City of Biddeford

City Council

April 05, 2022 6:00 PM Council Chambers and via Zoom

Please click the link below to join the webinar:

https://biddeford.zoom.us/j/96772902418?pwd=TE4yOXZHYk8xYm5TVzMybFF2NmRaUT09

Passcode: 153758

Or One tap mobile :

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Webinar ID: 967 7290 2418

International numbers available: https://biddeford.zoom.us/u/adKKRIUlz7

1. Zoom Meeting Link

1.a. Please click the link below to join the webinar:
https://biddeford.zoom.us/j/96772902418?pwd=TE4yOXZHYk8xYm5TVzMybFF2NmRaUT09
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2. Roll Call

3. Pledge of Allegiance

4. Adjustment(s) to Agenda

4.a. Discussion/Approval) Review River Wall Repair Alternatives Analysis - Recommended Extension of Contract with Weston & Sampson

Appointment & Confirmation: {No Public Comment}

City Solicitor

4-05-2022 Confirmation of City Solicitor.docx

Public Addressing the Council...(3-minute limit per speaker for up to a total of 15 minutes)

5. Public Hearing

5.a. State Liquor Applications:

Valleigh Inc. DBA: Valerie's Scratch Kitchen - 45 Boulder Way
Vickie's Veggie Table, LLC - 299 Main Street, Suite 101

6. Liquor Licenses Consideration:

6.a. Valleigh, Inc DBA: Valerie's Scratch Kitchen - 45 Boulder Way
Vickie's Veggie Table, LLC - 299 Main Street, Suite 101
4-05-2022 Valeries Scratch Kitchen Liquor License App.pdf
4-05-2022 Vickies Veggie Table Liquor License App.pdf

7. Presentation:

7.a. Grant Submission & Allocation

8. Consideration of Minutes:

8.a. March 15, 2022 Council Meeting Minutes
3-15-2022 Council Meeting Minutes.docx

9. Second Reading: {Public Comment - 3 Minute Limit}

9.a. 2022.17) Authorization/Biddeford School Revolving Renovation Fund Financing/ Bonds for Health, Safety and Compliance Repairs at School Facilities for June 14, 2022 Municipal Referendum Election

3-15-2022 School Revolving Renovation Bond-ORDER.DOCX
3-15-2022 School Revolving Renovations Bond-MEMO.docx

10. Orders of the Day: {Public Comment - 3 Minute Limit}

10.a. 2022.23) Approval/Biddeford Saco Chamber of Commerce to Serve Alcohol on City Property (Mechanics Park)/Approval of Special Event Permit
4-05-2022 Special Event-Permission for Alcohol-Chamber of Commerce-ORDER.docx
4-05-2022 Special Event-Liquor Permit-Chamber Business Expo.pdf
4-05-2022 Waiver Request to Serve Alcohol-Chamber of Commerce.pdf

10.b 2022.24) Approval/LaKermesse Franco-Americaine Festival to Serve Alcohol on City Property (St. Louis Field)/Approval of Special Event Permit
4-05-2022 Special Event-Permission for Alcohol-LaKermesse-ORDER.docx
4-05-2022 LaKermesse Request to Serve Alcohol.pdf
4-05-2022 LaKermesse Special Event Application.pdf

10.c. 2022.25) Approval of Fire Department Assessment Consultant/Center for Public Safety Management, LLC
4-05-2022 Fire Department Assessment - Award Recommendation CPSM - ORDER.docx
4-05-2022 Fire Department Assessment-MEMO.docx
4-05-2022 Fire Dept Assessment-CPSM Project Scope and Fee Proposal Letter.pdf
4-05-2022 Fire Dept Assessment-CPSM Fee Proposal.pdf
4-05-2022 Fire Dept Assessment-CPSM RFQ Submittal - Fire EMS Quals.pdf

4-05-2022 Fire Dept Assessment-Matrix Consulting RFQ Submittal - Fire EMS Quals.pdf

10.d 2022.26) Discussion/Approval - Review River Wall Repair Alternatives Analysis/Recommended Extension of Contract with Weston & Sampson

20220405 River Wall Repair Alternatives-MEMO

20200325 Alternatives Study Report - Riverwalk Retaining Walls Replacement (FEMA).pdf

20220404 River Wall Repair Alternatives - 3rd Party Review - Sewall

11. Appointments: {No Public Comment}

11.a. Maine Service Center Coalition

4-05-2022 Appt-Maine Service Center Coalition.pdf

11.b Bryan Hadler...Conservation Commission

4-05-2022 Appt-Hadler-Conservation Commission.docx

4-05-2022 Committee App-Hadler.pdf

11.c. Larry Patoine...Planning Board, Associate Member

4-05-2022 Appt-Patoine-Planning Board.docx

4-05-2022 Comm App-Patoine-Planning Board.pdf

12. Public Addressing the Council..(5-minute limit per speaker; 30 minute total time limit)

13. City Manager Report {James Bennett}

14. Other Business {Councilor's Comments; Updates; Announcements}

15. Council President Addressing the Council {Councilor Norman Belanger}

16. Mayor Addressing the Council {Mayor Alan Casavant}

17. Adjourn

2022. **IN BOARD OF CITY COUNCIL..APRIL 5, 2022**

BE IT ORDERED, that Mayor Casavant's appointment of Harry B. Center, Esq. and the firm of Woodman Edmands Smith Danylik, Austin & Jacques, P.A., as City Solicitor, in accordance with the Charter of the City of Biddeford be confirmed.

pd $210.00 3/18/2022

For New Businesses and Businesses with Liquor Licenses: Please be sure to contact the Code Enforcement Office to schedule an inspection (207) 284-9236

City of Biddeford

BUSINESS LICENSE APPLICATION

BUSINESS NAME: Valleigh Inc. DBA: Valerie's Scratch Kitchen

Business Address: 45 Boulder Way Biddeford **Map** _____ **Lot** _____

Mailing Address: 15 Georgetown Dr. Biddeford ME 04005

Business Telephone Number: 207-423-5798

Email Address: nolettevalerie@yahoo.com

OWNER/OPERATOR: Valerie Nolette

Home Physical Address: 15 Georgetown Dr. Biddeford ME 04005

Home Mailing Address: Same

Home Telephone Number: 207-423-5798

Applicant(s) Date of Birth: 10-16-1978

Applicant's Signature 03-08-2022 **Date**

Any information provided in this application, which is found to be false, will result in the denial or revocation of this license – per 1 M.R.S.A. 17-A §453.

TYPES OF ENTERTAINMENT: **$150.00 (single/multiple events)**

- ☐ Concert
- ☐ Exhibitions (live performances)
- ☐ Circus/Carnival
- ☐ Playhouse/Play

$150.00 (annual)

- ☐ Indoor Skating Rink
- ☐ Bowling Lanes
- ☐ Theater/Movie House (plus $25.00 per screen)
- ☐ Billiard Room(s)
- ☐ Public Firing Range
- ☐ Bottle Club

AUTOMOBILE REPAIR AND/OR GRAVEYARD:

- ☐ Automobile Repair Garage for maintenance **$75.00**
- ☐ Automobile Graveyard **$200.00**

PLACES/DEALERS IN PRODUCTS: **$200.00**

- ☐ Secondhand Dealers
- ☐ Dealers in gold jewelry, etc.
- ☐ Antique Dealer
- ☐ Flea Market (for 20 tables; $5 per add'l table)
- ☐ Junk Dealer/Recycling

For New Businesses and Businesses with Liquor Licenses: Please be sure to contact the Code Enforcement Office to schedule an inspection (207) 284-9236

PAWNBROKER:	**$200.00**
VENDOR ON A PUBLIC PLACE:	**$50.00**
ICE CREAM TRUCK VENDOR	**$75.00**
(need to show proof of at least $500,000 liability insurance)	
VENDING ON WATERWAYS	**$100.00**
OPERATING LICENSE:	
☐ Victualer (no alcohol)-State Cert. Required	**$75.00**
☐ Victualer serving beer and/or wine-State Cert. Required	**$100.00**
☑ Victualer serving beer, wine and/or liquor State Cert. Required	**$150.00**
☐ Taxicab, motorbus, public automobile (plus $20.00 per vehicle)	**$50.00**
☐ Massage Establishment/Therapist	**$100.00**
☐ Combined Massage Establishment/Massage Therapist	**$150.00**
☐ Adult Business	**$2,000.00**
☐ Sludge Disposal	**$50.00**
MISCELLANEOUS:	
☑ Advertising (for liquor licenses)	**$60.00**
☐ Newspaper Vending Machines (per machine)	**$10.00**
☐ Video Game Devices (up to a max of $50.00)	**$10.00 (each machine)**

New Business License Application Disclosure: By submitting, signing and paying the applicable $10.00 application fee (and $60.00 advertising, when applicable), the issuance of business license in the City of Biddeford is not guaranteed. You will be required to pay the full business license fee(s) once departmental reviews have been completed and an Occupancy Permit has been issued by the Code Enforcement Office.

CITY COUNCIL APPROVAL DATE (if applicable): _____

CODE ENFORCEMENT APPROVAL: _____
(Occupancy Permit Issued)

CITY CLERK ISSUED:_____**DATE:**_____

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
BUREAU OF ALCOHOLIC BEVERAGES AND LOTTERY OPERATIONS
DIVISION OF LIQUOR LICENSING AND ENFORCEMENT

Division Use Only
License No:
Class: By:
Deposit Date:
Amt. Deposited:
Payment Type:
OK with SOS: Yes ☐ No ☐

Application for an On-Premises License

All Questions Must Be Answered Completely. Please print legibly.

Section I: Licensee/Applicant(s) Information; Type of License and Status

Legal Business Entity Applicant Name (corporation, LLC): Valleigh Inc.	Business Name (D/B/A): Valerie's Scratch Kitchen
Individual or Sole Proprietor Applicant Name(s): Valerie L Nolette	Physical Location: 45 Boulder Way Biddeford Maine 04005
Individual or Sole Proprietor Applicant Name(s):	Mailing address, if different:
Mailing address, if different from DBA address: 15 Georgetown Dr Biddeford Maine 04005	Email Address: nolettevalerie@yahoo.com
Telephone # Fax #: 207-423-5798	Business Telephone # Fax #: 207-423-5798
Federal Tax Identification Number: 04-3797991	Maine Seller Certificate # or Sales Tax #: 1079894
Retail Beverage Alcohol Dealers Permit:	Website address:

1. New license or renewal of existing license? ☒ New Expected Start date: 05/02/2022
   ☐ Renewal Expiration Date: _____

2. The dollar amount of gross income for the licensure period that will end on the expiration date above:

   Food: _____ Beer, Wine or Spirits: _____ Guest Rooms: _____

3. Please indicate the type of alcoholic beverage to be sold: (check all that apply)

   ☒ Malt Liquor (beer) ☒ Wine ☒ Spirits

4. Indicate the type of license applying for: (choose only one)

☒	Restaurant (Class I, II, III, IV)	☐	Class A Restaurant/Lounge (Class XI)	☐	Class A Lounge (Class X)
☐	Hotel (Class I, II, III, IV)	☐	Hotel – Food Optional (Class I-A)	☐	Bed & Breakfast (Class V)
☐	Golf Course (included optional licenses, please check if apply) (Class I, II, III, IV)	☐	Auxiliary	☐	Mobile Cart
☐	Tavern (Class IV)	☐	Other: _____		
☐	Qualified Caterer	☐	Self-Sponsored Events (Qualified Caterers Only)		

Refer to Section V for the License Fee Schedule on page 9

5. Business records are located at the following address:

512 Elm Street Biddeford Maine 04005

6. Is the licensee/applicant(s) citizens of the United States? ☒ Yes ☐ No

7. Is the licensee/applicant(s) a resident of the State of Maine? ☒ Yes ☐ No

NOTE: Applicants that are not citizens of the United States are required to file for the license as a business entity.

8. Is licensee/applicant(s) a business entity like a corporation or limited liability company?

☒ Yes ☐ No If **Yes**, complete Section VII at the end of this application

9. For a licensee/applicant who is a business entity as noted in Section I, does any officer, director, member, manager, shareholder or partner have in any way an interest, directly or indirectly, in their capacity in any other business entity which is a holder of a wholesaler license granted by the State of Maine?

☐ Yes No

☒ Not applicable – licensee/applicant(s) is a sole proprietor

10. Is the licensee or applicant for a license receiving, directly or indirectly, any money, credit, thing of value, endorsement of commercial paper, guarantee of credit or financial assistance of any sort from any person or entity within or without the State, if the person or entity is engaged, directly or indirectly, in the manufacture, distribution, wholesale sale, storage or transportation of liquor.

☐ Yes ☒ No

If yes, please provide details: _____

_____

11. Do you own or have any interest in any another Maine Liquor License? ☐ Yes ☒ No

If yes, please list license number, business name, and complete physical location address: (attach additional pages as needed using the same format)

Name of Business	License Number	Complete Physical Address

12. List name, date of birth, place of birth for all applicants including any manager(s) employed by the licensee/applicant. Provide maiden name, if married. (attach additional pages as needed using the same format)

Full Name	DOB	Place of Birth
Valerie Leigh Nolette	10/16/1978	Portland Maine

Residence address on all the above for previous 5 years

Name	Address:
Valerie Nolette	15 Georgetown Dr Biddeford Maine 04005
Name	Address:
Name	Address:
Name	Address:

13. Will any law enforcement officer directly benefit financially from this license, if issued?

☐ Yes ☒ No

If **Yes**, provide name of law enforcement officer and department where employed:

_____

14. Has the licensee/applicant(s) ever been convicted of any violation of the liquor laws in Maine or any State of the United States? ☐ Yes ☒ No

If Yes, please provide the following information and attach additional pages as needed using the same format.

Name: _____ Date of Conviction: _____

Offense: _____ Location: _____

Disposition: _____

15. Has the licensee/applicant(s) ever been convicted of any violation of any law, other than minor traffic violations, in Maine or any State of the United States? ☐ Yes ☒ No

If Yes, please provide the following information and attach additional pages as needed using the same format.

Name: _____ Date of Conviction: _____

Offense: _____ Location: _____

Disposition: _____

16. Has the licensee/applicant(s) formerly held a Maine liquor license? ☐ Yes ☒ No

17. Does the licensee/applicant(s) own the premises? ☐ Yes ☒ No

If No, please provide the name and address of the owner:

Raymond Maillhot 13 Rivers Edge Dr Kennebunk Maine 04043

18. If you are applying for a liquor license for a Hotel or Bed & Breakfast, please provide the number of guest rooms available: _____

19. Please describe in detail the area(s) within the premises to be licensed. This description is in addition to the diagram in Section VI. (Use additional pages as needed)

Full service restaurant serving breakfast, lunch and dinner. We plan on having one bar located inside the restaurant the will occommodate 12 bar seats.

20. What is the distance from the premises to the **nearest** school, school dormitory, church, chapel or parish house, measured from the main entrance of the premises to the main entrance of the school, school dormitory, church, chapel or parish house by the ordinary course of travel?

Name: Biddeford Primary School

Distance: 2.2 miles

Section II: Signature of Applicant(s)

By signing this application, the licensee/applicant understands that false statements made on this application are punishable by law. Knowingly supplying false information on this application is a Class D Offense under Maine's Criminal Code, punishable by confinement of up to one year, or by monetary fine of up to $2,000 or by both.

Please sign and date in blue ink.

Dated: 03/08/2022

Signature of Duly Authorized Person

Signature of Duly Authorized Person

Valerie L Nolette

Printed Name Duly Authorized Person

Printed Name of Duly Authorized Person

Section III: For use by Municipal Officers and County Commissioners only

The undersigned hereby certifies that we have complied with the process outlined in 28-A M.R.S. §653 and approve this on-premises liquor license application.

Dated: _____

Who is approving this application? ☐ Municipal Officers of _____

☐ County Commissioners of _____ County

☐ **Please Note:** The Municipal Officers or County Commissioners must confirm that the records of Local Option Votes have been verified that allows this type of establishment to be licensed by the Bureau for the type of alcohol to be sold for the appropriate days of the week. Please check this box to indicate this verification was completed.

Signature of Officials	Printed Name and Title

This Application will Expire 60 Days from the date of Municipal or County Approval unless submitted to the Bureau

Included below is the section of Maine's liquor laws regarding the approval process by the municipalities or the county commissioners. This is provided as a courtesy only and may not reflect the law in effect at the time of application. Please see http://www.mainelegislature.org/legis/statutes/28-A/title28-Asec653.html

§653. Hearings; bureau review; appeal

1. Hearings. The municipal officers or, in the case of unincorporated places, the county commissioners of the county in which the unincorporated place is located, may hold a public hearing for the consideration of applications for new on-premises licenses and applications for transfer of location of existing on-premises licenses. The municipal officers or county commissioners may hold a public hearing for the consideration of requests for renewal of licenses, except that when an applicant has held a license for the prior 5 years and a complaint has not been filed against the applicant within that time, the applicant may request a waiver of the hearing.

A. The bureau shall prepare and supply application forms.

B. The municipal officers or the county commissioners, as the case may be, shall provide public notice of any hearing held under this section by causing a notice, at the applicant's prepaid expense, stating the name and place of hearing, to appear on at least 3 consecutive days before the date of hearing in a daily newspaper having general circulation in the municipality where the premises are located or one week before the date of the hearing in a weekly newspaper having general circulation in the municipality where the premises are located.

C. If the municipal officers or the county commissioners, as the case may be, fail to take final action on an application for a new on-premises license or transfer of the location of an existing on-premises license within 60 days of the filing of an application, the application is deemed approved and ready for action by the bureau. For purposes of this paragraph, the date of filing of the application is the date the application is received by the municipal officers or county commissioners. This paragraph applies to all applications pending before municipal officers or county commissioners as of the effective date of this paragraph as well as all applications filed on or after the effective date of this paragraph. This paragraph applies to an existing on-premises license that has been extended pending renewal. The municipal officers or the county commissioners shall take final action on an on-premises license that has been extended pending renewal within 120 days of the filing of the application.

D. If an application is approved by the municipal officers or the county commissioners but the bureau finds, after inspection of the premises and the records of the applicant, that the applicant does not qualify for the class of license applied for, the bureau shall notify the applicant of that fact in writing. The bureau shall give the applicant 30 days to file an amended application for the appropriate class of license, accompanied by any additional license fee, with the municipal officers or county commissioners, as the case may be. If the applicant fails to file an amended application within 30 days, the original application must be denied by the bureau. The bureau shall notify the applicant in writing of its decision to deny the application including the reasons for the denial and the rights of appeal of the applicant.

2. Findings. In granting or denying an application, the municipal officers or the county commissioners shall indicate the reasons for their decision and provide a copy to the applicant. A license may be denied on one or more of the following grounds:

A. Conviction of the applicant of any Class A, Class B or Class C crime;

B. Noncompliance of the licensed premises or its use with any local zoning ordinance or other land use ordinance not directly related to liquor control;

C. Conditions of record such as waste disposal violations, health or safety violations or repeated parking or traffic violations on or in the vicinity of the licensed premises and caused by persons patronizing or employed by the licensed premises or other such conditions caused by persons patronizing or employed by the licensed premises that unreasonably disturb, interfere with or affect the ability of persons or businesses residing or located in the vicinity of the licensed premises to use their property in a reasonable manner;

D. Repeated incidents of record of breaches of the peace, disorderly conduct, vandalism or other violations of law on or in the vicinity of the licensed premises and caused by persons patronizing or employed by the licensed premises;

D-1. Failure to obtain, or comply with the provisions of, a permit for music, dancing or entertainment required by a municipality or, in the case of an unincorporated place, the county commissioners;

E. A violation of any provision of this Title;

F. A determination by the municipal officers or county commissioners that the purpose of the application is to circumvent the provisions of section 601; and

G. After September 1, 2010, server training, in a program certified by the bureau and required by local ordinance, has not been completed by individuals who serve alcoholic beverages.

3. Appeal to bureau. Any applicant aggrieved by the decision of the municipal officers or county commissioners under this section may appeal to the bureau within 15 days of the receipt of the written decision of the municipal officers or county commissioners. The bureau shall hold a public hearing in the city, town or unincorporated place where the premises are situated. In acting on such an appeal, the bureau may consider all licensure requirements and findings referred to in subsection 2.

A. Repealed

B. If the decision appealed from is an application denial, the bureau may issue the license only if it finds by clear and convincing evidence that the decision was without justifiable cause.

4. Repealed

5. Appeal to District Court. Any person or governmental entity aggrieved by a bureau decision under this section may appeal the decision to the District Court within 30 days of receipt of the written decision of the bureau.

An applicant who files an appeal or who has an appeal pending shall pay the annual license fee the applicant would otherwise pay. Upon resolution of the appeal, if an applicant's license renewal is denied, the bureau shall refund the applicant the prorated amount of the unused license fee.

Section IV: Terms and Conditions of Licensure as an Establishment that sells liquor for on-premises consumption in Maine

- The licensee/applicant(s) agrees to be bound by and comply with the laws, rules and instructions promulgated by the Bureau.
- The licensee/applicant(s) agrees to maintain accurate records related to an on-premise license as required by the law, rules and instructions promulgated or issued by the Bureau if a license is issued as a result of this application.
    - The licensee/applicant(s) authorizes the Bureau to obtain and examine all books, records and tax returns pertaining to the business, for which this liquor license is requested, and also any books, records and returns during the year in which any liquor license is in effect.
- Any change in the licensee's/applicant's licensed premises as defined in this application must be approved by the Bureau in advance.
- All new applicants must apply to the Alcohol and Tobacco Tax and Trade Bureau (TTB) for its Retail Beverage Alcohol Dealers permit. See the TTB's website at https://www.ttb.gov/nrc/retail-beverage-alcohol-dealers for more information.

Section V: Fee Schedule

Filing fee required. In addition to the license fees listed below, a filing fee of $10.00 must be included with all applications.

Please note: For Licensees/Applicants in unorganized territories in Maine, the $10.00 filing fee must be paid directly to County Treasurer. All applications received by the Bureau from licensees/applicants in unorganized territories must submit proof of payment was made to the County Treasurer together with the application.

Class of License	Type of liquor/Establishments included	Fee
Class I	**For the sale of liquor (malt liquor, wine and spirits)**	$ 900.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants: Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Vessels; Qualified Caterers	
Class I-A	**For the sale of liquor (malt liquor, wine and spirits)**	$1,100.00
	This class includes only hotels that do not serve three meals a day.	
Class II	**For the Sale of Spirits Only**	$ 550.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; and Vessels.	
Class III	**For the Sale of Wine Only**	$ 220.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Vessels; Pool Halls; and Bed and Breakfasts.	
Class IV	**For the Sale of Malt Liquor Only**	$ 220.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Taverns; Pool Halls; and Bed and Breakfasts.	
Class III and IV	**For the Sale of Malt Liquor and Wine Only**	$ 440.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Vessels; Pool Halls; and Bed and Breakfasts.	
Class V	**For the sale of liquor (malt liquor, wine and spirits)**	$ 495.00
	This class includes only a Club without catering privileges.	
Class X	**For the sale of liquor (malt liquor, wine and spirits)**	$2,200.00
	This class includes only a Class A Lounge	
Class XI	**For the sale of liquor (malt liquor, wine and spirits)**	$1,500.00
	This class includes only a Restaurant Lounge	

Section VI Premises Floor Plan

In an effort to clearly define your license premise and the areas that consumption and storage of liquor authorized by your license type is allowed, the Bureau requires all applications to include a diagram of the premise to be licensed.

Diagrams should be submitted on this form and should be as accurate as possible. Be sure to label the following areas: entrances, office area, coolers, storage areas, display cases, shelves, restroom, point of sale area, area for on-premise consumption, dining rooms, event/function rooms, lounges, outside area/decks or any other areas on the premise that you are requesting approval. Attached an additional page as needed to fully describe the premise.

See attatched

Section VII: Required Additional Information for a Licensee/Applicant for an On-Premises Liquor License Who are Legal Business Entities

Questions 1 to 4 of this part of the application must match information in Section I of the application above and match the information on file with the Maine Secretary of State's office. If you have questions regarding your legal entity name or DBA, please call the Secretary of State's office at (207) 624-7752.

All Questions Must Be Answered Completely. Please print legibly.

1. Exact legal name: Valleigh Inc.
2. Doing Business As, if any: Valerie's Scratch Kitchen
3. Date of filing with Secretary of State: 10/14/2004 State in which you are formed: Maine
4. If not a Maine business entity, date on which you were authorized to transact business in the State of Maine: _____
5. List the name and addresses for previous 5 years, birth dates, titles of officers, directors, managers, members or partners and the percentage ownership any person listed: (attached additional pages as needed)

Name	Address (5 Years)	Date of Birth	Title	Percentage of Ownership
Valerie L Nolette	15 Georgetown Dr	10/16/1978	OWNER	100%
	Biddeford Maine 04005			

(Ownership in non-publicly traded companies must add up to 100%.)

For New Businesses and Businesses with Liquor Licenses: Please be sure to contact the Code Enforcement Office to schedule an inspection (207) 284-9236

City of Biddeford

BUSINESS LICENSE APPLICATION

BUSINESS NAME: Vickie's Veggie Table LLC

Business Address: 299 Main St Ste 101 **Map**____ **Lot**____

Mailing Address: 16 Maple St Apt 2 Saco, ME 04072

Business Telephone Number: 207-205-3471

Email Address: vickiesveggietable@gmail.com

OWNER/OPERATOR: Victoria F. Charity-McGuirk

Home Physical Address: 16 Maple St Apt 2 Saco, ME 04072

Home Mailing Address: 16 Maple St Apt 2 Saco, ME 04072

Home Telephone Number: 207-205-3471

Applicant(s) Date of Birth: 2/29/64

Victoria F. Charity-McGuirk — 2/24/22

Applicant's Signature — **Date**

Any information provided in this application, which is found to be false, will result in the denial or revocation of this license – per 1 M.R.S.A. 17-A §453.

TYPES OF ENTERTAINMENT: **$150.00 (single/multiple events)**

- ❑ Concert
- ❑ Exhibitions (live performances)
- ❑ Circus/Carnival
- ❑ Playhouse/Play

- ❑ Indoor Skating Rink
- ❑ Bowling Lanes
- ❑ Theater/Movie House (plus $25.00 per screen)
- ❑ Billiard Room(s)

$150.00 (annual)

- ❑ Public Firing Range
- ❑ Bottle Club

AUTOMOBILE REPAIR AND/OR GRAVEYARD:

- ❑ Automobile Repair Garage for maintenance **$75.00**
- ❑ Automobile Graveyard **$200.00**

PLACES/DEALERS IN PRODUCTS: **$200.00**

- ❑ Secondhand Dealers
- ❑ Dealers in gold jewelry, etc.
- ❑ Antique Dealer
- ❑ Flea Market (for 20 tables; $5 per add'l table)
- ❑ Junk Dealer/Recycling

For New Businesses and Businesses with Liquor Licenses: Please be sure to contact the Code Enforcement Office to schedule an inspection (207) 284-9236

PAWNBROKER:	**$200.00**
VENDOR ON A PUBLIC PLACE:	**$50.00**
ICE CREAM TRUCK VENDOR	**$75.00**
(need to show proof of at least $500,000 liability insurance)	
VENDING ON WATERWAYS	**$100.00**
OPERATING LICENSE:	
☐ Victualer (no alcohol)-State Cert. Required	**$75.00**
☒ Victualer serving beer and/or wine-State Cert. Required	**$100.00**
☐ Victualer serving beer, wine and/or liquor State Cert. Required	**$150.00**
☐ Taxicab, motorbus, public automobile (plus $20.00 per vehicle)	**$50.00**
☐ Massage Establishment/Therapist	**$100.00**
☐ Combined Massage Establishment/Massage Therapist	**$150.00**
☐ Adult Business	**$2,000.00**
☐ Sludge Disposal	**$50.00**
MISCELLANEOUS:	
☑ Advertising (for liquor licenses)	**$60.00**
☐ Newspaper Vending Machines (per machine)	**$10.00**
☐ Video Game Devices (up to a max of $50.00)	**$10.00 (each machine)**

New Business License Application Disclosure: By submitting, signing and paying the applicable $10.00 application fee (and $60.00 advertising, when applicable), the issuance of business license in the City of Biddeford is not guaranteed. You will be required to pay the full business license fee(s) once departmental reviews have been completed and an Occupancy Permit has been issued by the Code Enforcement Office.

CITY COUNCIL APPROVAL DATE (if applicable): _____

CODE ENFORCEMENT APPROVAL: _____
(Occupancy Permit Issued)

CITY CLERK ISSUED:_____ **DATE:**_____

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
BUREAU OF ALCOHOLIC BEVERAGES AND LOTTERY OPERATIONS
DIVISION OF LIQUOR LICENSING AND ENFORCEMENT

TELEPHONE: (207) 624-7220
FAX: (207) 287-3434
EMAIL INQUIRIES: maineliquor@maine.gov

Thank you for your interested in becoming a licensed establishment to sell and serve alcoholic beverages in Maine. To avoid any delay in the processing of your application and the subsequent issuance of your liquor license, please use the following checklist to assist you in completing the application. If you are renewing your license, this checklist is useful as well.

- ☑ Your application has been completed in its entirety and is legible. For a renewal, please submit your application 30 days prior to the expiration date of your liquor license.
- ☑ Your application is signed and dated by a duly authorized person.
- ☐ The application is signed and approved by the Town or City Municipal Officers or County Commissioners.
- ☑ The license fee submitted is for the correct fee for the license class for which you are applying and includes the $10.00 filing fee.
  - ☐ The check must be made payable to "Treasurer, State of Maine"; both the license and filing fees can be submitted on one check.
  - ☐ If the licensee/applicant(s) is in an unorganized township, the application must be approved by the County Commissioners and the $10.00 filing fee must be paid to them. Please be sure to include a copy of the receipt of payment with your application.
- ☐ N/A For a renewal, the dollar amount of your gross income for food, liquor and guest rooms, if applicable must be completed – see Section I.1
- ☑ A diagram of the facility to be licensed must accompany **all** applications whether for a new license or the renewal of an existing license
- ☑ If you are a registered business entity with the Maine Secretary of State's office like a corporation or a limited liability company, you must complete Section VII of the application. This does not need to be completed if you are a sole proprietor.
- ☑ Have you applied for other required licensing from other state and federal agencies? See attached list.

Important – all applications whether for a new license or to renew an existing license for an on-premises liquor licenses must contact their Municipal Officials or the County Commissioners in unincorporated places to have their application approved and signed prior to submitting it to the Bureau for further consideration.

The address to send your completed application to:

1. Mailing address:
   Bureau of Alcoholic Beverages and Lottery Operations
   Division of Liquor Licensing and Enforcement
   8 State House Station
   Augusta, ME 04333-0008
2. Courier/overnight address:
   Bureau of Alcoholic Beverages and Lottery Operations
   Division of Liquor Licensing and Enforcement
   19 Union Street, Suite 301-B
   Augusta, ME 04330

The following licenses/permits may be required prior to be licensing as an on-premises licensee with the Bureau

Obtained ✓	License/Permit	State/Federal Agency to Contact	Telephone Number	Physical Location
	Seller Certificate or Sales Tax Number	Maine Revenue Services www.maine.gov/revenue	(207) 624-9693	51 Commerce Dr, Augusta
	Health License	Health and Human Services www.maine.gov/dhhs	(207) 287 5671	286 Water St, 3rd floor, Augusta
	Victualer's License	Municipality where premise is located.	Contact your town office or county office	Contact your town office or county office
	Shellfish License	Marine Recourses www.maine.gov/dmr	(207) 624-6550	• 32 Blossom Lane, Augusta • 194 McKown Point Rd, West Boothbay Harbor • Lamoine State Park, Lamoine • 650 State St, Bangor • 317 Whitneyville Rd, Jonesboro
	Dance or Entertainment License	Fire Marshall's Office www.maine.gov/dps/fmo	(207) 626-3882	45 Commerce Drive, Suite 1, Augusta
	Federal I.D. Number	www.irs.gov	(800) 829-4933	
	Legal business names for corporations and limited liability companies and "Doing Business As" Names (assumed names)	Secretary of State, Bureau of Corporations, Elections and Commissions www.maine.gov/sos/cec	(207) 624-7752	111 Sewall St, 3rd Fl, Augusta
	Retail Beverage Alcohol Dealers Permit	Alcohol and Tobacco Tax and Trade Bureau (TTB) https://www.ttb.gov/nrc/retail-beverage-alcohol-dealers	(877) 882-3277	

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
BUREAU OF ALCOHOLIC BEVERAGES AND LOTTERY OPERATIONS
DIVISION OF LIQUOR LICENSING AND ENFORCEMENT

Division Use Only
License No:
Class: By:
Deposit Date:
Amt. Deposited:
Payment Type:
OK with SOS: Yes ☐ No ☐

Application for an On-Premises License

All Questions Must Be Answered Completely. Please print legibly.

Section I: Licensee/Applicant(s) Information; Type of License and Status

Legal Business Entity Applicant Name (corporation, LLC): Vickie's Veggie Table, LLC	Business Name (D/B/A): Vickie's Veggie Table
Individual or Sole Proprietor Applicant Name(s): Victoria F. Charity-McGuirk	Physical Location: 299 Main St Suite 101 Biddeford, ME 04005
Individual or Sole Proprietor Applicant Name(s):	Mailing address, if different: 16 Maple St Apt 2 Saco, ME 04072
Mailing address, if different from DBA address:	Email Address: vickiesveggietable@gmail.com
Telephone # Fax #: 207-205-3471	Business Telephone # Fax #: 207-205-3471
Federal Tax Identification Number: 87-3068952	Maine Seller Certificate # or Sales Tax #:
Retail Beverage Alcohol Dealers Permit:	Website address: vickiesveggietable.com (not set up yet)

1. New license or renewal of existing license? ☒ New Expected Start date: 5/7/22
   ☐ Renewal Expiration Date: _____

2. The dollar amount of gross income for the licensure period that will end on the expiration date above:

   Food: _____ Beer, Wine or Spirits: _____ Guest Rooms: _____

3. Please indicate the type of alcoholic beverage to be sold: (check all that apply)

   ☑ Malt Liquor (beer) ☑ Wine ☐ Spirits

4. Indicate the type of license applying for: (choose only one)

☑ Restaurant (Class I, II, III, IV) ☐ Class A Restaurant/Lounge (Class XI) ☐ Class A Lounge (Class X)

☐ Hotel (Class I, II, III, IV) ☐ Hotel – Food Optional (Class I-A) ☐ Bed & Breakfast (Class V)

☐ Golf Course (included optional licenses, please check if apply) (Class I, II, III, IV) ☐ Auxiliary ☐ Mobile Cart

☐ Tavern (Class IV) ☐ Other: _____

☐ Qualified Caterer ☐ Self-Sponsored Events (Qualified Caterers Only)

Refer to Section V for the License Fee Schedule on page 9

5. Business records are located at the following address:

16 Maple St Apt 2 Saco, ME 04072

6. Is the licensee/applicant(s) citizens of the United States? ☑ Yes ☐ No

7. Is the licensee/applicant(s) a resident of the State of Maine? ☑ Yes ☐ No

NOTE: Applicants that are not citizens of the United States are required to file for the license as a business entity.

8. Is licensee/applicant(s) a business entity like a corporation or limited liability company?

☑ Yes ☐ No If **Yes**, complete Section VII at the end of this application

9. For a licensee/applicant who is a business entity as noted in Section I, does any officer, director, member, manager, shareholder or partner have in any way an interest, directly or indirectly, in their capacity in any other business entity which is a holder of a wholesaler license granted by the State of Maine?

☐ Yes ☑ No

☐ Not applicable – licensee/applicant(s) is a sole proprietor

10. Is the licensee or applicant for a license receiving, directly or indirectly, any money, credit, thing of value, endorsement of commercial paper, guarantee of credit or financial assistance of any sort from any person or entity within or without the State, if the person or entity is engaged, directly or indirectly, in the manufacture, distribution, wholesale sale, storage or transportation of liquor.

☐ Yes ☒ No

If yes, please provide details: _____

_____

11. Do you own or have any interest in any another Maine Liquor License? ☐ Yes ☒ No

If yes, please list license number, business name, and complete physical location address: (attach additional pages as needed using the same format)

Name of Business	License Number	Complete Physical Address

12. List name, date of birth, place of birth for all applicants including any manager(s) employed by the licensee/applicant. Provide maiden name, if married. (attach additional pages as needed using the same format)

Full Name	DOB	Place of Birth
Victoria F. Charity-McGuirk (maiden name Victoria F. Charity)	2/29/64	Biddeford, ME
Melanie R. McGuirk	6/7/93	Biddeford, ME

Residence address on all the above for previous 5 years

Name Victoria F Charity-McGuirk Address: 16 Maple St Apt 2 Saco, ME 04072 (9/25/20-present)

Name Victoria F Charity-McGuirk Address: 17075 San Bruno St Fountain Valley CA 92708 (11/2018-3/21/20)

Name Victoria F Charity-McGuirk Address: 39 Smithwheel Old Orchard Beach, ME 04064 (11/17-10/18)

Name Victoria F Charity-McGuirk Address: 561 Seaport Terr SE Palm Bay, FL 32909 (3/22/20-9/24/20)

Melanie McGuirk 316 Cherry Ave Apt 306 Long Beach, CA 90802
Melanie McGuirk 31 East Valentine St Westbrook, ME 04092
Melanie McGuirk 13728 Bentongrove Dr Whittier, CA 90605
5350 E Orangethorpe Ave La Palma, CA 90623

13. Will any law enforcement officer directly benefit financially from this license, if issued?

☐ Yes ☑ No

If **Yes**, provide name of law enforcement officer and department where employed:

_____

14. Has the licensee/applicant(s) ever been convicted of any violation of the liquor laws in Maine or any State of the United States? ☐ Yes ☑ No

If Yes, please provide the following information and attach additional pages as needed using the same format.

Name: _____ Date of Conviction: _____

Offense: _____ Location: _____

Disposition: _____

15. Has the licensee/applicant(s) ever been convicted of any violation of any law, other than minor traffic violations, in Maine or any State of the United States? ☐ Yes ☑ No

If Yes, please provide the following information and attach additional pages as needed using the same format.

Name: _____ Date of Conviction: _____

Offense: _____ Location: _____

Disposition: _____

16. Has the licensee/applicant(s) formerly held a Maine liquor license? ☐ Yes ☑ No

17. Does the licensee/applicant(s) own the premises? ☐ Yes ☑ No

If No, please provide the name and address of the owner:

Joan Harkins / Nicoletos Block Corp

18. If you are applying for a liquor license for a Hotel or Bed & Breakfast, please provide the number of guest rooms available: n/a

19. Please describe in detail the area(s) within the premises to be licensed. This description is in addition to the diagram in Section VI. (Use additional pages as needed)

The restaurant will have seating and wine & beer service in the front two sections. The premises is rectangular with four sections partially divided, all visible when you walk in. The third & fourth sections are the restaurant's kitchen & storage areas.

20. What is the distance from the premises to the **nearest** school, school dormitory, church, chapel or parish house, measured from the main entrance of the premises to the main entrance of the school, school dormitory, church, chapel or parish house by the ordinary course of travel?

Name: St. Joseph's Church

Distance: .2 miles

Section II: Signature of Applicant(s)

By signing this application, the licensee/applicant understands that false statements made on this application are punishable by law. Knowingly supplying false information on this application is a Class D Offense under Maine's Criminal Code, punishable by confinement of up to one year, or by monetary fine of up to $2,000 or by both.

Please sign and date in blue ink.

Dated: 3/2/22

Victoria F. Charity-McGuirk
Signature of Duly Authorized Person

Signature of Duly Authorized Person

Victoria F Charity-McGuirk
Printed Name Duly Authorized Person

Printed Name of Duly Authorized Person

Section III: For use by Municipal Officers and County Commissioners only

The undersigned hereby certifies that we have complied with the process outlined in 28-A M.R.S. §653 and approve this on-premises liquor license application.

Dated: _____

Who is approving this application? ☐ Municipal Officers of _____

☐ County Commissioners of _____ County

☐ **Please Note:** The Municipal Officers or County Commissioners must confirm that the records of Local Option Votes have been verified that allows this type of establishment to be licensed by the Bureau for the type of alcohol to be sold for the appropriate days of the week. Please check this box to indicate this verification was completed.

Signature of Officials	Printed Name and Title

This Application will Expire 60 Days from the date of Municipal or County Approval unless submitted to the Bureau

Included below is the section of Maine's liquor laws regarding the approval process by the municipalities or the county commissioners. This is provided as a courtesy only and may not reflect the law in effect at the time of application. Please see http://www.mainelegislature.org/legis/statutes/28-A/title28-Asec653.html

§653. Hearings; bureau review; appeal

1. Hearings. The municipal officers or, in the case of unincorporated places, the county commissioners of the county in which the unincorporated place is located, may hold a public hearing for the consideration of applications for new on-premises licenses and applications for transfer of location of existing on-premises licenses. The municipal officers or county commissioners may hold a public hearing for the consideration of requests for renewal of licenses, except that when an applicant has held a license for the prior 5 years and a complaint has not been filed against the applicant within that time, the applicant may request a waiver of the hearing.

A. The bureau shall prepare and supply application forms.

B. The municipal officers or the county commissioners, as the case may be, shall provide public notice of any hearing held under this section by causing a notice, at the applicant's prepaid expense, stating the name and place of hearing, to appear on at least 3 consecutive days before the date of hearing in a daily newspaper having general circulation in the municipality where the premises are located or one week before the date of the hearing in a weekly newspaper having general circulation in the municipality where the premises are located.

C. If the municipal officers or the county commissioners, as the case may be, fail to take final action on an application for a new on-premises license or transfer of the location of an existing on-premises license within 60 days of the filing of an application, the application is deemed approved and ready for action by the bureau. For purposes of this paragraph, the date of filing of the application is the date the application is received by the municipal officers or county commissioners. This paragraph applies to all applications pending before municipal officers or county commissioners as of the effective date of this paragraph as well as all applications filed on or after the effective date of this paragraph. This paragraph applies to an existing on-premises license that has been extended pending renewal. The municipal officers or the county commissioners shall take final action on an on-premises license that has been extended pending renewal within 120 days of the filing of the application.

D. If an application is approved by the municipal officers or the county commissioners but the bureau finds, after inspection of the premises and the records of the applicant, that the applicant does not qualify for the class of license applied for, the bureau shall notify the applicant of that fact in writing. The bureau shall give the applicant 30 days to file an amended application for the appropriate class of license, accompanied by any additional license fee, with the municipal officers or county commissioners, as the case may be. If the applicant fails to file an amended application within 30 days, the original application must be denied by the bureau. The bureau shall notify the applicant in writing of its decision to deny the application including the reasons for the denial and the rights of appeal of the applicant.

2. Findings. In granting or denying an application, the municipal officers or the county commissioners shall indicate the reasons for their decision and provide a copy to the applicant. A license may be denied on one or more of the following grounds:

A. Conviction of the applicant of any Class A, Class B or Class C crime;

B. Noncompliance of the licensed premises or its use with any local zoning ordinance or other land use ordinance not directly related to liquor control;

C. Conditions of record such as waste disposal violations, health or safety violations or repeated parking or traffic violations on or in the vicinity of the licensed premises and caused by persons patronizing or employed by the licensed premises or other such conditions caused by persons patronizing or employed by the licensed premises that unreasonably disturb, interfere with or affect the ability of persons or businesses residing or located in the vicinity of the licensed premises to use their property in a reasonable manner;

D. Repeated incidents of record of breaches of the peace, disorderly conduct, vandalism or other violations of law on or in the vicinity of the licensed premises and caused by persons patronizing or employed by the licensed premises;

D-1. Failure to obtain, or comply with the provisions of, a permit for music, dancing or entertainment required by a municipality or, in the case of an unincorporated place, the county commissioners;

E. A violation of any provision of this Title;

F. A determination by the municipal officers or county commissioners that the purpose of the application is to circumvent the provisions of section 601; and

G. After September 1, 2010, server training, in a program certified by the bureau and required by local ordinance, has not been completed by individuals who serve alcoholic beverages.

3. Appeal to bureau. Any applicant aggrieved by the decision of the municipal officers or county commissioners under this section may appeal to the bureau within 15 days of the receipt of the written decision of the municipal officers or county commissioners. The bureau shall hold a public hearing in the city, town or unincorporated place where the premises are situated. In acting on such an appeal, the bureau may consider all licensure requirements and findings referred to in subsection 2.

A. Repealed

B. If the decision appealed from is an application denial, the bureau may issue the license only if it finds by clear and convincing evidence that the decision was without justifiable cause.

4. Repealed

5. Appeal to District Court. Any person or governmental entity aggrieved by a bureau decision under this section may appeal the decision to the District Court within 30 days of receipt of the written decision of the bureau.

An applicant who files an appeal or who has an appeal pending shall pay the annual license fee the applicant would otherwise pay. Upon resolution of the appeal, if an applicant's license renewal is denied, the bureau shall refund the applicant the prorated amount of the unused license fee.

Section IV: Terms and Conditions of Licensure as an Establishment that sells liquor for on-premises consumption in Maine

- The licensee/applicant(s) agrees to be bound by and comply with the laws, rules and instructions promulgated by the Bureau.
- The licensee/applicant(s) agrees to maintain accurate records related to an on-premise license as required by the law, rules and instructions promulgated or issued by the Bureau if a license is issued as a result of this application.
    - The licensee/applicant(s) authorizes the Bureau to obtain and examine all books, records and tax returns pertaining to the business, for which this liquor license is requested, and also any books, records and returns during the year in which any liquor license is in effect.
- Any change in the licensee's/applicant's licensed premises as defined in this application must be approved by the Bureau in advance.
- All new applicants must apply to the Alcohol and Tobacco Tax and Trade Bureau (TTB) for its Retail Beverage Alcohol Dealers permit. See the TTB's website at https://www.ttb.gov/nrc/retail-beverage-alcohol-dealers for more information.

Section V: Fee Schedule

Filing fee required. In addition to the license fees listed below, a filing fee of $10.00 must be included with all applications.

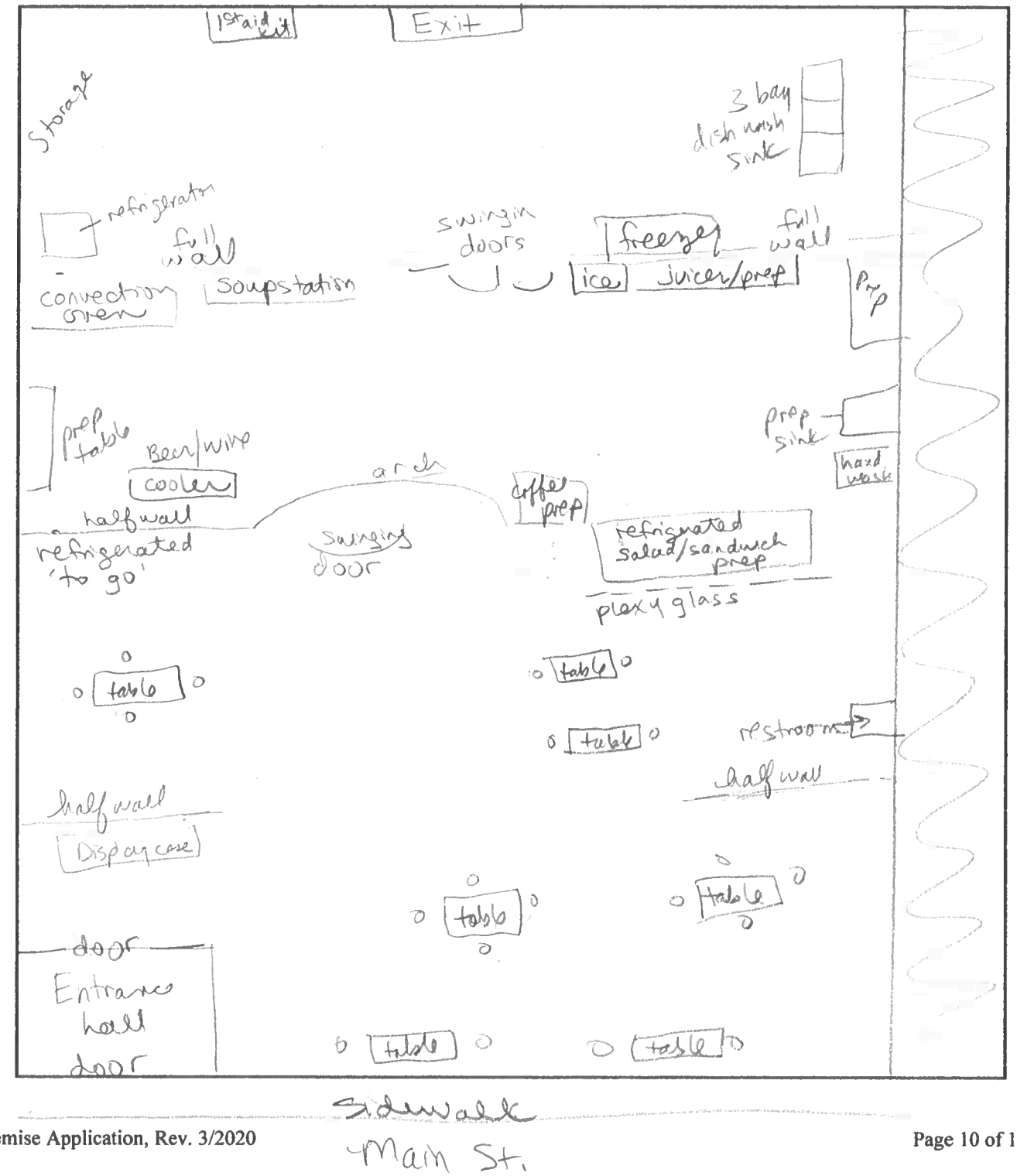
Please note: For Licensees/Applicants in unorganized territories in Maine, the $10.00 filing fee must be paid directly to County Treasurer. All applications received by the Bureau from licensees/applicants in unorganized territories must submit proof of payment was made to the County Treasurer together with the application.

Class of License	Type of liquor/Establishments included	Fee
Class I	**For the sale of liquor (malt liquor, wine and spirits)**	$ 900.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants: Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Vessels; Qualified Caterers	
Class I-A	**For the sale of liquor (malt liquor, wine and spirits)**	$1,100.00
	This class includes only hotels that do not serve three meals a day.	
Class II	**For the Sale of Spirits Only**	$ 550.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; and Vessels.	
Class III	**For the Sale of Wine Only**	$ 220.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Vessels; Pool Halls; and Bed and Breakfasts.	
Class IV	**For the Sale of Malt Liquor Only**	$ 220.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Taverns; Pool Halls; and Bed and Breakfasts.	
Class III and IV	**For the Sale of Malt Liquor and Wine Only**	$ 440.00
	This class includes: Airlines; Civic Auditoriums; Class A Restaurants; Clubs with catering privileges; Dining Cars; Golf Courses; Hotels; Indoor Ice-Skating Clubs; Indoor Tennis Clubs; Restaurants; Vessels; Pool Halls; and Bed and Breakfasts.	
Class V	**For the sale of liquor (malt liquor, wine and spirits)**	$ 495.00
	This class includes only a Club without catering privileges.	
Class X	**For the sale of liquor (malt liquor, wine and spirits)**	$2,200.00
	This class includes only a Class A Lounge	
Class XI	**For the sale of liquor (malt liquor, wine and spirits)**	$1,500.00
	This class includes only a Restaurant Lounge	

Section VI Premises Floor Plan

In an effort to clearly define your license premise and the areas that consumption and storage of liquor authorized by your license type is allowed, the Bureau requires all applications to include a diagram of the premise to be licensed.

Diagrams should be submitted on this form and should be as accurate as possible. Be sure to label the following areas: entrances, office area, coolers, storage areas, display cases, shelves, restroom, point of sale area, area for on-premise consumption, dining rooms, event/function rooms, lounges, outside area/decks or any other areas on the premise that you are requesting approval. Attached an additional page as needed to fully describe the premise.



Section VII: Required Additional Information for a Licensee/Applicant for an On-Premises Liquor License Who are Legal Business Entities

Questions 1 to 4 of this part of the application must match information in Section I of the application above and match the information on file with the Maine Secretary of State's office. If you have questions regarding your legal entity name or DBA, please call the Secretary of State's office at (207) 624-7752.

All Questions Must Be Answered Completely. Please print legibly.

1. Exact legal name: Victie's Veggie Table LLC
2. Doing Business As, if any: Victie's Veggie Table
3. Date of filing with Secretary of State: 10/12/21 State in which you are formed: Maine
4. If not a Maine business entity, date on which you were authorized to transact business in the State of Maine: _____
5. List the name and addresses for previous 5 years, birth dates, titles of officers, directors, managers, members or partners and the percentage ownership any person listed: (attached additional pages as needed)

Name	Address (5 Years)	Date of Birth	Title	Percentage of Ownership
Victoria F. Charity-McGuirk	16 Maple St Apt 2 Saco, ME 04072 516 Seaport Terr SE Palm Bay FL 32909	2/29/64	Managing Member	50
"	17075 San Bruno St Fountain Valley CA 92708	"	"	"
"	39 Smithwheler Rd OOB ME 04064	"	"	"
Melanie McGuirk	316 Cherry Ave Apt 306 Long Beach CA 90802	6/9/93	Treasurer	50
"	31 East Valentine St Westbrook ME 04092	"	"	"
"	5350 E Orangethorpe Ave La Palma CA 90623 13728 Bentongrove Dr Whittier CA 90605	"	"	"

(Ownership in non-publicly traded companies must add up to 100%.)

COUNCIL MEETING
MARCH 15, 2022
NOTE: Due to COVID-19, this meeting was held in-person in the Council Chambers, as well as virtually (via ZOOM),

Mayor Casavant called the meeting to order at 6:00 p.m.

Roll Call: William Emhiser, Scott Whiting, Martin Grohman, Bobby Mills, Amy Clearwater, Norman Belanger, Liam LaFountain, Doris Ortiz and Marc Lessard

The Council, and all who were present, recited the Pledge of Allegiance.

Adjustments to the Agenda:
- Add: Proclamation for *2022 Week of the Young Child*
- Add: Proclamation for *Vietnam War Remembrance Day*
- Remove Order of the Day 2022.19
- Remove Executive Session

Proclamation: **2022 Week of the Young Child – April 2-8, 2022**
Mayor Casavant read the Proclamation.

Proclamation: **Vietnam War Remembrance Day – March 29, 2022**
Mayor Casavant read the Proclamation. He thanked Councilor Grohman for bringing this Proclamation forward so that the Council could recognize the importance of this Day of Remembrance, and to appreciate the sacrifices of those who served.
Councilor Grohman shared a couple ways to help our local Vietnam Veterans; one being bringing returnables to their Post on Elm Street. A ceremony for this Day of Remembrance will be put together for March 29th.

Recognition of City Solicitor Keith Jacques, Esq.
Mayor Casavant recognized that tonight's Council Meeting is Keith's last meeting with the Biddeford City Council. Keith will be retiring in April, after having served as Biddeford's City Solicitor for the past 18 years. Mayor Casavant went on to say that Keith has served with integrity, wisdom and skill and is respected by both past and present Councils and City Staff. Keith's legal counsel and guidance has proven to be exemplary and he will be truly missed.

Public Addressing the Council..(3 minute limit per speaker for up to 15 minutes):
There were no public comments.

Presentation: **School Department FY23 Budget**
Superintendent of Schools Jeremy Ray gave an in-depth overview of the proposed School Department FY23 Budget. He talked about how the rising valuation of the City makes it more difficult over time to bring in very limited increases to the taxpayers. He noted that the major increases in the School Budget stem from Employee Steps and Wages; expected Health Insurance increases; and payment for capital expenditures through the revolving renovations grant.

Consideration of Minutes: **March 1, 2022**
Motion by Councilor Belanger, seconded by Councilor Clearwater to accept the minutes as printed.
Vote: Unanimous.

Second Reading:
2022.13) Amendment/Land Use Regulations/Art. XV-Historic Preservation Ordinance/ Section 5 and Section 14
{For a copy of the ordinance amendment and first reading, see the Council Meeting minutes of March 1, 2022}

Motion by Councilor Belanger, seconded by Councilor Clearwater to grant the second reading of the ordinance amendment.
Vote: Unanimous.

Orders of the Day:

Order Authorizing $3,872,635 City of Biddeford School Revolving Renovation Fund Financing, including $1,641,610 in Loan Forgiveness and $2,231,025 in Bonds, for Windows and Health, Safety, and Compliance Repairs at School Facilities

2022.17 **IN BOARD OF CITY COUNCIL…MARCH 15, 2022**

BE IT ORDERED, by the City Council of Biddeford as follows:

Whereas, pursuant to sections 5953-E and 6006-F of Title 30-A of the Maine Revised Statutes, on January 31, 2022, the Maine Department of Education approved School Revolving Renovation Fund loans for the following windows and health, safety, and compliance repair projects (the "Projects"):

School	Project	Loan Amount
Biddeford Primary School	ADA, Security, Windows	$1,449,454
Biddeford Intermediate School	Security, Windows	$ 480,290
Biddeford Regional Center of Technology	ADA, Air Quality, Asbestos	$1,942,891
	Windows	$3,872,635

Whereas, of the total loan principal amount of up to $3,872,635, the sum of up to $1,641,610 (42.39%) will be forgiven and the sum of up to $2,231,025 (57.61%) will be payable at 0% interest in ten (10) equal annual installments; and

Whereas, the Council desires to authorize the execution and delivery of a loan agreement in principal amount of $3,872,635 and the issuance, sale, and delivery of general obligation bonds of the City in principal amount of $2,231,025 to finance the Projects;

Now therefore, be it ordered, by the City Council of the City of Biddeford as follows:

Section 1. Loan Authorized. That pursuant to Maine law, including sections 5953-E, 6006-F, and 5772 of Title 30-A of the Maine Revised Statutes, Article XI, Section 6 and Article XII, Section 7(a) of the Charter of the City of Biddeford, a Maine Department of Education School Revolving Renovation Fund Project Eligibility Certificate dated January 31, 2022, as amended, and all other authority thereto enabling, the Treasurer and the Mayor of the City of Biddeford are authorized in the name of and on behalf of the City to execute and deliver a Loan Agreement between the Maine Municipal Bond Bank (the "Bond Bank") and the City to effect a loan from the Bond Bank to finance the Projects in the principal amount of $3,872,635, but of which amount $1,641,610 of principal is forgiven by the Bond Bank (the "Loan Agreement"); and that the Loan Agreement be in such form as the Treasurer and Mayor may approve, the execution and delivery thereof to be conclusive evidence of such approval;

Section 2. Bond Authorized. That pursuant to Maine law, including sections 5953-E, 6006-F, and 5772 of Title 30-A of the Maine Revised Statutes, Article XI, Section 6 and Article XII, Section 7(a) of the Charter of the City of Biddeford, and other applicable law, the Treasurer and Mayor of the City be authorized to borrow in the name and on behalf of the City the sum of up to $2,231,025 from the Bond Bank to finance the Projects; that in connection therewith, the Treasurer and the Mayor be authorized to issue general obligation securities (bonds or notes) of the City in an original principal amount of up to $2,231,025, payable WITH NO INTEREST in ten (10) equal annual installments of principal, and to execute and deliver such general obligation bonds or notes in registered form under the seal of the City, signed by the Treasurer, countersigned by the Mayor, and attested by the City Clerk (the "Bond"); that the signatures on the Bond may be facsimile signatures, provided that at least the signature of the Treasurer or the Mayor be a manual signature; and that the Bond be in such form and include such terms not inconsistent herewith as the Treasurer and Mayor may approve, the execution and delivery thereof to be conclusive evidence of such approval.

Section 3. That the Mayor, Treasurer, City Clerk, and other appropriate officials of the City of Biddeford, acting singly, are authorized to execute and deliver on behalf of the City such other documents and certificates as may be required in connection with the Loan Agreement and the Bond, including execution and delivery of an Assignment of monies transferred by the State of Maine to pay for Project costs and such other instruments, documents, certificates and agreements, and to take or cause to be taken such further actions for and on behalf of the City, as may be necessary, convenient, or appropriate to accomplish the Projects and to effect the transactions contemplated

herein and by the documents referenced herein, and that the City Clerk be authorized to attest to the foregoing and attach the City's seal to any of the foregoing.

Section 4. That if the Treasurer, Mayor, or City Clerk are for any reason unavailable to approve and execute the Loan Agreement, the Bond, or any associated documents, the person or persons then acting in any such capacity, whether as an assistant, a deputy, as the "acting" official, or otherwise, are each individually authorized to act for such official with the same force and effect as if such official has herself or himself performed such act.

Section 5. That if any of the officers or officials of the City who have signed or sealed the Loan Agreement or Bond shall cease to be such officers or officials before the Loan Agreement or Bond so signed and sealed shall have actually been authenticated or delivered by the City, such Loan Agreement or Bond nevertheless may be authenticated, issued, and delivered with the same force and effect as though the person or persons who signed or sealed such Loan Agreement or Bond had not ceased to be such officer or official; and also any such Loan Agreement or Bond may be signed and sealed on behalf of the City by those persons who, at the actual date of the execution of such Loan Agreement or Bond, shall be the proper officers and officials of the City, although at the nominal date of such Loan Agreement or Bond, any such person shall not have been such officer or official.

Section 6. That during the term of the Loan Agreement and Bond, all authority granted pursuant to this Order shall be, remain, and continue in full force and effect without the necessity of any further action of the City Council.

Section 7. That the sum of $3,872,675 is hereby appropriated to finance costs of the Projects, such amount to be raised by the execution and delivery of the Loan Agreement and the issuance and sale of the Bond.

Section 8. That pursuant to Section 2528(5) of Title 30-A of the Maine Revised Statutes and Article XII, Section 7 of the City Charter, the following question, accompanied by the recommendations of the City Council, the Budget Committee, and the School Committee, shall be submitted to the voters of the City of Biddeford for consideration at a referendum vote to be held on June 14, 2022:

> Shall the Mayor and the Treasurer of the City of Biddeford be authorized to borrow, on behalf of the City, a sum not to exceed $3,872,635 through the State of Maine's zero interest rate/loan forgiveness School Revolving Renovation Fund (SRRF) Program for windows and health, safety, and compliance repairs at Biddeford Primary School, Biddeford Intermediate School, and the Biddeford Regional Center of Technology (the "Project")?
>
> SRRF Program Funding. The Project costs (up to $3,872,635) have been approved for funding through the State's SRRF Program. Of this amount, the City will receive 42.39% (up to $1,641,610) as a loan that will be forgiven, and 57.61% (up to $2,231,025) as a loan that the City will repay at zero interest (0%) over a term of ten (10) years.
>
> *The City Council recommends the adoption of this question – Voted __-__.*
> *The Budget Committee recommends the adoption of this question – Voted __-__.*
> *The School Committee recommends the adoption of this question – Voted __-__.*

Section 9. That said referendum question be accompanied by a signed financial statement of the Treasurer substantially in form as set forth below:

CITY OF BIDDEFORD FINANCIAL STATEMENT

1. Total City Indebtedness

Bonds outstanding and unpaid	$ 33,520,000
Bonds authorized and unissued	$ 17,500,000
Bond to be issued if this Question is approved	$ 2,231,025
Total:	$ 53,251025

2. Estimated Costs and Impacts of Bond
At an estimated interest rate of zero percent (0%), for a 10-year term, the estimated total costs of this bond issue will be:

Principal	$ 2,231,025
Interest	$ - 0 -
Total Principal & Interest to be Paid at Maturity	$ 2,231,025
Projected effect on mil rate:	$ 0.084
Total length of term:	Ten (10) years

3. Validity
The validity of the Bond and of the voters' ratification of the Bond may not be affected by any errors in the above Estimated Costs of Bond. If the actual amount of the total debt service for the bond issue varies from the estimate, the ratification by the electors is nevertheless conclusive and the validity of the bond issue is not affected by reason of the variance.

_____
James Bennett, Treasurer
City of Biddeford

Motion by Councilor Clearwater, seconded by Councilor Lessard to grant the first reading of the order.
Vote: Unanimous.

2022.18 IN BOARD OF CITY COUNCIL..MARCH 15, 2022
BE IT ORDERED, that the City Council of the City of Biddeford does hereby authorize the purchase of Self-Contained Breathing Apparatus Equipment from Bergeron Protective Clothing in an amount not to exceed $313,835.00. Funding for this equipment will, in large part, be covered by a FEMA Grant in the amount of $285,304.55; and $28,530.45 will come from the City's Grant Matching Reserve Account
(22001-92111-11602).

NOTE: This item will be considered by the Finance Committee at their March 15, 2022 meeting and recommendation will be forwarded to the Council.

Motion by Councilor Clearwater, seconded by Councilor Lessard to grant the order.
Vote: Unanimous.

2022.20 IN BOARD OF CITY COUNCIL..MARCH 15, 2022
BE IT ORDERED, that the City Council of the City of Biddeford does hereby award a contract extension with Shaw Brothers for the City's Paving Program; contract to be extended through July 1, 2023.

Motion by Councilor Clearwater, seconded by Councilor Lessard to grant the order.
Vote: Unanimous.

2022.21 IN BOARD OF CITY COUNCIL..MARCH 15, 2022
BE IT ORDERED, that the City Council of the City of Biddeford does hereby authorize the City Manager, or his designee, to execute an Easement Deed in the form attached hereto between the City of Biddeford and Freddy, LLC granting a non-exclusive vehicular easement to provide access to 64 Alfred Street.

Motion by Councilor Mills, seconded by Councilor Belanger to grant the order.
Vote: Unanimous.

2022.22 IN BOARD OF CITY COUNCIL..MARCH 15, 2022
WHEREAS, York County has received American Rescue Plan Act (ARPA) funding; and

WHEREAS, there is a proposal to use a portion of the York County ARPA funds to purchase a regional hydraulic dredge for use by communities within York County, and

WHEREAS, access to a regional dredge may be of benefit to the City of Biddeford and other communities within York County, and

WHEREAS, the City of Biddeford has been asked to provide a letter in support of the purchase of a regional dredge, and

WHEREAS, the Biddeford City Council does not have sufficient information to form an opinion on the benefits and sustainability of such a purchase, and

WHEREAS, York County Commissioners have until December 31, 2024 to expend ARPA funds, and

WHEREAS, a detailed project proposal would assist the City of Biddeford in making a determination in support of the benefits and sustainability of the purchase of a regional hydraulic dredge for the benefit of the City of Biddeford and York County Communities;

NOW THERFORE BE IT RESOLVED that the Biddeford City Council express the need for more information from the York County Commissioners in the form of a letter recommending the development of a detailed project proposal in the form referenced in the draft *York County Regional Dredge Purchase Support Request Letter*, dated March 15, 2022 as may be amended.

Motion by Councilor Clearwater, seconded by Councilor Lessard to grant the resolution.

Motion by Councilor Belanger, seconded by Councilor Clearwater to amend the resolution so to allow the City Manager to sign the letter, instead of the Councilors.
Vote: 8/1; Councilor Mills opposed.
Councilors Emhiser, Whiting, Grohman, Clearwater, Belanger, LaFountain, Ortiz and Lessard in favor.
Amendment carries.

Motion by Councilor Belanger, seconded by Councilor Clearwater to suspend the rules to allow Councilor Mills to speak for a third time.
Vote: Unanimous.

Vote on order, as amended: 5/4; Councilors Lessard, Mills, Belanger and Emhiser opposed.
Councilors Whiting, Grohman, Clearwater, LaFountain and Ortiz in favor.
Motion carries.

Public Addressing the Council…(5 minute limit per speaker; 30 minute total time limit):
There were no public comments.

City Manager Report:
Chief Operating Officer Brian Phinney let the Council know that he forwarded them the School Department FY23 Budget Presentation to their email; as well as posted the presentation in Granicus with the other FY23 Budget documents.

Other Business:
Councilor Mills: let the Council know that he will be requesting $25,000 at an upcoming Budget Committee meeting for crosswalks and signage at Waterhouse Field.

Council President Addressing the Council: Councilor Belanger expressed his appreciation to Keith for all he has done.

Mayor Addressing the Council: Mayor Casavant recently received a note from a former student who was an exchange student in one of his classes years ago when he taught at Biddeford High School. The former exchange student and now lives in the Ukraine. In his note, the former student shared that he is living in a basement with his parents due to the ongoing war in that country. The note served as a reminder of how life is fragile and it's important that we keep things in perspective.

Motion by Councilor Belanger, seconded by Councilor Clearwater to adjourn.
Vote: Unanimous. Time: 8:00 p.m.

Attest by:_____

Carmen J. Bernier, City Clerk

Order Authorizing $3,872,635 City of Biddeford School Revolving Renovation Fund Financing, including $1,641,610 in Loan Forgiveness and $2,231,025 in Bonds, for Windows and Health, Safety, and Compliance Repairs at School Facilities

2022.17 **IN BOARD OF CITY COUNCIL…MARCH 15, 2022**

BE IT ORDERED, by the City Council of Biddeford as follows:

Whereas, pursuant to sections 5953-E and 6006-F of Title 30-A of the Maine Revised Statutes, on January 31, 2022, the Maine Department of Education approved School Revolving Renovation Fund loans for the following windows and health, safety, and compliance repair projects (the "Projects"):

School	Project	Loan Amount
Biddeford Primary School	ADA, Security, Windows	$1,449,454
Biddeford Intermediate School	Security, Windows	$ 480,290
Biddeford Regional Center of Technology	ADA, Air Quality, Asbestos Windows	$1,942,891
		$3,872,635

Whereas, of the total loan principal amount of up to $3,872,635, the sum of up to $1,641,610 (42.39%) will be forgiven and the sum of up to $2,231,025 (57.61%) will be payable at 0% interest in ten (10) equal annual installments; and

Whereas, the Council desires to authorize the execution and delivery of a loan agreement in principal amount of $3,872,635 and the issuance, sale, and delivery of general obligation bonds of the City in principal amount of $2,231,025 to finance the Projects;

Now therefore, be it ordered, by the City Council of the City of Biddeford as follows:

Section 1. Loan Authorized. That pursuant to Maine law, including sections 5953-E, 6006-F, and 5772 of Title 30-A of the Maine Revised Statutes, Article XI, Section 6 and Article XII, Section 7(a) of the Charter of the City of Biddeford, a Maine Department of Education School Revolving Renovation Fund Project Eligibility Certificate dated January 31, 2022, as amended, and all other authority thereto enabling, the Treasurer and the Mayor of the City of Biddeford are authorized in the name of and on behalf of the City to execute and deliver a Loan Agreement between the Maine Municipal Bond Bank (the "Bond Bank") and the City to effect a loan from the Bond Bank to finance the Projects in the principal amount of $3,872,635, but of which amount $1,641,610 of principal is forgiven by the Bond Bank (the "Loan Agreement"); and that the Loan Agreement be in such form as the Treasurer and Mayor may approve, the execution and delivery thereof to be conclusive evidence of such approval;

Section 2. Bond Authorized. That pursuant to Maine law, including sections 5953-E, 6006-F, and 5772 of Title 30-A of the Maine Revised Statutes, Article XI, Section 6 and Article XII, Section 7(a) of the Charter of the City of Biddeford, and other applicable law, the Treasurer and Mayor of the City be authorized to borrow in the name and on behalf of the City the sum of up to $2,231,025 from the Bond Bank to finance the Projects; that in connection therewith, the Treasurer and the Mayor be authorized to issue general obligation securities (bonds or notes) of the City in an original principal amount of up to $2,231,025, payable

WITH NO INTEREST in ten (10) equal annual installments of principal, and to execute and deliver such general obligation bonds or notes in registered form under the seal of the City, signed by the Treasurer, countersigned by the Mayor, and attested by the City Clerk (the "Bond"); that the signatures on the Bond may be facsimile signatures, provided that at least the signature of the Treasurer or the Mayor be a manual signature; and that the Bond be in such form and include such terms not inconsistent herewith as the Treasurer and Mayor may approve, the execution and delivery thereof to be conclusive evidence of such approval.

Section 3. That the Mayor, Treasurer, City Clerk, and other appropriate officials of the City of Biddeford, acting singly, are authorized to execute and deliver on behalf of the City such other documents and certificates as may be required in connection with the Loan Agreement and the Bond, including execution and delivery of an Assignment of monies transferred by the State of Maine to pay for Project costs and such other instruments, documents, certificates and agreements, and to take or cause to be taken such further actions for and on behalf of the City, as may be necessary, convenient, or appropriate to accomplish the Projects and to effect the transactions contemplated herein and by the documents referenced herein, and that the City Clerk be authorized to attest to the foregoing and attach the City's seal to any of the foregoing.

Section 4. That if the Treasurer, Mayor, or City Clerk are for any reason unavailable to approve and execute the Loan Agreement, the Bond, or any associated documents, the person or persons then acting in any such capacity, whether as an assistant, a deputy, as the "acting" official, or otherwise, are each individually authorized to act for such official with the same force and effect as if such official has herself or himself performed such act.

Section 5. That if any of the officers or officials of the City who have signed or sealed the Loan Agreement or Bond shall cease to be such officers or officials before the Loan Agreement or Bond so signed and sealed shall have actually been authenticated or delivered by the City, such Loan Agreement or Bond nevertheless may be authenticated, issued, and delivered with the same force and effect as though the person or persons who signed or sealed such Loan Agreement or Bond had not ceased to be such officer or official; and also any such Loan Agreement or Bond may be signed and sealed on behalf of the City by those persons who, at the actual date of the execution of such Loan Agreement or Bond, shall be the proper officers and officials of the City, although at the nominal date of such Loan Agreement or Bond, any such person shall not have been such officer or official.

Section 6. That during the term of the Loan Agreement and Bond, all authority granted pursuant to this Order shall be, remain, and continue in full force and effect without the necessity of any further action of the City Council.

Section 7. That the sum of $3,872,675 is hereby appropriated to finance costs of the Projects, such amount to be raised by the execution and delivery of the Loan Agreement and the issuance and sale of the Bond.

Section 8. That pursuant to Section 2528(5) of Title 30-A of the Maine Revised Statutes and Article XII, Section 7 of the City Charter, the following question, accompanied by the recommendations of the City Council, the Budget Committee, and the School Committee, shall be

submitted to the voters of the City of Biddeford for consideration at a referendum vote to be held on June 14, 2022:

> Shall the Mayor and the Treasurer of the City of Biddeford be authorized to borrow, on behalf of the City, a sum not to exceed $3,872,635 through the State of Maine's zero interest rate/loan forgiveness School Revolving Renovation Fund (SRRF) Program for windows and health, safety, and compliance repairs at Biddeford Primary School, Biddeford Intermediate School, and the Biddeford Regional Center of Technology (the "Project")?
>
> SRRF Program Funding. The Project costs (up to $3,872,635) have been approved for funding through the State's SRRF Program. Of this amount, the City will receive 42.39% (up to $1,641,610) as a loan that will be forgiven, and 57.61% (up to $2,231,025) as a loan that the City will repay at zero interest (0%) over a term of ten (10) years.
>
> *The City Council recommends the adoption of this question – Voted __-__.*
> *The Budget Committee recommends the adoption of this question – Voted __-__.*
> *The School Committee recommends the adoption of this question – Voted __-__.*

Section 9. That said referendum question be accompanied by a signed financial statement of the Treasurer substantially in form as set forth below:

CITY OF BIDDEFORD FINANCIAL STATEMENT

1. Total City Indebtedness

Bonds outstanding and unpaid	$ 33,520,000
Bonds authorized and unissued	$ 17,500,000
Bond to be issued if this Question is approved	$ 2,231,025
Total:	$ 53,251025

2. Estimated Costs and Impacts of Bond

At an estimated interest rate of zero percent (0%), for a 10-year term, the estimated total costs of this bond issue will be:

Principal	$ 2,231,025
Interest	$ - 0 -
Total Principal & Interest to be Paid at Maturity	$ 2,231,025
Projected effect on mil rate:	$ 0.084
Total length of term:	Ten (10) years

3. Validity

The validity of the Bond and of the voters' ratification of the Bond may not be affected by any errors in the above Estimated Costs of Bond. If the actual amount of the total debt service for the bond issue varies from the estimate,

the ratification by the electors is nevertheless conclusive and the validity of the bond issue is not affected by reason of the variance.

_____
James Bennett, Treasurer
City of Biddeford

March 15, 2022

Motion by Councilor Clearwater, seconded by Councilor Lessard to grant the first reading of the order. Vote: Unanimous.

A true copy as adopted by a majority of the Biddeford City Council, Attest:

_____
Carmen J. Bernier
Biddeford City Clerk

Biddeford Schools
Office of the Superintendent

18 Maplewood Avenue
Biddeford, ME 04005
207.282.8280
biddefordschools.me

To: Biddeford School Committee
From: Jeremy Ray, Superintendent of Schools
Date: February 2, 2022
Re: Revolving Renovation Grant Awards

The Maine Department of Education's School Revolving Renovation Fund (SRRF) provides funding assistance to school administrative units (SAUs) to ensure that students have a safe, healthy and appropriate learning environment. The SRRF offers funding where SAUs have identified needs in the areas of health and safety, building systems, energy and water conservation, and learning space upgrades.

The SRRF has the following priorities:

- Priority 1: Health, safety, and compliance issues including roof structural upgrades; improvements to indoor air quality; compliance with the Americans with Disabilities Act; hazardous material abatement or removal; and other health, safety, and compliance issues
- Priority 2: Repairs and improvements not related to health, safety and compliance limited to repairs and improvements to school building structures, windows, doors and water supply or waste disposal systems.
- Priority 3: Repairs and improvements related to energy and water conservation
- Priority 4: Upgrades of learning spaces
- Priority 5: Other projects

The SRRF is funded through the Maine Municipal Bond Bank. It is a State and local partnership with each providing a portion of a project's funding.

The fund provides loans to SAUs to finance project expenditures. A portion of each loan is considered a grant and is forgiven. The forgiveness rate ranges from 30 percent to 70 percent and is based on the percentage of State subsidy paid to the local SAU. The remaining balance of the loan is paid back over either five or 10 years at a 0 percent interest rate. The loan repayments revolve back into the SRRF and are then used to fund other approved projects.

The maximum loan that can be provided is capped at $1 million per priority, per school building within any five-year period.

The Biddeford School Department has been approved for the following projects funded by the State of Maine at a 42.39%. The Biddeford Community would be responsible for 57.61% of the cost paid over 10 years at 0 percent interest.

Project	Cost	State Grant	Balance
COT - ADA Bathrooms	$499,504.00	$211,739.75	$287,764.25
COT - IAQ - Air Quality	$361,212.00	$153,117.77	$208,094.23
COT - Asbestos Removal	$82,175.00	$34,833.98	$47,341.02
COT - Windows Replacement	$1,000,000.00	$423,900.00	$576,100.00
BIS - Door Security	$42,000.00	$17,803.80	$24,196.20
BIS - Window Replacement	$438,290.00	$185,791.13	$252,498.87
BPS - ADA Toilet Upgrade	$624,653.00	$264,790.41	$359,862.59
BPS - Door Security	$49,900.00	$21,152.61	$28,747.39
BPS - Window Replacement	$774,701.00	$328,395.75	$446,305.25
Total	$3,872,435.00	$1,641,525.20	$2,230,909.80
10 Year Zero Interest Loan Payment			$223,090.98

In order to move forward with these projects, the board and citizens will have to take the following actions:

- School Committee - approve the projects at the board level and allocate the funds to the FY23 budget
- City Council - approve the school budget prior to the local referendum
- Public - Vote on the ballot questions in the June election (separate vote from the school budget approval)

2022.23 **IN BOARD OF CITY COUNCIL..APRIL 5, 2022**

BE IT ORDERED, that in accordance with the provisions set forth under *Ch. 6, Amusements, Article V – Sales, Possession and Consumption of liquor at and during Special Events on City Public Property*, the City Council of the City of Biddeford does hereby grant approval for Biddeford Saco Chamber of Commerce to serve liquor at their Membership Cookout on July 21, 2022 at Mechanics Park, providing that the said Biddeford Saco Chamber of Commerce is and remains in compliance with the provisions set forth under Ch. 6, Section 6-178 et seq.

BE IT FURTHER ORDERED, that the City Council also approves the issuance of a Special Event Permit for the Biddeford & Saco Chamber of Commerce Trade Show/Business Expo Event on July 21, 2022 at Mechanics Park.

APPLICATION NUMBER: 22-03-021

EFFECTIVE 7-6-2017 THE FOLLOWING FEES WILL APPLY:	
B050 Administrative fee	$25.00
B051 Parade Permit fee	$50.00
B052 Block Party Permit fee	$75.00
B053 Mass Gathering fee	$100.00

INDEMNIFICATION AND RELEASE PROVISIONS
CITY OF BIDDEFORD SPECIAL EVENT PERMIT

A. In consideration for being permitted to use the facilities and/or rights-of-way of the City of Biddeford, (hereinafter "City"), Biddeford + Saco Chamber of Commerce. (insert name of person/entity seeking permission to use facilities and/or right-of-way, hereinafter "Applicant") agrees to indemnify and hold harmless the City, its officers, employees, and insurers, from and against all liability, claims, and demands, which are incurred, made, or brought by any person or entity on account of damage, loss, or injury, including without limitation claims arising from property loss, or damage, bodily injury, personal injury, sickness, disease, death, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with the use of the facilities and/or rights-of-way, whether any such liability, claims, and demands result from the act, omission, negligence, or other fault on the part of the City, its officers, or its employees, or from any other cause whatsoever.

B. By signing below, Applicant agrees that in the event of damage, loss or injury to the facilities or to any property or equipment therein or to the City rights-of-way, the City may deduct from any damage deposit the full amount of such damage, loss, or injury. Applicant further agrees that if such damage, loss, or injury exceeds the amount of the damage deposit, Applicant will promptly reimburse the City for all costs associated therewith upon billing by the City.

C. In addition, in consideration for being permitted or allowed to use the facilities and/or right-of-way, Applicant on behalf of itself and its officers, employees, members, and participants, hereby expressly exempts and releases the City, its officers, employees, insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from property loss or damage, bodily injury, personal injury, sickness, disease, or death, that Applicant may incur as a result of such use, whether any such liability claims and demands result from the act, omission, negligence, or other fault on the part of the City, its officer, or its employees, or from any other cause whatsoever.

D. In addition, Biddeford + Saco Chamber of Commerce has furnished and attached two copies of certificates of insurance with the City of Biddeford named as an additional insured in the amount of $400,000 unless a greater amount is warranted.

Signature of Applicant

2-17-22
Date

Amanda Lutz
Printed Name of Applicant

Revised 8/5/2021

APPLICATION NUMBER:_____

CITY OF BIDDEFORD
SPECIAL EVENT APPLICATION

City of Biddeford
P.O. Box 586
Biddeford, ME 04005

Name of Event Chamber Fest Location of Event Mechanics Park
Date of Event: 7/21/22 Start Time 5pm Finish Time 730 pm

Detailed and specific description of Event (attached separate sheet if necessary)

Tradeshow event / Business Expo
Chamber members will share information about their business at tables with other members and people from the community, enjoy food and conversation in a relaxed outdoor setting.

Estimated # of Participants 75 Estimated Attendance 75

Type of Event:

- [x] Festival/Fair With Alcohol: Yes: ✓ ** No: _____
- [ ] Race/Walk/Bike Ride
- [ ] Concert
- [ ] Parade/March
- [ ] Other – Please Specify:_____

**** NOTE**: If alcohol is being sold, or otherwise available, permission must be obtained through application at City Clerk's Office, and must be approved by the City Council. If alcohol is sold, this requires applicable State of Maine Liquor license to sell alcohol. List contact name and address of licensee:

_____

Revised 8/5/2021

APPLICATION NUMBER:_____

What impact will this have upon the surrounding neighborhood? (Noise, Traffic, etc.) Please explain:

Some parking impact for the short period of time, but minimal.

Describe the means by which the neighborhood (residents and businesses) will be notified of this event and its public hearing:

Chamber members to be notified via email/ social media.

Organization (Applicant) Information

Name of Organization or Name of Applicant if NOT an Organization

Biddeford + Saco Chamber of Commerce

Physical Address: 28 Water Street Biddeford, ME 04002

Mailing Address:_____

Business Telephone 282-1567 Fax — E-mail amanda@biddefordsacochamber.org

Income Tax Exempt: Yes: ✓ No:_____ Tax Exempt Number: _____

Contact Person/Event Coordinator

Name & Address

Amanda Lutz

Telephone 282-1567 Cellular 604-0127 E-Mail amanda@BiddefordSacoChamber.org

Relationship Organization: Marketing Manager

General Service Questions

Department of Public Works

Is the use of barricades necessary/requested for this event? NO

If yes, number needed —

Will it be necessary to cover street and/or parking signs for this event? NO If yes, please note on diagram.

What is your plan for cleanup and debris disposal for this event?

Chamber will take care of.

Revised 8/5/2021

APPLICATION NUMBER:_____

Is any other Public Works assistance anticipated?

no

Parks and Recreation Department

Will this event take place in a Public Right of Way, Public Way, City Park or athletic field? _____

If yes, where

Mechanics Park

Will tenting/staging be utilized for this event? NO If yes, what is your plan to repair any damage caused by stakes, tie-downs, etc.?

_____

Any Parks and Recreation assistance required?

NO

Fire Department

Will the Fire Department have access to all sites in the event of an emergency?

yes

Will any fire hydrants be obstructed? NO Will you have access to E 9-1-1?

yes

Will you have First Aid or medical staff present?

NO

******* If First aid or Medical Staff is needed, The Biddeford Fire Department can provide for a fee. Please Contact the Biddeford Fire Department at 207-282-6632 for details.*******

Police Department

Is traffic control necessary for this event? NO If yes, who will provide it?

_____

_____

Is crowd control necessary for this event? NO If yes, who will provide it?

_____

Revised 8/5/2021

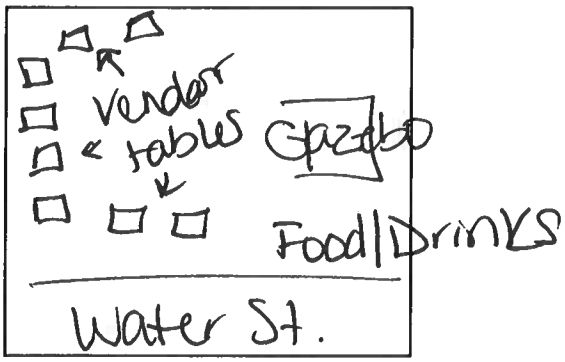
APPLICATION NUMBER:_____

Other

All venders *must* obtain proper licenses/permits from the City Clerk's office (284-9307). Indemnification agreement/insurance certificate must be attached to this application at the time of submission. Site Plan Sketch may be accompanied by a separate map, if necessary.

SITE PLAN SKETCH OF SPECIAL EVENT (Completed by Event Coordinator)
In the space below, please provide the following information. Attach a separate map if necessary.

General Map of Location	Vender Locations	Street Closures/Parking Information
Event Coordinator's Booth	Garbage Cans	Water/Electricity Sources
Tents/Stages/Grandstands	Water Sources	Loudspeakers
Rest Facilities		



Revised 8/5/2021

APPLICATION NUMBER:_____

Applicant's Statement of Agreement
Everything I have stated on this agreement is correct to the best of my knowledge. This permit, if granted, is not transferable and is revocable at any time at the discretion of the City of Biddeford. I understand that the issuance of this permit is contingent upon compliance with any and all conditions imposed by the City of Biddeford or its officers.

Applicant Signature:_____ Date 8·17·22

Revised 8/5/2021

APPLICATION NUMBER:_____

REVIEW BY SPECIAL EVENTS COMMITTEE:

Having completed a review of the application, the proposal itself, the location of the vent and its impact upon services and resources, this application is:

APPROVED WITH MODIFICATIONS AND/OR RESTRICTIONS: ___

APPROVED AS SUBMITTED: ___

DENIED: ___

Modifications / Restrictions:

_____

_____

_____

REASON(S) FOR DENIAL:

_____

_____

_____

_____
Police Chief

Date:

_____
Fire Chief

Date

_____
Public Works Director

Date:

_____
Codes Enforcement Officer

Date:

_____
Parks & Recreation

Date:

Revised 8/5/2021

To: Carmen Morris, City of Biddeford

Subject: Request for Waiver of Park Alcohol Consumption Rule

Date: March 15, 2022 (April 5,2022 Council Meeting)

This is an official request to have the City Council consider approving our request to allow the consumption of alcoholic beverages during our annual Chamber Member Appreciation Barbecue. Here are details concerning this event proposal:

NAME OF EVENT: Chamber Member Appreciation Event: "ChamberFest"

SPONSOR – Biddeford + Saco Chamber of Commerce

DATE/TIME – July 21, 2022, 5:00pm – 7:30pm

LOCATION – Mechanics Park, Biddeford

EST. ATTENDANCE – 75 Chamber of Commerce Members

CONSUMPTION – 2 Tickets for each member for beer or wine (free/not sold)

ALCOHOL SERVERS – Rustic Taps Inc. (Chamber Member and certified servers)

ROPED SECTION - Roped section to be set up within Mechanics Park

Thank you,

Jim LaBelle, Executive Director

(207) 282-1567

2022.24 **IN BOARD OF CITY COUNCIL..APRIL 5, 2022**

BE IT ORDERED, that in accordance with the provisions set forth under *Ch. 6, Amusements, Article V – Sales, Possession and Consumption of liquor at and during Special Events on City Public Property*, the City Council of the City of Biddeford does hereby grant approval for LaKermesse Franco-Americaine to have beer/wine served at their festival on June 23rd, 24th, 25th and 26th, 2022 at St. Louis Field, providing that the said LaKermesse Franco-Americaine is and remains in compliance with the provisions set forth under Ch. 6, Section 6-178 et seq.

BE IT FURTHER ORDERED, that the City Council also approves the issuance of a Special Event Permit for the LaKermesse Franco-Americaine Festival on June 23rd, 24th, 25th and 26th, 2022.

La Kermesse Franco-Américaine
P. O. Box 289
Biddeford, ME 04005-0289

March 22, 2022

La Kermesse Franco-Americaine Festival
P.O.Box 289
Biddeford, Maine 04005

Mayor Casavant, City Manager and Respected City Council Members,

I am writing to you on behalf of the La Kermesse Board of Directors. We are in the process of planning for our 38th Annual Festival, which is to held June 23-26th, 2022. We are very excited to return after a two-year hiatus due to the Covid-19 Pandemic. We are hoping to be able to once again offer Beer and Wine under our Main Tent as we have in year's past and are sending this letter as a formal request.

Over the last three festivals held at St. Louis Field, we have worked with Julie Grant, the owner and operator of Chaps LLC, who has been running our bar. She is fully licensed, insured and brings with her the experience needed to ensure our bar is run professionally, securely and safely. We are once again under contract to work with her at this year's festival upon approval of the Council.

We ask that you approve our request to be able to provide Beer and Wine to our patrons.

We the Board of Director of La Kermesse thank you for your time and efforts in this matter.

Sincerely,
Jessica J. Quattrone,
La Kermesse President

EFFECTIVE 7-6-2017 THE FOLLOWING FEES WILL APPLY:	
Administrative fee	$25.00
Parade Permit fee	$50.00
Block Party Permit fee	$75.00
Mass Gathering fee	$100.00

APPLICATION NUMBER:_____

INDEMNIFICATION AND RELEASE PROVISIONS
CITY OF BIDDEFORD SPECIAL EVENT PERMIT

A. In consideration for being permitted to use the facilities and/or rights-of-way of the City of Biddeford, (hereinafter "City"), La Kermesse Franco American Festival (insert name of person/entity seeking permission to use facilities and/or right-of-way, hereinafter "Applicant") agrees to indemnify and hold harmless the City, its officers, employees, and insurers, from and against all liability, claims, and demands, which are incurred, made, or brought by any person or entity on account of damage, loss, or injury, including without limitation claims arising from property loss, or damage, bodily injury, personal injury, sickness, disease, death, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with the use of the facilities and/or rights-of-way, whether any such liability, claims, and demands result from the act, omission, negligence, or other fault on the part of the City, its officers, or its employees, or from any other cause whatsoever.

B. By signing below, Applicant agrees that in the event of damage, loss or injury to the facilities or to any property or equipment therein or to the City rights-of-way, the City may deduct from any damage deposit the full amount of such damage, loss, or injury. Applicant further agrees that if such damage, loss, or injury exceeds the amount of the damage deposit, Applicant will promptly reimburse the City for all costs associated therewith upon billing by the City.

C. In addition, in consideration for being permitted or allowed to use the facilities and/or right-of-way, Applicant on behalf of itself and its officers, employees, members, and participants, hereby expressly exempts and releases the City, its officers, employees, insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from property loss or damage, bodily injury, personal injury, sickness, disease, or death, that Applicant may incur as a result of such use, whether any such liability claims and demands result from the act, omission, negligence, or other fault on the part of the City, its officer, or its employees, or from any other cause whatsoever.

D. In addition, _____has furnished and attached two copies of certificates of insurance with the City of Biddeford named as an additional insured in the amount of $400,000 unless a greater amount is warranted.

Paul M. Gagné
Signature of Applicant

3-10-2022
Date

PAUL M. GAGNÉ
Printed Name of Applicant

Revised 8/5/2021

APPLICATION NUMBER:_____

CITY OF BIDDEFORD
SPECIAL EVENT APPLICATION

City of Biddeford
P.O. Box 586
Biddeford, ME 04005

Name of Event: Lafrenieres Festival Location of Event: Corner West & Profect

Date of Event: June 23-26 Start Time 4:00 6-23 Finish Time 7:00 PM 6-26

Detailed and specific description of Event (attached separate sheet if necessary)

June 23rd Open @ 4:00 PM Car Show, rides, Ent.
June 24th, Friday open @ 4:00 PM, Parade @ 6 PM
Ent. Tribute Band Overwinter, June 25, open @
4:00 PM, Sunday open @ 11:00 Catholic mass.
All events will be @ St Louis field corner of
Profect & West.

Estimated # of Participants 200 Estimated Attendance 3,000

Type of Event:

☒ Festival/Fair With Alcohol: Yes: ☒ ** No: ☐

☐ Race/Walk/Bike Ride

☐ Concert

☐ Parade/March

☐ Other – Please Specify:_____

**** NOTE**: If alcohol is being sold, or otherwise available, permission must be obtained through application at City Clerk's Office, and must be approved by the City Council. If alcohol is sold, this requires applicable State of Maine Liquor license to sell alcohol. List contact name and address of licensee:

_____

Revised 8/5/2021

APPLICATION NUMBER:_____

What impact will this have upon the surrounding neighborhood? (Noise, Traffic, etc.) Please explain:

Prospect closed & Hilliard Ave. Traffic would be sent down Hilliard Ave

Describe the means by which the neighborhood (residents and businesses) will be notified of this event and its public hearing:

Written & Verbal Comm. as set up starts most neighbors are familiar with festival

Organization (Applicant) Information

Name of Organization or Name of Applicant if NOT an Organization

La Kermesse Franco Americaine

Physical Address: Office @ Alfred St.

Mailing Address: PO Box 289

Business Telephone 207-229-2024 Fax _____ E-mail _____

Income Tax Exempt: Yes: [X] No: [ ] Tax Exempt Number: _____

Contact Person/Event Coordinator

Name & Address

Paul N. Gagné

Telephone _____ Cellular 207-229-2024 E-Mail BFP808@GWI.NET

Relationship Organization: Treasurer

General Service Questions

Department of Public Works

Is the use of barricades necessary/requested for this event? Y

If yes, number needed Will cordinate with Public Work

Will it be necessary to cover street and/or parking signs for this event? N If yes, please note on diagram.

What is your plan for cleanup and debris disposal for this event?

Will dumster on field

Revised 8/5/2021

APPLICATION NUMBER:_____

Is any other Public Works assistance anticipated?
They help move bleachers, benches, picnic Tables

Parks and Recreation Department

Will this event take place in a Public Right of Way, Public Way, City Park or athletic field? ____

If yes, where
Corner of West St + Brosfect

Will tenting/staging be utilized for this event? X If yes, what is your plan to repair any damage caused by stakes, tie-downs, etc.?
Fill in & rake as we have done every year

Any Parks and Recreation assistance required? X

Fire Department

Will the Fire Department have access to all sites in the event of an emergency?
Y

Will any fire hydrants be obstructed? N Will you have access to E 9-1-1?
Y

Will you have First Aid or medical staff present?
Y

******* If First aid or Medical Staff is needed, The Biddeford Fire Department can provide for a fee. Please Contact the Biddeford Fire Department at 207-282-6632 for details.*******

Police Department

Is traffic control necessary for this event? Yes If yes, who will provide it?
We use barricades for the parade

Is crowd control necessary for this event? Yes If yes, who will provide it?
We hire our own Security

Revised 8/5/2021

APPLICATION NUMBER:_____

Other

All venders *must* obtain proper licenses/permits from the City Clerk's office (284-9307). Indemnification agreement/insurance certificate must be attached to this application at the time of submission. Site Plan Sketch may be accompanied by a separate map, if necessary.

SITE PLAN SKETCH OF SPECIAL EVENT (Completed by Event Coordinator)
In the space below, please provide the following information. Attach a separate map if necessary.

General Map of Location	Vender Locations	Street Closures/Parking Information
Event Coordinator's Booth	Garbage Cans	Water/Electricity Sources
Tents/Stages/Grandstands	Water Sources	Loudspeakers
Rest Facilities		

See attached layout

Revised 8/5/2021

APPLICATION NUMBER:_____

Applicant's Statement of Agreement
Everything I have stated on this agreement is correct to the best of my knowledge. This permit, if granted, is not transferable and is revocable at any time at the discretion of the City of Biddeford. I understand that the issuance of this permit is contingent upon compliance with any and all conditions imposed by the City of Biddeford or its officers.

Applicant Signature: Paul R. Hagner _____ Date _____

Revised 8/5/2021

APPLICATION NUMBER:_____

CITY OF BIDDEFORD
BLOCK PARTY PERMIT APPLICATION

Name of Applicant _____

Address _____

Telephone # _____

Location of Block Party _____

Date of Block Party _____

Start Time _____ Finish Time _____

Block Party Regulations

Authorization to block off your street for a block party on the above date during the above stated time is contingent upon the following stipulations.

1. Although the street will be closed, provisions must be made for access by **EMERGENCY VEHICLES**. Barricades must be provided at the requesting party's expense. They must be of a temporary nature and easily removable in an emergency.

2. Block party must cease before dark, with all street obstructions and barricades removed.

3. Any debris or litter must be cleaned by the permit holder immediately following the event.

4. Music will be allowed but it must be maintained at a reasonable volume so as not to disturb nearby neighbors. Any complaint regarding noise of any type that is substantiated by the Police Department may cause this permit to be terminated without notice.

5. It is **ILLEGAL** in Maine to consume alcoholic beverages in public areas, which includes city streets and sidewalks. Any consumption of alcoholic beverages must take place on private property only.

On the following page, please attach or sketch a map showing the area to be blocked, the location of the barricades, and any other descriptive information pertinent to the issuance of this permit.

Revised 8/5/2021

APPLICATION NUMBER:_____

PAGE 2 – BLOCK PARTY PERMIT

Attach your map or sketch below.

Revised 8/5/2021

APPLICATION NUMBER:_____

REVIEW BY SPECIAL EVENTS COMMITTEE:

Having completed a review of the application, the proposal itself, the location of the vent and its impact upon services and resources, this application is:

APPROVED WITH MODIFICATIONS AND/OR RESTRICTIONS: ☐

APPROVED AS SUBMITTED: ☐

DENIED: ☐

Modifications / Restrictions:

_____

_____

_____

REASON(S) FOR DENIAL:

_____

_____

_____

_____
Police Chief

Date:

_____
Fire Chief

Date

_____
Public Works Director

Date:

_____
Codes Enforcement Officer

Date:

_____
Parks & Recreation

Date:

Revised 8/5/2021

2022.25 **IN BOARD OF CITY COUNCIL.....APRIL 5, 2022**

BE IT ORDERED, that the City Manager be authorized to sign an agreement with Center for Public Safety Management, LLC for conducting an assessment of the Biddeford Fire Department in the total not-to-exceed amount of $53,500.

BE IT FURTHER ORDERED, that authorization for any additional work shall comply with the City of Biddeford purchasing policy and rules.

NOTE: The Finance Committee is scheduled to reviewed this item on April 5, 2022 as part of the published agenda.

City Council

Meeting Date: April 5, 2022
Meeting Time: 6:00 pm

Agenda Item No: 10.c
Item Description: 2022.25) Approval of Fire Department Assessment Consultant/Center for Public Safety Management, LLC

Submitted by: Brian S. Phinney, COO

Supporting Information/Documentation:

Center for Public Safety Management – Biddeford Fire Department Assessment Statement of Qualifications

Center For Public Safety Management – Fee Proposal

Center for Public Safety Management – Revised Fee Proposal Letter

Matrix Consulting Group – Biddeford Fire Department Statement of Qualifications

Key Terms:

N/A

Executive Summary:

The City released a request for qualifications (RFQ) for an assessment of the Biddeford Fire Department and received two responses. After review of the submittals, interviews, and reference checks, Center for Public Safety Management (CPSM) was selected as the preferred vendor. Staff recommends award to CPSM.

Detailed Review:

The City release a request for qualifications for firms interested in performing an assessment of the Biddeford Fire Department. The general scope of services included evaluation and subsequent recommendations relative to the effectiveness and efficiency of fire department's operations including, but is not limited to, analyzing the department's organization, programs and services, operating policies and procedures, training, budget, and staffing. Two firms submitted proposals – Center for Public Safety Management, LLC (CPSM), and Matrix Consulting Group (Matrix).

A review committee comprised of Assistant Fire Chief Ed Dexter, Councilor Doris Ortiz, Councilor William Emhiser, and COO Brian Phinney, reviewed the statements of qualification and interviewed the candidates. Individual rankings unanimously identified CPSM as the preferred qualified contractor. Assistant Chief Dexter proceeded to perform the reference checks. All the references confirmed CSPM's work and otherwise checked out. In

accordance with our RFQ process and upon completion of the reference check, the pricing sheet was opened and reviewed. CPSM proposes a not to exceed price of $53,500, which includes $5,000 in travel expenses. After review of the fee proposal CPSM was asked to provide a revised fee statement clarifying the applicable scope of work, which was submitted.

Upon signing an agreement the work is expected to take upwards of 180-days to complete.

Funding Source:

The funds for this assessment were not budgeted for in FY22. The expense will be covered within the expected end of year surplus.

Staff Recommendation:

Staff recommends award of the project to Center for Public Safety Management, LLC in the amount of $53,500.

CPSM®

Center for Public Safety Management, LLC

March 24, 2022

Mr. Brian Phinney, Chief Operating Officer
City of Biddeford, Maine
205 Maine Street
Biddeford, Maine

Mr. Phinney:

The *Center for Public Safety Management, LLC, (CPSM)* as the exclusive provider of public safety technical assistance for the International City/County Management Association, is pleased to submit this project scope to conduct a fire administrative and operations analysis for the City of Biddeford, Maine.

CPSM, is pleased to confirm the project methodology and timeline identified in Sections 3 & 4 of the January 14, 2022 Statement of Qualifications (SOQ)".

Fees

CPSM will provide consulting services to conduct a Fire Administrative and Operational Analysis for the City of Biddeford, Maine as described herein, for a total fee not to exceed **$53,500,** unless otherwise authorized by the City. A breakdown of fees for each study is as follows:

CPSM completes public safety analyses in tangible project segments. Accordingly, CPSM proposes this project be structured for fee invoicing and payments as outlined in the Task Order table below.

CPSM Project Task	% Fee Invoicing for Task Completion
Project Kick Off Meetings	10% of Total Contracted Fire Study Fees
Completion and Submittal of Draft Fire Data Analysis Report	40% of Total Contracted Fire Study Fees
Completion and Submittal of Draft Fire Operational Analysis Report	40% of Total Contracted Fire Study Fees
Submittal of Final Fire Report; Council Presentation	10% of Total Contracted Fire Study Fees

Hourly Work

Should additional work be requested by the client following the completion of this study, CPSM hourly rates may be selected or a "not to exceed" price can be created for such activity.

CPSM's hourly rates are as follows:

Principals (Wieczorek, Matarese, Chelst):	$300.00 per hour
Team leads/SME's:	$225.00 per hour
Data analysists:	$120.00 per hour

Please let me know if I can provide any additional services.

Sincerely,

Thomas J. Wieczorek
Director
Center for Public Safety Management. LLC
616-813-3782
twieczorek@cpsm.us

CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

Statement of Qualifications for

Biddeford Fire Department Assessment Fee Statement Volume

City of Biddeford, Maine

January 14, 2022, 11:59 am Eastern

CPSM®

CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC
475 K STREET NW STE 702 • WASHINGTON, DC 20001
WWW.CPSM.US • 800-998-3392

Exclusive Provider of Public Safety Technical Services for International City/County Management Association

ICMA

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1. Fee Statement

CPSM's lump sum price to perform the required Biddeford Fire Department Assessment is $53,500. This includes $5,000 for travel associated with performing the required services.

CPSM's payment terms are based on the following three installments: 40% upon signing the contract; 40% with delivery of the draft data analysis; and 20% with delivery of the draft final report.

CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

Statement of Qualifications for

Biddeford Fire Department Assessment

City of Biddeford, Maine

January 14, 2022, 11:59 am Eastern

CPSM®

CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC
475 K STREET NW STE 702 • WASHINGTON, DC 20001
WWW.CPSM.US • 800-998-3392

Exclusive Provider of Public Safety Technical Services for International City/County Management Association

ICMA

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1. Letter of Transmittal

CPSM®

January 14, 2022

Mr. James Bennett, City Manager
City of Biddeford
205 Main Street, Suite 107 (physical address)
P.O. Box 586 (mailing address)
Biddeford, Maine 04005

Dear Mr. Bennett:

Statement of Qualifications for Biddeford Fire Department Assessment

The Center for Public Safety Management, LLC (CPSM) is pleased to submit this proposal to the City of Biddeford, Maine for its Request for Qualifications for a Biddeford Fire Department Assessment.

Firm History, Size, and Expertise

CPSM offers more than 14 years of experience performing comprehensive assessments of municipal fire, rescue, EMS, and police departments nationwide using our unique methodology and industry subject matter expertise. The firm was started as part of the International City/County Management Association (ICMA), a non-profit organization founded in 1914 and dedicated to assisting local governments and their managers in providing services to its citizens in an efficient and effective manner. ICMA launched the Center for Public Safety in 2007 to provide support to local governments in the areas of fire, EMS, and police services. In 2014, as part of a restructuring at ICMA, CPSM was spun off as a separate company and is now the exclusive provider of public safety technical assistance for ICMA.

With our team of 30 fire, rescue, and EMS subject matter experts, police subject matter experts, and data analysts, we evaluate existing operations, identify current and future needs, make recommendations that will optimize operations and increase efficiencies, assess the associated budgetary impacts, and assist municipalities and public safety agencies in strategic planning. Our experience includes completing more than 329 similar studies in 44 states and provinces and 264 communities ranging in population from 8,000 (Boone, Iowa) to 800,000 (Indianapolis, Indiana).

The CPSM approach to conducting assessments of fire, rescue, EMS, and police departments and agencies is unique and comprehensive in that we link operational information and service delivery systems with a review of the department's response workload. We utilize this approach to establish the current state of the department's service delivery. We will use this approach to perform the required assessment of the Biddeford Fire Department.

This proposal is designed to provide the City of Biddeford with a comprehensive study of its fire department. CPSM offers a proven approach developed by combining the expertise of our fire, rescue, and EMS subject matter experts with our experience performing hundreds of similar studies and planning assistance for municipalities nationwide.

Our project team has been selected specifically for the City of Biddeford project and offers hundreds of years of practical experience managing fire, rescue, and EMS departments; a record of research, academic, teaching and training, and professional publications; and extensive consulting experience completing hundreds of similar studies nationwide. Our team comprises true industry subject matter experts, not merely research assistants, interns, or generic management consultants. Our fire department assessments reflect lessons learned and best practices from the hands-on fire, rescue, and EMS experience of our leading industry experts.

My colleagues at CPSM and I greatly appreciate this opportunity and would be pleased to address any comments you may have. You may contact me at 616.813.3782 or via email at twieczorek@cpsm.us.

Sincerely,

Thomas Wieczorek
Director, Center for Public Safety Management, LLC

2. Qualifications

2.A. Summary of CPSM Experience Relevant to Scope of Services

CPSM is a nationally recognized expert in fire protection and EMS service organization analysis and planning. We routinely perform comprehensive assessments of fire departments, including analyzing deployment of resources including station location, size, etc. against existing and future needs. We specialize in this work and have completed hundreds of such analyses for municipal clients nationwide and in Canada. We are able to offer our clients the kind of insight and creative options available from the broad scope of our experience, both in the field as fire service professionals and as a result of the other assessments we have conducted of fire departments nationwide. As a result of our studies, we have provided our clients with hundreds of strategic planning recommendations for enhanced service delivery and efficiencies and cost avoidance.

CPSM's business is exclusively focused on working with municipal governments and agencies responsible for the administration and/or operation of fire, EMS, or police services. The firm was started as part of the International City/County Management Association (ICMA), a non-profit organization founded in 1914 and dedicated to assisting local governments and their managers in providing services to its citizens in an efficient and effective manner. ICMA launched the Center for Public Safety in 2007 to provide support to local governments in the areas of fire, EMS, and police services. In 2014, as part of a restructuring at ICMA, CPSM was spun off as a separate company and is now the exclusive provider of public safety technical assistance for ICMA. CPSM maintains the same team of individuals performing the same level of service as when it was a component of ICMA.

The firm's principals are shown in Figure 1. All three principals have been with CPSM since its inception. CPSM's staff includes a team of 30 fire, rescue, and EMS subject matter experts, police subject matter experts, and data analysts. CPSM is headquartered in Washington, DC, with a quantitative analysis group based in West Orange, New Jersey, and subject matter experts throughout the U.S.

Director Thomas Wieczorek	Managing Partner Leonard Matarese	Managing Partner Dov Chelst, PhD
•Expert in fire and EMS operations •Served as a police officer, fire chief, director of public safety and city manager and is former Executive Director of the Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International, Inc.) •Managed hundreds of studies similar to those required by the City of Biddeford	•Specialist in public sector administration with particular expertise in public safety issues •44 years' experience as a law enforcement officer, police chief, public safety director, city manager and major city Human Resources Commissioner •Managed several hundred studies of emergency services agencies	•Leads the company's quantitative analysis unit •Supported by data analysts specializing in the analysis of public safety data •Managed and performed provided data analysis for hundreds of similar municipal police, fire, and EMS studies

Figure 1. CPSM's Principals offer significant experience in similar studies.

CPSM has a record of completing its projects on time, within the established budget, and in compliance with contractual requirements. We offer client references in Section 2.D of this proposal as evidence of our performance. Many of our clients are repeat clients, coming back to us for additional studies or to update previously performed studies.

CPSM specializes in performing independent, comprehensive assessments of police, fire, rescue, and EMS services departments and organizations. Our methodology is based on nationally recognized industry standards, guidelines, and criteria, including the Commission on Fire Accreditation's Standards of Response Coverage. We follow a systematic approach to collecting, analyzing, and presenting data in an organized format. Our subject matter experts routinely review and evaluate agency budget and planning documents and provide assistance in developing strategic plans.

As part of our data collection process, we gather input from stakeholders via such means as interviews, survey tools, and stakeholder meetings. We regularly facilitate stakeholder meetings, which provide not only the opportunity to solicit stakeholder input but also to advise stakeholders of the assessment process. Through our work on hundreds of similar studies, we are very familiar with public input processes and very accustomed to presenting study objectives, methodology, findings, and recommendations to varied stakeholder audiences. Our subject matter experts are experienced in addressing and incorporating stakeholder comments into study report documents.

CPSM has provided similar fire and EMS department/agency review services for hundreds of municipal clients. Therefore, our subject matter experts are proficient in reviewing, evaluating, and working with multi-agency partnerships and cooperative problem-solving.

The breadth and depth of experience offered by CPSM's accomplished and highly regarded subject matter experts allows us to identify and offer flexible and creative alternatives for the resolution of service and policy issues and improved effectiveness and efficiencies in delivering required fire and emergency services and meeting community needs.

CPSM offers fire and emergency services subject matter experts who are not only career fire and emergency services professionals but also highly experienced in reviewing and assessing departments and agencies throughout the U.S. Our subject matter experts offer executive/management-level understanding of how fire protection services are financed and delivered. Through their experience in assessing municipal departments and agencies in their work for CPSM, they bring a broad experience that comes from understanding how different departments and agencies across the nation finance and deliver fire protection services.

CPSM is a nationally recognized expert in fire protection service organization analysis, including the financial analysis of fire protection service delivery systems. This includes evaluating agency budgets and structures, including overtime expenditures and making comparisons to industry norms and standards.

We routinely analyze deployment of resources including station location, size, etc. against existing and future needs. We specialize in this work and have completed hundreds of such analyses for municipal clients nationwide and in Canada. We are able to offer our clients the kind of insight and creative options available from the broad scope of our experience. As a result of our studies, we have provided our clients with hundreds of recommendations for enhanced efficiencies and cost avoidance.

Our subject matter experts are knowledgeable and experienced in developing performance measurement criteria and applying benchmarking techniques in the evaluation of fire protection service delivery systems. We routinely work with nationally recognized industry standards, guidelines, and criteria such as the Commission on Fire Accreditation's Community Risk Assessment and Standards of Coverage and benchmark departments/agencies against those standards and municipalities with similar demographics, issues, and constraints.

2.B. CPSM Project Experience

CPSM has conducted similar studies in 44 states and provinces for more than 300 public clients. CPSM has conducted more than 150 urban fire and EMS projects and more than 225 police/law enforcement projects with comprehensive management, operational, and staffing analyses. Studies have included report components and recommendations following the Center for Public Safety Excellence, Commission on Accreditation of Law Enforcement Agencies, and Commission on Fire Accreditation International standards. These projects have involved workload matching to staffing, review of investigations and specialized units, community risk assessments,

Standards of Cover assessments, fire and EMS consolidation analyses, analysis of emergency communications centers, fire and EMS department strategic plans, fire and EMS department staffing plans, and fiscal analyses. Table 1 provides a comprehensive list of the public clients for which CPSM has provided similar services.

Table 1. CPSM List of Relevant Past and Current Projects

Locality	State	Project
Leduc County	AB	Fire Consolidation Plan
Leduc	AB	Comprehensive Analysis of Fire Services.
Kenai	AK	Comprehensive Analysis of Fire Services
Anniston	AL	Comprehensive Analysis of Police Services
Auburn	AL	Comprehensive Analysis of Fire Services
Auburn	AL	Comprehensive Analysis of Police Services
Dothan	AL	Comprehensive Analysis of Police Services
Pelham	AL	Police Chief Selection
Casa Grande	AZ	Comprehensive Analysis of Police Services
Florence	AZ	Comprehensive Analysis of Police Services
Glendale	AZ	Fire Data Analysis
Lake Havasu City	AZ	Comprehensive Analysis of Police Services
Lake Havasu City	AZ	Comprehensive Analysis of Fire Services
Florence	AZ	Comprehensive Analysis of Police Services
Pinal County	AZ	Comprehensive Analysis of Sheriff's Office
Pinal County	AZ	Sheriff's Office Firearms Audit
Prescott	AZ	Comprehensive Analysis of Fire Services
Prescott	AZ	Comprehensive Analysis of Police Services
Queen Creek	AZ	Fire Standards of Coverage Study
Queen Creek	AZ	Police Strategic Plan
Queen Creek	AZ	Comprehensive Analysis of Fire Services
Scottsdale	AZ	Comprehensive Analysis of Police Services
Tucson	AZ	Comprehensive Analysis of Police Services
Youngtown	AZ	Comprehensive Analysis of Police Services
Alameda	CA	Comprehensive Analysis of Fire Services
Alameda	CA	Comprehensive Analysis of Police Services
Burbank	CA	Analysis of Investigations Workload / Staffing
Carlsbad	CA	Comprehensive Analysis of Police Services
El Centro	CA	Comprehensive Analysis of Police Services
El Centro	CA	Comprehensive Analysis of Fire Services
Fairfield	CA	Comprehensive Analysis of Police Services
Greenfield	CA	Comprehensive Analysis of Police Services
Hermosa Beach	CA	Comprehensive Analysis of Fire Services
Hermosa Beach	CA	Comprehensive Analysis of Police Services
Huntington Park	CA	Comprehensive Analysis of Police Services
Indio	CA	Police Patrol Workload Analysis
Kern County	CA	Comprehensive Analysis of Fire Services

Locality	State	Project
Laguna Woods	CA	Review of Sheriff's Office Service
Laguna Woods	CA	Review of Sheriff's Office Service 2017
Laguna Woods	CA	Review of Sheriff's Office Service 2019
Milpitas	CA	Comprehensive Analysis of Police Services
Morgan Hill	CA	Comprehensive Analysis of Police Services
Morgan Hill	CA	Comprehensive Analysis of Fire Services
Palm Desert	CA	Comprehensive Analysis of Fire Services
Palo Alto	CA	Comprehensive Analysis of Fire Services
Pasadena	CA	Police Patrol Workload Analysis
Placentia	CA	Comprehensive Analysis of Police Services
Placentia	CA	Fire Services Contract Analysis
Rohnert Park	CA	Comprehensive Analysis of Police Services
Salinas	CA	Comprehensive Analysis of Police Services
Salinas	CA	Comprehensive Analysis of Fire Services
San Diego County	CA	EMS Study
San Jose	CA	Fire Study Review
San Jose	CA	Police Study Review
San Mateo	CA	Dispatch Operations Review
Santa Ana	CA	Comprehensive Analysis of Police Services
Santa Clara	CA	Comprehensive Analysis of Police Services
Santa Cruz	CA	Comprehensive Analysis of Police Services
Santa Monica	CA	Police Chief Selection
Santa Rosa	CA	Performance Measurement Analysis
Stockton	CA	Comprehensive Analysis of Police Services
Stockton	CA	Comprehensive Analysis of Fire Services
Torrance	CA	Police Strategic Plan
Union City	CA	Comprehensive Analysis of Fire Services
Whittier	CA	Comprehensive Analysis of Police Services
Woodlands	CA	Police Chief Selection
Yuba City	CA	Comprehensive Analysis of Fire Services
Yuba City	CA	Comprehensive Analysis of Police Services
Federal Heights	CO	Comprehensive Analysis of Police Services
Federal Heights	CO	Comprehensive Analysis of Fire Services
Littleton	CO	Comprehensive Analysis of Fire Services
Littleton	CO	Review of Fire Consolidation Proposal
Steamboat Springs	CO	Comprehensive Analysis of Fire Services
Cheshire	CT	Police Management Review
Southington	CT	Comprehensive Analysis of Fire Services
Bethany Beach	DE	EMS Apparatus Review
Bethany Beach	DE	EMS Review
S. Bethany Beach	DE	Police Department Review
Dover	DE	Comprehensive Analysis of Police Department

Locality	State	Project
Dover	DE	Comprehensive Analysis of Fire Services
Alachua	FL	Expert Witness Law Enforcement Issues
BCCMA	FL	Review of Broward Sheriff's Office Services
Tamarac	FL	Analysis of Sheriff's Contract Services
Inverness	FL	Comprehensive Analysis of Fire Services
Citrus County	FL	Comprehensive Analysis of Fire Services
Cocoa	FL	Comprehensive Analysis of Police Services
Coconut Creek	FL	Comprehensive Analysis of Police Services
Delray Beach	FL	Comprehensive Analysis of Police Services
Delray Beach	FL	Comprehensive Analysis of Fire Services
Dunedin	FL	Police Consolidation Review
Hollywood	FL	Police Internal Affairs Review
Indian River Shores	FL	Public Safety Staffing Analysis
Indian River Shores	FL	Public Safety Study
Jacksonville Bch	FL	Police Chief Selection
Jupiter Island	FL	Public Safety Department Review
Jupiter	FL	Police and Fire Study
Hobe Sound	FL	Public Safety Consolidation
Kenneth City	FL	Comprehensive Analysis of Police Services
Miami Beach	FL	Comprehensive Analysis of Fire Services
Naples	FL	Presentation
North Port	FL	Comprehensive Analysis of Police Services
Orange County	FL	Dispatch Center Staffing Study
Parkland	FL	City Safety & Security Review
Pasco County	FL	Sheriff's Budget Review
Land O' Lakes	FL	Comprehensive Analysis of Fire Services
New Port Richey	FL	Sheriff Budget Analysis
Pompano Beach	FL	Comprehensive Analysis of Police Services
Venice	FL	Comprehensive Analysis of Fire Services
Alpharetta	GA	Comprehensive Analysis of Fire Services
Alpharetta	GA	Comprehensive Analysis of Police Services
Camden County	GA	Police Consolidation Study
Camden County	GA	Comprehensive Analysis of Fire Services
Camden County	GA	Fire Consolidation Study
Kingsland	GA	Comprehensive Analysis of Fire Services
Kingsland	GA	Fire Consolidation St Mary's
Woodbine	GA	Police Consolidation Study
Garden City	GA	Preliminary Analysis Public Safety Merger
Johns Creek	GA	Analysis of Fire Services
Kingsland	GA	Fire Consolidation Study
Roswell	GA	Comprehensive Analysis of Police Department
Roswell	GA	Police Chief Selection

Locality	State	Project
Sandy Springs	GA	Comprehensive Analysis of Police Department
St. Mary's	GA	Fire Consolidation Study
Ankeny	IA	Police Chief Selection
Boone	IA	Public Safety Consolidation
Boone	IA	Performance Measurement of Municipal
Hayden	ID	Comprehensive Analysis of Police Services
Jerome	ID	Analysis of Police Services
Algonquin	IL	Performance Measurement Analysis
Glenview	IL	Comprehensive Analysis of Police & Fire Services
Glenview	IL	Comprehensive Analysis of Police Services
Glenview	IL	Dispatch Operations Review
Highland	IL	Comprehensive Analysis of Fire Services
Highland Park	IL	Comprehensive Analysis of Fire Consolidation
Highwood	IL	Comprehensive Analysis of Fire Consolidation
Lake Bluff	IL	Analysis of Fire Consolidation
Lake Bluff	IL	Fire Data Review
Lake Forest	IL	Analysis of Fire Consolidation
Lake Zurich	IL	Comprehensive Analysis of Fire services
Naperville	IL	Workload, Staffing & Schedule Design
Roseville	IL	Comprehensive Analysis of Police Services
Skokie	IL	Comprehensive Analysis of Police Services
St. Charles	IL	Police Staffing Review
Western Springs	IL	Comprehensive Analysis of Police Services
Indianapolis	IN	Police Workload & Deployment Services
Plainfield	IN	Comprehensive Analysis of Police Services
Topeka	KS	Preliminary Review of Fire Department
Northborough	MA	Comprehensive Analysis of Police Services
Northborough	MA	Comprehensive Analysis of Fire Services
Cambridge	MD	Performance Measurement Study
Annapolis	MD	Comprehensive Analysis of Police Services
Ocean City	MD	Dispatch Operations Review
Rockville	MD	Comprehensive Analysis of Police Services
Ann Arbor	MI	Comprehensive Analysis of Fire Services
Auburn Hills	MI	Comprehensive Analysis of Fire Services
Auburn Hills	MI	Comprehensive Analysis of Police Services
Benton Harbor	MI	Public Safety Consolidation
Chesterfield	MI	Comprehensive Analysis of Police Services
Charlevoix	MI	EMS Study
Lansing	MI	Comprehensive Analysis of Police Services
Lansing	MI	Comprehensive Analysis of Fire Services
Delta Township	MI	Comprehensive Analysis of Fire Services
Delta Township	MI	Comprehensive Analysis of Police Services

Locality	State	Project
Detroit Public Schools	MI	Police Department Review
Douglas	MI	Comprehensive Analysis of Police Services
Flint	MI	Comprehensive Analysis of Fire Services
Flint	MI	Comprehensive Analysis of Police Services
Green Lake Twp.	MI	Comprehensive Analysis of Fire Services
Grand Rapids	MI	Comprehensive Analysis of Police Services
Grand Rapids	MI	Comprehensive Analysis of Fire Services
Kingsley	MI	Comprehensive Analysis of Fire Services
Hamtramck	MI	Comprehensive Analysis of Police Services
Interlochen	MI	Comprehensive Analysis of Fire Services
Grand Traverse	MI	Comprehensive Analysis of Fire Services
Grosse Pointe Park	MI	Public Safety Consolidation
Grosse Pointe	MI	Public Safety Consolidation
Hamtramck	MI	Police Study
Grand Blanc	MI	Comprehensive Analysis of Fire Services
Grand Rapids	MI	Comprehensive Analysis of Police & Fire Services
Grand Rapids	MI	Analysis of Police Services Consolidation
Kentwood	MI	Analysis of Fire Services Consolidation
Flint	MI	Comprehensive Analysis of Police Services
Flint	MI	Comprehensive Analysis of Fire Services
Mott College	MI	Comprehensive Analysis of Police Services
Novi	MI	Comprehensive Analysis of Police Services
Novi	MI	Comprehensive Analysis of Fire Services
Kalamazoo	MI	Police Workload / Contract for Services Analysis
Oshtemo Twp.	MI	Review of Sheriff's Office Contract Services
Ottawa County	MI	Sheriff's Office Staffing Study
Petoskey	MI	Public Safety Consolidation
Plymouth	MI	Fire Services Consolidation
Plymouth	MI	Fire Service Analysis
Plymouth	MI	Public Safety Department Report
Royal Oak	MI	Comprehensive Analysis of Police Services
Royal Oak	MI	Comprehensive Analysis of Fire Services
Saginaw	MI	Comprehensive Analysis of Police Services
Saginaw	MI	Comprehensive Analysis of Fire Services
Saginaw	MI	Public Safety Workload Analysis
So. Kalamazoo	MI	Fire Services Review
Vicksburg	MI	Financial Analysis of Fire Authority
Saint Joseph	MI	Public Safety Consolidation
Sturgis	MI	Public Safety Analysis
Troy	MI	Comprehensive Analysis of Police Services
Troy	MI	Review of Fire Administration and Inspections
Wyoming	MI	Comprehensive Analysis of Police Services 2012

Locality	State	Project
Wyoming	MI	Comprehensive Analysis of Fire Services 2012
Wyoming	MI	Comprehensive Analysis of Police Services 2009
Wyoming	MI	Comprehensive Analysis of Fire Services 2009
Mankato	MN	Public Safety Study
Moorhead	MN	Comprehensive Analysis of Fire Services
North St. Paul	MN	Public Safety Strategic Plan
Saint Cloud	MN	Police Strategic Planning Review
Saint Cloud	MN	Comprehensive Analysis of Police Services
Stearns County	MN	Comprehensive Analysis of Sheriff's Office
Brentwood	MO	Comprehensive Analysis of Police Services
Hazelwood	MO	Fire / EMS Analysis
Osage Beach	MO	Comprehensive Analysis of Police Services
Saint Louis	MO	Comprehensive Analysis of Fire Services
Saint Louis	MO	Comprehensive Analysis of Police Services
Saint Louis	MO	Standard of Response / Risk Assessment
Bozeman	MT	Fire Protection Master Plan
Kalispell	MY	EMS Study
Bald Head Island	NC	Public Safety Staffing Review
Bald Head Island	NC	Public Safety Consolidation
Chapel Hill	NC	Comprehensive Analysis of Police Services
Cornelius	NC	Fire Consolidation Study
Davidson	NC	Fire Consolidation Study
Greenville	NC	Comprehensive Analysis of Fire Services
Hickory	NC	Comprehensive Analysis of Fire Services
Huntersville	NC	Comprehensive Analysis of Fire Services
Matthews	NC	Comprehensive Analysis of Police Services
Oxford	NC	Comprehensive Analysis of Fire Services
Oxford	NC	Comprehensive Analysis of Police Services
Rocky Mount	NC	AED Grant Assistance
Rocky Mount	NC	Comprehensive Analysis of Police Services
Grand Island	NE	Comprehensive Analysis of Police Services
Grand Island	NE	Comprehensive Analysis of Fire Services
South Sioux City	NE	Fire Services Strategic Plan
Exeter	NH	Comprehensive Analysis of Fire Services
Exeter	NH	Comprehensive Analysis of Police Services
East Brunswick	NJ	EMS Study
Oradell	NJ	Comprehensive Analysis of Police Services
Paterson	NJ	Review of Police Services
South Orange	NJ	Comprehensive Analysis of Police Services
Westwood	NJ	Comprehensive Analysis of Police Services
Bernalillo	NM	Comprehensive Analysis of Fire Services
Las Cruces	NM	Comprehensive Analysis of Fire Services

Locality	State	Project
Las Cruces	NM	Comprehensive Analysis of Police Services
Ruidoso	NM	Comprehensive Analysis of Police Services
Boulder City	NV	Police Organizational Study
Henderson	NV	Comprehensive Analysis of Police Services
Las Vegas	NV	Comprehensive Analysis of Fire Services
North Las Vegas	NV	Fire Workload Analysis
Reno	NV	Comprehensive Analysis of Fire Services
Briar Cliff Manor	NY	Analysis of Police Consolidation
Canandaigua	NY	Regional Fire Services Study
Garden City	NY	Comprehensive Analysis of Fire Services
Garden City	NY	Comprehensive Analysis of Police Services
Garden City	NY	Patrol Workload Analysis Update
Long Beach	NY	Comprehensive Analysis of Fire and EMS Services
Oneonta	NY	Comprehensive Analysis of Fire and EMS Services
Oneonta	NY	Fire Apparatus Review
Orchard Park	NY	Comprehensive Analysis of Police Services
Ossining	NY	Analysis of Police Consolidation
Ossining Town	NY	Analysis of Police Consolidation
Rye	NY	Police Chief Selection
Watertown	NY	Comprehensive Analysis of Fire Services
Cincinnati	OH	Police Dispatch Review
Dayton	OH	Police Internal Affairs Review
Huron	OH	Comprehensive Analysis of Police Services
Huron	OH	Comprehensive Analysis of Fire Services
Independence	OH	Comprehensive Analysis of Police Services
Independence	OH	Comprehensive Analysis of Fire Services
Sandusky	OH	Fire Study
Sandusky	OH	Police Study
Broken Arrow	OK	Comprehensive Analysis of Police Services
Broken Arrow	OK	Comprehensive Analysis of Fire Services
Edmond	OK	Comprehensive Analysis of Police Services
Jenks	OK	Comprehensive Analysis of Police Services
Jenks	OK	Comprehensive Analysis of Fire Services
Muskogee	OK	Comprehensive Analysis of Police Services
Tulsa	OK	Comprehensive Analysis of Fire Services
Bend	OR	Comprehensive Analysis of Police Services
Forest Grove	OR	Police Planning Study
Grants Pass	OR	Comprehensive Analysis of Fire Services
Grants Pass	OR	Comprehensive Analysis of Police Services
Grants Pass	OR	Public Safety Strategic Plan Development
Ontario	OR	Comprehensive Analysis of Police Services
Ontario	OR	Comprehensive Analysis of Fire Services

Locality	State	Project
Medford	OR	Comprehensive Analysis of Fire Services
Cumru Twp.	PA	Comprehensive Analysis of Police Services
Cumru Twp.	PA	Police Chief Selection
Ephrata	PA	Comprehensive Analysis of Police Services
Farrell	PA	Comprehensive Analysis of Police Services
Manheim Twp.	PA	Comprehensive Analysis of Police Services
Tredyffrin Twp.	PA	Comprehensive Analysis of Police Services
Lower Windsor Twp.	PA	Comprehensive Analysis of Police Services
Wrightsville	PA	Comprehensive Analysis of Police Services
East Providence	RI	Comprehensive Analysis of Fire Services
East Providence	RI	Expert Witness Fire Issues
Beaufort	SC	Review of Fire Service Contract
Beaufort	SC	Comprehensive Analysis of Police Services
Beaufort	SC	Comprehensive Analysis of Fire Services
Walterboro	SC	Comprehensive Analysis of Public Safety Dept.
Rapid City	SD	Comprehensive Analysis of Fire Services
Germantown	TN	Comprehensive Analysis of Fire Services
Johnson City	TN	Comprehensive Analysis of Fire Services
Johnson City	TN	Comprehensive Analysis of Police Services
Smyrna	TN	Comprehensive Analysis of Police Services
Smyrna	TN	Comprehensive Analysis of Fire Services
Addison	TX	Comprehensive Analysis of Fire Services
Addison	TX	Comprehensive Analysis of Police Services
Baytown	TX	EMS Study
Belton	TX	Comprehensive Analysis of Police Services
Belton	TX	Comprehensive Analysis of Fire Services
Belton	TX	Police Chief Selection
Belton	TX	Fire Chief Selection
Bryan	TX	Comprehensive Analysis of Fire Services
Buda	TX	Comprehensive Analysis of Police Services
Cedar Park	TX	Comprehensive Analysis of Police Services
College Station	TX	Comprehensive Analysis of Fire Services
Conroe	TX	Fire Services Analysis and Standard of Response
Corinth	TX	Comprehensive Analysis of Fire Services
Frisco	TX	Comprehensive Analysis of Fire Services
Highland Village	TX	Fire Review
Hutto	TX	Comprehensive Analysis of Fire Services
Lucas	TX	Fire and EMS Analysis
Lufkin	TX	Comprehensive Analysis of Fire Services
New Braunfels	TX	Fire Study
New Braunfels	TX	Police Study
Prosper	TX	Comprehensive Analysis of Police Services

Locality	State	Project
Round Rock	TX	Comprehensive Analysis of Fire Services
Sugar Land	TX	Comprehensive Analysis of Police Services
Sugar Land	TX	Fire Department Overtime Analysis
Sugar Land	TX	Comprehensive Analysis of Fire Services
Victoria	TX	Comprehensive Analysis of Police Services
Washington City	UT	Comprehensive Public Safety Analysis
Hampton	VA	Police Chief Selection
Leesburg	VA	Comprehensive Analysis of Sheriff Services
Leesburg	VA	Comprehensive Analysis of Fire Services
Hampton	VA	Police Chief Selection
Loudon County	VA	Comprehensive Analysis of Fire Services
Loudon County	VA	Comprehensive Analysis of Sheriff's Services
Bonney Lake	WA	Comprehensive Analysis of Police Services
Lacey	WA	Comprehensive Analysis of Fire Services
Snoqualmie	WA	Police Workload & Deployment Analysis
Marysville	WA	Comprehensive Analysis of Police Services
Marysville	WA	Comprehensive Analysis of Police Services
Mill Creek	WA	Comprehensive Analysis of Police Services
Mill Creek	WA	Comprehensive Analysis of Fire Services
Spokane Valley	WA	Comprehensive Analysis of Police Services
Vancouver	WA	Comprehensive Analysis of Police Services
Vancouver	WA	Police Chief Selection
Dunn County	WI	Sheriff Office Study
Wauwatosa	WI	Comprehensive Analysis of Fire Services
Wauwatosa	WI	Comprehensive Analysis of Police Services
Casper	WY	Comprehensive Analysis of Police Services
Jackson	WY	Police Consolidation Review
Laramie	WY	Comprehensive Analysis of Police Services

2.C. Individuals Assigned to Biddeford Fire Department Assessment Project

CPSM offers the City of Biddeford a project team made up of highly capable and experienced fire, rescue, EMS, and data analysis subject matter experts with a track record of competently and efficiently performing similar projects for municipal clients. Each of our Fire and EMS operational subject matter experts are current and former fire, rescue, and EMS chief officers who have years of experience working in the local government setting to include cities and counties. This experience includes working with city and county leadership and elected officials. Our subject matter experts themselves have prior experience serving as practitioners, line officers, and middle managers. Their expertise has been applied to similar projects that CPSM has performed for its clients.

CPSM's organizational chart for the project is provided in Figure 2, which shows our project management team and reporting relationships. A summary of our key personnel's qualifications, experience, and project roles is provided in Table 2, which includes information on our staff's home base location, availability, relevant certifications, licenses, professional association memberships, and training. Resumes/bios for each of our key personnel follow the table.

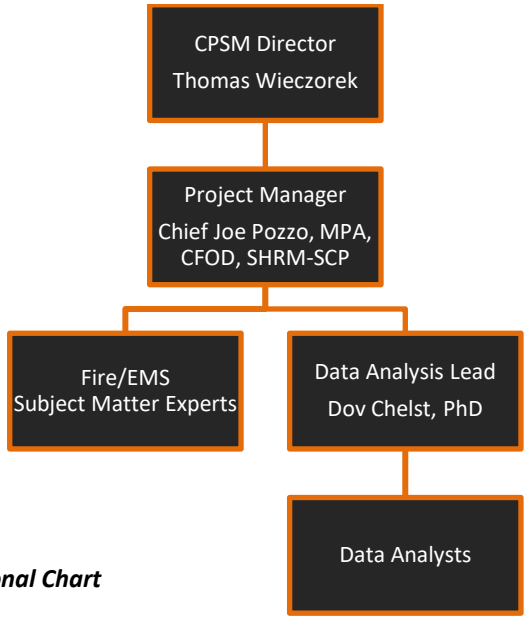

Figure 2. Project Organizational Chart

CPSM offers the City of Biddeford a project team comprising highly capable and experienced fire, rescue, EMS, and data analysis subject matter experts with a track record of competently and efficiently performing similar projects for municipal clients. CPSM utilizes current and former fire, rescue, and EMS chief officers who have prior experience serving as practitioners, line officers, and middle managers. This ensures that our staff have extensive relevant knowledge, hands-on experience, and understanding of all aspects of fire, rescue, and EMS operations. Their expertise has been applied to similar projects that CPSM has performed for its clients. Our comprehensive fire, rescue, and EMS analyses have yielded thousands of recommendations for enhancing the effectiveness and efficiency of department management, operations, staffing, training, data management, fleet management, community relations, and more.

CPSM's proposed project professionals will be available to support the project through completion. Estimates on proposed personnel availability are included in Table 2. CPSM's subject matter experts have a long history with the firm, which means staff turnover is not a significant concern. Based on our experience, a dedicated, consistent project team works more efficiently and effectively, ensuring both continuity of project knowledge and budget management. Because we have a stable workforce, our project team members have a history of collaborating on similar projects.

CPSM performs all work using in-house resources and does not subcontract any portion of the work scope. The firm has adequate in-house subject matter experts to perform multiple concurrent public safety studies at any time.

2.C.1. Key Personnel Resumes

For this project, CPSM has assembled a premier team of experts with hands-on experience and knowledge directly relevant to performing the Biddeford Fire Department Assessment project. CPSM assigns a project manager to each project it performs. Our project manager is responsible for all aspects of project execution and contractual compliance. Chief Joe Pozzo will be the project manager for this contract. He will lead our project team of Fire/EMS and Data Analysis subject matter experts in performing the required scope of services in accordance with the contract, CPSM's quality standards, and the established project budget and schedule.

As project manager, Chief Pozzo serves as a principal point of contact with the City's project team. He will ensure that CPSM performs the required study with the same exceptional quality and service for which CPSM is recognized. After contract award, at the project kickoff meeting, our project manager will solicit input on our proposed approach and schedule and document the mutually agreed upon final plan that CPSM will follow to complete the project.

Chief Joseph Pozzo is a Senior Manager for Fire and EMS for CPSM and reports directly to CPSM's Director, Thomas Wieczorek. Chief Pozzo has completed more than 50 similar studies while with CPSM. He has had a 40-year career in public service that includes serving as the Director of Public Protection for Volusia County, Florida.

Table 2. Key Personnel Summary

Name/Title/ Location/Availability	Qualifications	Relevant Experience	Project Role
Thomas Wieczorek Director, Center for Public Safety Management, LLC Washington, DC	▪ Current representative of ICMA on the NFPA 1710 Career Committee ▪ 2000 ICMA Award for Excellence ▪ 1999 City Manager of the Year, 2003 Person of the Year for Rural Water Association of Michigan ▪ 2005 Distinguished Service Award – Michigan Municipal League	▪ Former police officer, fire chief, director of public safety, and city manager ▪ As city manager, was lead negotiator for ambulance service contracts serving City and surrounding Townships and represented City on a regional rural hospital board. ▪ Former Executive Director of the Center for Public Safety Excellence. Taught Public Safety programs at multiple colleges and organizations ▪ Former officer for Michigan Local Government Manager's Association and Commission of Fire Officer Designation	Corporate Oversight
Fire/EMS Operations Team			
Chief Joseph Pozzo (Ret), MPA, CFOD, SHRM-SCP Senior Manager for Fire/EMS Florida 75% availability to project	▪ 40-year career in public service ▪ Master of Public Administration degree from Troy University, BA in Public Administration from Saint Leo University and several associate degrees including an AAS in Fire Science and Protective Services ▪ Chief Fire Officer Designation from the Center for Public Safety Excellence ▪ Senior Certified Professional, Society of Human Resource Management	▪ As CPSM's Senior Manager for Fire and EMS has completed more than 50 similar studies ▪ Former Director of Public Protection for Volusia County, Florida where he provided executive leadership to 900-employee Fire, EMS, Emergency Management, Corrections, Animal Control, and Beach Safety divisions ▪ Former Fire Chief Volusia County, FL, Loudoun County, VA, Portsmouth, VA	Project Manager
Chief Rondall L. Early, MPA, EFO, NREMT-P Associate North Carolina 100% availability to project	▪ More than 30 years of fire and EMS experience as a practitioner, middle manager, and Chief officer in the planning, organizing, delivering, and administration of fire and EMS department operations. ▪ Master's in public administration from Troy University	▪ Since 2008, has commanded the Wake Forest Fire Department, a combination fire department that provides fire suppression, basic life support emergency medical services first response, hazardous material response, fire prevention, and fire and emergency medical services training programs.	Fire and EMS Subject Matter Expert

Name/Title/ Location/Availability	Qualifications	Relevant Experience	Project Role
	▪ 2011 graduate of the National Fire Academy's Executive Fire Officer Program ▪ Certification of Nationally Registered Emergency Medical Technician-Paramedic ▪ Rank of 2nd Lieutenant with the North Carolina Civil Air Patrol in charge of Emergency Services.	▪ Served the Portsmouth, VA Fire and EMS Department for 20 years where he rose through the ranks from firefighter to Battalion Chief, working in all areas of this department to include engine and ladder companies, EMS transport, and training. ▪ Final assignment in Portsmouth prior to leaving for Wake Forest was as the Division Chief for Emergency Medical Services, where he oversaw EMS transport operations, EMS billing, training, and administration.	
Mark I Piland, MPH, EFO Associate Texas 100% availability to project	▪ More than 35 years in Fire-Rescue service ▪ Experience in the Fire Administration, Fire Prevention, Fire Operations, Emergency Management and CERT, Training, Special Operations, Fire Accreditation, emergency response with local, state, and federal governments, and executive level management, and budget ▪ MPH from Eastern Virginia Medical School, and a bachelor's degree in psychology from Old Dominion University ▪ Graduate of the National Fire Academy's Executive Fire Officer Program, The Executive Leaders Program at the Post Naval Graduate School, Center for Homeland Defense, and Senior Executives in State and Local Government from The Kennedy School at Harvard	▪ Fire Chief and Emergency Management Coordinator for the City of Frisco, Texas ▪ Previously, served as Fire Chief for Volusia County Fire Services in Volusia County, FL and as Shift Commander in Operations for the Virginia Beach Fire Department in Virginia Beach, VA ▪ Served as a Principal Member on NFPA Technical Committee 1981 Standard on Open Circuit Self Contained Breathing Apparatus for seven years ▪ Served with FEMA as a Task Force Leader with Virginia Task Force 2 (VATF-2) a FEMA Urban Search and Rescue Team as well as the East Coast Task Force Divisional Representative for the FEMA US&R System ▪ Served as The Plans Chief for the Pentagon incident during the 9-11 terrorism attack, and deployed as the Task Force Leader for VATF-2 (Type I 80 persons) for Hurricane Katrina Earthquake in Port Au Prince, Haiti	Fire Service Subject Matter Expert
Data Assessment Team			
Dov Chelst, PhD	▪ Subject Matter Expert in analyzing public safety department's workload and deployment	▪ Managed over 140 data analysis projects for city and county agencies ranging in	Data Assessment Lead

Name/Title/ Location/Availability	Qualifications	Relevant Experience	Project Role
Director of Quantitative Analysis New Jersey 75% availability to project	▪ PhD Mathematics ▪ BA Magna Cum Laude in Mathematics and Physics	population size from 8,000 to 800,000	
Xianfeng Li, PhD Senior Public Safety Data Analyst New Jersey 100% availability to project	▪ PhD and Master's degree in Polymer Science within the Institute of Chemistry from the Chinese Academy of Sciences in Beijing ▪ Bachelor's degree in Chemistry, Jilin University in Changchun	▪ Professional computational scientist and certified SAS programmer with a wealth of knowledge and research experience in complex system modeling, data analysis, and statistical physics. ▪ Previously worked as a Research Associate at Clemson University.	Data Analyst
Sarah Weadon, BA Senior Public Safety Data Analyst Virginia 100% availability to project	▪ 15+ years' experience consulting with local, state, and federal government agencies in data and geospatial analysis, database and application development, and project management ▪ Bachelor's degree in Classical Languages	▪ Worked with 40+ public safety agencies across the U.S. and Canada, providing data and geospatial analysis of response times, call trends, and station locations	Data Analyst

Director, Center for Public Safety Management, LLC —Thomas Wieczorek

Retired City Manager Ionia, MI; former Executive Director Center for Public Safety Excellence

Thomas Wieczorek is an expert in fire and emergency medical services operations. He has served as a police officer, fire chief, director of public safety and city manager and is former Executive Director of the Center for Public Safety Excellence (formerly the Commission on Fire Accreditation International, Inc.).

He has taught a number of programs at Grand Valley State University, the National Highway Traffic Safety Administration (NHTSA), and Grand Rapids Junior College. He has testified frequently for the Michigan Municipal League before the legislature and in several courts as an expert in the field of accident reconstruction and fire department management. He is the past president of the Michigan Local Government Manager's Association; served as the vice-chairperson of the Commission on Fire Officer Designation; and serves as a representative of ICMA on the NFPA 1710 career committee.

He most recently worked with the National League of Cities and the Department of Homeland Security to create and deliver a program on emergency management for local officials titled "Crisis Leadership for Local Government Officials." It has been presented in 43 states (including Hawaii) and has been assigned a course number by the DHS. He represents ICMA on the NFPA 1710 and 1730 Standards Committees and is a board member on the International Accreditation Service, a wholly-owned subsidiary of the International Code Council.

He received the Mark E. Keane "Award for Excellence" in 2000 from the ICMA, the Association's highest award, and was honored as City Manager of the Year (1999) and Person of the Year (2003) by the Rural Water Association of Michigan, and for distinguished service by the Michigan Municipal League in 2005.

Fire and EMS Operations Assessment Team

Chief Joseph Pozzo (Ret.), MPA, CFOD, SHRM-SCP — Project Manager

Former Director of Public Protection for Volusia County, Florida; Former Assistant Director of Human Resources, Volusia County, FL; Former Deputy Director, Volusia County Department of Public Protection; former Director and Fire Chief, Volusia County, Florida, former Fire Chief, Loudon County, Virginia, former Fire Chief Portsmouth, Virginia.

Chief Pozzo has a 40-year career in public service, and most recently served as the Director of Public Protection for Volusia County, Florida where he provided executive leadership to the Fire, EMS, Emergency Management, Corrections, Animal Control, and Beach Safety divisions. The Public Protection Department is the largest department in Volusia County and includes 945+ employees, an EMS Division that handles over 50,000 transports per year and utilizes Florida's first ever Nurse Triage system in the 911 Center, an all-hazards Emergency Management Division that specializes in coastal storm preparation and response, and a Fire Division that responds to 23,000 calls/year utilizing ALS staffed apparatus.

From March 2015 to September of 2018, Chief Pozzo served as the Assistant Director of Human Resources for Volusia County, Florida (3,200 employees), where he managed the employee relations, benefits administration, and occupational health services functions and teams, as well as assisted in the management and negotiation of six collective bargaining agreements/units. He was also involved in developing and implementing the County's Diversity and Inclusion initiative.

Chief Pozzo has also served as the Deputy Director of the Department of Public Protection Volusia County, Florida, where he was responsible for the day-to-day operations of Fire, EMS, Emergency Management, Medical Examiner, Beach Safety, Corrections, and Animal Services. He was formerly Fire Chief of Volusia County Fire Services, where he developed and implemented a service model designed to introduce EMS transport into the agency, incorporate fleet efficiencies, and enhance the wild land/urban interface efforts.

Prior to Chief Pozzo's appointment in Volusia County in 2010, he served as the Chief of the Loudoun County Department of Fire and Rescue. This agency is a combination fire and rescue system providing fire, rescue, and emergency management services in one of the fastest growing counties in the nation. The fire and rescue system during Chief Pozzo's tenure provided these services to over 275,000 permanent residents living in 520 square miles of diverse suburban and rural area located within the National Capital Region. Services were executed through 450+ career staff and 1,400+ volunteer members operating out of 19 stations.

Prior to his appointment with Loudoun County, Chief Pozzo served as Chief of the Portsmouth Fire, Rescue and Emergency Services Department. This agency is one of the oldest professional departments on the eastern seaboard and served over 100,000 residents during Chief Pozzo's tenure. Chief Pozzo also served in the City of Virginia Beach, Virginia Fire Department for 19 years, reaching the level of Deputy Fire Marshal and then Battalion Chief prior to embarking on his career as a Fire Chief/Director.

Chief Pozzo holds a Master of Public Administration degree from Troy University, a B.A. in Public Administration from Saint Leo University, and numerous public safety technical certifications. He holds the Chief Fire Officer Designation from the Center for Public Safety Excellence and is a Senior Certified Professional in Human Resources through the Society of Human Resource Management (SHRM).

Chief Rondall L. Early, MPA, EFO, NREMT-P — Associate

Fire Chief, Wake Forest, North Carolina

Chief Early has more than 30 years of fire and EMS experience as a practitioner, middle manager, and Chief officer in the planning, organizing, delivering, and administration of fire and EMS department operations. Since 2008, Chief Early has commanded the Wake Forest Fire Department. The Wake Forest fire department is a combination fire department that provides fire suppression, basic life support emergency medical services first response, hazardous material response, fire prevention, and fire and emergency medical services training programs.

Prior to his appointment in Wake Forest, Chief Early served the Portsmouth, VA Fire and EMS Department for 20 years. In Portsmouth, Chief Early rose through the ranks from firefighter to Battalion Chief, working in all areas of this department to include engine and ladder companies, EMS transport, and training. Chief Early's final assignment in Portsmouth prior to leaving for Wake Forest was as the Division Chief for Emergency Medical Services, where he oversaw the EMS transport operations, EMS billing, training, and administration of this departmental function.

Chief Early holds a Master in Public Administration degree from Troy University, is a 2011 graduate of the National Fire Academy's Executive Fire Officer Program, holds the certification of Nationally Registered Emergency Medical Technician-Paramedic, and holds the rank of 2nd Lieutenant with the North Carolina Civil Air Patrol in charge of Emergency Services.

Chief Mark I. Piland, MPH, EFO— Associate

Mark I. Piland is the Fire Chief and Emergency Management Coordinator for the City of Frisco, Texas, one of the fastest growing cities in the United States. Previously, Piland served as the Fire Chief for Volusia County Fire Services in Volusia County, Florida and as Shift Commander in Operations for the Virginia Beach Fire Department in Virginia Beach, Virginia.

Chief Piland has over 35 years in the Fire-Rescue service, beginning as a volunteer, amassing experience in the areas of Fire Administration, Fire Prevention, Fire Operations, Emergency Management and CERT, Training, Special Operations, Fire Accreditation, emergency response with local, state, and federal governments, and executive level management, and budget. Chief Piland has strong expertise in the areas of executive leadership and community disaster preparedness response and outreach programs.

Chief Piland has served with the Federal Emergency Management Agency (FEMA) as a Task Force Leader with Virginia Task Force 2 (VATF-2), a FEMA Urban Search and Rescue Team, as well as the East Coast Task Force Divisional Representative for the FEMA US&R System. He also served as a FEMA Working Group Member for Command and General Staff and Incident Support Team Leader. Chief Piland served as The Plans Chief for the Pentagon incident during the 9-11 terrorism attack and deployed as the Task Force Leader for VATF-2 (Type I 80 persons) for Hurricane Katrina in New Orleans (2005), and the Earthquake in Port Au Prince, Haiti (2010).

Chief Piland has served as a Principal Member on NFPA Technical Committee 1981 Standard on Open Circuit Self Contained Breathing Apparatus for seven years. He was recently selected to represent the International Association of Fire Chiefs (IAFC) at the NFPA Forum, a think tank of fire service leaders brought together to discuss and make recommendations for the protection of the fire service as well as the life and safety protection needs of society.

Chief Piland possesses a masters of public health degree from Eastern Virginia Medical School and a bachelor of psychology degree from Old Dominion University. He is a graduate of the National Fire Academy's Executive Fire Officer Program, The Executive Leaders Program at the Post Naval Graduate School, Center for Homeland Defense, and Senior Executives in State and Local Government from The Kennedy School at Harvard.

Data Assessment Team

Dov Chelst, PhD — Data Assessment Lead

Director of Quantitative Analysis

Dov Chelst is an expert in analyzing public safety department workload and deployment. He manages the analysis of all public safety data for CPSM. He is involved in all phases of CPSM's studies from initial data collection, onsite review, large-scale dataset processing, statistical analysis, and data report design. To date, he has managed over 140 data analysis projects for city and county agencies ranging in population size from 8,000 to 800,000.

Dr. Chelst has a PhD in Mathematics from Rutgers University and a BA *Magna Cum Laude* in Mathematics and Physics from Yeshiva University. He has taught mathematics, physics, and statistics at the university level for nine years. He has conducted research in complex analysis, mathematical physics, and wireless communication

networks, presented his academic research at local, national, and international conferences, and participated in workshops across the country.

Public Safety Data Analyst — Xianfeng Li, PhD

Dr. Xianfeng Li is a professional computational scientist and certified SAS programmer with a wealth of knowledge and research experience in complex system modeling, data analysis, and statistical physics. He performs CPSM's fire and EMS data analyses. He previously worked as a Research Associate at Clemson University.

Dr. Li earned his PhD and Master's degree in Polymer Science within the Institute of Chemistry from the Chinese Academy of Sciences in Beijing. He earned his Bachelor's degree in Chemistry at Jilin University in Changchun.

Sarah Weadon, BA — Senior Public Safety Data Analyst

Sarah Weadon has over 15 years' experience consulting with local, state, and federal government agencies in the areas of data and geospatial analysis, database and application development, and project management. She has worked with over 40 public safety agencies across the U.S. and Canada, providing data and geospatial analysis of response times, call trends, and station locations. Her skill in understanding the results of the analyses in the broader context of each client's budget, political, and overall reality, supports the development of practical, actionable recommendations. Ms. Weadon holds a bachelor's degree in Classical Languages.

2.D. References for Similar Projects with Cities of Similar or Greater Size Performed in Last Five Years

CPSM's references for similar projects with cities of similar or greater size performed within the last five years are provided in Table 3. These references are for projects with full-time career departments in similar settings and circumstances as well as similar size departments.

Electronic copies of the reports for CPSM's Exeter, New Hampshire; Danville, Kentucky; and Lufkin, Texas are provided with our proposal submittal.

Table 3. References for Similar Projects Within Past Five Years

Name and Address of Government Agency/ Services Provided/ Dates Service Provided	Client Contact and Title/ Telephone Number/ Email Address	Description of Services Performed
Town of Exeter, NH 10 Front Street Exeter, NH 03833 Fire Staffing and Deployment Analysis August 2019–December 2020	Russell Dean, Town Manager (603) 773-6101 rdean@exeternh.gov	CPSM analyzed the town's fire department, assessed the Emergency Communications Center (ECC), and reviewed the existing public safety facility and available sites to construct a new facility. A forensic data analysis, all-hazard risk assessment, and operational, staffing, administrative, and facility recommendations were prepared as part of this study.
City of Danville, KY 445 West Main Street Danville, KY 40422 Fire Operational & Administrative Analysis Report April 23, 2020–June 2021	Earl Coffey, City Manager (859) 238-1200 ecoffey@danvilleky.gov	CPSM conducted an analysis of the Danville Fire Department (DFD) that included an All-Hazard Risk Assessment of the community. The study was documented in a report that addressed response time and staffing components to examine the current level of service provided by the DFD compared to national best practices, as well as

Name and Address of Government Agency/ Services Provided/ Dates Service Provided	Client Contact and Title/ Telephone Number/ Email Address	Description of Services Performed
		incident data and relevant information to be utilized for future planning and self-review of service levels for continued improvement designed to meet community expectations and mitigate emergencies effectively and efficiently. Other significant components of this report included an analysis of the current deployment of resources and the performance of these resources in terms of response times and the two DFD fire management zones; current staffing levels and patterns; department resiliency (ability to handle more than one incident); critical tasking elements for specific incident responses; and assembling an effective response force. CPSM analyzed these items and provided recommendations where applicable to improve service delivery and for future planning purposes.
City of Lufkin, TX 300 E Shepherd Lufkin, TX 75901 Fire Operational and Administrative Analysis Report April 24, 2018–December 5, 2018	Gerald Williamson, Public Safety Director (936) 633-0203 gwilliamson@lufkinpolice.com	CPSM performed a comprehensive analysis of the city's fire and EMS department, which was designed to provide the city with a thorough and unbiased review of services provided by the Lufkin Fire Department (LFD). During the study, CPSM analyzed performance data provided by the LFD and examined firsthand the department's operations. To begin the review, CPSM project staff asked the city for certain documents, data, and information, which we used to familiarize ourselves with the department's structure, assets, operations, and risk. The provided information was also used in conjunction with the collected raw performance data to determine the existing performance of the department and to compare that performance to national benchmarks. Project staff conducted a site visit to observe fire department and agency-connected supportive operations, interview key department and city staff,

Name and Address of Government Agency/ Services Provided/ Dates Service Provided	Client Contact and Title/ Telephone Number/ Email Address	Description of Services Performed
		and review preliminary data, operations, and community risk. CPSM prepared a report that provided a benchmark of the LFD's existing service delivery performance and community risk as analyzed in the comprehensive data analysis and community risk assessment. This report contained observations and recommendations for more efficient, effective, and in some cases, in a safer manner operations.

3. Project Methodology

The City of Biddeford is seeking a consulting firm to provide organizational and performance management review services for the Biddeford Fire Department. The objective of the assessment is to prepare the department to meet modern and future trends and needs of the community in fire/emergency response preparedness. The assessment is to include, but is not limited to, analyzing the department's organization, management, and staffing; department functions, programs, and services; operating policies and procedures; training and certifications; equipment, and budget. A physical assessment of facilities is not included in the scope of services.

Based on the findings of the assessment, the consultant will provide recommendations to improve the effectiveness and efficiency of department operations. Recommendations may include but not be limited to, improvements, management actions, realigning staff responsibilities/job duties as needed, budget savings or initiatives requiring supplemental funding; as well as to comment on areas found to be well managed and/or appropriately funded.

3.A. Work Plan

CPSM's proposed approach to performing the required scope of services is described in the following subsections.

3.A.1. Gather Pertinent Data and Information in Collaboration with City and Fire Department

Immediately following project launch, CPSM's Project Manager will deliver an operational and administrative information request to the fire department or designated point of contact. This is an extensive request that provides us with a detailed understanding of the department's operations. We will provide instructions for uploading materials to our cloud files. When necessary, our Project Manager and/or Operations Team Members will lead telephone or virtual conferences with City of Biddeford team members to discuss items contained in the request.

Also immediately following the project launch, CPSM's Data Team Lead will submit a preliminary data request, which will evaluate the quality of the Computer-Aided Dispatch (CAD) system data. This will be followed by a comprehensive request for data from the CAD system and the department's National Incident Fire Reporting System (NFIRS) data to conduct the response and workload analysis. This request requires a concerted effort and focused response to ensure the timely production of required data for analysis. The data team will extract five years' worth of Calls for Service (CFS) from the CAD system. Once our Data Team Lead is confident the data are accurate (CAD and NFIRS), they will certify that they have all the data necessary to complete the data analysis.

Following project launch, our Project Manager will arrange an initial virtual meeting with key City and Department staff to discuss our approach to the scope of work for this project, as well as begin the stakeholder dialogue that will drive the project's success.

When CPSM is engaged in performing a public safety assessment for a jurisdiction, we make our project team accessible to our client and available to support the project as needed to ensure successful performance. We have found that by collaboratively partnering with our governmental clients, we are able to work more effectively and efficiently while ensuring a more comprehensive assessment and report. At the project kickoff meeting, we will introduce our project team to the City's project team and share our team's contact information as well as the draft project schedule. This step facilitates better project communication and performance.

CPSM has a firm understanding of this project and the importance of making fire department response decisions based on data and analytics rather than emotion. CPSM has always advocated this approach, which is why we are a leader in performing fire and EMS analyses using the Community Risk Assessment Standards of Cover (CRA-SOC) elements as foundational methods to our projects.

3.A.2. Staffing Analysis and Operational Assessment

We will interview key city and fire department staff regarding the current state of the fire department, analyze community hazards and risk, response and deployment of assets, mutual aid partners, staffing, ability to assemble

an effective response force, and perform a fire management zone analysis that includes response times and ISO coverage and operational performance expectations.

Our team will request data and information from the City that includes Computer-Aided Dispatch data, National Fire Incident Reporting System data, City Comprehensive Growth-Management Plan, City Transportation Plan, City and Fire Department Strategic Plans, staffing and deployment metrics, and a matrix of information, plans, and data germane to the fire department that will support the development of the operational and staffing analysis. A sample of this request is included in Figure 3.

CPSM
Center for Public Safety Management, LLC

Center for Public Safety Management
Fire Department Study - Document Request

Agency: Sample Fire Department

Municipality: Sample, USA

CPSM Contact

To make the analysis and information gathering process as efficient as possible for the Roswell, GA Strategic Plan Gap Analysis, CPSM is submitting this ***Document Request*** list. You will be provided a link to upload this information to the CPSM data site.

The information requested herein will familiarize our study team with your agency's structure, assets, operations, and processes. Any questions regarding the listed items can be directed to the CPSM Project Manager, Joe Pozzo at the above listed e-mail or phone number.

CPSM looks forward to working with your agency on this important project. CPSM realizes that you may not have all the documents requested below. ***If there is a document you do not have, please let CPSM know.***

The ***Document Request*** list is as follows:

1. Current Fire Dept. Organizational chart.
   a. Number and type of positions assigned to fire administration.
   b. Number and type of positions assigned to training function.
   c. Number and type of positions assigned to Community Risk Reduction function (fire prevention, fire investigation, public education).
   d. Number and type of positions assigned to Emergency Management.
   e. Number and type of positions assigned to Fire Operations.
   f. Number and type of positions assigned to ancillary functions such as logistics, fleet, facilities

2. Current City Organizational Chart showing where the FD fits.

1

Figure 3. Excerpt from Sample Document Request

stakeholder virtual meetings to clarify information, request new information, and establish a continuum of relevant dialogue to ensure a full understanding of the community risk and response and deployment of fire resources.

We will conduct a forensic data analysis that focuses on fire services first response types, response times; workload dedicated to fire and EMS first response; station response workload; apparatus/unit workload; peak workload hours; operational response resiliency, and operational response workload of the entire Fire and department.

CPSM will conduct an all-hazards analysis of community risks to include, but not be limited to:

- Demographic/population data analysis
- Target hazards analysis
- Growth and development projections
- Land use, zoning, and geospatial information
- Current Insurance Services Office (ISO) report analysis
- Building information, density, and occupancy type analysis (will use fire department Occupancy Vulnerability Assessment Profile (OVAP) scores if completed and available)
- Environmental factors analysis
- Transportation network analysis
- Fire Management Zone analysis—facility placement and response times
- Fire risk
- EMS risk
- 3-Axis Risk Calculation
- Current services/staffing model and resource deployment in relation to the defined risks
- Analysis of current department deployment of resources and performance
- Linking the Community Risk Assessment to response assets and evaluation of department capabilities to respond to these risks
- Analysis of the department's ability to assemble an Effective Response Force in accordance with national standards and benchmarking (NFPA and CPSE)
- Analysis of and recommendations on Critical Task Capabilities of the Fire and EMS department in accordance with national standards and benchmarking (NFPA and CPSE)
- Analysis of Fire Management Zones for station location, call density, response times, resiliency, community risk
- Analysis of current demographics and population, land use, and projected growth and associated impacts on the department
- Staffing evaluation to include:
  - Deployment methods and staffing performance for incidents
  - Cost analysis for each staffing model
- Facility analysis with regards to accommodation of existing and future staffing

3.A.3. City and Proposer Resources Required

CPSM expects the City to provide requested data and information in a timely manner. Delays in providing information and data will delay the delivery of the final document.

While performing onsite stakeholder meetings and onsite information gathering, CPSM expects adequate meeting rooms and when requested, City and/or fire department staff assistance and/or participation. This includes:

Meetings

- Preparatory meetings with city and fire department leadership (virtual).
- Internal stakeholder meetings with (virtual and in-person) to identify staffing and deployment issues and concerns.

- Formal presentation of findings and recommendations to the City Council at a regular or special public meeting specific to this report.

Evaluation and Analysis Activities

- Examination of the current and future environmental factors that affect the department's capability to meet staffing and deployment goals and objectives and as benchmarked against national standards.
- Evaluate the fire department's strengths, weaknesses, opportunities, and threats as they relate to staffing and deploying resources against current demand and population and future community growth.
- Comprehensive data analysis that includes fire and EMS call demand, response times, unit workload, and department resiliency.
  - Community Risk Assessment to include 3-Axis Risk Calculation and fire department Occupancy Vulnerability Assessment Profile (OVAP) scores if available.
- GIS mapping that assesses fire and EMS district/management zones.
- Analysis of the fire department's ability to assemble an effective response force.
- Demand analysis mapping.
- Critical task analysis for the fire department.
- Staffing analysis to include the need for potential future staffing based on community growth.

Report Preparation Activities

- Development of a work plan for gaining consensus of City Council, Fire Department administrative staff and stakeholders regarding service level benchmarks.
- Cost analysis of each staffing model identified and options for funding the cost of each model presented.
- Development of planning recommendations for the near term, mid-term, and long term.

3.A.4. Presentation of Data and GIS Mapping

CPSM will present the data analysis in a series of tables and charts depicting the outcomes of the analysis. Using GIS, we will conduct an analysis on call demand concentration of fire, EMS, and non-emergency calls. The results of the GIS analysis are presented in GIS mapping illustrations. Examples are identified in the following tables and figures.

Table 4. Call Types

Call Type	Number of Calls	Calls per Day	Call Percentage
Breathing difficulty	9,366	25.7	8.7
Cardiac and stroke	13,665	37.4	12.7
Fall and injury	14,747	40.4	13.7
Illness and other	29,426	80.6	27.3
MVA	7,280	19.9	6.7
Overdose and psychiatric	5,146	14.1	4.8
Seizure and unconsciousness	11,070	30.3	10.3
EMS Total	90,700	248.5	84.1
False alarm	1,646	4.5	1.5
Good intent	526	1.4	0.5
Hazard	893	2.4	0.8
Outside fire	2,101	5.8	1.9

Call Type	Number of Calls	Calls per Day	Call Percentage
Public service	1,815	5.0	1.7
Structure fire	993	2.7	0.9
Fire Total	7,974	21.8	7.4
Canceled	9,235	25.3	8.6
Total	107,909	295.6	100.0

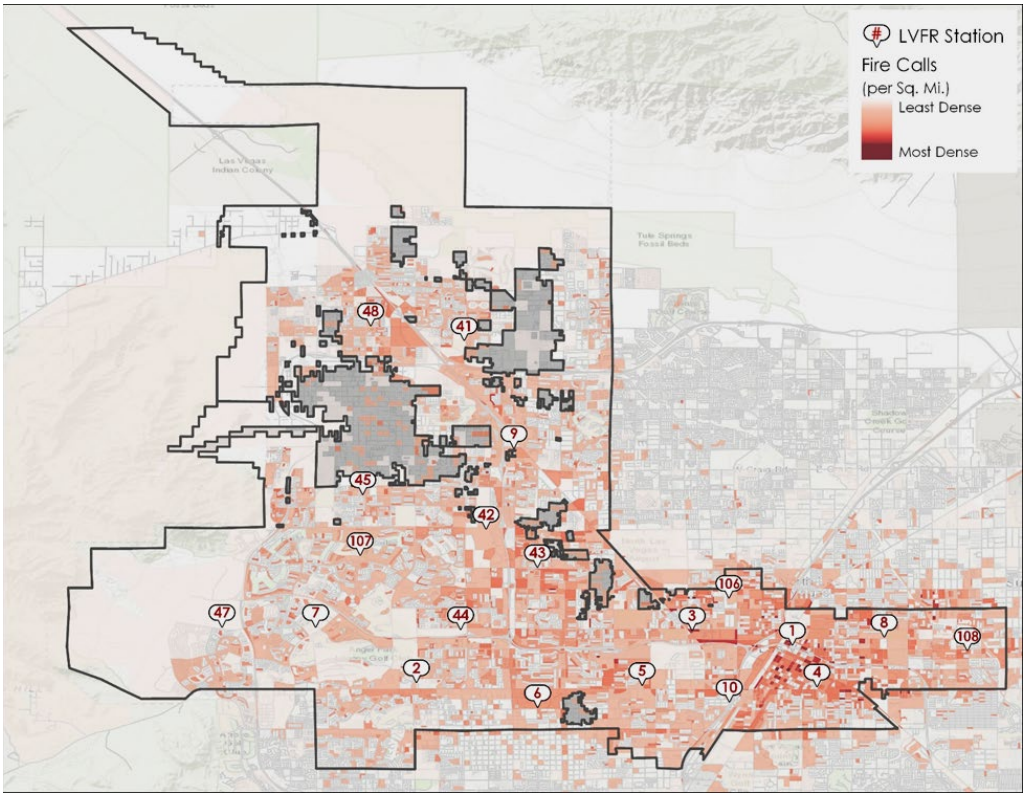

Figure 4. Density of Fire Calls

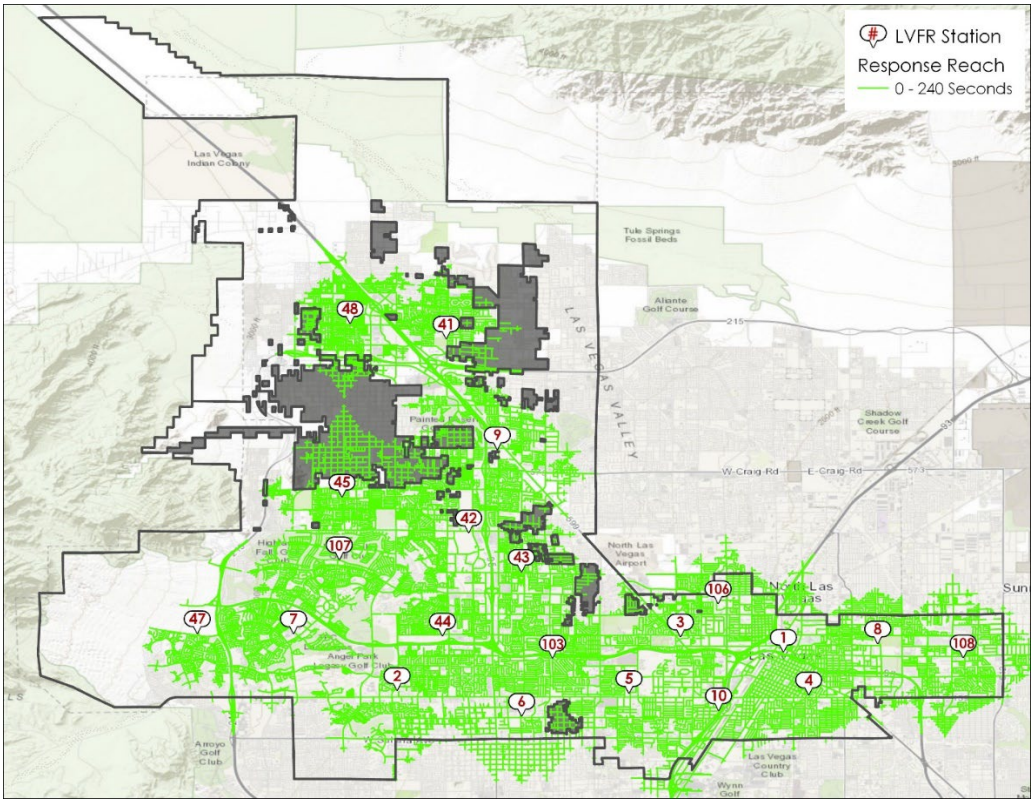

Figure 5. 240-Second Travel Time Bleed Map, City-wide Analysis

Table 5. 90th Percentile Response Time of First Arriving Unit, by Call Type (Minutes)

Call Type	Dispatch	Turnout	Travel	Total	Number of Calls
Breathing difficulty	2.4	2.0	7.3	10.6	8,053
Cardiac and stroke	2.8	1.9	7.3	10.9	11,685
Fall and injury	3.3	2.0	9.0	13.0	12,304
Illness and other	3.1	2.0	9.2	12.8	23,551
MVA	2.2	1.7	7.1	10.1	6,116
Overdose and psychiatric	10.2	2.0	8.5	18.2	3,701
Seizure and unconsciousness	3.0	1.9	7.9	11.6	9,840
EMS Total	3.1	1.9	8.4	12.2	75,250
False alarm	2.7	1.9	9.8	13.2	1,495
Good intent	3.0	1.8	9.8	12.7	410
Hazard	3.1	1.8	9.8	14.1	630
Outside fire	2.3	1.6	7.4	10.4	1,723
Public service	3.0	1.9	9.1	12.7	1,044
Structure fire	2.9	1.6	6.0	9.2	639
Fire Total	2.8	1.8	8.9	12.2	5,941
Total	3.0	1.9	8.4	12.2	81,191

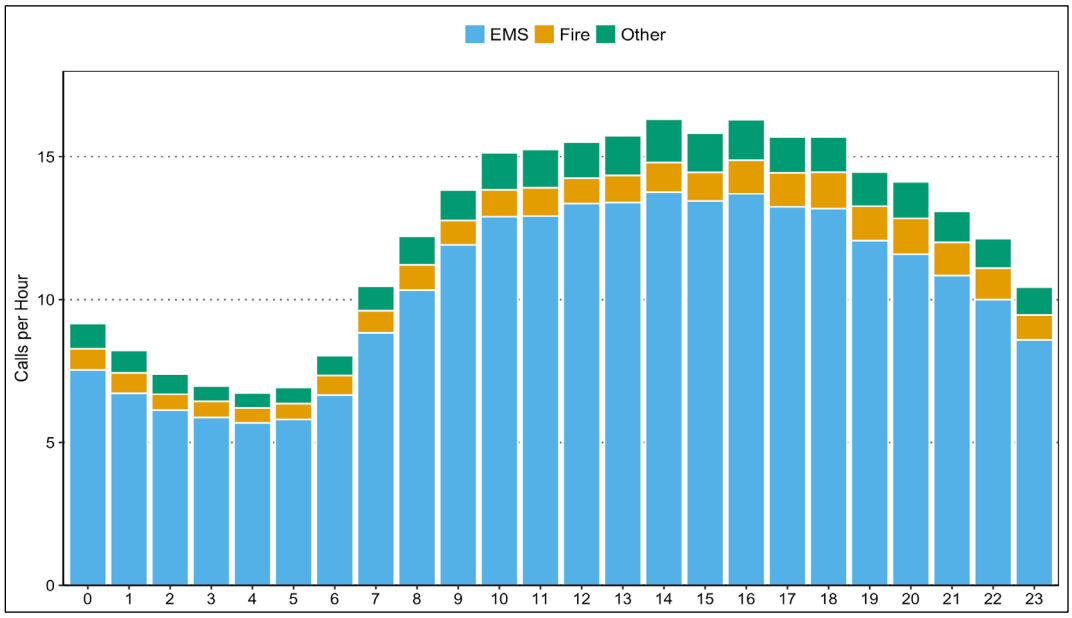

Figure 6. Call Demand by Hour of Day

3.B. Examples of Anticipated Survey Tools

CPSM uses a variety of survey tools to solicit stakeholder input for its assessments of fire departments. These may include one-on-one or group interviews, public meetings, and/or a questionnaire. For each project, we select the most appropriate survey tool(s) depending on factors such as availability of stakeholders and schedule.

3.C. Process for Identifying Key Stakeholders for Soliciting Input

Our project manager will collaborate with the City and Department to identify the specific key stakeholders for this project and to arrange for the interview schedule and location. Stakeholders may include City officials, Fire Department leadership and personnel, other City departments, community members, as identified by the City in conjunction with CPSM's assistance.

3.D. Description of Anticipated Interview Process

CPSM has conducted hundreds of stakeholder interviews. When our project manager and fire service subject matter experts conduct stakeholder interviews, we utilize an inclusionary interview process rather than force it through structured questions. Our experience guides us through a process where we gain the greatest amount of information through listening and discussion and encouraging open dialogue with the stakeholders.

3.E. Other Major Methodologies or Tools Used to Obtain Understanding of Current Operations

CPSM employs a systematic approach to evaluating a fire department's current operations. Our methodology is based on nationally recognized industry standards, guidelines, and criteria, including the Commission on Fire Accreditation's Standards of Response Coverage. We have refined our methodology based on the hundreds of public agency assessments CPSM has conducted as well as the expertise of our fire services subject matter experts. Following a systematic approach ensures that the assessments we conduct are comprehensive and that we collect, analyze, and present data in an organized format. Our subject matter experts have volumes of research data collected while conducting our studies and analyses that we have available to apply to specific projects. Our subject matter experts understand all the elements, practices, nuances, and structures in a fire department, as they themselves have years of experience as practitioners, first-line supervisors, middle managers, and senior leaders in municipal fire departments.

3.F. Proposed Benchmark for Measuring Results/Outcomes

CPSM utilizes National Fire Protection Association (NFPA) 1710 benchmark for career departments, the Center for Public Safety Excellence (CPSE) Standard of Cover elements, and Insurance Services Office-Fire Suppression Rating Schedule (ISO-FSRS) when benchmarking results/outcomes of our analysis regarding staffing, assembling an effective response force, critical tasking, and response times.

3.G. Project Deliverables

CPSM's project deliverables will include draft and final versions of the study report and presentation of the draft report to City staff and departmental personnel and to elected officials at a public workshop.

3.G.1. Draft and Final Reports

CPSM will deliver a draft copy of the report to the City and Department for review and comment.

The report will include at a minimum:

- Executive summary
- Study methodology
- Data gathered and evaluated
- Findings including a summary review of the strengths of the Department and opportunities for improvement and change
- Performance objectives including measures and compliance methodology
- Proposed changes and recommendations including best practices as well as rationale
- Supporting statistics and other visual data to fully illustrate the current situation and consultant recommendations

After presentations of the draft report (see below for more on presentations), CPSM will address comments received, finalize the report, and deliver the final report in both electronic (MS Word and PDF formats) and hard copies (five copies) as required.

3.G.2. Presentations

CPSM will prepare and conduct formal presentations of the draft study report findings and recommendations to 1) City staff and departmental personnel and 2) elected officials at a public workshop. We prepare in advance of our presentations to understand the intended audience and their specific needs and goals. This helps us present information in a manner that is sensitive to each presentation's audience composition, interests, and goals. Our presentation will incorporate use of multi-media tools to ensure that the presentation communicates pertinent information to the audience effectively both in terms of content and interest. CPSM's subject matter experts are accustomed to providing such presentations to similar audiences for our other municipal clients, and our presentations have been very well received both by our clients and stakeholder attendees. We will coordinate with the City on the schedule, attendees, location, etc. for each presentation.

4. Timeline

Table 6 provides a draft timeline for completion of the Biddeford Fire Department Assessment, submittal of the draft and final reports, and presentations on the draft report. After contract award, we will discuss the draft timeline with the City, and based on the discussion, we will submit a revised final schedule.

Table 6. Study Time Frame

Milestone Timeline	Milestone or Task	Description
1	Full execution of the agreement	Agreement completed between client and CPSM.
2 **7–14 days**	Project Kickoff Meeting	CPSM will conduct a virtual meeting with client's project team. Our project manager will kick off the project by introducing our team, clarifying, and confirming expectations, detailing study parameters, discussing our proposed approach and schedule, and commencing information and data gathering.
3 **7 days**	Administrative, Operational, and Response Data Requests *We will provide instructions for uploading materials to our cloud file storage system.*	Immediately following the kickoff meeting, our Fire/EMS Project Manager will deliver an information request to the client. This request will provide us with a detailed understanding of the Department's relevant policies, practices, organization, management, staffing, etc. Additionally, our Data Analysis Lead will submit a preliminary data request, which will evaluate the quality of the CAD system data. This will be followed by a comprehensive request for data from the CAD system and the department's NFIRS report information to conduct a response and workload analysis from these records management systems.
4 ***These two analyses overlap and are continuous until the Final Operational Report is delivered***	Response Data Analysis Commences Operational Analysis Commences	Once the Data Team is confident the CAD and NFIRS data are accurate, they will certify that they have all the data necessary to complete the analysis-Data Analysis commences. The Operations Team will review the data and information uploaded to our cloud file and begin the Operational Analysis. During this period, the Project Manager and operations team members will gather additional information as they build the background information of the Operational Report through virtual meetings, email request, and conference calls.
5 **65 days**	Deliver Draft Data Analysis Report	The Data Team will provide the client a Draft Data Analysis Report for review. The City will provide CPSM with a consolidated set of comments on the report that CPSM will address and incorporate.
6 **90 days**	Operations Team Onsite Visit	Once the Draft Data Analysis is in draft form, and the operations team has completed the background information sections of the Operational Analysis, the Project Manager will schedule an onsite visit. The purpose of this visit is to collect additional administrative and operational information as needed, conduct stakeholder

Milestone Timeline	Milestone or Task	Description
		interviews, and confirm information already recorded in the draft report.
7a 120–130 days	Deliver Draft Final Operational Analysis Report	CPSM will deliver a Draft Operational Report that includes the Data Analysis to the client. The client will provide CPSM with a consolidated set of comments on the report that CPSM will address and incorporate.
7b 140–150 days	Deliver Final Report	CPSM will deliver a Final Report to the client as specified in the proposal.
8a	Presentation of Initial Draft to City Staff and Department Personnel	CPSM will deliver a presentation of the initial report draft to the City staff and Department personnel.
8b	Presentation of Subsequent Draft to Elected Officials at a Public Workshop	CPSM will provide a formal presentation to elected officials at a public workshop to be coordinated with the City and Department.
Total Elapsed Time: 150–180 days		

5. Supporting Data

Not applicable.

Qualifications to Conduct a Fire Department Assessment

BIDDEFORD, MAINE

January 12, 2022

matrix consulting group

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matrix consulting group

January 12, 2022

James Bennett, City Manager
City of Biddeford
205 Main Street, Suite 107
Biddeford, ME 04005

Dear Mr. Bennett:

The Matrix Consulting Group is pleased to provide you with our qualifications to conduct a Fire Department Assessment for the City of Biddeford. This proposal is based on our review of the request for qualifications, background review of the City and the Fire Department and our experience working with hundreds of fire departments in Maine, elsewhere in New England and across the United States.

A review of our services, experience, and qualifications will show that the Matrix Consulting Group is highly qualified because of its extensive experience evaluating fire operations, emergency medical services, management, and resource deployment throughout the United States. Our firm was founded in 2002 and members of the project team have over 30 years' experience in consulting and municipal management.

Our team's Fire and EMS analytical experience includes over 350 projects throughout the country, including these sample assignments (with New England projects in **bold**):

Amesbury, Massachusetts
Anchorage, Alaska
Auburn, Maine
Augusta, Maine
Bedford, New York
Berlin, Maryland
Berlin, New Hampshire
Billerica, Massachusetts
Canandaigua, New York
Chelsea, Massachusetts
Clinton, Massachusetts
Estacada, Oregon
Falmouth, Massachusetts
Greenwich, Connecticut
Highland, California
Hoboken, New Jersey
Indio, California
Keene, New Hampshire
Killington, Vermont
Mason, Ohio
Meriden, Connecticut
Milwaukee, Wisconsin
Monrovia, California
Montpelier, Vermont
New Rochelle, New York
North Kingstown, RI
Pacific Grove, California
Peoria, Illinois
Plano, Texas
Portland, Oregon
Pueblo, Colorado
Red Bluff, California
Reno, Nevada
Sacramento, California
San Antonio, Texas
Somerville, Massachusetts
Springdale, Arkansas
Westport, Connecticut
Yarmouth, Massachusetts

We are also conducting fire and EMS studies in **Sandwich (MA)** and Phoenix (AZ**).**

The following points characterize our approach to conducting fire studies:

- All of the staff for our proposed team are extremely experienced, having themselves conducted up to hundreds of EMS and fire service studies.
  - The President of the firm, with 40 years of fire service analytical experience would manage the project.
  - Our lead analyst, Robert Finn, has led the analysis of numerous fire studies, include examining the opportunities for contract services or regionalization of services.
- We are a 'fact based' firm providing detailed data collection and analysis.
- We obtain extensive input from 'stakeholders' in our studies, including municipal managers and elected officials, EMS and fire service managers and staff.
- We work closely with our clients through interim reports and review meetings.

As President, I am authorized to represent the firm in negotiations.

If you have any questions, please do not hesitate to contact me at 650-858-0507 or via email at rbrady@matrixcg.net. I can also be contacted at the letterhead address.

Richard P. Brady
President
Matrix Consulting Group

1 Qualifications

This section of our qualifications provides an overview of the firm, our experience, and qualifications as well as that of the proposed project team in providing fire and emergency medical analytical services to government agencies in general and to fire service agencies in particular.

1. Introduction to the Matrix Consulting Group

The Matrix Consulting Group, founded in 2002, is a management consulting firm dedicated to enhancing the efficiency and effectiveness of local governments, for their employees and the citizens they serve. Key elements of our approach to working with local governments in general and fire service agencies in particular include:

- We are specialists, not generalists. Each member of our proposed project team has experience conducting scores of fire department reviews. As described later in this proposal we have conducted over 350 fire studies, many in New England.
- We maximize field time with our clients, typically devoting over half of our project budgets to obtain client input through interviews and data collection.
- We take pride in exceeding expectations in every project.
- We have a strong commitment and record of providing assistance to our clients to implement appropriate solutions to organizational and management issues.
- Our corporate headquarters are in California. We also have offices in Massachusetts, North Carolina, Texas and Oregon. We are incorporated in both California and Massachusetts.
- Currently, we have 20 full time and 8 part time staff.

While we provide a wide variety of services to local government, the analysis of public safety (police and fire) services is our largest service area. This is described in the following section of this proposal.

2. Fire Service Analytical Experience

The Matrix Consulting Group has conducted over 350 fire and emergency medical

services studies. A summary of the Matrix Consulting Group's fire and emergency medical services analytical experience in recent years is provided in the table below (with New England projects in **bold**):

Amesbury, Massachusetts	**Greenwich, Connecticut**	Pacific Grove, California
Anchorage, Alaska	Highland, California	Peoria, Illinois
Auburn, Maine	Hoboken, New Jersey	Plano, Texas
Augusta, Maine	Indio, California	Portland, Oregon
Bedford, New York	**Keene, New Hampshire**	Pueblo, Colorado
Berlin, Maryland	**Killington, Vermont**	Red Bluff, California
Berlin, New Hampshire	Mason, Ohio	Reno, Nevada
Billerica, Massachusetts	**Meriden, Connecticut**	Sacramento, California
Canandaigua, New York	Milwaukee, Wisconsin	San Antonio, Texas
Chelsea, Massachusetts	Monrovia, California	**Somerville, Massachusetts**
Clinton, Massachusetts	**Montpelier, Vermont**	Springdale, Arkansas
Estacada, Oregon	New Rochelle, New York	**Westport, Connecticut**
Falmouth, Massachusetts	**North Kingstown, RI**	**Yarmouth, Massachusetts**

We are also currently completing fire studies in **Sandwich (MA)** and Phoenix (AZ).

3. Project Staff

The Matrix Consulting Group proposes to utilize a senior project team, including our President, who will serve as the Project Manager and be involved throughout the project. The project team includes former chief officers of career departments and a GIS Analyst.

This project team has worked with hundreds of fire departments across the country, including city, county and regional fire departments. The organization chart, which follows, depicts the project team and summary of their experience:

Summary of Project Team Qualifications

Richard Brady
President
Project Manager

Mr. Brady has been providing management consulting services to municipalities for 40 years across all governmental functions, including over 250 fire and EMS studies, department clients, conducting costs and financial analysis, organizational and operational assessments, organizational structure reviews, feasibility studies, technology and equipment reviews, and performance audits.

He has led all of our fire studies in New England. This includes recent fire department assessments for Auburn and Augusta (ME), Boston (MA), Chelsea, Somerville, Truro, Provincetown, Wilbraham, Yarmouth and Haverhill (MA), Meridian and Westport (CT), North Kingston (RI), and Dinuba (CA).

He has a Doctoral Degree from Oxford University and a BA from Cal State, Hayward.

Robert Finn
Senior Manager
Lead Analyst

Robert Finn is a Senior Manager with the firm. He has over 30 years' experience as a public safety manager and consultant. Mr. Finn is a former Fire Chief and has led our fire service consulting practice the past 6 years. He has conducted over 75 fire departments reviews in Massachusetts and across the country.

Mr. Finn has recently worked on fire and EMS department studies in Auburn (ME), Big Bear Lake (CA), Boston, Chelsea, Falmouth, Yarmouth and Billerica (MA), Lincoln (RI), Westport (CT), Butte County, Pacific Grove and Dinuba (CA), Davenport (IA), Perrysburg (OH),) and Winter Garden (FL).

He holds an MBA and BA in Public Safety Administration from Grand Canyon University in Phoenix, AZ.

Terry Lewis
Senior Consultant
Project Analyst

Terry Lewis is a Senior Consultant with our firm and has over 30 years' experience as a consultant and fire service manager. He worked in all capacities of the fire service including financial management, fire prevention, public education, and operations, eventually becoming Fire Chief.

Mr. Lewis was a member of our department study teams for Yarmouth and Billerica (MA), Westport (CT), Butte County (CA), Davenport (IA) Matanuska-Susitna Borough (AK), King William County (VA), Mesa County (CO), Merced County), Santa Paula, and West Sacramento (CA).

Mr. Lewis has a Bachelor of Science in Fire and Safety Engineering Technology and an Associates in Accounting from the University of Cincinnati.

Ryan Peterson **Consultant** **Project Analyst**	Ryan Peterson is a Consultant with the Matrix Consulting Group, specializing in GIS and data analytics. He has over five years of experience in conducting geospatial analysis for local and regional governments, having previously worked for the City of Portland and City of Beaverton, as well as the Tri-County Metropolitan Transportation District of Oregon (TriMet). Mr. Peterson has recently worked on fire analytical projects for West Sacramento (CA), Mequon (WI), Atherton (CA) and New Rochelle (NY). He holds a BS in Geography/GIS from University of Oregon, as well as a GIS Graduate Certificate from Portland State University, and a certificate in programming from the Epicodus School.

Detailed project team resumes are included in the following pages.

RICHARD P. BRADY, PHD

PRESIDENT, MATRIX CONSULTING GROUP

Richard is the Matrix Consulting Group's Founder and President. Richard has been a management consultant to local government for more than 40 years. Prior to joining the Matrix Consulting Group, he was the MAXIMUS national Vice President in charge of its local government consulting practice, and before that the managing partner of the California-based management consulting firm of Hughes, Heiss & Associates. The vast majority of his work is in the fire services, law enforcement, criminal justice, and public safety areas.

Richard has conducted master planning and management audits, each of which have included evaluation of all departmental programs; service level analysis for fire suppression and emergency medical services; financial analysis of all fees and revenues; and training program evaluation. Also included review of emergency management practices.

Experience Highlights

Berlin, NH: Richard served as the Project Manager for this engagement. He was responsible for oversight of all aspects of the project that examined the feasibility of consolidating EMS and Fire Services. Key findings/ achievements of the project:

- Development of facility plan for the consolidated operation.
- Financial analysis for transfer of capital assets.
- Financial analysis of the costs and savings of a consolidated operation.

Bellingham, WA: Richard served as the Project Manager for this project that developed a strategic plan for the Fire Department. Key findings/achievements include:

- Developed a 10-year strategic plan for the Department and contract Fire District.
- Recommended multiple improvements to the response system.
- Provided analysis and recommendations to enhancements to emergency management operations.

Role on This Engagement: Richard will serve as the project manager.

Relevant Clients:

AL	Birmingham
CA	Big Bear
CA	Butte County
CA	Monterey
CA	Merced County
CA	Placer County
CA	San Jose
CA	Sacramento
CA	Tuolumne County
CO	Mesa County
CO	Steamboat Springs
CT	Greenwich
CT	Westport
FL	Coconut Creek
GA	DeKalb County
GA	Peachtree City
IA	Davenport
MA	Billerica
MA	Boston
ME	Augusta
MI	Sterling Heights
MN	Hennepin County
MO	Columbia
NY	New Rochelle
OH	Cleveland
OH	Columbus
OR	Jefferson County
OR	Portland
WA	Bellingham
WI	Oshkosh

Years of Experience: 40+

Education:

BA, California State University, Hayward
Ph.D., Oxford University, United Kingdom

ROBERT FINN

SENIOR MANAGER, MATRIX CONSULTING GROUP

ROBERT is a Senior Manager with the Matrix Consulting Group and previously served as the Chief of the Southlake (TX) Department of Public Safety. Mr. Finn has a strong educational background coupled with a successful track record that includes strategic planning, budgeting, change management, community relations, and building collaborative partnerships. Robert has over 30 years of fire service and consulting experience covering all aspects of the fire service industry.

Robert's relevant experience includes serving the City of Southlake, Texas for 25 years in the following roles:

- Chief of Police (2008 to 2011)
- Chief of Fire Services (2004 to 2008)
- Lieutenant of Professional Standards (1999 to 2004)
- Lieutenant of Training (1995 to 1999)
- Coordinator of Emergency Medical Services (1993 to 1995)
- Firefighter / Driver / Paramedic (1987 to 1993)

Billerica, MA: Robert was the lead analyst on this project aimed at an assessment of the Fire Department. Key findings/ achievements of the project:

- Increasing minimum staffing on engine companies to 3 personnel.
- Relocation of a station to improve response times and reduce risk of flooding.
- Elimination of a redundant Captain position.

Westport, CT: Robert was the lead analyst on this study develop a strategic plan for the Fire Department. Key findings/achievements include:

- Changes to the deployment model to improve services.
- Improvements to the record keeping and data reporting systems
- Relocating Fire Prevention to centralize the service in the Town.
- Implementing electronic inspection and plan review processes.

Role on This Engagement: Robert will be the lead analyst on this project.

Relevant Clients:

AK	Anchorage
CA	Big Bear
CA	Huntington Beach
CA	Mercer County
CA	Monterey
CO	Mesa County
CO	Steamboat Springs
CT	Greenwich
CT	Westport
GA	DeKalb County
IA	Davenport
MA	Billerica
MA	Boston
MA	Yarmouth
ME	Auburn
MI	Sterling Heights
NC	Raleigh
NY	Bedford
NY	New Rochelle
OH	Cleveland
TX	Possum Kingdom
TX	San Antonio
WA	Bellingham
WI	Oshkosh

Years of Experience: 30

Education:

MBA, and BS, Public Safety Administration, Grand Canyon University

Professional Association:

National Fire Protection Association (NFPA)

International Association of Fire Chiefs (IAFC)

Center for Public Safety Excellence (CPSE)

TERRY LEWIS

SENIOR CONSULTANT, MATRIX CONSULTING GROUP

TERRY has over 30 years of fire service and consulting experience. He previously served as the Chief of the Henderson (KY) Fire Department. Terry has a strong educational background coupled with a successful track record of leading an agency of 60 personnel in a community with 30,000 residents. Terry brings a wealth of knowledge and experience evaluating the staffing and operational needs of fire and EMS operations.

Terry's relevant experience includes serving the City of Henderson, Kentucky as Fire Chief for 10 years. He began his career with the Loveland-Symmes (OH) Fire Department where he advanced through the ranks until being appointed as Chief of Henderson. He has experience in the following areas:

- Administration
- Fire Prevention
- Financial Management
- Operations
- Hazardous Materials

Experience Highlights

Yarmouth, MA: Terry was a technical analyst on this project aimed at an assessment of internal and shared service improvement opportunities. Key findings/ achievements of the project:

- Identification of consolidation opportunities in Emergency Communication Services.
- Staffing requirements for a peak hour EMS unit.
- Development of service requirements, staffing needs, and costs of operating a during winter and peak summer months.

Oshkosh, WI: Terry was a technical analyst on this study to look at the staffing, operations, and deployment of the fire department. Key findings/achievements include:

- Centralizing fleet and facility maintenance in the City.
- Discontinuing the interfacility EMS transfer program.
- Reorganization to improve reporting relationships in the Department.
- Deployment changes to improve gaps in coverage in the City.

Role on This Engagement:

Terry will be a technical expert for fire operations.

Relevant Clients:

CA	Atherton
CA	Big Bear
CA	Butte County
CA	Dixon
CA	Huntington Beach
CA	Mercer County
CA	Monterey
CA	Placer County
CO	Steamboat Springs
CT	Greenwich
CT	Westport
FL	Coconut Creek
GA	DeKalb County
IA	Davenport
MA	Billerica
MA	Boston
MA	Chelsea
MI	Sterling Heights
NC	Raleigh
NH	Berlin
NY	New Rochelle
OH	Cleveland
OR	Estacada
TX	San Antonio
WA	Redmond
WI	Oshkosh

Years of Experience: 30+

Education:

BS Fire Technology, AS Accounting, University of Cincinnati

Professional Association:

National Fire Protection Association (NFPA)

International Association of Fire Chiefs (IAFC)

Center for Public Safety Excellence (CPSE)

RYAN PETERSON

CONSULTANT, MATRIX CONSULTING GROUP

Ryan is a data and GIS analyst with the firm and is involved in all emergency medical and fire projects. He performs data and GIS analysis for all public safety studies and is responsible for the creation of our response time analysis and graphics. Ryan has over eight years of geospatial and data analysis for public safety agencies. Prior to joining the Matrix Consulting Group in 2017 he was a GIS analyst for several local government agencies in the Pacific Northwest.

Experience Highlights

Berlin, NH: Fire and EMS Service Study

Ryan was a data and GIS analyst on this project that examined the feasibility of consolidate private EMS services with the Town Fire Department.

- Conducted the calls for service data analyst to determine the location for EMS and Fire calls for services.
- Geographic analysis to determine response time capabilities
- Developed three projection scenarios to determine future workload and staffing models.

Jefferson County, OR: Fire and EMS Feasibility Study

Ryan was a data and GIS analyst on this project that examined the feasibility of consolidating private EMS with the County Fire District.

- Conducted calls for service and unit utilization analysis.
- Conducted financial analysis related to costs of providing both services now and into the future.
- Developed mapping scenarios to illustrate travel time performance from various station locations.

Role on This Engagement:

Ryan will serve as the GIS and data analyst to help develop scenarios on current performance and future needs.

Relevant Experience:

AZ	Buckeye
AZ	Peoria
CA	Atherton
CA	Big Bear
CA	Monterey
FL	Coconut Creek
FL	Highland Beach
HI	Kauai County
IA	Davenport
IL	Rockford
MA	Billerica
MA	Yarmouth
MD	Berlin
NH	Berlin
OH	Columbus
TX	Fort Worth
TX	Lewisville
TX	Travis County
WA	Bellingham
WA	Mercer Island
WA	Tacoma
WI	Mequon
WI	Oshkosh

Years of Experience: 8

Education:

BS in Geography, University of Oregon

4. Project References

This table below provides references for the quality and depth of our work.

Berlin, New Hampshire Fire Service EMS Study James Wheeler City Manager (603) 752-7532	The Matrix Consulting Group was retained by the Town of Berlin to determine if EMS transport services should be provided by the Fire Department as opposed to contracting with a 3rd party private provider. The study examined facility needs, training requirements, current costs and revenues and the process for acquiring capital equipment needed to assume transport services. The analysis showed that moving EMS transport services into the Fire Department would cost the City an additional $8,673 the first year, but then generate savings of $60,000 - $100,000 in the subsequent five years.
Yarmouth, Massachusetts **Fire and Police Department Operational Reviews** Chris Dwelley Assistant Town Manager (508) 398-2231	In this study, the firm developed a comprehensive assessment of internal and shared service improvement opportunities for both Police and Fire. In the Fire Department study, the project team validated current staffing, deployment and management of all operational areas. Key recommendations included establishing performance targets, staffing a peak hour unit, reclassifying an inspector position, enhancing apparatus replacement plans and using call personnel to assist in fire prevention activities. The project team also examined short- and long-term opportunities for internal and external shared services. Most significant among these was a proposed consolidation of police and fire communications.
Jefferson County, Oregon Fire and EMS Feasibility Study Jeff Rasmussen County Administrator (541) 475-2449	The Matrix Consulting Group was retained by Jefferson County to determine the feasibility of the Jefferson County Fire District #1 and the Jefferson County Emergency Medical Services District to consolidate into a single district. The analysis indicated that the continued rising costs of providing emergency services in the County would result in both agencies reaching a point of deficit spending in the next several years. The analysis also showed there would be an improvement in operating costs as compared to revenue in a consolidated environment and recommended seeking voter approval to consolidate the districts with an effective tax rate of $2.1847 per $1,000 in assessed value.

We would be pleased to provide additional references for fire and EMS study projects completed.

5. Similar Projects

The following links are provided to allow review of two recent fire studies completed by our firm, and this proposed project team.

Oshkosh, Wisconsin

https://drive.google.com/file/d/1Izda8DLvHSdeo7chWQS-9Gb8ccKR7yUS/view?usp=sharing

Yarmouth, Massachusetts

https://drive.google.com/file/d/10GZoQ9UnpZaY8euaH_E9pusszypQcvhj/view?usp=sharing

Fremont, Nebraska

https://drive.google.com/file/d/1UdSEI2oO7JH8VxI_DcO6siNuE7XpVSO2/view?usp=sharing

2 Project Methodology

This section illustrates our general approach to conducting fire staffing studies, as detailed project work plan and our recommendations for annual maintenance.

1. General Approach to Conducting the Study

Our place in the government consulting industry is based on our experience and our approach to project management and analysis. While more fully explained in later sections of the proposal, these strengths can be summarized as follows:

- As a team, we have collectively completed over 350 fire service staffing, operational assessments and master plans that include all facets of fire, rescue, and emergency medical operations.

- We are specialists, not generalists. Each staff member of our proposed team has experience conducting dozens of studies related specifically to fire operations, facility assessment, and master plans. Additionally, our team includes members who have served as former fire and public safety chiefs, facility planners, architects, engineers, and cost estimators which provides an in-depth understanding of local government operations, culture, and challenges.

- Our detailed approach to providing consulting services is client centered, recognizing that each client environment is unique. Our methodology includes:

  - Extensive interviews with staff and external stakeholders.
  - Detailed understanding of the fire, rescue, ems operations and needs.
  - Fact-based analysis of workloads, service levels, and costs.
  - Extensive evaluation of current facilities, locations, and determination of facility and space needs.
  - Collaboration with the client as the study proceeds, including obtaining buy-in from staff and stakeholders for our recommendations.
  - Detailed reports that provide a discussion of our analysis, the recommendations developed and an implementation plan to guide our client in making necessary changes over the planning horizon.

We are known for the depth and insight of our analysis and our client responsiveness. We believe very strongly in the science of our craft. As a result, we approach each project utilizing the following techniques as a baseline:

- **Project Management**: One critical success in conducting a project of this size and complexity in an efficient, timely, and effective approach to project management. The Matrix Consulting Group utilizes project management approaches that assures we have minimum impact on staff and their daily operations, while providing effective coordination of the project. Examples include the development of a project schedule in advance of formal project kickoff, distribution of a data collection after understanding what data is available and coordinating onsite efforts well in advance. All project work activities are defined in advance and tied to each project team member, deliverables, the schedule and the budget. Our approach to project management keeps all parties apprised of current project status (formally and informally) and when to expect deliverables.

- **Information Gathering**: Equally important to the success of the project are the methods that we will use to collect, analyze, and present information in order to formulate findings and develop and assure acceptance of recommendations. The Matrix Consulting Group has developed and fine-tuned over the years a number of information-gathering tools and techniques that enable us to gather information efficiently and quickly. They include the use of checklists that specify the types of data and other quantitative information we typically seek in order to evaluate workloads; development of interview guides to ensure that we capture the necessary objective and subjective information required to understand each position, process, and major operational areas; and observing current processes to identify strengths and improvement opportunities

- **Interaction**: Continual communication between the client and project team is a critical component of this study. We will conduct numerous interviews with management and supervisory staff and line staff from the Fire Rescue staff, City management, elected and appointed officials. Additionally, we will have on-going communication with the City's project manager and steering committee related to project status and review of project deliverables. Additionally, we dedicate significant time conducting interviews and meetings with a wide variety of stakeholders to gain an understanding of perspectives on current services and challenges.

- **Quality Control**: Our project manager designs and personally reviews all interim and final products before they are delivered to the client. This is done to ensure a quality document and that all services and analytical efforts outlined in our proposal have been fully completed.

- **Implementation**: Our projects result in implementable recommendations and solutions for our clients. We develop an implementation action plan that identifies the resources required for the implementation, degree of difficulty, and a time frame for successful implementation. The implementation action plan is critical, especially for recommendations that include significant capital and reoccurring cost. The action plan will provide strategy and management tools to successfully complete the implementation. Furthermore, our project team will remain available for consultation during the implementation phase.

Our approach to each project results in implementable recommendations, with approximately 85% of recommendations being implemented.

2. Project Work Plan

The task plan, which follows, provides an outline of the steps that the project team would take to conduct and complete this staffing study. Following the task plan is a suggested schedule for completion of the study.

Task 1 | Initiate the Project and Document Fire and Emergency Medical Service Trends and Issues That Led to this Study.

In order to conduct the study of the current and future facility, staffing and deployment needs of the Biddeford Fire Department, the project team will first develop an initial understanding of the Department and its service environment, as well as seek input on existing service levels and potential issues from Department staff and key stakeholders. This task, which involves on-site time by the project team, allows for an opportunity to learn about the unique characteristics, fire and EMS programs, and other services provided by the Department. This process includes the following elements:

- Interviews with the Mayor and other elected officials (if desired) to obtain views on fire and EMS service issues and improvement opportunities. Other external stakeholders identified by the City and Department would also be interviewed.
- Interviews with the City Manager, Fire Chief and command staff in order to obtain their views on service issues and improvement opportunities in the department.
- Interview City staff to gain an understanding of financial, human resources, community development and planning in the City.
- Interview leadership at regional and State service providers to obtain views on regional opportunities for service delivery and options for Biddeford to contract

out for services. We will work with the Department and City to identify these potential partners.

- Conduct a kick-off meeting with the project steering committee, including a review of project objectives, approach, interim deliverables, and schedule. It should be noted that we will meet with and brief the team at key steps in the study process.

These initial interviews will focus on determining individual attitudes toward current fire and EMS services in Biddeford and organizational considerations, including:

- Adequacy of existing service levels, including responsiveness to the community.
- Ability to effectively recruit and retain paid call members.
- Issues relating to deployment and service consistency in the City.
- Other issues with respect to emergency and/or special operations.

The project team will also collect various documents, including departmental goals and objectives statements, as well as other organizational materials and budget documents. During these initial meetings, the project team will identify key community members for input into the study and determining whether the current Fire and EMS system is meeting community needs.

> **TASK RESULT**
>
> **Based on the results of these interviews and initial data collection, the project team will prepare a detailed project schedule and workplan to organize the project team responsibilities and timelines.**

Task 2 | Document the Fire Department's Staffing, Organization and Deployment Plan in Biddeford.

To establish a basis for structuring and comprehensively evaluating the fire and EMS operational needs in Biddeford, we will develop a profile of the Fire Department. We will gather and analyze detailed information about the organizational structure, operations and service levels of the Fire Department to use as a basis for planning how services should be delivered in the City. In order to understand the system of fire and EMS service delivery and the basis for alternatives to the delivery of services, we will document:

- An overview of the service delivery systems in terms of service levels, deployments, scheduling and operational management of these systems.

- The organization of the Department and lines of authority that run through them.
- The staffing and deployment plan of the Fire Department.
- Workloads and service level performance indicators.
- Roles and responsibilities of career and paid call staff.
- Basic and in-service training provided to firefighters as well as any cross training.
- Inventory of current vehicles, equipment and facilities in use by the Department.
- All costs related to the operation and capital expenditures of the Fire Department over the past three (3) years.

> **TASK RESULT**
>
> **The data will be profiled in a summary narrative and statistical portrait of fire and EMS services in Biddeford. This important first deliverable in the project will be reviewed with the City and Fire Department to ensure accuracy.**

Task 3 | Evaluation of Community Risk

A key to this analysis is the development of a detailed understanding of workloads and service levels. To develop this level of understanding, we will document the current community characteristics and analyze workload and service levels as described in the following illustrative subsections.

(1) Review of Services Provided.

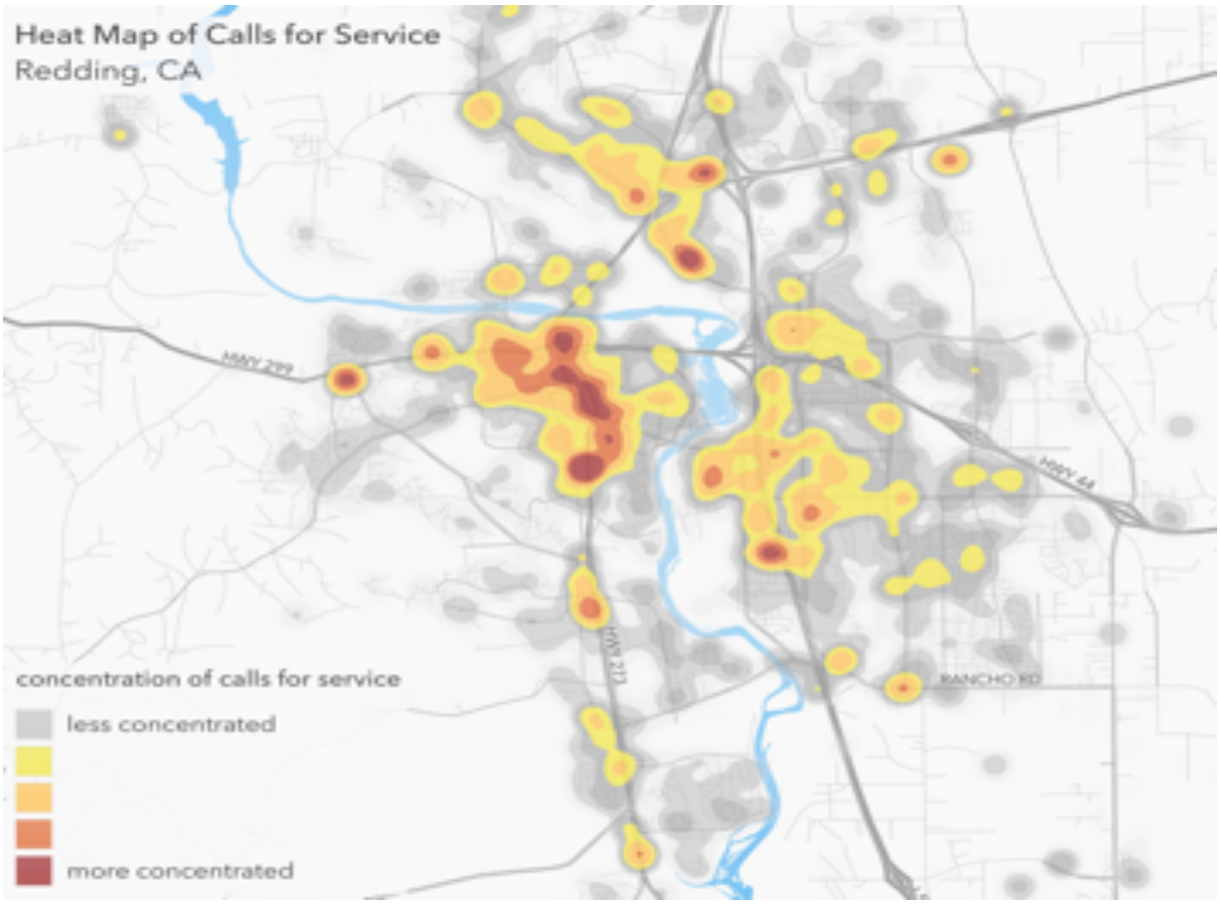
The project team will work to fully understand the services currently provided by the Department and conduct evaluation on these services. Areas to be considered include:

- Review of firefighter career and paid call staff distribution and assignment
- Review and evaluation of administration and support staffing levels
- Review and evaluation of operational staffing levels
- Review staff allocation to various functions in the Department
- Review the staff scheduling methodology in the Department
- Review of any current performance goals, objectives and measurements
- Review of the current staffing and service delivery compared to industry standards and benchmarks

(2) Conduct a Community Risk Assessment.

The project team will work to fully understand the range of hazards found within the Fire Department's area of responsibility and growth projections for the City and contract areas. Specific steps to understanding the fire and non-fire risks present in BFD's service area will include:

- Review of local planning/zoning data combined with Geographic Information System (GIS) data to evaluate the physical risks of the community, including:
  - Overall geospatial characteristics including political and growth boundaries, construction and infrastructure limitations
  - Topography including response barriers, elevation extremes and open space/Wildland interface
  - Transportation network including roads, rail lines and waterways
  - Evaluation of physical assets protected
- Review and interpretation of available census and community development data indicating
  - Population history
  - Census-based population and demographic information
  - Community planning-based population information
  - Transient population and demographic information
  - Population density
  - Community land use regulations
  - Locations of mid-rise and high-rise occupancies
  - Occupancy types by land use designation
  - Hazardous substances and processes
  - Non-structural risk in the service area
- Evaluation of the workloads of the BFD and how it relates to risks, including:
  - A **Demand Study** that will analyze and geographically display the current service demand by incident type and temporal variation



- Development of a matrix for the common and predictable risk types and corresponding staffing, resource needs and time standards to mitigate these types of emergencies. This will allow comparison of the current deployment capabilities against community risks, call demand and community expectations

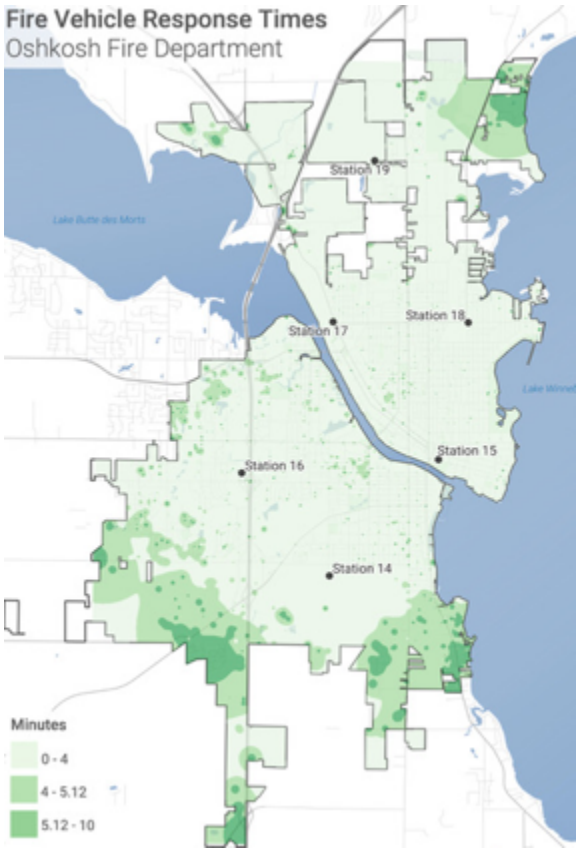
- We will also separately evaluate the demand for services at other key target hazards.

- Summary of the current available resources and how they correspond to the community risk profile

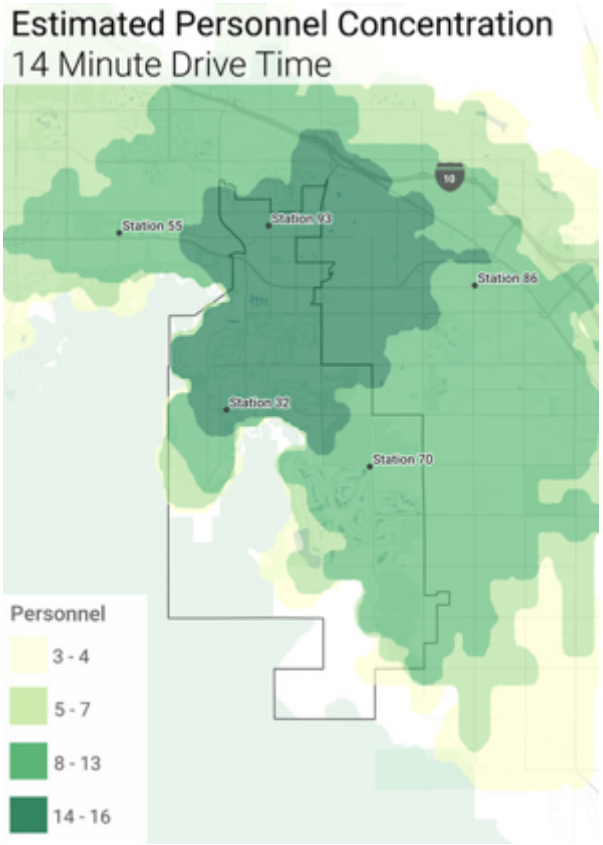
(4) Review of Historical System Performance

The project team will review and make observations in areas specifically involved in, or affecting, service levels and performance. This will include reviewing the impact of traffic calming strategies and other modifications that can impact response travel times. Key areas to be reviewed will include:

- **Distribution Study –** Overview of the current facility and apparatus deployment strategy, analyzed through GIS software, with identification of service gaps and redundancies in initial unit arrival.



- **Concentration Study**
  - Analysis of response time capability to achieve a full effective response force
  - Analysis of company and staff distribution as it relates to the assembly of an effective response force



- **Reliability Study**
  - Analysis of current workload, including unit hour utilization of individual companies
  - Review of actual or estimated failure rates of individual companies
  - Analysis of call concurrency and the impact on the ability to assemble an effective response force an impact on resource exhaustion
  - Analysis of actual system reflex time performance both system wide and by individual companies
- Review of current automatic and mutual aid documents to determine the ability of outside agencies to assist in the delivery of emergency services and development of an effective response force and development of maps illustrating the capability of these resources.

TASK RESULT

This task will conclude in an interim project report showing the current conditions and capabilities of the Biddeford Fire Department, including an apparatus assessment. This document will be delivered to the City, Department and Project Steering Committee for factual review to ensure that our understanding and analysis is factual.

Task 4 | Assess the Fire Department Staffing and Deployment Methods

By this point, the project team will have the data needed to evaluate the current staffing levels and deployments in each operational area of the Fire Department. This task will involve the following approaches:

- Evaluate existing fire call response and service levels.
- Determination of personnel net availability, which includes analysis of factors such as a leave, training, administrative tasks and turnover that impact actual on-duty staffing levels.
- Compare call and service demands and identify opportunities for changes in resource deployment.
  - Based on an understanding of demand and field unit deployment, evaluate existing staffing policies, scheduling, unit deployment and response approaches.
  - Evaluate the current and expected use of overtime and on call utilization to meet daily staffing needs.
- Analysis of time used by fire units to handle workloads and provide service effectively, including:
  - Call processing, turnout, and travel times by priority level and classification.
  - Total spent handling calls by units (unit hour utilization).
  - Consistent allocations workloads among field units.
- In other services, analysis of the ability for staffing levels to support effective operations management:
  - Are spans of control within targeted ranges for individual functions?
  - Are staffing levels sufficient to meet minimum staffing without the frequent use of overtime, and what standards are used to determine requirements?

  - How are scheduling systems used for career and paid call personnel?
  - How are priorities and operational decisions supported by data-driven techniques?
- Analyze training programs and the implications for career development as well as meeting community needs.
- Analyze opportunities to adjust the mutual aid and automatic aid response system in the region or where regionalization of services is a possibility.
- Review and evaluate the personnel management practices in the Department for career and paid call personnel, including recruitment practices, selection practices, promotional practices, succession planning, health and wellness, retention programs and performance evaluations.
- Identify any issues that are impacting the effective use of personnel and the delivery of services in the Fire Department.

TASK RESULT

The result of this task would be the development of a staffing, scheduling and deployment model for sworn and non-sworn staff in the Fire Department to include recommended staffing levels for each organizational area and responding to calls with apparatus other than ladder and engine companies.

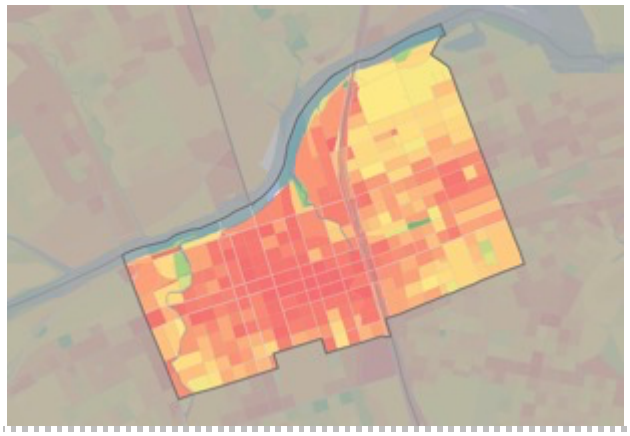
Task 5 Develop a Projection of Current and Future Station and Staffing Needs Based on Projected Growth in the City and Identified Potential Contract Communities.

The unique factors of a community shape the service environment that public safety personnel operate in, and as a result, there is not a one-size-fits-all approach to identifying strategic planning.

The modeling system we have developed to determine the impacts of development and growth on fire service demands is the combined product of using advanced technical capabilities and our experience in working with local government clients.

Key aspects of the model employed to create an accurate and defensive model for planning service and personnel needs include the following:

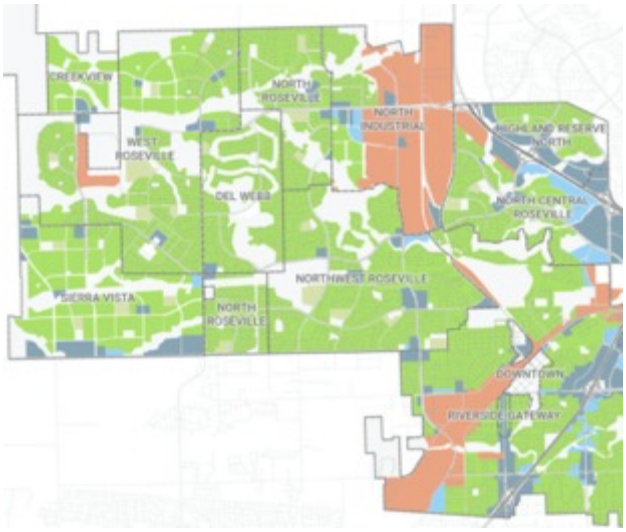
Illustrative Factors Considered to Project Future Staffing Needs



Geographic Analysis of Service Needs

In order to model the effects of the anticipated development projected in Biddeford, it is critical to understand the rates at which existing and similar developments generate workloads and other public safety service needs.

Our analysis will utilize a GIS-centered approach to examine geospatial trends in service demand.

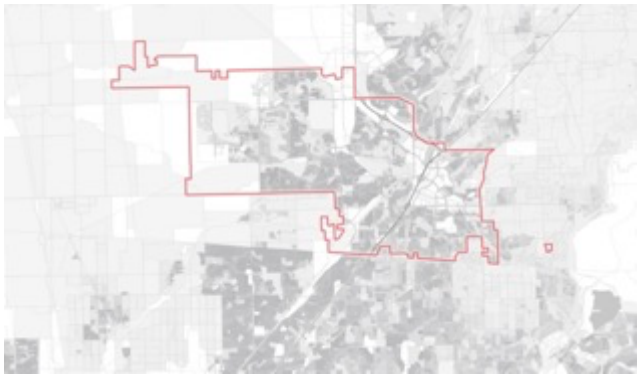


Land Use and Redevelopment

Different types of residential, commercial, and industrial zoning spaces have unique impacts on public safety service needs.

We will meet with Biddeford Planning officials to understand how land is used currently, as well as the configurations of the anticipated development project, in order to accurately model how these needs will evolve.

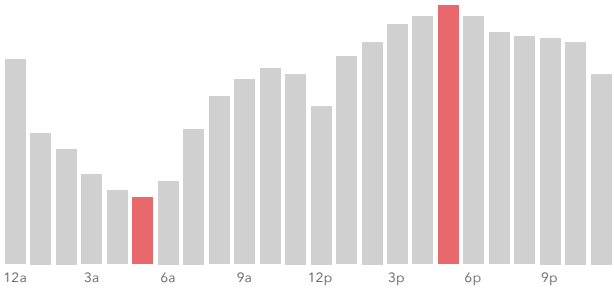
The data collected from Planning and other resources will form the basis of our GIS model of how fire service needs will evolve over the projection timeframe.



Regional Interactions

Understanding the context of the community within its surrounding region is essential to forecasting its planning needs.

This includes developing an understanding of factors such as the daytime working population and effects on field resource demands in the mixed-use environment of this proposed project.



Workload-Based Projections

Rather than base projections for future staffing or facility needs on a simple ratio such as firefighters per capita, our analysis builds staffing needs from how workload changes – whether driven by calls for service, inspection workload, or reports and administrative workloads for other staff.

Data collected for the analysis of projected service and personnel needs includes the following:

- CAD data (up to the past three years if current CAD system has been in place for that timeframe)
- Supporting information for CAD analysis (e.g., unit code and incident type lists, incident report totals).
- Planning and land use GIS shapefiles (preferably including information such as commercial space, housing unit counts, and other key target hazard data)
- Information on planned developments, including expected timeframes for completion when possible

The project team will collect other publicly available data used for the analysis, such as current and proposed road networks, census data, and geographical features.

Is the deployment of apparatus and personnel appropriate to best meet the current and future needs of the community? We will assess the current deployment and staffing of apparatus to determine if apparatus is over or underutilized and whether re-deployment, peak hour units, seasonal units or additional or fewer units are required to meet the needs of Biddeford Each unit will be evaluated for use by time of day, day of week and seasonally to determine workload factors and whether call concurrence issues may impact the agency.

The results of the service need and staffing projections will be developed into an interim deliverable that provides comprehensive projections for facility and staffing needs to meet current service needs and provide services Biddeford over the next 10 years. The projections will be provided at multiple timeframes in order to provide for a more accurate

planning process and include options for new stations, relocation of stations or consolidation of stations. These options will include the analysis of the following:

- Continuing the combination career/paid call staffing model
- Opportunities to contract out services to enhance efficiencies
- Opportunities to regionalize staffing or deployment of resources

> **TASK RESULT**
>
> **The analysis will result in an interim deliverable that comprehensively projects Fire Department facility and staffing needs based on planned development in Biddeford and surrounding areas. The project team will review the draft deliverable with the steering committee and make revisions as needed.**

Task 6 | Develop the Final Report and Present the Results of the Study.

Once the work tasks noted above have been completed, our findings, conclusions, and recommendations will be documented in the form of a draft and final report to the City together with detailed plans for implementation, including financial impacts to both operational and capital budgetary needs.

- Executive summary describing the report, methods utilized for analysis, findings and key recommendations.
- Specific recommendations regarding:
  - Any recommended relocation of facilities
  - General location and timeline of any required future fire stations
  - Selection and deployment of each apparatus type
  - Deployment of operations personnel
  - Deployment of any special units or resources
  - Future growth projections and impact on services
- Evaluation and description of deployment options to include:
  - Benefits gained through implementation
  - Extent to which performance objectives will be achieved
  - Any potential negative consequences associated with the implementation
- Implementation plan

The report will include full detailed analysis of the items in the scope of work along with timelines and targets for implementing change and the costs or savings associated with making the change.

> **TASK RESULT**
>
> **The results of this task would be draft and final reports, which would be reviewed internally prior to making them final. We would be prepared to make a public presentation of the results at a City Council meeting and deliver five (5) bound hard copies of the final report along with one (1) electronic version of the report.**

3 Project Timeline

The Matrix Consulting Group proposes to conduct this assignment over a period of 16 weeks, but is committed to remain available to the City to assist with any issues related to the implementations of recommendations both short and long-term that are a result of this project. The following table illustrates the project timeline as proposed:

Proposed Project Schedule

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initiation	■	■														
Stakeholder Input		■	■													
Profile			■	■	■	■										
Baseline Evaluation						■	■	■	■							
Current and Future Needs									■	■	■	■				
Draft / Final Report												■	■	■	■	■

The Project Manager is responsible for ensuring each of the major tasks are completed according to the timeline established above. City staff will be needed during tasks to assist with gathering data and setting up interviews required for the project as well as reviewing interim deliverables at the end of each task.

City Council

Meeting Date: April 5, 2022
Meeting Time: 6:00 p.m.

Agenda Item No: 10.d.
Item Description: 2022.26) Discussion/Approval - Review River Wall Repair Alternatives Analysis/Recommended Extension of Contract with Weston & Sampson

Submitted by: James Bennett, City Manager
Brian S. Phinney, COO
Jeff Demers, Director of Public Works
Roby Fecteau, Code Enforce & EMA Director

Supporting Information/Documentation:

Alternatives Analysis Report by Weston & Sampson, dated March 25, 2022

Biddeford Riverwalk Retaining Wall Replacement – High Level Review, 3rd Party Review Letter dated April 4, 2022, James W. Sewall Co

Key Terms:

N/A

Executive Summary:

FEMA has approved the disaster declaration for the river wall collapse at the RiverWalk overlook. Staff is providing a project update to review the wall repair alternatives report, FEMA funding expectations, and next steps. Weston & Sampson recommends a soldier pile and lagging wall design. It happens that this design is also the lowest cost alternative. To ensure selection of the most appropriate alternative given the wall failure and other factors. A 3rd party review was requested as a "check". James W. Sewall Co., confirmed Weston & Samson's findings. Next steps include moving forward with permitting, final design once FEMA sign-off is received and construction bidding.

With funding available in the FY22 budget, staff also recommends adding a municipally funded task to Weston & Samson's Agreement for permitting repair of the known failure and erosion damage at the Mechanics Park wall. The road constructed to access the RiverWalk collapse at Pepperell runs directly by the Mechanics Park section. Moving forward with permitting will allow repair and reduced overall cost. The City's EMA director is also actively pursuing federal funding in support of the Mechanics Park section.

Detailed Review:

As a result of the storm in October of 2021, a section of the river wall supporting the RiverWalk at the location of the overlook collapsed. The City responded with mitigation activities to stabilize the failed wall section. The City's EMA director began working with the Federal Emergency Management Agency (FEMA) and the Maine Emergency Management Agency (MEMA) for funding support shortly after the event. After a lengthy and detailed

review by MEMA a request for disaster assistance was filed by the Governor with FEMA and FEMA has accepted the declaration for funding.

The FEMA review and funding process requires several steps. Upon discovery of a disaster-type event identified as eligible for possible disaster assistance, a municipality is authorized, and obligated from as a practical matter, to assess the situation and implement mitigation measures to prevent further damage. As you are aware, the City engaged Weston & Sampson to assess the damage and evaluate alternatives and also engaged Shaw Bros., for the physical mitigation. In order to stabilize the area and provide direct access for the engineering evaluation Shaw Bros., constructed an access "road" from Mechanics Park under the bridge to the wall collapse area to facilitate installation of a cofferdam.

Weston & Sampson completed the engineering analysis and evaluated wall repair alternatives. The Alternatives Analysis Report (Report) is the product of that work. Generally, FEMA funds projects with an eye toward in-kind replacement. The Report identified three alternatives;

1. A mechanically stabilized earth (MSE) wall (existing wall design) with estimated total cost of $3,500,000 to $4,500,000.
2. A cast-in-place concrete wall with estimated total cost of $4,300,000 to $5,200,000.
3. A soldier pile and lagging wall with estimated total cost of $2,200,000 to $2,800,000.

Each design has advantages and disadvantages, see sections 4.2.1, 4.2.2, and 4.2.3 of the Report. Weston & Sampson recommends the soldier pile and lagging wall design. At the beginning of the process the Council expressed concern about the current design, conditions contributing to the wall failure, and assurances that wall repair consider these factors in order to reduce, to the extent possible, the chance of a future failure. The City engaged James W. Sewall, Co., to perform a high-level review of the Report for concurrence on the selected alternative. A copy of the review letter is provided. Sewall agrees with Weston & Sampson's alternative selection.

The City's EMA director has been in contact with FEMA to review the Report and confirm the preferred reconstruction approach. As noted above, FEMA typically looks to fund projects only to pre-disaster conditions. Given that the preferred alternative is the least expensive option we do not anticipate FEMA will object to Weston & Sampson's recommendation.

The next steps in the process involves permitting, final design of the selected alternative, bidding for construction, and finally reconstruction. The current permits for in-river and near-river work are specific to mitigation and stabilization. Staff is requesting an extension of the agreement with Weston & Sampson to proceed with (1) permitting due to the expected agency review and processing period, and (2) final design of the FEMA approved alternative. In addition to the completed scope of work and alternatives analysis, the current agreement with Weston and Sampson states:

> *2.1 <u>Additional Services:</u> The ENGINEER will assist the OWNER with professional engineering services for additional project needs not otherwise articulated above. These services will be discussed and agreed upon by and between the ENGIBNEER and the OWNER prior to proceeding.*

Based on this language, it is staff's belief that the active agreement with Weston & Sampson allows for extending the scope of work to include permitting, design, and project management; however, as a matter of transparency staff felt it was prudent to inform the Finance Committee and City Council as to the status of the project, remaining tasks, and intent to expand Weston & Sampson's scope of work as noted above.

As has been discussed previously, there is also a known limited failure of the wall at Mechanics Park near the CSO tank outfall. The soil behind the wall is eroding at a rapid pace and creating concern. Installation of the roadway in the river has allowed staff the opportunity to inspect the area confirming that action should be taken to stabilize this section as well. While not part of the collapse at the Pepperell property, the City's EMA director is actively pursuing separate federal funding to assist with repair of the wall at Mechanics Park while the roadway exists. Delaying repair until a later date would increase costs due to reinstallation of the roadway.

In anticipation of receipt of federal funding for the Mechanics Park repair, staff recommends utilizing Weston & Sampson for permitting of the Mechanics Park repair project considering Weston & Sampson will be preparing the permits for construction at the Pepperell section and there is a limited window for in-river work due to fish migration patterns. Absent the emergency that facilitated construction of the roadway and cofferdam, in-river access is limited to July 15th through November 30th each year.

Funding Source:

Now that FEMA has authorized funding the mitigation activity will be reimbursed at 100%. Design permitting and construction is expected to be reimbursed at between 90-96%. A range is specified because the Governor's office is expected to ask FEMA for an increase in the level of reimbursement. Maximum expected exposure is 10% of remaining project costs.

Expenses to date total $566,311.85 with $81,414.95 for engineering and $484,896.90 for construction activities.

For Mechanics Park permitting, there is currently $50,000 in the FY22 budget for Mechanics Park wall repair assessment (22004-92114) and $200,000 in FY22 CIP for wall repair and engineering. We suggest using the $50,000 for permitting. The anticipate cost is expected to be considerably less. For clarification, should federal funding be awarded, repair would be solicited through a sealed bid process with review and award in accordance with the City's purchasing policy.

Staff Recommendation:

Extend the scope of work for Weston & Sampson to include river wall repair permitting at Pepperell and add a separate municipal funded task for permitting for the river wall at Mechanics Park.

westonandsampson.com

WESTON & SAMPSON ENGINEERS, INC.
150 Dow Street, Tower 4, Suite 350
Manchester, NH 03101
tel: 603.263.9296

ALTERNATIVES ANALYSIS REPORT

March 25, 2022

CITY OF
BIDDEFORD
MAINE

Riverwalk Retaining Walls Replacement
Biddeford, Maine

150 Dow Street, Tower 4, Suite 150, Manchester, NH 03101
Tel: 603.263.9296

March 25, 2022

Mr. Jeff Demers
City of Biddeford
Director of Public Works/Wastewater Department
371 Hill Street
Biddeford, Maine 04005
Jeff.Demers@biddefordmaine.org

Re: Alternatives Analysis Report
Riverwalk Retaining Walls Replacement
Biddeford, Maine

Dear Mr. Demers:

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to submit our Alternatives Analysis Report for the Riverwalk Retaining Walls Replacement project. This report presents our findings and documents our visual observations, topographic survey, subsurface explorations, laboratory testing, engineering assessments, and alternatives analysis. Retaining wall replacement concepts and estimated costs for feasible alternatives are provided along with our recommended replacement alternative to assist the City in deciding how to best proceed with addressing the failed wall portion of the Riverwalk wall and overlook structure.

We appreciate the opportunity to be of continued service to you. If you have questions concerning this report or require additional information, please contact me at 603-263-9499 (striket@wseinc.com).

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.

Thomas J. Strike, PE (NH)
Team Leader

Tulin Fuselier, PE
Geotechnical Practice Leader

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1.0 INTRODUCTION

Sections of retaining walls along the Saco River in Biddeford, Maine failed, or were significantly damaged following substantial rainfall on October 31, 2021. The failed and damaged sections are located along a stretch of the Biddeford-Saco Riverwalk that extends through the North Dam Mill Complex at 2 Main Street (project area), as shown in *Figure 1 – Locus Map* and *Figure 2 – Existing Conditions Plan*.

The City of Biddeford (the City) retained Weston & Sampson to provide consulting engineering services for repair of the failed walls. Our services to date have included historical document review, site observations by geotechnical and structural engineers, topographic survey, environmental permitting assistance, subsurface explorations, environmental laboratory testing and analysis, and preliminary engineering assessments and evaluations. This report summarizes our services and findings, and presents alternatives for wall replacement with advantages, disadvantages, and approximate cost ranges for each.

1.1 Site History and Background

The wall system in the project area is approximately 33 ft in height, and has historically consisted of stacked, non-mortared granite block wall (block wall) downstream, and stacked, non-mortared granite rubble walls (rubble walls) upstream of the project area. This report references downstream and upstream as areas left and right, respectively, as standing in Saco River and facing the walls. The Saco River at this location is tidal, therefore river flow direction varies. Our understanding of site history is based on information provided by the City and on our review of available electronic historical information.

View of site prior to wall failure (googlemaps.com)

Based on review of historical photos, construction of the granite rubble retaining wall began prior to 1894. Some time prior to 1920, the block wall was constructed, and portions of the rubble wall were vertically extended using reinforced concrete. The Boiler House building and the approximately 250 ft. tall smokestack located just downstream of the building were constructed behind the extended wall sections. We assume the retaining walls are supported on bedrock that forms the bottom of the Saco River. Historical site photographs as well as photos of the wall failure and existing conditions are provided in *Appendix A*.

The Boiler House building has two below grade levels. Based on site observations, the foundation wall of the building along the Saco River is not integrated with the adjacent retaining walls. We assume both the Boiler House building and the smokestack foundations are supported on the bedrock surface (see Data Gaps Section 4.6). The City was not able to locate plans for the smokestack and Boiler House building.

The retaining walls generally maintained their integrity and configuration until 2006. At this time, an approximately 40 ft. wide section of the granite rubble wall, approximately 80 ft. downstream of the smokestack, failed and collapsed into the Saco River. According to an April 2, 2008 Geotechnical Report prepared by Summit Geoengineering Services (Summit), the bottom of the wall after the failure appeared intact and stable. The cause

of the failure was not identified in the Summit Report. The Summit Report provided recommendations for replacement of the failed section of wall with a precast concrete block wall with geogrid tiebacks, also knowns as a Mechanically Stabilized Earth (MSE) type wall.

The failed section of wall was replaced in 2011 with an MSE wall having a maximum retained earth height of approximately 15 ft. According to review of 2011 Design Plans prepared by Summit and Wright-Pierce, Inc. and on review of construction photos, the new MSE wall base is supported on the top of the remnants of the failed granite rubble wall and the sides are/were structurally connected to adjacent walls with concrete infill and No. 5 steel rebar. Much of the 2006 failed section of wall was left in the Saco River and below the base of the MSE wall.

Wall replacement also included construction of an overhang deck structure, designed by Wright-Pierce, above the MSE wall. The overhang deck is supported by W12x22 steel beams that extend behind the wall. The beams are encased in a concrete slab behind the wall. The overhang deck also includes cast-in-place retaining walls along the sides of and behind the deck. Available Summit and Wright-Pierce Design Plans are provided in *Appendix B*. We understand that the overhang structure became a popular element of the Biddeford-Saco Riverwalk.

Site features along the Riverwalk and behind the retaining walls after the 2011 wall replacement included, the Riverwalk overhang structure, concrete sidewalks, a public garden, a generator in the area of the public garden, light poles, and other ancillary features. Subsurface utilities in this area include electric and stormwater drainage. A paved parking lot for the buildings at 2 Main Street are located south of the Riverwalk (further beyond the retaining walls). Additional subsurface utilities in the paved parking lot area include sewer and gas. The ground surface along the Riverwalk and in the paved parking area are relatively level and range from approximately El. 29 to El. 32 ft. The ground surface just south of the smokestack, in the area of an existing ramp, slope down from El. 30 to El. 27 ft.

1.2 October 31, 2021 Failure and Existing Conditions

An approximately 80 ft. wide section of the rubble wall between the smokestack and the MSE wall/overhang structure failed on October 31, 2021 during a period of significant rainfall in which the Biddeford area received approximately 6.5-inches of rain. The failed sections of wall and backfill material, along with features behind the wall including a concrete sidewalk adjacent to the overhang structure, metal railings, a flagpole, and landscaped features, collapsed into the Saco River. The failure left a steep, sloughed soil slope along the failed wall section. Based on existing site topographic information and site investigations estimating top of bedrock, the failed section of wall was up to approximately 33 ft. in height.

View of wall failure on November 1, 2021

Failure of the retaining wall caused significant damage to the adjacent MSE wall and overhang structure. Damage included loss of backfill and geogrid support behind the MSE wall, displacement and reduced support of wall blocks that were structurally connected to the failed wall, and outward

displacement of MSE wall support base (remnants of the 2006 wall failure). Additional discussions of the structural condition of the MSE wall, overhang structure, and adjacent retaining walls are provided in Section 3.1.

Since the time of the failure, stone riprap was placed over the exposed soil to stabilize the slope and a stone fill access road was installed in the Saco River to divert flow away from the failed wall and to provide access for site investigations and future wall replacement construction. The access road extends from downstream of the Main Street Bridge to just upstream of the smokestack. The access road along the failed section of wall and the MSE wall was intended to function as a cofferdam to maintain dry conditions along the project area. Due to the open-graded characteristics of the materials used to construct the access road and absence of an impermeable layer integrated into the road, the river flow easily passes through the access road and lowering water between the access road and the project area is not possible. Details of the access road are shown in a November 15, 2021 Access Road/Cofferdam Plan prepared by Gagnon Engineering, Inc. included in *Appendix C*. Photographs of the failure, damage, and site stabilization are included in *Figure 3 – Existing Conditions Profile* and *Appendix A*.

1.3 General Elevations (Feet)

Weston & Sampson retained Doucet Survey, LLC to complete a topographic survey of the project area and surrounding features. The survey was completed in December 2021 using a Leica Survey Grade Laser Scanner and conventional survey equipment. Survey data were obtained based on vertical and horizontal datums established on survey control provided by the City and do to not reference known datums. An existing conditions plan is provided as *Figure 2*.

The following is a summary of elevations for specific features in the project area based on the survey.

A.	Top of Granite Rubble/Concrete Wall	El. 27.0 to 29.4 +/-
B.	Top of Concrete Slab at Overhang Deck	El. 29.5 +/-
C.	Top of Granite Block Wall	El. 29.7 to 30.0 +/-
D.	Top of Access Road	El. 7.0 +/-
E.	Top of Bedrock in Explorations (see *Section 2.0*)	El. -3.0 to -2.5 +/-
F.	Reported Saco River Mean High Water	El. 9.6 +/-

2.0 SUBSURFACE CONDITIONS

2.1 Subsurface Exploration Program by Summit (2008)

2.1.1 General

Summit completed a subsurface exploration program in March 2008 after the 2006 wall failure to support geotechnical evaluation and design for the wall replacement. The program included seven borings designated as B-1 through B-7 and six probes designated as P-1 through P-6, as included in *Appendix D*.

2.1.2 Encountered Subsurface Conditions

According to our review of the Summit Boring Logs, the explorations generally encountered fill material above refusal. Borings B-6 and B-7, however, encountered a native silty clay layer below the fill and above refusal. The fill generally contained a mixture of sand, gravel, silt, and clay and varying amounts of debris including brick, ash, wood, and cinder pieces. The Summit Report indicates that the explorations encountered "a significant number" of cobbles and boulders. Refusals were encountered in all explorations, except in P-1, at depths ranging from approximately 7.5 to 22.5 ft. Although the Summit Report indicates some explorations encountered refusals on boulders and others encountered refusal on bedrock, rock coring was not completed at refusal depths. Our opinion is, therefore, that the nature of refusals in the Summit explorations (boulders, bedrock, or other obstructions) cannot be confirmed. Groundwater was not observed in the Summit explorations. The Summit Boring Logs are provided in *Appendix D*.

2.2 Subsurface Exploration Program by Weston & Sampson (2022)

2.2.1 General

The Weston & Sampson exploration program was completed in the project area between January 18 and January 20, 2022. The purpose of this exploration program was to collect information on bedrock and soil conditions below and behind the wall failure area necessary to evaluate geotechnical and environmental considerations and appropriate wall replacement alternatives.

The program included five borings designated as B-101 through B-105, with borings B-104 and B-105 offset several times due to shallow refusal. Borings with "B" and "C" designations were offset from borings with "A" designations to attempt to advance the offset borings beyond shallow refusal depths. A groundwater monitoring well was installed in B-105C. Borings B-101 through B-103 were completed between the base of the wall failure and the stone fill access road. Up to approximately 11 ft. of sandy fill material was placed between the bottom of the wall failure area and the side of the stone fill access road to provide access to these borings. Borings B-104A through B-105C were completed behind the wall failure and at the top of the sloughed slope. Approximate boring locations are shown in *Figure 2*.

The borings were advanced to depths ranging from approximately 2 to 21 ft. by SW Cole Explorations, LLC of Hermon, ME with a track-mounted drill rig. Borings B-101 through B-103 were advanced using drive-and-wash drilling methods and borings B-104A through B-105C were advanced using hollow-stem auger drilling methods. Rock core sampling in B-101 through B-103 was completed using an NQ wire-line core barrel.

Standard penetration tests (SPTs) were conducted in B-104A through B-105B by driving a 24 in. long by 1-3/8 in. inside diameter (2 in. outside diameter) split spoon sampler with blows from a 140 lb. automatic safety hammer falling 30 in. per blow. Hammer blows per 6-inches of sampler penetration (for 24-inches) were recorded. The blow counts for the middle 12-inches are combined and designated as the SPT blow count, which is correlated to soil consistencies and engineering soil properties. Split-spoon refusal, where noted in the boring logs, is defined as 100 hammer blows for less than 6-inches of sampler penetration. Drilling refusal is defined as no discernable advancement of the auger under the full weight of the drill rig over a period of approximately 5 minutes. SPTs were not conducted through the sand fill above the bedrock in B-101 through B-103 or in B-105C, where a groundwater monitoring well was installed.

2.2.2 Encountered Subsurface Conditions by Weston & Sampson

Bedrock was encountered directly below the sand fill in B-101 through B-103. Subsurface conditions in B-104 through B-105C generally consisted of up to 14 ft. of undocumented fill over refusal. Boring B-105B, however, encountered a layer of weathered bedrock below the fill and above the boring termination depth of 16 ft.

Descriptions of the subsurface conditions encountered in the borings are included in the boring logs in Appendix E. The major strata encountered in the borings described below. Variations may occur and should be expected outside and between boring locations.

Fill – Approximately 8 to 15 ft. of undocumented fill was encountered in B-104A through B-105C. The fill generally consisted of a mixture of fine to coarse sand, gravel, non to medium plasticity fines, and debris materials. The debris materials included brick, slag, ash, concrete, and asphalt. Auger refusals were encountered in the fill at depths ranging from approximately 2 to 8 ft. Based on periodic auger grinding and inconsistent refusal depths, cobbles, boulders, and larger debris materials are likely present in the fill. Boring B-104C was terminated in the fill at 14 ft. due to damaged augers.

Bedrock/Refusal – An approximate 1 ft. thick layer of weathered bedrock was encountered below the fill, and at approximately 15 ft. in B-105B. The weathered bedrock possessed the consistency of well graded, fine to coarse gravel. Boring B-105B was terminated in the weathered bedrock at 16 ft.

Bedrock was encountered in B-101 through B-103 below the sand fill that was placed to access these boring locations. The top of the bedrock surface was encountered at elevations ranging from approximately El. -3 to El. -2.5 ft. Ten feet of rock core samples were collected from each of these borings. The bedrock generally consisted of very hard, slightly weathered, moderately fractured METAMORPHIC GNEISS. The Rock Quality Designation (RQD) of the bedrock samples ranged from 75 to 90 percent, indicating good quality bedrock.

Rock coring was not completed in borings B-104A through B-105C. Refusals at these locations, therefore, could have been on boulders, large debris, or bedrock.

Groundwater – Groundwater was encountered in B-104C, B-105B, and B-105C at depths ranging from approximately 8 to 12 ft. based on observation of saturated samples. We anticipate that groundwater levels will fluctuate with season, variations in precipitation, construction in the area, tides, and other factors. Perched groundwater conditions could exist close to the ground surface, especially during and after extended periods of wet weather.

A groundwater observation well was installed in B-105C at a depth of approximately 13 ft. Groundwater was measured at approximately 12 ft. on January 20, 2022. Weston & Sampson returned to the site on February 28, 2022 and groundwater was not observed in the well.

2.3 Past Environmental Studies and Weston & Sampson Environmental Testing Results

2.3.1 *Past Environmental Studies*

Based on our review of available information from the Maine Department of Environmental Protection (MEDEP), the project area coincides with two state-listed remediation sites (the North Dam Mill Site and Westpoint Stevens Boiler House Site). These sites are associated with the historic release of petroleum, metals, and polycyclic aromatic hydrocarbons (PAHs) to soil and groundwater from former bulk petroleum storage at the site, former industrial land use, and occurrence of historic urban fill. Response actions to address these impacts were historically completed by others and included the following:

- Removal of former underground storage tanks (UST) and associated petroleum-impacted soil.
- Construction of a soil cap over portions of properties at 2 Main Street. A plan of the cap areas is included in *Appendix F*.

2.3.2 Weston & Sampson Environmental Testing Results

Weston & Sampson completed a limited environmental site investigation concurrent with the geotechnical subsurface explorations described above to further characterize contaminated materials that may be encountered during project construction. Specifically, the investigation was completed in the anticipated excavation areas for wall replacement activities, which correspond with B-104A through B-105C. The investigation included:

- Evaluation of soil for visual and olfactory evidence of contamination, such as stains, odors, and free-phase oil.
- Field screening of soil samples for total volatile organic compounds (VOCs) using a photoionization detector (PID).
- Collection of shallow and deep soil samples from each location for disposal characterization laboratory analysis.

The shallow soil samples for laboratory analysis were collected at depths ranging from 0 to 8 ft., while deep samples were collected from greater than 8 ft. to the bottom of each boring. The samples were submitted to Pace Analytical for the following:

- Volatile Organic Compounds (VOCs),
- Semi-Volatile Organic Compounds (SVOCs),
- Total Petroleum Hydrocarbons (TPH),
- RCRA-8 Metals,
- Polychlorinated Biphenyls (PCBs),
- Hazardous characteristics (pH, reactivity, and ignitability), and
- Specific Conductance.

Additionally, the shallow and deep samples at the B-104 locations were analyzed for herbicide and pesticides, while select samples from both locations were also analyzed for toxicity characteristic leaching procedure (TCLP) lead analysis. Except for VOCs, the analysis was performed with composite samples. Samples for VOCs were collected as discrete 2-foot grab samples within each composite sampling interval based on soil evaluation/field screening results. The laboratory data reports are included in *Appendix F*.

As noted on the boring logs and in the sections above, fill materials containing debris materials such as ash and slag were identified at B-104A through B-105C; however, no other evidence of contamination or elevated PID screening results were encountered. As shown in Table 1 in *Appendix F*, laboratory analyses identified various metals, SVOC, and TPH concentrations at both locations along with a low-level VOC concentration (toluene) in shallow soil at the B-105 locations. Where detected, the concentrations were less than the most stringent MEDEP residential Remedial Action Guidelines (RAGs), except for arsenic at the B-104 and B-105 locations, lead at the B-105 locations, and a single SVOC, benzo(a)pyrene, at the B-104 locations.

3.0 ENGINEERING ASSESSMENT AND EVALUATION

3.1 Existing Structure Conditions

Our assessment and evaluation of the failed section of wall, the existing stacked, non-mortared granite block wall, the MSE wall/overhang structure, the stacked non-mortared granite rubble/concrete wall, the smokestack, and Boiler House building are described in the sections below. A profile section view of these structures is shown in *Figure 3*.

3.1.1 Stacked, Non-Mortared Granite Block Wall

The stacked, non-mortared granite block wall extends approximately 90 ft. from the existing Main Street Bridge to the existing MSE wall. The downstream side of the wall forms the wingwall for the Main Street Bridge. The battered wall retains the earth and park features from above. The support depth for most of the wall is not known, however, plans for the existing bridge indicate the wall closest to the bridge is supported on bedrock. We assume the remainder of the wall is similarly supported on bedrock.

The wall section from the bridge to approximately 15 ft. downstream of the MSE wall appears to be in a stable configuration. The batter of an approximately 15-foot-long section that abuts the MSE wall appears to be bulging with wider gaps between the blocks. Based on our field observations, there appears to be a distinct area where the wall transitions from a uniform construction with consistent shape granite blocks, having smaller joints and less voids (as may have been originally constructed) to a wall type showing signs of settlement, unevenness and more random nonrectangular placed stone, creating bulging in the wall at this location.

3.1.2 MSE Wall and Riverwalk Overhang Structure

The MSE wall extends approximately 55 ft. from the granite block wall to the failed wall. The MSE wall is recessed in from the face of the granite stone block wall and has less of a battered slope. As previously discussed, the MSE wall foundation was constructed on remnants of the 2006 failed section of the granite rubble wall.

MSE walls include wall blocks, backfill soils, and geogrids that are connected to the blocks and extend into the backfill soils (reinforced soil zone). Wall stability is derived from the weight of the wall blocks and interaction between the backfill soils and the layers of geogrid. For most MSE walls, the geogrids provide the greatest resistance to forces applied to the wall system.

The 2021 wall failure caused significant damage to the MSE wall, particularly along the upstream side of the wall where blocks were structurally connected to the failed wall and to the rubble wall below. As previously discussed, damage included loss of backfill and geogrid support behind the MSE Wall, displacement and reduced support of wall blocks, and outward displacement of the MSE wall foundation. It also appears that portions of the rubble block wall below the upstream side of the foundation have displacement downward.

The loss of backfill behind portions of the wall means that the geogrids in these areas are no longer contributing to wall stability. The volume of backfill loss behind the wall is not fully known but appears significant behind the upstream side of the wall. Loss of backfill was also observed near the bottom, east side of the wall. We anticipate that the loss of backfill will continue until repairs are completed, particularly during rainfall events.

The Riverwalk overhang structure is supported on the MSE wall backfill soils and on the wall blocks. The upstream retaining wall of the structure was undermined as a result of the adjacent wall failure. The loss of backfill behind the MSE wall, along with loss of foundation support of the upstream retaining wall significantly reduces the structural integrity of the Overhang structure. We have not monitored any movement of the structure.

The MSE wall is considered structurally deficient due to the sustained damage discussed above and does not provide sufficient stability/capacity to support the backfill soils and overlying features, such as the Riverwalk overhang structure. Movement of the base foundation of the MSE wall, which supports the wall blocks, and loss of geogrid support indicates the wall could be subject to further displacement and potential failure.

3.1.3 2021 Failed Retaining Wall

The 2021 failed section of retaining wall was mostly comprised of non-mortared, granite rubble blocks, with a section of reinforced concrete above the blocks near the existing smokestack. As discussed above, the failed section was approximately 80 ft. wide and extended from the existing MSE wall to the existing smokestack. Based on a test pit completed at the base of the riprap cover, portions of the wall below the Saco River remain intact. The base of the intact portion of wall appears to be supported on bedrock.

The cause of the failure is not evident and multiple factors over an extended time could have attributed to the failure. These factors could have included a combination of the age of the wall (up to 130 years), saturated backfill soil, damage/fatigue from the 2006 wall failure, and/or concentrated circular river currents (eddies) displacing backfill soils and wall stone.

3.1.4 Stacked, Non-Mortared Granite Rubble Wall

The stacked, non-mortared granite rubble wall extends from the wall failure area to the upstream end of the Boiler House building. This section of wall is of the same construction type as the 2021 failed section of wall. As previously discussed, the granite rubble section of the wall was constructed prior to 1892 and the wall was vertically extended sometime before 1920 using reinforced concrete. The heights of the two different wall types varies along its length, but the height of concrete generally increases upstream to downstream.

The stacked granite rubble and concrete extensions in front of most of the Boiler House building appear to be in a stable configuration. However, the wall extending from the smokestack to approximately 25 ft. upstream of the building corner, appears to have settled based on gaps observed in the top of the concrete section of the wall. In front of the smokestack, the end of concrete wall section has displaced due to loss of backfill and/or long-term movement of the rubble blocks below.

3.1.5 Smokestack and Boiler House Building

As previously discussed, plans for both the smokestack and Boiler House building were not located by the City, therefore, the foundations types and found support depths are not known. We assume, however, that the foundations for both structures are supported on bedrock and not on backfill soils above the bottom of the existing retaining walls.

Monitoring points (prisms) were installed on the smokestack by the City and the Contractor retained by the City to assist with this project (Shaw Brothers) to evaluate any horizontal displacement of the smokestack. We understand that no displacement has been recorded.

3.2 Environmental Considerations for Handling and Disposal of On-Site Soils

Our environmental testing program indicate that the in-situ soils behind the failed retaining wall are environmentally contaminated. Additionally, our research of MEDEP files indicate that the project area coincides with two state-listed remediation sites and that a cap system is in-place above environmentally contaminated soils.

Regardless of the wall replacement alternative selected by the City, the project will require handling and disposal of materials with contaminant concentrations exceeding MEDEP residential Remedial Action Guidelines (RAGs). The estimated volume of disposal required, however, will vary between the alternatives as discussed in Section 4.0.

Surplus excavated materials with contaminant concentrations exceeding residential RAGs will require appropriate off-site transportation and disposal. Based on concentrations detected, surplus excavated materials appear suitable for disposal at a non-hazardous Subtitle D landfill or appropriately licensed thermal treatment or asphalt batching facility.

According to MEDEP records, soil in the project area was previously capped during historic response actions at the North Mill site (adjacent to the project area). Based on the site's 2015 Soil Management Plan (SMP) requirements, off-site transportation and disposal of surplus excavated materials from capped areas will require MEDEP approval. We recommend contacting MEDEP to discuss the project, the proposed soil management strategy, and any additional data need required for their approval following wall replacement alternative selection.

The site's SMP indicates the previously installed soil caps shall be maintained by the site owner unless otherwise approved by MEDEP. According to the Soil Cover System Plan dated September 2015 included in the SMP, cap restoration needed for any disturbance should include either 6-inches of compacted subbase ad asphalt pavement or 12 to 18-inches of clean fill underlain by a geotextile demarcation layer.

4.0 WALL REPLACEMENT ALTERNATIVES ANALYSES

4.1 Background

In considering alternatives for restoring the failed retaining wall, we considered constructing a new wall in the failure area and repairing the adjacent damaged walls. However, given the level of repair necessary and unknowns of the full extent of damage sustained, it is our opinion that repair is not a practical or reliable approach, and is not recommended for the following reasons:

- The MSE wall foundation and bottom blocks have showed signs of displacement that affects the stability of the entire wall. Additionally, the overall wall stability is compromised due to the significant volume of backfill loss and geogrid support. The foundation cannot be repaired, backfill cannot be reliably replaced, and geogrid support cannot be regained without wall and Riverwalk overhang removal.

- The section of wall immediately upstream of the failed wall has displaced backwards and is at risk of failure due to loss of soil support behind the wall and due to the likelihood that granite rubble blocks shifted as a result to wall failure. Given the age and condition of this section of wall, repair of this section is not considered feasible.

- The bulging section of the block wall adjacent to the downstream side of the MSE wall does not appear at imminent risk of failure. The bulging, however, is an indication of block movement and displacement of soil. Continued bulging could cause damage to features behind the wall and contribute to future failure. Removal of the bulged wall section is recommended as it would serve as a reasonable and appropriate point to tie into with a new wall type system.

Based on the forgoing, we recommend that the failed and damaged sections be replaced with a new retaining wall that extends from the bulged area downstream to approximately 25 ft. beyond upstream end of the Boiler House building. The total length of replacement is estimated at 185 ft. and the total height of the wall is estimated at 33 ft. A conceptual plan of the replacement area is shown in *Figure 4 – Conceptual Proposed Site Conditions.*

Conceptual retaining wall replacement alternatives considered and evaluated are discussed below.

4.2 Conceptual Retaining Wall Replacement Alternatives

We considered three retaining wall replacement alternatives. These alternatives included an MSE wall, a cast-in-place concrete wall, and a soldier pile and lagging wall. Although each of these walls are technically feasible replacement alternatives (along most of the proposed replacement alignment), each have their own advantages and disadvantages that should be considered.

As discussed in Section 3.2 above, the soils at the site are environmentally contaminated. Excavations will be required to construct the wall replacement; however the extent of these excavations will vary depending on the wall replacement alternative. Each wall replacement alternative would have similar batters as the existing walls. The wall replacement would be intended to perform independently of the existing walls and would not be structurally connected.

Although the retaining walls presented below are feasible replacement alternatives, they are conceptual in nature. Additional engineering analyses are required for final design.

4.2.1 *MSE Wall Replacement Alternative*

As previously discussed, MSE walls include the wall blocks, backfill soils, and geogrids that are connected to the blocks and extend into the backfill soils (reinforced soil zone). The bottom blocks are typically supported on a crushed stone or a concrete leveling pad and the geogrids typically extend up to about 70 percent of the wall height behind the blocks (up to 23 ft. for the wall replacement). The precast concrete wall blocks come in various patterns and facing options.

Replacement with an MSE wall is feasible along much of the proposed replacement alignment, however, construction of this type of wall is not possible in front of the smokestack or Boiler House building since excavation, and placement of the geogrids in these areas is not possible. Wall replacement would, therefore, need to terminate on the downstream side of the smokestack, leaving the structurally deficient section of stacked granite rubble/concrete wall in place. It may be possible, however, to complete some localized temporary repairs to this section of wall. Such repairs would not be considered a permanent solution and is not recommended if the City prefers a long-term repair approach.

Advantages and disadvantages of the MSE wall alternative are presented below:

<u>Advantages</u>

- Construction can be completed using conventional earthwork equipment.
- The blocks can be faced to aesthetically blend with existing historic features.
- The lowest cost wall system (not including excavation, disposal, and replacement costs).

<u>Disadvantages</u>

- Significant excavation volumes needed to install geogrids and construct safe excavation slopes, which will result in excessive contaminated soil disposal costs.
- The inability to extend a MSE wall beyond the smokestack, leaving structurally deficient wall sections in-place.

4.2.2 Cast-in-Place Concrete Wall Replacement Alternative

Cast-in-place concrete walls are comprised of a stem wall and a foundation that includes a heel and a toe that extend to the back and front of the stem wall, respectively. Taller concrete walls, such as the proposed wall replacement, oftentimes include a concrete buttress/batter along the back of the stem wall to help resist forces impose by backfill soils and overlying features. The foundation can be supported directly on the competent bedrock surface. The foundation width is generally 2/3rds the wall height behind the wall, or approximately 22 ft. for the proposed wall replacement. Less width can be accomplished if tiebacks are used. Facing can be applied to the front of the wall.

As with the MSE wall alternative, replacement with a cast-in-place concrete retaining wall is feasible along much of the proposed replacement alignment, however, construction of this type of wall is not possible in front of the smokestack or Boiler House building due to the excavation depth required. This will lead to the same concerns discussed above for the MSE wall.

Advantages and disadvantages of the cast-in-place alternative are presented below:

Advantages

- Construction can be completed using conventional earthwork equipment.
- No specialty contractor required.
- The front of the wall can be faced to aesthetically blend with existing historic features.

Disadvantages

- Significant excavation volumes needed to construct the wall and safe excavation slopes, which will result in excessive contaminated soil disposal costs.
- The inability to extend a cast-in-place concrete wall beyond the smokestack, leaving structurally deficient wall sections in-place.
- Longest construction duration due to concrete placement and curing times.
- The highest cost wall system (excluding excavation, disposal, and replacement costs).

4.2.3 *Soldier Pile and Lagging Wall Replacement Alternative*

Soldier pile and lagging walls are comprised of vertical steel piles (H-piles) with horizontal lagging between the piles. The H-piles are driven through overburden soil and/or drilled into bedrock at regular intervals along the wall alignment. The lagging would consist of precast concrete panels. The lagging resists loading imposed by the backfill soils and overlying features and transfers the loading to the H-piles. Depending on the wall height and loading needing resistance, additional lateral support can be attained by rows of tiebacks installed into the backfill soils and/or bedrock surface. Large excavations are not required for soldier pile and lagging walls.

We met on-site with a specialty installation contractor to discuss using a soldier pile and lagging wall as a wall replacement alternative. The contractor indicated that use of a soldier pile and lagging wall is feasible along the entire wall replacement alignment, including in front of the smokestack and Boiler House building. The piles would be installed in holes drilled into the bedrock surface (rock sockets) at approximate 8-foot spacing. All work would be completed from the access road installed in the Saco River.

Pre-cast concrete panels come in numerous patterns. It is possible for the pre-cast panels to be formed such that the ends of the panels extend of over the H-piles to create the look of a uniform wall. Alternatively, shotcrete could be installed along the face of the H-piles.

Advantages and disadvantages of the cast-in-place alternative are presented below:

Advantages

- Can be installed over the full length of the recommended wall replacement area.
- Relatively small amount of excavation needed behind the wall that will result in significantly less volume of soil requiring disposal and less disturbance to features behind the replacement areas as compared with the MSE and cast-in-place concrete wall alternatives.
- Numerous pre-cast concrete panel options so that the wall can aesthetically blend with existing historic features.

Disadvantages

- Installed by specialty contractor.
- Cost of wall system (excluding excavation and disposal costs) higher than MSE wall alternative, but less expensive than cast-in-place concrete wall alternative.

4.3 Permitting

We understand that the City has secured an Army Corps of Engineers (ACOE) General Conditions permit for emergency repair and that the permit assumed that the failed wall would be replaced in-kind and within the same footprint as the failed wall. We also understand that the City has communicated with additional permitting agencies, including MEDEP and the Maine Historic Preservation Commission, regarding emergency repair efforts. Additional permits may be required for the proposed wall replacement including amendments to the ACOE and MEDEP permits. We estimate a permit review time of approximately one to three months.

4.4 Estimated Wall Replacement Costs

We estimated wall replacement cost ranges, including those for removal and disposal of existing structures and soils and engineering and permitting services, based on our experience with similar projects. Note that costs for removal and disposal of the contaminated backfill soil significantly impact the overall estimated costs of wall replacement. These costs ranges are presented in the following table:

Alternative	Estimated Cost Range for Design and Permitting	Estimated Cost Range for Construction	Estimated Total Cost Range
MSE Wall	$125,000 to $225,000	$3,375,000 to $4,275,000	$3,500,000 to $4,500,000
Cast-in-Place Concrete Wall	$250,000 to $350,000	$4,050,000 to $4,850,000	$4,300,000 to $5,200,000
Soldier Pile and Lagging Wall	$250,000 to $350,000	$1,950,000 to $2,450,000	$2,200,000 to $2,800,000

4.5 Recommended Wall Replacement Alternative

Based on the advantages and disadvantages and the estimated costs presented above, Weston & Sampson recommends selecting the soldier pile and lagging wall as the wall replacement alternative. This alternative will provide a consistent, aesthetically pleasing wall along the entire recommended wall replacement alignment at the lowest cost. The City, however, should review each alternative carefully and select the alternative that best fits the City's expectations.

4.6 Data Gaps

As indicated previously, we do not have information on the depths and configurations of the foundations for the smokestack and Boiler House building. This information will need to be obtained during final design. If plans with this information cannot be found, we should be provided access to the Boiler building lower level areas.

4.7 Additional Engineering Analyses

The wall alternatives included in this report are conceptual in nature and are intended to provide the City with a high level presentation of feasible wall replacement alternatives. Additional engineering analyses are required to progress the selected wall replacement alternative to final design.

5.0 LIMITATIONS

We have prepared this report for use by the City of Biddeford, Maine for the subject project and this site only. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the actual conditions and are not applicable to other sites.

This report has been prepared solely for the purpose of preliminary evaluation and analyses of conceptual-level wall replacement alternatives. This is not a design-level report and should not be construed as such. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, is given.

FIGURES

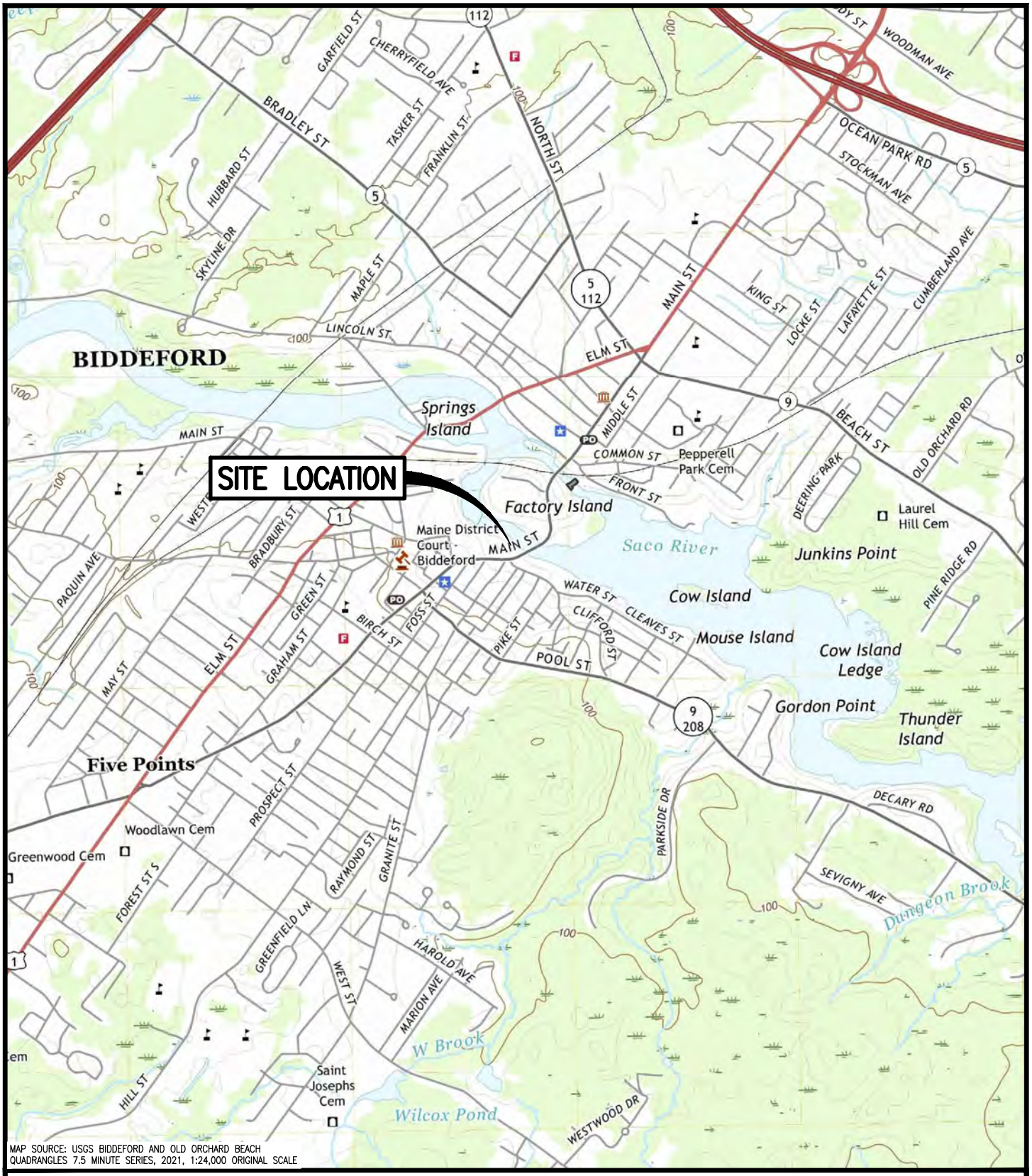


FIGURE 1
RIVERWALK RETAINING WALLS
BIDDEFORD, ME

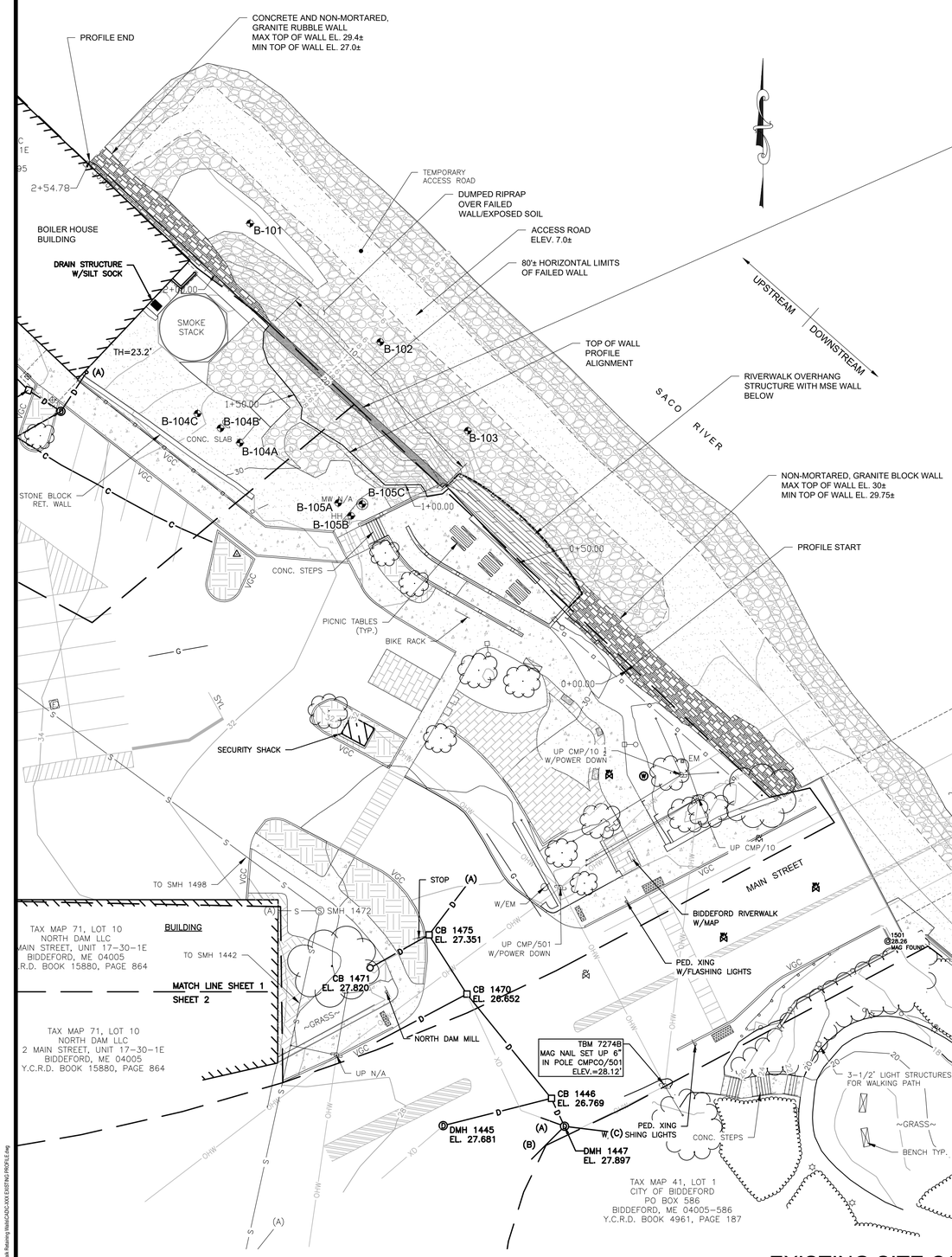
LOCUS MAP

SCALE: 1"=2000'

0 2000 4000

Weston & Sampson

\\wse03.local\WSE\Projects\ME\Biddeford ME\ENG21-1343 Riverwalk Retaining Walls\Borings\Plans\CAD\Figure 1 _Locus Map.dwg



EXISTING SITE CONDITIONS

SCALE: 1"=20'-0"

20 0 20 40

SCALE: 1 INCH = 20 FT.

NOVEMBER 3, 2021

LEGEND

- APPROX. LOT LINE PER CITY GIS
- STOCKADE FENCE
- CHAIN LINK FENCE
- GUARDRAIL
- OHW — OVERHEAD WIRE
- S — SEWER LINE
- D — DRAIN LINE
- G — GAS LINE
- 100 — MAJOR CONTOUR LINE
- 98 — MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- CONCRETE
- RIP RAP
- LANDSCAPED AREA
- CRUSHED STONE
- BRICK
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- LIGHT POLE (ONE ARM)
- SIGN
- SIGN (TWO POSTS)
- BOLLARD
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- SPIGOT
- SPRINKLER
- GAS GATE VALVE
- ELECTRIC BOX
- CATCH BASIN
- DRAIN MANHOLE
- MANHOLE
- ELECTRIC MANHOLE
- WATER MANHOLE
- WATER METER
- SEWER MANHOLE
- HAND HOLE
- DECIDUOUS TREE
- TRAFFIC SIGNAL
- TYP. — TYPICAL
- CONC. — CONCRETE
- GRAN. — GRANITE
- FF — FINISHED FLOOR
- TH — THRESHOLD FLOOR
- EP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- AS — AUTO SPRINKLER
- APPROX. BORING LOCATION

TOPOGRAPHIC INFORMATION BASED ON SURVEY COMPLETED BY DOUCET SURVEY, LLS IN DECEMBER 2022. HORIZONTAL AND VERTICAL DATUMS ARE BASED ON SHAW BROTHERS SURVEY CONTROL PROVIDED BY THE CITY.

CONCEPTUAL PLANS

Project:

CITY OF BIDDEFORD, MAINE

RIVERWALK RETAINING WALLS REPLACEMENT

Weston & Sampson

Weston & Sampson Engineers, Inc.
150 Dow Street, Tower 4, Suite 350
Manchester, NH 03103
978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

NOT RELEASED FOR CONSTRUCTION

Scale: AS NOTED

Date:	03/23/2022
Drawn By:	YS
Reviewed By:	TJS
Approved By:	TF
W&S Project No.:	ENG21 -1343
W&S File No.:	

Drawing Title:

EXISTING SITE CONDITIONS

Sheet Number:

FIGURE 2

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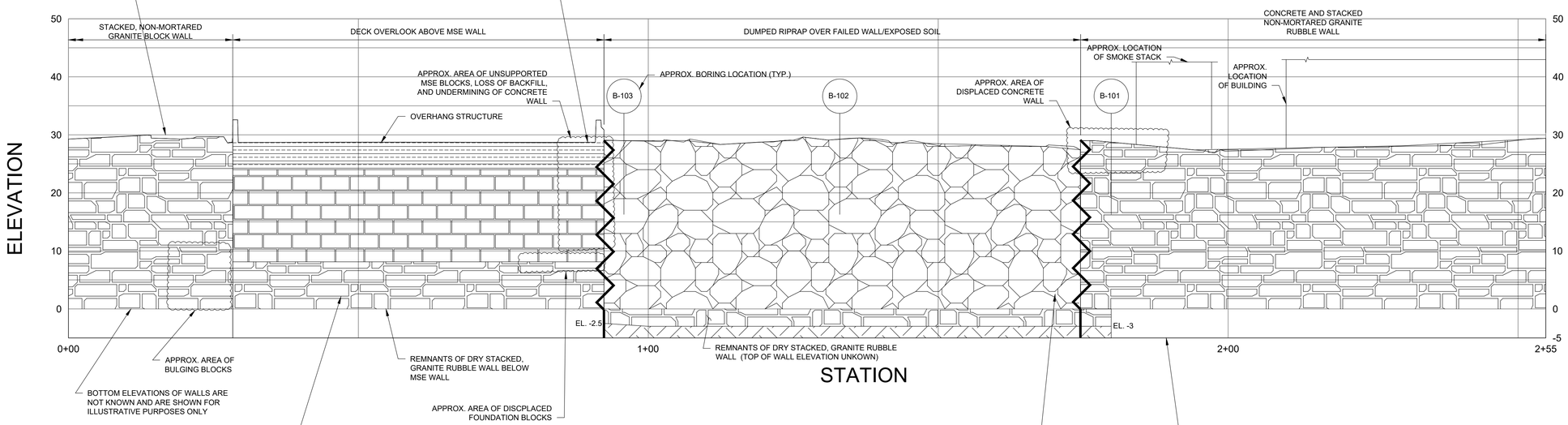
DECEMBER 9, 2021

DECEMBER 9, 2021

CONCEPTUAL PLANS

EXISTING TOP OF WALL



EXISTING CONDITIONS PROFILE

HORIZONTAL SCALE: 1"=10'-0"
VERTICAL SCALE 1"=10'-0"

DECEMBER 9, 2021

DECEMBER 9, 2021

DECEMBER 9, 2021

Project:

CITY OF BIDDEFORD, MAINE

RIVERWALK RETAINING WALLS REPLACEMENT

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Consultants:

DECEMBER 9, 2021

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Reviewed By:	TJS
Approved By:	TF
W&S Project No.:	ENG21 -1343
W&S File No.:	

Drawing Title:

EXISTING CONDITIONS PROFILE

Sheet Number:

FIGURE 3

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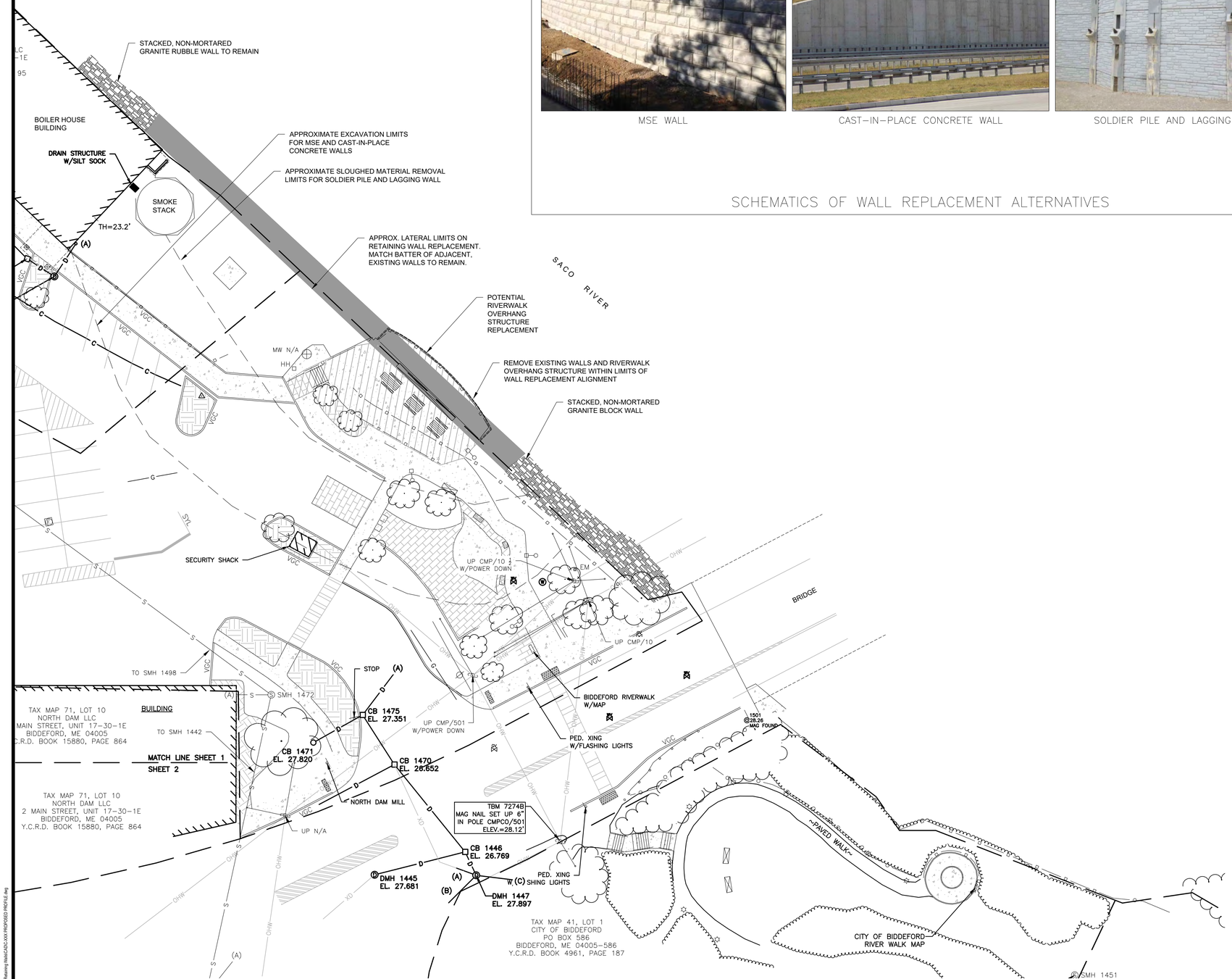
P:\BIDDEFORD\ME\ENG21-1343 Riverwalk Retaining Walls\CAD\C-XXX EXISTING PROFILE E.dwg

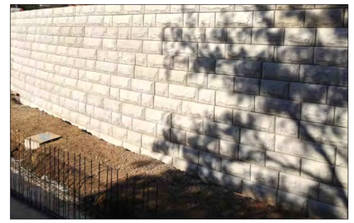


CONCEPTUAL SITE CONDITIONS

SCALE: 1"=20'-0"

20 0 20 40

SCALE: 1 INCH = 20 FT.



MSE WALL

CAST-IN-PLACE CONCRETE WALL

SOLDIER PILE AND LAGGING WALL

SCHEMATICS OF WALL REPLACEMENT ALTERNATIVES

LEGEND

- APPROX. LOT LINE PER CITY GIS
- STOCKADE FENCE
- CHAIN LINK FENCE
- GUARDRAIL
- OHW — OVERHEAD WIRE
- S — SEWER LINE
- D — DRAIN LINE
- G — GAS LINE
- 100 — MAJOR CONTOUR LINE
- 98 — MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- CONCRETE
- RIP RAP
- LANDSCAPED AREA
- CRUSHED STONE
- BRICK
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- LIGHT POLE (ONE ARM)
- SIGN
- SIGN (TWO POSTS)
- BOLLARD
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- SPIGOT
- SPRINKLER
- GAS GATE VALVE
- ELECTRIC BOX
- CATCH BASIN
- DRAIN MANHOLE
- MANHOLE
- ELECTRIC MANHOLE
- WATER MANHOLE
- WATER METER
- SEWER MANHOLE
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- APPROX. BORING LOCATION

CONCEPTUAL PLANS

Project:

CITY OF BIDDEFORD, MAINE

RIVERWALK RETAINING WALLS REPLACEMENT

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Date:	03/23/2022
Drawn By:	YS
Reviewed By:	TJS
Approved By:	TF
W&S Project No.:	ENG21 -1343
W&S File No.:	

Drawing Title: CONCEPTUAL SITE CONDITIONS

Sheet Number: FIGURE 4

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APPENDIX A

Photographs

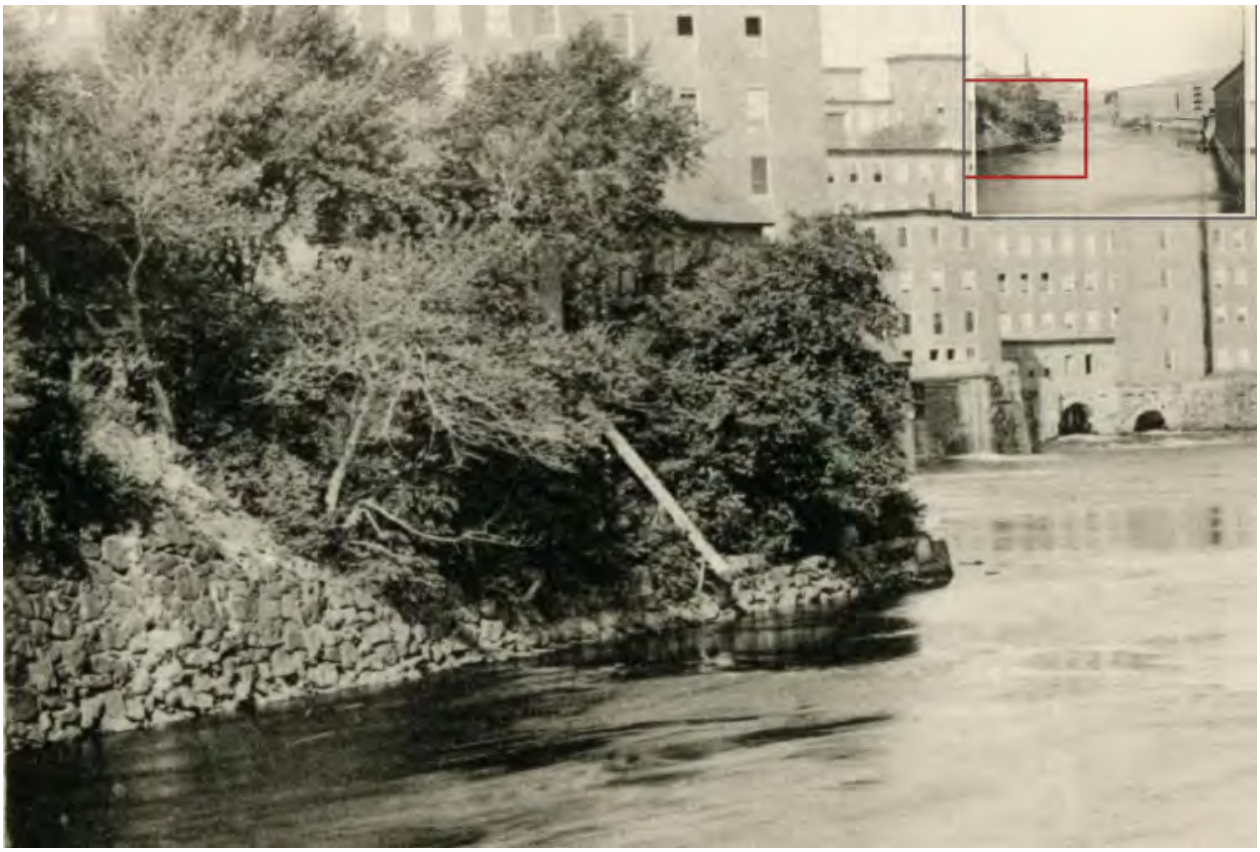


Photo 1- Wall Circa 1894 from mainememory.net

Photo 2 – Wall circa 1912 from mainememory.net

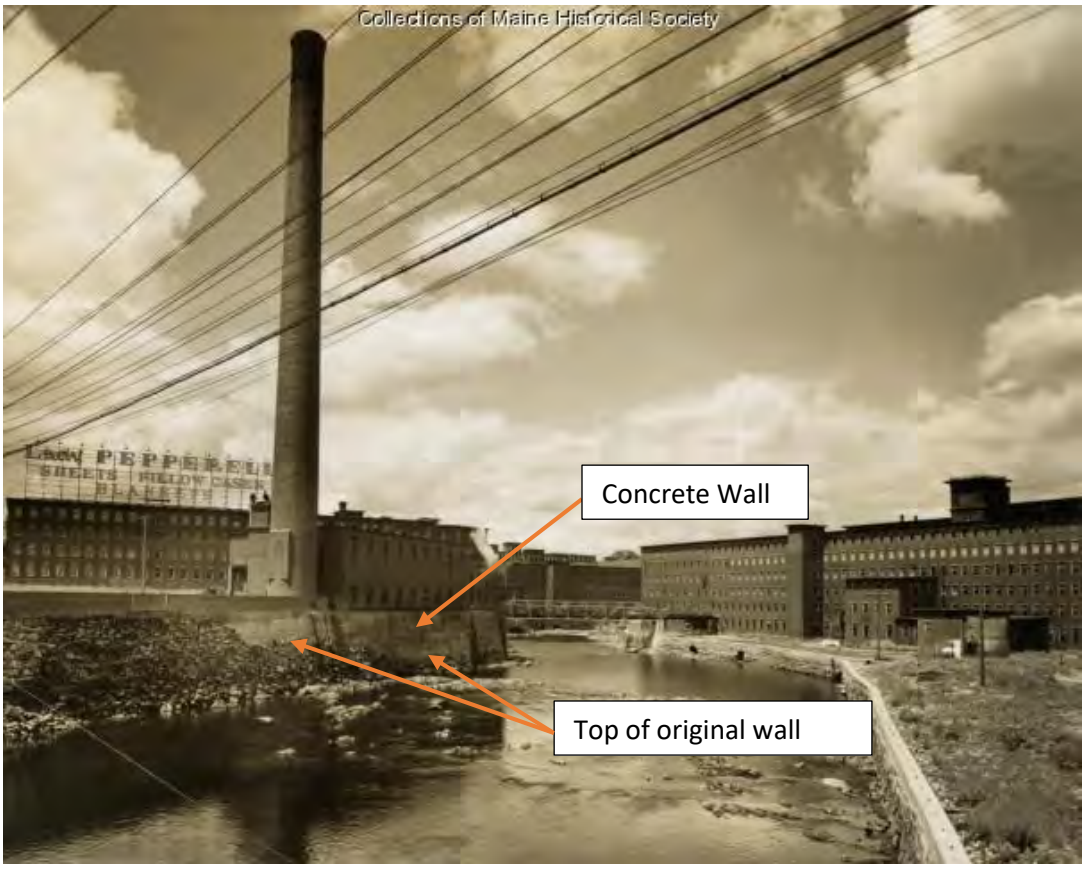


Photo 3 – Wall, Smokestack, and Boiler House Building Circa 1920 from mainememory.net

Photo 4 – Wall and Overhang Structure from Google Maps

Photo 5 – Wall Failure Before Stabilization on about November 1, 2021

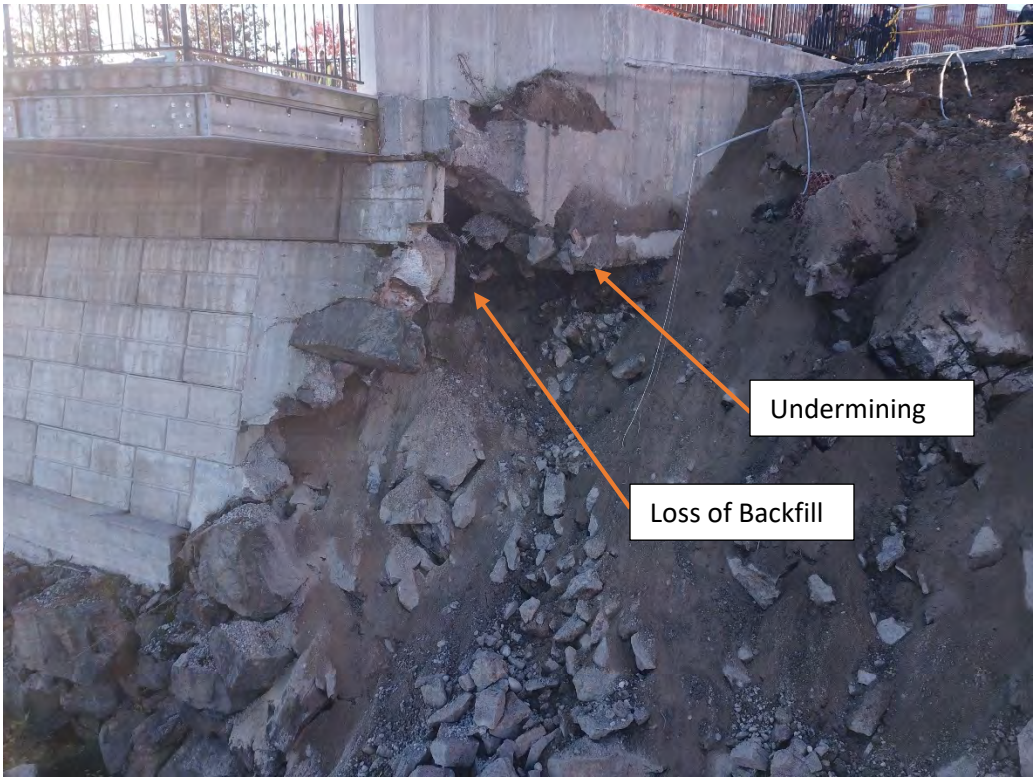


Photo 6 – Loss of Soil Behind MSE Wall and Undermining of Concrete Wall, November 3, 2021

Photo 7 – Concrete Wall at Smokestack, November 2, 2021

Photo 8 – Riprap Stabilized Slope and Access Road, December 9, 2021

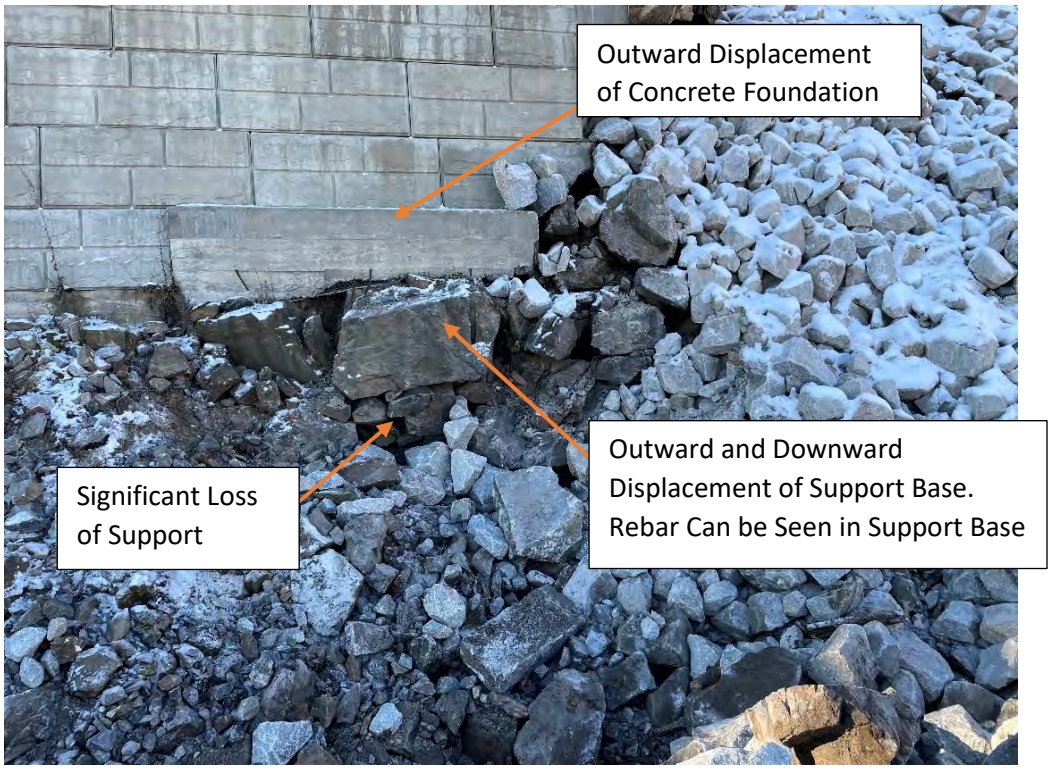


Photo 9 – Displacement of Concrete Foundation and Support Base, December 9, 2021

Photo 10 – Damage to West Side of MSE Wall, December 9, 2021

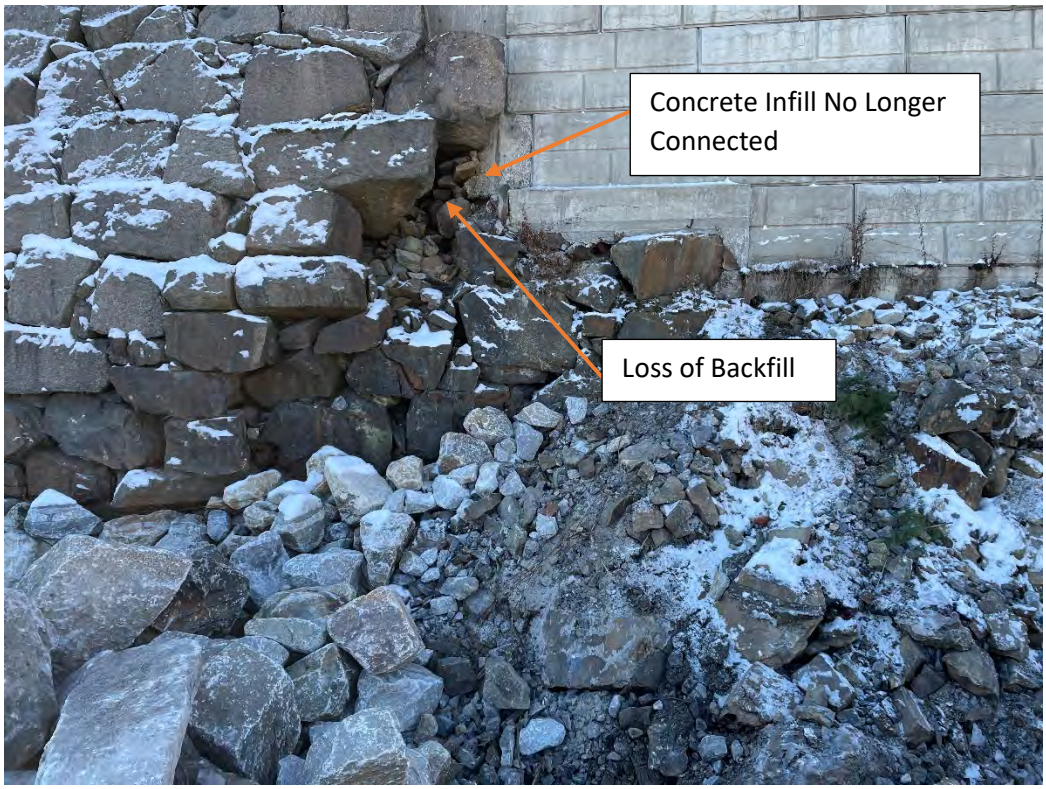


Photo 11 – Damage to East Side of MSE Wall, December 9, 2021

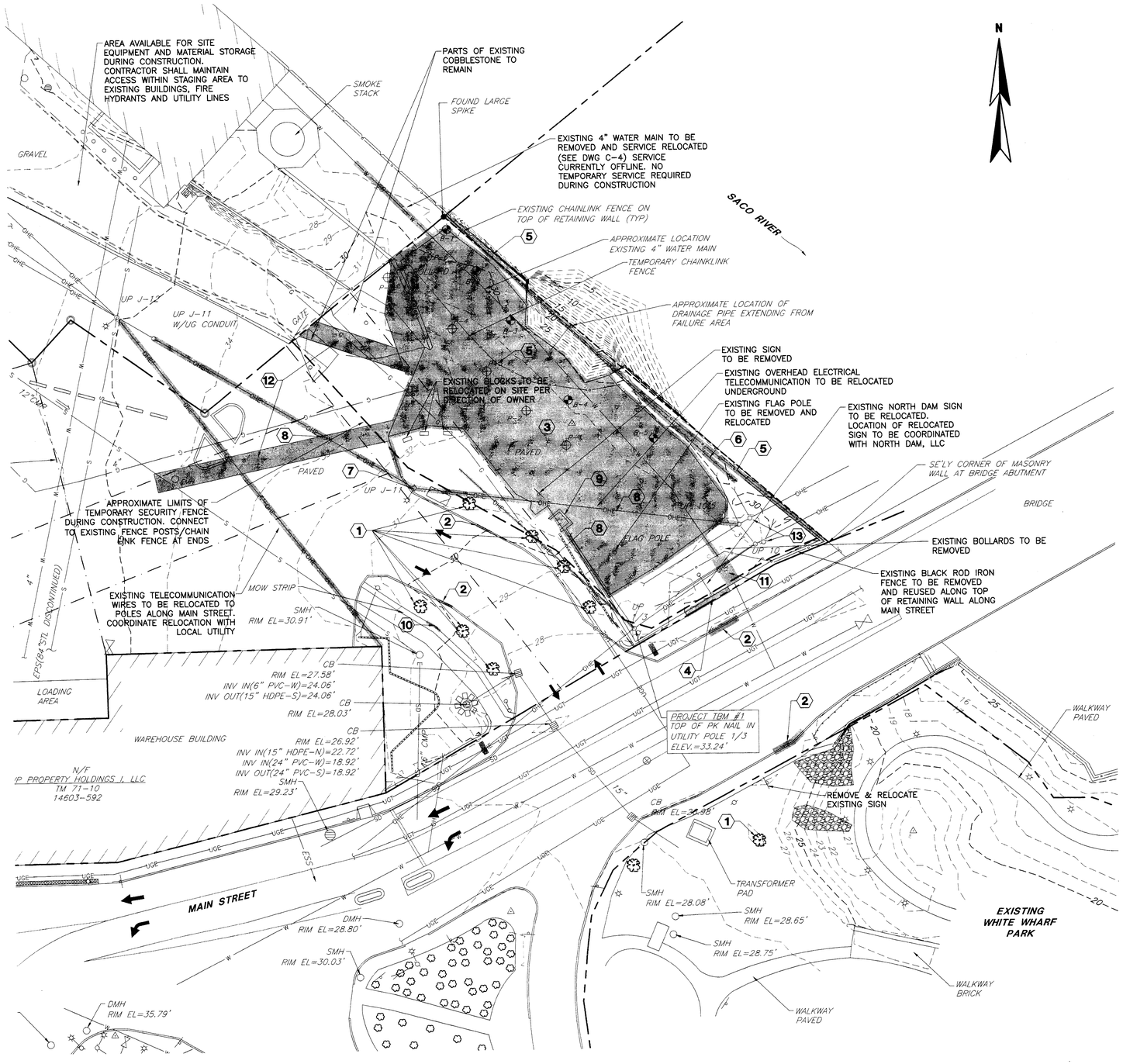
Photo 12 – Bulging of Stacked Block Wall, December 9, 2021

APPENDIX B

Summit and Wright Pierce Design Plans

NOTES:

1. EXISTING TREES TO REMAIN. CONTRACTOR TO TAKE SPECIAL CARE TO PROTECT EXISTING TREES ADJACENT TO PROJECT AREA.
2. EXISTING GRANITE CURBING TO BE REMOVED & SET ASIDE FOR REUSE IN PROJECT AREA.
3. EXISTING PAVEMENT TO BE REMOVED TO LIMITS SHOWN. SAWCUT PAVEMENT AT LIMITS FOR REMOVAL.
4. PORTION OF EXISTING RETAINING WALL ALONG MAIN STREET TO BE REMOVED TO PROVIDE ACCESS FOR BIDDEFORD RIVERWALK PATHWAY
5. EXISTING CHAINLINK FENCE TO BE REMOVED TO LIMITS SHOWN.
6. EXISTING GUARDRAIL TO BE REMOVED TO LIMITS SHOWN.
7. EXISTING POLE & LIGHT TO BE REMOVED.
8. EXISTING OVERHEAD ELECTRICAL TO BE RELOCATED UNDER GROUND.
9. EXISTING FOUNDATION OF RETAINING WALL TO BE REMOVED TO A POINT BELOW FINISHED GRADE.
10. REMOVE EXISTING MOW STRIP TO LIMITS SHOWN.
11. EXISTING METER VAULT AND METER ASSEMBLY TO BE REMOVED. COORDINATE DISCONNECT WITH BIDDEFORD-SACO WATER COMPANY.
12. EXISTING PAVEMENT TO BE DEMOLISHED FOR NEW UNDERGROUND CONDUIT.
13. EXISTING UNUSED CMP POLES TO BE REMOVED BY CMP.
14. EXISTING TREES AND VEGETATION ALONG RETAINING WALL TO BE PRUNED AND REMOVED AS NEEDED FOR CONSTRUCTION. COORDINATE PRUNING WITH ENGINEER.



GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY RPB
CHECKED BY SAH
DATE
APPROVED BY JCE
DATE
BOOK NO.
PROJECT NO. 11541A
SCALE AS NOTED

STATE OF MAINE JONATHAN C. EDGERTON No. 6824 PROFESSIONAL ENGINEER

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CITY OF BIDDEFORD, MAINE
BIDDEFORD RIVERWALK
PHASE I

EXISTING CONDITIONS & DEMOLITION PLAN

DRAWING
C-2

LAST SAVED BY: RYAN.BEISAW 6/20/2011 3:54 PM

G:\DWGS\11541-BIDDEFORD-ME\11541A-FD\PHASE-I\CIV\11541AC-2.DWG | 11541aC-2 | 1:1 | ---- | 6/21/2011 10:06:02 AM | RYAN.BEISAW

TD-1821

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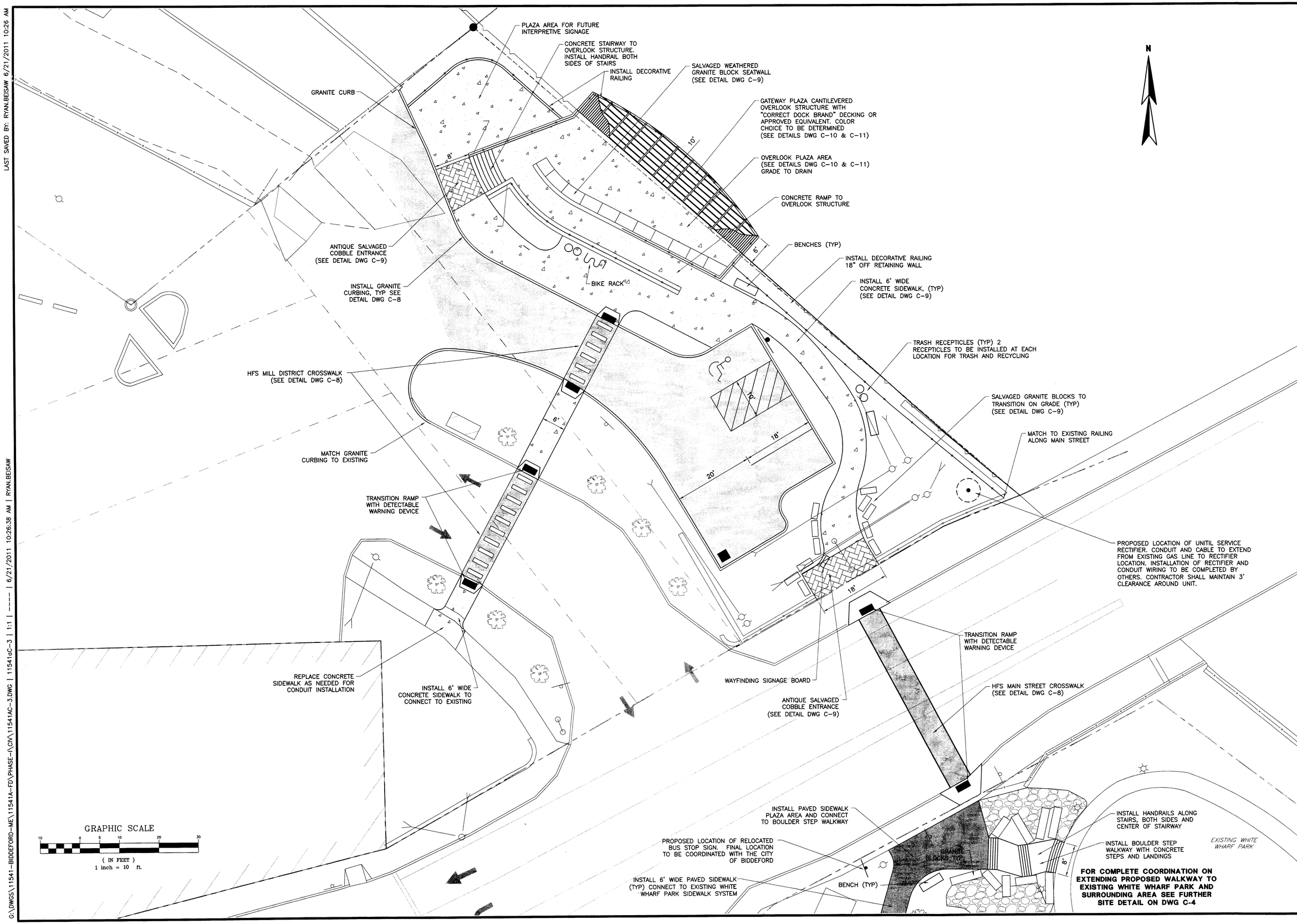

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
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4			
5			

DRAWN BY RPB
CHECKED BY SAH
DATE
APPROVED BY JCE
DATE
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PROJECT NO. 11541A
SCALE AS NOTED

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No. 6824
LICENSED
PROFESSIONAL ENGINEER

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CITY OF BIDDEFORD, MAINE
BIDDEFORD RIVERWALK
PHASE I

SITE PLAN

DRAWING
C-3

TD-18

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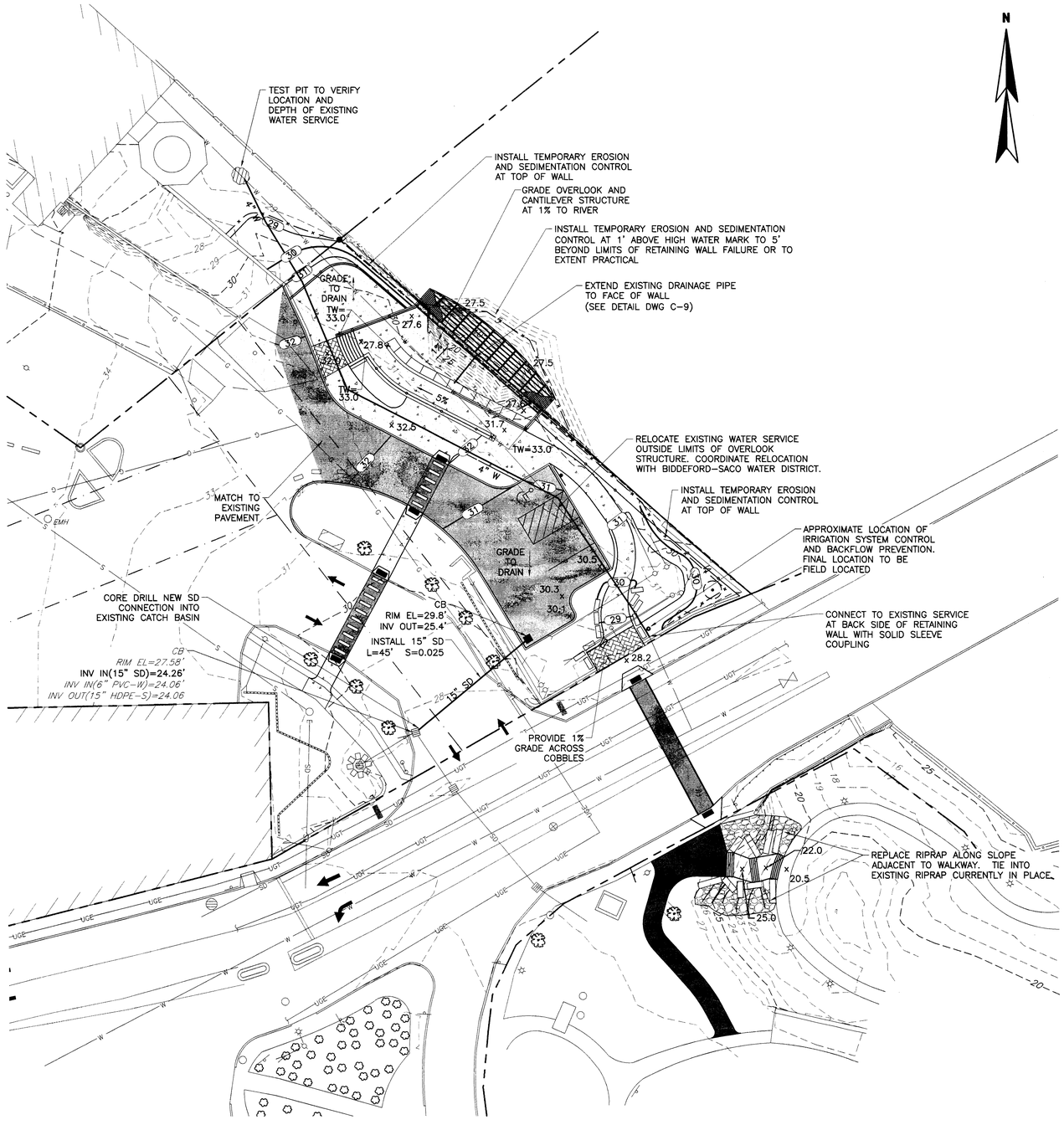

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY RPB
CHECKED BY SAH
DATE
APPROVED BY JCE
DATE
BOOK NO.
PROJECT NO. 11541A
SCALE AS NOTED

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JONATHAN C. EDGERTON
No. 6624
REGISTERED PROFESSIONAL ENGINEER

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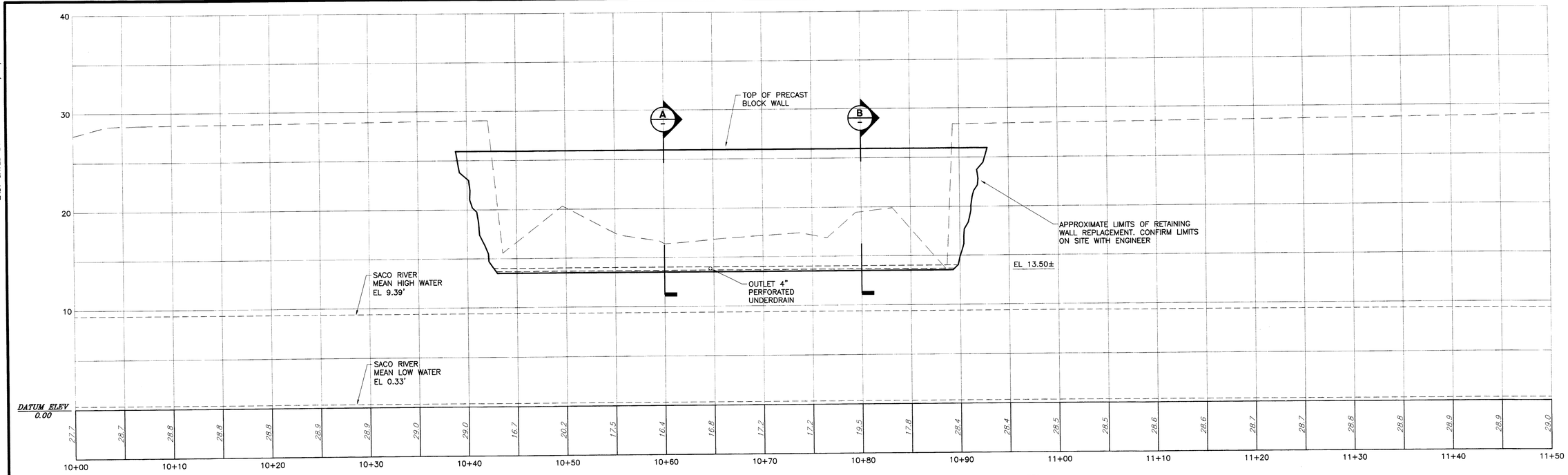
BIDDEFORD RIVERWALK
PHASE I

GRADING & UTILITIES PLAN

DRAWING
C-4

G:\DWGS\11541-BIDDEFORD-ME\11541A-FD\PHASE-1\CIV\11541AC-4.DWG | 11541aC-4 | 1:1 | ---- | 6/21/2011 10:06:19 AM | RYAN.BEISAW

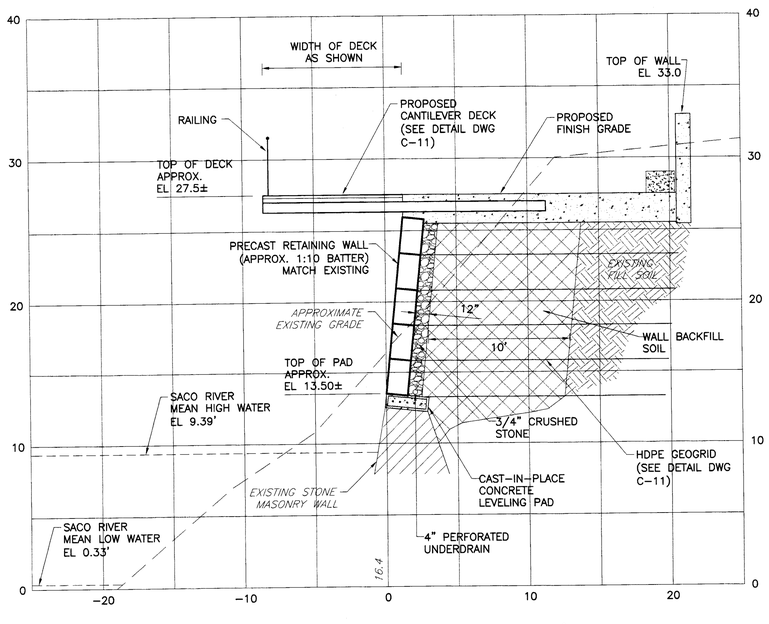


ELEVATION

SCALES:
VERT: 1"=5'
HORIZ:1"=5'

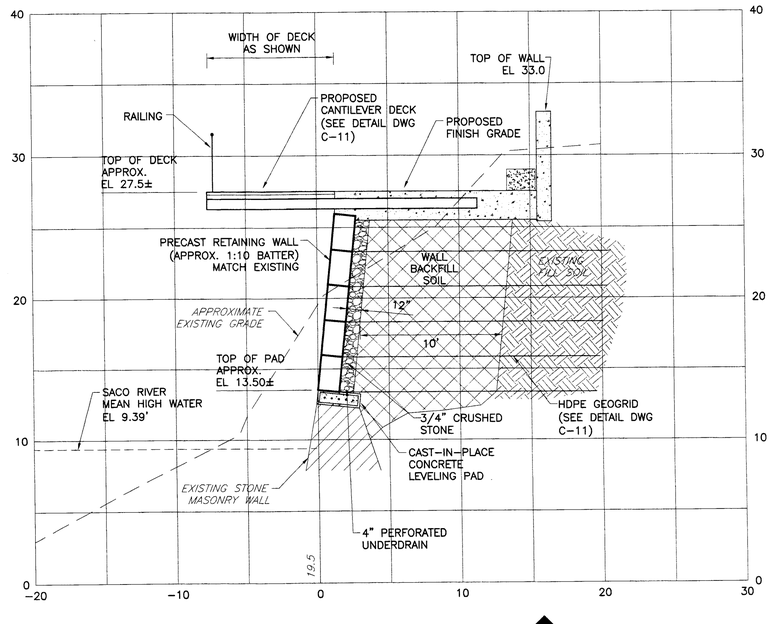
NOTES:

1. ELEVATIONS REFERENCE VERTICAL DATUM NGVD29.
2. MEAN HIGH WATER AND MEAN LOW WATER LEVELS WERE AS RECORDED BY N.O.A.A. ON AUGUST 12, 2009.



RETAINING WALL CROSS SECTION A

SCALES:
VERT: 1"=5'
HORIZ:1"=5'



RETAINING WALL CROSS SECTION B

SCALES:
VERT: 1"=5'
HORIZ:1"=5'

NO	SUBMISSIONS/REVISIONS	APV'D	DATE
1			
2			
3			
4			

DRAWN BY: RPB
CHECKED BY: SAH
DATE:
APPROVED BY: JCE
DATE:
BOOK NO.:
PROJECT NO. 11541A
SCALE: AS NOTED

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CITY OF BIDDEFORD, MAINE
BIDDEFORD RIVERWALK
PHASE I

CANTILIEVER ELEVATION AND CROSS SECTIONS

DRAWING
C-10

LAST SAVED BY: RYAN.BEISAW 6/21/2011 8:26 AM

G:\DWGS\11541-BIDDEFORD-ME\11541A-FD\PHASE-I\CIV\11541AC-10.DWG | C-9 | 1:1 | ---- | 6/21/2011 10:07:01 AM | RYAN.BEISAW

TD-1871

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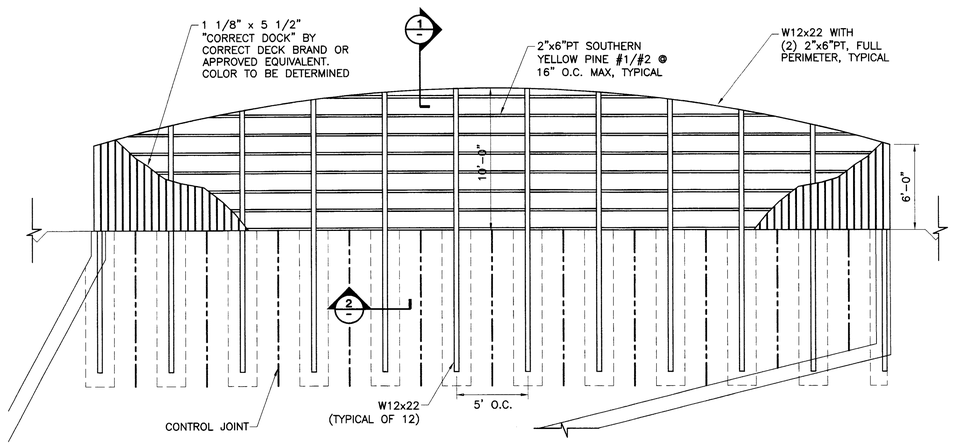
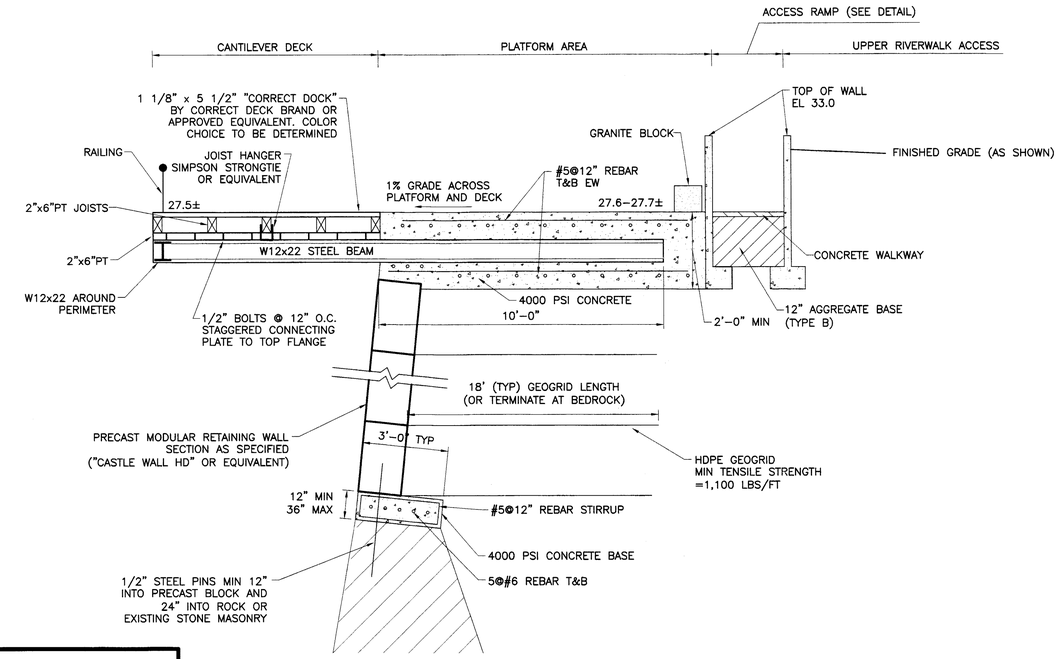


FRAMING PLAN

SCALE:1"=5'

NOTES:

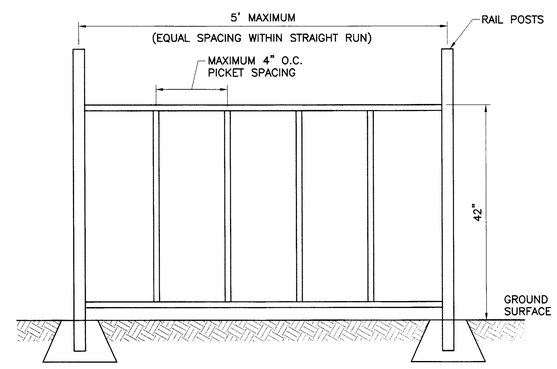
1. LIVE LOAD = 100 PSF
2. ALL BEAMS, CLIP ANGLES AND BOLTS SHALL BE HOT DIPPED GLAVANIZED



RETAINING WALL DETAIL WITH CANTILEVERED DECK SECTION

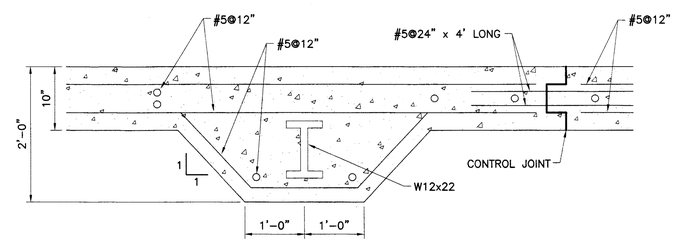
1

NTS



RAILING

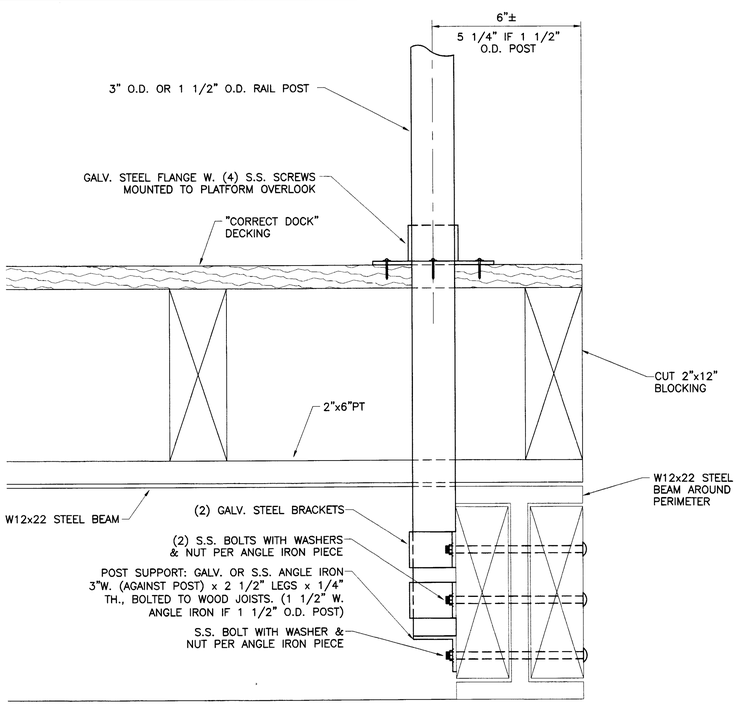
NTS



W BEAM CROSS SECTION

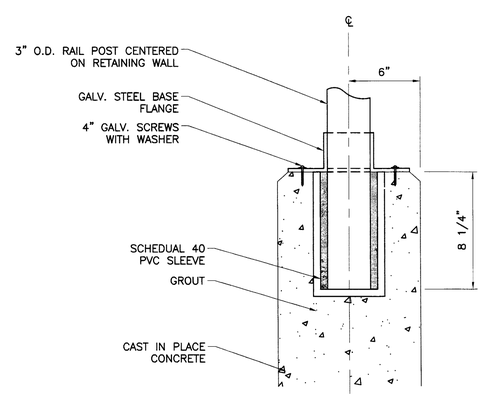
2

NTS



RAIL POST MOUNTING: TYPE A SECTION

NTS



RAIL POST MOUNTING: TYPE B SECTION

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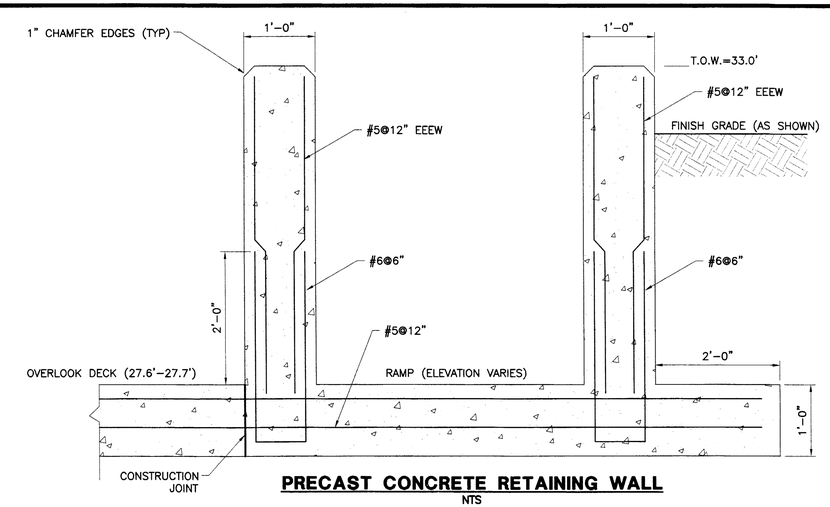

PRECAST CONCRETE RETAINING WALL

NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

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CHECKED BY SAH
DATE
APPROVED BY JCE
DATE
BOOK NO.
PROJECT NO. 11541A
SCALE AS NOTED

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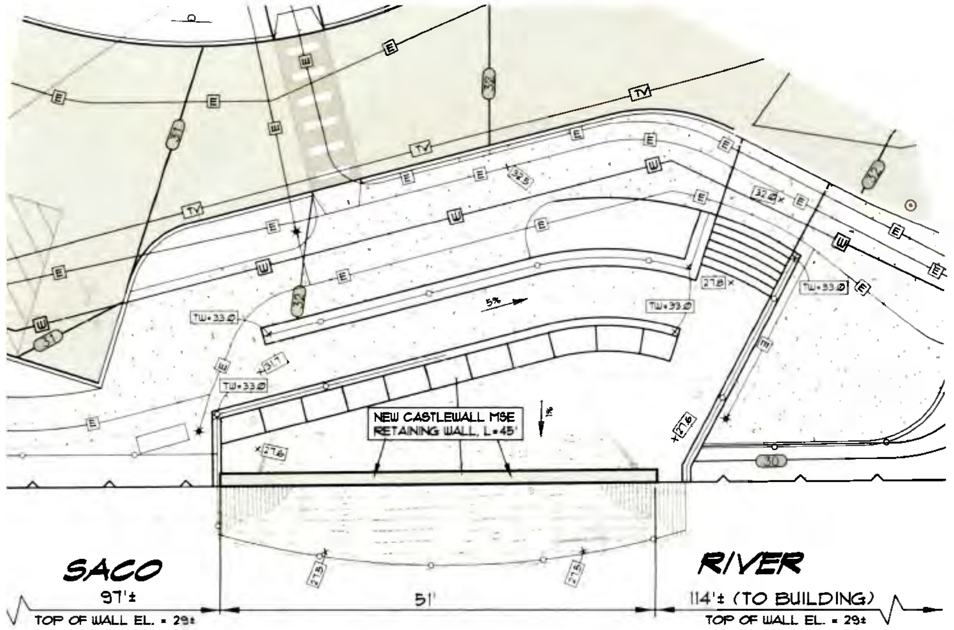
CITY OF BIDDEFORD, MAINE
BIDDEFORD RIVERWALK
PHASE I

CANTILEVER STRUCTURE DETAILS

DRAWING
C-11

G:\DWGS\11541-BIDDEFORD-ME\11541A-FD\PHASE-I\CIV\11541AC-11.DWG | 11541aC-11 | 1:1 | ---- | 6/21/2011 10:07:06 AM | RYAN.BEISAW

TD-182



PLAN VIEW

SCALE: 1" = 10'

WALL INSTALLATION

1) INSTALL BASE COURSE OF BLOCKS ON PREPARED CONCRETE FOOTING. SEE DETAIL.

2) INSTALL DRAINAGE AGGREGATE AND BACKFILL SOIL BEHIND THE WALL AND BACKFILL SOIL IN FRONT OF THE BASE COURSE TO THE ELEVATION INDICATED. INSTALL MATERIAL IN MAXIMUM 15" THICK LIFTS COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557, MODIFIED PROCTOR TEST DO NOT USE HEAVY EQUIPMENT WITHIN 3 FEET OF THE BACK FACE OF THE WALL. COMPACT TO MINIMUM 93% WITHIN FIRST 3 FEET.

3) INSTALL GEOGRID USING BODKIN BAR CONNECTIONS IN FULL LENGTH PIECES WITH MINIMUM LENGTH INDICATED TO THE BACK FACE OF THE WALL. INSTALL GRID WITH ROLL DIMENSION I.E. STRONG DIRECTION PERPENDICULAR TO THE WALL FACE.

4) SWEEP AND CLEAN OFF BLOCK WALL AND INSTALL NEXT COURSE OF BLOCKS. SHIMS MAY BE REQUIRED TO PLUMB BLOCK PROVIDE A SLIGHT BATTER BACK INTO THE RETAINED SOIL.

5) PULL GEOGRID TIGHT AND SECURE TO HOLD TENSION ON GEOGRID. INSTALL DRAINAGE MATERIAL AND BACKFILL MATERIAL ON GRID TAKING PRECAUTIONS TO KEEP GEOGRID TIGHT. COMPACT PARALLEL TO THE WALL FACE BEGINNING AT THE BACK FACE OF THE WALL AND CONTINUING TO THE LIMITS OF THE REINFORCED FILL ZONE.

6) DO NOT ALLOW ANY CONSTRUCTION EQUIPMENT TO TRAVEL DIRECTLY ON THE GEOGRID MATERIAL.

7) CONTRACTOR SHALL TAKE PRECAUTIONS DURING THE INSTALLATION AND COMPACTION OF THE DRAINAGE AND BACKFILL MATERIAL TO ENSURE THAT BACKFILL MATERIAL DOES NOT CONTAMINATE THE DRAINAGE LAYER DIRECTLY BEHIND THE WALL. REMOVE AND REPLACE ANY AREAS OF DRAINAGE MATERIAL THAT INADVERTENTLY BECOMES CONTAMINATED DURING THE BACKFILLING OPERATION.

8) CONTINUE PLACEMENT OF BLOCK WALL, GEOGRIDS, DRAINAGE AGGREGATE AND BACKFILL SOIL TO FULL HEIGHT OF WALL MAINTAINING HORIZONTAL AND VERTICAL ALIGNMENT DURING CONSTRUCTION.

9) FINISH GRADE FOR POSITIVE DRAINAGE AWAY FROM WALL FACE

10) DOWELS INTO ROCK SHALL CONSIST OF #5 DEFORMED REINFORCING STEEL BARS. BARS SHALL BE DRIVEN INTO THE DRILL HOLE SUFFICIENT TO PROVIDE ADEQUATE ANCHORAGE

DRAINAGE

1) DURING CONSTRUCTION BEFORE RAIN EVENTS, BACKFILL SURFACE SHALL BE GRADED AWAY FROM THE WALL FACE AND A TEMPORARY SOIL BERM CONSTRUCTED NEAR THE TOP CREST TO PREVENT SURFACE WATER RUNOFF FROM OVERTOPPING THE WALL. PROVIDE PRECAUTIONS AS NECESSARY TO ENSURE THAT SURFACE RUNOFF FROM ADJACENT AREAS DOES NOT ENTER THE WALL CONSTRUCTION SITE. DURING CONSTRUCTION BEFORE RAIN EVENTS, BACKFILL SURFACE SHALL BE SMOOTHED OUT TO PREVENT PONDING OF WATER AND SATURATION OF SOIL.

MATERIAL SPECIFICATION

1) DRAINAGE AGGREGATE SHALL BE CLEAN ANGULAR CRUSHED STONE MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D422.

SIEVE SIZE	PERCENT PASSING
1 INCH	100
¾ INCH	90 - 100
⅜ INCH	20 - 55
No. 4	0 - 10
No. 8	0 - 5

2) WALL BACKFILL SHALL BE A FREE DRAINING, WELL GRADED GRANULAR MATERIAL MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D422.

SIEVE SIZE	PERCENT PASSING
4 INCH	100
1/4"	0 - 70
no. 200	0 - 7

REFERENCE: MDOT 70320 GRAVEL BORROW, MODIFIED TO REDUCE THE MAXIMUM PARTICLE SIZE AND PERCENT FINES.

3) SHIMS SHALL BE A HIGH COMPRESSIVE STRENGTH SLIP RESISTANT MATERIAL 1" MAXIMUM THICKNESS BY 4" DEEP BY 8" WIDE MINIMUM.

4) TENSAR GEOGRID REINFORCEMENT SHALL BE HIGH DENSITY POLYETHYLENE AS MANUFACTURED BY TENSAR EARTH TECHNOLOGIES, INC., ATLANTA, GEORGIA. TYPE AND LENGTH SHALL BE AS INDICATED ON THESE PLANS.

5) CONCRETE FOR FOOTINGS AND FILLER SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 psi, A MAXIMUM AGGREGATE SIZE OF ¾" AND AN ENTRAINED AIR OF 6% (±1.5%)

6) REINFORCING STEEL SHALL BE GRADE 60 HAVING A MINIMUM YIELD STRENGTH OF 60,000 psi.

CONSTRUCTION CONTROL

1) IT IS THE RESPONSIBILITY OF THE OWNER, CONTRACTOR OR THEIR RESPECTIVE REPRESENTATIVES TO ENSURE THAT CONSTRUCTION OF THE WALL AND MATERIALS USED IN THE CONSTRUCTION OF THE WALL ARE IN ACCORDANCE WITH THESE SPECIFICATIONS AND/OR THE CONTRACT SPECIFICATIONS WHICH EVER ARE MORE STRINGENT.

2) OLDCASTLE PRECAST AND ITS ENGINEER ACCEPTS NO RESPONSIBILITY NOR LIABILITY IN THE DETERMINATION OF THE ADEQUACY OF SITE MATERIALS AND/OR PROCEDURES.

3) PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THAT ALL ELEVATIONS AND ASSUMED SITE CONDITIONS SHOWN ON THESE DRAWINGS ARE ACCURATE TO THE GIVEN SITE CONDITIONS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF OLDCASTLE PRECAST PRIOR TO START OF CONSTRUCTION.

4) THE FOLLOWING CONSTRUCTION TOLERANCES ARE RECOMMENDED:
VERTICAL CONTROL: +/- 1.25 INCHES OVER 10 FT± 3 INCHES MAXIMUM.
HORIZONTAL CONTROL: +/- 1.25 INCHES OVER 10 FT± 3 INCHES MAXIMUM
ROTATION FROM PLAN BATTER: +2.0 DEGREES, -0.0 DEGREES
BULGING: 1 INCH OVER 10 FT DISTANCE

FOUNDATION NOTES

1) FOUNDATION EXCAVATION SHALL EXTEND TO THE SOLID BLOCKS OF THE EXISTING WALL. LOOSE MATERIAL OR UNSTABLE FOUNDATION SOILS SHALL BE REMOVED FROM THE AREA TO BE OCCUPIED BY THE WALL FOOTING.

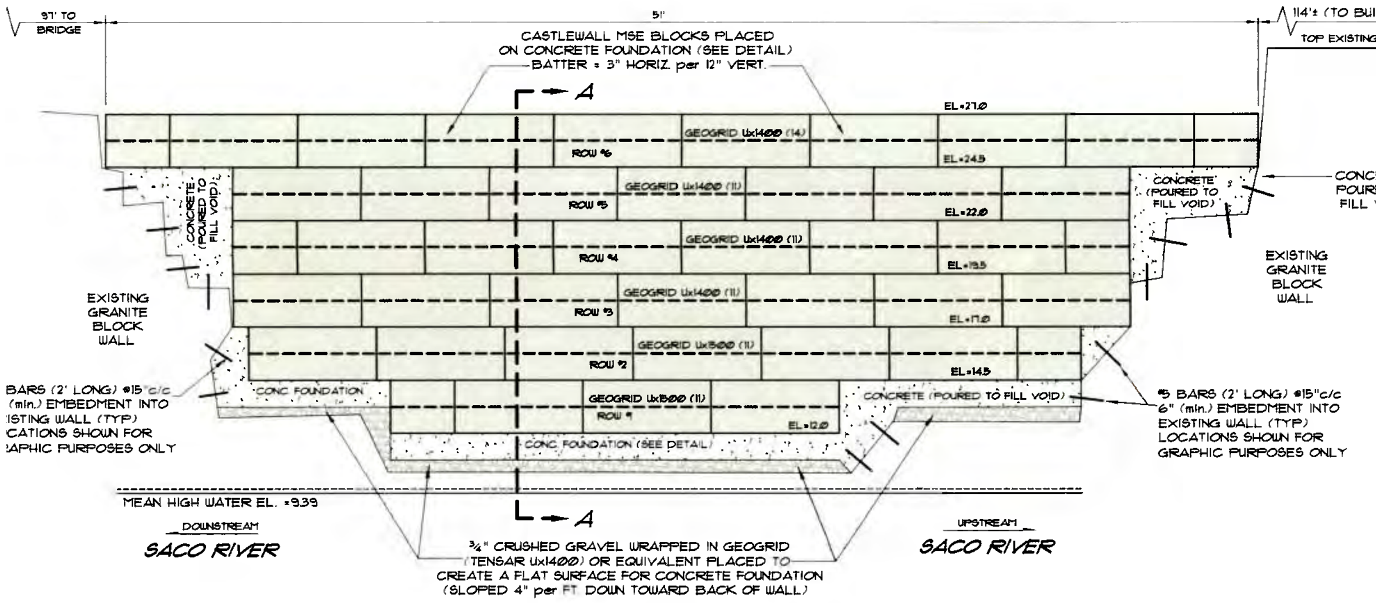
2) UPON COMPLETION OF THE EXCAVATION, THE NATURAL SUBGRADE SHALL BE COMPACTED BY A MINIMUM OF SIX PASSES WITH HAND OPERATED VIBRATORY COMPACTION EQUIPMENT (MIN. 500 lbs. STATIC WEIGHT)

3) CONSTRUCT THE WALL FOOTING AS SHOWN ON THIS DRAWING AND AS OTHERWISE DIRECTED BY THE WALL DESIGNER.

DESIGN ASSUMPTIONS

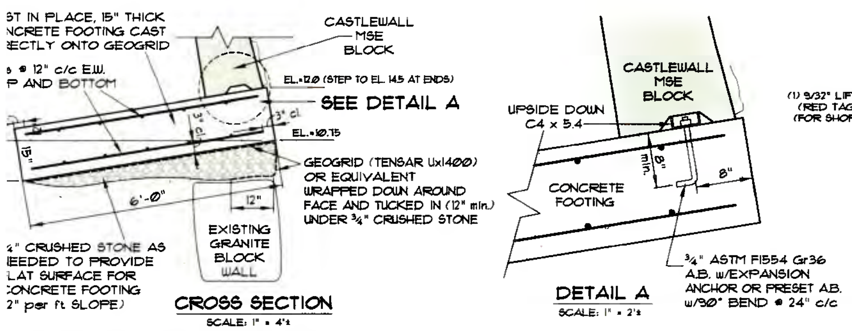
1) DESIGN OF CASTLEROCK MSE WALL IS IN GENERAL ACCORDANCE WITH "DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS", SECOND EDITION, NCMA, "SEGMENTAL RETAINING WALLS -SEISMIC DESIGN MANUAL", FIRST EDITION, NCMA.

2) THE FOLLOWING ASSUMPTIONS WERE USED IN THE DESIGN.
A) SLOPE AT TOP & BACK OF WALL - LEVEL
B) SOIL PROPERTIES ASSUMED:
REINFORCED ZONE - WALL BACKFILL - PHI=34° - U.W. 135 pcf
RETAINED ZONE - GRANULAR SOIL - PHI=30° - U.W. 125 pcf
FOUNDATION SOILS - GRANULAR SOIL - PHI=30° - U.W. 125 pcf
IF THE ACTUAL SOIL PROPERTIES DIFFER SIGNIFICANTLY, SUMMIT SHOULD BE NOTIFIED IMMEDIATELY.
C) LIVE LOAD SURCHARGE = 100 psf
D) MAXIMUM CONTACT PRESSURE IS LESS THAN 2,000 psf
E) GROUNDWATER AT OR BELOW THE BASE OF THE WALL.
F) SEISMIC DESIGN COEFFICIENT = 0.12

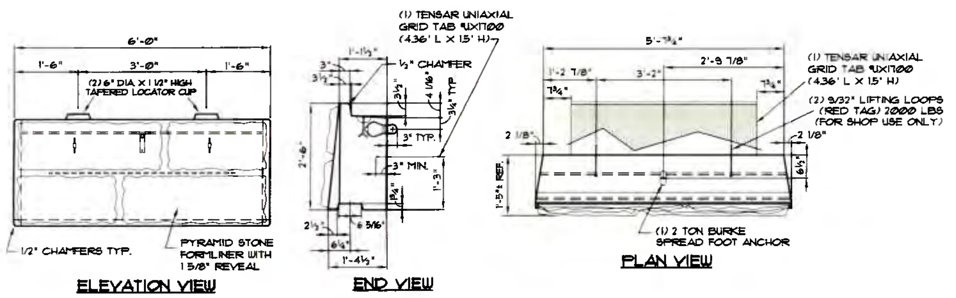


PROFILE

SCALE: 1" = 4'±



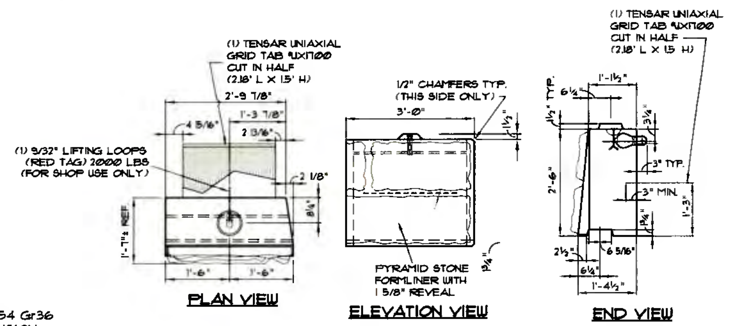
WALL FOUNDATION DETAIL



APPROX WEIGHT = 1½ TON
CONCRETE MINIMUM STRENGTH - 5,000 PSI @ 28 DAYS

30" FULL MIDDLE

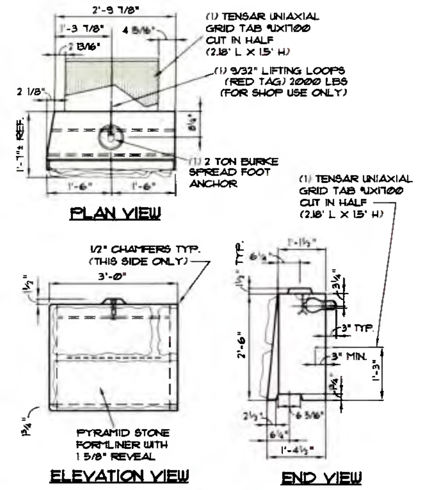
SCALE: 1" = 2'



APPROX WEIGHT = ¾ TONS
CONCRETE MINIMUM STRENGTH - 5,000 PSI @ 28 DAYS

30" LEFT HALF MIDDLE

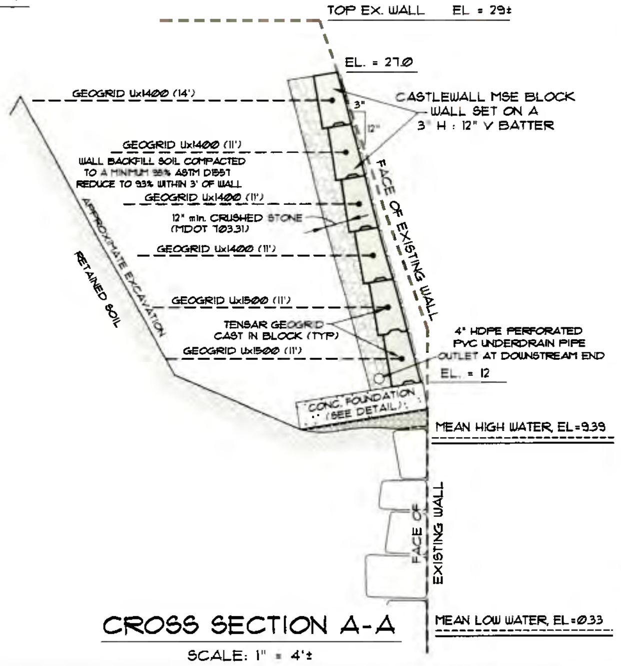
SCALE: 1" = 2'



APPROX WEIGHT = ¾ TONS
CONCRETE MINIMUM STRENGTH - 5,000 PSI @ 28 DAYS

30" RIGHT HALF MIDDLE

SCALE: 1" = 2'



CROSS SECTION A-A

SCALE: 1" = 4'±

NO.	REVISION	DATE
2	UPDATE NOTES	9-22-11
1	UPDATE PROFILE	9-9-11

TITLE: CASTLEROCK MSE RETAINING WALL PLAN / PROFILE

SCALE: AS NOTED
DATE: AUGUST 2011
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: SACO RIVER WATERFRONT PARK
ROUTE 9 - BIDDEFORD, MAINE

CLIENT: STONEAGE STONEWORKS

640 MAIN ST.
LEWISTON, MAINE 04240
Tel.: (207) 576-3313
Fax: (207) 795-6128
www.summitgeoeng.com
SUMMIT GEOENGINEERING SERVICES

STATE OF MAINE
WILLIAM M. PETERLEIN 5787
LICENSED PROFESSIONAL ENGINEER

JOB NO. - 11186

SHEET NUMBER 1

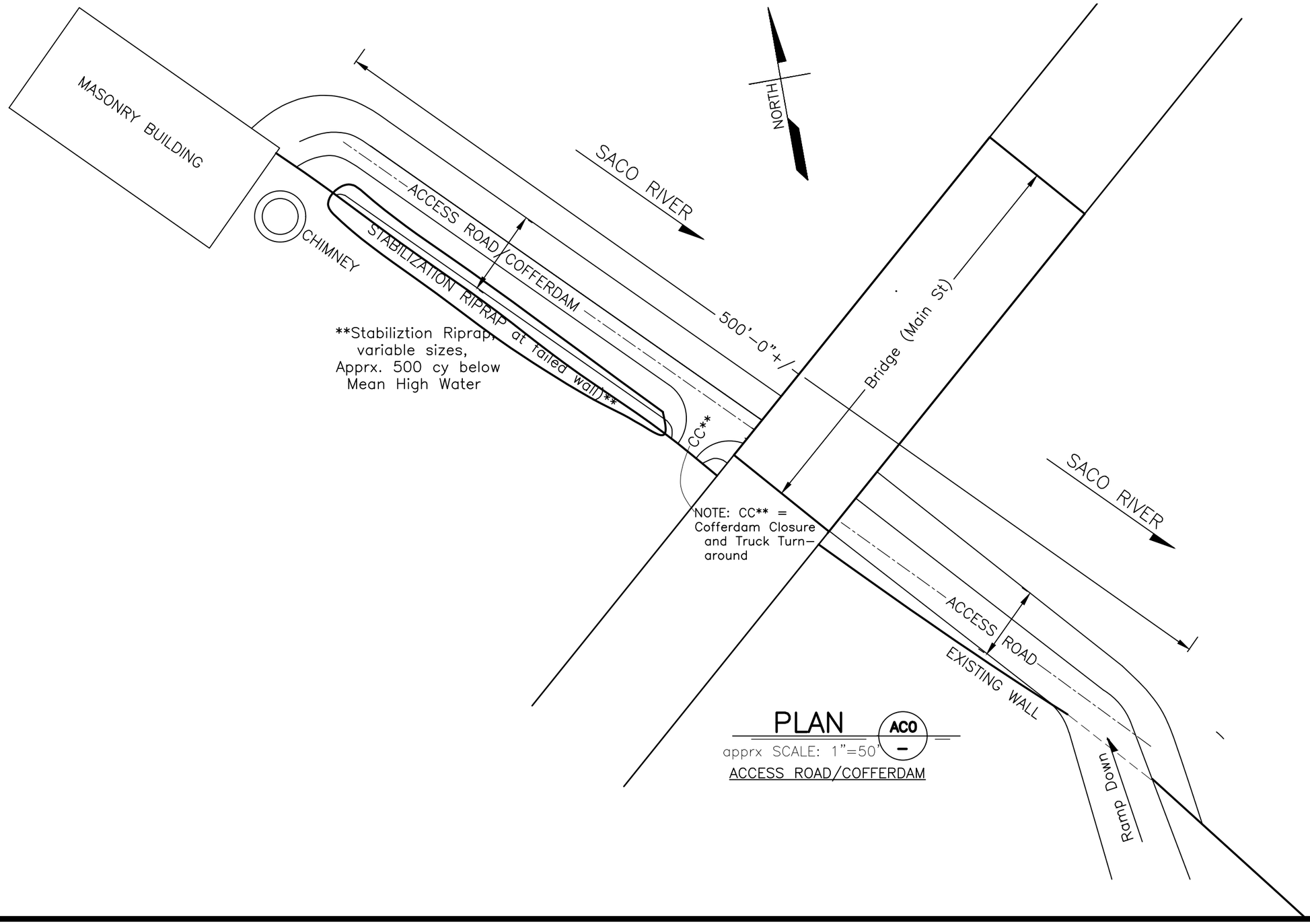
APPENDIX C

Access Road/Cofferdam Plan

PROJECT: SHAW BROS. BIDDEFORD
SUBJECT: ACCESS ROAD COFFERDAM
ITEM: PLAN VIEW

GAGNON ENGINEERING INC.
Structural Consultants
198 Main Street
GORHAM, MAINE 04038
(207 939-4689)

DATE: 11/15/21
BY: RG
SHEET: 1 OF 9999
PROJECT NO. 001SB

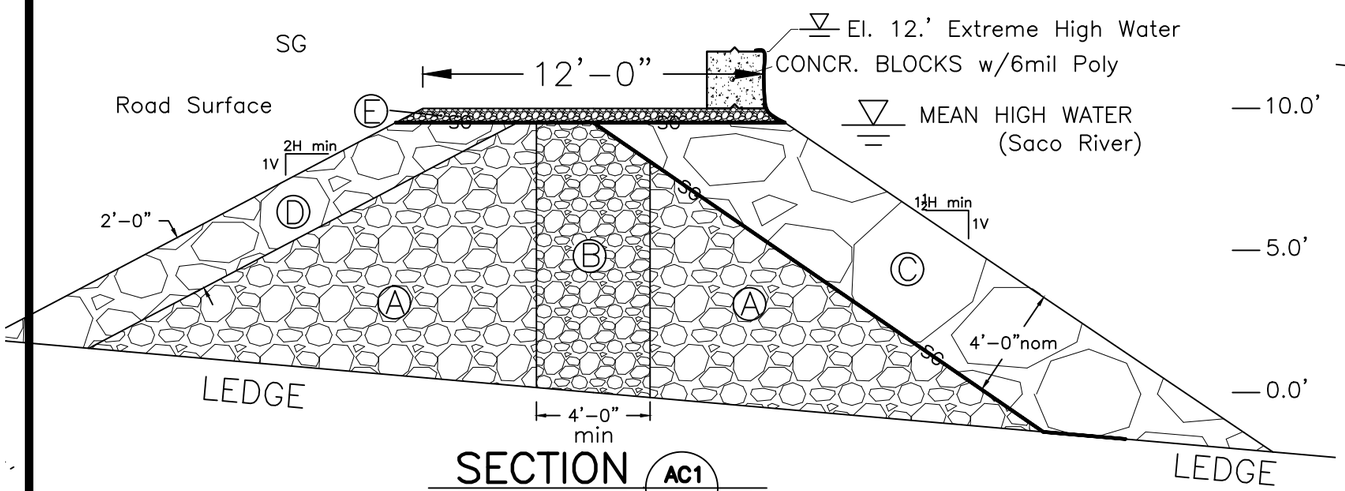


PLAN ACO
apprx SCALE: 1"=50'
ACCESS ROAD/COFFERDAM

PROJECT: SHAW BROS. – BIDDEFORD
SUBJECT: ACCESS ROAD/COFFERDAM
ITEM: SECTIONS

GAGNON ENGINEERING INC.
Structural Consultants
198 Main Street
GORHAM, MAINE 04038
(207 939-4689)

DATE: 11/15/21
BY: RG
SHEET: 2 OF 9999
PROJECT NO. SO

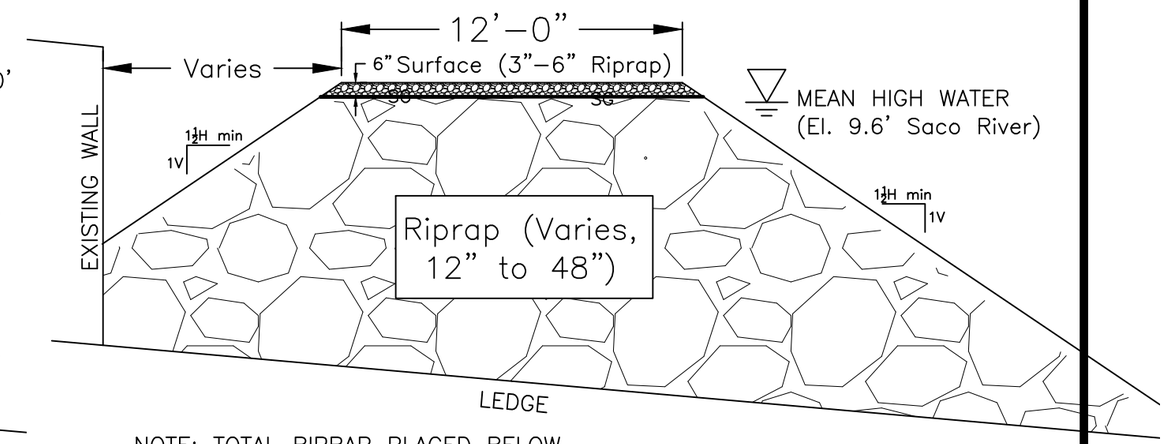


SECTION AC1

SCALE: 3/16"=1'–0"

TYP. SECTION (Work Area)
Access Road/Cofferdam
(& COFFERDAM CLOSURE)

NOTE: TOTAL RIPRAP PLACED BELOW MEAN HIGH WATER APPRX. 3200.cy



NOTE: TOTAL RIPRAP PLACED BELOW MEAN HIGH WATER APPRX. 2800.cy

SECTION AR1

SCALE: 3/16"=1'–0"

TYP. SECTION
Access Road (Downstream)

LEGEND

- Ⓐ 6–"–12" RIPRAP
- Ⓑ BLASTED ROCK (CORE)
- Ⓒ 24"–48" RIPRAP (OUTBOARD SLOPE)
- Ⓓ 12"–24" RIPRAP (INBOARD SLOPE)
- Ⓔ 3"–6" RIPRAP (ROAD SURFACE)
- SG SEPARATION GEOTEXTILE

SECTION GF1

SCALE: 1/2"=1'–0"

PERPENDIC. to JOISTS
(at Bearing Wall)

APPENDIX D

Summit Borings Logs

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG Project: Wall Replacement North Mill Dam Saco, Maine	Boring #: B-1 Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	31 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
3/19/2008			Caved at 5 ft

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/8	0 to 2	4	Brown to black SAND, little Gravel and	
1				2	Silt, trace coal ash, loose, dry, SM	FILL
				1		
2				3		
3						
4						
5						
	S-2	24/24	5 to 7	2	Olive brown Sandy SILT, little Clay, trace	
6				3	organics (appears to be a thin layer), wet,	
				7	stiff, ML	
7				14		
8					End of Boring on Auguer Refusal at 7.5 ft	
					(No Bedrock)	
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

SUMMIT
GEOENGINEERING SERVICES
640 Main Street
Lewiston, Maine 04240

SOIL BORING LOG

Boring #:	**B-2**
Project:	Wall Replacement, North Mill Dam, Saco, Maine
Project #:	17337
Sheet:	1 of 1
Prep by:	WMP
Drilling Co:	Northern Test Borings
Foreman:	M. Nadeau
Summit:	B. Peterlein, P.E.
Ground Elevation:	31 ft +/-
Reference:	Interpolated from C-1, Oak Point Associates
Date started:	3/19/2008
Date Comp:	3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved at 5 ft

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/12	0 to 2	19	Pavement	
1				7	Black medium to fine SAND, little Gravel	FILL
				5	and Silt, trace cinders and ashes, compact,	
2				3	dry, SM	
3						
4						
5						
	S-2	24/8	5 to 7	1	Black to brown SAND, little Gravel and	
6				2	Silt, trace bricks and cinder pieces, loose	
				3	dry, SM	
7				4		
8						
9						
10						
	S-3	1"/0	10 to 10.1	25-1"	Refusal at 10.1 feet, presumed to be a boulder	
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG Project: Wall Replacement North Mill Dam Saco, Maine	Boring #: B-3 Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	30 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH			
Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved at 5 ft

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/12	0 to 2	3	Brown to black SAND, little Gravel and	
1				3	Silt, trace of black cinders and ashes,	FILL
				2	trace brick, loose, moist, SM	
2				2		
3						
4						
5						
	S-2	24/2	5 to 7	3	Gray rock fragments mixed with brown	
6				5	Silty SAND, compact, wet, SM	
				6		
7				7		
8						
9						
10						
	S-3	24/0	10 to 12	29	No recovery	
11				12		
				6		
12				3		
13					Rocks/rubble	
14						
15						
16	S-4	18/0	15.5 to 17	29	No Recovery	
				12		
17				5		
18						
19						
20						
	S-5	24/2	20 to 22	24	Brown SAND, little Gravel and Silt, trace	
21				10	bricks, compact, SM	
				10		
22				5		
					End of boring at 22.5 ft on Boulders	

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG	Boring #: B-4
	Project: Wall Replacement North Mill Dam Saco, Maine	Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	31 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/8	0 to 2	3	Brown SAND, little Gravel and Silt, loose,	
1				2	moist, SM	FILL
				3		
2				5		
3						
4						
5						
	S-2	24/12	5 to 7	4	Olive brown Silty CLAY, trace fine Sand,	
6				3	firm, damp, ML	
				3		
7				3		
8						
9						
10						
	S-3	24/18	10 to 12	3	Olive brown Clayey SILT, trace fine Sand	
11				3	and Gravel, small brick pieces, firm,	
				23	wet, ML	
12				5		
13						
14						
15						
	S-4	24/8	15 to 17	8	Same as above	
16				10		
				9	weathered rock in bottom 6" of spoon	
17				4		
18						
19						
20						
	S-5	23/12	20 to 22	20	Same as above	
21				19	Weathered rock in bottom of 4" spoon	
				12		
22				50-5"		
					End of Boring at 22.5 ft on Auger Refusal	

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG Project: Wall Replacement North Mill Dam Saco, Maine	Boring #: B-5 Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	30 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/12	0 to 2	9	Brown Gravelly SAND, trace Silt and brick	
1				5	pieces, loose, moist, SP or SM	FILL
				3		
2				3		
3						
4						
5						
	S-2	24/12	5 to 7	2	Brown to black SAND, trace Silt and	
6				3	Gravel, white ash, brick pieces, loose,	
				4	SM or SP	
7				2		
8						
9						
10						
	S-3	24/12	10 to 12	3	Rock fragments, brick, rubble, mixed with	
11				2	brown to black SAND, little Silt, loose,	
				8	SM	
12				10		
13						
14						
15						
					Hole caved	
16						
17						
18						
19						
20						
21						
22					Auger refusal at 21.5 ft	

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG Project: Wall Replacement North Mill Dam Saco, Maine	Boring #: B-6 Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	38 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH			
Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/12	0 to 2	20	Brown Gravelly SAND, trace Silt, trace	
1				24	rubble fragments, dense, SP	FILL
				22		
2				24		
	S-2	24/12	2 to 4	14	Same as above with black ashes (coal),	
3				9	brick pieces, compact, dry, SP	
				7		
4				7	Wood fragments (stump or wood debris?)	
	S-3	24/12	4 to 6	3		
5				2		
				3		
6				3		
					End of Boring at 6 ft	
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

SUMMIT GEOENGINEERING SERVICES 640 Main Street Lewiston, Maine 04240	SOIL BORING LOG Project: Wall Replacement North Mill Dam Saco, Maine	Boring #: B-7 Project #: 17337 Sheet: 1 of 1 Prep by: WMP

Drilling Co:	Northern Test Borings	Ground Elevation:	38 ft +/-
Foreman:	M. Nadeau	Reference:	Interpolated from C-1, Oak Point Associates
Summit:	B. Peterlein, P.E.	Date started: 3/19/2008	Date Comp: 3/19/2008

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Type:	24" SS
Model:	Diedrich D50	Hammer:	140 lb
Method:	2-1/2" H.S.A.	Fall:	30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
3/19/2008			None observed, hole caved

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/18	0 to 2	21	Brown Gravelly SAND, trace to little Silt	
1				12		FILL
				6		
2				8		
	S-2	24/8	2 to 4	5	Olive-brown Silty CLAY, slightly mottled,	GLACIAL MARINE
3				6	stiff, moist, ML	
				9		
4				15		
	S-3	24/8	4 to 6	15	Same as above	
5				8		
				7		
6				7		
					End of Boring at 6 ft	
7						
8						
9						
10						
11						
12						
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19						
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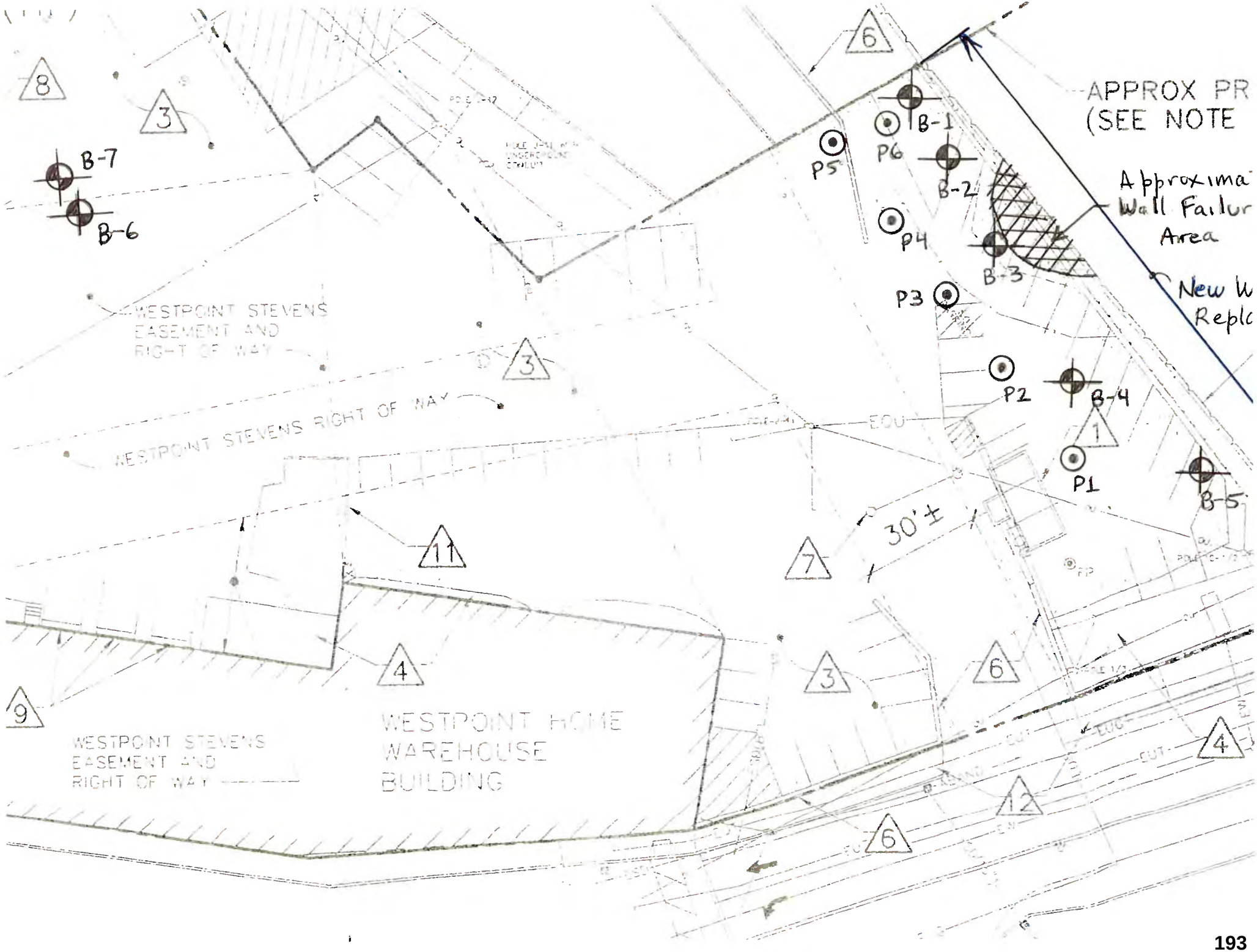
22						


APPROX PR
(SEE NOTE
Approxima
Wall Failur
Area
New W
Replc
B-1
B-2
B-3
B-4
B-5
B-6
B-7
P1
P2
P3
P4
P5
P6
30'±
WESTPOINT STEVENS
EASEMENT AND
RIGHT OF WAY
WESTPOINT STEVENS RIGHT OF WAY
WESTPOINT STEVENS
EASEMENT AND
RIGHT OF WAY
WESTPOINT HOME
WAREHOUSE
BUILDING

APPENDIX E

Weston & Sampson Boring Logs

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-101

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 18, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Rotary Wash Drilling	DATE FINISH:	January 18, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	N/A	GROUND EL:	7.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	Driven Flush-Joint Casing (3" ID)	FINAL DEPTH:	20.5 ft.
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	NQ Wireline	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

GEOTECHNICAL TEST DATA: ● N-Value, Raw (bpf); ⊠ Organic Content (%) (10, 20, 30, 40); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%) (25, 50, 75, 100)

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
					Surface: Sand.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
					No sampling through fill.		[0.0 - 10.5] Contractor excavated riprap from inside of access road and replaced with imported sand to provide a flat and dry surface to operate drill rig at boring location.
5						2	
10						-3	
		R-1 60/60	06:05 06:10 06:55 07:30 07:55		Metamorphic Gneiss, medium-grained, light blue, very hard, slightly weathered, moderately fractured [BERWICK FORMATION]		
			RQD = 75%				
15						-8	
		R-2 60/60	03:45 06:45 06:15 05:00 06:50				
			RQD = 83%				
20						-13	
							Exploration ended at 20.5 ft.

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-102

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 18, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Rotary Wash Drilling	DATE FINISH:	January 18, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	N/A	GROUND EL:	7.5 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	Driven Flush-Joint Casing (3" ID)	FINAL DEPTH:	20.5 ft.
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	NQ Wireline	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

GEOTECHNICAL TEST DATA: ● N-Value, Raw (bpf); ⊠ Organic Content (%) (10, 20, 30, 40); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%) (25, 50, 75, 100)

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
						Surface: Sand.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
						No sampling through fill.		[0.0 - 10.5] Contractor excavated riprap from inside of access road and replaced with imported sand to provide a flat and dry surface to operate drill rig at boring location.
5							3	
10							-2	
		R-1 23/24	05:30	RQD = 84%		Metamorphic Gneiss, medium-grained, light blue, very hard, slightly weathered, moderately fractured [BERWICK FORMATION]		
			05:55					
		R-2 60/60	04:15	RQD = 90%				
			03:45					
15			02:50				-7	
			03:40					
			03:55					
		R-3 35/36	03:05	RQD = 81%				
			02:30					
			03:00				-12	
20								Exploration ended at 20.5 ft.
							-17	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-103

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 19, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Rotary Wash Drilling	DATE FINISH:	January 19, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	N/A	GROUND EL:	7.5 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	Driven Flush-Joint Casing (3" ID)	FINAL DEPTH:	21.0 ft.
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	NQ Wireline	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%) 10 20 30 40; ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%) 25 50 75 100)	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
						Surface: Sand.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
						No sampling through fill.		[0.0 - 11.0] Contractor excavated riprap from inside of access road and replaced with imported sand to provide a flat and dry surface to operate drill rig at boring location.
5							3	
10							-2	
		R-1 57/60	03:45	RQD = 87%		Metamorphic Gneiss, medium-grained, light blue, very hard, slightly weathered, moderately fractured [BERWICK FORMATION]		
			03:15					
			03:20					
			03:50				-7	
15			03:50					
		R-2 60/60	03:20	RQD = 90%				
			04:05					
			03:50					
			03:55				-12	
20			03:20					
								Exploration ended at 21.0 ft.
							-17	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-104A

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	2-1/4" ID (Stem), 5-5/8" OD (Flights)	GROUND EL:	29.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	2.0 ft. (Refusal)
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	PID MEASUREMENT, PPM BY VOLUME (HEADSPACE)	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%); 10 20 30 40; ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%); 25 50 75 100)	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
							Surface: Gravel area.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
		S-1 7/24	47 75 69 7	0.0	>> 144 ●		Well graded sand with silt and gravel (SW-SM) - Very dense; brown; moist; mostly fine to coarse SAND, some fine gravel, few non plastic fines; trace debris (brick, slag). [FILL]		[0.0 - 2.0] Intermittent auger grinding.
									Relocate to B-104B. Auger refusal at 2.0 ft. (exploration ended).
5								24	
10								19	
15								14	
20								9	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-104B

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	2-1/4" ID (Stem), 5-5/8" OD (Flights)	GROUND EL:	28.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	8.0 ft. (Refusal)
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	PID MEASUREMENT, PPM BY VOLUME (HEADSPACE)	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%))	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
							Surface: Gravel area.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
		S-1 10/24	3 3 2 1	0.0	5		Well graded gravel with silt and sand (GW-GM) - Loose; dark brown; moist; mostly fine to coarse GRAVEL, little fine to coarse sand, few non plastic fines; trace debris (ash, slag, brick). [FILL]		[2.0 - 8.0] Intermittent auger grinding.
		S-2 6/24	2 8 8 6	0.0	16		Sandy lean clay with gravel (CL) - Medium stiff to very stiff; brown to gray; moist; mostly medium plasticity FINES, little fine to medium sand, little fine gravel; occasional debris (brick, ash). [FILL]	23	
5		S-3 0/24	17 6 1 7		7				
									Relocate to B-104C. Auger refusal at 8.0 ft. (exploration ended).
10								18	
15								13	
20								8	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-104C

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	2-1/4" ID (Stem), 5-5/8" OD (Flights)	GROUND EL:	27.5 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	14.0 ft. (Refusal)
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	PID MEASUREMENT, PPM BY VOLUME (HEADSPACE)	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%))	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
							Surface: Gravel area.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
5								23	
		S-1 4/24	3 1 2 3	0.0	3		Gravelly lean clay with sand (CL) - Soft to very stiff; brown to gray; moist to wet; mostly medium plasticity FINES, some fine gravel, little fine to medium sand; occasional debris (brick). [FILL]		[8.0] Estimated water level at time of drilling based on changes in sample moisture.
10		S-2 4/24	5 5 5 14	0.0	10			18	
		S-3 0/24	10 19 11 2		30				
15								13	Damaged equipment at 14.0 ft. (exploration ended).
20								8	
								3	

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Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-105A

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	2-1/4" ID (Stem), 5-5/8" OD (Flights)	GROUND EL:	32.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	4.0 ft. (Refusal)
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	PID MEASUREMENT, PPM BY VOLUME (HEADSPACE)	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%))	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
							Surface: Cement concrete slab.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
		S-1 19/24	25 26 14 13	0.0	40		Concrete- Paved Sidewalk - 5 inches thick.		[0.0 - 4.0] Intermittent auger grinding.
							Poorly graded sand (SP) - Dense; light brown; moist; mostly fine to medium SAND, trace fine gravel, trace non plastic fines. [FILL]		
		S-2 8/17	30 25 100/5	0.0			Well graded gravel with sand (GW) - Gray to brown; moist; mostly fine to coarse GRAVEL, little fine to coarse sand, trace non plastic fines; trace debris (asphalt). [FILL]		[3.0 - 4.0] Sample is mostly broken rock pieces.
									Relocate to B-105B. Auger refusal at 4.0 ft. (exploration ended).
5								27	
10								22	
15								17	
20								12	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-105B

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	2-1/4" ID (Stem), 5-5/8" OD (Flights)	GROUND EL:	32.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	16.0 ft.
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	N/A

GEOTECHNICAL TEST DATA: ● N-Value, Raw (bpf); ⊠ Organic Content (%) (10, 20, 30, 40); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%) (25, 50, 75, 100)

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	PID MEASUREMENT, PPM BY VOLUME (HEADSPACE)	N-Value, Raw (bpf)	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
					Surface: Cement concrete slab.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	S-1 9/24	6 8 7 7	0.0	15	Well graded sand with silt and gravel (SW-SM) - Medium dense; brown; moist; mostly fine to coarse SAND, little fine gravel, few non plastic fines; trace debris (concrete). [FILL]	27	
5							
	S-2 9/24	4 3 3 3	0.0	6	Well graded gravel with sand (GW) - Loose to dense; gray to brown; moist; mostly fine to coarse GRAVEL, little fine to coarse sand, trace non plastic fines. [FILL]		[6.0 - 8.0] Sample is mostly broken rock pieces.
	S-3 0/24	4 1 3 5		4			
10						22	
	S-4 0/24	3 7 38 9		45			
	S-5 5/24	11 5 4 8	0.0	9	Gravelly lean clay with sand (CL) - Stiff; brown to gray; moist to wet; mostly medium plasticity FINES, some fine gravel, little fine to medium sand. [FILL]		[12.0] Estimated water level at time of drilling based on changes in sample moisture.
	S-6 7/24	22 22 52 21	0.0	>> 74	Well graded gravel (GW) - Very dense; gray; moist; mostly fine to coarse GRAVEL. [WEATHERED ROCK]	17	
15							Exploration ended at 16.0 ft.
20						12	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

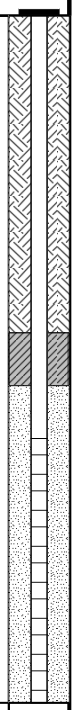
Riverwalk Retaining Wall Replacement
Biddeford, ME

BORING ID: B-105C

WSE Project: ENG21-1343

CONTRACTOR:	S.W. Cole Explorations, LLC	BORING LOCATION:	See Attached Figure	DATE START:	January 20, 2022
FOREMAN:	Kevin	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	January 20, 2022
LOGGED BY:	Aaron Chabot, E.I.T.	AUGER DIAMETER:	4-1/4" ID (Stem), 7-5/8" OD (Flights)	GROUND EL:	32.0 ± ()
CHECKED BY:	Thomas Strike, P.E.	SUPPORT CASING:	N/A	FINAL DEPTH:	13.0 ft. (Refusal)
EQUIPMENT:	Diedrich D-50 Hydraulic Drill	CORING METHOD:	N/A	GRID COORDS:	N/A
SPT HAMMER:	N/A	BACKFILL MATERIAL:	Monitoring Well Installed	GRID SYSTEM:	N/A

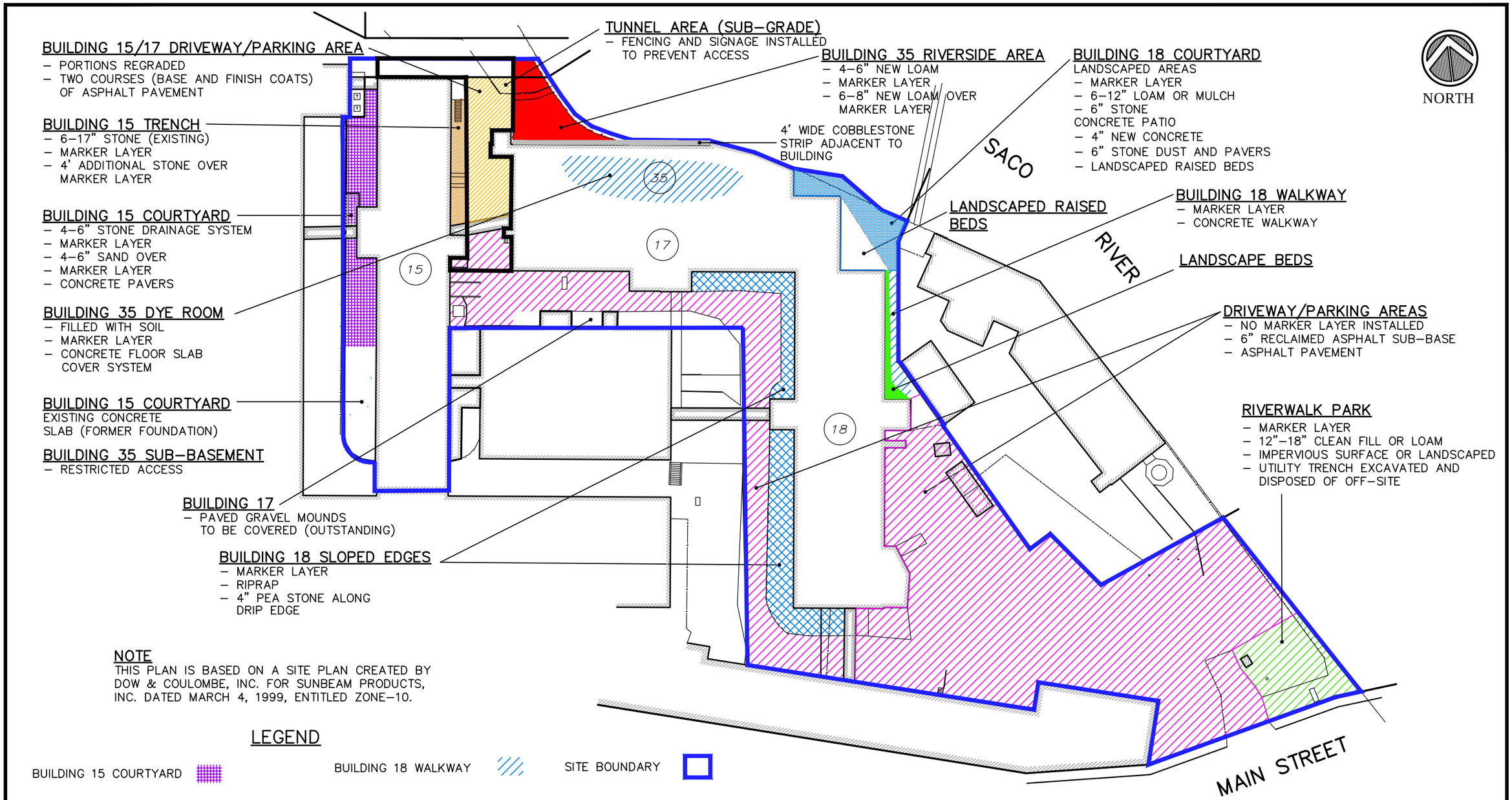
DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	SPT RESISTANCE, RQD, AND LABORATORY DATA (● N-Value, Raw (bpf); ⊕ Moisture Content (%); ▶ Plastic Limit (%); ◀ Liquid Limit (%); ⊠ Organic Content (%); 10 20 30 40)	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
						Surface: Cement concrete slab.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
								[0.0 - 13.0] Drilled to refusal without sampling.
5							27	
10							22	
								[12.0] Water level measured on 01/20/22 (during drilling).
								Auger refusal at 13.0 ft. (exploration ended).
15							17	
20							12	



Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

APPENDIX F

Environmental Data



NOTE
THIS PLAN IS BASED ON A SITE PLAN CREATED BY DOW & COULOMBE, INC. FOR SUNBEAM PRODUCTS, INC. DATED MARCH 4, 1999, ENTITLED ZONE–10.

LEGEND

- BUILDING 15 COURTYARD
- BUILDING 15 TRENCH
- TUNNEL AREA
- BUILDING 35 RIVERSIDE AREA
- BUILDING 18 COURTYARD
- BUILDING 18 WALKWAY
- DRIVEWAY/PARKING AREA
- RIVERWALK PARK
- BUILDING 18 SLOPED EDGES
- BUILDING 15/17 DRIVEWAY/PARKING AREA
- SITE BOUNDARY

RANSOM Environmental Consultants, Inc.

PREPARED FOR:
SOUTHERN MAINE REGIONAL PLANNING COMMISSION

SITE:
NORTH DAM MILL
2 MAIN STREET
BIDDEFORD, MAINE

SOIL COVER SYSTEM PLAN

DATE: SEPTEMBER 2015
PROJECT: 076073

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TABLE 1
SOIL RESULTS
RIVERWALK RETAINING WALL REPLACEMENT PROJECT
BIDDEFORD, MAINE

Parameter	Units	Soil RAG Resident (mg/kg)	B-104				B-105			
			0-8 ft	2-4 ft	8-12 ft	8-10 ft	0-8 ft	0.5-2 ft	8-16 ft	14-15 ft
			1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022
Volatile Organic Compounds (VOCs)										
Toluene	mg/Kg	750	NA	<0.0017	NA	<0.0016	NA	**0.0017**	NA	<0.0013
Total VOCs	mg/Kg	~	NA		NA	NA	NA	**0.0017**	NA	
Semivolatile Organic Compounds (SVOCs)										
Acenaphthene	mg/Kg	4,900	**0.21**	NA	<0.21	NA	<0.20	NA	<0.21	NA
Anthracene	mg/Kg	25,000	**0.66**	NA	<0.21	NA	<0.20	NA	**0.35**	NA
Benzo(a)anthracene	mg/Kg	16	**1.9**	NA	<0.21	NA	<0.20	NA	**0.89**	NA
Benzo(a)pyrene	mg/Kg	1.6	**1.8**	NA	**0.25**	NA	<0.20	NA	**0.74**	NA
Benzo(b)fluoranthene	mg/Kg	16	**2.2**	NA	**0.25**	NA	<0.20	NA	**0.82**	NA
Benzo(g,h,i)perylene	mg/Kg	2,500	**1.0**	NA	<0.21	NA	<0.20	NA	**0.37**	NA
Benzo(k)fluoranthene	mg/Kg	160	**0.87**	NA	<0.21	NA	<0.20	NA	**0.34**	NA
Carbazole	mg/Kg	270	**0.31**	NA	<0.21	NA	<0.20	NA	<0.21	NA
Chrysene	mg/Kg	1,600	**1.9**	NA	<0.21	NA	<0.20	NA	**0.77**	NA
Dibenz(a,h)anthracene	mg/Kg	1.6	**0.31**	NA	<0.21	NA	<0.20	NA	<0.21	NA
Fluoranthene	mg/Kg	3,300	**3.8**	NA	**0.22**	NA	<0.20	NA	**1.5**	NA
Fluorene	mg/Kg	3,300	**0.24**	NA	<0.21	NA	<0.20	NA	<0.21	NA
Indeno(1,2,3-cd)pyrene	mg/Kg	16	**1.2**	NA	<0.21	NA	<0.20	NA	**0.39**	NA
Phenanthrene	mg/Kg	2,500	**3.1**	NA	<0.21	NA	<0.20	NA	**0.87**	NA
Pyrene	mg/Kg	2,500	**3.9**	NA	**0.27**	NA	<0.20	NA	**1.7**	NA
Total SVOCs	mg/Kg	~	**23.4**	NA	**0.99**	NA	<0.20	NA	**8.74**	NA
Organochloride Pesticides										
Alachlor	mg/Kg	130	<1.2	NA	<0.24	NA	NA	NA	NA	NA
Aldrin	mg/Kg	~	<0.30	NA	<0.061	NA	NA	NA	NA	NA
alpha-BHC	mg/Kg	1.2	<0.30	NA	<0.061	NA	NA	NA	NA	NA
beta-BHC	mg/Kg	4.1	<0.30	NA	<0.061	NA	NA	NA	NA	NA
delta-BHC	mg/Kg	~	<0.30	NA	<0.061	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	mg/Kg	7.8	<0.12	NA	<0.024	NA	NA	NA	NA	NA
Chlordane	mg/Kg	24	<1.2	NA	<0.24	NA	NA	NA	NA	NA
4,4'-DDD	mg/Kg	2.6	<0.24	NA	<0.049	NA	NA	NA	NA	NA
4,4'-DDE	mg/Kg	27	<0.24	NA	<0.049	NA	NA	NA	NA	NA
4,4'-DDT	mg/Kg	26	<0.24	NA	<0.049	NA	NA	NA	NA	NA
Dieldrin	mg/Kg	0.46	<0.24	NA	<0.049	NA	NA	NA	NA	NA
Endosulfan I	mg/Kg	640	<0.30	NA	<0.061	NA	NA	NA	NA	NA
Endosulfan II	mg/Kg	~	<0.47	NA	<0.098	NA	NA	NA	NA	NA
Endosulfan Sulfate	mg/Kg	~	<0.47	NA	<0.098	NA	NA	NA	NA	NA
Endrin	mg/Kg	26	<0.47	NA	<0.098	NA	NA	NA	NA	NA
Endrin Aldehyde	mg/Kg	~	<0.47	NA	<0.098	NA	NA	NA	NA	NA
Endrin Ketone	mg/Kg	~	<0.47	NA	<0.098	NA	NA	NA	NA	NA
Heptachlor	mg/Kg	1.9	<0.30	NA	<0.061	NA	NA	NA	NA	NA
Heptachlor Epoxide	mg/Kg	0.97	<0.30	NA	<0.061	NA	NA	NA	NA	NA
Hexachlorobenzene	mg/Kg	~	<0.35	NA	<0.073	NA	NA	NA	NA	NA
Methoxychlor	mg/Kg	430	<3.0	NA	<0.61	NA	NA	NA	NA	NA
Toxaphene	mg/Kg	~	<5.9	NA	<1.2	NA	NA	NA	NA	NA
Herbicides										
2,4-D	µg/kg	~	<120	NA	<120	NA	NA	NA	NA	NA
2,4-DB	µg/kg	~	<120	NA	<120	NA	NA	NA	NA	NA
2,4,5-TP (Silvex)	µg/kg	690	<12	NA	<12	NA	NA	NA	NA	NA
2,4,5-T	µg/kg	~	<12	NA	<12	NA	NA	NA	NA	NA
Dalapon	µg/kg	2600	<300	NA	<300	NA	NA	NA	NA	NA
Dicamba	µg/kg	~	<12	NA	<12	NA	NA	NA	NA	NA
Dichloroprop	µg/kg	~	<120	NA	<120	NA	NA	NA	NA	NA
Dinoseb	µg/kg	~	<59	NA	<61	NA	NA	NA	NA	NA
MCPA	µg/kg	43	<12000	NA	<12000	NA	NA	NA	NA	NA
MCPP	µg/kg	86	<12000	NA	<12000	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBS)										
Aroclor-1016	mg/Kg	5.6	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1221	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1232	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1242	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1248	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1254	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1260	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1262	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Aroclor-1268	mg/Kg	~	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA
Total PCBs	mg/Kg	3.1	<0.095	NA	<0.098	NA	<0.094	NA	<0.099	NA

TABLE 1
SOIL RESULTS
RIVERWALK RETAINING WALL REPLACEMENT PROJECT
BIDDEFORD, MAINE

Parameter	Units	Soil RAG Resident (mg/kg)	B-104				B-105			
			0-8 ft	2-4 ft	8-12 ft	8-10 ft	0-8 ft	0.5-2 ft	8-16 ft	14-15 ft
			1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022
Total Petroleum Hydrocarbons										
TPH (C9-C36)	mg/Kg	~	**550**	NA	**45**	NA	**43**	NA	**63**	NA
Metals (Total)										
Arsenic	mg/Kg	9.3	**14**	NA	**18**	NA	**4.2**	NA	**14**	NA
Barium	mg/Kg	21,000	**60**	NA	**59**	NA	**16**	NA	**78**	NA
Cadmium	mg/Kg	98	<0.37	NA	<0.38	NA	<0.37	NA	<0.39	NA
Chromium	mg/Kg	100,000	**15**	NA	**23**	NA	**7.7**	NA	**46**	NA
Lead	mg/Kg	140	**120**	NA	**120**	NA	**9.5**	NA	**150**	NA
TCLP Lead	mg/L	~	<0.10	NA	<0.10	NA	NA	NA	<0.10	NA
Mercury	mg/Kg	3.1	**0.39**	NA	**0.15**	NA	<0.028	NA	<0.028	NA
Selenium	mg/Kg	540	<3.7	NA	<3.8	NA	<3.7	NA	<3.9	NA
Silver	mg/Kg	540	<0.37	NA	<0.38	NA	<0.37	NA	<0.39	NA
Conventional Chemistry										
% Solids	% Wt	~	**84.6**	**84.6**	**82**	**82**	**85.4**	**85.4**	**80.4**	80.4
Specific conductance	µmhos/cm	~	**21**	NA	**12**	NA	**14**	NA	**14**	NA
Reactive Cyanide	mg/Kg	~	<4.0	NA	<3.9	NA	<4.0	NA	<4.0	NA
Reactive Sulfide	mg/Kg	~	<20	NA	<19	NA	<20	NA	<20	NA
pH	pH Units	~	**9.3**	NA	**8.6**	NA	**9.9**	NA	**8.8**	NA
Ignitability	present/absent	~	Absent	NA	Absent	NA	Absent	NA	Absent	NA

NOTES:

1. VOC and SVOC constituents detected in at least one sample are summarized. For the complete list of constituents refer to laboratory reports.
2. < # = Not detected above the lab reporting limits shown.
3. Bolded values detected above the lab reporting limits.
4. ~ = No Maine Department of Environmental Protection Remedial Action Guidelines for Contaminated Sites (RAGs) Effective Date: May 1, 2021 available.
5. Shaded values equal to or exceed the ME DEP RAGs concentrations.
6. Total Chromium concentrations are being compared to the ME DEP RAGs for Chromium(III), Insoluble Salts not Chromium(VI).
7. Sampling depths in feet below existing ground surface.

LABOROTORY DATA REPORTS

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February 4, 2022

Todd Bridgeo
Weston & Sampson Engineers MA
55 Walkers Brook Drive
Reading, MA 01867

Project Location: 2 Main St., Biddeford, ME
Client Job Number:
Project Number: ENG21-1343
Laboratory Work Order Number: 22A1249

Enclosed are results of analyses for samples as received by the laboratory on January 24, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kerry K. McGee
Project Manager

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Weston & Sampson Engineers MA
55 Walkers Brook Drive
Reading, MA 01867
ATTN: Todd Bridgeo

REPORT DATE: 2/4/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: ENG21-1343

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22A1249

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 2 Main St., Biddeford, ME

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-104 (0-8)	22A1249-01	Soil		SM 2540G	
				SM21-23 2510B Modified	
				SW-846 1030	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8081B	
				SW-846 8082A	
				SW-846 8100 Modified	
				SW-846 8151A	
				SW-846 8270E	
				SW-846 9014	
				SW-846 9030A	
				SW-846 9045C	
B-104 (2-4)	22A1249-02	Soil		SM 2540G	
				SW-846 8260D	
B-104 (8-12)	22A1249-03	Soil		SM 2540G	
				SM21-23 2510B Modified	
				SW-846 1030	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8081B	
				SW-846 8082A	
				SW-846 8100 Modified	
				SW-846 8151A	
				SW-846 8270E	
				SW-846 9014	
				SW-846 9030A	
				SW-846 9045C	
B-104 (8-10)	22A1249-04	Soil		SM 2540G	
				SW-846 8260D	

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Weston & Sampson Engineers MA
55 Walkers Brook Drive
Reading, MA 01867
ATTN: Todd Bridgeo

REPORT DATE: 2/4/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: ENG21-1343

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22A1249

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 2 Main St., Biddeford, ME

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-105 (0-8)	22A1249-05	Soil		SM 2540G	
				SM21-23 2510B Modified	
				SW-846 1030	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8082A	
				SW-846 8100 Modified	
				SW-846 8270E	
				SW-846 9014	
				SW-846 9030A	
				SW-846 9045C	
B-105 (0.5-2)	22A1249-06	Soil		SM 2540G	
				SW-846 8260D	
B-105 (8-16)	22A1249-07	Soil		SM 2540G	
				SM21-23 2510B Modified	
				SW-846 1030	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8082A	
				SW-846 8100 Modified	
				SW-846 8270E	
				SW-846 9014	
				SW-846 9030A	
				SW-846 9045C	
B-105 (14-15)	22A1249-08	Soil		SM 2540G	
				SW-846 8260D	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8151 samples were derivatized on 02/01/22

For method 8151 samples analysis bracketed by LCS to monitor esterification. All recoveries in the bracketing LCS met method criteria.

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SW-846 7471B

Qualifications:

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Mercury
B299756-BSD1

SW-846 8081B

Qualifications:

DL-03

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
22A1249-01[B-104 (0-8)]

Decachlorobiphenyl [2C]
22A1249-01[B-104 (0-8)]

Tetrachloro-m-xylene
22A1249-01[B-104 (0-8)]

Tetrachloro-m-xylene [2C]
22A1249-01[B-104 (0-8)]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Methoxychlor
B299753-BS1, B299753-BSD1

SW-846 8260D

Qualifications:

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Bromomethane
B299615-BS1, B299615-BSD1, S067665-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromomethane
22A1249-02[B-104 (2-4)], 22A1249-04[B-104 (8-10)], 22A1249-06[B-105 (0.5-2)], 22A1249-08[B-105 (14-15)], B299615-BLK1, B299615-BS1, B299615-BSD1, S067665-CCV1

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Acetone
B299615-BS1, B299615-BSD1, S067665-CCV1

SW-846 8270E

Qualifications:

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L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Hexachlorocyclopentadiene
B299673-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

3/4-Methylphenol
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1

Acetophenone
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1

N-Nitrosodi-n-propylamine
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1

Phenol
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Benzidine
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1, S067723-CCV1, S067777-CCV1

Hexachlorocyclopentadiene
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1, S067723-CCV1, S067777-CCV1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
S067777-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)]

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

4-Chloroaniline
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1, S067723-CCV1, S067777-CCV1

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299673-BLK1, B299673-BS1, B299673-BSD1, S067723-CCV1, S067777-CCV1

SW-846 9045C

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
22A1249-01[B-104 (0-8)], 22A1249-03[B-104 (8-12)], 22A1249-05[B-105 (0-8)], 22A1249-07[B-105 (8-16)], B299601-DUP1

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SW-846 8100 Modified

TPH (C9-C36) is quantitated against a calibration made with a diesel standard.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249
Date Received: 1/24/2022
Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00
Sample ID: 22A1249-01
Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	0.21	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Acetophenone	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Aniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Anthracene	0.66	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzidine	ND	0.78	mg/Kg dry	1	V-05, V-35	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzo(a)anthracene	1.9	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzo(a)pyrene	1.8	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzo(b)fluoranthene	2.2	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzo(g,h,i)perylene	1.0	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzo(k)fluoranthene	0.87	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Benzoic Acid	ND	1.2	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Bis(2-chloroethoxy)methane	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Bis(2-chloroethyl)ether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Bis(2-chloroisopropyl)ether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Bis(2-Ethylhexyl)phthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Bromophenylphenylether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Butylbenzylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Carbazole	0.31	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Chloroaniline	ND	0.78	mg/Kg dry	1	V-34	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Chloro-3-methylphenol	ND	0.78	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Chloronaphthalene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Chlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Chlorophenylphenylether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Chrysene	1.9	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Dibenz(a,h)anthracene	0.31	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Dibenzofuran	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Di-n-butylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,2-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,3-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,4-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
3,3-Dichlorobenzidine	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4-Dichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Diethylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4-Dimethylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Dimethylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4,6-Dinitro-2-methylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4-Dinitrophenol	ND	0.78	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4-Dinitrotoluene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,6-Dinitrotoluene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Di-n-octylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Fluoranthene	3.8	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Fluorene	0.24	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Hexachlorobutadiene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Hexachlorocyclopentadiene	ND	0.40	mg/Kg dry	1	V-05	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Hexachloroethane	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Indeno(1,2,3-cd)pyrene	1.2	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Isophorone	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Methylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
3/4-Methylphenol	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
3-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Nitrobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2-Nitrophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
4-Nitrophenol	ND	0.78	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
N-Nitrosodimethylamine	ND	0.40	mg/Kg dry	1	V-20	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
N-Nitrosodi-n-propylamine	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Pentachloronitrobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Pentachlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Phenanthrene	3.1	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Phenol	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Pyrene	3.9	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
Pyridine	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,2,4,5-Tetrachlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
1,2,4-Trichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4,5-Trichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL
2,4,6-Trichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 15:55	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	61.1	30-130		1/28/22 15:55
Phenol-d6	65.6	30-130		1/28/22 15:55
Nitrobenzene-d5	61.0	30-130		1/28/22 15:55
2-Fluorobiphenyl	68.7	30-130		1/28/22 15:55
2,4,6-Tribromophenol	41.2	30-130		1/28/22 15:55
p-Terphenyl-d14	80.6	30-130		1/28/22 15:55

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [2]	ND	1.2	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Aldrin [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
alpha-BHC [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
beta-BHC [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
delta-BHC [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
gamma-BHC (Lindane) [2]	ND	0.12	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Chlordane [2]	ND	1.2	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
4,4'-DDD [2]	ND	0.24	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
4,4'-DDE [2]	ND	0.24	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
4,4'-DDT [2]	ND	0.24	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Dieldrin [2]	ND	0.24	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endosulfan I [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endosulfan II [2]	ND	0.47	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endosulfan sulfate [2]	ND	0.47	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endrin [2]	ND	0.47	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endrin aldehyde [2]	ND	0.47	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Endrin ketone [2]	ND	0.47	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Heptachlor [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Heptachlor epoxide [2]	ND	0.30	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Hexachlorobenzene [2]	ND	0.35	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Methoxychlor [2]	ND	3.0	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB
Toxaphene [2]	ND	5.9	mg/Kg dry	50		SW-846 8081B	1/26/22	1/29/22 0:22	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	1/29/22 0:22
Decachlorobiphenyl [2]	*	30-150	S-01	1/29/22 0:22
Tetrachloro-m-xylene [1]	*	30-150	S-01	1/29/22 0:22
Tetrachloro-m-xylene [2]	*	30-150	S-01	1/29/22 0:22

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
2,4-DB [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
2,4,5-TP (Silvex) [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
2,4,5-T [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
Dalalpon [1]	ND	300	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
Dicamba [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
Dichloroprop [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
Dinoseb [1]	ND	59	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
MCPA [1]	ND	12000	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG
MCPP [1]	ND	12000	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:09	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	87.4	30-150		2/2/22 20:09
2,4-Dichlorophenylacetic acid [2]	87.3	30-150		2/2/22 20:09

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1221 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1232 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1242 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1248 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1254 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1260 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1262 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG
Aroclor-1268 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:23	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	90.2	30-150		2/2/22 18:23
Decachlorobiphenyl [2]	82.0	30-150		2/2/22 18:23
Tetrachloro-m-xylene [1]	87.6	30-150		2/2/22 18:23
Tetrachloro-m-xylene [2]	81.8	30-150		2/2/22 18:23

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	550	200	mg/Kg dry	20		SW-846 8100 Modified	1/25/22	1/28/22 14:12	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorobiphenyl	57.2	40-140		1/28/22 14:12

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	14	3.7	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Barium	60	1.9	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Cadmium	ND	0.37	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Chromium	15	0.74	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Lead	120	0.56	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Mercury	0.39	0.030	mg/Kg dry	1		SW-846 7471B	1/31/22	2/1/22 14:28	GLH
Selenium	ND	3.7	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW
Silver	ND	0.37	mg/Kg dry	1		SW-846 6010D	1/25/22	1/26/22 17:20	QNW

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.6		% Wt	1		SM 2540G	1/25/22	1/25/22 15:42	WAT
Ignitability	Absent		present/absent	1		SW-846 1030	1/25/22	1/25/22 14:45	CB2
pH @19.9°C	9.3		pH Units	1	H-03	SW-846 9045C	1/24/22	1/24/22 22:00	IS
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	1/27/22	1/28/22 12:35	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	1/27/22	1/28/22 11:50	EC
Specific conductance	21	2.0	µmhos/cm	1		SM21-23 2510B Modified	1/27/22	1/27/22 13:15	EC

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (2-4)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Acrylonitrile	ND	0.0052	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Benzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Bromobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Bromochloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Bromodichloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Bromoform	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Bromomethane	ND	0.0086	mg/Kg dry	1	V-34	SW-846 8260D	1/25/22	1/25/22 9:00	MFF
2-Butanone (MEK)	ND	0.034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
tert-Butyl Alcohol (TBA)	ND	0.086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
n-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
sec-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
tert-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Carbon Disulfide	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Carbon Tetrachloride	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Chlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Chlorodibromomethane	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Chloroethane	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Chloroform	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Chloromethane	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
2-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
4-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2-Dibromoethane (EDB)	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Dibromomethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,3-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,4-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
trans-1,4-Dichloro-2-butene	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1-Dichloroethylene	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
cis-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
trans-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,3-Dichloropropane	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
2,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1-Dichloropropene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
cis-1,3-Dichloropropene	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
trans-1,3-Dichloropropene	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Diethyl Ether	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (2-4)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,4-Dioxane	ND	0.086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Ethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Hexachlorobutadiene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
2-Hexanone (MBK)	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Isopropylbenzene (Cumene)	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Methyl Acetate	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Methyl Cyclohexane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Methylene Chloride	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Naphthalene	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
n-Propylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Styrene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1,2,2-Tetrachloroethane	ND	0.00086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Tetrachloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Tetrahydrofuran	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Toluene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2,3-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2,4-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,3,5-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1,1-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1,2-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Trichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2,3-Trichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,2,4-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
1,3,5-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
Vinyl Chloride	ND	0.0086	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
m+p Xylene	ND	0.0034	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF
o-Xylene	ND	0.0017	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:00	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	99.0	70-130		1/25/22 9:00
Toluene-d8	95.6	70-130		1/25/22 9:00
4-Bromofluorobenzene	90.0	70-130		1/25/22 9:00

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (2-4)
Sampled: 1/20/2022 10:00

Sample ID: 22A1249-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.6		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	MJH

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Acetophenone	ND	0.41	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Aniline	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzidine	ND	0.80	mg/Kg dry	1	V-05, V-35	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzo(a)pyrene	0.25	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzo(b)fluoranthene	0.25	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Benzoic Acid	ND	1.2	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Bis(2-chloroethoxy)methane	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Bis(2-chloroethyl)ether	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Bis(2-chloroisopropyl)ether	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Bis(2-Ethylhexyl)phthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Bromophenylphenylether	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Butylbenzylphthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Carbazole	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Chloroaniline	ND	0.80	mg/Kg dry	1	V-34	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Chloro-3-methylphenol	ND	0.80	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Chloronaphthalene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Chlorophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Chlorophenylphenylether	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Dibenzofuran	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Di-n-butylphthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,2-Dichlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,3-Dichlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,4-Dichlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
3,3-Dichlorobenzidine	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4-Dichlorophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Diethylphthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4-Dimethylphenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Dimethylphthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4,6-Dinitro-2-methylphenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4-Dinitrophenol	ND	0.80	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4-Dinitrotoluene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,6-Dinitrotoluene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Di-n-octylphthalate	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Fluoranthene	0.22	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Hexachlorobutadiene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Hexachlorocyclopentadiene	ND	0.41	mg/Kg dry	1	V-05	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Hexachloroethane	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Isophorone	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Methylphenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
3/4-Methylphenol	ND	0.41	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Nitroaniline	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
3-Nitroaniline	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Nitroaniline	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Nitrobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2-Nitrophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
4-Nitrophenol	ND	0.80	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
N-Nitrosodimethylamine	ND	0.41	mg/Kg dry	1	V-20	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
N-Nitrosodi-n-propylamine	ND	0.41	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Pentachloronitrobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Pentachlorophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Phenol	ND	0.41	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Pyrene	0.27	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
Pyridine	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,2,4,5-Tetrachlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
1,2,4-Trichlorobenzene	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4,5-Trichlorophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL
2,4,6-Trichlorophenol	ND	0.41	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:19	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	38.3	30-130		1/28/22 16:19
Phenol-d6	40.8	30-130		1/28/22 16:19
Nitrobenzene-d5	38.0	30-130		1/28/22 16:19
2-Fluorobiphenyl	44.4	30-130		1/28/22 16:19
2,4,6-Tribromophenol	35.0	30-130		1/28/22 16:19
p-Terphenyl-d14	53.9	30-130		1/28/22 16:19

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [2]	ND	0.24	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Aldrin [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
alpha-BHC [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
beta-BHC [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
delta-BHC [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
gamma-BHC (Lindane) [2]	ND	0.024	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Chlordane [2]	ND	0.24	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
4,4'-DDD [2]	ND	0.049	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
4,4'-DDE [2]	ND	0.049	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
4,4'-DDT [2]	ND	0.049	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Dieldrin [2]	ND	0.049	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endosulfan I [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endosulfan II [2]	ND	0.098	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endosulfan sulfate [2]	ND	0.098	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endrin [2]	ND	0.098	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endrin aldehyde [2]	ND	0.098	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Endrin ketone [2]	ND	0.098	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Heptachlor [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Heptachlor epoxide [2]	ND	0.061	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Hexachlorobenzene [2]	ND	0.073	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Methoxychlor [2]	ND	0.61	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB
Toxaphene [2]	ND	1.2	mg/Kg dry	10		SW-846 8081B	1/26/22	1/29/22 0:49	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	66.4	30-150		1/29/22 0:49
Decachlorobiphenyl [2]	76.5	30-150		1/29/22 0:49
Tetrachloro-m-xylene [1]	64.7	30-150		1/29/22 0:49
Tetrachloro-m-xylene [2]	75.8	30-150		1/29/22 0:49

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
2,4-DB [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
2,4,5-TP (Silvex) [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
2,4,5-T [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
Dalalpon [1]	ND	300	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
Dicamba [1]	ND	12	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
Dichloroprop [1]	ND	120	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
Dinoseb [1]	ND	61	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
MCPA [1]	ND	12000	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG
MCPP [1]	ND	12000	µg/kg dry	4		SW-846 8151A	1/27/22	2/2/22 20:49	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	100	30-150		2/2/22 20:49
2,4-Dichlorophenylacetic acid [2]	86.2	30-150		2/2/22 20:49

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1221 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1232 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1242 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1248 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1254 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1260 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1262 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG
Aroclor-1268 [1]	ND	0.098	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:41	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	94.3	30-150		2/2/22 18:41
Decachlorobiphenyl [2]	84.6	30-150		2/2/22 18:41
Tetrachloro-m-xylene [1]	81.6	30-150		2/2/22 18:41
Tetrachloro-m-xylene [2]	79.0	30-150		2/2/22 18:41

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	45	10	mg/Kg dry	1		SW-846 8100 Modified	1/25/22	1/28/22 0:00	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorobiphenyl	44.8	40-140		1/28/22 0:00

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	18	3.8	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Barium	59	1.9	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Cadmium	ND	0.38	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Chromium	23	0.77	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Lead	120	0.57	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Mercury	0.15	0.030	mg/Kg dry	1		SW-846 7471B	1/31/22	2/1/22 14:29	GLH
Selenium	ND	3.8	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW
Silver	ND	0.38	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:41	QNW

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.0		% Wt	1		SM 2540G	1/25/22	1/25/22 15:42	WAT
Ignitability	Absent		present/absent	1		SW-846 1030	1/25/22	1/25/22 14:45	CB2
pH @19.1°C	8.6		pH Units	1	H-03	SW-846 9045C	1/24/22	1/24/22 22:00	IS
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	1/27/22	1/28/22 12:35	EC
Reactive Sulfide	ND	19	mg/Kg	1		SW-846 9030A	1/27/22	1/28/22 11:50	EC
Specific conductance	12	2.0	µmhos/cm	1		SM21-23 2510B Modified	1/27/22	1/27/22 13:15	EC

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249
Date Received: 1/24/2022
Field Sample #: B-104 (8-10)
Sampled: 1/20/2022 10:15
Sample ID: 22A1249-04
Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Acrylonitrile	ND	0.0047	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Benzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Bromobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Bromochloromethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Bromodichloromethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Bromoform	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Bromomethane	ND	0.0078	mg/Kg dry	1	V-34	SW-846 8260D	1/25/22	1/25/22 9:25	MFF
2-Butanone (MEK)	ND	0.031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
tert-Butyl Alcohol (TBA)	ND	0.078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
n-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
sec-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
tert-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Carbon Disulfide	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Carbon Tetrachloride	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Chlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Chlorodibromomethane	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Chloroethane	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Chloroform	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Chloromethane	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
2-Chlorotoluene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
4-Chlorotoluene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2-Dibromoethane (EDB)	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Dibromomethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,3-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,4-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
trans-1,4-Dichloro-2-butene	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1-Dichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2-Dichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1-Dichloroethylene	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
cis-1,2-Dichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
trans-1,2-Dichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2-Dichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,3-Dichloropropane	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
2,2-Dichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1-Dichloropropene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
cis-1,3-Dichloropropene	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
trans-1,3-Dichloropropene	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Diethyl Ether	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-10)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,4-Dioxane	ND	0.078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Ethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Hexachlorobutadiene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
2-Hexanone (MBK)	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Isopropylbenzene (Cumene)	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Methyl Acetate	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Methyl Cyclohexane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Methylene Chloride	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Naphthalene	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
n-Propylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Styrene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1,1,2-Tetrachloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1,2,2-Tetrachloroethane	ND	0.00078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Tetrachloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Tetrahydrofuran	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Toluene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2,3-Trichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2,4-Trichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,3,5-Trichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1,1-Trichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1,2-Trichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Trichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2,3-Trichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,2,4-Trimethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
1,3,5-Trimethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
Vinyl Chloride	ND	0.0078	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
m+p Xylene	ND	0.0031	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF
o-Xylene	ND	0.0016	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:25	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	92.7	70-130		1/25/22 9:25
Toluene-d8	96.4	70-130		1/25/22 9:25
4-Bromofluorobenzene	98.1	70-130		1/25/22 9:25

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-104 (8-10)
Sampled: 1/20/2022 10:15

Sample ID: 22A1249-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.0		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	MJH

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Acetophenone	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Aniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzidine	ND	0.77	mg/Kg dry	1	V-05, V-35	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzo(a)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzo(a)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzo(b)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzo(g,h,i)perylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Benzoic Acid	ND	1.2	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Bis(2-chloroethoxy)methane	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Bis(2-chloroethyl)ether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Bis(2-chloroisopropyl)ether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Bis(2-Ethylhexyl)phthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Bromophenylphenylether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Butylbenzylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Carbazole	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Chloroaniline	ND	0.77	mg/Kg dry	1	V-34	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Chloro-3-methylphenol	ND	0.77	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Chloronaphthalene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Chlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Chlorophenylphenylether	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Chrysene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Dibenzofuran	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Di-n-butylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,2-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,3-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,4-Dichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
3,3-Dichlorobenzidine	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4-Dichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Diethylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4-Dimethylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Dimethylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4,6-Dinitro-2-methylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4-Dinitrophenol	ND	0.77	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4-Dinitrotoluene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,6-Dinitrotoluene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Di-n-octylphthalate	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Hexachlorobutadiene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Hexachlorocyclopentadiene	ND	0.40	mg/Kg dry	1	V-05	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Hexachloroethane	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Indeno(1,2,3-cd)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Isophorone	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Methylphenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
3/4-Methylphenol	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
3-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Nitroaniline	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Nitrobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2-Nitrophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
4-Nitrophenol	ND	0.77	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
N-Nitrosodimethylamine	ND	0.40	mg/Kg dry	1	V-20	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
N-Nitrosodi-n-propylamine	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Pentachloronitrobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Pentachlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Phenanthrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Phenol	ND	0.40	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
Pyridine	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,2,4,5-Tetrachlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
1,2,4-Trichlorobenzene	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4,5-Trichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL
2,4,6-Trichlorophenol	ND	0.40	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 16:43	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	68.2	30-130		1/28/22 16:43
Phenol-d6	73.7	30-130		1/28/22 16:43
Nitrobenzene-d5	69.6	30-130		1/28/22 16:43
2-Fluorobiphenyl	79.1	30-130		1/28/22 16:43
2,4,6-Tribromophenol	66.8	30-130		1/28/22 16:43
p-Terphenyl-d14	95.3	30-130		1/28/22 16:43

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1221 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1232 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1242 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1248 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1254 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1260 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1262 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG
Aroclor-1268 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 18:59	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	110	30-150		2/2/22 18:59
Decachlorobiphenyl [2]	100	30-150		2/2/22 18:59
Tetrachloro-m-xylene [1]	90.4	30-150		2/2/22 18:59
Tetrachloro-m-xylene [2]	88.5	30-150		2/2/22 18:59

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	43	9.8	mg/Kg dry	1		SW-846 8100 Modified	1/25/22	1/28/22 0:31	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorobiphenyl	70.8	40-140		1/28/22 0:31

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	4.2	3.7	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Barium	16	1.8	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Cadmium	ND	0.37	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Chromium	7.7	0.74	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Lead	9.5	0.55	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Mercury	ND	0.028	mg/Kg dry	1		SW-846 7471B	1/28/22	1/31/22 15:19	ICP
Selenium	ND	3.7	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW
Silver	ND	0.37	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:46	QNW

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0-8)
Sampled: 1/20/2022 08:15

Sample ID: 22A1249-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.4		% Wt	1		SM 2540G	1/26/22	1/26/22 13:53	WAT
Ignitability	Absent		present/absent	1		SW-846 1030	1/25/22	1/25/22 14:45	CB2
pH @19.1°C	9.9		pH Units	1	H-03	SW-846 9045C	1/24/22	1/24/22 22:00	IS
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	1/27/22	1/28/22 12:35	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	1/27/22	1/28/22 11:50	EC
Specific conductance	14	2.0	µmhos/cm	1		SM21-23 2510B Modified	1/27/22	1/27/22 13:15	EC

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0.5-2)
Sampled: 1/20/2022 08:00

Sample ID: 22A1249-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Acrylonitrile	ND	0.0033	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Benzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Bromobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Bromochloromethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Bromodichloromethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Bromoform	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Bromomethane	ND	0.0055	mg/Kg dry	1	V-34	SW-846 8260D	1/25/22	1/25/22 9:50	MFF
2-Butanone (MEK)	ND	0.022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
tert-Butyl Alcohol (TBA)	ND	0.055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
n-Butylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
sec-Butylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
tert-Butylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Carbon Disulfide	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Carbon Tetrachloride	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Chlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Chlorodibromomethane	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Chloroethane	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Chloroform	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Chloromethane	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
2-Chlorotoluene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
4-Chlorotoluene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2-Dibromoethane (EDB)	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Dibromomethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,3-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,4-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
trans-1,4-Dichloro-2-butene	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1-Dichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2-Dichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1-Dichloroethylene	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
cis-1,2-Dichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
trans-1,2-Dichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,3-Dichloropropane	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
2,2-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
cis-1,3-Dichloropropene	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
trans-1,3-Dichloropropene	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Diethyl Ether	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0.5-2)
Sampled: 1/20/2022 08:00

Sample ID: 22A1249-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,4-Dioxane	ND	0.055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Ethylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Hexachlorobutadiene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
2-Hexanone (MBK)	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Isopropylbenzene (Cumene)	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Methyl Acetate	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Methyl Cyclohexane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Methylene Chloride	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Naphthalene	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
n-Propylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Styrene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1,1,2-Tetrachloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1,2,2-Tetrachloroethane	ND	0.00055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Tetrachloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Tetrahydrofuran	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Toluene	0.0017	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2,3-Trichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2,4-Trichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,3,5-Trichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1,1-Trichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1,2-Trichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Trichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2,3-Trichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,2,4-Trimethylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
1,3,5-Trimethylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
Vinyl Chloride	ND	0.0055	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
m+p Xylene	ND	0.0022	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF
o-Xylene	ND	0.0011	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 9:50	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.0	70-130		1/25/22 9:50
Toluene-d8	96.7	70-130		1/25/22 9:50
4-Bromofluorobenzene	101	70-130		1/25/22 9:50

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (0.5-2)
Sampled: 1/20/2022 08:00

Sample ID: 22A1249-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.4		% Wt	1		SM 2540G	1/26/22	1/31/22 12:11	MJH

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Acetophenone	ND	0.42	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Aniline	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Anthracene	0.35	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzidine	ND	0.82	mg/Kg dry	1	V-05, V-35	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzo(a)anthracene	0.89	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzo(a)pyrene	0.74	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzo(b)fluoranthene	0.82	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzo(g,h,i)perylene	0.37	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzo(k)fluoranthene	0.34	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Benzoic Acid	ND	1.2	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Bis(2-chloroethoxy)methane	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Bis(2-chloroethyl)ether	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Bis(2-chloroisopropyl)ether	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Bis(2-Ethylhexyl)phthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Bromophenylphenylether	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Butylbenzylphthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Carbazole	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Chloroaniline	ND	0.82	mg/Kg dry	1	V-34	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Chloro-3-methylphenol	ND	0.82	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Chloronaphthalene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Chlorophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Chlorophenylphenylether	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Chrysene	0.77	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Dibenzofuran	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Di-n-butylphthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,2-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,3-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,4-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
3,3-Dichlorobenzidine	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4-Dichlorophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Diethylphthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4-Dimethylphenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Dimethylphthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4,6-Dinitro-2-methylphenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4-Dinitrophenol	ND	0.82	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4-Dinitrotoluene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,6-Dinitrotoluene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Di-n-octylphthalate	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Fluoranthene	1.5	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Hexachlorobutadiene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Hexachlorocyclopentadiene	ND	0.42	mg/Kg dry	1	V-05	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Hexachloroethane	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Indeno(1,2,3-cd)pyrene	0.39	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Isophorone	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Methylphenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
3/4-Methylphenol	ND	0.42	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Nitroaniline	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
3-Nitroaniline	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Nitroaniline	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Nitrobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2-Nitrophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
4-Nitrophenol	ND	0.82	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
N-Nitrosodimethylamine	ND	0.42	mg/Kg dry	1	V-20	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
N-Nitrosodi-n-propylamine	ND	0.42	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Pentachloronitrobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Pentachlorophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Phenanthrene	0.87	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Phenol	ND	0.42	mg/Kg dry	1	R-05	SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Pyrene	1.7	0.21	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
Pyridine	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,2,4,5-Tetrachlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
1,2,4-Trichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4,5-Trichlorophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL
2,4,6-Trichlorophenol	ND	0.42	mg/Kg dry	1		SW-846 8270E	1/25/22	1/28/22 17:07	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	51.7	30-130		1/28/22 17:07
Phenol-d6	54.9	30-130		1/28/22 17:07
Nitrobenzene-d5	49.7	30-130		1/28/22 17:07
2-Fluorobiphenyl	57.6	30-130		1/28/22 17:07
2,4,6-Tribromophenol	37.3	30-130		1/28/22 17:07
p-Terphenyl-d14	69.8	30-130		1/28/22 17:07

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1221 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1232 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1242 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1248 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1254 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1260 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1262 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG
Aroclor-1268 [1]	ND	0.099	mg/Kg dry	4		SW-846 8082A	2/1/22	2/2/22 19:17	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	111	30-150		2/2/22 19:17
Decachlorobiphenyl [2]	96.6	30-150		2/2/22 19:17
Tetrachloro-m-xylene [1]	90.3	30-150		2/2/22 19:17
Tetrachloro-m-xylene [2]	87.1	30-150		2/2/22 19:17

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	63	10	mg/Kg dry	1		SW-846 8100 Modified	1/25/22	1/28/22 2:04	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorobiphenyl	46.6	40-140		1/28/22 2:04

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	14	3.9	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Barium	78	2.0	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Cadmium	ND	0.39	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Chromium	46	0.79	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Lead	150	0.59	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Mercury	ND	0.028	mg/Kg dry	1		SW-846 7471B	1/28/22	1/31/22 15:21	ICP
Selenium	ND	3.9	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW
Silver	ND	0.39	mg/Kg dry	1		SW-846 6010D	1/26/22	1/27/22 15:53	QNW

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.4		% Wt	1		SM 2540G	1/25/22	1/25/22 15:42	WAT
Ignitability	Absent		present/absent	1		SW-846 1030	1/25/22	1/25/22 14:45	CB2
pH @18.9°C	8.8		pH Units	1	H-03	SW-846 9045C	1/24/22	1/24/22 22:00	IS
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	1/27/22	1/28/22 12:35	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	1/27/22	1/28/22 11:50	EC
Specific conductance	14	2.0	µmhos/cm	1		SM21-23 2510B Modified	1/27/22	1/27/22 13:15	EC

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249
Date Received: 1/24/2022
Field Sample #: B-105 (14-15)
Sampled: 1/20/2022 08:45
Sample ID: 22A1249-08
Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Acrylonitrile	ND	0.0040	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Benzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Bromobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Bromochloromethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Bromodichloromethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Bromoform	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Bromomethane	ND	0.0067	mg/Kg dry	1	V-34	SW-846 8260D	1/25/22	1/25/22 10:15	MFF
2-Butanone (MEK)	ND	0.027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
tert-Butyl Alcohol (TBA)	ND	0.067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
n-Butylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
sec-Butylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
tert-Butylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Carbon Disulfide	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Carbon Tetrachloride	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Chlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Chlorodibromomethane	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Chloroethane	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Chloroform	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Chloromethane	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
2-Chlorotoluene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
4-Chlorotoluene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2-Dibromoethane (EDB)	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Dibromomethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2-Dichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,3-Dichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,4-Dichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
trans-1,4-Dichloro-2-butene	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1-Dichloroethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2-Dichloroethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1-Dichloroethylene	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
cis-1,2-Dichloroethylene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
trans-1,2-Dichloroethylene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2-Dichloropropane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,3-Dichloropropane	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
2,2-Dichloropropane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1-Dichloropropene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
cis-1,3-Dichloropropene	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
trans-1,3-Dichloropropene	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Diethyl Ether	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (14-15)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,4-Dioxane	ND	0.067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Ethylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Hexachlorobutadiene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
2-Hexanone (MBK)	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Isopropylbenzene (Cumene)	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Methyl Acetate	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Methyl Cyclohexane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Methylene Chloride	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Naphthalene	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
n-Propylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Styrene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1,1,2-Tetrachloroethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1,2,2-Tetrachloroethane	ND	0.00067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Tetrachloroethylene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Tetrahydrofuran	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Toluene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2,3-Trichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2,4-Trichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,3,5-Trichlorobenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1,1-Trichloroethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1,2-Trichloroethane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Trichloroethylene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2,3-Trichloropropane	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,2,4-Trimethylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
1,3,5-Trimethylbenzene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
Vinyl Chloride	ND	0.0067	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
m+p Xylene	ND	0.0027	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF
o-Xylene	ND	0.0013	mg/Kg dry	1		SW-846 8260D	1/25/22	1/25/22 10:15	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	96.8	70-130		1/25/22 10:15
Toluene-d8	99.4	70-130		1/25/22 10:15
4-Bromofluorobenzene	103	70-130		1/25/22 10:15

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22A1249

Date Received: 1/24/2022

Field Sample #: B-105 (14-15)
Sampled: 1/20/2022 08:45

Sample ID: 22A1249-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.4		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	MJH

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Sample Extraction Data

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22A1249-01 [B-104 (0-8)]	B299617	01/25/22
22A1249-02 [B-104 (2-4)]	B299617	01/25/22
22A1249-03 [B-104 (8-12)]	B299617	01/25/22
22A1249-04 [B-104 (8-10)]	B299617	01/25/22
22A1249-07 [B-105 (8-16)]	B299617	01/25/22
22A1249-08 [B-105 (14-15)]	B299617	01/25/22

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22A1249-05 [B-105 (0-8)]	B299706	01/26/22
22A1249-06 [B-105 (0.5-2)]	B299706	01/26/22

SM21-23 2510B Modified

Lab Number [Field ID]	Batch	Initial [g]	Date
22A1249-01 [B-104 (0-8)]	B299827	1.00	01/27/22
22A1249-03 [B-104 (8-12)]	B299827	1.00	01/27/22
22A1249-05 [B-105 (0-8)]	B299827	1.00	01/27/22
22A1249-07 [B-105 (8-16)]	B299827	1.00	01/27/22

SW-846 1030

Lab Number [Field ID]	Batch	Initial [g]	Date
22A1249-01 [B-104 (0-8)]	B299676	50.0	01/25/22
22A1249-03 [B-104 (8-12)]	B299676	50.0	01/25/22
22A1249-05 [B-105 (0-8)]	B299676	50.0	01/25/22
22A1249-07 [B-105 (8-16)]	B299676	50.0	01/25/22

Prep Method: SW-846 3050B **Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299663	1.60	50.0	01/25/22

Prep Method: SW-846 3050B **Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-03 [B-104 (8-12)]	B299725	1.59	50.0	01/26/22
22A1249-05 [B-105 (0-8)]	B299725	1.59	50.0	01/26/22
22A1249-07 [B-105 (8-16)]	B299725	1.58	50.0	01/26/22

Prep Method: SW-846 7471 **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-05 [B-105 (0-8)]	B299756	0.634	50.0	01/28/22
22A1249-07 [B-105 (8-16)]	B299756	0.676	50.0	01/28/22

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Sample Extraction Data

Prep Method: SW-846 7471 **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B300060	0.599	50.0	01/31/22
22A1249-03 [B-104 (8-12)]	B300060	0.610	50.0	01/31/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8081B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299753	10.0	10.0	01/26/22
22A1249-03 [B-104 (8-12)]	B299753	10.0	10.0	01/26/22

Prep Method: SW-846 3540C **Analytical Method: SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01RE1 [B-104 (0-8)]	B300143	10.0	10.0	02/01/22
22A1249-03RE1 [B-104 (8-12)]	B300143	10.0	10.0	02/01/22
22A1249-05RE1 [B-105 (0-8)]	B300143	10.0	10.0	02/01/22
22A1249-07RE1 [B-105 (8-16)]	B300143	10.0	10.0	02/01/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8100 Modified**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299672	30.0	1.00	01/25/22
22A1249-03 [B-104 (8-12)]	B299672	30.0	1.00	01/25/22
22A1249-05 [B-105 (0-8)]	B299672	30.0	1.00	01/25/22
22A1249-07 [B-105 (8-16)]	B299672	30.0	1.00	01/25/22

Prep Method: SW-846 8151 **Analytical Method: SW-846 8151A**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299771	20.0	5.00	01/27/22
22A1249-03 [B-104 (8-12)]	B299771	20.0	5.00	01/27/22

Prep Method: SW-846 5035 **Analytical Method: SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-02 [B-104 (2-4)]	B299615	6.87	10.0	01/25/22
22A1249-04 [B-104 (8-10)]	B299615	7.83	10.0	01/25/22
22A1249-06 [B-105 (0.5-2)]	B299615	10.6	10.0	01/25/22
22A1249-08 [B-105 (14-15)]	B299615	9.33	10.0	01/25/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299673	30.0	1.00	01/25/22
22A1249-03 [B-104 (8-12)]	B299673	30.0	1.00	01/25/22
22A1249-05 [B-105 (0-8)]	B299673	30.0	1.00	01/25/22
22A1249-07 [B-105 (8-16)]	B299673	30.0	1.00	01/25/22

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Sample Extraction Data

SW-846 9014

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299813	25.2	250	01/27/22
22A1249-03 [B-104 (8-12)]	B299813	25.7	250	01/27/22
22A1249-05 [B-105 (0-8)]	B299813	25.2	250	01/27/22
22A1249-07 [B-105 (8-16)]	B299813	25.3	250	01/27/22

SW-846 9030A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22A1249-01 [B-104 (0-8)]	B299818	25.2	250	01/27/22
22A1249-03 [B-104 (8-12)]	B299818	25.7	250	01/27/22
22A1249-05 [B-105 (0-8)]	B299818	25.2	250	01/27/22
22A1249-07 [B-105 (8-16)]	B299818	25.3	250	01/27/22

SW-846 9045C

Lab Number [Field ID]	Batch	Initial [g]	Date
22A1249-01 [B-104 (0-8)]	B299601	20.0	01/24/22
22A1249-03 [B-104 (8-12)]	B299601	20.0	01/24/22
22A1249-05 [B-105 (0-8)]	B299601	20.0	01/24/22
22A1249-07 [B-105 (8-16)]	B299601	20.0	01/24/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299615 - SW-846 5035										
Blank (B299615-BLK1)				Prepared & Analyzed: 01/25/22						
Acetone	ND	0.10	mg/Kg wet							
Acrylonitrile	ND	0.0060	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
tert-Butyl Alcohol (TBA)	ND	0.10	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.010	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.020	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.0040	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.020	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl Acetate	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B299615 - SW-846 5035											
Blank (B299615-BLK1)				Prepared & Analyzed: 01/25/22							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet								
Methyl Cyclohexane	ND	0.0020	mg/Kg wet								
Methylene Chloride	ND	0.020	mg/Kg wet								
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet								
Naphthalene	ND	0.0040	mg/Kg wet								
n-Propylbenzene	ND	0.0020	mg/Kg wet								
Styrene	ND	0.0020	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet								
Tetrachloroethylene	ND	0.0020	mg/Kg wet								
Tetrahydrofuran	ND	0.010	mg/Kg wet								
Toluene	ND	0.0020	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,3,5-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet								
Trichloroethylene	ND	0.0020	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.010	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet								
Vinyl Chloride	ND	0.010	mg/Kg wet								
m+p Xylene	ND	0.0040	mg/Kg wet								
o-Xylene	ND	0.0020	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0488*		mg/Kg wet	0.0500		97.6	70-130				
Surrogate: Toluene-d8	*0.0494*		mg/Kg wet	0.0500		98.8	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0508*		mg/Kg wet	0.0500		102	70-130				
LCS (B299615-BS1)				Prepared & Analyzed: 01/25/22							
Acetone	0.188	0.10	mg/Kg wet	0.200		94.0	70-160			V-35	†
Acrylonitrile	0.0185	0.0060	mg/Kg wet	0.0200		92.5	70-130				
tert-Amyl Methyl Ether (TAME)	0.0185	0.0010	mg/Kg wet	0.0200		92.4	70-130				
Benzene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130				
Bromobenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.3	70-130				
Bromochloromethane	0.0192	0.0020	mg/Kg wet	0.0200		96.1	70-130				
Bromodichloromethane	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-130				
Bromoform	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130				
Bromomethane	0.0237	0.010	mg/Kg wet	0.0200		119	40-130			V-20, V-34	†
2-Butanone (MEK)	0.187	0.040	mg/Kg wet	0.200		93.3	70-160				†
tert-Butyl Alcohol (TBA)	0.171	0.10	mg/Kg wet	0.200		85.4	40-130				†
n-Butylbenzene	0.0190	0.0020	mg/Kg wet	0.0200		95.0	70-130				
sec-Butylbenzene	0.0192	0.0020	mg/Kg wet	0.0200		95.8	70-130				
tert-Butylbenzene	0.0192	0.0020	mg/Kg wet	0.0200		96.1	70-160				†
tert-Butyl Ethyl Ether (TBEE)	0.0179	0.0010	mg/Kg wet	0.0200		89.5	70-130				
Carbon Disulfide	0.198	0.010	mg/Kg wet	0.200		99.2	70-130				
Carbon Tetrachloride	0.0196	0.0020	mg/Kg wet	0.0200		97.9	70-130				
Chlorobenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.4	70-130				
Chlorodibromomethane	0.0200	0.0010	mg/Kg wet	0.0200		100	70-130				
Chloroethane	0.0191	0.020	mg/Kg wet	0.0200		95.6	70-130				
Chloroform	0.0188	0.0040	mg/Kg wet	0.0200		94.0	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299615 - SW-846 5035										
LCS (B299615-BS1)				Prepared & Analyzed: 01/25/22						
Chloromethane	0.0195	0.010	mg/Kg wet	0.0200		97.4	70-130			
2-Chlorotoluene	0.0198	0.0020	mg/Kg wet	0.0200		99.0	70-130			
4-Chlorotoluene	0.0199	0.0020	mg/Kg wet	0.0200		99.6	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0185	0.0020	mg/Kg wet	0.0200		92.6	70-130			
1,2-Dibromoethane (EDB)	0.0199	0.0010	mg/Kg wet	0.0200		99.5	70-130			
Dibromomethane	0.0195	0.0020	mg/Kg wet	0.0200		97.6	70-130			
1,2-Dichlorobenzene	0.0192	0.0020	mg/Kg wet	0.0200		95.9	70-130			
1,3-Dichlorobenzene	0.0188	0.0020	mg/Kg wet	0.0200		94.1	70-130			
1,4-Dichlorobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.7	70-130			
trans-1,4-Dichloro-2-butene	0.0196	0.0040	mg/Kg wet	0.0200		98.1	70-130			
Dichlorodifluoromethane (Freon 12)	0.0173	0.020	mg/Kg wet	0.0200		86.6	40-160			†
1,1-Dichloroethane	0.0184	0.0020	mg/Kg wet	0.0200		91.8	70-130			
1,2-Dichloroethane	0.0189	0.0020	mg/Kg wet	0.0200		94.4	70-130			
1,1-Dichloroethylene	0.0194	0.0040	mg/Kg wet	0.0200		96.8	70-130			
cis-1,2-Dichloroethylene	0.0182	0.0020	mg/Kg wet	0.0200		91.0	70-130			
trans-1,2-Dichloroethylene	0.0187	0.0020	mg/Kg wet	0.0200		93.4	70-130			
1,2-Dichloropropane	0.0192	0.0020	mg/Kg wet	0.0200		96.0	70-130			
1,3-Dichloropropane	0.0196	0.0010	mg/Kg wet	0.0200		98.2	70-130			
2,2-Dichloropropane	0.0180	0.0020	mg/Kg wet	0.0200		90.2	70-130			
1,1-Dichloropropene	0.0192	0.0020	mg/Kg wet	0.0200		95.9	70-130			
cis-1,3-Dichloropropene	0.0201	0.0010	mg/Kg wet	0.0200		100	70-130			
trans-1,3-Dichloropropene	0.0199	0.0010	mg/Kg wet	0.0200		99.3	70-130			
Diethyl Ether	0.0184	0.020	mg/Kg wet	0.0200		92.0	70-130			
Diisopropyl Ether (DIPE)	0.0185	0.0010	mg/Kg wet	0.0200		92.7	70-130			
1,4-Dioxane	0.188	0.10	mg/Kg wet	0.200		93.9	40-160			†
Ethylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130			
Hexachlorobutadiene	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-160			
2-Hexanone (MBK)	0.198	0.020	mg/Kg wet	0.200		99.2	70-160			†
Isopropylbenzene (Cumene)	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
p-Isopropyltoluene (p-Cymene)	0.0190	0.0020	mg/Kg wet	0.0200		95.0	70-130			
Methyl Acetate	0.0175	0.0020	mg/Kg wet	0.0200		87.4	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0187	0.0040	mg/Kg wet	0.0200		93.4	70-130			
Methyl Cyclohexane	0.0199	0.0020	mg/Kg wet	0.0200		99.6	70-130			
Methylene Chloride	0.0168	0.020	mg/Kg wet	0.0200		84.2	40-160			†
4-Methyl-2-pentanone (MIBK)	0.190	0.020	mg/Kg wet	0.200		95.2	70-160			†
Naphthalene	0.0189	0.0040	mg/Kg wet	0.0200		94.5	40-130			†
n-Propylbenzene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
Styrene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130			
1,1,1,2-Tetrachloroethane	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
1,1,2,2-Tetrachloroethane	0.0202	0.0010	mg/Kg wet	0.0200		101	70-130			
Tetrachloroethylene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
Tetrahydrofuran	0.0177	0.010	mg/Kg wet	0.0200		88.6	70-130			
Toluene	0.0179	0.0020	mg/Kg wet	0.0200		89.5	70-130			
1,2,3-Trichlorobenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.7	70-130			
1,2,4-Trichlorobenzene	0.0186	0.0020	mg/Kg wet	0.0200		92.8	70-130			
1,3,5-Trichlorobenzene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130			
1,1,1-Trichloroethane	0.0197	0.0020	mg/Kg wet	0.0200		98.3	70-130			
1,1,2-Trichloroethane	0.0196	0.0020	mg/Kg wet	0.0200		98.1	70-130			
Trichloroethylene	0.0199	0.0020	mg/Kg wet	0.0200		99.3	70-130			
Trichlorofluoromethane (Freon 11)	0.0192	0.010	mg/Kg wet	0.0200		95.9	70-130			
1,2,3-Trichloropropane	0.0199	0.0020	mg/Kg wet	0.0200		99.7	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B299615 - SW-846 5035											
LCS (B299615-BS1)				Prepared & Analyzed: 01/25/22							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0204	0.010	mg/Kg wet	0.0200		102	70-130				
1,2,4-Trimethylbenzene	0.0188	0.0020	mg/Kg wet	0.0200		94.2	70-130				
1,3,5-Trimethylbenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
Vinyl Chloride	0.0180	0.010	mg/Kg wet	0.0200		90.0	40-130				†
m+p Xylene	0.0404	0.0040	mg/Kg wet	0.0400		101	70-130				
o-Xylene	0.0198	0.0020	mg/Kg wet	0.0200		99.2	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0473*		mg/Kg wet	0.0500		94.6	70-130				
Surrogate: Toluene-d8	*0.0499*		mg/Kg wet	0.0500		99.9	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0511*		mg/Kg wet	0.0500		102	70-130				
LCS Dup (B299615-BSD1)				Prepared & Analyzed: 01/25/22							
Acetone	0.179	0.10	mg/Kg wet	0.200		89.3	70-160	5.20	25	V-35	†
Acrylonitrile	0.0183	0.0060	mg/Kg wet	0.0200		91.3	70-130	1.31	25		
tert-Amyl Methyl Ether (TAME)	0.0180	0.0010	mg/Kg wet	0.0200		90.0	70-130	2.63	25		
Benzene	0.0178	0.0020	mg/Kg wet	0.0200		88.8	70-130	2.67	25		
Bromobenzene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130	12.2	25		
Bromochloromethane	0.0187	0.0020	mg/Kg wet	0.0200		93.4	70-130	2.85	25		
Bromodichloromethane	0.0194	0.0020	mg/Kg wet	0.0200		96.9	70-130	0.617	25		
Bromoform	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	4.54	25		
Bromomethane	0.0221	0.010	mg/Kg wet	0.0200		111	40-130	6.97	25	V-20, V-34	†
2-Butanone (MEK)	0.178	0.040	mg/Kg wet	0.200		89.2	70-160	4.47	25		†
tert-Butyl Alcohol (TBA)	0.165	0.10	mg/Kg wet	0.200		82.3	40-130	3.67	25		†
n-Butylbenzene	0.0185	0.0020	mg/Kg wet	0.0200		92.7	70-130	2.45	25		
sec-Butylbenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.6	70-130	1.26	25		
tert-Butylbenzene	0.0188	0.0020	mg/Kg wet	0.0200		93.9	70-160	2.32	25		†
tert-Butyl Ethyl Ether (TBEE)	0.0175	0.0010	mg/Kg wet	0.0200		87.5	70-130	2.26	25		
Carbon Disulfide	0.189	0.010	mg/Kg wet	0.200		94.5	70-130	4.82	25		
Carbon Tetrachloride	0.0184	0.0020	mg/Kg wet	0.0200		92.2	70-130	6.00	25		
Chlorobenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.6	70-130	0.808	25		
Chlorodibromomethane	0.0203	0.0010	mg/Kg wet	0.0200		101	70-130	1.09	25		
Chloroethane	0.0178	0.020	mg/Kg wet	0.0200		88.8	70-130	7.38	25		
Chloroform	0.0180	0.0040	mg/Kg wet	0.0200		90.1	70-130	4.24	25		
Chloromethane	0.0185	0.010	mg/Kg wet	0.0200		92.4	70-130	5.27	25		
2-Chlorotoluene	0.0193	0.0020	mg/Kg wet	0.0200		96.5	70-130	2.56	25		
4-Chlorotoluene	0.0193	0.0020	mg/Kg wet	0.0200		96.3	70-130	3.37	25		
1,2-Dibromo-3-chloropropane (DBCP)	0.0176	0.0020	mg/Kg wet	0.0200		87.9	70-130	5.21	25		
1,2-Dibromoethane (EDB)	0.0199	0.0010	mg/Kg wet	0.0200		99.4	70-130	0.101	25		
Dibromomethane	0.0198	0.0020	mg/Kg wet	0.0200		98.8	70-130	1.22	25		
1,2-Dichlorobenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.5	70-130	2.53	25		
1,3-Dichlorobenzene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130	0.961	25		
1,4-Dichlorobenzene	0.0185	0.0020	mg/Kg wet	0.0200		92.5	70-130	2.35	25		
trans-1,4-Dichloro-2-butene	0.0190	0.0040	mg/Kg wet	0.0200		95.2	70-130	3.00	25		
Dichlorodifluoromethane (Freon 12)	0.0166	0.020	mg/Kg wet	0.0200		83.1	40-160	4.12	25		†
1,1-Dichloroethane	0.0179	0.0020	mg/Kg wet	0.0200		89.4	70-130	2.65	25		
1,2-Dichloroethane	0.0187	0.0020	mg/Kg wet	0.0200		93.5	70-130	0.958	25		
1,1-Dichloroethylene	0.0184	0.0040	mg/Kg wet	0.0200		92.0	70-130	5.08	25		
cis-1,2-Dichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200		89.7	70-130	1.44	25		
trans-1,2-Dichloroethylene	0.0181	0.0020	mg/Kg wet	0.0200		90.5	70-130	3.15	25		
1,2-Dichloropropane	0.0190	0.0020	mg/Kg wet	0.0200		94.9	70-130	1.15	25		
1,3-Dichloropropane	0.0195	0.0010	mg/Kg wet	0.0200		97.4	70-130	0.818	25		
2,2-Dichloropropane	0.0175	0.0020	mg/Kg wet	0.0200		87.4	70-130	3.15	25		
1,1-Dichloropropene	0.0182	0.0020	mg/Kg wet	0.0200		91.0	70-130	5.24	25		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299615 - SW-846 5035										
LCS Dup (B299615-BSD1)				Prepared & Analyzed: 01/25/22						
cis-1,3-Dichloropropene	0.0199	0.0010	mg/Kg wet	0.0200		99.4	70-130	0.901	25	
trans-1,3-Dichloropropene	0.0199	0.0010	mg/Kg wet	0.0200		99.5	70-130	0.201	25	
Diethyl Ether	0.0180	0.020	mg/Kg wet	0.0200		89.9	70-130	2.31	25	
Diisopropyl Ether (DIPE)	0.0174	0.0010	mg/Kg wet	0.0200		87.1	70-130	6.23	25	
1,4-Dioxane	0.195	0.10	mg/Kg wet	0.200		97.3	40-160	3.51	50	† ‡
Ethylbenzene	0.0196	0.0020	mg/Kg wet	0.0200		97.9	70-130	3.81	25	
Hexachlorobutadiene	0.0193	0.0020	mg/Kg wet	0.0200		96.3	70-160	1.24	25	
2-Hexanone (MBK)	0.197	0.020	mg/Kg wet	0.200		98.6	70-160	0.688	25	†
Isopropylbenzene (Cumene)	0.0196	0.0020	mg/Kg wet	0.0200		97.9	70-130	4.00	25	
p-Isopropyltoluene (p-Cymene)	0.0184	0.0020	mg/Kg wet	0.0200		92.1	70-130	3.10	25	
Methyl Acetate	0.0182	0.0020	mg/Kg wet	0.0200		90.8	70-130	3.82	25	
Methyl tert-Butyl Ether (MTBE)	0.0181	0.0040	mg/Kg wet	0.0200		90.3	70-130	3.38	25	
Methyl Cyclohexane	0.0193	0.0020	mg/Kg wet	0.0200		96.4	70-130	3.27	25	
Methylene Chloride	0.0166	0.020	mg/Kg wet	0.0200		83.0	40-160	1.44	25	†
4-Methyl-2-pentanone (MIBK)	0.189	0.020	mg/Kg wet	0.200		94.6	70-160	0.611	25	†
Naphthalene	0.0184	0.0040	mg/Kg wet	0.0200		91.8	40-130	2.90	25	†
n-Propylbenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	3.89	25	
Styrene	0.0197	0.0020	mg/Kg wet	0.0200		98.5	70-130	3.10	25	
1,1,1,2-Tetrachloroethane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	2.25	25	
1,1,2,2-Tetrachloroethane	0.0197	0.0010	mg/Kg wet	0.0200		98.3	70-130	2.51	25	
Tetrachloroethylene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	2.90	25	
Tetrahydrofuran	0.0169	0.010	mg/Kg wet	0.0200		84.5	70-130	4.74	25	
Toluene	0.0183	0.0020	mg/Kg wet	0.0200		91.4	70-130	2.10	25	
1,2,3-Trichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		91.0	70-130	2.92	25	
1,2,4-Trichlorobenzene	0.0178	0.0020	mg/Kg wet	0.0200		89.1	70-130	4.07	25	
1,3,5-Trichlorobenzene	0.0179	0.0020	mg/Kg wet	0.0200		89.7	70-130	3.83	25	
1,1,1-Trichloroethane	0.0190	0.0020	mg/Kg wet	0.0200		95.2	70-130	3.20	25	
1,1,2-Trichloroethane	0.0194	0.0020	mg/Kg wet	0.0200		97.1	70-130	1.02	25	
Trichloroethylene	0.0197	0.0020	mg/Kg wet	0.0200		98.6	70-130	0.707	25	
Trichlorofluoromethane (Freon 11)	0.0184	0.010	mg/Kg wet	0.0200		92.1	70-130	4.04	25	
1,2,3-Trichloropropane	0.0195	0.0020	mg/Kg wet	0.0200		97.7	70-130	2.03	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0198	0.010	mg/Kg wet	0.0200		98.8	70-130	3.19	25	
1,2,4-Trimethylbenzene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130	3.24	25	
1,3,5-Trimethylbenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130	2.40	25	
Vinyl Chloride	0.0168	0.010	mg/Kg wet	0.0200		84.1	40-130	6.78	25	†
m+p Xylene	0.0391	0.0040	mg/Kg wet	0.0400		97.8	70-130	3.32	25	
o-Xylene	0.0195	0.0020	mg/Kg wet	0.0200		97.6	70-130	1.63	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0467*		mg/Kg wet	0.0500		93.4	70-130			
Surrogate: Toluene-d8	*0.0495*		mg/Kg wet	0.0500		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0504*		mg/Kg wet	0.0500		101	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299673 - SW-846 3546										
Blank (B299673-BLK1)				Prepared: 01/25/22 Analyzed: 01/27/22						
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Acetophenone	ND	0.34	mg/Kg wet							R-05
Aniline	ND	0.34	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzidine	ND	0.66	mg/Kg wet							V-05, V-35
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Benzoic Acid	ND	1.0	mg/Kg wet							
Bis(2-chloroethoxy)methane	ND	0.34	mg/Kg wet							
Bis(2-chloroethyl)ether	ND	0.34	mg/Kg wet							
Bis(2-chloroisopropyl)ether	ND	0.34	mg/Kg wet							
Bis(2-Ethylhexyl)phthalate	ND	0.34	mg/Kg wet							
4-Bromophenylphenylether	ND	0.34	mg/Kg wet							
Butylbenzylphthalate	ND	0.34	mg/Kg wet							
Carbazole	ND	0.17	mg/Kg wet							
4-Chloroaniline	ND	0.66	mg/Kg wet							V-34
4-Chloro-3-methylphenol	ND	0.66	mg/Kg wet							
2-Chloronaphthalene	ND	0.34	mg/Kg wet							
2-Chlorophenol	ND	0.34	mg/Kg wet							
4-Chlorophenylphenylether	ND	0.34	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Dibenzofuran	ND	0.34	mg/Kg wet							
Di-n-butylphthalate	ND	0.34	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.34	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.34	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.34	mg/Kg wet							
3,3-Dichlorobenzidine	ND	0.17	mg/Kg wet							
2,4-Dichlorophenol	ND	0.34	mg/Kg wet							
Diethylphthalate	ND	0.34	mg/Kg wet							
2,4-Dimethylphenol	ND	0.34	mg/Kg wet							
Dimethylphthalate	ND	0.34	mg/Kg wet							
4,6-Dinitro-2-methylphenol	ND	0.34	mg/Kg wet							
2,4-Dinitrophenol	ND	0.66	mg/Kg wet							
2,4-Dinitrotoluene	ND	0.34	mg/Kg wet							
2,6-Dinitrotoluene	ND	0.34	mg/Kg wet							
Di-n-octylphthalate	ND	0.34	mg/Kg wet							
1,2-Diphenylhydrazine/Azobenzene	ND	0.34	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Hexachlorobenzene	ND	0.34	mg/Kg wet							
Hexachlorobutadiene	ND	0.34	mg/Kg wet							
Hexachlorocyclopentadiene	ND	0.34	mg/Kg wet							V-05
Hexachloroethane	ND	0.34	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
Isophorone	ND	0.34	mg/Kg wet							
1-Methylnaphthalene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B299673 - SW-846 3546											
Blank (B299673-BLK1)				Prepared: 01/25/22 Analyzed: 01/27/22							
2-Methylphenol	ND	0.34	mg/Kg wet								
3/4-Methylphenol	ND	0.34	mg/Kg wet							R-05	
Naphthalene	ND	0.17	mg/Kg wet								
2-Nitroaniline	ND	0.34	mg/Kg wet								
3-Nitroaniline	ND	0.34	mg/Kg wet								
4-Nitroaniline	ND	0.34	mg/Kg wet								
Nitrobenzene	ND	0.34	mg/Kg wet								
2-Nitrophenol	ND	0.34	mg/Kg wet								
4-Nitrophenol	ND	0.66	mg/Kg wet								
N-Nitrosodimethylamine	ND	0.34	mg/Kg wet								
N-Nitrosodiphenylamine/Diphenylamine	ND	0.34	mg/Kg wet								
N-Nitrosodi-n-propylamine	ND	0.34	mg/Kg wet							R-05	
Pentachloronitrobenzene	ND	0.34	mg/Kg wet								
Pentachlorophenol	ND	0.34	mg/Kg wet								
Phenanthrene	ND	0.17	mg/Kg wet								
Phenol	ND	0.34	mg/Kg wet							R-05	
Pyrene	ND	0.17	mg/Kg wet								
Pyridine	ND	0.34	mg/Kg wet								
1,2,4,5-Tetrachlorobenzene	ND	0.34	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.34	mg/Kg wet								
2,4,5-Trichlorophenol	ND	0.34	mg/Kg wet								
2,4,6-Trichlorophenol	ND	0.34	mg/Kg wet								
Surrogate: 2-Fluorophenol	*4.39*		mg/Kg wet	6.67		65.9	30-130				
Surrogate: Phenol-d6	*4.58*		mg/Kg wet	6.67		68.7	30-130				
Surrogate: Nitrobenzene-d5	*2.03*		mg/Kg wet	3.33		61.0	30-130				
Surrogate: 2-Fluorobiphenyl	*2.34*		mg/Kg wet	3.33		70.3	30-130				
Surrogate: 2,4,6-Tribromophenol	*5.38*		mg/Kg wet	6.67		80.7	30-130				
Surrogate: p-Terphenyl-d14	*2.91*		mg/Kg wet	3.33		87.4	30-130				
LCS (B299673-BS1)				Prepared: 01/25/22 Analyzed: 01/27/22							
Acenaphthene	1.02	0.17	mg/Kg wet	1.67		60.9	40-140				
Acenaphthylene	1.11	0.17	mg/Kg wet	1.67		66.6	40-140				
Acetophenone	0.895	0.34	mg/Kg wet	1.67		53.7	40-140			R-05	
Aniline	0.705	0.34	mg/Kg wet	1.67		42.3	10-140				†
Anthracene	1.17	0.17	mg/Kg wet	1.67		70.1	40-140				
Benzidine	1.61	0.66	mg/Kg wet	1.67		96.6	40-140			V-05, V-35	
Benzo(a)anthracene	1.19	0.17	mg/Kg wet	1.67		71.2	40-140				
Benzo(a)pyrene	1.29	0.17	mg/Kg wet	1.67		77.1	40-140				
Benzo(b)fluoranthene	1.27	0.17	mg/Kg wet	1.67		76.1	40-140				
Benzo(g,h,i)perylene	1.23	0.17	mg/Kg wet	1.67		73.6	40-140				
Benzo(k)fluoranthene	1.34	0.17	mg/Kg wet	1.67		80.5	40-140				
Benzoic Acid	0.975	1.0	mg/Kg wet	1.67		58.5	30-130				
Bis(2-chloroethoxy)methane	0.950	0.34	mg/Kg wet	1.67		57.0	40-140				
Bis(2-chloroethyl)ether	0.975	0.34	mg/Kg wet	1.67		58.5	40-140				
Bis(2-chloroisopropyl)ether	1.15	0.34	mg/Kg wet	1.67		69.2	40-140				
Bis(2-Ethylhexyl)phthalate	1.12	0.34	mg/Kg wet	1.67		67.5	40-140				
4-Bromophenylphenylether	1.08	0.34	mg/Kg wet	1.67		64.6	40-140				
Butylbenzylphthalate	1.10	0.34	mg/Kg wet	1.67		66.2	40-140				
Carbazole	1.18	0.17	mg/Kg wet	1.67		70.8	40-140				
4-Chloroaniline	0.866	0.66	mg/Kg wet	1.67		52.0	10-140			V-34	†
4-Chloro-3-methylphenol	1.05	0.66	mg/Kg wet	1.67		62.9	30-130				
2-Chloronaphthalene	0.974	0.34	mg/Kg wet	1.67		58.4	40-140				

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B299673 - SW-846 3546												
LCS (B299673-BS1)				Prepared: 01/25/22 Analyzed: 01/27/22								
2-Chlorophenol	0.955	0.34	mg/Kg wet	1.67		57.3		30-130				
4-Chlorophenylphenylether	1.14	0.34	mg/Kg wet	1.67		68.2		40-140				
Chrysene	1.16	0.17	mg/Kg wet	1.67		69.4		40-140				
Dibenz(a,h)anthracene	1.28	0.17	mg/Kg wet	1.67		76.9		40-140				
Dibenzofuran	1.22	0.34	mg/Kg wet	1.67		73.4		40-140				
Di-n-butylphthalate	1.13	0.34	mg/Kg wet	1.67		67.9		40-140				
1,2-Dichlorobenzene	1.01	0.34	mg/Kg wet	1.67		60.8		40-140				
1,3-Dichlorobenzene	0.964	0.34	mg/Kg wet	1.67		57.8		40-140				
1,4-Dichlorobenzene	0.968	0.34	mg/Kg wet	1.67		58.1		40-140				
3,3-Dichlorobenzidine	0.818	0.17	mg/Kg wet	1.67		49.1		20-140				†
2,4-Dichlorophenol	1.00	0.34	mg/Kg wet	1.67		60.1		30-130				
Diethylphthalate	1.12	0.34	mg/Kg wet	1.67		67.1		40-140				
2,4-Dimethylphenol	0.976	0.34	mg/Kg wet	1.67		58.6		30-130				
Dimethylphthalate	1.11	0.34	mg/Kg wet	1.67		66.9		40-140				
4,6-Dinitro-2-methylphenol	0.957	0.34	mg/Kg wet	1.67		57.4		30-130				
2,4-Dinitrophenol	0.603	0.66	mg/Kg wet	1.67		36.2		30-130				
2,4-Dinitrotoluene	1.22	0.34	mg/Kg wet	1.67		73.3		40-140				
2,6-Dinitrotoluene	1.23	0.34	mg/Kg wet	1.67		73.9		40-140				
Di-n-octylphthalate	1.23	0.34	mg/Kg wet	1.67		73.9		40-140				
1,2-Diphenylhydrazine/Azobenzene	1.06	0.34	mg/Kg wet	1.67		63.7		40-140				
Fluoranthene	1.25	0.17	mg/Kg wet	1.67		75.0		40-140				
Fluorene	1.17	0.17	mg/Kg wet	1.67		70.0		40-140				
Hexachlorobenzene	1.23	0.34	mg/Kg wet	1.67		73.9		40-140				
Hexachlorobutadiene	0.983	0.34	mg/Kg wet	1.67		59.0		40-140				
Hexachlorocyclopentadiene	0.654	0.34	mg/Kg wet	1.67		**39.2**	*	40-140			L-07, V-05	
Hexachloroethane	0.818	0.34	mg/Kg wet	1.67		49.1		40-140				
Indeno(1,2,3-cd)pyrene	1.19	0.17	mg/Kg wet	1.67		71.5		40-140				
Isophorone	1.04	0.34	mg/Kg wet	1.67		62.7		40-140				
1-Methylnaphthalene	0.987	0.17	mg/Kg wet	1.67		59.2		40-140				
2-Methylnaphthalene	1.13	0.17	mg/Kg wet	1.67		67.9		40-140				
2-Methylphenol	1.06	0.34	mg/Kg wet	1.67		63.4		30-130				
3/4-Methylphenol	0.949	0.34	mg/Kg wet	1.67		56.9		30-130			R-05	
Naphthalene	1.00	0.17	mg/Kg wet	1.67		60.0		40-140				
2-Nitroaniline	1.17	0.34	mg/Kg wet	1.67		70.1		40-140				
3-Nitroaniline	1.22	0.34	mg/Kg wet	1.67		73.1		30-140				†
4-Nitroaniline	1.32	0.34	mg/Kg wet	1.67		79.0		40-140				
Nitrobenzene	0.940	0.34	mg/Kg wet	1.67		56.4		40-140				
2-Nitrophenol	0.979	0.34	mg/Kg wet	1.67		58.7		30-130				
4-Nitrophenol	1.14	0.66	mg/Kg wet	1.67		68.1		30-130				
N-Nitrosodimethylamine	1.06	0.34	mg/Kg wet	1.67		63.5		40-140				
N-Nitrosodiphenylamine/Diphenylamine	1.16	0.34	mg/Kg wet	1.67		69.4		40-140				
N-Nitrosodi-n-propylamine	0.860	0.34	mg/Kg wet	1.67		51.6		40-140			R-05	
Pentachloronitrobenzene	1.24	0.34	mg/Kg wet	1.67		74.2		40-140				
Pentachlorophenol	0.828	0.34	mg/Kg wet	1.67		49.7		30-130				
Phenanthrene	1.17	0.17	mg/Kg wet	1.67		70.1		40-140				
Phenol	0.930	0.34	mg/Kg wet	1.67		55.8		30-130			R-05	
Pyrene	1.18	0.17	mg/Kg wet	1.67		70.7		40-140				
Pyridine	0.657	0.34	mg/Kg wet	1.67		39.4		30-140				†
1,2,4,5-Tetrachlorobenzene	0.983	0.34	mg/Kg wet	1.67		59.0		40-140				
1,2,4-Trichlorobenzene	0.983	0.34	mg/Kg wet	1.67		59.0		40-140				
2,4,5-Trichlorophenol	1.17	0.34	mg/Kg wet	1.67		70.3		30-130				
2,4,6-Trichlorophenol	1.06	0.34	mg/Kg wet	1.67		63.5		30-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes	
Batch B299673 - SW-846 3546												
LCS (B299673-BS1)				Prepared: 01/25/22 Analyzed: 01/27/22								
Surrogate: 2-Fluorophenol	*4.07*		mg/Kg wet	6.67		61.0	30-130					
Surrogate: Phenol-d6	*4.29*		mg/Kg wet	6.67		64.4	30-130					
Surrogate: Nitrobenzene-d5	*1.92*		mg/Kg wet	3.33		57.6	30-130					
Surrogate: 2-Fluorobiphenyl	*2.27*		mg/Kg wet	3.33		68.2	30-130					
Surrogate: 2,4,6-Tribromophenol	*5.66*		mg/Kg wet	6.67		84.8	30-130					
Surrogate: p-Terphenyl-d14	*2.72*		mg/Kg wet	3.33		81.6	30-130					
LCS Dup (B299673-BSD1)				Prepared: 01/25/22 Analyzed: 01/27/22								
Acenaphthene	1.15	0.17	mg/Kg wet	1.67		68.7	40-140	12.1		30		
Acenaphthylene	1.26	0.17	mg/Kg wet	1.67		75.5	40-140	12.6		30		
Acetophenone	1.23	0.34	mg/Kg wet	1.67		73.7	40-140	**31.4**	*	30	R-05	
Aniline	1.07	0.34	mg/Kg wet	1.67		64.3	10-140	41.3		50		† ‡
Anthracene	1.32	0.17	mg/Kg wet	1.67		79.3	40-140	12.3		30		
Benzidine	2.04	0.66	mg/Kg wet	1.67		123	40-140	23.6		30	V-05, V-35	
Benzo(a)anthracene	1.32	0.17	mg/Kg wet	1.67		79.0	40-140	10.5		30		
Benzo(a)pyrene	1.43	0.17	mg/Kg wet	1.67		85.8	40-140	10.7		30		
Benzo(b)fluoranthene	1.41	0.17	mg/Kg wet	1.67		84.3	40-140	10.2		30		
Benzo(g,h,i)perylene	1.36	0.17	mg/Kg wet	1.67		81.7	40-140	10.5		30		
Benzo(k)fluoranthene	1.48	0.17	mg/Kg wet	1.67		88.9	40-140	9.99		30		
Benzoic Acid	1.16	1.0	mg/Kg wet	1.67		69.8	30-130	17.6		50		‡
Bis(2-chloroethoxy)methane	1.12	0.34	mg/Kg wet	1.67		67.0	40-140	16.1		30		
Bis(2-chloroethyl)ether	1.28	0.34	mg/Kg wet	1.67		76.7	40-140	26.8		30		
Bis(2-chloroisopropyl)ether	1.27	0.34	mg/Kg wet	1.67		76.5	40-140	9.97		30		
Bis(2-Ethylhexyl)phthalate	1.27	0.34	mg/Kg wet	1.67		76.2	40-140	12.1		30		
4-Bromophenylphenylether	1.20	0.34	mg/Kg wet	1.67		71.8	40-140	10.5		30		
Butylbenzylphthalate	1.26	0.34	mg/Kg wet	1.67		75.6	40-140	13.3		30		
Carbazole	1.31	0.17	mg/Kg wet	1.67		78.5	40-140	10.3		30		
4-Chloroaniline	1.01	0.66	mg/Kg wet	1.67		60.4	10-140	15.0		30	V-34	†
4-Chloro-3-methylphenol	1.20	0.66	mg/Kg wet	1.67		71.8	30-130	13.2		30		
2-Chloronaphthalene	1.09	0.34	mg/Kg wet	1.67		65.2	40-140	10.9		30		
2-Chlorophenol	1.29	0.34	mg/Kg wet	1.67		77.5	30-130	30.0		30		
4-Chlorophenylphenylether	1.25	0.34	mg/Kg wet	1.67		75.1	40-140	9.60		30		
Chrysene	1.27	0.17	mg/Kg wet	1.67		76.3	40-140	9.42		30		
Dibenz(a,h)anthracene	1.36	0.17	mg/Kg wet	1.67		81.4	40-140	5.71		30		
Dibenzofuran	1.36	0.34	mg/Kg wet	1.67		81.8	40-140	10.9		30		
Di-n-butylphthalate	1.28	0.34	mg/Kg wet	1.67		76.8	40-140	12.3		30		
1,2-Dichlorobenzene	1.17	0.34	mg/Kg wet	1.67		70.0	40-140	14.1		30		
1,3-Dichlorobenzene	1.12	0.34	mg/Kg wet	1.67		67.1	40-140	14.8		30		
1,4-Dichlorobenzene	1.12	0.34	mg/Kg wet	1.67		67.5	40-140	15.0		30		
3,3-Dichlorobenzidine	0.889	0.17	mg/Kg wet	1.67		53.4	20-140	8.40		50		† ‡
2,4-Dichlorophenol	1.19	0.34	mg/Kg wet	1.67		71.3	30-130	17.0		30		
Diethylphthalate	1.23	0.34	mg/Kg wet	1.67		73.9	40-140	9.68		30		
2,4-Dimethylphenol	1.14	0.34	mg/Kg wet	1.67		68.7	30-130	15.9		30		
Dimethylphthalate	1.22	0.34	mg/Kg wet	1.67		73.3	40-140	9.24		30		
4,6-Dinitro-2-methylphenol	1.06	0.34	mg/Kg wet	1.67		63.5	30-130	10.2		30		
2,4-Dinitrophenol	0.681	0.66	mg/Kg wet	1.67		40.9	30-130	12.1		30		
2,4-Dinitrotoluene	1.35	0.34	mg/Kg wet	1.67		80.7	40-140	9.61		30		
2,6-Dinitrotoluene	1.38	0.34	mg/Kg wet	1.67		82.8	40-140	11.3		30		
Di-n-octylphthalate	1.39	0.34	mg/Kg wet	1.67		83.2	40-140	11.8		30		
1,2-Diphenylhydrazine/Azobenzene	1.19	0.34	mg/Kg wet	1.67		71.1	40-140	11.0		30		
Fluoranthene	1.37	0.17	mg/Kg wet	1.67		82.5	40-140	9.45		30		
Fluorene	1.30	0.17	mg/Kg wet	1.67		77.8	40-140	10.5		30		

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes	
Batch B299673 - SW-846 3546												
LCS Dup (B299673-BSD1)				Prepared: 01/25/22 Analyzed: 01/27/22								
Hexachlorobenzene	1.38	0.34	mg/Kg wet	1.67		83.1	40-140	11.8		30		
Hexachlorobutadiene	1.16	0.34	mg/Kg wet	1.67		69.6	40-140	16.5		30		
Hexachlorocyclopentadiene	0.785	0.34	mg/Kg wet	1.67		47.1	40-140	18.2		30	V-05	
Hexachloroethane	1.10	0.34	mg/Kg wet	1.67		66.3	40-140	29.8		30		
Indeno(1,2,3-cd)pyrene	1.37	0.17	mg/Kg wet	1.67		82.1	40-140	13.9		30		
Isophorone	1.25	0.34	mg/Kg wet	1.67		74.8	40-140	17.6		30		
1-Methylnaphthalene	1.17	0.17	mg/Kg wet	1.67		70.3	40-140	17.2		30		
2-Methylnaphthalene	1.36	0.17	mg/Kg wet	1.67		81.3	40-140	18.0		30		
2-Methylphenol	1.27	0.34	mg/Kg wet	1.67		76.4	30-130	18.5		30		
3/4-Methylphenol	1.30	0.34	mg/Kg wet	1.67		78.2	30-130	**31.4**	*	30	R-05	
Naphthalene	1.19	0.17	mg/Kg wet	1.67		71.5	40-140	17.6		30		
2-Nitroaniline	1.26	0.34	mg/Kg wet	1.67		75.9	40-140	7.89		30		
3-Nitroaniline	1.35	0.34	mg/Kg wet	1.67		80.9	30-140	10.2		30		†
4-Nitroaniline	1.44	0.34	mg/Kg wet	1.67		86.3	40-140	8.81		30		
Nitrobenzene	1.12	0.34	mg/Kg wet	1.67		67.3	40-140	17.6		30		
2-Nitrophenol	1.16	0.34	mg/Kg wet	1.67		69.9	30-130	17.3		30		
4-Nitrophenol	1.24	0.66	mg/Kg wet	1.67		74.6	30-130	9.10		50		‡
N-Nitrosodimethylamine	1.37	0.34	mg/Kg wet	1.67		82.0	40-140	25.5		30		
N-Nitrosodiphenylamine/Diphenylamine	1.29	0.34	mg/Kg wet	1.67		77.5	40-140	11.1		30		
N-Nitrosodi-n-propylamine	1.17	0.34	mg/Kg wet	1.67		70.1	40-140	**30.4**	*	30	R-05	
Pentachloronitrobenzene	1.41	0.34	mg/Kg wet	1.67		84.6	40-140	13.2		30		
Pentachlorophenol	0.934	0.34	mg/Kg wet	1.67		56.1	30-130	12.1		30		
Phenanthrene	1.31	0.17	mg/Kg wet	1.67		78.5	40-140	11.3		30		
Phenol	1.26	0.34	mg/Kg wet	1.67		75.5	30-130	**30.1**	*	30	R-05	
Pyrene	1.35	0.17	mg/Kg wet	1.67		80.9	40-140	13.4		30		
Pyridine	0.850	0.34	mg/Kg wet	1.67		51.0	30-140	25.7		30		†
1,2,4,5-Tetrachlorobenzene	1.16	0.34	mg/Kg wet	1.67		69.5	40-140	16.4		30		
1,2,4-Trichlorobenzene	1.18	0.34	mg/Kg wet	1.67		70.8	40-140	18.2		30		
2,4,5-Trichlorophenol	1.29	0.34	mg/Kg wet	1.67		77.3	30-130	9.43		30		
2,4,6-Trichlorophenol	1.18	0.34	mg/Kg wet	1.67		70.7	30-130	10.7		30		
Surrogate: 2-Fluorophenol	*5.55*		mg/Kg wet	6.67		83.2	30-130					
Surrogate: Phenol-d6	*5.70*		mg/Kg wet	6.67		85.5	30-130					
Surrogate: Nitrobenzene-d5	*2.28*		mg/Kg wet	3.33		68.3	30-130					
Surrogate: 2-Fluorobiphenyl	*2.57*		mg/Kg wet	3.33		77.0	30-130					
Surrogate: 2,4,6-Tribromophenol	*6.12*		mg/Kg wet	6.67		91.8	30-130					
Surrogate: p-Terphenyl-d14	*3.03*		mg/Kg wet	3.33		91.0	30-130					

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299753 - SW-846 3546										
Blank (B299753-BLK1)				Prepared: 01/26/22 Analyzed: 01/28/22						
alpha-Chlordane	ND	0.0050	mg/Kg wet							
alpha-Chlordane [2C]	ND	0.0050	mg/Kg wet							
gamma-Chlordane	ND	0.0050	mg/Kg wet							
gamma-Chlordane [2C]	ND	0.0050	mg/Kg wet							
Alachlor	ND	0.020	mg/Kg wet							
Alachlor [2C]	ND	0.020	mg/Kg wet							
Aldrin	ND	0.0050	mg/Kg wet							
Aldrin [2C]	ND	0.0050	mg/Kg wet							
alpha-BHC	ND	0.0050	mg/Kg wet							
alpha-BHC [2C]	ND	0.0050	mg/Kg wet							
beta-BHC	ND	0.0050	mg/Kg wet							
beta-BHC [2C]	ND	0.0050	mg/Kg wet							
delta-BHC	ND	0.0050	mg/Kg wet							
delta-BHC [2C]	ND	0.0050	mg/Kg wet							
gamma-BHC (Lindane)	ND	0.0020	mg/Kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0020	mg/Kg wet							
Chlordane	ND	0.020	mg/Kg wet							
Chlordane [2C]	ND	0.020	mg/Kg wet							
4,4'-DDD	ND	0.0040	mg/Kg wet							
4,4'-DDD [2C]	ND	0.0040	mg/Kg wet							
4,4'-DDE	ND	0.0040	mg/Kg wet							
4,4'-DDE [2C]	ND	0.0040	mg/Kg wet							
4,4'-DDT	ND	0.0040	mg/Kg wet							
4,4'-DDT [2C]	ND	0.0040	mg/Kg wet							
Dieldrin	ND	0.0040	mg/Kg wet							
Dieldrin [2C]	ND	0.0040	mg/Kg wet							
Endosulfan I	ND	0.0050	mg/Kg wet							
Endosulfan I [2C]	ND	0.0050	mg/Kg wet							
Endosulfan II	ND	0.0080	mg/Kg wet							
Endosulfan II [2C]	ND	0.0080	mg/Kg wet							
Endosulfan Sulfate	ND	0.0080	mg/Kg wet							
Endosulfan Sulfate [2C]	ND	0.0080	mg/Kg wet							
Endrin	ND	0.0080	mg/Kg wet							
Endrin [2C]	ND	0.0080	mg/Kg wet							
Endrin Aldehyde	ND	0.0080	mg/Kg wet							
Endrin Aldehyde [2C]	ND	0.0080	mg/Kg wet							
Endrin Ketone	ND	0.0080	mg/Kg wet							
Endrin Ketone [2C]	ND	0.0080	mg/Kg wet							
Heptachlor	ND	0.0050	mg/Kg wet							
Heptachlor [2C]	ND	0.0050	mg/Kg wet							
Heptachlor Epoxide	ND	0.0050	mg/Kg wet							
Heptachlor Epoxide [2C]	ND	0.0050	mg/Kg wet							
Hexachlorobenzene	ND	0.0060	mg/Kg wet							
Hexachlorobenzene [2C]	ND	0.0060	mg/Kg wet							
Methoxychlor	ND	0.050	mg/Kg wet							
Methoxychlor [2C]	ND	0.050	mg/Kg wet							
Toxaphene	ND	0.10	mg/Kg wet							
Toxaphene [2C]	ND	0.10	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.123*		mg/Kg wet	0.200		61.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.181*		mg/Kg wet	0.200		90.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.136*		mg/Kg wet	0.200		68.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.181*		mg/Kg wet	0.200		90.5	30-150			

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299753 - SW-846 3546										
LCS (B299753-BS1)				Prepared: 01/26/22 Analyzed: 01/28/22						
alpha-Chlordane	0.076	0.0050	mg/Kg wet	0.100		76.3	40-140			
alpha-Chlordane [2C]	0.095	0.0050	mg/Kg wet	0.100		95.1	40-140			
gamma-Chlordane	0.072	0.0050	mg/Kg wet	0.100		71.8	40-140			
gamma-Chlordane [2C]	0.097	0.0050	mg/Kg wet	0.100		96.7	40-140			
Alachlor	0.098	0.020	mg/Kg wet	0.100		97.7	40-140			
Alachlor [2C]	0.099	0.020	mg/Kg wet	0.100		98.8	40-140			
Aldrin	0.076	0.0050	mg/Kg wet	0.100		76.2	40-140			
Aldrin [2C]	0.10	0.0050	mg/Kg wet	0.100		99.6	40-140			
alpha-BHC	0.074	0.0050	mg/Kg wet	0.100		73.9	40-140			
alpha-BHC [2C]	0.10	0.0050	mg/Kg wet	0.100		103	40-140			
beta-BHC	0.074	0.0050	mg/Kg wet	0.100		74.2	40-140			
beta-BHC [2C]	0.092	0.0050	mg/Kg wet	0.100		92.4	40-140			
delta-BHC	0.076	0.0050	mg/Kg wet	0.100		76.2	40-140			
delta-BHC [2C]	0.095	0.0050	mg/Kg wet	0.100		94.6	40-140			
gamma-BHC (Lindane)	0.070	0.0020	mg/Kg wet	0.100		69.9	40-140			
gamma-BHC (Lindane) [2C]	0.099	0.0020	mg/Kg wet	0.100		99.3	40-140			
Chlordane	ND	0.020	mg/Kg wet				40-140			
Chlordane [2C]	ND	0.020	mg/Kg wet				40-140			
4,4'-DDD	0.086	0.0040	mg/Kg wet	0.100		85.6	40-140			
4,4'-DDD [2C]	0.11	0.0040	mg/Kg wet	0.100		114	40-140			
4,4'-DDE	0.082	0.0040	mg/Kg wet	0.100		81.7	40-140			
4,4'-DDE [2C]	0.11	0.0040	mg/Kg wet	0.100		107	40-140			
4,4'-DDT	0.087	0.0040	mg/Kg wet	0.100		86.9	40-140			
4,4'-DDT [2C]	0.11	0.0040	mg/Kg wet	0.100		108	40-140			
Dieldrin	0.083	0.0040	mg/Kg wet	0.100		83.4	40-140			
Dieldrin [2C]	0.10	0.0040	mg/Kg wet	0.100		104	40-140			
Endosulfan I	0.080	0.0050	mg/Kg wet	0.100		80.1	40-140			
Endosulfan I [2C]	0.096	0.0050	mg/Kg wet	0.100		96.3	40-140			
Endosulfan II	0.084	0.0080	mg/Kg wet	0.100		83.8	40-140			
Endosulfan II [2C]	0.10	0.0080	mg/Kg wet	0.100		101	40-140			
Endosulfan Sulfate	0.092	0.0080	mg/Kg wet	0.100		92.3	40-140			
Endosulfan Sulfate [2C]	0.11	0.0080	mg/Kg wet	0.100		108	40-140			
Endrin	0.084	0.0080	mg/Kg wet	0.100		84.3	40-140			
Endrin [2C]	0.10	0.0080	mg/Kg wet	0.100		101	40-140			
Endrin Aldehyde	0.082	0.0080	mg/Kg wet	0.100		81.9	40-140			
Endrin Aldehyde [2C]	0.093	0.0080	mg/Kg wet	0.100		93.5	40-140			
Endrin Ketone	0.092	0.0080	mg/Kg wet	0.100		92.3	40-140			
Endrin Ketone [2C]	0.11	0.0080	mg/Kg wet	0.100		108	40-140			
Heptachlor	0.073	0.0050	mg/Kg wet	0.100		72.5	40-140			
Heptachlor [2C]	0.097	0.0050	mg/Kg wet	0.100		96.8	40-140			
Heptachlor Epoxide	0.076	0.0050	mg/Kg wet	0.100		75.8	40-140			
Heptachlor Epoxide [2C]	0.092	0.0050	mg/Kg wet	0.100		92.0	40-140			
Hexachlorobenzene	0.076	0.0060	mg/Kg wet	0.100		75.7	40-140			
Hexachlorobenzene [2C]	0.10	0.0060	mg/Kg wet	0.100		102	40-140			
Methoxychlor	0.092	0.050	mg/Kg wet	0.100		92.3	40-140			V-05
Methoxychlor [2C]	0.11	0.050	mg/Kg wet	0.100		107	40-140			
Toxaphene	ND	0.10	mg/Kg wet				40-140			
Toxaphene [2C]	ND	0.10	mg/Kg wet				40-140			
Surrogate: Decachlorobiphenyl	*0.124*		mg/Kg wet	0.200		61.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.182*		mg/Kg wet	0.200		91.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.137*		mg/Kg wet	0.200		68.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.177*		mg/Kg wet	0.200		88.4	30-150			

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299753 - SW-846 3546										
LCS Dup (B299753-BSD1)				Prepared: 01/26/22 Analyzed: 01/28/22						
alpha-Chlordane	0.072	0.0050	mg/Kg wet	0.100		71.9	40-140	5.94	30	
alpha-Chlordane [2C]	0.091	0.0050	mg/Kg wet	0.100		90.8	40-140	4.58	30	
gamma-Chlordane	0.064	0.0050	mg/Kg wet	0.100		64.1	40-140	11.3	30	
gamma-Chlordane [2C]	0.092	0.0050	mg/Kg wet	0.100		91.8	40-140	5.20	30	
Alachlor	0.092	0.020	mg/Kg wet	0.100		92.2	40-140	5.74	30	
Alachlor [2C]	0.091	0.020	mg/Kg wet	0.100		90.8	40-140	8.39	30	
Aldrin	0.074	0.0050	mg/Kg wet	0.100		74.2	40-140	2.78	30	
Aldrin [2C]	0.094	0.0050	mg/Kg wet	0.100		93.7	40-140	6.12	30	
alpha-BHC	0.075	0.0050	mg/Kg wet	0.100		74.5	40-140	0.911	30	
alpha-BHC [2C]	0.092	0.0050	mg/Kg wet	0.100		92.3	40-140	11.1	30	
beta-BHC	0.071	0.0050	mg/Kg wet	0.100		71.5	40-140	3.68	30	
beta-BHC [2C]	0.087	0.0050	mg/Kg wet	0.100		86.6	40-140	6.44	30	
delta-BHC	0.074	0.0050	mg/Kg wet	0.100		73.8	40-140	3.24	30	
delta-BHC [2C]	0.086	0.0050	mg/Kg wet	0.100		86.3	40-140	9.17	30	
gamma-BHC (Lindane)	0.069	0.0020	mg/Kg wet	0.100		69.0	40-140	1.24	30	
gamma-BHC (Lindane) [2C]	0.091	0.0020	mg/Kg wet	0.100		90.7	40-140	9.00	30	
Chlordane	ND	0.020	mg/Kg wet				40-140	NC	30	
Chlordane [2C]	ND	0.020	mg/Kg wet				40-140	NC	30	
4,4'-DDD	0.082	0.0040	mg/Kg wet	0.100		81.5	40-140	4.83	30	
4,4'-DDD [2C]	0.11	0.0040	mg/Kg wet	0.100		112	40-140	1.76	30	
4,4'-DDE	0.077	0.0040	mg/Kg wet	0.100		76.8	40-140	6.24	30	
4,4'-DDE [2C]	0.10	0.0040	mg/Kg wet	0.100		104	40-140	2.62	30	
4,4'-DDT	0.083	0.0040	mg/Kg wet	0.100		83.3	40-140	4.25	30	
4,4'-DDT [2C]	0.10	0.0040	mg/Kg wet	0.100		105	40-140	3.49	30	
Dieldrin	0.077	0.0040	mg/Kg wet	0.100		77.3	40-140	7.54	30	
Dieldrin [2C]	0.10	0.0040	mg/Kg wet	0.100		99.6	40-140	4.45	30	
Endosulfan I	0.075	0.0050	mg/Kg wet	0.100		74.9	40-140	6.69	30	
Endosulfan I [2C]	0.091	0.0050	mg/Kg wet	0.100		90.9	40-140	5.84	30	
Endosulfan II	0.078	0.0080	mg/Kg wet	0.100		77.9	40-140	7.32	30	
Endosulfan II [2C]	0.098	0.0080	mg/Kg wet	0.100		97.6	40-140	3.63	30	
Endosulfan Sulfate	0.085	0.0080	mg/Kg wet	0.100		84.7	40-140	8.59	30	
Endosulfan Sulfate [2C]	0.10	0.0080	mg/Kg wet	0.100		103	40-140	3.94	30	
Endrin	0.080	0.0080	mg/Kg wet	0.100		79.6	40-140	5.73	30	
Endrin [2C]	0.096	0.0080	mg/Kg wet	0.100		96.0	40-140	5.42	30	
Endrin Aldehyde	0.075	0.0080	mg/Kg wet	0.100		75.2	40-140	8.47	30	
Endrin Aldehyde [2C]	0.090	0.0080	mg/Kg wet	0.100		89.7	40-140	4.17	30	
Endrin Ketone	0.087	0.0080	mg/Kg wet	0.100		86.8	40-140	6.14	30	
Endrin Ketone [2C]	0.10	0.0080	mg/Kg wet	0.100		105	40-140	2.80	30	
Heptachlor	0.072	0.0050	mg/Kg wet	0.100		72.2	40-140	0.493	30	
Heptachlor [2C]	0.089	0.0050	mg/Kg wet	0.100		88.5	40-140	8.98	30	
Heptachlor Epoxide	0.072	0.0050	mg/Kg wet	0.100		72.1	40-140	5.06	30	
Heptachlor Epoxide [2C]	0.086	0.0050	mg/Kg wet	0.100		85.6	40-140	7.17	30	
Hexachlorobenzene	0.078	0.0060	mg/Kg wet	0.100		78.2	40-140	3.29	30	
Hexachlorobenzene [2C]	0.095	0.0060	mg/Kg wet	0.100		94.9	40-140	7.40	30	
Methoxychlor	0.090	0.050	mg/Kg wet	0.100		90.1	40-140	2.44	30	V-05
Methoxychlor [2C]	0.11	0.050	mg/Kg wet	0.100		105	40-140	1.51	30	
Toxaphene	ND	0.10	mg/Kg wet				40-140	NC	30	
Toxaphene [2C]	ND	0.10	mg/Kg wet				40-140	NC	30	
Surrogate: Decachlorobiphenyl	*0.124*		mg/Kg wet	0.200		61.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.185*		mg/Kg wet	0.200		92.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.146*		mg/Kg wet	0.200		72.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.169*		mg/Kg wet	0.200		84.5	30-150			

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QUALITY CONTROL

Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299771 - SW-846 8151										
Blank (B299771-BLK1)				Prepared: 01/27/22 Analyzed: 02/02/22						
2,4-D	ND	24	µg/kg wet							
2,4-D [2C]	ND	24	µg/kg wet							
2,4-DB	ND	24	µg/kg wet							
2,4-DB [2C]	ND	24	µg/kg wet							
2,4,5-TP (Silvex)	ND	2.4	µg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	2.4	µg/kg wet							
2,4,5-T	ND	2.4	µg/kg wet							
2,4,5-T [2C]	ND	2.4	µg/kg wet							
Dalapon	ND	60	µg/kg wet							
Dalapon [2C]	ND	60	µg/kg wet							
Dicamba	ND	2.4	µg/kg wet							
Dicamba [2C]	ND	2.4	µg/kg wet							
Dichloroprop	ND	24	µg/kg wet							
Dichloroprop [2C]	ND	24	µg/kg wet							
Dinoseb	ND	12	µg/kg wet							
Dinoseb [2C]	ND	12	µg/kg wet							
MCPA	ND	2400	µg/kg wet							
MCPA [2C]	ND	2400	µg/kg wet							
MCPP	ND	2400	µg/kg wet							
MCPP [2C]	ND	2400	µg/kg wet							
Surrogate: 2,4-Dichlorophenylacetic acid	*48.9*		µg/kg wet	95.2		51.4	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*59.1*		µg/kg wet	95.2		62.1	30-150			
LCS (B299771-BS1)				Prepared: 01/27/22 Analyzed: 02/02/22						
2,4-D	82.1	25	µg/kg wet	125		65.7	40-140			
2,4-D [2C]	91.5	25	µg/kg wet	125		73.2	40-140			
2,4-DB	79.3	25	µg/kg wet	125		63.4	40-140			
2,4-DB [2C]	76.0	25	µg/kg wet	125		60.8	40-140			
2,4,5-TP (Silvex)	9.00	2.5	µg/kg wet	12.5		72.0	40-140			
2,4,5-TP (Silvex) [2C]	9.17	2.5	µg/kg wet	12.5		73.3	40-140			
2,4,5-T	8.59	2.5	µg/kg wet	12.5		68.7	40-140			
2,4,5-T [2C]	8.75	2.5	µg/kg wet	12.5		70.0	40-140			
Dalapon	144	62	µg/kg wet	312		46.1	40-140			
Dalapon [2C]	153	62	µg/kg wet	312		48.8	40-140			
Dicamba	8.51	2.5	µg/kg wet	12.5		68.1	40-140			
Dicamba [2C]	8.55	2.5	µg/kg wet	12.5		68.4	40-140			
Dichloroprop	92.6	25	µg/kg wet	125		74.1	40-140			
Dichloroprop [2C]	91.8	25	µg/kg wet	125		73.4	40-140			
Dinoseb	10.4	12	µg/kg wet	62.5		16.7	2.28-30.2			
Dinoseb [2C]	10.5	12	µg/kg wet	62.5		16.8	2.56-33.2			
MCPA	8130	2500	µg/kg wet	12500		65.1	40-140			
MCPA [2C]	8360	2500	µg/kg wet	12500		66.9	40-140			
MCPP	8840	2500	µg/kg wet	12500		70.8	40-140			
MCPP [2C]	8620	2500	µg/kg wet	12500		69.0	40-140			
Surrogate: 2,4-Dichlorophenylacetic acid	*71.7*		µg/kg wet	100		71.7	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*77.3*		µg/kg wet	100		77.3	30-150			

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QUALITY CONTROL

Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299771 - SW-846 8151										
LCS Dup (B299771-BSD1)				Prepared: 01/27/22 Analyzed: 02/02/22						
2,4-D	82.9	25	µg/kg wet	125		66.4	40-140	0.971	30	
2,4-D [2C]	92.4	25	µg/kg wet	125		73.9	40-140	0.972	30	
2,4-DB	81.1	25	µg/kg wet	125		64.9	40-140	2.29	30	
2,4-DB [2C]	76.4	25	µg/kg wet	125		61.1	40-140	0.533	30	
2,4,5-TP (Silvex)	8.86	2.5	µg/kg wet	12.5		70.9	40-140	1.47	30	
2,4,5-TP (Silvex) [2C]	8.99	2.5	µg/kg wet	12.5		71.9	40-140	1.93	30	
2,4,5-T	8.58	2.5	µg/kg wet	12.5		68.6	40-140	0.183	30	
2,4,5-T [2C]	8.69	2.5	µg/kg wet	12.5		69.5	40-140	0.671	30	
Dalapon	153	62	µg/kg wet	312		49.1	40-140	6.16	30	
Dalapon [2C]	166	62	µg/kg wet	312		53.0	40-140	8.11	30	
Dicamba	8.33	2.5	µg/kg wet	12.5		66.6	40-140	2.24	30	
Dicamba [2C]	8.48	2.5	µg/kg wet	12.5		67.8	40-140	0.866	30	
Dichloroprop	92.4	25	µg/kg wet	125		73.9	40-140	0.212	30	
Dichloroprop [2C]	91.3	25	µg/kg wet	125		73.0	40-140	0.556	30	
Dinoseb	9.61	12	µg/kg wet	62.5		15.4	2.28-30.2	8.02	30	
Dinoseb [2C]	9.68	12	µg/kg wet	62.5		15.5	2.56-33.2	8.39	30	
MCPA	8210	2500	µg/kg wet	12500		65.7	40-140	0.980	30	
MCPA [2C]	8330	2500	µg/kg wet	12500		66.6	40-140	0.403	30	
MCPP	8780	2500	µg/kg wet	12500		70.3	40-140	0.682	30	
MCPP [2C]	8500	2500	µg/kg wet	12500		68.0	40-140	1.41	30	
Surrogate: 2,4-Dichlorophenylacetic acid	*67.7*		µg/kg wet	100		67.7	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*76.5*		µg/kg wet	100		76.5	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B300143 - SW-846 3540C										
Blank (B300143-BLK1)				Prepared: 02/01/22 Analyzed: 02/02/22						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.221*		mg/Kg wet	0.200		111	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.174*		mg/Kg wet	0.200		87.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.163*		mg/Kg wet	0.200		81.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.113*		mg/Kg wet	0.200		56.7	30-150			
LCS (B300143-BS1)				Prepared: 02/01/22 Analyzed: 02/02/22						
Aroclor-1016	0.16	0.020	mg/Kg wet	0.200		79.1	40-140			
Aroclor-1016 [2C]	0.14	0.020	mg/Kg wet	0.200		72.2	40-140			
Aroclor-1260	0.17	0.020	mg/Kg wet	0.200		87.1	40-140			
Aroclor-1260 [2C]	0.17	0.020	mg/Kg wet	0.200		85.8	40-140			
Surrogate: Decachlorobiphenyl	*0.239*		mg/Kg wet	0.200		119	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.182*		mg/Kg wet	0.200		90.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.179*		mg/Kg wet	0.200		89.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.115*		mg/Kg wet	0.200		57.7	30-150			
LCS Dup (B300143-BSD1)				Prepared: 02/01/22 Analyzed: 02/02/22						
Aroclor-1016	0.16	0.020	mg/Kg wet	0.200		78.8	40-140	0.494	30	
Aroclor-1016 [2C]	0.14	0.020	mg/Kg wet	0.200		71.7	40-140	0.651	30	
Aroclor-1260	0.17	0.020	mg/Kg wet	0.200		86.2	40-140	1.05	30	
Aroclor-1260 [2C]	0.17	0.020	mg/Kg wet	0.200		83.9	40-140	2.18	30	
Surrogate: Decachlorobiphenyl	*0.230*		mg/Kg wet	0.200		115	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.177*		mg/Kg wet	0.200		88.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.171*		mg/Kg wet	0.200		85.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.114*		mg/Kg wet	0.200		57.1	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299672 - SW-846 3546										
Blank (B299672-BLK1)				Prepared: 01/25/22 Analyzed: 01/27/22						
TPH (C9-C36)	ND	8.3	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	*3.32*		mg/Kg wet	3.33		99.7	40-140			
LCS (B299672-BS1)				Prepared: 01/25/22 Analyzed: 01/27/22						
TPH (C9-C36)	18.7	8.3	mg/Kg wet	33.3		56.2	40-140			
Surrogate: 2-Fluorobiphenyl	*1.77*		mg/Kg wet	3.33		53.2	40-140			
LCS Dup (B299672-BSD1)				Prepared: 01/25/22 Analyzed: 01/27/22						
TPH (C9-C36)	25.3	8.3	mg/Kg wet	33.3		75.9	40-140	29.8	30	
Surrogate: 2-Fluorobiphenyl	*2.49*		mg/Kg wet	3.33		74.6	40-140			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299663 - SW-846 3050B										
Blank (B299663-BLK1)				Prepared: 01/25/22 Analyzed: 01/26/22						
Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.6	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.66	mg/Kg wet							
Lead	ND	0.49	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							
LCS (B299663-BS1)				Prepared: 01/25/22 Analyzed: 01/26/22						
Arsenic	146	9.8	mg/Kg wet	170		86.1	82.9-117.6			
Barium	166	4.9	mg/Kg wet	183		90.8	82.5-117.5			
Cadmium	78.7	0.98	mg/Kg wet	89.5		87.9	82.8-117.3			
Chromium	90.5	2.0	mg/Kg wet	101		89.6	82.1-117.8			
Lead	124	1.5	mg/Kg wet	140		88.5	82.9-117.1			
Selenium	165	9.8	mg/Kg wet	182		90.4	79.7-120.3			
Silver	45.5	0.98	mg/Kg wet	50.1		90.9	80.2-120			
LCS Dup (B299663-BSD1)				Prepared: 01/25/22 Analyzed: 01/26/22						
Arsenic	154	9.6	mg/Kg wet	170		90.6	82.9-117.6	5.10	30	
Barium	175	4.8	mg/Kg wet	183		95.4	82.5-117.5	4.96	20	
Cadmium	83.1	0.96	mg/Kg wet	89.5		92.9	82.8-117.3	5.45	20	
Chromium	95.1	1.9	mg/Kg wet	101		94.2	82.1-117.8	4.95	30	
Lead	130	1.4	mg/Kg wet	140		92.8	82.9-117.1	4.78	30	
Selenium	170	9.6	mg/Kg wet	182		93.5	79.7-120.3	3.34	30	
Silver	47.8	0.96	mg/Kg wet	50.1		95.4	80.2-120	4.82	30	
Reference (B299663-SRM1) MRL CHECK				Prepared: 01/25/22 Analyzed: 01/26/22						
Lead	0.477	0.50	mg/Kg wet	0.497		96.1	80-120			
Batch B299725 - SW-846 3050B										
Blank (B299725-BLK1)				Prepared: 01/26/22 Analyzed: 01/27/22						
Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.67	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							
LCS (B299725-BS1)				Prepared: 01/26/22 Analyzed: 01/27/22						
Arsenic	162	9.9	mg/Kg wet	170		95.3	82.9-117.6			
Barium	183	5.0	mg/Kg wet	183		100	82.5-117.5			
Cadmium	85.8	0.99	mg/Kg wet	89.5		95.9	82.8-117.3			
Chromium	99.2	2.0	mg/Kg wet	101		98.3	82.1-117.8			
Lead	140	1.5	mg/Kg wet	140		99.7	82.9-117.1			
Selenium	179	9.9	mg/Kg wet	182		98.5	79.7-120.3			
Silver	50.1	0.99	mg/Kg wet	50.1		100	80.2-120			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes
Batch B299725 - SW-846 3050B											
LCS Dup (B299725-BSD1)				Prepared: 01/26/22 Analyzed: 01/27/22							
Arsenic	162	9.7	mg/Kg wet	170		95.5	82.9-117.6	0.203		30	
Barium	187	4.8	mg/Kg wet	183		102	82.5-117.5	1.97		20	
Cadmium	90.6	0.97	mg/Kg wet	89.5		101	82.8-117.3	5.45		20	
Chromium	101	1.9	mg/Kg wet	101		100	82.1-117.8	1.74		30	
Lead	138	1.5	mg/Kg wet	140		98.5	82.9-117.1	1.17		30	
Selenium	182	9.7	mg/Kg wet	182		100	79.7-120.3	1.75		30	
Silver	49.1	0.97	mg/Kg wet	50.1		98.1	80.2-120	1.99		30	
Reference (B299725-SRM1) MRL CHECK				Prepared: 01/26/22 Analyzed: 01/27/22							
Lead	0.518	0.50	mg/Kg wet	0.500		104	80-120				
Batch B299756 - SW-846 7471											
Blank (B299756-BLK1)				Prepared: 01/28/22 Analyzed: 01/31/22							
Mercury	ND	0.025	mg/Kg wet								
LCS (B299756-BS1)				Prepared: 01/28/22 Analyzed: 01/31/22							
Mercury	1.49	0.075	mg/Kg wet	1.56		95.5	59.3-140.4				
LCS Dup (B299756-BSD1)				Prepared: 01/28/22 Analyzed: 01/31/22							
Mercury	20.6	0.74	mg/Kg wet	15.6		132	59.3-140.4	**173**	*	20	R-05
Batch B300060 - SW-846 7471											
Blank (B300060-BLK1)				Prepared: 01/31/22 Analyzed: 02/01/22							
Mercury	ND	0.025	mg/Kg wet								
LCS (B300060-BS1)				Prepared: 01/31/22 Analyzed: 02/01/22							
Mercury	16.7	0.76	mg/Kg wet	15.6		107	59.3-140.4				
LCS Dup (B300060-BSD1)				Prepared: 01/31/22 Analyzed: 02/01/22							
Mercury	17.2	0.76	mg/Kg wet	15.6		110	59.3-140.4	3.37		20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B299601 - SW-846 9045C										
LCS (B299601-BS1)				Prepared & Analyzed: 01/24/22						
pH	5.99		pH Units	6.00		99.8	90-110			
Duplicate (B299601-DUP1)		**Source: 22A1249-01**		Prepared & Analyzed: 01/24/22						
pH	9.2		pH Units		9.3			0.616	10	H-03
Batch B299813 - SW-846 9014										
Blank (B299813-BLK1)				Prepared: 01/27/22 Analyzed: 01/28/22						
Reactive Cyanide	ND	0.40	mg/Kg							
LCS (B299813-BS1)				Prepared: 01/27/22 Analyzed: 01/28/22						
Reactive Cyanide	9.3	0.40	mg/Kg	10.0		93.0	81.3-111			
Batch B299818 - SW-846 9030A										
Blank (B299818-BLK1)				Prepared: 01/27/22 Analyzed: 01/28/22						
Reactive Sulfide	ND	2.0	mg/Kg							
LCS (B299818-BS1)				Prepared: 01/27/22 Analyzed: 01/28/22						
Reactive Sulfide	4.4	2.0	mg/Kg	4.00		110	71.8-120			
Batch B299827 - SM21-23 2510B Modified										
Blank (B299827-BLK1)				Prepared & Analyzed: 01/27/22						
Specific conductance	ND	2.0	µmhos/cm							
LCS (B299827-BS1)				Prepared & Analyzed: 01/27/22						
Specific conductance	150		µmhos/cm	137		110	90-114			
Duplicate (B299827-DUP1)		**Source: 22A1249-01**		Prepared & Analyzed: 01/27/22						
Specific conductance	20	2.0	µmhos/cm		21			4.16	44.6	

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BREAKDOWN REPORT

Lab Sample ID: **S067797-PEM1** **Analyzed:** **01/28/2022**

Column Number: **1**

Analyte	% Breakdown
4,4'-DDT [1]	1.81
Endrin [1]	3.25

Column Number: **2**

Analyte	% Breakdown
4,4'-DDT [2]	1.10
Endrin [2]	1.89

BREAKDOWN REPORT

Lab Sample ID: **S067797-PEM2** **Analyzed:** **01/28/2022**

Column Number: **1**

Analyte	% Breakdown
4,4'-DDT [1]	2.73
Endrin [1]	5.50

Column Number: **2**

Analyte	% Breakdown
4,4'-DDT [2]	1.90
Endrin [2]	5.67

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS

Lab Sample ID: B299753-BS1 Date(s) Analyzed: 01/28/2022 01/28/2022

Instrument ID (1): ECD6 Instrument ID (2): ECD6

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	6.945	6.914	6.974	0.086	
	2	6.958	6.926	6.986	0.11	24.5
4,4'-DDE	1	6.518	6.487	6.547	0.082	
	2	6.541	6.509	6.569	0.11	29.2
4,4'-DDT	1	7.152	7.120	7.180	0.087	
	2	7.189	7.158	7.218	0.11	23.4
Alachlor	1	5.981	5.951	6.011	0.098	
	2	5.765	5.734	5.794	0.099	1.0
Aldrin	1	5.881	5.850	5.910	0.076	
	2	5.811	5.780	5.840	0.10	27.3
alpha-BHC	1	5.222	5.192	5.252	0.074	
	2	5.164	5.134	5.194	0.10	29.9
alpha-Chlordane	1	6.457	6.425	6.485	0.076	
	2	6.410	6.378	6.438	0.095	22.2
beta-BHC	1	5.460	5.428	5.488	0.074	
	2	5.415	5.383	5.443	0.092	21.7
delta-BHC	1	5.565	5.534	5.594	0.076	
	2	5.585	5.555	5.615	0.095	22.2
Dieldrin	1	6.718	6.686	6.746	0.083	
	2	6.635	6.603	6.663	0.10	18.6
Endosulfan I	1	6.549	6.517	6.577	0.080	
	2	6.444	6.412	6.472	0.096	18.2
Endosulfan II	1	7.046	7.014	7.074	0.084	
	2	7.008	6.976	7.036	0.10	17.4
Endosulfan Sulfate	1	7.692	7.660	7.720	0.092	
	2	7.474	7.443	7.503	0.11	17.8
Endrin	1	6.882	6.851	6.911	0.084	
	2	6.849	6.817	6.877	0.10	17.4
Endrin Aldehyde	1	7.360	7.328	7.388	0.082	
	2	7.262	7.232	7.292	0.093	12.6
Endrin Ketone	1	7.903	7.871	7.931	0.092	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS

Lab Sample ID: B299753-BS1 Date(s) Analyzed: 01/28/2022 01/28/2022

Instrument ID (1): ECD6 Instrument ID (2): ECD6

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	7.876	7.845	7.905	0.11	17.8
gamma-BHC (Lindane)	1	5.406	5.375	5.435	0.070	
	2	5.362	5.332	5.392	0.099	34.3
gamma-Chlordane	1	6.365	6.334	6.394	0.072	
	2	6.309	6.278	6.338	0.097	29.6
Heptachlor	1	5.693	5.662	5.722	0.073	
	2	5.616	5.585	5.645	0.097	28.2
Heptachlor Epoxide	1	6.281	6.249	6.309	0.076	
	2	6.182	6.151	6.211	0.092	19.0
Hexachlorobenzene	1	5.124	5.093	5.153	0.076	
	2	5.084	5.053	5.113	0.10	27.3
Methoxychlor	1	7.533	7.502	7.562	0.092	
	2	7.737	7.706	7.766	0.11	17.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS Dup

Lab Sample ID: B299753-BSD1 Date(s) Analyzed: 01/28/2022 01/28/2022

Instrument ID (1): ECD6 Instrument ID (2): ECD6

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	6.944	6.914	6.974	0.082	
	2	6.957	6.926	6.986	0.11	29.2
4,4'-DDE	1	6.518	6.487	6.547	0.077	
	2	6.540	6.509	6.569	0.10	26.0
4,4'-DDT	1	7.150	7.120	7.180	0.083	
	2	7.188	7.158	7.218	0.10	18.6
Alachlor	1	5.981	5.951	6.011	0.092	
	2	5.764	5.734	5.794	0.091	1.1
Aldrin	1	5.880	5.850	5.910	0.074	
	2	5.811	5.780	5.840	0.094	23.8
alpha-BHC	1	5.222	5.192	5.252	0.075	
	2	5.164	5.134	5.194	0.092	20.4
alpha-Chlordane	1	6.456	6.425	6.485	0.072	
	2	6.409	6.378	6.438	0.091	23.3
beta-BHC	1	5.459	5.428	5.488	0.071	
	2	5.415	5.383	5.443	0.087	18.9
delta-BHC	1	5.565	5.534	5.594	0.074	
	2	5.585	5.555	5.615	0.086	15.0
Dieldrin	1	6.717	6.686	6.746	0.077	
	2	6.634	6.603	6.663	0.10	26.0
Endosulfan I	1	6.548	6.517	6.577	0.075	
	2	6.443	6.412	6.472	0.091	19.3
Endosulfan II	1	7.045	7.014	7.074	0.078	
	2	7.006	6.976	7.036	0.098	22.7
Endosulfan Sulfate	1	7.691	7.660	7.720	0.085	
	2	7.472	7.443	7.503	0.10	16.2
Endrin	1	6.881	6.851	6.911	0.080	
	2	6.848	6.817	6.877	0.096	18.2
Endrin Aldehyde	1	7.358	7.328	7.388	0.075	
	2	7.261	7.232	7.292	0.090	18.2
Endrin Ketone	1	7.901	7.871	7.931	0.087	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS Dup

Lab Sample ID: B299753-BSD1 Date(s) Analyzed: 01/28/2022 01/28/2022

Instrument ID (1): ECD6 Instrument ID (2): ECD6

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	7.876	7.845	7.905	0.10	13.9
gamma-BHC (Lindane)	1	5.406	5.375	5.435	0.069	
	2	5.362	5.332	5.392	0.091	27.5
gamma-Chlordane	1	6.364	6.334	6.394	0.064	
	2	6.309	6.278	6.338	0.092	35.9
Heptachlor	1	5.692	5.662	5.722	0.072	
	2	5.615	5.585	5.645	0.089	21.1
Heptachlor Epoxide	1	6.280	6.249	6.309	0.072	
	2	6.181	6.151	6.211	0.086	17.7
Hexachlorobenzene	1	5.124	5.093	5.153	0.078	
	2	5.084	5.053	5.113	0.095	19.7
Methoxychlor	1	7.532	7.502	7.562	0.090	
	2	7.736	7.706	7.766	0.11	20.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8151A

LCS

Lab Sample ID: B299771-BS1 Date(s) Analyzed: 02/02/2022 02/02/2022

Instrument ID (1): ECD 8 Instrument ID (2): ECD 8

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	17.473	0.000	0.000	8.59	
	2	17.273	0.000	0.000	8.75	1.7
2,4,5-TP (Silvex)	1	17.265	0.000	0.000	9.00	
	2	16.948	0.000	0.000	9.17	1.9
2,4-D	1	16.102	0.000	0.000	82.1	
	2	15.403	0.000	0.000	91.5	11.0
2,4-DB	1	17.806	0.000	0.000	79.3	
	2	17.600	0.000	0.000	76.0	3.9
Dalapon	1	5.630	0.000	0.000	144	
	2	5.053	0.000	0.000	153	8.9
Dicamba	1	13.806	0.000	0.000	8.51	
	2	13.043	0.000	0.000	8.55	0.6
Dichloroprop	1	15.554	0.000	0.000	92.6	
	2	14.682	0.000	0.000	91.8	1.3
Dinoseb	1	18.325	0.000	0.000	10.4	
	2	17.765	0.000	0.000	10.5	4.9
MCPA	1	14.683	0.000	0.000	8130	
	2	13.929	0.000	0.000	8360	3.2
MCPP	1	14.320	0.000	0.000	8840	
	2	13.389	0.000	0.000	8620	2.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8151A

LCS Dup

Lab Sample ID: B299771-BSD1 Date(s) Analyzed: 02/02/2022 02/02/2022

Instrument ID (1): ECD 8 Instrument ID (2): ECD 8

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	17.474	0.000	0.000	8.58	
	2	17.273	0.000	0.000	8.69	1.0
2,4,5-TP (Silvex)	1	17.266	0.000	0.000	8.86	
	2	16.949	0.000	0.000	8.99	1.0
2,4-D	1	16.102	0.000	0.000	82.9	
	2	15.403	0.000	0.000	92.4	10.7
2,4-DB	1	17.807	0.000	0.000	81.1	
	2	17.601	0.000	0.000	76.4	5.8
Dalapon	1	5.628	0.000	0.000	153	
	2	5.051	0.000	0.000	166	10.1
Dicamba	1	13.805	0.000	0.000	8.33	
	2	13.043	0.000	0.000	8.48	2.2
Dichloroprop	1	15.554	0.000	0.000	92.4	
	2	14.682	0.000	0.000	91.3	0.8
Dinoseb	1	18.326	0.000	0.000	9.61	
	2	17.767	0.000	0.000	9.68	0.8
MCPA	1	14.684	0.000	0.000	8210	
	2	13.929	0.000	0.000	8330	1.6
MCPP	1	14.319	0.000	0.000	8780	
	2	13.389	0.000	0.000	8500	3.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B300143-BS1 Date(s) Analyzed: 02/02/2022 02/02/2022

Instrument ID (1): ECD1 Instrument ID (2): ECD1

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.16	
	2	0.000	-0.030	0.030	0.14	13.3
Aroclor-1260	1	0.000	-0.030	0.030	0.17	
	2	0.000	-0.030	0.030	0.17	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B300143-BSD1 Date(s) Analyzed: 02/02/2022 02/02/2022

Instrument ID (1): ECD1 Instrument ID (2): ECD1

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.16	
	2	0.000	-0.030	0.030	0.14	13.3
Aroclor-1260	1	0.000	-0.030	0.030	0.17	
	2	0.000	-0.030	0.030	0.17	0.0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
H-03	Sample received after recommended holding time was exceeded.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 1030 in Soil	
Ignitability	NY,NH,CT,NC,ME,VA
SW-846 6010D in Soil	
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8081B in Soil	
Alachlor	NC
Alachlor [2C]	NC
Aldrin	CT,NH,NY,ME,NC,VA
Aldrin [2C]	CT,NH,NY,ME,NC,VA
alpha-BHC	CT,NH,NY,ME,NC,VA
alpha-BHC [2C]	CT,NH,NY,ME,NC,VA
beta-BHC	CT,NH,NY,ME,NC,VA
beta-BHC [2C]	CT,NH,NY,ME,NC,VA
delta-BHC	CT,NH,NY,ME,NC,VA
delta-BHC [2C]	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane)	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane) [2C]	CT,NH,NY,ME,NC,VA
Chlordane	CT,NH,NY,ME,NC,VA
Chlordane [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDD	CT,NH,NY,ME,NC,VA
4,4'-DDD [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDE	CT,NH,NY,ME,NC,VA
4,4'-DDE [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDT	CT,NH,NY,ME,NC,VA
4,4'-DDT [2C]	CT,NH,NY,ME,NC,VA
Dieldrin	CT,NH,NY,ME,NC,VA
Dieldrin [2C]	CT,NH,NY,ME,NC,VA
Endosulfan I	CT,NH,NY,ME,NC,VA
Endosulfan I [2C]	CT,NH,NY,ME,NC,VA
Endosulfan II	CT,NH,NY,ME,NC,VA
Endosulfan II [2C]	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate [2C]	CT,NH,NY,ME,NC,VA
Endrin	CT,NH,NY,ME,NC,VA
Endrin [2C]	CT,NH,NY,ME,NC,VA
Endrin Aldehyde	CT,NH,NY,ME,NC,VA
Endrin Aldehyde [2C]	CT,NH,NY,ME,NC,VA
Endrin Ketone	NC
Endrin Ketone [2C]	NC

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8081B in Soil	
Heptachlor	CT,NH,NY,ME,NC,VA
Heptachlor [2C]	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide [2C]	CT,NH,NY,ME,NC,VA
Hexachlorobenzene	NC
Hexachlorobenzene [2C]	NC
Methoxychlor	CT,NH,NY,ME,NC,VA
Methoxychlor [2C]	CT,NH,NY,ME,NC,VA
Toxaphene	CT,NH,NY,ME,NC,VA
Toxaphene [2C]	CT,NH,NY,ME,NC,VA
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1262	NY,NC,VA,PA
Aroclor-1262 [2C]	NY,NC,VA,PA
Aroclor-1268	NY,NC,VA,PA
Aroclor-1268 [2C]	NY,NC,VA,PA
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1262	NY,NC,VA,PA
Aroclor-1262 [2C]	NY,NC,VA,PA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1268	NY,NC,VA,PA
Aroclor-1268 [2C]	NY,NC,VA,PA
SW-846 8151A in Soil	
2,4-D	NY,ME,NC,NH,VA,CT
2,4-D [2C]	NY,ME,NC,NH,VA,CT
2,4-DB	NY,ME,NC,NH,VA,CT
2,4-DB [2C]	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex)	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex) [2C]	NY,ME,NC,NH,VA,CT
2,4,5-T	NY,ME,NC,NH,VA,CT
2,4,5-T [2C]	NY,ME,NC,NH,VA,CT
Dalapon	NY,ME,NC,NH,VA,CT
Dalapon [2C]	NY,ME,NC,NH,VA,CT
Dicamba	NY,ME,NC,NH,VA,CT
Dicamba [2C]	NY,ME,NC,NH,VA,CT
Dichloroprop	NY,ME,NC,NH,VA,CT
Dichloroprop [2C]	NY,ME,NC,NH,VA,CT
Dinoseb	NY,ME,NC,NH,VA,CT
Dinoseb [2C]	NY,ME,NC,NH,VA,CT
MCPA	NY,ME,NC,NH,VA,CT
MCPA [2C]	NY,ME,NC,NH,VA,CT
MCPP	NY,ME,NC,NH,VA,CT
MCPP [2C]	NY,ME,NC,NH,VA,CT
SW-846 8151A in Water	
2,4-D	ME,NC,NH,CT,NY,VA
2,4-D [2C]	ME,NC,NH,CT,NY,VA
2,4-DB	ME,NC,NH,CT,NY,VA
2,4-DB [2C]	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex)	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex) [2C]	ME,NC,NH,CT,NY,VA
2,4,5-T	ME,NC,NH,CT,NY,VA
2,4,5-T [2C]	ME,NC,NH,CT,NY,VA
Dalapon	ME,NC,NH,CT,NY,VA
Dalapon [2C]	ME,NC,NH,CT,NY,VA
Dicamba	ME,NC,NH,CT,NY,VA
Dicamba [2C]	ME,NC,NH,CT,NY,VA
Dichloroprop	ME,NC,NH,CT,NY,VA
Dichloroprop [2C]	ME,NC,NH,CT,NY,VA
Dinoseb	ME,NC,NH,CT,NY,VA
Dinoseb [2C]	ME,NC,NH,CT,NY,VA
MCPA	NC,CT
MCPA [2C]	NC,CT
MCPP	NC,CT
MCPP [2C]	NC,CT
SW-846 8260D in Soil	
Acetone	CT,NH,NY,ME,VA

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CERTIFICATIONS

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Analyte	Certifications
SW-846 8260D in Soil	
Acrylonitrile	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
tert-Butyl Alcohol (TBA)	NY,ME
n-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA
Chloroform	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
1,2-Dibromo-3-chloropropane (DBCP)	NY,ME
1,2-Dibromoethane (EDB)	NH,NY
Dibromomethane	NH,NY,ME,VA
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
trans-1,4-Dichloro-2-butene	NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA
Diethyl Ether	ME
1,4-Dioxane	NY,ME
Ethylbenzene	CT,NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
p-Isopropyltoluene (p-Cymene)	NH,NY

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Soil	
Methyl Acetate	NY,ME
Methyl tert-Butyl Ether (MTBE)	NY,ME,VA
Methyl Cyclohexane	NY
Methylene Chloride	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME,VA
Naphthalene	NH,NY,ME,VA
n-Propylbenzene	NH,NY,ME
Styrene	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
1,2,3-Trichlorobenzene	NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA
Trichloroethylene	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA
SW-846 8270E in Soil	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Acetophenone	NY,NH,ME,NC,VA
Aniline	NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzidine	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Benzoic Acid	NY,NH,ME,NC,VA
Bis(2-chloroethoxy)methane	CT,NY,NH,ME,NC,VA
Bis(2-chloroethyl)ether	CT,NY,NH,ME,NC,VA
Bis(2-chloroisopropyl)ether	CT,NY,NH,ME,NC,VA
Bis(2-Ethylhexyl)phthalate	CT,NY,NH,ME,NC,VA
4-Bromophenylphenylether	CT,NY,NH,ME,NC,VA
Butylbenzylphthalate	CT,NY,NH,ME,NC,VA
Carbazole	NC
4-Chloroaniline	CT,NY,NH,ME,NC,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270E in Soil	
4-Chloro-3-methylphenol	CT,NY,NH,ME,NC,VA
2-Chloronaphthalene	CT,NY,NH,NC,VA
2-Chlorophenol	CT,NY,NH,ME,NC,VA
4-Chlorophenylphenylether	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Dibenzofuran	CT,NY,NH,ME,NC,VA
Di-n-butylphthalate	CT,NY,NH,ME,NC,VA
1,2-Dichlorobenzene	NY,NH,ME,NC,VA
1,3-Dichlorobenzene	NY,NH,ME,NC,VA
1,4-Dichlorobenzene	NY,NH,ME,NC,VA
3,3-Dichlorobenzidine	CT,NY,NH,ME,NC,VA
2,4-Dichlorophenol	CT,NY,NH,ME,NC,VA
Diethylphthalate	CT,NY,NH,ME,NC,VA
2,4-Dimethylphenol	CT,NY,NH,ME,NC,VA
Dimethylphthalate	CT,NY,NH,ME,NC,VA
4,6-Dinitro-2-methylphenol	CT,NY,NH,ME,NC,VA
2,4-Dinitrophenol	CT,NY,NH,ME,NC,VA
2,4-Dinitrotoluene	CT,NY,NH,ME,NC,VA
2,6-Dinitrotoluene	CT,NY,NH,ME,NC,VA
Di-n-octylphthalate	CT,NY,NH,ME,NC,VA
1,2-Diphenylhydrazine/Azobenzene	NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	NY,NH,ME,NC,VA
Hexachlorobenzene	CT,NY,NH,ME,NC,VA
Hexachlorobutadiene	CT,NY,NH,ME,NC,VA
Hexachlorocyclopentadiene	CT,NY,NH,ME,NC,VA
Hexachloroethane	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
Isophorone	CT,NY,NH,ME,NC,VA
1-Methylnaphthalene	NC
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
2-Methylphenol	CT,NY,NH,ME,NC,VA
3/4-Methylphenol	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
2-Nitroaniline	CT,NY,NH,ME,NC,VA
3-Nitroaniline	CT,NY,NH,ME,NC,VA
4-Nitroaniline	CT,NY,NH,ME,NC,VA
Nitrobenzene	CT,NY,NH,ME,NC,VA
2-Nitrophenol	CT,NY,NH,ME,NC,VA
4-Nitrophenol	CT,NY,NH,ME,NC,VA
N-Nitrosodimethylamine	CT,NY,NH,ME,NC,VA
N-Nitrosodi-n-propylamine	CT,NY,NH,ME,NC,VA
Pentachloronitrobenzene	NY,NC
Pentachlorophenol	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Phenol	CT,NY,NH,ME,NC,VA

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CERTIFICATIONS

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Analyte	Certifications
SW-846 8270E in Soil	
Pyrene	CT,NY,NH,ME,NC,VA
Pyridine	CT,NY,NH,ME,NC,VA
1,2,4,5-Tetrachlorobenzene	NY,NC
1,2,4-Trichlorobenzene	CT,NY,NH,ME,NC,VA
2,4,5-Trichlorophenol	CT,NY,NH,ME,NC,VA
2,4,6-Trichlorophenol	CT,NY,NH,ME,NC,VA
2-Fluorophenol	NC
SW-846 8270E in Water	
Acenaphthene	CT,NY,NC,ME,NH,VA
Acenaphthylene	CT,NY,NC,ME,NH,VA
Acetophenone	NY,NC
Aniline	CT,NY,NC,ME,VA
Anthracene	CT,NY,NC,ME,NH,VA
Benzidine	CT,NY,NC,ME,NH,VA
Benzo(a)anthracene	CT,NY,NC,ME,NH,VA
Benzo(a)pyrene	CT,NY,NC,ME,NH,VA
Benzo(b)fluoranthene	CT,NY,NC,ME,NH,VA
Benzo(g,h,i)perylene	CT,NY,NC,ME,NH,VA
Benzo(k)fluoranthene	CT,NY,NC,ME,NH,VA
Benzoic Acid	NY,NC,ME,NH,VA
Bis(2-chloroethoxy)methane	CT,NY,NC,ME,NH,VA
Bis(2-chloroethyl)ether	CT,NY,NC,ME,NH,VA
Bis(2-chloroisopropyl)ether	CT,NY,NC,ME,NH,VA
Bis(2-Ethylhexyl)phthalate	CT,NY,NC,ME,NH,VA
4-Bromophenylphenylether	CT,NY,NC,ME,NH,VA
Butylbenzylphthalate	CT,NY,NC,ME,NH,VA
Carbazole	NC
4-Chloroaniline	CT,NY,NC,ME,NH,VA
4-Chloro-3-methylphenol	CT,NY,NC,ME,NH,VA
2-Chloronaphthalene	CT,NY,NC,ME,NH,VA
2-Chlorophenol	CT,NY,NC,ME,NH,VA
4-Chlorophenylphenylether	CT,NY,NC,ME,NH,VA
Chrysene	CT,NY,NC,ME,NH,VA
Dibenz(a,h)anthracene	CT,NY,NC,ME,NH,VA
Dibenzofuran	CT,NY,NC,ME,NH,VA
Di-n-butylphthalate	CT,NY,NC,ME,NH,VA
1,2-Dichlorobenzene	CT,NY,NC,ME,NH,VA
1,3-Dichlorobenzene	CT,NY,NC,ME,NH,VA
1,4-Dichlorobenzene	CT,NY,NC,ME,NH,VA
3,3-Dichlorobenzidine	CT,NY,NC,ME,NH,VA
2,4-Dichlorophenol	CT,NY,NC,ME,NH,VA
Diethylphthalate	CT,NY,NC,ME,NH,VA
2,4-Dimethylphenol	CT,NY,NC,ME,NH,VA
Dimethylphthalate	CT,NY,NC,ME,NH,VA
4,6-Dinitro-2-methylphenol	CT,NY,NC,ME,NH,VA
2,4-Dinitrophenol	CT,NY,NC,ME,NH,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270E in Water	
2,4-Dinitrotoluene	CT,NY,NC,ME,NH,VA
2,6-Dinitrotoluene	CT,NY,NC,ME,NH,VA
Di-n-octylphthalate	CT,NY,NC,ME,NH,VA
1,2-Diphenylhydrazine/Azobenzene	NY,NC
Fluoranthene	CT,NY,NC,ME,NH,VA
Fluorene	NY,NC,ME,NH,VA
Hexachlorobenzene	CT,NY,NC,ME,NH,VA
Hexachlorobutadiene	CT,NY,NC,ME,NH,VA
Hexachlorocyclopentadiene	CT,NY,NC,ME,NH,VA
Hexachloroethane	CT,NY,NC,ME,NH,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NC,ME,NH,VA
Isophorone	CT,NY,NC,ME,NH,VA
1-Methylnaphthalene	NC
2-Methylnaphthalene	CT,NY,NC,ME,NH,VA
2-Methylphenol	CT,NY,NC,NH,VA
3/4-Methylphenol	CT,NY,NC,NH,VA
Naphthalene	CT,NY,NC,ME,NH,VA
2-Nitroaniline	CT,NY,NC,ME,NH,VA
3-Nitroaniline	CT,NY,NC,ME,NH,VA
4-Nitroaniline	CT,NY,NC,ME,NH,VA
Nitrobenzene	CT,NY,NC,ME,NH,VA
2-Nitrophenol	CT,NY,NC,ME,NH,VA
4-Nitrophenol	CT,NY,NC,ME,NH,VA
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA
N-Nitrosodi-n-propylamine	CT,NY,NC,ME,NH,VA
Pentachloronitrobenzene	NC
Pentachlorophenol	CT,NY,NC,ME,NH,VA
Phenanthrene	CT,NY,NC,ME,NH,VA
Phenol	CT,NY,NC,ME,NH,VA
Pyrene	CT,NY,NC,ME,NH,VA
Pyridine	CT,NY,NC,ME,NH,VA
1,2,4,5-Tetrachlorobenzene	NY,NC
1,2,4-Trichlorobenzene	CT,NY,NC,ME,NH,VA
2,4,5-Trichlorophenol	CT,NY,NC,ME,NH,VA
2,4,6-Trichlorophenol	CT,NY,NC,ME,NH,VA
2-Fluorophenol	NC

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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

22A1249

Pace Analytical®

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Access COC's and Support Requests

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page 1 of 1

Company Name: Weston & Sampson Eng., Inc.
Address: 106 International Dr., Portsmouth, NH
Phone: 978-532-1900
Project Name: Saco River Wall Replacement
Project Location: 2 Main St, Biddeford, ME
Project Number: ENG21-1343
Project Manager: Todd Bridgeo
Pace Quote Name/Number:
Invoice Recipient: Todd Bridgeo
Sampled By: Aaron Chabot

Requested Turnaround Time: 7-Day [X] 10-Day [ ] PFAS 10-Day (std) [ ] Due Date:

Rush Approval Required: 1-Day [ ] 3-Day [ ] 2-Day [ ] 4-Day [ ]

Data Delivery: Format: PDF [X] EXCEL [X] Other: CLP Like Data Pkg Required: [ ] Email To: bridgeo@weseinc.com Fax To #:

Dissolved Metals Samples: Field Filtered [ ] Lab to Filter [ ]

Orthophosphate Samples: Field Filtered [ ] Lab to Filter [ ]

PCB ONLY: SOXHLET [X] NON SOXHLET [ ]

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	MB	VOCs - 8260	SVOC - 8270	TPH - 8100	PCB - 8082	RCRA METALS - 6010B/7470	pH	React	Ignita	Herb. - 8151	Pesti - 8081	Speci
1	B-104 (0-8')	1/20/21	10:00	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X	X
2	B-104 (2-4')	1/20/21	10:00	G	S	U	3	0	0			X											
3	B-104 (8-[redacted] 12')	1/20/21	10:15	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X	X
4	B-104 (8-10')	1/20/21	10:15	G	S	U	3	0	0			X											
5	B-105 (0-8')	1/20/21	8:15	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X	X
6	B-105 (0.5-2')	1/20/21	8:00	G	S	U	3	0	0			X											
7	B-105 (8-16')	1/20/21	8:45	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X	X
8	B-105 (14-15')	1/20/21	8:45	G	S	U	3	0	0			X											

Relinquished by: (signature) [signature] Date/Time: 1/20/22 15:00
Received by: (signature) [signature] 1/24/22 Date/Time: 1045
Relinquished by: (signature) [signature] 1/24/22 Date/Time: 1900
Received by: (signature) [signature] 1/24/22 Date/Time: 1900
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:

Client Comments:

Detection Limit Requirements: ME RESIDENTIAL REMEDIAL ACTION GUIDELINES

Special Requirements: MA MCP Required [ ]; MCP Certification Form Required; CT RCP Required [ ]; RCP Certification Form Required; MA State DW Required [ ]

Project Name: ME RAGS PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above: H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity: Government [ ] Municipality [ ] MWRA [ ] WRTA [ ] Federal [ ] 21 J [ ] School [ ] City [ ] Brownfield [ ] MBTA [ ]

Other: [ ] Chromatogram [ ] AIHA-LAP,LLC

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Weston + Sampson Eng., Inc.

Received By DK Date 1-24-22 Time 1800

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____

Direct from Sampling ____ Ambient ____ Melted Ice ____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 4.6

By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? ____

Are there Rushes? F Who was notified? ____

Are there Short Holds? T Who was notified? Irma

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid ____ Base ____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	~~4~~ 4
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	4
Meoh-	4	250 mL Amb.		250 mL Plastic		4oz Amb/Clear	~~4~~
Bisulfate-	8	Flashpoint		Col./Bacteria		2oz Amb/Clear	4
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

February 17, 2022

Todd Bridgeo
Weston & Sampson Engineers MA
55 Walkers Brook Drive
Reading, MA 01867

Project Location: 2 Main St., Biddeford, ME
Client Job Number:
Project Number: ENG21-1343
Laboratory Work Order Number: 22B0686

Enclosed are results of analyses for samples as received by the laboratory on February 11, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kerry K. McGee
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
55 Walkers Brook Drive
Reading, MA 01867
ATTN: Todd Bridgeo

REPORT DATE: 2/17/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: ENG21-1343

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22B0686

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 2 Main St., Biddeford, ME

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-104 (0-8)	22B0686-01	Soil		SM 2540G	
				SW-846 6010D	
B-104 (8-12)	22B0686-02	Soil		SM 2540G	
				SW-846 6010D	
B-105 (8-16)	22B0686-03	Soil		SM 2540G	
				SW-846 6010D	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22B0686-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.6		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	WAT

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-104 (0-8)
Sampled: 1/20/2022 10:00

Sample ID: 22B0686-01

Sample Matrix: Soil

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	ND	0.10	mg/L	1		SW-846 6010D	2/15/22	2/16/22 15:30	QNW

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22B0686-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.0		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	WAT

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-104 (8-12)
Sampled: 1/20/2022 10:15

Sample ID: 22B0686-02

Sample Matrix: Soil

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	ND	0.10	mg/L	1		SW-846 6010D	2/15/22	2/16/22 15:38	QNW

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22B0686-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.4		% Wt	1		SM 2540G	1/25/22	1/25/22 15:47	WAT

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Project Location: 2 Main St., Biddeford, ME
Sample Description:
Work Order: 22B0686

Date Received: 2/11/2022

Field Sample #: B-105 (8-16)
Sampled: 1/20/2022 08:45

Sample ID: 22B0686-03

Sample Matrix: Soil

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	ND	0.10	mg/L	1		SW-846 6010D	2/15/22	2/16/22 15:44	QNW

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Sample Extraction Data

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22B0686-01 [B-104 (0-8)]	B299617	01/25/22
22B0686-02 [B-104 (8-12)]	B299617	01/25/22
22B0686-03 [B-105 (8-16)]	B299617	01/25/22

Prep Method: SW-846 3010A **Analytical Method: SW-846 6010D** **Leachates were extracted on 2/11/2022 per SW-846 1311 in Batch B300985**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22B0686-01 [B-104 (0-8)]	B301199	50.0	50.0	02/15/22
22B0686-02 [B-104 (8-12)]	B301199	50.0	50.0	02/15/22
22B0686-03 [B-105 (8-16)]	B301199	50.0	50.0	02/15/22

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QUALITY CONTROL

TCLP - Metals Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B301199 - SW-846 3010A										
Blank (B301199-BLK1)				Prepared: 02/15/22 Analyzed: 02/16/22						
Lead	ND	0.10	mg/L							
LCS (B301199-BS1)				Prepared: 02/15/22 Analyzed: 02/16/22						
Lead	0.507	0.10	mg/L	0.500		101	80-120			
LCS Dup (B301199-BSD1)				Prepared: 02/15/22 Analyzed: 02/16/22						
Lead	0.519	0.10	mg/L	0.500		104	80-120	2.44	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 6010D in Water	
Lead	NY,CT,ME,NC,NH,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

~~22A1249~~ 22B0686

Pace Analytical®

Phone: 413-525-2332
Fax: 413-525-6405
Access COC's and Support Requests

http://www.pacelabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page 1 of 1

Company Name: Weston & Sampson Eng., Inc.
Address: 106 International Dr., Portsmouth, NH
Phone: 978-532-1900
Project Name: Saco River Wall Replacement
Project Location: 2 Main St, Biddeford, ME
Project Number: ENG21-1343
Project Manager: Todd Bridgeo
Pace Quote Name/Number:
Invoice Recipient: Todd Bridgeo
Sampled By: Aaron Chabot

Requested Turnaround Time: 7-Day [X] 10-Day [ ] PFAS 10-Day (std) [ ] Due Date:

Rush Approval Required: 1-Day [ ] 3-Day [ ] 2-Day [ ] 4-Day [ ]

Data Delivery: Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: bridgeo@westseinc.com
Fax To #:

Dissolved Metals Samples: ○ Field Filtered ○ Lab to Filter

Orthophosphate Samples: ○ Field Filtered ○ Lab to Filter

PCB ONLY: SOXHLET [X] NON SOXHLET [ ]

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	VOCs - 8260	SVOC - 8270	TPH - 8100	PCB - 8082	RCRA METALS - 6010B/7470	pH	React	Ignita	Herb. - 8151	Pesti - 8081	Speci
01 1	B-104 (0-8")	1/20/21	10:00	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X
2	B-104 (2-4')	1/20/21	10:00	G	S	U	3	0	0			X										
02 3	B-104 (8-[redacted] 12")	1/20/21	10:15	C	S	U	0	3	0				X	X	X	X	X	X	X	X	X	X
4	B-104 (8-10')	1/20/21	10:15	G	S	U	3	0	0			X										
5	B-105 (0-8")	1/20/21	8:15	C	S	U	0	3	0				X	X	X	X	X	X	X	~~X~~	~~X~~	X
6	B-105 (0.5-2')	1/20/21	8:00	G	S	U	3	0	0			X										
03 7	B-105 (8-16')	1/20/21	8:45	C	S	U	0	3	0				X	X	X	X	X	X	X	~~X~~	~~X~~	X
8	B-105 (14-15')	1/20/21	8:45	G	S	U	3	0	0			X										

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time:
[signature]	1/20/22 15:00
Received by: (signature) [signature] 1/24/22	Date/Time: 1045
Relinquished by: (signature) [signature] 1/24/22	Date/Time: 1900
Received by: (signature) [signature] 1/24/22	Date/Time: 1900
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Reactivate samples -01, -03 & -07 for TCLP Pb per Lexy H.

-KKM 2/11/22

Detection Limit Requirements: ME RESIDENTIAL REMEDIAL ACTION GUIDELINES

Special Requirements: MA MCP Required; MCP Certification Form Required; CT RCP Required; RCP Certification Form Required; MA State DW Required

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Reporting: ME RAGS
PWSID #

NELAC and AIHA-LAP, LLC Accredited

Project Entity: Government [ ] Municipality [ ] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other: [ ] Chromatogram [ ] AIHA-LAP,LLC

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

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Are there Rushes? F Who was notified? ____

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Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
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Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

April 4, 2022

Mr. Brian Phinney
Chief Operating Officer
City of Biddeford
205 Main St
Biddeford, ME 04005

RE: BIDDEFORD RIVERWALK RETAINING WALL REPLACEMENT – HIGH LEVEL REVIEW

Dear Mr. Phinney:

The report provided by Weston & Sampson, "Alternatives Analysis Report – Riverwalk Retaining Walls Replacement" dated March 25th, 2022, has been reviewed. It is understood that this is a conceptual design and more information is needed before proceeding with Final Design Plans.

James W. Sewall Company (SEWALL) is in general agreement with the report findings, alternatives presented in Section 4.2, and preliminary design recommendations in Section 4.5. Based on our knowledge of existing site conditions and previous work in the area, the full wall replacement appears to be the safest, most effective option. Limiting excavation, disturbance behind the wall, and impact to existing adjacent walls and structures that are still structurally sound should remain priority, as well as, remaining conscious of the environmental impact. SEWALL recommends moving forward with the Final Design and Permitting of the Soldier Pile and Lagging Wall replacement. Final Design and Permitting should take into consideration the additional in water work needed to complete the Riverwalk upstream, or just north of the replacement, and ways to reuse as much of the "contaminated" soil as possible.

Please reach out if there are any questions or if you need additional information.

Sincerely,
JAMES W. SEWALL COMPANY

Heather Hayes

Heather Hayes, PE, - *Structural Engineer*

A TFIC Company
40 Forest Falls Drive, Suite 2 • Yarmouth, Maine 04096 • +1.207.817.5440 • sewall.com • info@sewall.com

MAINE SERVICE CENTER COALITION

2022 Resolution for Membership and Appointment of Voting Delegate Representative and Alternate

BE IT RESOLVED that the _____
(City/Town Council or Board of Selectmen)

hereby authorizes membership in the Maine Service Center Coalition and designates:

_____ _____,
(name) (position in municipality)

to be the appointed REPRESENTATIVE for the Maine Service Centers Coalition and is therefore authorized to vote at the Maine Service Centers Coalition business meetings.

BE IT FURTHER RESOLVED that the designated ALTERNATE is:

_____ _____,
(name) (position in municipality)

_____ _____
Dated Attested To By:

Please return this Resolution as soon as possible to:

Maine Service Centers Coalition
c/o Melissa White, Liaison for Affiliate Services
Maine Municipal Association
60 Community Drive
Augusta, Maine 04330
E-mail: mwhite@memun.org

MAINE SERVICE CENTERS COALITION

VOTING DELEGATES - 2022

Membership Information Sheet

MSCC REPRESENTATIVE	MSCC ALTERNATE
NAME:	NAME:
TITLE:	TITLE:
MUNICIPALITY:	MUNICIPALITY:
MAILING ADDRESS:	MAILING ADDRESS:
CITY/ST/ZIP:	CITY/ST/ZIP:
TOWN OFFICE PHONE:	TOWN OFFICE PHONE:
WORK PHONE:	WORK PHONE:
HOME PHONE:	HOME PHONE:
FAX PHONE:	FAX PHONE:
E-MAIL ADDRESS:	E-MAIL ADDRESS:

RETURN TO:

Maine Service Centers Coalition
c/o Melissa White, Liaison for Affiliate Services
Maine Municipal Association
60 Community Drive
Augusta, Maine 04330
E-mail: mwhite@memun.org

MAINE SERVICE CENTERS COALITION
2022 EXECUTIVE COMMITTEE

OFFICERS

(Serve 1-Year Terms)

Chairman

TERM EXPIRES: 12/31/2022
Scott Morelli, City Manager
City of South Portland
PO Box 9422
South Portland, ME 04116-9422
Telephone: (207) 767-7606
Email: smorelli@southportland.org

County: Cumberland
Population: 25,779
Votes: 3

Vice Chairman

TERM EXPIRES: 12/31/2022
Phil Crowell, City Manager
City of Auburn
60 Court Street
Auburn, ME 04210
Telephone: (207) 333-6600
Email: pcrowell@auburnmaine.gov

County: Androscoggin
Population: 22,951
Votes: 3

Secretary

TERM EXPIRES: 12/31/2023
Matt Lutkus, Town Manager
Town of Damariscotta
21 School Street
Damariscotta, ME 04543
Telephone: (207) 563-5168
Email: mlutkus@damariscottame.com

County: Lincoln
Population: 2,081
Votes: 1

Treasurer

TERM EXPIRES: 12/31/2023
James Bennett, City Manager
City of Biddeford
PO Box 586
Biddeford, ME 04005-0586
Telephone: (207) 284-9313
Email: James.Bennett@biddefordmaine.org

County: York
Population: 21,393
Votes: 3

MEMBERS-AT-LARGE

(All Members to Serve 3-Year Staggered Terms)

TERM EXPIRES: 12/31/2024
Marian Anderson, Town Manager
Town of Houlton
21 Water Street
Houlton, ME 04730-2020
Telephone: (207) 532-7111
Email: town.manager@houlton-maine.com
County: Aroostook
Population: 5,266 Votes: 1

TERM EXPIRES: 12/31/2024
Stephen Daly, City Manager
City of Waterville
One Common Street
Waterville, ME 04901-6699
Telephone: (207) 680-4204
Email: sdaly@waterville-me.gov
County: Kennebec
Population: 15,927 Votes: 2

TERM EXPIRES: 12/31/2024
Sophia Wilson, Town Manager
Town of Orono
59 Main Street
Orono, ME 04473-4001
Telephone: (207) 889-6905
Email: swilson@orono.org
County: Penobscot
Population: 10,679 Votes: 2

TERM EXPIRES: 12/31/2024
Kara George, Town Manager
Town of Thomaston
13 Valley Street
Thomaston, ME 04861
Telephone: (207) 354-6107
Email: kgeorge@thomaston.gov
County: Knox
Population: 2,771 Votes: 1

TERM EXPIRES: 12/31/2022
Audra Caler, Town Manager
Town of Camden
PO Box 1207
Camden, ME 04843-1207
Telephone: (207) 236-3353
Email: acaler@camdenmaine.gov
County: Knox
Population: 4,642 Votes: 1

TERM EXPIRES: 12/31/2023
Susan Robertson, Assistant City Manager
City of Augusta
16 Cony Street
Augusta, ME 04330-5201
Telephone: (207) 626-2300
Email: susan.robertson@augustamaine.gov
County: Kennebec
Population: 18,374 Votes: 2

TERM EXPIRES: 12/31/2023

VACANT

Telephone:
Email:
County:
Population: Votes:

Administrative Services
Melissa White, Liaison for Affiliate Services
Maine Municipal Association
60 Community Drive
Augusta, ME 04330-9486
Telephone: (207) 623-8428 ext. 2299
Email: mwhite@memun.org

Advocacy Services
Richard Trahey, President
Maine Governmental Relations
103 Water Street, Suite 203
Hallowell, ME 04347-1300
Telephone: (207) 623-0272
Email: rtrahey124@gmail.com

IN BOARD OF CITY COUNCIL…APRIL 5, 2022

ORDERED, that I, Alan M. Casavant, Mayor of the City of Biddeford, do hereby appoint:

Bryan Hadler
100 Summer Street, #302
Ward 4

to the *Conservation Commission*, replacing Kenneth Buechs, for a term to expire in December 2022.

CITY OF BIDDEFORD

Application for
City Committees, Commissions and Boards

Date: 3/10/2022

Name: Bryan Hadler

Street Address: 100 Summer St

Apt 302

Mailing Address:
(if different)

Phone Number(s): 631-356-2663

Email Address: bryan.hadler@gmail.com

Which City Committee, Board or Commission do you request to be appointed to:

- [ ] Airport Commission
- [ ] Biddeford Citizens Advisory Committee
- [ ] Biddeford Fire Advisory Committee
- [ ] Biddeford Housing Authority
- [ ] Biddeford Police Advisory Committee
- [ ] Board of Assessment Review
- [ ] Cable T.V. Committee
- [ ] Capital Projects Committee
- [✓] Conservation Commission
- [ ] Diversity, Equity and Inclusion Committee
- [✓] Downtown Development Commission
- [ ] Economic Improvement Commission
- [ ] Harbor Commission
- [ ] Historic Preservation Commission
- [ ] Planning Board
- [ ] Policy Committee
- [✓] Project Canopy Committee
- [✓] Recreation Commission
- [ ] Recycling & Solid Waste Management Commission
- [✓] Shellfish Conservation Committee
- [ ] Wastewater Management Commission
- [ ] Zoning Board of Appeals
- [ ] Other:

CITY OF BIDDEFORD
Committee Application

Please list any prior experience serving on any Public Boards, Commissions or Committees (and approximate dates)

No professional/civic experience. I was on a board of a club in college as the Treasurer

Please list any other experience that may be pertinent to the Board or Committee in which you are requesting to serve on.

I am looking to be involved with a committee or commission that is involved with sustainability/conservation, enjoying the outdoors, and/or the revitalization of Downtown. My academic background includes concentrations in Biology, Marine Science, and Sustainability Studies. I have been a part of, and led, many teams professionally in my roles as Manager and Head Brewer. I'm currently enrolled in a Sustainable Business certificate program to give me more updated and relevant sustainability information.

Please provide a brief statement describing your interest in serving the City of Biddeford.

I have been a resident of Biddeford for 2 years and have completely fallen in love with this city. I am a firm believer that if you want to give back to a community you need to do more than fill out some surveys online - though they certainly do help. You need to take part in the discussions and sometimes roll up your sleeves to help out. I would love to be involved with the local government to help shape the bright future Biddeford has and ensure that future is a sustainable one so that our children and their children can enjoy this city like we do.

Attach any additional information to this application and return it to the City Clerk's Office.

IN BOARD OF CITY COUNCIL…APRIL 5, 2022

ORDERED, that I, Alan M. Casavant, Mayor of the City of Biddeford, do hereby appoint:

Larry Patoine
12 Shepherds Way
Ward 6

to the *Planning Board*, as an Associate Member, for a term to expire in December 2025.

CITY OF BIDDEFORD

Application for
City Committees, Commissions and Boards

Date:

Name: LARRY J. PATOINE

Street Address: 12 Shepherds Way
Biddeford, Maine 04005

Mailing Address:
(if different)

Phone Number(s): 207-283-9272

Email Address: ljpat1@maine.rr.com

Which City Committee, Board or Commission do you request to be appointed to:

- [ ] Airport Commission
- [ ] Biddeford Citizens Advisory Committee
- [ ] Biddeford Fire Advisory Committee
- [ ] Biddeford Housing Authority
- [ ] Biddeford Police Advisory Committee
- [ ] Board of Assessment Review
- [ ] Cable T.V. Committee
- [ ] Capital Projects Committee
- [ ] Conservation Commission
- [ ] Diversity, Equity and Inclusion Committee
- [ ] Downtown Development Commission
- [ ] Economic Improvement Commission
- [ ] Harbor Commission
- [ ] Historic Preservation Commission
- [x] Planning Board
- [ ] Policy Committee
- [ ] Project Canopy Committee
- [ ] Recreation Commission
- [ ] Recycling & Solid Waste Management Commission
- [ ] Shellfish Conservation Committee
- [ ] Wastewater Management Commission
- [ ] Zoning Board of Appeals
- [ ] Other:

CITY OF BIDDEFORD
Committee Application

Please list any prior experience serving on any Public Boards, Commissions or Committees (and approximate dates)

Planning board 2007 to 2020

Please list any other experience that may be pertinent to the Board or Committee in which you are requesting to serve on.

Served as chair

Please provide a brief statement describing your interest in serving the City of Biddeford.

I believe in giving back to a city that makes it a great place to live.

Attach any additional information to this application and return it to the City Clerk's Office.