the technicians will proceed with sample collection. Tank samples must always be taken from the top of the tank, if possible, for two reasons. If a valve is available on the bottom of the tank such as in the case of a tanker truck, obtaining a sample from it will lead to an unrepresentative sample. The bottom level of the tank will be the only section sampled and if layering is present above that level, it will be undetected. In some cases, the valve may be deteriorated to such an extent that once opened it cannot be closed again. This could lead to leakage or a serious spill. If no top opening is apparent, the technician should ask the client for instructions or alternate access to the sample. ALS requests that all tank valves and/or ports be opened and closed by the client.

11.7.2 Sampling will consist of a cross section of the entire depth of the tank to obtain a true representative sample. Methods of sampling include the use of COLIWASAs or tank samplers. Tank samplers are similar in design to a COLIWASA but are 10-15´ long and approximately 1” in diameter. A check valve device is fitted at the bottom of the device. This valve can be opened or closed to obtain or release the sample. The crew members must ensure that samples from all depths of the tank are included in the sample in equal proportions.

11.7.3 If layering is visibly evident in the sample, the client will be informed immediately. The layers can be analyzed separately in the lab if requested. The field technicians will obtain bulk volume of the entire depth of liquid in the tank or drum. These bulk samples will be returned to the lab and laboratory personnel will separate each individual layer for analysis.

11.8 PFAS Sampling

11.8.1 All PFAS sampling events will be done in accordance with the most up to date guidance directed by NYSDEC Part 375 Remedial Programs. This includes QA/QC procedures, approved sampling materials, decontamination procedures, and approved PPE. The standard sampling procedures outlined in 11.1 through 11.7 still apply to all sampling events, but field personnel must make proper equipment and PPE modifications to comply with NYSDEC guidelines

11.8.2 Each field technician will receive training and a physical copy of the most up to date NYSDEC PFAS sampling guidelines as they become available. Prior to any PFAS sampling event the field manager will hold a daily tailgate meeting with the team to ensure all necessary modifications have been made.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

12) Troubleshooting

None listed

13) Data Acquisition

Field measurements are recorded in field logs. A copy is made and given to the project manager or reporting group for manual entry into LIMS.

14) Calculation and Data Reduction Requirements

- Accuracy and Precision of the QC samples is calculated as per the QAM.
- Calculations for the field analyses are listed in the laboratory SOPs.

15) Quality Control, Acceptance Criteria, and Corrective Action

15.1 A program of quality assurance for field activities is an integral part of the overall laboratory Quality Control Program. The QA/QC Officer, in conjunction with the Field Supervisor, establishes the minimal field quality control data that is generated and the system checks that are used to ensure representative sampling.

15.2 The generation of blanks and duplicates for checking the cleanliness of sampling equipment and/or containers is the most important requirement of the field staff. Field blanks are produced by filling container sets with organic-free deionized water provides data on the condition of the sampling containers. Trip blank data monitors whether the ambient air in the shipping containers or in the vicinity of the collection of samples is contaminating the samples or the DI rinse waters. The trip blanks are vials of organic-free deionized water that are made in the laboratory and carried with the sampling equipment throughout the field event.

15.3 Equipment blanks are a check on the cleanliness of the sampling equipment. Organic-free deionized water is poured over the equipment and captured directly into a set of sample containers.

15.4 Duplicate samples are the last check made and monitor the ability of the field crew to reproduce samples. Consistency of sampling is necessary to avoid the introduction of non-source variables on the results.

15.5 Calibration logs are the second essential ingredient in the field quality assurance program. Portable equipment meters, depth level indicators, current meters, and dissolved probes are subject to physical abuse and more likely to change calibration. As a minimum requirement, this equipment is calibrated before leaving the laboratory and as often as practical during the sampling event. For example, at well fields this translates to every 2-3-hours; for streams utilizing boats and vans, every hour; and for laboratory trailers, every 4-hours.

15.6 The third essential item includes training and audits. Field crews should generally work in teams and take advantage of this team structure to facilitate the training of new personnel and to upgrade the training of experienced personnel. Each crew should be managed by a supervisor whose primary responsibility is training and following up the training with frequent audits.

16) Data Records Management

Records are maintained according to ADM-ARCH.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

17) Contingencies for Handling Out of Control Data

If data is produced that is out of control and is not to be re-analyzed due to sample volume restrictions, holding times, or QC controls cannot be met, flag and narrate appropriately.

18) Method Performance

The method performance of the field analyses is listed in the laboratory SOPs.

19) Summary of Changes

- Replaced DO meter information
- Added QED MP50 Micro Purge Pump
- Added Waterra HydroLift II
- Added Geopump II Peristaltic Pump
- Added section for PFAS sampling.

20) References and Related Documents

- "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," SW-846, 3rd edition, December 1996. Chapters 3 and 11.
- "Supplemental Guidelines for Planning and Operations of Monitoring Wells at Class 1 Injection Facilities," EPA Region V, February 1991.
- "Field Sampling Procedures Manual", New Jersey Department of Environmental Protection, August 2005.
- "Sampling, Analysis, and Assessment of Per – And Polyfluoroalkyl Substances, under (PFAS) NYSDEC's part 375 Remedial Programs, November 2022, listed in section 20

21) Appendix

- Table 1 – Collection Priority According to Volatilization Sensitivity
- Examples of Site Safety Requirements
- Terra Core Sampling Instructions

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Table 1

COLLECTION PRIORITY ACCORDING TO VOLATILIZATION SENSITIVITY FOR COMMON GROUNDWATER PARAMETERS

1. Volatile Organics (VOA)
2. Field Parameters (Temperature, pH, conductivity)
3. Purgeable Organic Carbon (POC)
4. Purgeable Organic Halogens (POX)
5. Total Organic Halogens (TOX)
6. Total Organic Carbon (TOC)
7. Extractable Organics
8. Total Metals
9. Dissolved Metals
10. Phenols
11. Cyanide
12. Sulfate and Chloride
13. Turbidity
14. Nitrate and Ammonia
15. Radionuclides

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Attachment

EXAMPLE OF SITE SAFETY REQUIREMENTS

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

EXAMPLE OF SITE SAFETY REQUIREMENTS

All sampling team members should have received the required safety training before participating in any sampling activities at the sampling site including the mandatory 40-hour OSHA safety course and annual 8-hour refresher thereafter. In addition, the site field managers should have completed the 8-hour OSHA supervisor training course. Team members should also have received information on the properties and health effects of any substance presumed or known to be present in the area to be sampled.

The sampling crew should always check their protective equipment before leaving for the site. Any worn parts, used cartridges, or missing equipment should be replaced or corrected before leaving. If the crew arrives on site and does not have the proper equipment, they will return to the laboratory to make some provisions to procure the equipment before initiating the sampling event.

When arriving at a well, crew members will park vehicles downwind of the well approximately 25 feet. Wells will be opened while crew members are positioned upwind to avoid as much contact with any gases which may be present upon opening of the well. The well breathing zone and headspace will be monitored by a QRAE II gas meter upon opening. If QRAE II readings detect the presence of organics in the breathing zone at levels from 1-5ppm above background levels, a full-face air purifying respirator with organic/acid gas cartridges will be worn. If a reading from 1-5ppm above background levels is detected in the well headspace but not the breathing zone, a full face mask will be worn. The breathing zone will be monitored with the QRAE II during the purging to determine if a higher level of protection is necessary due to volatilization of gases during purging process.

In the event that levels of organics in the breathing zone near or exceed the limitations of the full-face respirator, a self-contained breathing apparatus or a supplied air respirator (level B protection) will be necessary to continue the sampling operation.

Cartridges will be changed every day in the APRs but must be changed earlier if any odor is detected during use. As an additional safety procedure, APRs will be worn at any time that any strong odor is detected near the well, even if the air monitoring equipment registers background levels.

Tyvek protective coveralls will be worn during all phases of the sampling event if any evidence of organics above background levels is present in the air at the well head. “Saranex” or saran coated tyveks will be worn if the concentration of organics is deemed to be high enough to permeate through normal protective clothing at too high a rate.

Safety glasses will be worn at all times when on site. If any overhead hazard is apparent, a hard hat will also be worn. Work shoes or boots will always be worn when on site. Sneakers are not permitted on site. Gasoline for pumps will be contained in safety gas cans.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Contact your local ALS Technical Sales Representative for more information.

5035A Soil Sampling for VOCs, BTEX/MTBE, GRO 8015 & TPH-TX 1005

EPA SW-846 Sampling Method 5035A reduces the amount of disturbance when collecting solid/soil samples for the analysis of Volatile Organic Compounds (VOCs) by 8260, BTEX/MTBE by 8021, GRO 8015 &TPH-TX 1005. A Terra Core™ Sampling Kit is provided for each sample being collected, and allows for a 5 gram sample aliquot for VOCs or BTEX/MTBE or GRO and a 10 gram sample aliquot for TPH-TX 1005 (collect and extrude twice) to be collected and immediately extruded into a pre-weighed, pre-preserved 40 mL VOA vial.

Terra Core™ Sample Containers

VOCs 8260 or BTEX/MTBE 8021 or GRO 8015:

- 1 - Terra Core™ Sampler that collects a 5 gram aliquot
- 1 - Methanol-preserved 40 mL VOA vial for high level analysis
- 2 - Neat 40 mL VOA vials containing stir bars for undiluted/low-level analysis
- 1 - 60 gram sample jar for percent moisture analysis or screening

TPH-TX 1005:

- 2 - Neat 40 mL VOA vials (without stir bars)

Scan the QR code or visit
WWW.ALSGLOBAL.COM

Continued on reverse side...

RIGHT SOLUTIONS, RIGHT PARTNER.

If this SOP is accessed electronically outside of the ALS Rochester Intranet website, it is an uncontrolled-copy and will not be updated.

Continued from reverse side...

Collecting a Sample Using the Terra Core™ Kit

Step 1: With the plunger seated in the handle, push the Terra CoreTM Sampler into freshly exposed soil until the sample chamber is filled. A filled chamber will deliver approximately 5 grams of soil.

Step 2: Wipe all soil or debris from the outside of the Terra CoreTM Sampler. The soil plug should be flush with the mouth of the sampler. Remove any excess soil that extends beyond the mouth of the sampler.

Step 3: Rotate the plunger that was seated in the handle top 90° until it is aligned with the slots in the body. Place the mouth of the sampler into the 40 mL VOA vials listed in these instructions and extrude the sample by pushing the plunger down.Quickly place the lid back on the 40 mL VOA vial.

Note: When capping the 40 mL VOA vial, be sure to remove any soil or debris from the top and/or threads of the vial.

Step 4: Collect sample for the 60 gram jar using the bulk soil collection technique.

Holding times:

Samples collected via 5035A must be submitted to the laboratory as soon as possible and frozen **within 48 hours of collection**.

Special labeling instructions:

Each Terra Core™ Sampling Kit is a foam container that includes the bottles listed in these instructions. Each bottle is pre-weighed and pre-labeled, and it is imperative that the weight is legible upon receipt at the laboratory. In addition, please complete each pre-labeled vial. **DO NOT** affix an additional label to the vials as it will alter the tared weight. A large label will be affixed to the outside of the ziplock bag that has a space for your Sample ID. Please complete this portion of the label.

QA/QC Requirements:

For each sampling event (or every 20 samples), please collect triple volume (three Terra Core™ Sampling Kits) for one sample location. This is needed for internal laboratory QA/QC (MS/MSD).

Special TPH-TX 1005 sampling instructions:

If you are collecting soil samples for Total Petroleum Hydrocarbons (TPH-TX 1005) using Method 5035A, you will receive two pre-weighed neat 40 mL VOA vials (without stir bars) contained in the Terra Core™ Sampling Kit (or enclosed in a separate bubble bag if no other 5035 parameters are requested). During sample collection, please collect 10 grams of sample (or extrude twice) and place into the vials.

Contact us now for more information!

Scan the QR code or visit
WWW.ALSGLOBAL.COM

Kelsey Foley

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

Education

Pennsylvania State University, Erie, PA
BS, Environmental Science, 2021

The National Environmental Trainers, **OSHA Industrial: 10 hour Training Course,** 2023

The National Environmental Trainers, **Hazardous Waste Operations and Emergency Response: 40 hour Training Course,** 2021

Field Services Technician

2021 - Present

Responsible for day to day sampling activities and client interaction at various client sites. Independently coordinates and performs collection of ground water, surface water, soil and hazardous waste samples at these sites, utilizing multiple sampling techniques and protocols. Works closely with clients to ensure their satisfaction with ALS while maintaining benchmark field services.

Previous Experience

Stohl Environmental — Environmental Consultant *'20-'21*
Orchard Park, NY

Collected water samples in schools for lead testing. Monitored contaminated soil removal and ensured proper remediation per NYDEC Spill Response. Monitored asbestos abatement projects through air samples and compliance with ICR 56. Wrote reports. Participated in ASTM Phase I and Phase II assessments.

Prior work history is not relevant to current position

Quinton Kolbeck

1565 Jefferson Road, Building 300, Suite 360 | Rochester, NY 14623 | +1 585 288 5380

Field Technician

2020- Present

Responsible for day to day sampling activities and client interaction at various client sites. Independently coordinates and performs collection of ground water, surface water, soil and hazardous waste samples at these sites, utilizing multiple sampling techniques and protocols. Works closely with clients to ensure their satisfaction with ALS while maintaining benchmark field services.

Previous Experience

Prior work history is not relevant to current position.

Education

Finger Lakes Community College **AA in Natural Resources Conservation** 2017

The National Environmental Trainers, **Hazardous Waste Operations and Emergency Response: 40 hour Training Course,** 2020

Kyle T. Lee

1565 Jefferson Road, Building 300, Suite 360 | Rochester, NY 14623 | +1 585 288 5380

Supervisor, Field Services

2021-Present

Responsible for overseeing daily activities of the field team and coordinating projects with various clients while fulfilling duties of a field analyst. Maintains constant communication lines between the client, CSRs, and field team via phone and emails to ensure that projects are completed correctly and in a timely manner. Participates in bid proposals and quotes to ensure that the field team is monetarily accounted for. Responsible for reviewing and entering all field data and logs upon project completion.

Senior Analyst, Field Services

2011-2021

Responsible for day to day sampling activities and client interaction at various client sites. Independently coordinates and performs collection of ground water, surface water, soil and hazardous waste samples at these sites, utilizing multiple sampling techniques and protocols. Works closely with clients to ensure their satisfaction with ALS while maintaining benchmark field services.

Previous Experience

Prior work history not relevant to current position.

Education

Finger Lakes Community College **AA in Environmental Studies** 2011

The National Environmental Trainers, **Hazardous Waste Operations and Emergency Response: 8 hour Refresher,** 2012

The National Environmental Trainers, **Hazardous Waste Operations and Emergency Response: 40 hour Training Course,** 2011

The National Environmental Trainers, **General Industry 10 Hour Training,** 2022

QUALITY ASSURANCE MANUAL

ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON RD, BUILDING 300, SUITE 360
ROCHESTER, NY 14623
(585) 288-5380 (PHONE)
(585) 288-8475 (FAX)
WWW.ALSGLOBAL.COM

Doc ID:	QAM	Rev. Number:	32	Effective Date:	09/05/2022

Signatories:

Approved By: _____ Date: 9/8/22
Laboratory Supervisor - Bill Allgeier
bill.allgeier@alsglobal.com

Approved By: _____ Date: 8/22/22
Quality Manager - Vicky Collom
vicky.collom@alsglobal.com

Approved By: _____ Date: 9/8/22
Lead Technical Director (Chemistry)-
Christine Kutzer
christine.kutzer@alsglobal.com

Approved By: _____ Date: 9/8/22
Technical Director (Microbiology) -
Adam Felser
adam.felser@alsglobal.com

Approved By: _____ Date: 9/8/22
Technical Director (Organic Chemistry) -
Meghan Pedro
Meghan.pedro@alsglobal.com

Table of Contents

1. Scope
2. Normative References
3. Terms and Definitions
4. General Requirements
   4.1 Impartiality
   4.2 Confidentiality
5. Structural Requirements
6. Resources Requirements
   6.1 General
   6.2 Personnel
   6.3 Facilities and Environmental Conditions
   6.4 Equipment
   6.5 Metrological traceability
   6.6 Externally provided products and services
7. Process Requirements
   7.1 Review of Requests Tenders and Contracts
   7.2 Selection, Verification, and Validation of Methods
   7.3 Sampling
   7.4 Handling of Test or Calibration Items
   7.5 Technical Records
   7.6 Evaluation of Measurement Uncertainty
   7.7 Ensuring the Validity of Results
   7.8 Reporting of Results
   7.9 Complaints
   7.10 Nonconforming Work
   7.11 Control of Data and Information Management
8. Management System Requirements
   8.1 Options
   8.2 Management System Documentation
   8.3 Control of Management System Documents
   8.4 Control of Records
   8.5 Actions to address Risks and Opportunities
   8.6 Improvement
   8.7 Corrective Actions
   8.8 Internal Audits
   8.9 Management Review

9. Appendices

A. Definitions

B. Key Personnel and Organization Charts

C. Ethics and Data Integrity Policy

D. Laboratory Floor Plan

E. Equipment List

F. Sample Preservation, Containers, and Holding Times

G. Standard Operating Procedures

H. Data Qualifiers

I. Mast List of Controlled Documents

J. Laboratory Accreditations

K. References for Quality System Standards, External Documents, Manuals, and Test Procedures

L. Data Quality Objectives

Cross Reference Table (ISO 17025:2017 to TNI Volume 1:2016)

QUALITY ASSURANCE MANUAL - CROSS REFERENCE TABLE

QAM, ISO/IEC 17025:2017		TNI Volume 1, 2016
1	Scope	M2 1.2
2	Normative reference	M2 2.0
3	Terms and definitions	M2 3.0
4	General Requirements	M2 4.1
4.1	Impartiality	NA
4.2	Confidentiality	M2 4.2
5	Structural requirements	M2 4.1
6	Resource requirements	M2 4.0
6.1	General	M2 4.1.5
6.2	Personnel	M2 4.1.5, 5.2
6.3	Facilities and environmental conditions	M2 5.3
6.4	Equipment	M2 5.5
6.5	Metrological traceability	M2 5.6
6.6	Externally provided products and services	M2 5.10.6
7	Process requirements	M2 4.0
7.1	Review of requests, tenders and contracts	M2 4.4
7.2	Selection, verification and validation of methods	M2 5.4
7.3	Sampling	M2 5.4
7.4	Handling of test or calibration items	M2 5.5.6
7.5	Technical records	M2 4.13.2
7.6	Evaluation of measurement uncertainty	M2 5.4.6
7.7	Ensuring the validity of results	M2 5.9
7.8	Reporting of results	M2 5.10
7.9	Complaints	M2 4.8
7.10	Nonconforming work	M2 4.9
7.11	Control of data and information management	M2 5.4.7
8	Management system requirements	M2 4.0
8.1	Options	M2 4.0
8.2	Management system documentation (Option A)	M2 4.2
8.3	Control of management system documents (Option A)	M2 4.3
8.4	Control records (Option A)	M2 4.13
8.5	Actions to address risks and opportunities (Option A)	M2 4.12
8.6	Improvement (Option A)	M2 4.10
8.7	Corrective Actions (Option A)	M2 4.11
8.8	Internal Audits (Option A)	M2 4.14
8.9	Management Reviews (Option A)	M2 4.15

1. Scope

This Quality Assurance Manual (QAM) describes the policies, procedures and accountabilities established by the Rochester, NY Laboratory of ALS Environmental (ALS) to ensure that the test results reported from analysis of air, water, soil, waste, and other matrices are reliable and of known and documented quality. This document describes the quality assurance and quality control procedures followed to generate reliable analytical data. This QAM applies to Environmental work included in Rochester's scope of accreditation (see Appendix J). This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

ALS maintains accreditations pertaining to various commercial and government entities. Each accreditation requires that the laboratory continue to perform at levels specified by the programs issuing accreditation. Program requirements can be rigorous; they include performance evaluations as well as annual audits of the laboratory to verify compliance.

Quality Assurance Policy

ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of the Various States, United States Environmental Protection Agency (USEPA), TNI Volume 1 2003/2009/2016, ISO/IEC 17025:2017, and DOD QSM 5.4.

ALS corporate management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM and other client and project related requirements.

ALS management reviews its operations on an ongoing basis and seeks input from staff and clients to make improvements. ALS is committed to good professional practice and a high standard of service.

It is the policy of ALS that all employees be familiar with all quality documentation.

Quality System

This QAM and SOPs referenced in this document comprise the ALS management system. This management system includes all quality assurance policies and quality control procedures.

Although verbal communication with employees is essential, written and visual communication through email and computer systems is the cornerstone of effective communication at ALS. Computer workstations throughout the lab provide access to LIMS, Procedures and email systems. All information essential for effective and consistent communication of analytical requirements and details affecting quality is available through these computerized systems.

Ethics and Data Integrity

It is the policy of ALS to perform work for clients in the most efficient manner possible, avoiding waste of resources. It is the role of both ALS management and employees to ensure that work for clients is performed most efficiently and effectively by properly utilizing ALS purchased materials, equipment, and the time and ability of personnel.

It is the policy of ALS to generate accurate and reliable data in accordance with contractual and regulatory requirements. The ALS SOP CE-GEN-001 "Laboratory Ethics and Data Integrity" details ALS policy and includes procedures, policy, and definitions on these topics:

- Any undue pressure applied to employees in the performance of their duties must be reported.
- It is against ALS policy to improperly manipulate or falsify data or to engage in any other unethical conduct.
- Prevention and detection of improper, unethical or illegal actions.
- Reporting and investigation of data manipulation, falsification of data, waste of resources, or other unethical practice or misconduct. For DOD work, the lab will report any instances of inappropriate and prohibited practices to the DOD ELAP Accreditation Body (PJLA) within 15 business days of the discovery, and submit records of associated corrections taken or proposed corrective actions within 30 business days of the discovery,

Laboratory Data Integrity and Ethics Training - initial and annual refresher training on Ethics and Data Integrity is performed for all employees. The training includes the SOP CE-GEN-001. Key topics covered are the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues, and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring, and examples of improper actions.

The pertinent ALS Project Manager must approve deviations from contractual requirements. The Project Manager obtains approval for any such deviations, either in writing or by phone (documented in a phone log) from pertinent contract authorities. In addition, ALS requires that deviations from contractual requirements that might affect data quality be reported to clients. Any employee who knowingly manipulates and/or falsifies data or documents or engages in any unethical conduct is subject to immediate release from employment.

2. Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17025:2017, “General requirements for the competence of testing and calibration laboratories”

TNI 2009 and 2016, VOLUME 1, “MANAGEMENT AND TECHNICAL REQUIREMENTS FOR LABORATORIES PERFORMING ENVIRONMENTAL ANALYSIS”

DoD/DOE QSM, “Department of Defense (DoD), Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories”

ISO/IEC Guide 99, International vocabulary of metrology — Basic and general concepts and associated terms (VIM1)

ISO/IEC 17000, Conformity assessment — Vocabulary and general principles

3. Terms and Definitions

- Impartiality - presence of objectivity
- Complaint - expression of dissatisfaction by any person or organization to a laboratory, relating to the activities or results of that laboratory, where a response is expected

- Inter-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions
- Intra-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items within the same laboratory in accordance with predetermined conditions
- Proficiency testing - evaluation of participant performance against pre-established criteria by means of inter-laboratory comparisons
- Laboratory - body that performs one or more of the following activities:
  - testing;
  - calibration;
  - sampling, associated with subsequent testing or calibration
- Decision rule - rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement
- Verification - provision of objective evidence that a given item fulfils specified requirements
- Validation - verification , where the specified requirements are adequate for an intended use

4. General Requirements

4.1 Impartiality

4.1.1 All employees are required to enter into the following agreements:

- **Code of Conduct Agreement**
  Provides a framework for decisions and actions in relation to conduct in employment. The agreement covers a wide range of topics including personal and professional behavior, conflicts of interest, gifts and favors, confidentiality, legal compliance, security of information, among others. The code of conduct agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Confidentiality Agreement**
  Describes policies for identifying and protecting information owned by ALS and its customers, and for keeping this information in confidence. The confidentiality agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Ethics and Data Integrity Agreement**
  Provided to the employee as part of the hiring and induction process, and reviewed during periodic ethics refresher training. This is coordinated between the Human Resources and Quality Assurance (QA) departments. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed. All employees are required to take annual ethics and data integrity refresher training.

In addition to the agreements, project managers act as a firewall to insulate the analysts from clients so that the lab personnel have no contact with clients. Lab IDs are assigned to samples and used throughout preparation and analysis to make the samples ambiguous to lab personnel. Together these agreements and procedures ensure freedom from undue internal and external commercial, financial, and other pressures or influences that could adversely affect the quality of work. They protect customers' confidential information and ALS' proprietary rights. They ensure avoidance of activities that could diminish confidence in the competence, impartiality, judgment or integrity of any ALS laboratory and staff.

4.1.2 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This and the peer review of all data will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results, opinions and interpretation of data is outside the scope of the laboratory activities.

4.2 Confidentiality

All employees signed confidentiality statement upon employment. These are maintained by Human Resources (HR).

Documents provided to the laboratory are held in strict confidence by project management staff. Documents pertaining to quality assurance and analytical requirements are reviewed with appropriate managers and staff through the project specific meetings and LIMS. Project related information provided by clients is securely archived using procedures described in the ALS SOP ADM-ARCH "Record Storage and Archiving."

It is the responsibility of all ALS employees to safeguard sensitive company information, client data, records, and information; and matters of national security concern should they arise. All information, data, and reports collected or assembled on behalf of a client is treated as confidential. Information may not be given to third parties without the consent of the client.

The transmittal of final results is specified by clients and follows those requirements unless specific changes are made by the ALS Project Manager assigned to the client/project.

5. Structural Requirements

5.1 The laboratory, a legal entity, is part of ALS USA Corp. The Laboratory Director reports to the General Manager, Life Sciences, USA. There are other support functions such as human resources, accounting, safety oversight and computer systems that are provided to the laboratory by corporate entities but none of which is responsible for managing laboratory activities. The support functions of this laboratory involved with testing and services are under the direction of the laboratory director.

5.2 The responsibility for this laboratory is under the direction of the laboratory director. Key employees in the management systems are identified in section 5.5.

5.3 This laboratory performs a range of inorganic and organic analyses using EPA SW-846 methods, CWA methodologies, some drinking water methods, and some stack testing methods. This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

5.4 ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of various states, United States Environmental Protection Agency (USEPA), and the normative references in Section 2 of this manual.

5.5 Org Chart and Key personnel-see Appendix B.

5.5.1 ALS Laboratory Director, The Laboratory Director is responsible to ensure:

- ✓ Implementation of quality policy and applicable standards, including communicating to the operation the importance of meeting customer, statutory, and regulatory requirements.
- ✓ Employees have sufficient experience and training to perform QAM-related duties and procedures.
- ✓ That the necessary facilities and equipment are available to meet the commitments of the laboratory.
- ✓ Sample receiving, handling, instrument calibration, sample analysis, and related operational and analytical activities are conducted and documented as described in this QAM, its related Standard Operating Procedures (SOPs), and its referenced methods.
- ✓ That routine QC samples are prepared, analyzed, and reviewed as required by this QAM.
- ✓ That at regular intervals audits are conducted and documented to assess compliance with this QAM.
- ✓ That corrective action is initiated and completed to remedy discrepancies or problems identified in any laboratory process.
- ✓ Management review of all processes and procedures associated with the management system.

5.5.2 ALS Laboratory Supervisor, The Laboratory Supervisor is responsible to ensure the directives of the Laboratory Director are carried out.

5.5.3 Quality Manager, The Quality Manager reports directly to top management and is responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Understand, monitor and evaluate the quality assurance (QA) and quality control (QC) activities described in this QAM and its references, reporting deficiencies and identifying resource requirements to the Laboratory Director.
- ✓ Conduct and document an annual internal audit of laboratory procedures to ensure compliance with this QAM and its references.
- ✓ Conduct an annual update of this QAM and review or update laboratory Standard Operating Procedures (SOPs).
- ✓ Arrange for the analysis of performance evaluation (PE) samples.
- ✓ Maintain a record of ongoing personnel training for QAM-related activities, reporting training deficiencies to the Laboratory Director.
- ✓ Maintain the laboratory documentation of nonconformance, corrective action, preventive action, and improvement programs. Monitor corrective actions.

- ✓ Maintain metrological records, archived logbooks, PT study results.
- ✓ Participate in root cause analysis and approve corrective action reports.
- ✓ Evaluate data in an objective manner, free of outside or managerial influence, including monitoring trends.

5.5.4 Technical Managers, The managers of these operations report directly to Top Management and are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand and follow this QAM with its references.
- ✓ Ensure that each set of reported results meets the requirements specified in this QAM and meets the client's requirements as defined in the applicable project requirements. Record the quality of all data reported by the laboratory.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Manager.

5.5.5 Project Managers, Project Managers report directly to Top Management. Project Managers are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Complete and distribute project related information for each project before the laboratory starts work on the project.
- ✓ Immediately communicate to the laboratory changes made to projects in progress and document these changes as appropriate.
- ✓ Respond to client requests for information.
- ✓ Ensure LIMS work orders are reviewed and meet client project requirements before release to the laboratory.
- ✓ Perform a review of results to verify that data reports submitted to the client meet project requirements.
- ✓ Issue test reports

5.5.6 Support Management (Sample Management, Computers (IT), Purchasing, Health and Safety, Human Resources) are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand and follow this QAM with its references.
- ✓ Ensure that procedures are followed and meets the client's requirements as defined in the applicable project requirements.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Assurance Manager.
- ✓ Training staff to comply with all processes

5.5.7 Deputies - In the case of absence of the Laboratory Director, Technical Director or QA PM, deputies are assigned to act in that role. Deputies must be assigned when Technical Directors are absent for more than 15 consecutive calendar days. If a Technical Director is absent for more than 35 consecutive calendar days, the accreditation authorities must be notified.

Position	Deputy
Lead Technical Director	Another individual meeting the qualifications of a Technical Director
Laboratory Director	Laboratory Supervisor, Lead Technical Director or Regional Director
Quality Manager	Lead Technical Director
Technical Director(s)	Lead Technical Director or Experienced analyst meeting the qualifications of a Technical Director.
Management (CEO, North America Manager, Life Sciences USA Manager, Regional Operations Manager)	One organizational position above current.
Sample Management, IT Manager, Purchasing manager, Project Managers, Health and Safety Manager, Human Resources Manager	Another experienced individual within the affected group.

5.6 It is the responsibility of all technical and support staff to comply with all procedures and be familiar with current quality systems and policies as established by management. At ALS, improvement of the quality systems and preventive action is effected through ongoing systems of review by management using input from all staff. ALS actively seeks employee and client input for improvements through surveys and questionnaires. Internally ALS maintains a process improvement website for employees to provide suggestions for improvements. For clients, ALS surveys and gains feedback on services provided. This input to management is provided from the corporate level. To comply with these requirements all staff are responsible, at a minimum, to the following:

- ✓ Follow project requirements as delineated by project managers to ensure analyses and commitments, including TAT, are performed as requested.
- ✓ Develop knowledge and understanding of the QAM requirements under which samples are handled and tested.
- ✓ Notify managers and Quality Assurance personnel when QA problems arise.
- ✓ Follow Quality Assurance requirements as outlined in the QAM and SOPs.
- ✓ Follow appropriate channels regarding modification of existing SOPs.
- ✓ Maintain accurate electronic and written records.
- ✓ Ensure that applicable data are included in each process in accordance with applicable SOPs.
- ✓ Record all nonconformance.
- ✓ Follow appropriate protocols when the handling and testing does not meet acceptance criteria.
- ✓ Apply integrity and professional judgment when dealing with analytical processes and laboratory operations.

5.7 ALS management is committed to improvements of the management systems through compliance with its own policies and procedures. When changes are planned and implemented, the integrity of the management system is maintained. Changes must be documented in SOPs signed by management, including the Quality Manager, the Technical Director. The management is familiar with the impacts changes may make to other systems and ensures impacts are minimized or accounted for in the change process.

6. Resources Requirements

6.1 General

6.1.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM. The ALS/Rochester staff, consisting of approximately 45 employees, includes chemists, technicians and support personnel. They represent diverse educational backgrounds and experience, and provide the comprehensive skills that the laboratory requires. During seasonal workload increases, additional temporary employees may be hired to perform specific tasks. See Appendix B for organization charts.

6.2 Personnel

6.2.1 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results is outside the scope of the laboratory activities. The ALS laboratory employs sufficient personnel to complete required chemical, physical, and biological analyses and support activities.

6.2.2 The ALS training program specified in the ALS SOP ADM-TRAINING includes quality training, technical training, safety training, and other training as described in this QAM. ALS managers are responsible to ensure that all staff training is initiated, completed, verified, and documented.

The specific training and experience of laboratory personnel is documented in individual training files maintained in accordance with ADM-TRAINING and includes records of analytical proficiency through the analysis of QC samples.

Job Descriptions include requirements for education, qualification, training, technical knowledge, skills and experience.

6.2.3 All ALS staff assigned to perform tasks affecting or relating to testing receives training relative to pertinent areas of responsibility, both prior to performing work on client samples and on an ongoing basis. Such training comes from internal and external sources.

6.2.5 Laboratory personnel have resources needed to carry out their duties. See 5.6. Technical Directors at ALS Rochester may not also be a Technical Director at another laboratory without authorization from the primary accrediting bodies.

6.2.5 When the laboratory management determines a need for personnel in the organization, the management determines the goals for the position, the requisite educational, experience and skill requirements, and works with human resources to post the position, screen potential candidates against the job description and forward qualified candidates to the hiring manager for interview. The supervisor for the position is defined. The organization chart shows the supervision structure. Each employee is supervised to the extent required to ensure adherence to the management system and ALS policies. It is the responsibility of the supervisor to authorize staff to perform specific laboratory activities. Records are retained for the pertinent authorizations by the Quality Assurance department. The supervisor monitors the competence of personnel throughout the course of work and performs an annual performance review.

Minimum requirements based on current accreditations:

Position	Education	Experience
Lead Technical Director (may be named as Laboratory Director or Laboratory Supervisor for state requirements)	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	3 years in an environmental analysis lab, 24 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Chemistry	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	2 years in an environmental analysis lab, 12 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Microbiology	Associates degree in science with 4 credits in microbiology	1 year of environmental microbiological experience
Quality Manager		Have documented training and/or experience in QA/QC procedures and the laboratory quality system. Have a general knowledge of analytical methods in use in the lab.
Instrumentation Analysts	H.S. diploma plus 8 college credits in chemistry	none
Analysts	High School Diploma	none

6.3 Facilities and Environmental Conditions

6.3.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM.

6.3.2 Records are maintained for the requirements and conditions necessary for method and regulatory compliance in the facility.

6.3.3 Records are retained with analytical data for monitoring and control of environmental conditions relevant to method and regulatory specifications.

6.3.4 See Appendix D for floor plan.

The ALS Rochester facility features over 23000 square feet of laboratory and administrative workspace at its Rochester, NY location. To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access (keytag proximity reader), except at the main business entrance and sample receiving entrance; these are open only during normal business hours and monitored by the receptionist at the business entrance and Sample Receipt Technicians at the sample receiving entrance. All non-employees are required to sign in with the receptionist at the main entrance. The laboratory accommodations and environmental condition design provides safeguards against cross-contamination of samples and is arranged according to work function, which enhances the efficiency of analytical operations. The ventilation system has been specially designed to meet the needs of the analyses performed in each work space. The organics extraction area is physically separated from the Volatile instrument area and the Volatiles instrument room is positively pressured to minimize cross contamination. ALS further minimizes laboratory contamination sources by employing janitorial staff to ensure good housekeeping. Facilities maintenance is performed by qualified contractors.

Each area in the laboratory has adequate lighting, temperature control, bench space, access to sinks, hot and cold water, reagent water, gasses, suction, electrical outlets, chemical storage, fume hoods, ventilation, eyewashes, fire extinguishers, and aisle space as needed for instrumentation, safety, and for the processes assigned to that area.

Fume hoods have visual indicators to ensure flow is maintained during use and are performance tested semi-annually.

All safety inspection records are kept on file for a minimum of five years.

6.4 Equipment

6.4.1 A comprehensive list of major instrumentation, support equipment, and associated computer hardware and software utilized at ALS is included in Appendix E. Redundant instruments are maintained for particular analyses. The method SOPs detail the reagents and standards, minor equipment and supplies and reference information needed for performing the analysis.

6.4.2 Laboratory equipment items such as analytical balances, pipets, and thermometers are verified against reference standards rather than reference materials. Laboratory reference weights and thermometers are certified by ISO accredited vendors against ISO or National Metrology Institute (NMI) traceable standards. Analytical balances are serviced on an annual basis by a professional metrology organization (currently Precision Scale and Balance). New certificates of calibration for each balance are issued to the laboratory on an annual basis. The calibration of each analytical balance is checked by the user each day of use with Class-1 verified weights bracketing the working range. The reference weights are verified annually against the balance vendors certified weights. Bound record books are kept which contain the recorded measurements, identification and location of equipment, acceptance criteria and the initials of the user who performed the checks. See SOP SMO-DALYCK for instructions and further information. All support equipment is maintained in proper working order and verified. For volumetric verifications refer to ADM-PCAL “Mechanical Volume Dispensing Devices, Volumetric and Non-Volumetric Labware”.

6.4.3 Temperature Control Devices

Temperatures are monitored and recorded for all of the temperature-critical support equipment such as refrigerators, freezers, ovens, and incubators. Units are equipped with stand-alone data logging thermometers with audible

alarms. The procedure for performing these measurements is provided in the *SOP for Calibration Check Procedures for Support Equipment (SOP ADM-DALYCK).* The SOP also includes the use of acceptance criteria and correction factors. Customers are notified of catastrophic failure of storage equipment when their samples were potentially impacted and whenever corrective action is not taken within 24 hours of system notification of an out-of-control storage equipment condition.

Where the operating temperature is specified as a test condition the temperature is recorded on the raw data.

6.4.4 Water Purification System

ALS uses a Siemens water purification system designed to produce reagent water meeting method specifications. The system consists of a series of pumps, filters, and resin beds designed to yield water meeting the specifications of ASTM Type II water, and *Standard Methods for the Examination of Water and Wastewater* (SM1080, 20th Ed.) *High Quality* water. The system is maintained by Evoqua Water Systems.

The conductivity is checked by the laboratory every business day using the systems in-line meter. When the lab analyzes samples for conductivity, the DI system is checked with the Method Blank on a meter calibrated according to GEN-120.1. This serves as a check of the in-line meter. Other checks are performed regularly by the subcontracted water system service (Evoqua). These checks are discussed further in ADM-DALYCK. The laboratory may use the results of laboratory method blanks for impromptu checks of TOC, TDS, and chloroform if a problem is suspected. The water in the volatiles department is further purified by a Millipore polishing system.

6.4.5 Routine maintenance is performed on laboratory instruments and equipment according to manufacturer recommendations. Maintenance is provided under warranty, through service contracts, and by ALS in-house personnel. Records of routine maintenance, emergency maintenance, and a return to control are kept with the instruments in hardcopy or electronic maintenance logbooks according to SOP ADM-DATANTRY "Making Entries and Control of Records". The preventive maintenance schedule is included in Appendix E.

6.4.6 Calibration program - All instruments are calibrated or verified before use, using reference materials with traceability established. Specific calibration requirements are detailed in the method SOP and support equipment SOP and comply with method and regulatory requirements. Equipment is labelled with a unique ID that is traceable to its status of calibration, including the date when last calibrated. The SOPs detail the equipment calibration verification criteria and when recalibration is due. Support equipment is labelled with expiration dates if applicable.

6.4.7 The instrument manuals are provided in electronic format usually in the software programs, CDs, and available on network drives. Software is controlled through licensing and is the responsibility of computer support to maintain licenses required. Hardcopy manuals for older instruments are kept near the instrument or on a shelf designated for equipment manuals.

6.4.8 Equipment that has been subjected to overloading or mishandling, gives questionable results, or has been shown to be defective or outside specified requirements, is taken out of service. It shall be recalibrated and not returned to service until it has been verified to perform correctly. The laboratory shall examine the effect of the defect or deviation from specified requirements and shall notify clients or reanalyze samples as applicable and appropriate.

6.4.9 All reference materials ordered by ALS have available documentation of purity, traceability and uncertainty.

6.4.10 Records of instruments are retained and include specifications, manufacturer, serial numbers, identification, software version, firmware version, location, status and the date of purchase.

6.4.11 Records of calibration, reference materials used, calibration checks or verifications are kept with analytical data.

6.4.12 Passing verification criteria ensures that unintended adjustment of equipment is identified.

6.5 Metrological Traceability

6.5.1 All measurements made by the laboratory require an unbroken chain to NMI, Reference Standards or Reference Materials.

6.5.2 Reference Standards and Reference Materials

a) Reference Standards

Reference standards used by the laboratory are calibrated at determined intervals by outside vendors for the following equipment. These reference standards are maintained under the control of QA personnel and are used for verifying intermediate materials used by the laboratory. Quality Assurance is responsible for maintaining records and schedules of calibration.

- Reference Thermometers
- Reference Weights
- Intermediate checks are used in the laboratory to verify performance of support equipment and are verified to traceable reference standards. Records of such verifications are retained by Quality Assurance.

b) Reference Materials

Reference materials used at ALS must be of the grade or quality specified by the pertinent analytical procedure or methodology.

Purchased reference materials must be traceable to a National Metrology Institute (NMI) or equivalent national or international standards where possible.

Stock solutions and calibration standard solutions are prepared fresh as often as necessary according to their stability. All standard solutions are properly labeled with standard name, analyte concentration, solvent, date, preparer, and expiration date; these entries are also recorded in the appropriate logbook(s) following ADM-DATANTRY. To ensure traceability, all standards are labeled with an in-house code that can be traced back to the original stock standard received by the vendor and thus, the certificate of analysis. Prior to introduction into the analytical system/process, reference materials are verified for accuracy with a second, independent source of the material. In addition, the independent source of reference material is also used to check the calibration standards for signs of deterioration. All standards, reagents and reference materials shall be stored per analytical SOP requirements to ensure their integrity. Safe handling and transportation of these materials are discussed in the respective analytical SOP and/or Laboratory Safety Manual. Standards and reference materials are stored separately from samples, extracts, and digestates.

6.5.3 Reference Standards are calibrated by vendors certified to ISO/IEC 17025:2017. ALS uses reference materials from ISO Guide 34:2009 or ISO/IEC 17034:2010 accredited vendors whenever possible.

Second source reference materials are purchased and used in the testing process as an independent verification of primary reference materials. The secondary reference material does not require accredited vendors.

6.6 Externally Provided Products and Services

6.6.1 Analytical services are subcontracted when the laboratory needs to balance workload or when the requested analyses are not performed by the laboratory. Subcontracting is only done with the knowledge and approval of the client and to qualified laboratories. Subcontracting to another ALS laboratory is preferred over external-laboratory subcontracting. Subcontracting is done using capable and qualified laboratories, qualified using established procedures. These procedures are described in the *SOP for Qualification of Subcontract Laboratories (ADM-SUBLAB)*. ALS accepts responsibility to the customer for the subcontractor's work unless the customer or a regulatory authority specified which subcontractor was to be used.

6.6.2 ALS SOP ADM-PUR "Procurement and Control of Laboratory Services and Supplies" outlines the process, evaluation, criteria and records maintained from the evaluation and reevaluation of supplies and services. ALS uses vendors which supply the level of quality required to perform testing activities. ALS maintains a relationship with multiple vendors and uses vendors with comparable certifications or accreditations. The quality level of reagents and materials (grade, traceability, etc.) required is specified in analytical SOPs. Department supervisors ensure that the proper materials are ordered, using an electronic system which requires approval by ALS Operations Management. Any changes to the order by the purchasing department must be approved by the department supervisors prior to ordering. Inspection and verification of material received is performed at the time of receipt by receiving personnel. The receiving staff labels the material with the date received, assigns the material an internal lot number and records the receipt. Expiration dates are assigned as appropriate for the material. Storage conditions and expiration dates are specified in the analytical SOP. *ADM-PUR* provides default expiration requirements. Supplies and services that are critical in maintaining the quality of laboratory testing are procured from pre-approved vendors. The lab must communicate any necessary specifications to the external provider. If the product or service is not meeting the laboratory's requirements, actions must be taken to return the laboratory to the standard of quality needed from a vendor.

Consumable reference materials routinely purchased by the laboratories (e.g., analytical standards) are purchased from nationally recognized, reputable vendors. All vendors have fulfilled the requirements for ISO 9001 certification and/or are accredited by a nationally recognized Accrediting Body (typically A2LA or ANAB). ALS relies on a primary vendor (currently Fisher Scientific) for the majority of its analytical supplies. Consumable primary stock standards are obtained from certified commercial sources or from sources referenced in a specific method. Supelco, Ultra Scientific, AccuStandard, Chem Services, Inc., Aldrich Chemical Co., Baker, Spex, etc. are examples of the vendors used. Reference material information is recorded in the appropriate logbook(s) and materials are stored under conditions that provide maximum protection against deterioration and contamination. The logbook entry includes such information as an assigned logbook identification code, the source of the material (i.e. vendor

identification), solvent (if applicable) and concentration of analyte(s), reference to the certificate of analysis and an assigned expiration date. The date that the standard is received in the laboratory is marked on the container. See ADM-PUR for more detailed information. Receipt procedures include technical review of the purchase order/request to verify that what was received is identical to the item ordered. The laboratory checks new lots of reagents for unacceptable levels of contamination prior to use in sample preservation, sample preparation, and sample analysis by following the requirements in ADM-PUR.

7. Process Requirements

7.1 Review of Requests Tenders and Contracts

Requests for new work are reviewed prior to signing any contracts or otherwise agreeing to perform the work. The specific analytical methods to be used are agreed upon between the laboratory and the client. A capability review is performed to determine if the laboratory has or needs to obtain certification to perform the work, to determine if the laboratory has the resources (personnel, equipment, materials, capacity, skills, expertise) to perform the work, and if the laboratory is able to meet the client's required reporting and QC limits. The results of this review are communicated to the client and any potential conflict, deficiency, lack of appropriate accreditation status, lack of appropriate method (incorrect, obsolete or improper) or concerns of the ability to complete the client's work are resolved. Any differences between the request or tender and the contract shall be resolved before any work commences. The client should be notified at this time if work is expected to be subcontracted. Each contract shall be acceptable both to the laboratory and the client. Records are maintained of pertinent discussions with a client relating to the client's requirements or the results of the work. If a contract needs to be amended after work has commenced, the contract review process is repeated and any amendments are communicated to all affected personnel. Changes in accreditation status affecting ongoing projects must be reported to the client. Revocation, suspension, or lapse of accreditation in part or full must be communicated to applicable clients as soon as possible (within 48 hours for PA).

When a customer requests a modification to an SOP, policy, or standard specification the Project Manager will discuss the proposed deviation with the Laboratory Director, and department manager (if applicable) to obtain approval for the deviation. The Quality Manager may also be involved. All project-specific requirements must be on-file and with the service request upon logging in the samples. The modification or deviation must be documented and it must not impact the integrity of the laboratory or the validity of the results. Waivers from DOD QSM requirements must be requested in writing from the DoD Chemist or Contractor on a project-specific basis and include technical justification. A Project-Specific Communication Form, or similar, may be used to document such deviations.

Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. Specific procedures for client communication and required documentation are listed in the ALS SOP ADM-PCR "Project Manager Duties and Report Review."

7.2 Selection, Verification, and Validation of Methods

7.2.1 Published Methods - ALS employs methods and analytical procedures from a variety of external sources. The primary method references are: USEPA SW-846, Third Edition and with Updates and online updates for hazardous waste samples, and USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-

93/100, 600/4-88-039, 600/R-94-111, EPA 40CFR parts 136 and 141, and Supplements; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater samples. Complete citations for these references can be found in Appendix K. Other published procedures, such as state-specific methods, program-specific methods, or in-house methods may be used. Several factors are involved with the selection of analytical methods to be used in the laboratory. These include the method detection limit, the concentration of the analyte being measured, method selectivity, accuracy and precision of the method, the type of sample being analyzed, and the regulatory compliance objectives. The implementation of methods by ALS is described in SOPs specific to each method. A list of NELAP-accredited methods is given in Appendix J.

7.2.2 Standard Operating Procedures (SOPs) - ALS maintains SOPs for use in both technical and administrative functions. An SOP is available for each accredited method. SOPs are written following standardized format and content requirements as described in the *SOP for Preparation of Standard Operating Procedures (ADM-SOP)*. Each SOP is reviewed and approved by a minimum of two managers (the Technical Director and the Quality Assurance Program Manager). All technical SOPs undergo a documented annual review to make sure current practices are described. The QA Manager maintains a comprehensive list of current SOPs. The SOP list is in Appendix G. The document control process ensures that only the most currently prepared version of an SOP is being used. The QA Manual, QAPPs, SOPs, standards preparation logbooks, current methodology, maintenance logbooks, et al., are controlled documents. The procedures for document control are described in the *SOP for Document Control* (ADM-DOC_CTRL). All controlled documents are readily available to all personnel on the ALS Rochester Intranet.

7.2.3 Modified Procedures - ALS policy is that all SOPs be compliant with the reference method. When several methods are referenced in an SOP, all procedures must be compliant with all referenced methods. All SOPs include a section describing changes and clarifications from the reference method. In the event that an analytical method is modified, the SOP documentation must include a description of the modification, any justification of the method modification which includes, but is not limited to, method performance and recovery data, any other supporting data, and approval from the Technical Managers, Quality Manager, and Laboratory Director. In the event that an analytical method must be modified or is modified from the SOP to perform on specific sample matrices, the modification and reason must be stated in the case narrative. Modified methods will be identified on the analytical report. Modifications allowed by EPA are not reported as modifications, but the modification and justification are documented in the SOP.

When a customer requests a modification to an SOP (such as a change in reporting limit, addition or deletion of target analyte(s), etc.), the project chemist handling that project must discuss the proposed deviation with the department manager in charge of the analysis and obtain their approval to accept the project. The project chemist is responsible for documenting the approved or allowed deviation from the SOP by placing a detailed description of the deviation attached to the quotation or in the project file and also providing an appropriate comment on the service request when the samples are received.

For circumstances when a deviation or departure from company policies or procedures involving any non-technical function is found necessary, approval must be obtained from the appropriate supervisor, manager, or other level of authority. Frequent departure from policy is not encouraged. However, if

frequent departure from any policy is noted, the Laboratory Director will address the possible need for a change in policy.

7.2.4 Validation - The policy of ALS is to apply analytical methods that have been approved, validated, and published by government agencies, professional societies and organizations, respected private entities, and other recognized authorities. These methods have been validated for their intended use and ALS uses the demonstration of competency procedures, calibration of instruments and sensitivity determination procedures to verify laboratory capability.

Published methods may be modified as a result of the request of the client or operational conditions prevailing in the laboratory. Operational conditions might relate to, for example, the availability of equipment or the performance of the method as determined by calibration processes, detection limits, or the results obtained for quality control samples.

Validation procedures describe three different classifications of validations for method modification. New methods, permanent modifications to a published method which will be used in subsequent laboratory determinations, and temporary modifications applied only to immediate analytical projects. These methods are used with approval from the clients.

The essential quality control elements for modification and validation include:

Calibration - Performance and acceptance criteria must meet or exceed requirements of ALS SOP ADM-ICAL "Initial Calibration". The initial calibration demonstrates a concentration range where the analyte response is proportional to concentration.

Demonstration of Capability (Precision and Bias) - QC samples prepared in the specific matrix, are assessed. If possible the recoveries are compared to method or historical control limits used for the reference method. All analytical methods and preparatory method combinations are routinely evaluated statistical control limits and reporting limits. The ALS SOP ADM-CTRL_LIM "Control Limits and Trending" describes how control limits are established and updated.

Sensitivity -. Method Detection Limits (MDL) for methods performed at ALS are determined during initial method set up and are verified or reestablished annually. The MDL will also be verified or reestablished if any significant changes are made to the analytical system. MDL procedures follow 40CFR136 Appendix B. Limit of detection (LOD) verification and Limit of quantitation (LOQ) verification is performed on every instrument used in the analysis. The sensitivity procedures are found in the *SOP ADM-MDL "Establishing Method Detection Limits, Limits of Detection and Limits of Quantitation (ADM-MDL).*

The Method Reporting Limit (MRL) is the lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions (i.e. limit of quantitation- LOQ). The MRL cannot be lower than the lowest calibration standard.

Current MDLs and MRLs are available from the laboratory. They were established using SOP, "Establishing Method Detection Limits, Limits of Detection, and Limits of Quantitation."

7.3 Sampling

The quality of analytical results is highly dependent upon the quality of the procedures

used to collect, preserve and store samples. ALS recommends that clients follow sampling guidelines described in 40 CFR 136, 40 CFR 141, USEPA SW-846, and state-specific sampling guidelines, if applicable. Sampling factors that must be taken into account to insure accurate, defensible analytical results include:

- Amount of sample taken
- Type of container used
- Type of sample preservation
- Sample storage time
- Proper custodial documentation

ALS uses the sample preservation, container, and holding-time recommendations published in a number of documents. The primary documents of reference are: USEPA SW-846, Third Edition and Updates I, II, IIA, IIB, III, IV, V and New Methods for hazardous waste samples; USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-93/100, 600/4-88-039, 600/R-94-111, and Supplements; EPA 40CFR parts 136 and 141; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater samples (see Section 18 for complete citations). The container, preservation and holding time information for these references is summarized in Appendix F for soil, water, and drinking water.

ALS routinely provides sample containers with appropriate preservatives for our clients. Containers are purchased as precleaned to a level 1 status, and conform to the requirements for samples established by the USEPA. Certificates of analysis for the sample containers are available to clients if requested. Reagent water used for sampling blanks (trip blanks, etc.) and chemical preservation reagents are pretested by the laboratory to ensure that they are free of interferences and documented. Our sample kits typically consist of foam-lined, precleaned shipping coolers, (cleaned inside and out, rinsed thoroughly and air-dried), specially prepared and labeled sample containers individually wrapped in protective material, chain-of-custody (COC) forms, and custody seals. Container labels and custody seals are provided for each container. The proper preservative is typically added to the sample containers prior to shipment, unless otherwise instructed by the client.

See SOP, SMO-BPS for more specific information regarding the packing and shipping of sample kits. See SOP, SMO-GEN for the Sample Acceptance Policy.

ALS keeps client-specific shipping requirements on file and utilizes major transportation carriers to guarantee that sample shipping requirements (same-day, overnight, etc.) are met. ALS also provides courier service that makes regularly scheduled trips to the Rochester, Syracuse and Buffalo areas.

7.4 Handling of Test Items

Standard Operating Procedures (SMO-GEN) are established for the receiving of samples into the laboratory. These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, is complete and consistent with the samples received.

Once samples are delivered to the ALS sample management office (SMO), a Cooler Receipt and Preservation Check Form is used to assess the shipping cooler and its contents as received by the laboratory personnel. Verification of sample integrity includes the following activities:

- Assessment of custody seal presence/absence;
- Temperature of sample containers upon receipt;
- Chain of custody documents properly used (entries in ink, signature present, etc.);
- Sample containers checked for integrity (broken, leaking, etc.);
- Sample is clearly marked and dated (bottle labels complete with required information);
- Appropriate containers (size, type) are received for the requested analyses;
- Sample container labels and/or tags agree with chain of custody entries (identification, required analyses, etc.);
- Assessment of proper sample preservation; and
- VOC containers are inspected for the presence/absence of bubbles. (Assessment of proper preservation of VOC containers is performed by lab personnel).

Samples are logged into a Laboratory Information Management System (LIMS). Any anomalies or discrepancies observed during the initial assessment are recorded on the CRPF and COC documents. Potential problems with a sample shipment are addressed by contacting the client and resolving the pertinent issues.

During the login process, each sample container is given a unique laboratory code. The laboratory code consists of the local ALS laboratory, the year in which the samples were logged, a folder number unique to the job, and an extension for the sample number within that job. The format of the laboratory code is as follows:

e.g. Lab Code R2203233-001 =

R - Rochester
22 - Year 2022
03233- Folder Number (sequential number of jobs logged in that year)
001 – Sample number in that Folder.

The LIMS generates a Summary that contains client information, sample descriptions, sample matrix information, required analyses, sample collection dates, analysis due dates and other pertinent information. The service request is reviewed by the appropriate Project Chemist for accuracy, completeness, and consistency of requested analyses and for client project objectives.

Sample Storage and Security

Following receipt, samples are stored in accordance with analytical method requirements until they undergo analysis, unless otherwise specified, using various refrigerators or freezers, or designated secure areas. ALS/Rochester has two walk-in cold storage units which house the majority of sample containers received at the laboratory. The storage areas for VOC samples are monitored using storage blanks, as described in the *SOP for Volatile Storage Blanks (VOC-BLANK)*. ALS also has freezers capable of storing samples at -20° C. The temperature of each sample storage unit is monitored. Recording thermometers placed in refrigerators provide a record of the storage conditions to which samples are exposed.

Unless other arrangements have been made in advance, most aqueous and soil samples are retained at 0-6°C in refrigerators for at least 30 days from receipt. Samples are required to be held for at least 60 days. Samples removed from the refrigerators are moved to an ambient temperature storage room as needed for an additional 30 days. Upon expiration of these time limits, the samples are either returned to the client or disposed according to approved disposal practices. All samples are characterized according to hazardous/non-hazardous waste criteria and are segregated accordingly. All hazardous waste samples are disposed of according to formal procedures outlined in the Sample Disposal SOP (SMO-SPLDIS). All waste produced at the laboratory, including the laboratory's own various hazardous waste streams, is treated in accordance with all applicable local and Federal laws. The bar coding system used to track samples through the lab, including disposal, produces cradle to grave sample history for each sample aliquot.

To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access, except at the main business entrance; this is open only during normal business hours and monitored by the receptionist. All non-employees are required to sign in with the receptionist at the main entrance. The entrance to the Sample Receiving area remains locked and is opened by the sample receiving personnel only to receive samples. The ALS facility is equipped with an alarm system.

Sample Tracking and Custody

Sample custody transfer at the time of sample receipt is documented using chain-of-custody (COC) forms accompanying the samples.

Facility security is described in the previous section.

A bar-coding system is used to document internal sample tracking. The system uniquely identifies the sample container. The system can be used for a full internal custody record if the client notifies the lab of the need of Legal Chain of Custody. The procedures are described in the *SOP for Sample Tracking and Internal Chain of Custody (SMO-ICOC).*

7.5 Technical Records

7.5.1 The generation, compilation, reporting, and archiving of data is a critical component of laboratory operations. In order to generate data of known and acceptable quality, the quality assurance systems and quality control practices (including electronic data systems) must be complete and comprehensive and in keeping with the overall quality assurance objectives of the organization.

Original raw data is obtained electronically, whenever possible. When manual recording of data is necessary, direct manual entry to a spreadsheet is preferable to handwritten records. When handwritten records are used, it is typically for entries to logbooks for support equipment, maintenance logs, or standard and reagent preparation logs. Laboratory notebook entries are standardized following the guidelines in the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). Entries made into laboratory notebooks are reviewed and approved by the appropriate supervisor at a regular interval.

The SOP for *Data Archiving* (ADM-ARCH) describe what records are maintained, how and where they are maintained, how long they are maintained, and how they are disposed.

In the event that the laboratory transfers ownership or goes out of business, laboratory records shall be retained for the contracted period and clients shall be notified prior to early destruction or disposal or samples or data. Samples may be shipped to another network location under client approval. Accrediting authorities shall be notified as soon as possible.

The control of electronic records are described in the following:

- **Information Management Systems** -ALS currently uses StarLIMS v.9 throughout the laboratory. This data management and retrieval system is deployed via Citrix XenApp Server from a centralized application server farm located in Portland, OR. This LIMS system utilizes Oracle 10g R1 as its database server, which runs on a Linux Operating System. The system allows the user to acquire data from instrumentation and to generate ASCII, spreadsheet, database, and/or print files. The ALS Laboratory Information Management System (LIMS) is used to manage sample information, sample tracking, sample workload projections, sample result storage, reporting, and invoicing. The LIMS is used to track the status of a sample and is important in maintaining internal chain of custody. Access is controlled by password. The laboratory will notify the customer prior to changes in LIMS software or hardware configuration if the change will adversely affect customer electronic data. The LIMS is inspected annually by the Quality Manager or designee to ensure the integrity of electronic data.

- **Backup and Security** -ALS laboratory data is acquired directly to the centralized acquisition server. All backups are performed using CommVault Simpana software to an offsite SAN in one of the ALS datacenters. These disk backups are then archived to tape for long-term storage. Incremental backups are performed daily, and a full backup is performed weekly**.** Weekly backups are stored for a month. The last of the month is stored for one year. The last backup of the year is stored for 5 years**.** All installed software, software versions, and software changes are managed via ServiceNow (ALS service management software). The server is also locally mirrored to a hard drive to provide quick restoration of the server should the server need to be replaced.

  The external e-mail system and Internet access is established via a single gateway to discourage unauthorized entry. ALS uses a closed system for company e-mail. Files, such as electronic deliverables, are sent through the external e-mail system only via a trusted agent. The external messaging system operates through a single secure gateway. Email attachments sent in and out of the gateway are subject to a virus scan. Because the Internet is not regulated, we use a limited access approach to provide a

firewall for added security. Virus screening is performed continuously on all network systems.

7.5.2 ALS ensures that amendments to technical records are tracked to previous versions or to original observations. Both the original and amended data and files are retained, including the date of alteration, an indication of the altered aspects and the personnel responsible for the alterations.

7.6 Evaluation of Measurement Uncertainty

Uncertainty is associated with most of the results obtained in the laboratory testing conducted by ALS. It is meaningful to estimate the extent of the uncertainty associated with each result generated by the laboratory. It is also useful to recognize that this measurement of uncertainty is likely to be much less than that associated with sample collection activities.

In practice, the uncertainty of a result may arise from many possible sources. ALS has considered the relative contribution of major sources of error. The approach to estimating uncertainty adopted by the laboratory resulted in the conclusion that many sources of error are insignificant compared to the processes of sample preparation, calibration, and instrumental measurement. Uncertainty attributed to the laboratory processes can be estimated, if requested, using the Laboratory Control Sample (LCS) limits. Since the LCS undergoes the same sample handling as the sample, the average recovery and standard deviation of the LCS represents the expected average recovery and standard deviation of the sample. This approach does not account for uncertainty attributed to sampling variability and specific sample matrix interferences. Field Duplicates, Field Blanks, and Sample Matrix Spikes may be used to further interpret the field influence on the data. The estimation of uncertainty applied by ALS relates only to measurements conducted in the laboratory. Uncertainty associated with processes conducted external to the laboratory (e.g., sampling activities) are not considered.

Calculation of uncertainty may use the precision measurement values for duplicate samples when LCS or QC samples are not used in testing.

The calculation of uncertainty is not required for qualitative tests. The process is assessed for contributors to uncertainty but the calculation of uncertainty has limited value when empirical values are not available.

7.7 Ensuring the Validity of Results

Before samples are analyzed, the analytical system must be in a controlled, reproducible state from which results of known and acceptable quality can be obtained. That state is verified through the use of Quality Control (QC) procedures intended to ensure accuracy, precision, selectivity, sensitivity, freedom from interference, and freedom from contamination. The QC procedures performed at ALS include: calibration and calibration verification; analysis and comparison of resultant data to predetermined control limits for method blanks, laboratory control samples, spiked matrix samples, duplicate matrix samples, and surrogates added to samples; analysis of performance evaluation samples; determination of Reporting Limits; and the tracking and evaluation of precision and accuracy. The standard lab limits for these QA objectives are found in the Data Quality Objectives table in Appendix. For specific analytical methods, other QC procedures are implemented as required by the method.

These QC procedures are performed and evaluated on a batch basis. Batching procedures and requirements are found in the ALS SOP ADM-BATCH "Sample Batches and Analytical Sequences." The samples in a batch are processed together, through each step of the preparation and analysis, to ensure that all samples receive consistent and equal treatment. Consequently, results from the batch QC samples, not including field sample QC, are used to evaluate the results for all samples in the batch.

In general terms, instrument calibration, method quality control, and data evaluation is described in analytical SOPs.

All QC parameters set by the applicable ALS SOP or method reference shall not be exceeded without proper documentation in the client report.

The hierarchy of quality control requirements begins with:

- ✓ Client Requirements (if specified and documented)
- ✓ Method and/or SOP requirements
- ✓ Guidance from QAM and other general SOPs

Calibration and Calibration Verification

Instrument calibration is a QC measure taken to verify selectivity and sensitivity. Calibration of instruments at ALS is accomplished through the use of reference materials of the highest quality obtainable. ISO or National Metrology Institute (NMI) traceable reference materials are procured and used if they are available. When ISO or National Metrology Institute (NMI) traceable reference materials are not available, certified reference materials from government agencies or reliable vendors are used. In all cases, written records are maintained that allow all analytical results to be traced unambiguously to the reference materials used for calibration.

In general, analytical instruments are initially calibrated with standard solutions made from the reference materials at levels appropriate for the analysis. This is called the initial calibration (ICAL). This calibration is verified with a standard solution independently prepared from a different lot of the reference material, preferably from a different vendor. This step is called initial calibration verification or ICV. At specified intervals throughout the analytical sequence, the calibration is re-verified again through the analysis of a calibration check solution, usually the mid-point standard solution. This process is called the continuing calibration verification or CCV. If the ICAL, the ICV, or any CCV fails criteria in the analytical method, the system is recalibrated or the results are narrated. It is ALS' intention to only report results generated under acceptable calibration conditions. Specific calibration procedures are found in the SOPs associated with each method of analysis.

Calibration blanks are analyzed at designated frequencies for some methods. These calibration blanks (CCBs) are solutions of either analyte-free water, reagent, or solvent that are analyzed in order to verify the analytical system is contamination-free. The frequency of CCB analysis is specified in the analytical SOP and usually once every ten samples. Additional project-specific requirements may also apply to continuing calibration blanks.

Alternative calibration sequences or procedures will be discussed with clients.

Analysis of Method Blanks

The method blank is an analyte-free matrix (water, soil, etc.) subjected to the entire preparation and analytical process. When analyte-free soil is not available, organic-free sand, glass beads, Teflon chips or an acceptable substitute is used. The method blank is analyzed to demonstrate that the analytical system itself does not introduce contamination. The method blank results should be below the Method Reporting Limit (MRL) or, if required for DoD projects, < ½ LOQ for the analyte(s) being tested. Otherwise, corrective action must be taken. A method blank is included with the analysis of every sample preparation batch, every 20 samples, or as stated in the method, whichever is more frequent

Analysis of Laboratory Control Samples

The laboratory control sample (LCS) is an aliquot of analyte-free water or analyte-free solid to which known amounts of the method analyte(s) is (are) added. A reference material of known matrix type, containing certified amounts of target analytes, may also be used as an LCS. An LCS is prepared and analyzed at a minimum frequency of one LCS per 20 samples, with every analytical batch or as stated in the method, whichever is more frequent. The LCS sample is prepared and analyzed in exactly the same manner as the field samples.

The percent recovery of the target analytes in the LCS is compared to established control limits and assists in determining whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements at the required reporting limit. Comparison of batch-to-batch LCS analyses enables the laboratory to evaluate batch-to-batch precision and accuracy.

The results of the LCS are reported as percent recovery:

$$\%\,\text{Recovery} = \frac{X}{K} \times 100$$

Where: X = Measured value and K = Expected value

Analysis of Spiked Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

Matrix spiked samples are aliquots of samples to which a known amount of the target analyte (or analytes) is (are) added. The samples are then prepared and analyzed in the same analytical batch, and in exactly the same manner as are routine samples. For the appropriate methods, matrix spiked samples are prepared and analyzed and at a minimum frequency of one spiked sample (and one duplicate spiked sample, if appropriate) per twenty samples. The spike recovery measures the effects of interferences caused by the sample matrix and reflects the accuracy of the method for the particular matrix in question. The results are reported as percent recovery.

$$\%\,\text{Recovery} = \frac{(XS - Xu)}{K} \times 100$$

Where Xs = Measured value in the spiked sample, Xu = Measured value in the unspiked sample, and K= Expected value

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Duplicate Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

A duplicate matrix spike sample or duplicate matrix sample is used to monitor the precision (repeatability) of the method chosen on a field sample. If a sufficient amount of the analyte(s) of interest is present in the field sample, a matrix duplicate sample is analyzed directly. If the analyte(s) of interest are not present in a sufficient amount, two additional portions of field sample are spiked with the analyte(s) of interest to

ensure that meaningful results are obtained. A pair of duplicate samples (matrix/matrix duplicate or matrix spike/matrix spike duplicate) is analyzed with every analytical batch of environmental samples. The results of the analysis of duplicate samples are reported as relative percent difference (RPD).

$$RPD = \frac{|X1 - X2|}{[(X1 + X2)/2]} \times 100$$

Where: $|X_1 - X_2|$ = The absolute value of the difference between the two sample values, $[(X_1 + X_2)/2]$ = The average of the two sample values

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Surrogates Added to Samples

Surrogates are organic compounds which are similar in chemical composition and chromatographic behavior to the analytes of interest, but which are not normally found in environmental samples. Depending on the analytical method, one or more of these compounds is added to method blanks, calibration and check standards, and samples (including duplicates, matrix spike samples, duplicate matrix spike samples and laboratory control samples) prior to extraction and analysis in order to monitor the method performance on each sample. Surrogate recovery is a measure of the accuracy and selectivity of the method in the sample matrix. Surrogate results are reported as percent recovery.

$$\%\,Recovery = \frac{X}{K} \times 100$$

Where: X = Measured value and K = Expected value

Analysis of Internal Standards (IS)

Internal standards are known amounts of specific compounds that are added to each sample prior to instrument analysis. Internal standards are generally used for GC/MS and ICP-MS procedures to correct sample results that have been affected by changes in instrument conditions or changes caused by matrix effects. The requirements for evaluation of internal standards are specified in each method and SOP.

Analysis of Interference Check Samples

An interference check sample (ICS) is a solution containing both interfering and analyte elements of known concentration that can be analyzed to verify background and interelement correction factors in metals analyses. The ICS is prepared to contain known concentrations (method or program specific) of elements that will provide an adequate test of the correction factors. The ICS is analyzed at the beginning and end of an analytical run or at a method-specified frequency. Results must meet method criteria and any project-specific criteria.

Analysis of Post Digestion Spikes

Post digestion spikes are samples prepared for metals analyses that have an analyte spike added to determine if matrix effects may be a factor in the results. The spike addition should produce a method-specified minimum concentration above the method reporting limit. A post digestion spike is analyzed with each batch of samples and recovery criteria are specified for each method.

Analysis of MRL Standards (CRDL, LFB)

A laboratory blank fortified at the MRL used to verify the minimum reporting limit. The LFB is carried through the entire extraction and analytical procedure. A LFB is required with every batch of drinking water samples.

Analysis of Performance Evaluation Samples (PT)

Proficiency testing (PT) samples are prepared by an independent organization outside the laboratory. PT providers are evaluated as per the requirements for External Suppliers and must be accredited by TNI for TNI work or ISO/IEC 17043:2010 for work requiring ISO accreditation. They are received and analyzed at regular intervals to monitor laboratory accuracy. ALS Laboratories sends the PT sample results to the independent organization, where they are evaluated and then forwarded directly from that organization to accreditation bodies as needed. PT samples are introduced into the regular sample stream of the laboratory and analyzed as routine samples by analysts who regularly perform the method. Laboratory personnel follow all instructions provided by the PT provider.

Procedures for these analyses are described in the SOP for *Proficiency Sample Testing Analysis* (ADM-PTS). This SOP details prohibited practices regarding Proficiency Testing.

ALS routinely participates in the following studies:

- Water Pollution (WP) and additional water parameters, 2 per year.
- Water Supply (WS) PT studies, 2 per year.
- Hazardous Waste/Soil PT studies, 2 per year.
- Microbiology (WS) PT studies, 2 per year.
- Other studies as required for specific certifications, accreditations, or validations.

PT samples are processed by entering them into the LIMS system as samples (assigned Service Request, due date, testing requirements, etc.) and are processed the same as field samples. The laboratory sections handle samples the same as field samples, performing the analyses following method requirements and performing data review. The laboratory sections submit results to the QA Program Manager for subsequent reporting to the appropriate agencies or study provider. Results of the performance evaluation samples and audits are reviewed by the QA PM, Laboratory Director, and the laboratory staff. For any results outside acceptance criteria, the analysis data is reviewed to attempt to identify a root cause for the deficiency, and corrective action is taken and documented through nonconformance procedures.

The Laboratory Director, Technical Managers or the Quality Manager can institute the analysis of additional PT samples or modify the performance evaluation program as appropriate.

Data Review of Batch

The integrity of the data generated is assessed through the evaluation of the sample results (examples below), initial calibrations, and QC samples. The criteria for evaluation of QC samples are listed within each method-specific SOP. Data is formally reviewed by the analyst and a peer using a checklist which details the items to be reviewed. The data review procedures and decision rules are in the SOP *Laboratory Data Review Process* (ADM-DREV). Records of the data review are maintained and available for external review.

- Holding Times – Holding times assigned by hours are tracked from the minute of sampling to the minute of analysis. Holding times assigned by days are tracked by the day, the holding time ends at midnight of the last day. Holding times prescribed in longer units (weeks, months, years) are handled in the same manner as a holding time defined in days, after converting the holding time to days. Weeks are defined as 7 days; months are defined as 30 days; years are defined as 365 days. When a time of sampling is not provided by the client, ALS uses the first minute of the sampling day (00:00) in the calculation of holding time. Examples:

  48 hour holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 3 09:32.

  5 day holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 6 at 23:59.

  6 month holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by Oct 28 23:59.

- Sample Results (Inorganic) – Following sample analysis and calculations (including any dilutions made due to the sample matrix) the result is verified to fall within the calibration range. If the result is above the calibration range, the sample is diluted and analyzed to bring the result into calibration range. When sample and sample duplicates are analyzed for precision, the calculated RPD is compared to the specified limits. The sample and duplicate are reanalyzed if the criteria are exceeded. The samples may require re-preparation and reanalysis.

- Sample Results (Organic) – For GC/MS analyses, it is verified that the analysis was within the prescribed tune window. If not, the sample is reanalyzed. Following sample analysis and calculations (including any dilutions made due to the sample matrix) peak integrations, retention times, and spectra are evaluated to confirm qualitative identification. Internal standard responses and surrogate recoveries are evaluated against specified criteria. If internal standard response does not meet criteria, the sample is diluted and reanalyzed. Results outside of the calibration range are diluted to within the calibration range. For GC and HPLC tests, results from confirmation analysis are evaluated to confirm positive results and to determine the reported value. The procedure to determine which result to report is described in the SOP for *Confirmation of Organic Analyte Identification and Quantitation (ADM-CONFIRM).* If obvious matrix interferences are present, additional cleanup of the sample using appropriate procedures may be necessary and the sample is reanalyzed. When dilutions are performed, the MRL is elevated accordingly and qualified.

Tracking, Trending, and Evaluation of Long Term Accuracy and Precision

In addition to evaluating individual batch QC results against control limits, QC results from successive batches are also evaluated for possible trends. While a trend is not necessarily an out-of-control situation in itself, it can provide an early warning of a condition that can cause the system to go out of control.

ALS analytical staff identify trends in analytical systems through the routine evaluation of data. Quality Assurance produces control charts as requested to assess trends but this activity by QA is not preventive and is only used to verify trends exist. The occurrence of a trend does not invalidate data that are otherwise in control. However, trends do require attention to determine whether a cause can be assigned to the trend so that appropriate preventive action can be undertaken.

The generation of control charts is routinely performed at ALS. Surrogate and LCS recoveries are monitored and charted using in-house software (ALS QC Control). Control charts are available to monitor the data and to identify various trends in the analytical results. Control charts are generated annually for all LCS and surrogates. Representative analytes are charted every quarter and compared to the previous for on-going evaluation of trends. The annual comparison of all LCS and surrogates provides a longer-term view of overall trends. The Quality Manager compares the newly generated statistical limits to the old and determines whether the new acceptance criteria is to replace the previous criteria. Investigative action may be taken if charts reveal a potential problem with data quality. See SOP for *Control Limits and Trending* (ADM-CTRL_LIM).

7.8 Reporting of Results

7.8.1 The following procedures describe our peer review procedures.

- When an analyst determines that the analytical data has met the data quality objectives (and/or any client-specific data quality objectives) of the method and has qualified any anomalies in a clear, acceptable fashion, the data package is reviewed by another trained analyst or supervisor. If the data package is acceptable, the secondary reviewer approves the data in LIMS.
- When all of the data in the LIMS has been approved by the analytical departments, the system indicates that report is ready for generation. A report writer generates the applicable report from the LIMS and assembles the package based upon the package level. The instructions for generation of a report and package assembly is given in the SOP for *Data Reporting and Report Generation* (ADM-RG).

7.8.2 The reports produced by ALS meet the following requirements:

- ✓ The report identifies the method used. If the method is modified, it is noted as “modified” in the report.
- ✓ Any abnormal sample conditions, deviation from hold time, irregularities in preservation or other situations that might affect the analytical results are noted in the report and associated with the analytical results.

The contents of the report include:

- ✓ The report title with a unique report number
- ✓ the name, address, and telephone number of the laboratory
- ✓ The name and address of the client or project
- ✓ Sample description and associated unique laboratory identification numbers
- ✓ The dates of sample collection, sample receipt, sample preparation, and analysis

- ✓ The time of sample preparation and/or analysis if the required hold time for either activity is 48 hours or less
- ✓ A method identifier for each method, including methods for preparation steps
- ✓ The MDL or minimum reporting limit for the analytical results
- ✓ The analytical results with units and qualifiers as required
- ✓ A description of any quality control failures and deviations from the accepted method
- ✓ The name and title of the individual(s) who accepts responsibility for the content of the report.
- ✓ The date the report is issued
- ✓ Clear identification of any results generated by a subcontract laboratory
- ✓ If sampling activities are performed by ALS personnel, a reference to the sampling procedures. ALS does not perform any sampling for DOD sites.
- ✓ Page numbers and total number of pages

Prior to release of the report to the client, the project chemist reviews the entire report for completeness according to the SOP for *Project Manager Duties and Report Review* (ADM-PCR). The Project Manager ensures that any and all client-specified objectives were successfully achieved. All data are reported in units consistent with project specifications to enable easy comparison of data from report to report.

For subcontracted analyses, the Project Chemist verifies that the report received from the subcontractor is complete. This includes checking that the correct analyses were performed, the analyses were performed for each sample as requested, a report is provided for each analysis, and the report is signed. The Project Chemist accepts the report if all verification items are complete. Acceptance is demonstrated by forwarding the report to the client.

7.8.3 ALS provides results objectively. ALS does not interpret results or state opinions.

7.8.4 ALS does not perform calibration services.

7.8.5 The laboratory reports results based on the sample provided by the customer. If ALS reports to a specification it is only for the sample results. The lab is not involved with decision rules applied to the sampling site.

7.8.6 Amended reports of analytical results are issued to correct errors. Amended reports require the following items:

Amendments to analytical reports will only be made in supplemental documents and shall contain identification similar to “Amended”.

Include the date amended or released to the client.

Amended reports shall meet all reporting and client requirements.

Amended Reports are stored with the original report, are uniquely identified, and make reference to original reports.

A peer review process is used to ensure amended results are accurate.

Any information changed in the report must have the reason for the change documented in the report.

7.8.7 Deliverables

In order to meet individual project needs, ALS provides several levels of analytical reports. Standard specifications for each level of deliverable are described in Table 7-1. Variations may be provided based on client or project specifications.

When requested, ALS provides Electronic Data Deliverables (EDDs) in the format specified by client need or project specification. ALS is capable of generating EDDs with many different formats and specifications. The EDD is prepared by report production staff using the electronic version of the laboratory report to minimize transcription errors. User guides and EDD specification outlines are used in preparing the EDD. The EDD is reviewed and compared to the hard-copy report for accuracy.

Table 7-1
Descriptions of ALS Standard Data Deliverables

Tier II. This Report includes the following:

1. Transmittal letter
2. Case Narrative
3. Sample Detection Summary
4. Sample Cross Reference
5. Chain of custody documents and sample/cooler receipt documentation
6. Report Qualifiers and Definitions, Acronyms, Accreditation IDs, Analyst Summary
7. Sample analytical results
8. Method blank results
9. Surrogate recovery results and acceptance criteria for applicable organic methods
10. Matrix spike result(s) with calculated recovery and including associated acceptance criteria
11. Duplicate or duplicate matrix spike result(s) (as appropriate to method), with calculated relative percent difference
12. Laboratory Control Sample result(s) with calculated recovery and including associated acceptance criteria
13. Dates of sample preparation and analysis for all samples and QC

Tier IV. Full Data Validation Package. In addition to the Tier III Deliverables, this Report includes the following:

1. All raw data associated with the sample analysis, including but not limited to:
   a. Preparation and analysis bench sheets and instrument printouts,
   b. For organics analyses, all applicable chromatograms, spectral, confirmation, and manual integration raw data. For GC/MS this includes tuning results, mass spectra of all positive hits, and the results and spectra of TIC compounds when requested.
   c. QC data,
   d. Calibration data (initial, verification, continuing, etc),
   e. Calibration blanks or instrument blanks (as appropriate to method).

7.9 Complaints

ALS has a documented process (ADM-FEEDBACK "Handling Customer Feedback") for how complaints are received, recorded, and evaluated. Complaints may result in Nonconformance documentation and/or corrective action. Decisions and outcomes are monitored and communicated. These outcomes are available upon request.

7.10 Nonconforming Work

7.10.1 The laboratory takes all appropriate steps necessary to ensure all sample results are reported with acceptable quality control results. When sample results do not conform to established quality control procedures, responsible management will evaluate the significance of the nonconforming work and address the nonconformance according to the procedures in the SOP *Nonconformance and Corrective Action (ADM-CA).* Most non-conformances are random events and can be addressed on the analytical report with standard qualifiers and statements prior to the release of the report. If a quality control measure is found to be out of control, and the data is to be reported, all samples associated with the failed quality control measure shall be reported with the appropriate data qualifier(s) as found in Appendix H

When a nonconformance or other quality issue occurs that casts doubt on the validity of reported test results or additional client instructions are needed, the Project Chemist notifies the client within 10 business days of the discovery. This gives the laboratory time to ascertain the extent and significance of the problem. The SOP for Data Recall (CE-GEN006) is used to guide the recall decision and recall action.

When identification of non-conformances casts doubts on the laboratory's compliance with its own policies and procedures, or on its compliance with applicable Standards (TNI, DOD QSM) or State regulations, the appropriate areas of activity are audited as soon as possible. In addition, the appropriate project chemist is promptly notified of any problems in order to inform the client and proceed with appropriate action. Actions (including halting or repeating of work and withholding of reports, as necessary) are based upon the risk levels established by the laboratory.

- ✓ Any employee may stop work when a task cannot be performed safely or the quality of data is determined to be or could be negatively affected. Metrics utilized for work stoppage may include but are not limited to exceeding instrument or sample control limits, QC trending, instrument problems, etc. The appropriate manager shall be consulted for any work stoppage.
- ✓ the management team is responsible for authorizing the resumption of work.

7.10.2 The laboratory retains records on all nonconformance.

7.10.3 If this evaluation determines the problem has or can reoccur or it is against the laboratories own policies or procedures the event requires a corrective action as described in section 8.7.

7.11 Control of Data and Information Management

7.11.1 The laboratory has access to all data and information through the internet, intranet, network locations and hard copy.

7.11.2 All of the software used for data reduction, verification, and reporting is documented and validated by the ALS computer support staff or by the vendor from whom it is purchased. ALS software is controlled and secured according to ALS SOP ADM-SWQADATA, "Software Quality Assurance and Data Security". A continuing effort is made at ALS to increase the use of automated data handling, improve efficiency, and minimize human error. All raw data is retained. If electronic audit trail functions are available, they are to be in use at all times. Handwritten data is verified for transcription errors by the secondary reviewer.

Software errors are treated as a nonconformance under section 7.10 or as a corrective action under 8.7.

7.11.3 Access to ALS networks are controlled through passwords and windows security. Access to LIMS is controlled through user names and passwords. LIMS passwords are changed at a minimum of once per year. Computer security awareness training is provided on an annual basis.

7.11.4 Network drives are backed up locally at the Rochester lab and remotely at another ALS location.

7.11.5 Access to network locations is managed with windows security and roles throughout the system.

7.11.6 Calculations and data transfers are checked using the peer review process and through documentation of computer programs by the IT staff. The QA department checks calculations on any lab produced spreadsheet templates. The spreadsheets are provided to the lab as Read Only with protection of calculations to prevent accidental changes.

7.11.7 Inspections of the LIMS is performed at least annually by the Quality Manager or designee to endure integrity of electronic data. Records of the inspections are made and a report is submitted to laboratory management, noting any problems identified. Any corrective actions are documented in the corrective action documentation system.

8. Management System Requirements

8.1 Options

8.1.1 The laboratory has implemented **Option A** from the ISO/IEC 17025:2017 standard as a management system. The following sections 8.2 through 8.9 address the required elements of Option A. This manual addresses management systems and demonstrates compliance with this document.

8.2 Management System Documentation

8.2.1 This manual describes or references the policies and objectives of the ALS management system. The laboratory SOPs describe the details on how objectives are accomplished.

8.2.2 Policies and objectives of the management system address how competence is demonstrated and assessed, how testing is objectively reviewed and how consistent operations are accomplished. These are addressed in various procedures that define the processes used.

8.2.3 Evidence of commitment is the review of this manual annually and the records of reading by all employees. Additionally, employees are assigned pertinent procedures as needed to ensure objectivity and consistency.

8.2.4 The policies are supported in this management system with references to the procedures as appropriate.

8.2.5 All employees have access to the Quality Assurance Manual and the supporting procedures, documents, and forms.

8.3 Control of Management System Documents

8.3.1 Procedures for control and maintenance of documents are described in ALS SOP "Document Control". The requirements of these SOPs apply to all laboratory logbooks (standards, maintenance, run logbooks, etc), certificates of analysis, SOPs, QAMs, and other controlled documents (Appendix I). External documents, such as reference methods, accreditation policies and requirements, and reference manuals are maintained under document control policies through the use of hardcopy and network drives.

8.3.2 Revisions are made to uniquely identified internal documents in accordance with the "Document Control" SOP. Assignments are made to the responsible ALS manager or designee to review and update SOPs applicable to the area of responsibility. After revision, the appropriate Manager, Quality Manager, and Laboratory Director must approve the updated SOP. Filing and distribution is performed by the QA PM, or designee, and ensure that only the most current version of the document is distributed and in use. Logbooks and SOPs that are no longer in use are archived according to ADM-ARCH.

8.4 Control of Records

8.4.1 ALS maintains records on the most part electronically and in accordance with *SOP for Data Archiving (ADM-ARCH)*. Logbook entries are standardized following the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). ALS personnel are responsible for retention, retrieval, and disposition of final records of laboratory data and activities. This includes: sample receipt, data packages, laboratory notebooks, instrument maintenance logs, training records, internal and external audits, management reviews, PT reports, QC charts, MDL calculations, accreditations, subcontractor accreditations, Controlled documents, metrology, data investigations, complaints, non-conformances, corrective actions, vendor approvals, purchasing documents, receipt records, and certificates of analysis.

Changes made to data, including electronic data, must clearly identify the date and the person making the change and must follow the procedures in ADM-DATANTRY.

All records are available to the accreditation bodies. Whenever possible, electronic instrument records are stored on the network, which is backed up remotely to prevent data loss due to hardware failure. Software for decommissioned instruments is maintained in ServiceNow (see section 7.5).

8.5 Actions to Address Risks and Opportunities

Multiple Quality System tools are used with the goal of identifying trends and preventing non-conformance with pro-active systems. These tools include the use of Preventive Maintenance, Data Review procedures (ADM-DREV), purchasing from approved vendors (ADM-PUR), the use of second source standards and batch QC, Proficiency Testing, QC Charting, Customer Feedback, Internal auditing, Management Review, Electronic Data backup and computer security procedures, Training procedures, Monthly Risk reporting, Document Control, Annual SOP review, initial and

annual ethics training, and the use of SOPs. When systematic non-conformances are identified in one area, corrective actions are examined for implementation in other lab areas and other ALS labs, as applicable.

All bench level personnel are responsible to continually detect short-term trends in QC data and respond appropriately (instrument maintenance, check of extraction or instrument conditions, check of standards, etc.). Long Term trends are identified with QC Charting, review of Holding Time exceedances, and review of recurring non-conformances.

ALS views risk management as a key component of its corporate governance responsibilities and an essential process in achieving and mandating a viable organization. ALS is committed to enterprise wide risk management to ensure its corporate governance responsibilities are met and its strategic goals are realized.

Refer to ALS Limited Risk Management Policy and Framework CAR-GL-GRP-POL-007 and Risk Appetite and Tolerance Statement CAR-GL-POL-011 for details.

Risk is defined at ALS as the effect of uncertainty on objectives. Objectives for the organization have different attributes and aspects, such as financial, service, quality, health & safety, environmental stewardship, and are considered at different levels, such as enterprise-wide, operational, and project levels. ALS interprets risk as anything that could impact meeting its corporate strategic objectives, and believes risks can provide positive opportunities as well as having negative impacts.

Tools for evaluating and managing risk include routine procedures such as employee evaluations, Management Review, control limits trending, corrective action reports, nonconforming events, SOP review, internal and external audits, and PT results.

Risk reporting mechanisms vary from routine reporting mechanisms and immediate action for lower risk situations to immediate notification of the ALS CEO in extreme cases.

Refer to: ALS Code of Conduct, ALS Whistleblower Policy and Integrity and Compliance Helpline

Regardless of the mechanism used, the policies and tools provide a framework for categorizing, assessing, analyzing, and addressing risk, as well as monitoring and reviewing actions taken. Roles and responsibilities are defined in the relevant procedures.

Risk severity is evaluated during the decision making process. For each risk there is an opportunity.

Risks to our business and how we address them include:

Impartiality by Employees

Analytical testing is completed without undue pressure to modify results to meet client objectives.
ALS does not view this as a risk. There are many firewalls in the lab process to prevent occurrence.

- Project Managers are in contact with clients but there is no ability to influence testing results
- A data generated must be peer reviewed by a second party
- Lab operations only see samples, sample names and numbers. They do not have direct contact with clients.
- Annual Ethics and Data Integrity Training for all employees
- ALS Code of Conduct, ALS Whistleblower Policy, ALS Integrity Hotline, and Integrity and Compliance Helpline.

Chemical Exposure

Failure to practice procedures as trained, issues with the facility, and poor engineering controls can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

ALS has policies, chemical exposure training, and readily available SDS sheets. Employees are expected to offer suggestions for improvement and formally report any conditions where concern for safety is recognized.

Explosion/Chemical Fire

Improper chemical storage and usage along with lack of equipment and facility upkeep can result in loss of life, loss of property, and laboratory down time.

ALS performs inspections and training, keeps an inventory of chemicals, establishes storage locations, and maintains minimal quantities of chemicals.

Supply Disruption

Natural disaster and vendors unable to provide needed supplies can disrupt the business, increase expenses, and result in lost production and lost clients.

ALS maintains multiple sources for supplies, develops relationships with our vendors, and emphasizes communication between analysts, managers, purchasing and vendors.

Loss of Key Employees

Resignation, leave for personal reasons or for other employment can negatively impact the business.

Communication, cross-training, designated backups, and having a pool of potential replacements minimizes this risk. We provide a positive atmosphere for employees and provide small perks to reward dedication.

Computer and Instrument Issues

Computer, instrument, or other IT failures can result in loss of revenue, loss of service, and loss of data.

ALS provides necessary IT resources for instruments and computers including replacing older computers, keeping related systems in good repair, and replacing when necessary. ALS continues to build robust data systems and make provisions for stellar back-up storage for all data.

Reputation

Falsifying test results can result in loss of credibility, loss of clients, loss of revenue, and loss of accreditation.

All new employees must sign an ethics agreement and have initial ethics and data integrity training. Annually, all employees must take ethics and data integrity refresher training. All data undergoes a proper peer review. ALS maintains a strong quality system.

Legal Ramifications

Not following workplace and environmental laws and failure to practice procedures as trained can result in license revocation, fines, and disruption of the business.

Targeted and ongoing training, inspections, and having established procedures minimizes this risk. ALS continues to follow all laws and regulations.

Loss Time Injury

Failure to practice procedures as trained and not having proper safeguards in place can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

Policies, specific task related training, targeted and ongoing training, inspections, workplace safeguards, cross training, and designated backups, minimize this risk. ALS continues to grow the safety program and culture.

Loss of Revenue

Can be caused by various audit fines and contract penalties for late data resulting in loss of revenue and disruption in business.

Policies, specific quality training, targeted and ongoing training, inspections, workplace safeguards, and internal audits minimize this risk. ALS continues to perform lab operations at the highest level.

8.6 Improvement

8.6.1 ALS management is committed to continually improving the effectiveness of the management and quality systems by implementing the requirements of this quality manual. ALS is committed to improvements of the management systems through compliance with its own policies and procedures, including the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. ALS management is also committed to compliance with requirements related to current DoD/DOE QSM, and other client and project related requirements.

8.6.2 ALS surveys clients and gains feedback on services provided. This input to management is managed at a corporate level and is reviewed monthly and during the management review processes. Customer feedback provides important information to allow the company to continually improve. The laboratory maintains and documents timely communication with the client for the purposes of seeking feedback and clarifying customer requests. Feedback is used and analyzed to improve the quality of services. The *SOP for Handling Customer Feedback* (ADM-FEEDBACK) is in place for these events.

8.7 Corrective Actions

8.7.1 ALS Laboratory operations are governed by documented procedures, requirements, quality assurance plans, project plans, and contracts. When any operation, for any reason, does not conform to the requirements of the governing documents, the aberrant event, item, or situation must be properly documented and evaluated. If the evaluation indicates a systematic problem, root cause evaluation is undertaken and corrective action is initiated. Procedures for the documentation and resolution of corrective action are detailed in the ALS SOP ADM-CA “Nonconformance and Corrective Action”. Corrective action may include changes to procedural or management system. It is the policy of ALS that any corrective action which impacts results of testing must include notification to clients. When the lab makes changes that affect a DOD ELAP approved corrective action plan, the DOD ELAP accreditation body is to be notified.

8.8 Internal Audits

8.8.1 Internal audits are conducted in accordance with ALS SOP ADM-IAUD "Internal Audits". When internal and external audits or data assessments reveal a cause for concern with the quality of the data an investigation is initiated by quality assurance personnel to determine the extent of the problem. Internal audits include examination of laboratory practice, the use of data handling systems, documentation and document control, personnel qualification and training records, procurement activities, and other systems that support and augment the laboratory analytical function. Audit findings and any event that casts doubt on the validity of the testing results requires client notification within 15 business days of the discovery of the issue and proposed corrective actions to resolve nonconformance submitted to the customer within 30 business days of the discovery.

8.9 Management Review

8.9.1 Review of the Management System is completed on an ongoing basis in accordance with ALS SOP ADM-MGMTRVW "Management Review".

8.9.2 Inputs to management reviews may be kept in agenda notes and include but are not limited to:

a) Changes in internal and external issues that are relevant to the laboratory; including risks to the laboratory's impartiality and any plan to minimize risks

b) Fulfilment of objectives;

c) Suitability of policies and procedures;

d) Status of actions from previous management reviews;

e) Outcome of recent internal audits;

f) Corrective actions; Preventive Actions

g) Assessments by external bodies;

h) Changes in the volume and type of the work or in the range of laboratory activities;

i) Customer and personnel feedback;

j) Complaints;

k) Effectiveness of any implemented improvements;

l) Adequacy of resources;

m) Results of risk and opportunity identification;

n) Outcome of the assurance of the validity of results (interlaboratory comparisons or proficiency tests);

o) Other relevant factors, such as monitoring activities, quality control activities, and training.

p) Reports from managerial and supervisory personnel

q) Certifications, Accreditations, Licenses, Permits

r) Recommendations for improvement

s) Facility Control

8.9.3 The outputs from the management review shall record all decisions and actions related to at least:

a) The effectiveness of the management system and its processes;

b) Improvement of the laboratory activities related to the fulfilment of the requirements of this document;

c) Provision of required resources;

d) Any need for change.

A summary of these outputs is generated annually.

9. Appendices

Appendices are available upon request. The documents listed in this section are dynamic; accordingly they can change without notice or revision to this QAM. Please contact the laboratory for the most current documents.

APPENDIX A – Definitions

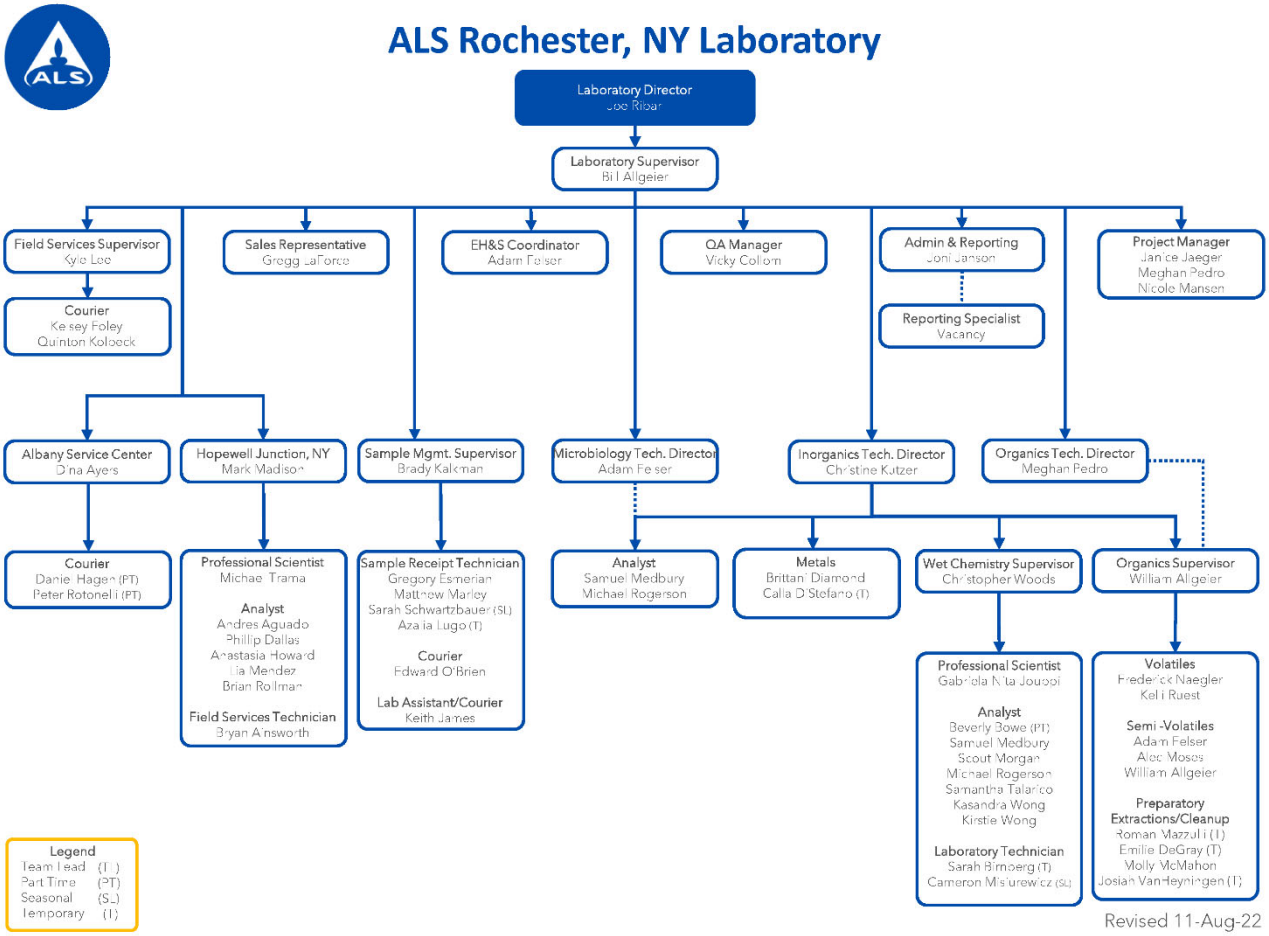
ACRONYM	DEFINITION
AA	Atomic Absorption Spectrometry (aka AAS) instrument used to measure concentration of metals in samples
ACS	American Chemical Society
ASTM	American Society for Testing and Materials
BFB	4-Bromofluorobenzene
BNA	Base Neutral Acid organic compounds (aka SOC or SVOCs)
BOD	Biochemical Oxygen Demand
BTEX/BETX	Benzene, Toluene, Ethylbenzene, Xylenes
CAS Number	Chemical Abstract Service Registry Number
CCB	Continuing Calibration Blank sample
CCC	Continuing Calibration Check sample
CCV	Continuing Calibration Verification sample
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
CLP	Contract Laboratory Program (through USEPA)
COC	Chain-of-Custody
COD	Chemical Oxygen Demand
DCM	Dichloromethane (aka Methylene Chloride)
DEC	Department of Environmental Conservation

DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOC	Demonstration of Capability
DOE	Department of Ecology (state or federal) or Department of Energy
DOH	Department of Health
EPA	U. S. Environmental Protection Agency (aka USEPA)
EPCRA	Emergency Planning & Community Right-to-Know Act
ERA	Environmental Resource Associates
ELAP	Environmental Laboratory Accreditation Program
FDA	Food & Drug Administration
FIA	Flow Injection Analysis
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide & Rodenticide Act
FR	Federal Register
GAO	General Accounting Office
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
HECD/ELCE	Hall Electrolytic Conductivity Detector
HP	Hewlett-Packard (mfg. GC instruments)
HPLC	High Pressure Liquid Chromatography
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectrometry (aka ICPAES)
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICV	Initial Calibration Verification sample
IFB	Invitation for Bid
IR	Infrared Spectrophotometer
ISE	Ion Selective Electrode
LCS	Laboratory Control Sample
LIMS	Laboratory Information Management System
LOD	Limit of Detection

LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
MB	Method Blank
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
MS	Matrix Spike
NA	Not Applicable
NAS	National Academy of Sciences
NCASI	National Council for Air and Stream Improvement (for the Paper Industry)
NCI	National Cancer Institute
ND	Not Detected (at or above MRL)
NIH	National Institute of Health
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
NSF	National Science Foundation
NTIS	National Technical Information System
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PE	Performance Evaluation sample (AKA PT – Proficiency Test sample)
PID	Photoionization Detector
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal

RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SMO	Sample Management Office (aka Sample Receiving)
SOC	Semi-Volatile Organic Compounds
SOQ	Statement of Qualifications
SOW	Statement of Work
SVOAs	Semi-Volatile Organic Analytes
SVOCs	Semi-Volatile Organic Compounds
SW-846	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
TOC	Total Organic Carbon (test to determine organic content)
TOX	Total Organic Halides (test to determine organic halide content)
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
UST	Underground Storage Tank
UV	Ultraviolet Spectrophotometer
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compounds
WP	Water Pollution
WS	Water Supply
UNITS	
mg/kg	Milligrams per Kilogram (same as ppm)
mg/L	Milligrams per Liter (same as ppm)
ug/L	Micrograms per liter (same as ppb)
ppb	Parts Per Billion
ppm	Parts Per Million

APPENDIX B – Key Personnel and Organization Charts



Joe Ribar

3352 128th Avenue | Holland, MI 49424 | +1 616 218 7990

Education

Purdue University,
Lafayette, IN
B.S. Biology, 2002

Regional Director

2020 – Present

Responsible for the Fort Collins, CO, Cincinnati, OH, Middletown, PA, Holland, MI, and Rochester, NY laboratories. Provides administrative, operational, and technical leadership through planning, allocation, and management of resources.

Previous Experience

Laboratory Director, '17 - '21

ALS Environmental Cincinnati, OH 2017 – Present *Rochester, NY 2018 – 2021*

Responsible for all laboratory activities as the highest-level manager. Providing administrative, operational, and technical leadership through planning, allocation, management of personnel, and management of resources. Provides resources for implementation of the QA program.

Previous Experience

ALS Environmental **Operations Manager, '11 – '17**
Holland, MI

Responsibilities included overseeing laboratory and field staff of 60+ people, ensuring timely completion of work, and exceeding client expectations. Duties also included management of greater than $1 million in projects annually, interacting with clients and lab personnel through effective communication, and working with sales staff to develop new and existing clients. Acted as program manager for national accounts.

ALS Environmental **Project Manager, '07 – '11**
Holland, MI

Responsible for management of incoming work; set up projects to meet client specifications, quote pricing, review and report data. Served as the liaison between the laboratory and client to set up projects to ensure the laboratory could meet client's needs; including methods, reporting limits, and turnaround time. Oversaw and reported projects pertaining to wastewater compliance monitoring, product analysis, brownfield remediation, and ongoing groundwater monitoring.

e-Lab Inc. **Field Services Technician, 04 – '07**
Holland, MI

Responsible for scheduling and sampling at numerous industries in the NW Indiana/Chicagoland region to ensure client compliance. Provided consultation to clients regarding industrial/environmental compliance issues; serving as liaison between clients and municipalities. Conducted groundwater monitoring utilizing low flow sampling protocol. Managed supply inventory and helped facilitate overnight shipping of samples to laboratory for large industrial remediation project to ensure hold times were met. Assembled sample kits and coordinated with clients to make sure they had appropriate supplies required for projects.

Severn-Trent Laboratories **Analytical Chemist '02 – '04**
Valparaiso, IN

Obtained analytical data through the use of titration, spectrophotometry, etc. Worked with management to shore up inefficiencies in sample processing including bringing automated instrumentation online including BOD assay and Auto-titrator. Communicated with project managers on a daily basis to update them on specific samples and make them aware of any issues.

Bill Allgeier

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

State University of New York at Brockport, Brockport, NY
BS, Biology, 1997

Erie Community College, Orchard Park, NY
AA, Liberal Arts, 1995

Laboratory Supervisor

2022 – Present

Primary responsibilities include management of all laboratory departments, scheduling, productivity, reporting and evaluation of analytical methodologies, project planning and Quality Assurance/Quality Control protocols.

Previous Experience

ALS Environmental. **Organics Analyst, 2011 – 2022**
Rochester, NY
Analysis, data review, and reporting of pesticides/PCBs, herbicides, semivolatiles, volatiles, and other GC, GC/MS, and HPLC methods.

Columbia Analytical Services **Organics Analyst**, 1999-2011
Rochester, NY
Duties as above.

Advanced Environmental Services **Organics Analyst**,1998-1999
Niagara Falls, NY
Duties as above.

Willow Pond Aqua Farm **Field Technician**, 1997
Hopewell, NY
Assist in maintaining a variety of fish species and installation of water garden ponds.

Christine M. Kutzer

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

St. Bonaventure University,
Olean, NY
BS, Chemistry, 1992

Technical Director

Organics Laboratory 2018-Present

Inorganics Laboratory 2015 - Present

Development and implementation of a quality system, including: monitoring standards of performance in quality control and quality assurance; monitoring the validity of analyses performed and data generated to ensure reliable data; ensuring that sufficient numbers of qualified personnel are employed to supervise and perform the work of the laboratory; and providing educational direction to laboratory staff. Plans and manages all activities in the Inorganics Department, including Metals and General Chemistry. Responsible for coordinating the workload and scheduling employees' daily activities. Assist in the operation, troubleshooting, and maintenance of instrumentation. Responsible for scheduling samples. Accountable for analytical data entry, analytical data approval and High Level metals package generation through MARRS. Responsible for coordinating method development in the Inorganics Laboratory.

Previous Experience

ALS Environmental
Rochester, NY
Technical Manager, Inorganics Laboratory, '11 – '15
Responsibilities same as above.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Inorganics Laboratory *'04-'11*
Duties same as above.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Metals and Organics Prep Laboratories *'02-'04*
Duties as above for Metals Department. Responsible for coordinating the workload and scheduling employees' daily activities and troubleshooting in the organics preparation laboratory.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Laboratory *'96-'02*
Duties as above for Metals Department.

General Testing Corporation
Rochester, NY
Analyst, *'96-'96*
Responsible for instrument troubleshooting and maintenance, digestion of samples, and TCLP extractions. Also responsible for data entry, approval, and package review.

General Testing Corporation
Rochester, NY
Chemist, *'92-'96*
Duties as listed above.

Meghan L. Pedro

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

Nazareth College,
Rochester, NY
MS, Management, 2011

Nazareth College,
Rochester, NY
BS, Chemistry, 2000

Project Manager/Organics Technical Director

2018 – Present / 2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Serves as a technical resource for the Organics Department. Ensures implementation of a quality system and validity of data through the regular review of Organics data.

Previous Experience

ALS Environmental. **Organics Prep Lab Supervisor, '11 – '18**
Rochester, NY

Supervised the organics preparation laboratory for the extraction of pesticides/PCBs, herbicides, semivolatiles and other GC and GC/MS methods. Analysis of the same.

Administration of the laboratory health and safety policies, including formulation and implementation, supervision on new employee safety training, review of accidents, incidents and prevention plans, and the conduction of safety inspections.

Columbia Analytical Services **Organics Prep Lab Supervisor**, '04-'11
Rochester, NY

Duties as above.

Columbia Analytical Services **Organics Analyst**,'02-'04
Rochester, NY

Duties as above, without the supervisory role.

Columbia Analytical Services **Analyst, Organics Preparation**, '01-'02
Rochester, NY

Extraction, concentration, and clean-up of water, soil, and oil samples for Semi-VOA compounds using EPA methodologies.

Adam Felser

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

State University of New York,
Alfred State College,
Alfred, NY
BS, Forensic Science,
AAS Biological Sciences
2017

Organic Analyst and Microbiology Technical Director

2021 - Present

Oversees the Microbiology department. Performs organic analysis using EPA approved methods.

Previous Experience

ALS Environmental,
Rochester, NY

Organic Analyst, Microbiology Analyst, and Wetchemistry Analyst
2019-2021

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,
Rochester, NY

Wetchemistry and Microbiology Analyst
2018-2019

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,

Rochester, NY

Wetchemistry Analyst
2017-2018

Performed Wetchemistry preparation and analysis, using EPA approved methods

Janice M. Jaeger

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

Ohio Wesleyan University, Delaware, OH
BA, Pre-Veterinary Medicine and Pre-Professional Zoology (Double Major), 1983

Project Manager

2011 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base

Previous Experience

Columbia Analytical Services, Inc. **Project Manager** *'96-'11*
Rochester, NY
Responsibilities: Assist clients to determine what analyses are required. Responsibilities primarily as above.

General Testing Corporation **Customer Service Representative/**
Rochester, NY **Sample Receiving,'89-'96**
Primary responsibilities included client services as listed above. Also responsible for sample receipt, log in and distribution as well as bottle preparation.

Penfield Veterinary Hospital **Surgical Assistant, '84-'89**
Rochester, NY
Primary responsibilities included preparation of instruments, surgical area, and animal for surgery. Also responsible for monitoring the animal before and after surgery.

Nicole Mansen

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

State University of New York, Brockport, NY
BS, Biological Sciences, 2011, plus graduate coursework through 2013

Finger Lakes Community College, Canandaigua, NY, **AS, Biotechnology**, 2008

Project Manager

2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Previous Experience

ALS Environmental, Rochester, NY — Metals Analyst and Microbiology Technical Director, 2016-2018

Overseed the Microbiology department. Performed metals preparation and analysis, using EPA approved methods.

ALS Environmental, Rochester, NY — Wetchemistry and Microbiology Analyst, 2014-2016

Performed Microbiology and Wetchemistry analysis, using EPA approved methods.

Vicky Collom

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

Westminster College,
New Wilmington, PA
BS, Environmental Science, 1995

Quality Assurance Manager

2015 - Present

Responsible for the overall coordination of the laboratory QA program and for ensuring implementation and compliance with established quality objectives and quality systems at all times. Responsible for Quality Assurance functions including the Quality Assurance Manual, certifications, documenting standard operating procedures, and maintaining performance evaluation records. Oversees balance calibration and sample storage temperature control. Maintains certifications/accreditations for regulatory agencies and client certifications or approval programs. Acts as primary point of contact during laboratory audits. Provides audit responses and initiates any changes in procedures resulting from an audit. Ensures continuous process improvement through the use of control charts, performance evaluation samples and preventive action. Conducts internal audits and makes recommendations for corrective action and improving effective quality assurance and quality control. Ensures that all personnel understand their contributions to the quality system and that communication takes place at all levels within the laboratory regarding the effectiveness of the quality system, and evaluating the effectiveness of training.

Provides technical assistance to laboratory staff on QA/QC issues, project feasibility, and methods interpretation/development.

Previous Experience

ALS Environmental. **Quality Assurance Specialist, '11 – '15**
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

Columbia Analytical Services **Quality Assurance Specialist**, '01-'11
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

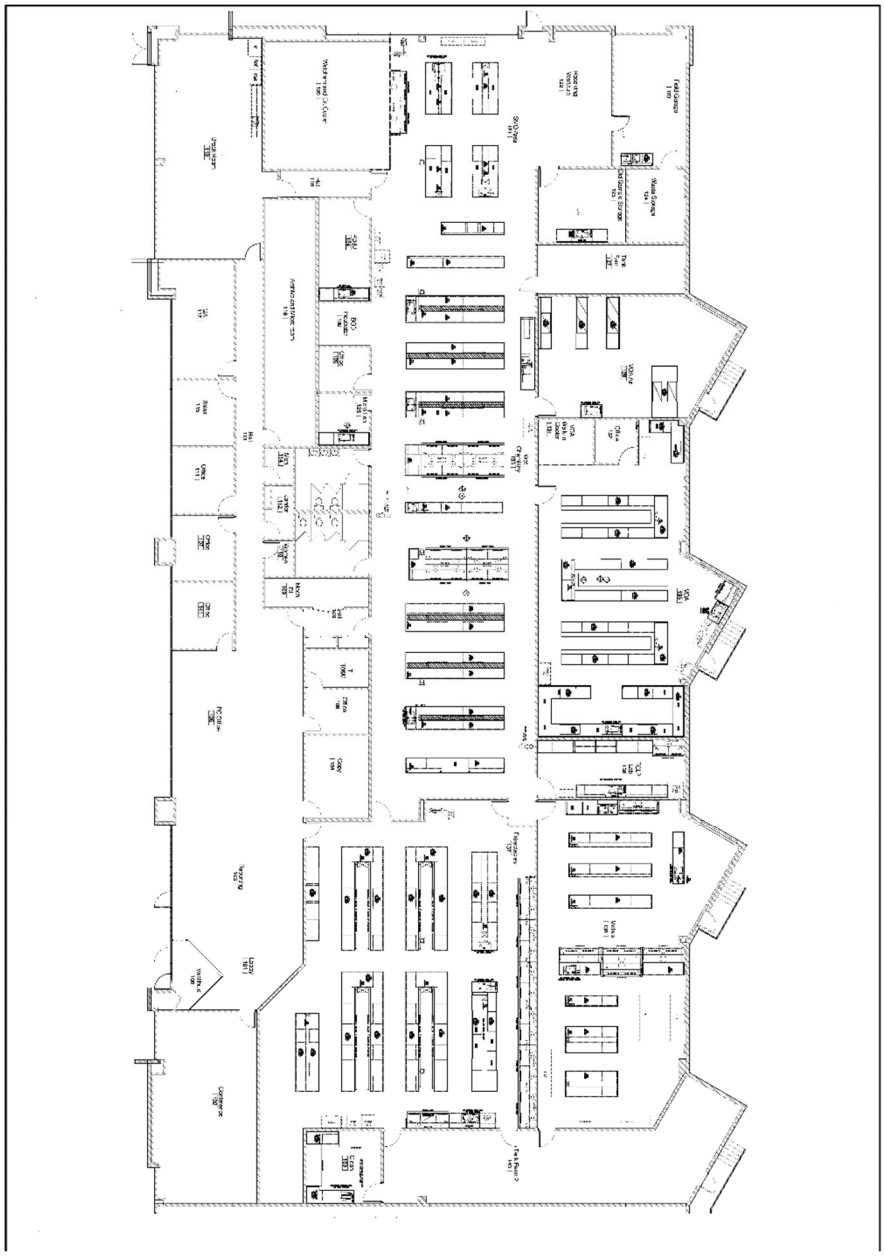
Columbia Analytical Services **Analyst, Wet Chemistry**,'97-'01
Rochester, NY
Responsibilities: Performed general chemistry preparation and analysis, including BOD, titrations, solids, operation and maintenance of instruments including Ion Chromatography, TOC analyzer, Lachat Flow Injection. Performed secondary review of data and participated in method development.

Lawrence County Department of Recycling **Intern**, '95
Solid Waste
New Castle, PA
Responsibilities: Community Education about recycling, data collection for the state about waste haulers, organized a telephone book recycling program.

APPENDIX C – Ethics and Data Integrity Policy

See CE-GEN001

APPENDIX D – Laboratory Floor Plan



APPENDIX E – Analytical & Support Equipment

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
MASS SPECTROMETERS - VOAs					
GC/MS #10 (R-MS-10)	Gas Chromatograph	Agilent 6890N	CN10633045	VOAs	2006
	Mass Spec Detector	Agilent 5975B	US62723782		
	Purge and Trap Autosampler and Concentrator	Atomx	US15195006		
	Computer Workstation	Dell E520 NARCEW7008	8PT52C1		
	Firmware	GC N.05.05 MS 5.02.02			
	Analytical Software	Chemstation	D.03.00.552		
GC/MS #12 (R-MS-12)	Gas Chromatograph	Agilent 6890	US00026365	VOAs	2008
	Mass Spec Detector	Agilent 5973	US71191002		
	Purge and Trap Autosampler and Concentrator	Atomx	US17198011		
	Computer Workstation	Dell NARCEW7005	B78K571		
	Firmware	GC A.03.08 MS 5.02.04			
	Analytical Software	Chemstation	W6G86-222ZT-YK65P-N82JA		
GC/MS #14 (R-MS-14)	Gas Chromatograph	Agilent 7890A	CN10945114	VOAs	2010
	Mass Spec Detector	Agilent 5975C	US94333887		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx	US13271003		
	Computer Workstation	IBM 8212KUE NARCEXP001	LKTAK9B		
	Firmware	GC B.02.02 MS 7.02.29			
	Analytical Software	Enviroquant Chemstation Core Software Software Upgrade Entech Smartlab v4.17b	USK0104163 91701EA		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-MS-16	Gas Chromatograph	Agilent 7890B	CN13473179	VOAs 524.2	used 2021
	Mass Spec Detector	Agilent 5975C	US10263617		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx	US14015025		
	Computer Workstation	HP Prodesk NARCEWX013	MXK0122RGM		
	Firmware	GC A.01.10.2 MS 5.02.04			
	Analytical Software	Mass Hunter	F.01.03.2365		

GAS CHROMATOGRAPHS - VOLATILES

V2 (R-GC-02)	Gas Chromatograph	Varian 3300	4130	Dissolved Gases by RSK	1999
	Detector	FID	(integrated)		
	Computer Workstation	Dell - Windows 2000 ALRCEWP014			
	Firmware	B.01.00			
	Analytical Software	Agilent Chemstation	G1701BA		

MASS SPECTROMETERS -SVOAs

GC/MS 5973C (R-MS-53)	Gas Chromatograph	Agilent 6890N (G1530N)	US10232036	Low Level	2002
	Mass Spec Detector	Agilent 5973 (G2578A)	US21853642		
	AutoSampler	Agilent 7683 (G2614A)	US00307019		
	Injector	Agilent 7683 (G2613A) Agilent LVI being installed	US81501041		
	Computer Workstation	Gateway P7-450 ALRCEWP003	13645026		
	Firmware	GC N.04.08 MS 3.01.58			
	Analytical Software	HP Chemstation Enviroquant G1701 v.D.00.00.38			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GC/MS 5973D (R-MS-54)	Gas Chromatograph	HP6890	US00025479	SemiVOAs	2008
	Mass Spec Detector	HP5973	DE82320565		
	AutoSampler	HP7683	CN74245816		
	Injector	HP7683	CN74143962		
	Computer Workstation	IBM Think Center ALRCEW7038	LKH2F83		
	Firmware	GC A.03.08 MS 5.02.04			
	Analytical Software	Chemstation G1701DA			
GC/MS 5975E (R-MS-56)	Gas Chromatograph	7890A	CN10391141	1,4-Dioxane	2010
	Mass Spec Detector	HP5975C	US1037615		
	AutoSampler	HP7693	CN10340022		
	Injector	HP7693	CN10340059		
	Computer Workstation	IBM Think Center ALRCEXP040	MXL0340NKM		
	Firmware	GC A.01.11 MS 5.02.07			
	Analytical Software	Chemstation G1701EA			
R-MS-64	Gas Chromatograph	7890A	CN10923101	SemiVOAs	used 2021
	Mass Spec Detector	HP5977A	US1352L201		
	AutoSampler	HP7683	CN51032422		
	Injector	HP7683	CN14523070		
	Computer Workstation	HP ProDesk NARCEWX015	MXL0122QBY		
	Firmware	GC A.01.16 MS 6.00.34			
	Analytical Software	Mass Hunter GCMS B.07.06.2704			
R-MS-65	Gas Chromatograph	8890 (G3542A)	US2051A032	625/8270	2022
	Mass Spec Detector	5977B	US2151M037		
	AutoSampler	7693A	R021077008		
	Injector	G4513A	R022015070		
	Computer Workstation	HPZ2 SFF G5 NARCEWX035	1413GFD		
	Firmware	GC 2.4.1.10 MS 6.00.34			
	Analytical Software	Mass Hunter V10			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GAS CHROMATOGRAPHS - EXTRACTABLES					
HP5890(II)-B (R-GC-52)	Gas Chromatograph	HP 5890	2728A14298	Glycol, Method 18	1988
	Detector	FID	(integrated)		
	Autosampler	HP7673	3417A35264		
	Injector	HP7673	CN34222775		
	Controller	HP7673	CN00005619		
	Computer Workstation	HP KAYAK XA ALRCENW001	US8345093		
	Firmware	B.02.00			
	Analytical Software	HPChemstation B.02.05 EnviroQuant G1701BA v.B.01.00			
HP6890- D (R-GC-54)	Gas Chromatograph	HP 6890	22174	PCBs Herbicides	1998
	Detector	Dual ECD			
	Injector	HP7683	DE82400931		
	Autosampler	G26143AX	US81800809		
	Computer Workstation	DELL ALRCENW011	7BQRS71		
	Firmware	A.03.07			
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			
6890N- G (R-GC-58)	Gas Chromatograph	Agilent 6890N	US10520018	PCB	2005
	Detector	Micro ECD			
	Injector	Agilent G2913A	CN51624717		
	Autosampler	Agilent G2614A	CN51032422		
	Computer Workstation	DELL ALRCENW011	7BQRS71		
	Firmware	N.05.05			
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			
6890N- I (R-GC-59)	Gas Chromatograph	Agilent 6890I	US10552066	Petroleum Hydrocarbons, Method 18	2006
	Detector	FID			
	Injector	Agilent G2913A_7683B	CN60931630		
	Autosampler	Agilent G2614A	US81800809		
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	N.05.05			
	Analytical Software	Chemstation D.02.00.275			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HP6890-J (R-GC-60)	Gas Chromatograph	Agilent 6890	US00039730	8015	2008
	Detector	FID			
	Injector	7683 Tower	MS93408790		
	Autosampler	Agilent G2613A_7683	US04910055		
	Columns	Supelcowax 60m, 0.53mm, 1u film, Agilent DB-624 60m, 0.53mm, 3.0u film			
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	A.03.07			
	Analytical Software	Agilent Chemstation 1701 H V2.00			
HP6890-K (R-GC-61)	Gas Chromatograph	Agilent 6890	CN10647081	Method 18	2008
	Detector	FID			
	Injector	76888 Tower G2913A	CN61732829		
	Autosampler	Agilent G2614A	CN31023400		
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	N.05.05			
	Analytical Software	Agilent Chemstation 1701 A U2.00			
7890-M (R-GC-62)	Gas Chromatograph	Agilent 7890	CN12161177	Pesticides	2013
	Detector	Dual ECD			
	Injector	Agilent 7693	CN12120018		
	Tray	Agilent 7693	CN11450020		
	Computer Workstation	HP with Windows 7 ALRCEW7002			
	Firmware	A.01.14			
	Analytical Software	G1701ea 2.02			
7890-N (R-GC-63)	Gas Chromatograph	Agilent 7890B(G3440B)	CN16283107	Pesticides	2016
	ECD - front	Agilent G2397A	U29461		
	ECD - back	Agilent G2397A	U29442		
	Injector	Agilent G4513A	CN16220015		
	Tray	Agilent G4514A	CN16220031		
	Computer Workstation	Prodesk NARCEW7030	2UA624210Z		
	Firmware	B.02.04.2			
	Analytical Software	MassHunter G1701FA version B.07.04.2260 Chemstation DASW rev F.01.03	USH3765977		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
EXTRACTABLES SUPPORT EQUIPMENT					
Buchi #1	Unit	Buchi Rotavapor R-300	1100049910	Concentrations	2021
	Interface	Buchi-I-300Pro	1100046460		
	Vacuum Pump	Buchi V-300	1100050299		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.11.00.00			
Buchi #2	Unit	Buchi Rotavapor R-300	1100085505	Concentrations	2021
	Interface	Buchi-I-300Pro	1100080782		
	Vacuum Pump	Buchi V-300	1100082191		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.12.00.00			
L6	Nitrogen Evap System	LabConco RapidVap	191083869	Concentrations	2019
L8	Nitrogen Evap System	LabConco RapidVap	200593843	Concentrations	2021
N-EVAP	Organomation N-EVAP	Model 112	7531	Concentrations	<2011
SI600	Incubated Shaker	Lab Companion SI600	R069376	Extractions	<2011
Microwave #1	Microwave	CEM MARS6 Model 910900	MY1656	Soil Extractions	used 2020
	Firmware	1.64			
Microwave #2	Microwave	CEM MARS6 Model 910900	MJ2199	Soil Extractions	used 2021
	Firmware	1.64			
Automated Soxhlet #1	Automated Soxhlet	Gerhardt SOX416	1/8465080006	Soil Extractions	2008
Automated Soxhlet #2	Automated Soxhlet	Gerhardt SOX416	1/8465080007	Soil Extractions	2008
Automated Soxhlet #3	Automated Soxhlet	Gerhardt SOX416	1/8465090004	Soil Extractions	2009
Automated Soxhlet #4	Automated Soxhlet	Gerhardt SOX416	1/8465090005	Soil Extractions	2009
Soxhlet Controller	Software/ Firmware	Gerhardt Soxtherm Manager SX PC 2.16			
Autoshaker #4	Automated Shaker	Glas-Col Model 099A VS20012	11811288	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811281 11811282 11811286 11811287		
Autoshaker #5	Automated Shaker	Glas-Col Model 099AVS20012	11811289	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811280 11811283 11811284 11811285		
Autoshaker-06	Rotator		5046WKBL00005	Extractions	2019
WristShaker-01	Burrell Wrist Action Shaker	Model 75		Extractions	<2011
641276A	Centrifuge	Dynac11		Extractions	<2011

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC					
HPLC03 (R-HPLC-03)	Binary Pumps	Shimadzu LCD10ADVP	1(A) C20963851348US 2(B) C20963851344US	Hydroquinone	2005
	UV/VIS Detector	Shimadzu SPD10AVVP	C21004050470US		
	Fluorescence Detector	Shimadzu RF-20A	L204949 56092		
	Electrochemical Detector	BAS LC4C/CC5	LC-4C 7014		
	AutoSampler	Shimadzu SIL10ADVP	C21053850511US		
	System Controller	Shimadzu SCL10AVP	C21013851302US		
	Degasser	Shimadzu DGU 14A	101076		
	Temperature Control Module	Shimadzu cto-20a	L20205152152		
	Computer Workstation	Gateway P7-450 ALRCENW010	14045751		
	Firmware	Concentrator SLC-10ADVp5.33 Pumps LC-10ADUp 9.18 Injector SIL-10ADVp 6.32 Gum CTO-20A 1.08 UV-vis SPD-10AUUP 5.23 Fluor RF-20A 1.05			
	Analytical Software	HP Chem B.02.05 Enviro G1701BA			
HPLC05 (R-HPLC-05)	Degasser	Degasser G1322A	JP 7305035	Metabolic Acids/client specific	2007
	Binary Pump	Agilent 1100/G1312A	US70600653		
	Diode Array Detector	Agilent 1100/G1315B	DE11112376		
	AutoSampler	Agilent 1100/G1313A ALS	DE72003859		
	Computer	ALRCEWP008			
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation for HPLC Rev A 09.0S1206	Data Acquisition and Instrument Control		
HPLC06 (R-HPLC-06)	Detector	Agilent 1100/G1315A	US74901960	Formaldyhyde	2011
	Degasser	Agilent 1100/G1322A	JP73010194		
	AutoSampler	Agilent 1100/G1313A	US80603194		
	Quaternary Pump	Agilent 1100/G1310A	DE33206020		
	Temperature Control Module	Agilent 1100/G1316A	US54000565		
	Computer	ALRCEXP019			
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation for HPLC Rev A.09.03[1417]	Data Acquisition and Instrument Control		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
METALS					
FIMS-02 (or FIMS II) (R-CVAA-02)	CVAA-FIMS	Perkin Elmer FIMS 100	101S12110203	Mercury	2013
	Autosampler	S-10	102S13020818		
	Computer Workstation	Lenova ThinkCentre NARCEW7031			
	Firmware	Spectrophotometer and FIAS 2.20, Autosampler 1.85			
	Analytical Software	PE AA WinLab 32 v.7.2			
Teledyne Leeman Quick Trace (R-CVAF-02)	CVAF	Teledyne Quick Trace M-8000	US17335019	Low Level Mercury	2018
	Autosampler	Teledyne ASX 280	121738A280		
	Computer Workstation	Dell Optiplex 3050 NARCEWX003	-		
	Analytical Software	QuickTrace Rev.3.1	-		
ICP #6 (R-ICP-AES-06)	Instrument	Agilent 5100	MY15340001	Metals	2015
	Autosampler	SPS4	AU15340450		
	Computer Workstation	HP Z230 NARCEW7024			
	Firmware	3585			
	Analytical Software	ICP Expert Pro 7.4.1.10449			
Agilent 7900 (R-ICP-MS-02)	ICP/MS	Agilent 7900	JP1649642	Metals	2017 (used)
	Autosampler	SPS 4	Au16321750		
	Computer Workstation	HPZ240 NARCEW7035	ZuA6373K2L		
	Firmware	4.00.03 003.04.			
	Analytical Software	MassHunter 4.4	G7201C version C.01.04 Build 544.3		
HOTBLOCKS - METALS					
WC Block #1	54 wells -50 mL	Environmental Express		Metals Digestions	2012
Hotblock #4	25 wells - 100 mL	Environmental Express		Metals Digestions	2005
Hotblock #7	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #8	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #9	120 wells - 10 mL	ALS	Control Box ALS16074	Metals Digestions	2017
Hotblock #10	120 wells - 10 mL	ALS	Control Box ALS16075	Metals Digestions	2017
Hotblock #11	54 wells -50 mL	Environmental Express		Metals Digestions	2021
Hotblock #12	54 wells -50 mL	Environmental Express		Metals Digestions	2021
TCLP					
TCLP Rotator #4	10 place box	Lars Lande		TCLP/SPLP	<2003
TCLP Rotator #6	12 place box	Environmental Express	8507-12-660	TCLP/SPLP	2013
TCLP Rotator #7	12 place collar	Analytical Testing Corp	5685YEBC0019	TCLP/SPLP	2021

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GENERAL CHEMISTRY					
Skalar (R-Buret-02) (R-DOmeter-05) (R-pH-08) (R-Condmeter-04)	Robotics	Skalar SP2003 21088903-01	15207	Alkalinity, pH	2016
	Autoitrator	Metrohm 848 Titrino Plus	1066010		
	Buret	Exchangeable 20 mL	1066010		
	DO Meters	2 x YSI ProODO 626281	15H100558 15H100559		
	YSI ProComm II Kit	2 x Item 605404	15G100513		
	YSI ProOBOD Probe	2 x 626400	15F102995 15F102996		
	External Pump	Skalar 21007965-01	15821		
	Conductivity Meter	Skalar Consort C6010	not in use		
	Conductivity probe	Skalar Consort 20T	107769		
	pH probe	Metrohm Aquatrode			
	Computer Workstation	Dell Optiplex 3020 NARCEW7025			
	Analytical Software/Firmware	Skalar Robotics v.1.74Release firmware 1088 version 2.23 714: 705:3.0 710:3.4	99300021USA		
202643	digital Barometer	VWR 10510-922	181563215	Barometric Pressure	2019
TOC#1 (R-TOC-01)	TOC Analyzer	OI Model 1010	J245710349	out of service	2003
	Autosampler	OI Model 1051	B247751184		
	Computer Workstation	Gateway GP6-300 ALRCENW017	10709094		
	Firmware	version 365			
	Analytical Software	OI WinTOC for 1010 v.01 Rev 225	-		
TOC#3 (R-TOC-03)	TOC Analyzer	Elementar Vario TOC Cube	38135054	TOC	2014
	Computer Workstation	Dell Optiplex 3020 NARCEW7006	25127169373		
	Firmware	version 1CC			
	Analytical Software	Vario TOC v3.0.8	1cc5b019		
TOC-04 (R-TOC-04)	TOC Analyzer	Shimadzu TOC-L(csh) Model 638-91151-43	H54425930043 CS	TOC	2022
	Computer Workstation	Dell Precision 3450 with Windows 10 HBB4RJ3	Service Tag # HBB4RJ3		
	Firmware	version 1.09			
	Analytical Software	TOC-Control L Software	TOCL-10900-101045		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
QC8500 (R-FIA-05)	Flow Injection System	Lachat 8500		Cyanide, NO2/NO3, Phosphorus, Silica, Ammonia, TKN	2011
	Colorimeter		110100001295		
	Amperometric Detector	BASi CC-5e	5966		
	Cell	BASi CC-3D	11314		
	Pump	14951	0595996-2		
	Autosampler	ASX-260	021109A260		
	Computer Workstation	Dell Optiplex 780 ALRCEXP043			
	Firmware	V.9.0.333.0			
	Analytical Software	Omnion FIA v.3.0	-		
R-Discrete-02	Instrument	ThermoFisher Gallery	861000110585	NO2, OPO4, Cr6+, Ammonia	2017
	Computer Workstation	Dell Optiplex 7040 NARCEW7033			
	Firmware	V.6.0			
	Software	Gallery			
SAN++ (R-FIA-06)	Flow Injection System	Skalar 5000	182775	Phenol Cyanide	2018
	UV Digester	5565	18122		
	Reagent Valve	21530919	18922		
	Computer Interface				
	Autosampler	21074900-01	18882		
	Computer Workstation	Dell Optiplex 3050 NARCEWX005			
	Firmware	Version Lab 7			
	Analytical Software	FlowAccess V4			
IC#3 (R-IC-03)	Ion Chromatograph	Metrohm 861 Advanced Compact IC		26A Anions	2005
	Basic Chromatography Module	Metrohm	861-02114		
	Pump	Metrohm	62824100s20		
	Conductivity Detector	Metrohm	integrated		
	Autosampler	Metrohm	838-04105		
	Computer Workstation	Dell OptiPlex GX520 ALRCEXP004	6VRC581		
	Firmware	SR#2			
	Analytical Software	IC NET 2.3 SR2	A.701.0016		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 5 (R-IC-05)	Ion Chromatograph	Dionex ICS-1000	7090145	Cr6+	2007
	Gradient Pump	GP40			
	Conductivity Detector	DS6	7081071		
	Autosampler	AS40	7090325		
	Computer Workstation	Dell Optiplex 745 NARCEW7040	1441DAA99		
	Firmware	Version 1127			
	Analytical Software	Chromeleon 6.80	56276		
IC # 6 (R-IC-06)	Ion Chromatograph	DX-120	10169	Out of service	2008
	Conductivity Detector	DS4-1	10133		
	Autosampler	AS40	4070066		
	Computer Workstation	Gateway 2000 GP6-266	10239250		
	Analytical Software	Peaknet 5.21	192-994-1564		
IC # 7 (R-IC-07)	Ion Chromatograph	DX500		TMA/TMAH	2008
	Basic Chromatography Module	LC20	99050321		
	Gradient Pump	GP50	99050419		
	Conductivity Detector	CD20	99050289		
	Autosampler	AS40	99011702		
	Computer Workstation	Gateway 2000 GP6-266 ARCEW9001	10239250		
	Analytical Software	Peaknet 5.21	192-994-1564		
IC #8 (R-IC-08)	Ion Chromatograph	Dionex ICS-2100	12030901	Cr6+	2012
	Heated Conductivity Cell	DS6	12030664		
	Reagent Pump	AXP	20045075		
	Variable Wavelength Detector		12031294		
	Autosampler	AS-AP	12031171		
	Computer Workstation	Dell Optiplex 790 NARCEW7040	15105322945		
	Firmware	Version 1127			
	Analytical Software	Chromeleon 7.0	151838		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 9 (R-IC-09)	Ion Chromatograph with gradient pump	Dionex 2100	12090703	out of service	2013
	Conductivity Detector	DS6	12090530		
	Autosampler	ASDV	12090422		
	Computer Workstation	Shares with IC#8			
	Firmware	Version 1127			
	Analytical Software	Shares with IC#8			
IC # 10 (R-IC-10)	Ion Chromatograph	Metrohm 930 Complact IC Flex		Anions	2020
	Basic Chromatography Module	Metrohm	1930200072154		
	Pump	Metrohm	40654		
	Conductivity Detector	Metrohm	18509010566141		
	Autosampler	Metrohm	1858002007735		
	Computer Workstation	Del Optiplex AIO NARCEWX010	OHL3QR4		
	Firmware	SR#130			
	Analytical Software	MagIC Net Version 3.3	4612612		
HB#6	54 place Hotblock with stirbase	Environmental Express SC154		Cr6+ digestions / Amenable Cyanide Prep / Metals digestions	<2015
TDS HB#1	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW135	TDS evaporation	2021
TDS HB#2	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW134	TDS evaporation	2021
Autoclave	Tutternauer	3870m	2801669	Micro/TPO4	2011

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Midi #1	Midi Distillation System	BSL Co	none	Sulfide Distillation	1997
Midi #2	Midi Distillation System			Sulfide Distillation	~2011
Micro Dist #1	Micro Distillation System	Lachat MicroDist	100500002065	Cyanide Distillation	2010
Micro Dist #2	Micro Distillation System	Lachat MicroDist	100500002066	Cyanide Distillation	2010
Turbidimeter (R-Turbidimeter-02)	Turbidimeter	HF Scientific Micro 100	609246	Turbidity	2000
MR 21D (R-UV-VIS-06)	Spectro-photometer	Milton Roy Model 332278	3152011032	COD	Received used 2019
1600PC (R-UV-VIS-05)	Spectro-photometer	VWR 1600PC 10037-436	UEE1605011	UV254, H2O2, Fe2+	2016
LDO Meter #3 (R-DOMeter-03)	Dissolved Oxygen Meter	Hach HQ40d	131783034008	DO, BOD	2013
LDO Meter #4 (R-DOMeter-04)	Dissolved Oxygen Meter	Hach HQ40d	131783034012	DO, BOD	2013
Closed Cup (R-Flash-02)	Closed Cup Flashpoint Tester	Boekel Model 152800	none	Ignitability - liquid waste	1993
Karl Fischer Titrator (R-KF-02)	Mettler Toledo	V20 Karl Fischer Titrator	B426750030	% Water	2014
OLD #1	TKN Digestion Block and Control	Al Scientific Pty Ltd AIM600	4726A12136	TKN digest	2007
NEW #2	TKN Digestion Block and Control	Seal Analytical AIM600	5146UO0286	TKN digest	2014
Fluorometer (R-Fluorometer-01)	Fluorometer	Turner Designs Trilogy 7200-000	720000843	Chlorphyll a	2012
	Chlorophyll a Module	Turner 7200-040	-		
Cicero	Solids Vacuum Manifold	Environmental Express Stable Weigh 6 place Filling Station TDS600F	Lot 67-8107	TDS	2018
Accuprep #1	6 place Solid Phase Extraction	CPI Accuprep 7000	-	1664	~1999
Accuprep #2	6 place Solid Phase Extraction	CPI Accuprep 7000	-	1664	~1999

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Dry Bath 01	Oil and Grease Nitrogen Evaporator	Thermo Drybath Stdrd Cat #8887003	HBBT70003040	1664	2018
Dry Bath 03			HCBT70003024	1664	2019
Dry Bath 04				1664	2020
COD Block #1	COD Blocks	Hach 45600-00	31000025012	COD Digestion	<1998
COD Block #2		Hach 45600-00	30800024827		<1998
COD Block #3		Environmental Express HotBlock COD			2018
pHat Albert (R-pH-01)	pH Meters	VWR SympHony B10P Probe Orion 9156BNWP	13246S0013	WC Support	2013
Toto (R-pH-06)		VWR SympHony B10P Probe Orion 9156BNWP	13219S0006	WC Support	2013
Robin (R-pH-07)		VWR SympHony B10P Probe Orion 9156BNWP	14021S0009	WC Support	2014
R-pH-05		SympHony SB80PC pH Probe VWR 89231-572	D04334	pH SMO-PH	2008
R-pH-09		VWR SympHony SB80PC pH Probe 14002-780 Cond Probe Thermo 013005MD	D00582	Extractables pH / WC Cond	2008
R-pH-10		Metrohm 913 pH meter with probe: Metrohm 6.0228.020	1913001015318	WC Support	2021

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-Balance-03	Top Loading Balances	Mettler Toledo PB602-S	1118331281	Metals	<2002
R-Balance-05		Mettler Toledo PB602-S	1125322050	Extractables	2004
R-Balance -14		Ohaus ScoutPro SP6001	7/31340865	SMO	2010
R-Balance -16		Ohaus ScoutPro SP4001	7126311345	out of service	2013
R-Balance-20		Sartorius Entris 3202-1S	36306768	Wetchem	2018
R-Balance-22		Ohaus AX422/E	C009047236	VOA	2020
R-Balance-23		Ohaus AX2202	C123930637	WC	2021
R-Balance-02	Analytical Balances	Mettler AE240	F96727	VOA	1996 used
R-Balance-10		Mettler AE200	J29745	Wetchem	2008 used
R-Balance-11		Mettler AG204	120330501	Wetchem	2001
R-Balance-13		Mettler AE160	D40689	Extractables	2008 used
R-Balance-18		Ohaus PA224C	B507619728	Wetchem	2015
R-Balance-19		Ohaus PA224C	B507619729	Metals	2015
R-Balance-21	Semi-Micro Balance	Sartorius Secura2250-1S	37608437	Wetchem	2019
R-Oven-Metal-01	Thermo Scientific	Model 6528	604341-206	104	2008
R-Oven-07	VWR	1370FM	601403	104	2011
R-Oven-08	VWR	89511-412	41623188	Sulfate drying	2014
R-Oven-09	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42473430	180	2019
R-Oven-10	VWR Oven F Air 6.2CF	Cat#89511-414	42749456	104	2021
R-Oven-11	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42857592	90, 104	2021
Kiln	Skutt Automatic Kiln	Model KM-1218-3	001168	Glassware/Sodium sulfate purification	2011
Thermolyne F48025-60	Muffle Furnace	F48025-60	150440201110801	Wetchem	2011

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
C-1	**Sample Cooler**	Bally Engineered Structures, Inc.	VOA	Sample Storage	2011
C-2	**Sample Cooler**	American Cooler Technologies		Sample Storage	2011
Micro Incubator #2	**Incubator**	Barnstead Model 403	1463060539124	not in use	2017 used
Micro Incubator #3	**Incubator**	VWR Incubator GrCon 4CF Cat#89511-420	42440095	Micro	2019
Micro Water Bath #1	**Water Bath**	VWR MX28C135-V11B	2102-00031	Micro	2021
BOD Incubator	**Incubator**	Shultz		BOD Closet	2011
R-4	**Reagent Fridge**	Revco Scientific	TY90605E	WC Reagents	<1997
R-10	**Sample Fridge**	Kenmore 253.70722410	WA44402244	VOA Bulk Soil Sample Storage	2014
R11	**Standards Fridge**	Haier HC27SF10RB	BS0880E1G 00BKEA80781	FID Standards	2015
R14	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9108913	WC Samples	2017
R15	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9097760	WC Samples	2017
R16	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9108912	WC Samples	2017
R18	**Sample Cooler**			High Conc VOA Cooler	2018 used
R20	**Sample Fridge**	Frigidaire JD-20 Model FF2021TS8	4A11211543	Extactables	2021
R21	**Standards Fridge**	Migali C-23RM-HC	003211102092C009	WC Standards	2022
R22	**Sample Fridge**	Avantco 178GDC69HCB	6589311821093219	WC Samples	2022
R23	**Extract Fridge**	Avantco 178GDC15HCW	6722310421124800	Extactables	2022
F- 5	**Sample Freezer**	Maytag	12377439GV	SMO Sample Storage	
F-6	**Extract Freezer**	GE	SH175743	Extractables	
F-08	**Standard Freezer**	Signature	23429-1	VOA Standards	
F-9	**Sample Freezer**	GE	MS145661	VOA Sample Storage (5035)	
F-10	**Sample Freezer**	Labline		SMO Sample Storage	
F-12	**Standards Freezer**	Whirlpool WZF34X16DW01	470303370	Extractables	2017
F-13	**Extract Freezer**	Frigidaire LFFH20F3 QWC	WB65147646	Extractables	2017

Note that the computers listed with the instruments are dedicated to that instrument for data aquisition, but the data files are saved to a lab-wide network and data may be accessed by any computer with the correct software - provided the user is authorized to do so.

Preventive Maintenance Procedures

Instrument	Activity	Laboratory or Vendor Performed	Frequency
Refrigerators and Coolers	Clean coils	Vendor	As needed
	Check coolant	Vendor	As needed or if temperature outside limit
Fume Hoods	Face velocity measured	Laboratory	Quarterly
	Sash operation	Laboratory	As needed
Ovens	Clean	Laboratory	As needed or if temperature outside limit
Incubators	Record temperatures	Laboratory	Every 15 minutes, electronically
Autoclave	Check temperature	Laboratory	Each use
	Clean	Laboratory	as needed
Top Loading Balances	Check calibration	Laboratory	Before every use
	Check alignment	Laboratory	Before every use
	Cleaning, calibration, adjustment, and spec compliance	Vendor	Annually
	Repair	Vendor	As needed
Analytical Balances	Check alignment	Laboratory	Before every use
	Check calibration	Laboratory	Daily,before use
	Clean pans and compartment	Laboratory	After every use
	Cleaning, calibration, adjustment, and spec compliance	Vendor	Annually
	Repair	Vendor	As needed
Dissolved Oxygen Meter	Check for scratches on sensors	Laboratory	Daily
pH probes	Condition probe	Laboratory	When fluctuations occur
UV-visible Spectrophotometer	Wavelength check	Vendor	Annually
Discrete Analyzer	Empty and Rinse Cuvette Container	Laboratory	Daily
	Empty and Rinse Waste Container	Laboratory	Daily
	Fill Diluent with fresh DI	Laboratory	Daily
	Follow prompts from instrument	Laboratory	Daily/Weekly/Monthly

Preventive Maintenance Procedures			
Instrument	**Activity**	**Lab or Vendor Performed**	**Frequency**
Total Organic Carbon Analyzers	Check IR zero	Laboratory	Weekly
	Check digestion/condensation vessels	Laboratory	Each use
	Clean digestion chamber	Laboratory	Every 2000 hours, or as needed
	Clean permeation tube	Laboratory	Every 2000 hours, or as needed
	Clean six-port valves	Laboratory	Every 200 -2000 hours, or as needed
	Clean sample pump	Laboratory	Every 200 -2000 hours, or as needed
	Clean carbon scrubber Clean IR cell	Laboratory Laboratory	Every 200 -2000 hours, or as needed Every 2000 -4000 hours, or as needed
Flow Injection Analyzer	Check valve flares	Laboratory	Quarterly
	Check valve ports	Vendor	As needed
	Check pump tubing	Laboratory	Daily
	Check flow cell flares	Laboratory	Quarterly
	Change bulb	Laboratory	As needed
	Check manifold tubing	Laboratory	Every six months
	Check T's and connectors	Laboratory	Every six months
Ion Chromatograph	Change column bed supports	Laboratory	Monthly or as needed
	Clean column	Laboratory	Monthly or as needed
	Change column	Laboratory	Every six months or as needed
	Change tubing Eluent pump	Laboratory Laboratory	Annually or as needed Annually
Atomic Absorption Spectro-photometers -CVAA	Check gases	Laboratory	Daily
	Check aspiration tubing	Laboratory	Daily
	Empty waste container	Laboratory	Weekly
ICP-AES	Check argon dewar	Laboratory	Daily
	Replace peristaltic pump tubing	Laboratory	Daily, or as needed
	Empty waste container , , spray torch	Laboratory Laboratory	Daily, or as needed Every two weeks, or as needed
	Replace water filter	Laboratory	Quarterly, or as needed
	Replace or vacuum air filters	Laboratory	Monthly, or as needed

Preventive Maintenance Procedures				
Instrument	**Activity**	**Lab or Vendor Performed**	**Frequency**	**Instrument**
ICP-MS	Check argon dewar		Laboratory	Daily
	Replace peristaltic pump tubing		Laboratory	Daily, or as needed
	Empty waste container		Laboratory	Daily, or as needed
	Clean nebulizer, spray chamber, and torch		Laboratory	Every two weeks, or as needed
	Clean Cone		Laboratory	As needed
	Check air filters		Laboratory	Annually or as needed
	Check rotary pump oil		Laboratory	Quarterly, or as needed
	Clean ion lens stack		Laboratory	Annually or as needed
Chromatographs	Clean and repack column		Laboratory	As needed
	Backflush valves		Laboratory	As needed
Gas Chromatographs	Check gas supplies		Laboratory	Daily, replace when pressure reaches 250 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change injection port liner		Laboratory	Daily or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Check system for gas leaks		Laboratory	After changing columns
	Clean FID		Laboratory	As needed
	Leak test ECD		Laboratory	Annually
Gas Chromatograph/Mass Spectrometers	Check gas supplies		Laboratory	Daily, replace when pressure reaches 50 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change septum		Laboratory	Daily
	Change injection port liner		Laboratory	Weekly or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Clean jet separator		Laboratory	As needed
	Clean source		Laboratory	As needed when tuning problems
	Change pump oil		Laboratory	Every six months
	Oil wick		Laboratory	Every six months

Preventive Maintenance Procedures			
Instrument	**Activity**	**Lab or Vendor Performed**	**Frequency**
Purge and Trap Concentrators	Change trap	Laboratory	As needed
	Change transfer lines	Laboratory	As needed
HPLC	Check gas supplies	Laboratory	Daily, replace when pressure reaches 200 psi
	Change guard column	Laboratory	As needed
	Change analytical column	Laboratory	As needed
	Change inlet filters	Laboratory	As needed
TCLP/SPLP Extractors	Monitor Room Temperature	Laboratory	Daily with use
	Monitor RPM of Rotators	Laboratory	Daily with use
	Leak Check ZHEs	Laboratory	Daily with use
	Grease fittings O-ring replacement	Laboratory	As needed

APPENDIX F – Sample Preservation, Containers, and Hold Times

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Bacterial Tests						
Coliform, Total	SM9223B	W	Sterile P,G	100	Cool, ≤6°C, 0.008% $Na_2S_2O_3$[d] No $Na_2S_2O_3$ if from unchlorinated source	30 hours
Inorganic Tests						
Alkalinity	SM2320B	W	P,G	125	Cool, ≤6°C no headspace	14 days
Ammonia	EPA 350.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Ammonia	EPA 350.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Ash, Percent	ASTM D482	NonAq Liq	P,G	250	Cool, ≤6°C	None Listed
Biochemical Oxygen Demand (BOD/ CBOD)	SM5210B	W	P,G	1000	Cool, ≤6°C	48 hours
Bromide	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Bromide	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chemical Oxygen Demand (COD)	410.4	W, NAq	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Chemical Oxygen Demand (COD)	SM 5220B	S, NAq	G	4 oz.	Cool, ≤6°C	28 days
Chloride	300.0/ 9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Chloride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chlorine, Total Residual	SM4500Cl F	W	P,G	500	None Required- field analysis preferred	15 minutes
Chlorine Demand	SM 409A	W	P,G	500	Cool, ≤6°C	None listed
Chlorophyll a - fluorometric	SM 10200H	W	P, Amber G, or filter	1000 or filter	Filter immediately and freeze filter	3 weeks
Color	SM2120B	W	P,G	100	Cool, ≤6°C	48 hours
Cyanide, Total, Amenable to Chlorination, Weak Acid Dissociable	335.4/ SM4500CNG /9012B/ Kelada-01	W	P,G	125	Cool, ≤6°C, NaOH to pH>12	14 days
Cyanide, Total	9012B	S	P,G	4 oz.	Cool, ≤6 °C	14 days
Density	ASTM D4052	NonAq Liq	P,G	250	None	None listed
Ethylene Glycol	NYSDEC 89-9	W	G	3x40 mL	Cool, ≤6°C	None listed
Fluoride	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Fluoride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Hardness	SM2340BorC	W	P,G	250	HNO_3 to pH<2	6 months
Hydrogen Ion (pH)	SM4500 H+B/ 9040	W	P,G	100	None Required – field analysis preferred	15 minutes
Ignitability – closed cup	1010A	Liquid	G	3 x 40mL	Cool, ≤6°C	14 days
Iodide	300	W	P,G	125	Cool, ≤6°C	28 days suggested
Iron, Ferrous	SM 3500 Fe D	W	P,G	125	Cool, ≤6 °C, no headspace	Immediate (24 hours – Field preferred)
Kjeldahl and Organic Nitrogen	351.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Kjeldahl and Organic Nitrogen	351.2	S, NAq	P,G	4oz.	Cool, ≤6°C	28 days
Nitrate	300.0/9056A	W	P,G	125	Cool, ≤6°C	48 hours
Nitrate	9056A	Naq, S	P,G	4 oz	Cool, ≤6°C	None listed
Nitrate-Nitrite	353.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Nitrite	300.0/9056A/ 353.2	W	P,G	125	Cool, ≤6°C	48 hours
Nitrite	9056A	S, Naq	P,G	4 oz	Cool, ≤6°C	None listed
Odor	SM 2150B	W	G	300 mL	None	Immediate
Oil and Grease	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Orthophosphate	365.1	W	P,G	125	Filter in field, Cool, ≤6°C	48 hours
Phenolics, Total	420.4/9066	W	Amber G Only	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phenolics, Total	9066	S	G	4 oz.	Cool, ≤6°C	28 days
Phenolics, Total	9066	NAq	G	250	Cool, ≤6°C	28 days
Phosphorus, Total	365.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phosphorus, Total	365.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Reactive Cyanide and Sulfide	Chpt7/9010	W,S	P,G	500 or 4 oz.	Cool, ≤6 °C	None listed
Residue, Total	SM2540B	W	P,G	250	Cool, ≤6°C	7 days
Residue, Filterable (TDS)	SM2540C	W	P,G	250	Cool, ≤6°C	7 days
Residue, Nonfilterable (TSS)	SM2540D	W	P,G	1000	Cool, ≤6°C	7 days
Residue, Settleable	SM2540F	W	P,G	1000	Cool, ≤6°C	48 hours

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Residue, Volatile (TVS, TVSS, TVDS)	SM 2540G	W	P,G	See Total Residue	Cool, ≤6°C	7 days
Residue, Volatile	SM 2540G	S	P,G	4 oz.	Cool, ≤6°C	none
Specific Conductance	120.1	W	P,G	100	Cool, ≤6°C Reagent Waters – no headspace	28 days Reagent Waters – 48 hours suggested
Specific Gravity	ASTM D1475	NonAq Liq	P,G	250	None	None listed
Sulfate	300.0/9056A	W	P,G	125	Cool, ≤6°C	28 days
Sulfate	9056A	Naq, S	G	4 oz.	Cool, ≤6°C	28 days
Sulfide, Acid Soluble	SM 4500-S2 F /9034	W	P,G	500	Cool, ≤6°C, Add Zinc Acetate plus NaOH to pH>9 No headspace	7 days
Sulfide, Acid Soluble	9030B/9034	S	P,G	4 oz.	Cool, ≤6°C No headspace	7 days
Sulfite	SM 4500-SO32-B	W	P,G	250	None Required- field analysis preferred	15 minutes
Sulfur – Peroxide Digestion	300	W,S,Naq	P,G	250	Cool, ≤6°C	None
Sulfuric Acid	8	A impingers	P,G	250	None	None
Temperature	170.1	W	NA	NA	None Required	Analyze immediately
Total Petroleum Hydrocarbons, Recoverable (gravimetric)	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, HCl or H_2SO_4 to pH<2	28 days
Turbidity	180.1	W	P,G	100	Cool, ≤6°C	48 hours
UV Absorbing Constituents	SM 5910 B	W	P,G	125	Cool, ≤6°C	48 hours
Water, Percent	ASTM E203	W	P,G	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Metals						
Chromium VI	218.6	W (not Drinking Water)	P,G	125	Cool, ≤6°C Buffering = pH 9.3-9.7 with specific solution	24 hours: 28 days if buffered
Chromium VI	218.6	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH 9.0-9.5 with specific solution	24 hours: 5 days if buffered
Chromium VI	218.7	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH >8 with specific solution	14 days
Chromium VI	7199, SM3500CrB	W	P,G	125	Cool, ≤6°C	24 hours
Chromium VI	7199	S	P,G	4 oz.	Cool, ≤6°C	30 days until digestion; 7 days until pH adjustment and analysis
Mercury, Low Level	1631E	W	G, double bagged	500	HCl BrCl in-lab, in bottle	28 days to BrCl 90 days from collection to analysis
Mercury	245.1/7470A	W	P,G	250	HNO_3 to pH<2	28 days
Mercury	245.5/7471B	S	P,G	4 oz.	Cool, ≤6°C	28 days
Metals, except Chromium VI and Mercury	200.7/200.8/ 6020A	W	P,G	125	HNO_3 to pH<2	180 days
Metals, except Chromium VI and Mercury	6010C	W	P,G	250	HNO_3 to pH<2	180 days
Lead and Copper for Public Water Systems	200.8	Drinking Water	P,G	1000-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Lead for Schools	200.8	Drinking Water	P,G	250-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	Tissue	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C	180 days
Organics						
Organic Carbon, Total (TOC)	SM 5310B/C /9060	W	G	40	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Total Inorganic Carbon (TIC)	SM 5310C	W	G	125	Cool, ≤6°C	28 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC)	EPA Lloyd Kahn	S	G	4 oz	Cool, ≤6°C, no headspace	14 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC	EPA Lloyd Kahn	NAq	G	4 oz	Cool, ≤6°C, no headspace	None listed
Petroleum Hydrocarbons, Total	310-13	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C,	7 days until extraction; 40 days after extraction
Petroleum Hydrocarbons, Total	310-13	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260C/624.1	W	G, Teflon-Lined Septum Cap	3x40	No Headspace, Cool, ≤6°C, **Typical:** HCl to pH<2, **Residual Chlorine Known to be Present**: 25mg Ascorbic, then HCl to pH<2, Cool, ≤6°C 2-chloroethyl vinyl ether – unpreserved only Acrolein (624 only)– unpreserved (or field preserved to pH 4-5)	14 days 7 days if not chemically preserved 7 days 3 days (14 days if field preserved to pH 4-5)
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S-Bulk Will be narrated	G, Teflon-Lined Cap	2 oz.	Cool, ≤6°C, Minimize Headspace	14 days
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S - 5035	G, Teflon-Lined, Septum Cap	5g cores in 2x40 DI 1x40 MeOH Or 3 x 5g cores	Cool, ≤6°C, Freeze upon receipt Cool, ≤6°C or freeze, in coring tool, lab transfer to 2x40 DI 1x40 MeOH within 48 hours	14 days
Dissolved Gases	RSK-175	W	G, Teflon-Lined Septum Cap	3x40	Cool, ≤6°C, HCl to pH<2 No Headspace	14 days 7 days if not chemically preserved

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Semivolatile Organics						
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C	7 days until extraction 40 days after extraction
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Non-Halogenated Organics	8015	W,S, NAq	G, Teflon-Lined Cap	3x40, 4 oz.	Cool, ≤6°C, No Headspace[g]	14 days
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	625.1/ 8270	W	G, Teflon-Lined Cap	2x250 LL: 2x1000	Cool, ≤6°C, store in dark[g]	7 days until extraction; 40 days after extraction
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, store in dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	610/8310 625.1/ 8270 LL	W	G, Teflon-Lined Cap	2x1000.	Cool, ≤6°C, Store in Dark	7 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, Store in Dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	T	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C, Store in Dark	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	608.3/ 8081	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C, Adjust pH to 5-9 unless extracted within 72 hours	7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	S, NAq	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	T	G, Teflon-Lined Cap	Hexane rinsed double aluminum foil and double bag	Frozen, ≤-20°C	Check client QAP 14/40 RIM Frozen 1 year for EPA Region 1
PCBs	608.3/8082	W	G, Teflon-Lined Cap	2x250, LL: 2x1000	Cool, ≤6°C	1 year until extraction and analysis
PCBs	608.3/8082	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	1 year until extraction and analysis
PCB Homologs	680	W	G, Teflon-Lined Cap	2x1000	Adjust pH to 5-9, Cool, ≤6°C, If not pH 5-9	7 days until extraction 40 days after extraction, 72 hours
PCB Homologs	680	T,S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Chlorinated Herbicides	8151	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C	7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Metabolic/Fatty/Organic Acids	In house	W	G, Teflon-Lined Cap	2x40 or 250	Cool, ≤6°C, H_3PO_4	28 days recommended
Carbonyl Compounds (Formaldehyde)	8315	W	G, Teflon-Lined Cap	500	Cool, ≤6°C	3 days until extraction, 3 days after extraction
1,4-Dioxane	522	DW	G, Teflon-Lined Cap	500	Dechlorinate Na_2SO_3, Cool, ≤6°C, pH <4 $NaHSO_4$	28 days until extraction; 28 days after extraction
1,4-Dioxane	8270	W	G, Teflon-Lined Cap	500	Cool, ≤6°C[4]	7 days until extraction; 40 days after extraction
Toxicity Characteristic Leaching Procedure (TCLP)						
Mercury	7470	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	28 days until extraction; 28 days after extraction
Metals, except Mercury	6010	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	180 days until extraction; 180 days after extraction
Volatile Organics	8260	HW	G, Teflon-Lined Cap	2 oz. (25g)	Sample: Cool, ≤6°C Minimize Headspace TCLP extract: Cool, ≤6°C, HCl to pH<2, No Headspace	14 days until extraction; 14 days after extraction
Semivolatile Organics	8270	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C, Store in Dark[g] TCLP extract: Cool, ≤6°C, Store in Dark	14 days until TCLP; 7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction

a Holding time is from collection to analysis unless otherwise specified. Where allowed by project sampling and analysis protocols, the holding time for sediment, soil, and tissue samples may be extended for a defined period when stored frozen at -20°C.
b W=Water, S=Soil or Sediment, A = Air, HW = Hazardous Waste, T=Tissue, NAq = Non-Aqueous Liquid
c P=Polyethylene G=Glass
d For chlorinated water samples
e The recommended maximum holding time is variable, and is dependent upon the geographical proximity of sample source to the laboratory
g If the water sample contains residual chlorine, 10% sodium thiosulfate is used to dechlorinate.

APPENDIX G – Standard Operating Procedures

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
DATA RECALL	CE-GEN006
LABORATORY ETHICS and DATA INTEGRITY	CE-GEN001
SAMPLE BATCHES AND ANALYTICAL SEQUENCES	ADM-BATCH
CONFIRMATION OF ORGANIC ANALYTE IDENTIFICATION AND QUANTITATION	ADM-CONFIRM
NONCONFORMANCE AND CORRECTIVE ACTION	ADM-CA
CONTROL LIMITS AND TRENDING	ADM-CTRL_LIM
MAKING ENTRIES ONTO ANALYTICAL RECORDS	ADM-DATANTRY
DOCUMENT CONTROL	ADM-DOC_CRTL
HANDLING CUSTOMER FEEDBACK	ADM-FEEDBACK
MECHANICAL VOLUMETRIC DISPENSING DEVICES, VOLUMETRIC AND NON-VOLUMETRIC LABWARE	ADM-PCAL
INITIAL CALIBRATION	ADM-ICAL
INTERNAL AUDITS	ADM-IAUD
PREPARING SAMPLE DILUTIONS	ADM-DIL
GENERATION OF ELECTRONIC DATA DELIVERABLES USING EDDGE	ADM-EDD
LABORATORY DATA REVIEW PROCESS	ADM-DREV
DELAWARE HSCA PROGRAM SOP	ADM-DNREC-HSCA
USE OF ACCREDITATION ORGANIZATION NAMES SYMBOLS AND LOGOS	ADM-LOGO
PROJECT CHEMIST DUTIES AND REPORT REVIEW	ADM-PCR
PROCUREMENT AND CONTROL OF LAB SERVICES AND SUPPLIES	ADM-PUR
REPORT GENERATION	ADM-RG
RECORD STORAGE AND ARCHIVING	ADM-ARCH
CALIBRATION CHECK PROCEDURES FOR SUPPORT EQUIPMENT	ADM-DALYCK
MANUAL INTEGRATION	ADM-INT
MANAGEMENT REVIEW	ADM-MGMTRVW
PERFORMING METHOD DETECTION LIMIT STUDIES AND ESTABLISHING LIMITS OF DETECTION AND QUANTITATION	ADM-MDL
SOFTWARE QUALITY ASSURANCE AND DATA SECURITY	ADM-SWQADATA
PH MEASUREMENTS FOR SUPPORT OF OTHER METHODS - CALIBRATION, USE, AND DOCUMENTATION	ADM-PhSUPPORT
PROFICIENCY TESTING SAMPLE ANALYSIS	ADM-PTS
SIGNIFICANT FIGURES	ADM-SIG.FIG
ESTABLISHING STANDARD OPERATING PROCEDURES	ADM-SOP
SAMPLE PREPARATION, COMPOSITING, AND SUBSAMPLING	ADM-SPLPREP
QUALIFICATION OF SUBCONTRACT LABORATORIES	ADM-SUBLAB
TRAINING AND ORIENTATION	ADM-TRAINING
COORDINATION AND REPORTING OF SAMPLES REQUIRING DECANTED PERCENT SOLIDS	ADM-DECANT
CARBON DIOXIDE BY CALCULATION	ADM-4500 CO2 D
HARDNESS BY CALCULATION	GEN-2340B
LANGLIER INDEX CALCULATION	ADM-2330B
UN-IONIZED SULFIDE BY CALCULATION	ADM-H2SCALC
FIELD SAMPLING	FLD-SAMPLE
TEMPERATURE - FIELD	FLD-2550B
FIELD MEASUREMENTS OF DISSOLVED OXYGEN BY MEMBRANE ELECTRODE	FLD-4500OG
FIELD CHLORINE RESIDUAL	FLD4500CLG
pH IN WATER AND AQUEOUS WASTE	FLD-4500H+B
METHOD 18 - AIR SAMPLING	FLD-18
METHOD 26A - AIR SAMPLING	FLD-26A
BOTTLE PREPARATION, PACKING, AND SHIPPING	SMO-BPS
RECEIPT, STORAGE AND DISPOSAL OF FOREIGN SOIL UNDER USDA PERMIT	SMO-FOREIGN SOIL
SAMPLE RECEIVING	SMO-GEN
INTERNAL CHAINS OF CUSTODY	SMO-ICOC
SAMPLE DISPOSAL	SMO-SPLDIS

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
AMMONIA BY COLORIMETRY	GEN-350.1
ASH, DETERMINATION OF	GEN-ASH
BIOCHEMICAL OXYGEN DEMAND	GEN-5210B
CHEMICAL OXYGEN DEMAND-Soils	GEN-CODS
CHEMICAL OXYGEN DEMAND-Waters	GEN-410.4
CHLORINE DEMAND	GEN-409A
CHLORINE RESIDUAL	GEN-4500ClF
CHLOROPHYLL A BY FLUOROMETRY	GEN-CHLPHA
COLILERT AND VERIFICATION OF E.COLI IN MUG CULTURES	GEN-9223B
COLOR	GEN-2120B
CONDUCTIVITY IN WATER	GEN-120.1
TOTAL CYANIDE BY AUTOMATED IN-LINE UV DIGESTION, FLASH DISTILLATION, AND COLORIMETRIC ANALYSIS	GEN-KELADA
CYANIDE, AMENABLE TO CHLORINE	GEN-4500 CN G
CYANIDE, MIDI DISTILLATION	GEN-9012
CYANIDE, WEAK ACID DISSOCIABLE	GEN-WADCN
DENSITY OR SPECIFIC GRAVITY BY WEIGHT PER GALLON CUP	GEN-D1475Cup
DISSOLVED OXYGEN	GEN-DO
GLYCOLS AND FORMALDEHYDE BY COLORIMETRY	GEN-89-9
FERROUS IRON	GEN-3500
HARDNESS, TOTAL	GEN-2340C
ALKALINE DIGESTION FOR HEXAVALENT CHROMIUM IN SOIL	GEN-3060
HEXAVALENT CHROMIUM BY IC	GEN-7199
HEXAVALENT CHROMIUM - WATERS	GEN-CR6
HYDROGEN PEROXIDE IN AIR IMPINGERS BY MANUAL COLORIMETRY WITH TITANIUM (IV)	GEN-OSHAVI6
IN-LAB FILTRATION	GEN-FILTER
ION CHROMATOGRAPHY, DETERMINATION OF ANIONS BY	GEN-300.0
NITRATE AND NITRITE	GEN-353.2
NITROGEN, TOTAL KJELDAHL	GEN-351.2
OIL AND GREASE HEXANE EXTRACTION	GEN-1664
PAINT FILTER TEST	SMO-9095
PERCENT WATER BY KARL FISCHER	GEN-H2O
pH IN WATER AND AQUEOUS WASTE	SMO-PH
pH IN WATER AND AQUEOUS WASTE	SMO-PH
PHENOLICS, TOTAL	GEN-420.4/9066
PHOSPHORUS, ORTHO	GEN- OPO4
PHOSPHORUS, TOTAL	GEN-365.1
SKALAR, SPECIFIC CONDUCTANCE, PH, and ALKALINITY	GEN-SKALAR
SOLIDS, PERCENT	GEN-DWPS
SOLIDS, TOTAL	GEN-2540B
SOLIDS, TOTAL DISSOLVED	GEN-2540C
SOLIDS, TOTAL SUSPENDED	GEN-2540D
SOLIDS, VOLATILE AND FIXED (TOTAL, DISSOLVED, and SUSPENDED)	GEN-160.4
SOLIDS, PERCENT VOLATILE	GEN-2540G
SETTEABLE SOLIDS	GEN-2540F
SUSPENDED SEDIMENT CONCENTRATION IN WATER SAMPLES by ASTM D3977	GEN-SSC
SULFIDE, ACID SOLUBLE	GEN-9030B
SULFIDE, TOTAL AND DISSOLVED IN WATERS	GEN-4500S2F
SULFITE	GEN-4500SO3B
SULFURIC ACID BY METHOD 8	GEN-8
TMA and TMAH IN SORBENT TUBES AND WATER USNG IC	GEN-TMA(H)
TOTAL ORGANIC CARBON OR TIC BY LLOYD KAHN/9060	GEN-TOCLK/9060
TOTAL ORGANIC CARBON-WATERS	GEN-5310

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
TOTAL INORGANIC CARBON - WATERS	GEN-TICW
TURBIDITY	SMO-180.1
UV-ABSORBING CONSTITUENTS	GEN-5910B
WET CHEMISTRY GLASSWARE CLEANING	GEN-GC
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP	MET-200.7/6010C
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP-MS	MET-6020A
MERCURY IN WATER AND SOLID OR SEMISOLID WASTE BY COLD VAPOR ATOMIC ABSORPTION SPECTROMETRY	MET-HG
MERCURY IN WATER BY OXIDATION, P&T, AND CVAFS	MET-1631
METALS DIGESTION, WATERS FOR ICP	MET-3010A
METALS DIGESTION, SOIL, SEDIMENT, SLUDGE FOR ICP AND GFAA ANALYSIS	MET-3050B
CLP DIGESTION TECHNIQUES FOR WATERS AND SOILS	MET-CLPDIG
SPLP EXTRACTION FOR METALS AND SEMIVOLATILES	MET-SPLP
METALS AND SEMIVOLATILES TCLP EXTRACTION (METHOD 1311)	MET-TCLP
ZERO HEADSPACE EXTRACTION (EPA METHOD 1311)	MET-TZHE
METALS GLASSWARE CLEANING	MET-GC
VOLATILE SCREENING	VOC-SCREEN
PREPARATION AND MONITORING PROCEDURES FOR VOLATILE STORAGE BLANKS	VOC-BLK
MIXED GASES BY RSK-175M	VOC-8015/RSK175
CLOSED SYSTEM PURGE AND TRAP	VOC-5035
ANALYSIS OF VOLATILE ORGANIC COMPOUNDS BY GC/MS IN DRINKING WATER	VOC-524
VOLATILE ORGANIC COMPOUNDS BY GC/MS	VOC-8260
DETERMINATION OF POLYAROMATIC HYDROCARBONS BY HPLC	HPLC-8310
DETERMINATION OF CARBONYL COMPOUNDS BY HPLC	HPLC-8315A
ANALYSIS OF WATER SAMPLES FOR METABOLIC ACIDS	HPLC-METACIDS
DETERMINATION OF HYDROQUINONE BY HPLC/ECD FOR "Client"	HPLC-Hydroquinone
SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	EXT-3510C
AUTOMATED SOXHLET EXTRACTION	EXT-3541
MICROWAVE EXTRACTION OF SOILS, SEDIMENTS, AND SOLIDS FOR ORGANIC ANALYTES	EXT-3546
WASTE DILUTION	EXT-3580A
SHAKE EXTRACTION FOR IMMISCIBLE NON-AQUEOUS LIQUID SAMPLES	EXT-NAQ
ADDITION OF SPIKES AND SURROGATES	EXT-SAS
PREPARATION OF ANHYDROUS SODIUM SULFATE	EXT-SUL
CONCENTRATION OF EXTRACTS	EXT-CONC
FLORISIL CLEANUP	EXT-3620B
SULFUR CLEANUP	EXT-3660B
SULFURIC ACID CLEANUP OF PCB EXTRACTS	EXT-3665A
ORGANIC EXTRACTIONS GLASSWARE CLEANING	EXT-GC
DIAZOMETHANE PREPARATION	EXT-DIAZ
GASEOUS ORGANIC COMPOUNDS ON MEDIA BY GC/FID	SOC-18
PETROLEUM PRODUCTS IN WATER (HYDROCARBON SCAN)-NYSDOH Mtd	SOC-310-13
1,4-DIOXANE IN DRINKING WATER BY SPE AND GC/MS SIM	SOC-522
1,4-DIOXANE IN WATER BY SPE AND GC/MS SIM OPT IDMS	SOC-14-DIOXANE
NONHALOGENATED ORGANICS BY GC/FID	SOC-8015
PETROLEUM HYDROCARBONS AS DIESEL IN WATERS, SOILS, AND WASTE	SOC-8015-DRO
ORGANOCHLORINE PESTICIDES IN WATERS AND SOILS	SOC-8081A
PCBs IN WATERS and SOILS	SOC-8082
CHLORINATED HERBICIDES	SOC-8151A
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	SOC-8270

APPENDIX H – Data Qualifiers

ALS Environmental

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 Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[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

APPENDIX I – Master List of Controlled Documents

ALS Environmental

CONTROLLED FORMS

Click here to access specific sections of the list:

QA
- Data Review Checklists
- Initial Calibration Checklists
- Training
- Training Plan Forms (Initial Training)

SMO
WC
- WC Logs
- WC Flowcharts
- WC Forms
- WC Benchsheets
- WC Standards Prep

Metals
- Metals Flowcharts
- Metals Benchsheets
- Metals Logbooks
- Metals MDLs

Extractables
VOAs
- GCVOA Calibration Templates

Project Management
Instrument Manuals

Master List:

	Form	Revision	Date
QA			
	Archive Access Log	0	1/13/21
	Balance Log Template	5	7/25/19
	Distribution Control Form	2	10/24/19
	Induction Training record	0	4/9/19
	New Employee QA and Ethics Orientation Training	2021	6/8/21
	Project Communication Form	0	11/12/12
	SOP Attestation Form	1	11/27/12
	SOP Change Form	1	1/13/21
	Vendor Evaluation Form	1	12/15/2020
	Volume Verification Log	0	2/6/17
	Log of LIMS Test Request – Change Control		
	Maintenance Log – Fridge/Freezer	0	12/23/19
	Gases Receipt and Use Log	0	1/6/2020
Data Review Checklists			
	EXT Extractables (GC)	1	12/1/11
	EXT_PCBs	3	3/27/12

	EXT Pesticides	1	3/27/12
	EXT HPLC	1	11/29/11
	EXT SVOA	5	4/2/2020
	MET ICP/CVAA/1631	9	5/24/21
	MET ICPMS	8	5/24/21
	MET MARRS	0	1/7/13
	SMO pH/Conductivity	3	1/5/18
	SMO Sett/Color/Turbidity	0	2/20/12
	VOC GC	1	12/1/11
	VOC GCMS	4	7/5/22
	VOC GCMS sub-checklist for rushes	1	1/23/13
	WC	4	11/29/11
	Ion Chromatography	1	11/11/21
Initial Calibration Checklists			
	ICAL checklists - All Departments	6	2/15/19
	ICAL checklist – Pest-PCB	7-PEST-PCB	3/20/2020
Training			
	Training Sign-In	1	8/3/17
	Critical Job Function Authorization Statement	3	1/23/18
	DOC Cover Page	2	3/29/19
Training Plan Forms (Initial)			
	Filtering	1	1/2/13
	Generic – use only if none other is applicable	1	1/2/13
	Glassware Cleaning	1	1/2/13
	Thermometer and Balance	1	1/2/13
	Pipette Use	1	1/2/13
	pH Meter	1	1/2/13
	SMO GEN	1	1/4/13
	SMO BPS	1	1/4/13
	Extractables - 3510	2	8/15/18
	Extractables – 3541	2	8/15/18
	Extractables – 3546	0	2/2/22
	HPLC	1	1/2/13
	Metals – TCLP	0	10/7/13
	Metals –ZHE TCLP	0	10/7/13
	Metals – SPLP	0	10/7/13
	Metals –ZHE SPLP	0	10/7/13
	Metals – Digestion	1	1/2/13
	Metals- Instrument	1	1/2/13
	VOC- GC	1	1/2/13
	VOC- MS	1	1/2/13
	SVOA GC ECD	1	4/26/21
	SVOA GC	1	1/2/13
	SVOA MS	1	1/2/13
	WC BOD	2	9/28/18
	WC Extraction	1	2/28/2020
	WC Distillation/Digestion	1	1/2/13
	WC Ion Chromatography	1	1/4/13
	WC Lachat	1	1/4/13
	WC Solids	1	1/4/13
	WC Manual Spec	1	1/4/13
	WC Titration	1	1/4/13
	WC TOC	1	1/4/13
DOC 4 rep Spreadsheets	reserved		

SMO			
	Bottle Kit Preservations	0	4/9/21
	Cooler Receipt and Preservation Form	19	3/2/21
	Cr6+ Preservation Log	4	10/22/21
	Containers, Preservation, and Holding Time	33	6/16/2020
	Foreign Soil Log	1	12/14/16
	Internal Tracking Form for Short Holding Time Samples	1	10/29/12
	Sample Preparation, Compositing, and Subsampling	0	1/17/13
	Sampling Instructions and Preservative Information	1	10/18/12
	Sampling 1631 Instructions	1	9/18/13
	Sampling 522 1,4-Dioxane Instructions	1	12/17/21
	Sampling 524.2 Instructions	1	7/16/18
	Sampling Instructions Coliform	3	7/20/15
	Sampling Instructions 5035 Terracore	0	6/3/15
	Short Holding Times Job Aid	4	7/21/22
	DI Conductivity Log	0	11/12/19
WC logs			
	IC Repeat Log	1	6/13/18
	IC Standards Log	02042016	2/4/16
	Pipettor Calibration Log	4	12/23/19
	Pipettor Calibration Calculator	1	4/1/2020
	Solids Oven In/Out Log	2	10/7/19
	6 mL Cyanide Tube Volume Verification	0	1/9/17
	6 mL Cyanide Tube – Excel for Calcs	0	1/9/17
	pH Meter Calibration	0	2/9/17
WC Flowcharts and Postings			
	Alcoa Common Dilutions	0	11/12/18
	Autoclave Operation	1	1/17/13
	BOD Evaluation Flowchart	0	8/5/21
	Colilert Flowchart	6	2/16/2021
	Colilert Package Instructions	0	3/7/18
	Hexavalent Chromium Soil Digest Flowchart	1	2/7/13
	Oil and Grease Flowchart	1	3/15/21
	Phenol Print Windows	0	10/9/18
	Quanticult Instructions	0	3/7/18
	Scan Instructions for COAs	0	1/6/20
	Solids – TDS Volume Determination	0	3/7/13
	TOC-LK Linear Ranges	1	9/2/14
	TMAH Dilutions	0	11/7/17
	WC Spiking Levels	8/5/2020	8/5/2020
WC Standards Prep			//
	Ammonia 8500	1	1/12/16
	Cr6+ Waters	0	4/12/13
	Nitrite	2	1/12/16
	TOTN	3	8/4/17
	TKN	3	12/20/19
	OPO4	1	10/17/17
	TPO4	2	1/24/18
	TPO4 – low level	2	1/23/18
WC Forms			
	Sample Dilutions	2	9/18/15
	BOD Dilution and Screening Sheet	2	1/19/17

WC/Micro Benchsheets	**All linked to I:\Acquadata\Wetchem**		
	%Ash	**1**	**12/5/13**
	%Water	**2**	**9/4/14**
	Alkalinity –Low Level	**3**	**2/1/16**
	Alkalinity –Regular Level	**4**	**12/9/15**
	Alkalinity – High Level	**4**	**12/9/15**
	BOD	**12**	**11/15/18**
	Chlorine Demand	**1**	**12/5/13**
	Chlorophyll a Fluorometric	**3**	**5/23/19**
	COD –LL	**8**	**2/17/22**
	COD-HL	**9**	**2/17/22**
	COD Soil	**1**	**12/6/13**
	Colilert	**0**	**8/9/21**
	Color	**1**	**4/13/21**
	Conductivity	**5**	**3/18/19**
	Cr6 Soil Digest	**4**	**8/24/18**
	Cr6 pH Adjust	**1**	**1/17/2020**
	Cyanide – Residual	**1**	**12/6/13**
	Cyanide-Micro	**3**	**11/8/17**
	Density	**1**	**12/6/13**
	Dissolved Oxygen	**1**	**1/2/15**
	Ethylene Glycol	**1**	**5/1/13**
	Ferrous Iron	**3**	**10/17/18**
	Hardness	**4**	**2/1/16**
	Hydrogen Peroxide in Air	**2**	**10/13/15**
	Hydrogen Peroxide in Water	**0**	**7/23/15**
	Method 8	**2**	**4/15/14**
	Oil and Grease/ TPH 1664	**4**	**3/15/21**
	Paint Filter – Free Liquid	**1**	**3/16/15**
	pH	**3**	**1/4/18**
	REDOX	**4**	**12/5/19**
	Residual Chlorine	**2**	**4/7/2020**
	Solids	**8**	**9/15/21**
	Solids-%Volatile	**2**	**3/16/16**
	Solids-Volatile Total	**4**	**10/26/16**
	Solids-Volatile Dissolved	**4**	**10/26/16**
	Solids-Volatile Suspended	**4**	**10/26/16**
	Solids-Fixed Dissolved	**4**	**10/26/16**
	Solids - Settleable	**1**	**5/19/21**
	Specific Gravity – Cup	**1**	**12/6/13**
	Sulfide 4500	**3**	**2/1/16**
	Sulfide 9030/9034	**5**	**12/28/21**
	Sulfite	**1**	**12/9/13**
	TKN Digest	**5**	**11/3/17**
	TPO4 Digest	**4**	**12/19/19**
	Turbidity	**1**	**10/30/2020**
	UV 254	**3**	**1/4/21**
Metals			
	Flowchart 200.2	**1**	**10/18/17**
	Flowchart 3010	**0**	**1/16/15**
	Flowchart 3050	**1**	**12/2/2020**
	ICP True Values	**0**	**1/13/2020**
	M33 Values	**0**	**12/1/21**
	Relative Error Instructions	**0**	**2/16/22**
Metals MDL Postings			
	Mercury	**2021 r0**	**5/17/21**
	ICPMS water	**2021 r0**	**5/17/21**
	ICPMS soil	**2021 r0**	**5/17/21**
	200.7	**2021 r0**	**5/17/21**
	6010 water	**2021 r0**	**5/17/21**
	6010 soil	**2021 r0**	**5/17/21**
Metals			

Benchsheets			
	LLHg Calibration Blank Template	0	6/11/21
	LLHg Dilution Sheet	0	11/18/21
	Soil Weight Sheet	1	10/11/19
Metals Logbooks			
	MDL Standards Log	07152019	7/15/19
	LOQ Prep Log	01142015	01/14/15
	ICP Standards Log	003082022	03/08/2022
	ODD Metals Standard Log	2	6/13/13
	ICP 6 Runlog	2	11/23/2020
	Agilent ICPMS Runlog	0	12/7/17
	Mercury Run Log	4	2/12/2020
	LL Mercury M8000 Runlog	1	12/30/2020
	Mercury Standards Log	2	2/24/16
	LL Mercury Standards Log	1	11/18/21
	MS Standards Log	03082022	3/8/22
	Mercury Reagents and Acid Lot Tests	0	10/3/14
TCLP			
	TCLP MB Vessel Rotation	0	5/18/15
	TCLP Benchsheet	8	4/23/2020
	ZHE TCLP Benchsheet	6	3/6/18
	SPLP Benchsheet	4	3/13/18
	TCLP Job Aid	0	8/9/21
Extractables			
	2 mL Vial Calibration Log	1	10/22/15
	8151 Extraction of Soils Flowchart	1	3/30/2020
	8151 Extraction of Waters Flowchart	1	3/26/2020
	Concentration Tracking Log	0	12/2/2020
	Confirmation Policy Flowchart	2	10/30/17
	Concentration Table	3	11/17/2021
	Extractables Prep Benchsheet	0	4/24/2020
	Pipettor Calibration Log	4	12/23/19
	Glassware Cleaning Flowchart	1	12/26/12
	Kiln Operation Instructions	1	12/19/12
	Methods Summary Spreadsheet (Spikes)	6	9/1/21
	Microwave Vessel Loading Posting	0	11/16/2020
	pH Meter Calibration Log	1	1/4/17
	Maintenance Log - Org	0	3/4/16
	Maintenance Log - LC	0	2/7/17
	RRT Template	0	3/18/21
	Runlog HPLC	2	3/23/18
	Runlog GC Ext	2	4/27/17
	Sodium Sulfate Prep Log	0	12/5/17
VOAs			
	Runlog MSVOA	5	1/11/22
	Runlog GCVOA	1	12/5/12
	5035 Prep Log		
	RRT Template VOA 10	0	5/3/21
	RRT Template VOA 12	0	5/3/21
	RRT Template VOA 14	0	5/3/21
	RRT Template VOA 14S	0	5/3/21
VOA-GC Calibration Templates			
	RSK	2	10/10/18
Project Manager			
	Qualifier Page - Routine	6	9/30/21
	Qualifier Page –Routine for Massachusetts	3	5/13/13
	Qualifier Page – No NELAC	0	6/17/13

	Qualifier Page - DOD	0	9/30/21
	Inorganic Preparation Methods	2	12/20/19
	Cr6+ EHpH Graphs	1	4/17/15
	Langlier, Ryznar, and Saturation Index	2	12/20/21
	Un-Ionized Sulfide Calculation	1	8/11/17
	Calculation Tests		6/28/22
	Terms and Conditions		
	Raw Data Order for scanning	0	3/7/18
	Drinking Water Certs and Limits	2021 r0	5/17/21
Instrument Manuals			
	Thermometer 398 Instructions Autoclave	Autoclave	
	Thermometer 412 Sper Sci 800007	Ovens	
	Excursion-Trac Datalogging Thermometer		
	R-Oven-09 Operating Manual		
	R-Incubator-03 Operating Manual		
	Coliform Water Bath Operating Manual		
	SympHony pH Meters B10P, B30PCI		
	Symphony pH Meter SB80PC		
	SympHony pH Probes		
	Analytical Balances Mettler AE200		
	Analytical Balances Mettler AE240		
	Sartorius LA5200D Manual		
	Skalar San++		
	REDOX-02 – Hanna Instruction Manual		
	Trilogy User Manual	chlorophyll	
	Buchi Operation Manual for I-300 Pro	Concentration	
	Buchi Operation Manual for R-300 Rotavapor		
	Buchi Operation Manual for V-300 Vacuum Pump		
	Buchi Operation Manual for F-314 chiller		
		Location	
	Perkin Elmer FIMS Flow Injection Mercury System Hardware Guide April 2007	Metals Shelf	
	Perkin Elmer FIMS Flow Injection Mercury Setting Up and Performing Analyses July 2003	Metals Shelf	
	Agilent 5100 ICP-OES Users Guide 2014	Metals Shelf	
	Agilent SPS 4 Autosampler User's Guide G8410-90000, Rev. A, May 2015	Metals Shelf	
	Perkin Elmer Concepts, Instrumentation, and techniques in Inductively Coupled Plasma Atomic Emission Spectrometry, Boss and Fredeen, 1989	Metals Shelf	
	Perkin Elmer Concepts, Instrumentation, and techniques in Atomic Absorption Spectrophotometry, Beaty and Kerber 1993	Metals Shelf	
	Perkin Elmer Elan 9000 Hardware Guide 1002729A, 2001	Metals Shelf	
	Perkin Elmer ELAN Version 2.4 Software Guide 1002821A, 1999-2001	Metals Shelf	

	Perkin Elmer WinLab32 Data Management Software Guide 2000	Metals Shelf	
	Perkin Elmer AS-93plus Autosampler for Atomic Spectrometry User's Guide 0993-5278 Release 3 July 2000	Metals Shelf	
	Perkin Elmer S10 Autosampler for Atomic Spectrometry User's Guide 0993-6788 Release B December 2007	Metals Shelf	
	Perkin Elmer WinLab32 Instrument Control Software, Software Guide, 0993-6335 Release B January 2000	Metals Shelf	
	PolyScience Refrigerated Recirculating Chillers Operator's Manual 110-811 03.13.12	Metals Shelf	
	Leeman Labs HYDRA AF Automated Mercury Analyzer Manual 150-00214 Rev 05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772036 110-462 8/24/09	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772026 110-240 02/05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772046 110-811 02/25/15	Metals Shelf	
	Labindustries REPIPET II Dispensers. Barnstead Internations. Assembly, Operation and Maintenance Instructions, Parts List and Warranty. LT832X1 6/17/02	Metals Shelf	
	Barnstead/Thermolyne Type RC2200 Remote Control Hot Plate Operation Manual and Parts List Serier 410/411 LT410X1 6/18/97	Metals Shelf	
	Agilent Tech 2015 ICP Expert Help, Version 1.0.1.0, April 2015	In Instrument Software	
	Agilent 5973 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 5975 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 6890 GC	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 7890 GC	Part of Software	**Voa Shelf Organic Managers Office**
	Atomx Auto Sampler	Part of Software	
	Archon Autosampler	Voa Shelf	
	Encon Concentrator	Voa Shelf	
	Tekmar 3400 GC	Voa Shelf	
	Agilent HPLC	Part of Software	
	Shimadzu HPLC	Ext. Shelf	
	Gerhardt Soxtherm	Ext. Shelf	
	Horizon SPE	Ext. Shelf	
	LabConco Concentrator	Ext. Shelf	
	Metrohm IC Net 2.3 SR2 6.6034.033 8.102.0013 Software Manual 04.2005/chs	Wetchem Shelf	
	Metrohm Autodatabase 1.0 8.110.8213 25.01.2000/do	Wetchem Shelf	
	Metrohm IC Cap 2.2 Administrator Manual 8.102.1013 04.2005/chs	Wetchem Shelf	
	Metrohm Illustrated Spare Parts Guide Jan	Wetchem Shelf	

	1, 2011		
	Metrohm Environmental Application 9702.C2.1001 2011	Wetchem Shelf	
	Metrohm 838 Advanced Sample Processor Instructions for Use 8.838.1003 09.2004/dm	Wetchem Shelf	
	Metrohm Using "IC Net 2.3"Software to comply with FDA 21CFRPart11 compliance white paper 8.110.8293 11.2003/pkl	Wetchem Shelf	
	Metrohm IC Cap 2.2 User Manual 8.102.1119 04.2005/chs	Wetchem Shelf	
	Metrohm 838 Addvanced Sample Processor Installation Instructions 8.838.1303 07.2004/dm	Wetchem Shelf	
	OI Analytical TOC Analyzer Operator's Manual WinTOC Cersion 5.01 Control Software for the Model 1010 TOC Analyzer	Wetchem Shelf	
	OI Analytical Model 1051 Vial Autosampler Operator's Manual Rev.4 July 2000 Part#278549	Wetchem Shelf	
	OI Analytical Model 1010 Instrument Validation Package SN02112603 Rev. 3.1 1998-2002	Wetchem Shelf	
	Dionex DRS 600 Suppressor Quick Start Doc No. 065750-01 Jan2018		
	Dionex PeakNet Software User's Guide 034914 rev 8 May 1998	Wetchem Shelf	
	Dionex ED40 Electrochemical Detector Operator's Manual 034855 Rev. 03 March 1995	Wetchem Shelf	
	Dionex DX-120 Ion Chromatograph Operator's Manual 031183 rev. 03 Sept 1998	Wetchem Shelf	
	Dionex AS40 Automated Sampler Operator's Manual 034970 Rev. 02 June 1994	Wetchem Shelf	
	Dionex Installing the Dionex PeakNet System 034941 Rev. 10 April 1999	Wetchem Shelf	
	Dionex GP40 Gradient Pump Operator's Manual 034856 Rev. 03 May 1995	Wetchem Shelf	
	Dionex Introduction to the Dionex DX500 Chromatography Systems 034892 Rev 02 Oct 1996	Wetchem Shelf	
	Dionex LC20 Chromatography Enclosure Operator's Manual 034859 Release 02 Sept 1993	Wetchem Shelf	
	Dionex ICS Series AS-AP Autosampler Operation Manual, PN 065361-05, 065470-02	Wetchem Shelf	
	AI Scientific AIM 600 Users Manual Rev. F September 2012 DG-U-UM001	Wetchem Shelf	
	Thermo Scientific Thermolyne Furnace Benchtop Muffle Type 47900and 48000 Installation and Operation Manual 2010	Wetchem Shelf	
	Environmental Express Hotblock Digestion System Operation and Instruction Manual May 2011	Wetchem Shelf	
	Lachat QuikChem 8500 Series 2 FIA Automated Ion Analyzer User Manual June 2008, Edition 4	Wetchem Shelf	
	Lachat Quik Chem 8500 Series Automated Ion Analyzers Training Manual, May 2008, Ed. 4	Wetchem Shelf	
	Operation Manual for Technicon Proportioning Pumps II and III, Technical Publication TAO-0159-00 Sept 1970	Wetchem Shelf	
	Technicon Automating Manual Methods using Technicon AutoAnalyzer II System Techniques, Manual TN1-0170-01, 1972 HH/71	Wetchem Shelf	
	Technicon Troubleshooting Guide for the Technicaon Autoanalyzer II System,	Wetchem Shelf	

	Technical Publication No TD2-0170-00, April 1972		
	LabLine Magnistirs Operation Manual, Manual NO. 057-539-00 Rev. 0, ECN 18222	Wetchem Shelf	
	Hach COD Reactor Model 45600 Instrument Manual 45600-18, 2000.	Wetchem Shelf	
	YSI ProOBOD IDS ProOBOD User manual Document #626471, Rev C Drawing #A626471 April 2013	Wetchem Shelf	
	YSI ProODO User Manual Item #626279 Rev C Drawing #A626279 March 2009	Wetchem Shelf	
	YSI ProODO Handheld Quick-Start Guide, Item #626280 Drawing # A626280 Rev B, December 2008.	Wetchem Shelf	
	Metrohm 848 Titrino Plus Manual 8.848.8008EN/2015-01-19	Wetchem Shelf	
	Metrohm 806 Exchange Unit Manual 8.806.8002ML 01/2011	Wetchem Shelf	
	Lachat QuikChem 8000 Automated Ion Analyzer Continuum Series, Hardware Installation and System Operation Manual, April 1998	Wetchem Shelf	
	Parr 6300 Oxygen Bomb Calorimeter Operating Instructions Manual, 10/2003	Wetchem Shelf	

APPENDIX J – Laboratory Accreditations

The current accreditations with scope and expiration dates are available online at
https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

or by request.

ALS/Rochester Certifications/Accreditations/Contracts

Federal, National, and International Programs

- NELAP/TNI Accreditation, since January 2001.
  Primary Accreditation with New York (see below).
  Secondary Accreditation with New Hampshire, Pennsylvania, and Virginia (see below).

- United States Department of Defense Environmental Laboratory Accreditation Program (DOD-ELAP) since January 2010.
  Currently accredited to QSM 5.4. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

- ISO/IEC 17025:2017. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

State and Local Programs

- State of Connecticut, Department of Health Services, Approved Public Health Laboratory.
  Certified Laboratory for Potable Water, Waste Water, Solid Waste and Soil.
  Examination for Inorganic Chemicals and Organic Chemicals. Registration No. PH-0556.
  Exp. 6/30/23.

- State of Delaware, Department of Natural Resources and Environmental Control. Approved for Delaware Hazardous Substance Cleanup Act.

- State of Florida, Department of Health, Bureau of Public Health Laboratories. Non-Potable Water, Solid Waste. Lab E87674.
  Expires 6/30/2023.

- State of Maine, Department of Health and Human Services.
  Drinking Water, Wastewater, and Solid Waste. Certification No.NY0032. Expires 11/12/2022.

- The Commonwealth of Massachusetts, Department of Environmental Protection.
  Non-Potable Water. Certification No. M-NY032. Exp. 06/30/2023.

- State of New York, Department of Health, Environmental Laboratory Approval Program.
  Potable Water, Air, Non-Potable Water, and Solid and Hazardous Waste.
  Certification No. 10145. Exp. 04/01/2023.

- State of New Hampshire, Department of Environmental Services
  Non-Potable Water, Drinking Water, Solid Waste. Certification No. 294102. Exp. 10/14/2022.

- State of North Carolina, Department of the Environment and Natural Resources, Division of Water Quality
  Wastewater, Ground water. Certificate 676. Expires 12/31/2022.

- State of North Carolina, Department of Health and Human Services
  Drinking Water, 1,4-Dioxane only. Lab 36701. Expires 7/31/2022.

- Pennsylvania Department of Environmental Protection.
  Non-Potable Water, Solid and Chemical Materials. Lab ID No. 68-00786. Expires 6/30/2023.

- State of Rhode Island, Department of Health
  Approved for Surface Water, WasteWater, and Sewage. LAO00333. Exp. 12/30/2022.

- Virginia Department of General Services Division of Consolidated Laboratory Services.
  Non-potable Water and Solid and Chemical Materials, Metals Category only. ID# 460167. Exp. 6/14/2023.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised June 21, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
Disinfection By-products	
Bromide	EPA 300.0 Rev. 2.1
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Additives	
Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2
Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Metals I	
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
Metals III	
Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Serial No.: 65323

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised June 21, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous	
1,4-Dioxane	EPA 522
Organic Carbon, Dissolved	SM 21-23 5310C (-00)
Organic Carbon, Total	SM 21-23 5310B (-00)
	SM 21-23 5310C (-00)
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 21-23 5910B (-00,-11)
Non-Metals	
Alkalinity	SM 21-23 2320B (-97)
Calcium Hardness	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 21-23 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	Kelada 01, Rev. 1.2
	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	EPA 365.1 Rev. 2.0
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	EPA 120.1 Rev. 1982
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2

Trihalomethanes	
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2

Serial No.: 65323

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised June 21, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Aromatics

tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2

Volatile Halocarbons

Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

Serial No.: 65323

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D

Amines

Pronamide	EPA 8270D
Propionitrile	EPA 8260C
Pyridine	EPA 625.1
	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
	EPA 608.3
beta-BHC	EPA 8081B

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides

beta-BHC	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
	EPA 608.3
Diallate	EPA 8270D
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
	EPA 608.3
Heptachlor	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbon Pesticides

Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B
PCNB	EPA 8270D
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Chlorinated Hydrocarbons	
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 625.1
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270D
Pentachlorophenol	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-2016
Carbonaceous BOD	SM 5210B-2016
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Oxygenates	
Di-isopropyl ether	EPA 8260C
	EPA 8015C
Ethanol	EPA 8015C
Methyl tert-butyl ether	EPA 8260C
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260C
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D
Low Level Polynuclear Aromatics	
Acenaphthene Low Level	EPA 610
	EPA 8270D
Acenaphthylene Low Level	EPA 610

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Low Level Polynuclear Aromatics

Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 610
	EPA 8270D
Benzo(a)anthracene Low Level	EPA 610
	EPA 8270D
Benzo(a)pyrene Low Level	EPA 610
	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 610
	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 610
	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 610
	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 610
	EPA 8270D
Fluorene Low Level	EPA 610
	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 610
	EPA 8270D
Naphthalene Low Level	EPA 610
	EPA 8270D
Phenanthrene Low Level	EPA 610

Low Level Polynuclear Aromatics

Phenanthrene Low Level	EPA 8270D
Pyrene Low Level	EPA 610
	EPA 8270D

Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Metals I	
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Metals II	
Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Chromium VI	EPA 218.6, Rev. 3.3 (1994)
	EPA 7196A
	EPA 7199
	SM 3500-Cr B-2011
Mercury, Low Level	EPA 1631E
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)
	EPA 7470A
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Metals II

Selenium, Total	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)

Metals III

Tin, Total	EPA 6010C
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Uranium (Mass)	EPA 6020A

Mineral

Alkalinity	SM 2320B-2011
Calcium Hardness	SM 2340B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Hardness, Total	SM 2340C-2011
	SM 2340B-2011
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A

Miscellaneous

Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Bromide	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Color	SM 2120B-2011
Corrosivity	SM 2330-2016
Cyanide, Available	SM 4500-CN G-2016
Cyanide, Total	Kelada-01

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Miscellaneous	
Cyanide, Total	SM 4500-CN E-2016
	EPA 335.4, Rev. 1.0 (1993)
	EPA 9012B
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664B
Oil and Grease Total Recoverable	EPA 1664B
Organic Carbon, Total	SM 5310B-2014
	SM 5310C-2014
	EPA 9060A
Phenols	EPA 420.4, Rev. 1.0 (1993)
	EPA 9066
Specific Conductance	EPA 120.1 (Rev. 1982)
Sulfide (as S)	SM 4500-S2- F-2011
	EPA 9034
Turbidity	EPA 180.1, Rev. 2.0 (1993)
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D

Nitroaromatics and Isophorone	
Isophorone	EPA 625.1
	EPA 8270D
Nitrobenzene	EPA 625.1
	EPA 8270D
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D
Nutrient	
Ammonia (as N)	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	EPA 351.2, Rev. 2.0 (1993)
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Nutrient	
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Orthophosphate (as P)	EPA 365.1, Rev. 2.0 (1993)
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)
Organophosphate Pesticides	
Atrazine	EPA 8270D
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D
Parathion methyl	EPA 8270D
Phorate	EPA 8270D
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
Phthalate Esters	
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 625.1
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Polynuclear Aromatics	
2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1
	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
Fluoranthene	EPA 625.1

Polynuclear Aromatics	
Fluoranthene	EPA 8270D
Fluorene	EPA 625.1
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D
Naphthalene	EPA 625.1
	EPA 8270D
Phenanthrene	EPA 625.1
	EPA 8270D
Pyrene	EPA 625.1
	EPA 8270D
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
2,6-Dichlorophenol	EPA 8270D

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Priority Pollutant Phenols

2-Chlorophenol	EPA 625.1
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
2-Methylphenol	EPA 625.1
	EPA 8270D
2-Nitrophenol	EPA 625.1
	EPA 8270D
3-Methylphenol	EPA 625.1
	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 625.1
	EPA 8270D
4-Nitrophenol	EPA 625.1
	EPA 8270D
Cresols, Total	EPA 8270D
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D

Residue

Settleable Solids	SM 2540 F-2015
Solids, Total	SM 2540 B-2015

Residue

Solids, Total Dissolved	SM 2540 C-2015
Solids, Total Suspended	SM 2540 D-2015
Solids, Volatile	SM 2540 E-2015

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 625.1
	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 625.1
	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Semi-Volatile Organics	
O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260C
	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 624.1
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 624.1
Isopropylbenzene	EPA 8260C

Volatile Aromatics	
m/p-Xylenes	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 624.1
Total Xylenes	EPA 8260C
	EPA 624.1
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons	
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 624.1
1,1,2-Trichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624.1
1,2-Dichloropropane	EPA 8260C
	EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
	EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C

Volatile Halocarbons	
Bromodichloromethane	EPA 624.1
Bromoform	EPA 8260C
	EPA 624.1
Bromomethane	EPA 8260C
	EPA 624.1
Carbon tetrachloride	EPA 8260C
	EPA 624.1
Chloroethane	EPA 8260C
	EPA 624.1
Chloroform	EPA 8260C
	EPA 624.1
Chloromethane	EPA 8260C
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
Dibromochloromethane	EPA 8260C
	EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons

Methylene chloride	EPA 8260C
	EPA 624.1
Tetrachloroethene	EPA 8260C
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 624.1
Trichlorofluoromethane	EPA 8260C
	EPA 624.1
Vinyl chloride	EPA 8260C
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
	EPA 624.1

Volatiles Organics

Acetone	EPA 8260C
	EPA 624.1
Acetonitrile	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethyl Acetate	EPA 8260C
	EPA 8015C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
	EPA 8015C
Isopropanol	EPA 8260C
Methanol	EPA 8015C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propylene Glycol	EPA 8015C
Tetrahydrofuran	EPA 8260C
	EPA 624.1
Vinyl acetate	EPA 8260C
	EPA 624.1

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022
Revised April 04, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Sample Preparation Methods

EPA 5030C
EPA 200.2
EPA 9030B
EPA 3010A
EPA 3005A
EPA 3510C
EPA 3535A

Serial No.: 65171

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 8270D

Characteristic Testing

Corrosivity (pH)	EPA 9040C
	EPA 9045D
Free Liquids	EPA 9095B
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
Diallate	EPA 8270D
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides

Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A

Chlorophenoxy Acid Pesticides

2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8270D
Pentachlorophenol	EPA 8151A

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270D
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D
Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 8270D
Benzo(a)anthracene Low Level	EPA 8270D
Benzo(a)pyrene Low Level	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 8270D
Fluorene Low Level	EPA 8270D

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Low Level Polynuclear Aromatic Hydrocarbons

Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
Naphthalene Low Level	EPA 8270D
Phenanthrene Low Level	EPA 8270D
Pyrene Low Level	EPA 8270D

Metals I

Barium, Total	EPA 6010C
	EPA 6020A
Cadmium, Total	EPA 6010C
	EPA 6020A
Calcium, Total	EPA 6010C
Chromium, Total	EPA 6010C
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6020A
Iron, Total	EPA 6010C
Lead, Total	EPA 6010C
	EPA 6020A
Magnesium, Total	EPA 6010C
Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
Silver, Total	EPA 6010C

Metals I

Silver, Total	EPA 6020A
Sodium, Total	EPA 6010C
Strontium, Total	EPA 6010C

Metals II

Aluminum, Total	EPA 6010C
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7199
Lithium, Total	EPA 6010C
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A

Metals III

Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Metals III	
Molybdenum, Total	EPA 6020A
Silica, Dissolved	EPA 6010C
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C
Titanium, Total	EPA 6010C
Minerals	
Bromide	EPA 9056A
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A
Miscellaneous	
Boron, Total	EPA 6010C
Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method
Phenols	EPA 9066
Sulfide (as S)	EPA 9034
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 8270D
Nitroaromatics and Isophorone	
4-Dimethylaminoazobenzene	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D
Pyridine	EPA 8270D
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D
Nutrients	
Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Organophosphate Pesticides	
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Organophosphate Pesticides

Parathion methyl	EPA 8270D
Phorate	EPA 8270D
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015C

Phthalate Esters

Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A

Polychlorinated Biphenyls

Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons

2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polynuclear Aromatic Hydrocarbons

Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Volatile Aromatics

1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C

Volatile Halocarbons

1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Volatile Halocarbons

cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C

Volatile Organics

Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
Isopropanol	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propionitrile	EPA 8260C
tert-butyl alcohol	EPA 8260C
Tetrahydrofuran	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

	EPA 5035A-L
	EPA 5035A-H
	EPA 3580A
	EPA 9030B
	EPA 3050B
	EPA 3546
	EPA 3060A
	EPA 3541

Serial No.: 64295

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Miscellaneous

Sulfur Dioxide	40 CFR 60 Method 8
Sulfuric Acid	40 CFR 60 Method 8

Serial No.: 64296

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

APPENDIX K –

References for Quality System Standards, External Documents, Manuals, and Test Procedures

- National Environmental Laboratory Accreditation Program (NELAP), 2003 Quality Standards.
- TNI Standard, The NELAC Institute, 2009 and 2016.
- International Standard *General requirements for the competence of testing and calibration laboratories,* ISO/IEC 17025:2017(E)
- *DoD Quality Systems Manual for Environmental Laboratories,* Version 5.4 or most current version.
- *Good Automated Laboratory Practices, Principles and Guidance to Regulations For Ensuring Data Integrity In Automated Laboratory Operations*, EPA 2185 (August 1995).
- *Manual for the Certification of Laboratories Analyzing Drinking Water*, 5th Edition, EPA 815-R-05-004 (2005).
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, (September 1986) and Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), Final Update IV (February 2007), Final Update V (August 2015) and updates posted online at http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm. See Chapters 1, 2, 3, and 4.
- *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, (Revised March 1983).
- *Methods for the Determination of Inorganic Substances in Environmental Samples*, EPA/600/R-93/100 (August 1993).
- *Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91/010 (June 1991) and Supplements.
- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, EPA 600/4-82-057 (July 1982) and 40 CFR Part 136, Appendix A.
- *Methods for the Determination of Organic Compounds in Drinking Water*, EPA/600/4-88/039 (December 1988) and Supplements.
- *Standard Methods for the Examination of Water and Wastewater*, on-line Edition (various years).
- 40 CFR Part 141, National Primary Drinking Water Regulations.
- Annual Book of ASTM Standards, Part 31, Water.
- *U. S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, EPA-540/R-94/012 (February 1993).
- *U. S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540/R-94/013 (February 1994).

APPENDIX L – Data Quality Objectives

Contact the laboratory for the current table

APPENDIX B

Data Validators Documentation

Louise Lindsay, M. Sc., P. Ag.

Education:

Masters of Science, Earth Sciences (Contaminant Hydrogeology) 1984
University of Waterloo, Waterloo, Ontario, Canada

Bachelor of Science in Agriculture, Major Soil Science
University of Guelph, Guelph, Ontario, Canada

Professional Associations:

Nova Scotia Institute of Agronomy
New York State Association for Solid Waste Management

Experience:

Over thirty years experience in the fiscal, technical and personnel management of multi-disciplinary environmental investigations from proposal development to project completion. Extensive experience in contaminant hydrogeology, including site assessment, environmental monitoring programmes, data interpretation, flow and transport numerical and analytical modelling, remedial designs and implementations.

Hazardous and solid waste management experience which includes waste audits, waste management strategies, landfill assessments, landfill design team, environmental monitoring plans, data validation, data interpretation and analysis, waste reduction, composting, remediation, site closures, report preparation, public meetings, permitting and liaison with regulatory agencies at facilities in Nova Scotia, Newfoundland, Ontario, New York, Massachusetts, Rhode Island, and Vermont.

Laboratory data analytical and quality experience which includes development of sampling and analytical plans, analysis of water and soil samples using general wet chemistry methods, auto analyzers, atomic absorption spectrometers, gas chromatographs, x-ray diffraction, et cetera, data quality and usability evaluations, data validation, data interpretation and reporting.

Emergency response, clean-up and remedial activities associated with spills. Technical support to HazMat response teams. Development of site specific health and safety plans for various hazardous sites.

Typical Projects

Project Manager for all hydrogeological services to Modern Landfill, Inc., of Model City, New York. Responsibilities include site assessment, numerical modelling in 3-D of the local groundwater flow regime, developing the environmental monitoring plan to meet Title 6 NYCRR Part 360 regulations, liaison with regulatory agencies, water quality data evaluations, data validation and all associated reporting.

Data Validator retained by Dillon Consulting for the Muggah Creek groundwater and surface water monitoring project. This project was part of the assessment of the coke ovens site in Cape Breton, Nova Scotia. It involved three monitoring events and hundreds of water samples.

QA/QC Officer and Senior Hydrogeologist for New York State SuperFund RI/FS project involving an old industrial complex which included three industrial landfills and 12 other areas of concern, including drum handling, solvent handling, *et cetera*. Responsibilities included data assessment, data usability analysis, and data interpretations, auditing of analytical laboratory, review of all data validation, *et cetera.*

Project Manager responsible for evaluating the groundwater monitoring data collected at the three landfills currently associated with the Bowater Mersey Paper Company (Bowater Mersey) newsprint mill site. The evaluation includes review of the laboratory QA/QC data to determine data validity and usability, comparison of the analytical results to permit and regulatory requirements or guidelines, review of the data in terms of monitoring well performance, recommendations for any necessary monitoring programme maintenance, associated reporting, and liaison with the Nova Scotia Department of Environment as appropriate.

Project Manager environmental site investigation for the closure of CFB Cornwallis. The investigation included several disposal areas, waste water treatment system, firing ranges, various infrastructure, *et cetera*. Project included, Phase I, II, and III site assessments, evaluating laboratory data for validation and usability, evaluating and costing various remedial options, and preparation of Phase I/II and Phase III/IV reports.

Typical Projects (Continued)

Project Manager for a detailed study of the potential for industrial treatment systems by-products, including primary and secondary sludges, to be composted. Study included developing terms of reference for a marketing study, permitting of a pilot study, conducting the pilot study, interpretation of findings and reporting. Major Pulp and Paper Co.

Project Manager for the delineation of the contaminant plume and remedial recommendations for the Highway 101 landfill. Project included borehole geophysics, determination of leachate quality, development of a sampling and analytical programme, interpretation of the analytical data and report preparation. Halifax Metropolitan Authority.

Project Hydrogeologist of several investigations to determine if the existing landfill facility was impacting ground or surface water. Development of remedial strategy. Responsible for the interpretation and reporting of the comprehensive geologic, hydraulic, and water quality data. Waste Management, Inc. - Mohawk Valley Landfill and Recycling Facility

Project Manager for a New York State Department of Environmental Conservation (NYSDEC) Phase II Investigation to determine if the existing landfill facility is impacting groundwater or surface water. Hydrogeologist responsible for developing work plan for NYSDEC approval, supervision of the extensive hydrogeological field investigation, interpretation, and reporting of the comprehensive geologic, hydraulic, and water quality data. Waste Management, Inc. - High Acres Landfill and Mohawk Valley Landfill and Recycling Facility.

Senior Technical Specialist on major fuel spill at Gander International Airport, NF. Responsible for advising on emergency response, the assessment of the extent of the contamination of soil, ground and surface water, development of containment and hydraulic control systems, and other site remediation activities, liaison with regulatory officials, and all report preparation.

Project Manager for major caustic spill at a large pulp and paper plant. Responsible for supervising the emergency response, assessing the extent of contamination, and development and implementation of a remediation and monitoring programme.