Seabrook Water & Sewer Department

PO Box 456
Seabrook, NH 03874
(603)-474-9921

MEMORANDUM

To: Board of Selectmen

Cc: William Manzi III; Town Manager

From: Curtis Slayton; Water & Sewer Superintendent

Date: May 12th, 2025

Subject: Monthly Report from March 10th to Date.

Below is a list of activities ongoing and completed by the Water & Sewer Department staff since the last report.

WATER

- Responded to 134 requests for service to include water turn on/off, inspections and meter repairs.
- Responded to 191 dig safe requests.
- 27,780,000 gallons of treated water was pumped into the distribution system in March and 27,131,000 gallons in April
- Meter readings were completed on the first of every month.
- Monthly bacteria samples were completed.
- Curbstop repairs at 9 Whittier Dr., 6 Groveland St, 245 Ashland St, 312 South Main St, and 539 Ocean Blvd.
- Water service line repairs were completed at 15 Weare Rd and 16 Perkins Ave.
- Repaired the watermain going over the Causeway Bridge.
- Hydrant inspections of public hydrants are ongoing.
- Hydrant repairs on Quaker Ln, Cross Beach and Plymouth St.
- The Ground Water Management Plan is still being maintained by staff.
- 1st quarter water and sewer bills went out at the end of April.
- The 2025 Consumer Confidence Report notice was sent out with the Water and Sewer Bills. The report can be viewed on the water department's website.
- Replaced basket and cleaned up fallen tree at the disk golf park.
- Residential lead and copper samples are ongoing.
- Painting at GPW #4.
- Grounds clean up around well #5

- 25,000 gallons of residuals were trucked to Berwick Maine for disposal using the town's new pump truck.
- Specific capacity on the wells has been completed.
- The pressure filters in the water treatment facility were inspected by Water Service Professionals. The report reveals media loss within the vessels. It is recommended that we make plans to have the media replaced soon. (see attached report)
- Gravel Packed Well # 2 cleaning and re-development was completed. The well improved by 22.41gpm/ft DD (Report Attached)
- Water turn offs for nonpayment were completed.
- Backflow testing of town devices was completed.
- Assisted in the town's paving program.
- Located curbstops on the town GIS system
- Repaired leak in the static mixer on the raw water line in the WTF.
- Worked with DPW turning on water to parks and cemeteries for the season.
- The altitude valve at the 107-water tank was serviced for the year.

SEWER

* 26 million gallons of wastewater treated in March and 27 million gallons in April.
* 181 tons of biosolids were sent out in March and 175 tons in April.
* Monthly operation reports sent to NHDES and USEPA
* Daily lab work 7 days a week
* Weekly pump station checks.
* Monitored chemical deliveries.
* Cyber security work is still on going. The Sewer Department installed the new fiber optic cable to the buildings on the Island.
* The Collections System Capacity, Management, Operations and Maintenance Program Report "CMOM" was Completed and sent to NHDES and EPA. (Report Attached)
* Pump truck supplier provided training to staff.
* Flow meters were calibrated by A&D Instruments.
* Cleaned debris from pumps at Carroll Ln, Worthley Ave, Pine Crest, Old New Boston Rd.
* Fixed loose relay in influent sampler.
* New heat exchanger on order for press one.
* Changed drive coupling on plant water pump.
* We received the grit classifier that was purchased through the bid process and was paid for by the 2023 warrant article 17.
* Replaced pump #2 at Worthley Pump Station as the old one was worn-out.
* Shoveled grit from aeration tank #2.
* Replacing Rotor blades in aeration tank #2
* Large station wet well cleaning is ongoing.
* Changed gravity belt on press #1

*Preconstruction meeting for Aldi's
*Assisted with town paving operations.
* Tour of facility for the Star Island staff and on a different day a wastewater class of 12 students.
* Replaced brakes in crane truck
* Changed drive belts on both Stard Rd pumps.
* Transported the surplus radar trailers to the state auction in Concord NH.
* The Army Corp of Engineers toured the wastewater facility looking at our power needs. In the event of an emergency the state emergency management will have our needs on file.

PRETREATMENT

- Updating all renewal forms and permits
- Completing renewal of Aerodynamics discharge permit.
- Creating restaurant educational flyers for grease management.
- Public education flyers were sent out to all homes that discharged to Worthley Ave pump station due to high call volume to this location. (see attached flyer)
- Worked with Nextera on flow exceedance, Helped Nextera locate faulty valve.

Respectfully submitted,

Curtis Slayton, Water & Sewer Superintendent

SEABROOK WATER DEPARTMENT

Water Delivered

Year: **2025** Month: **March**

Gravel Packed Wells

1: **6,025,000**
3: **620,000**
7: **2,115,000**

Plant: **19,020,000**

Total: **27,780,000**

Previous Month / Year Mar-24 Total 28,411,000
Previous Month / Year Mar-23 Total 29,767,000

Respectfully submitted: George M. Eaton Chief Op

Date: 4/2/2025

SEABROOK WATER DEPARTMENT

Water Delivered

Year: **2025** Month: **April**

Gravel Packed Wells

1:	**5,398,000**
3:	**2,983,000**
7:	**0**
Plant:	**18,750,000**
Total:	**27,131,000**

Previous Month / Year	Apr-24	Total	27,789,000
Previous Month / Year	Apr-23	Total	29,767,000

Respectfully submitted: George M. Eaton Chief Op

Date: 5/2/2025

SEABROOK WATER DEPARTMENT

ROUTE 107 WATER FILTRATION PLANT

FILTER INSPECTION REPORT

APRIL 1, 2025

Water Service Professionals of PA ◦ 10 Pettit's Bridge Rd ◦ Jamison, PA 18929 ◦ ph: 610-202-7378 ◦ e-mail: ataylor@wsp-us.com

VERTICAL PRESSURE FILTER REPORT CARD

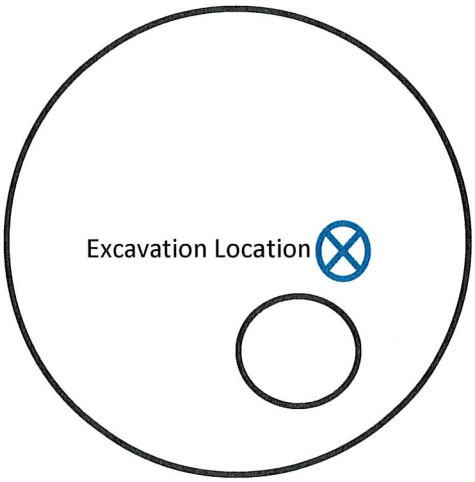


Figure 1- Plan View

Measurements / Conditions				
Filter Number	#3	#5		
Depth of Anthracite	16"	18"		
Thickness of Interface	2"	1"		
Depth of Greensand	5"*	12"*		
Total Media Depth	23"	31"		
Freeboard	42"	42"		
Draindown port to media	9"	9"		
Mounding (Y/N)	No	No		
Cracking (Y/N)	No	No		
Solids Present (Y/N)	Y	Y		

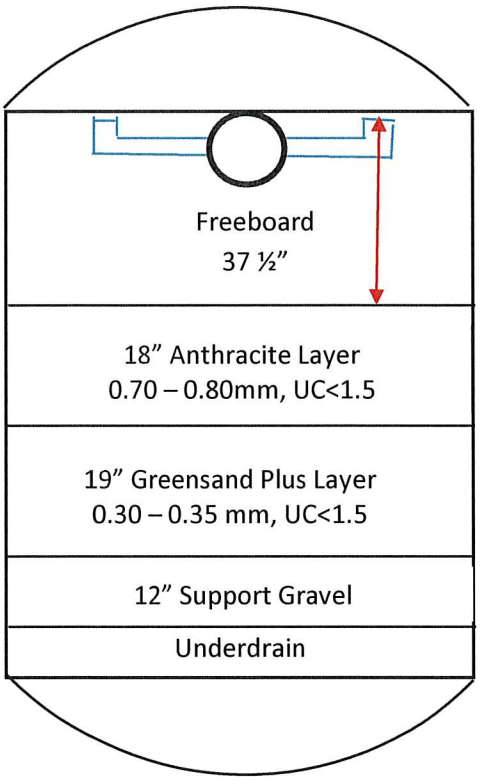


Figure 2- Section View

Notes:/General Observations:

1. Support gravel found to be extremely displaced in both filters.
2. Some Greensand Plus loss has occurred. Likely a result of the compromised gravel layers. GSP has likely migrated into the underdrains.
3. Empty filters routinely refilled with filter influent. Not best practice, entrapped air in filter media can cause gravel displacement.

* - The author believes the GSP depth reflects gravel migration more than media loss. Other areas in the filter likely have very deep GSP depths.

Seabrook Water Department
Route 107 Water Filtration Plant

Background

Mr. Andrew Taylor from Water Service Professionals (WSP-US) met with representatives from the Seabrook Water Department at the Route 107 Water Filtration Plant at 8:00am on Tuesday, April 1, 2025. The purpose of the visit was to perform the annual filter inspections of two (2) 11'-0" diameter vertical pressure filters. The vessels were originally supplied by Roberts Filter in early 2010 under Roberts' contract # 3661-T. Filters #3 and #5 were inspected.

When entering the filter gallery from the street side, filter 1 (2210) is closest to the control room and filter 5 (2250) is the last filter.

The plant treats ground water from multiple wells. The pressure filters were designed with a 19" depth of 0.30 -0.35mm Greensand Plus topped with an 18" depth of 0.70 – 0.80 mm anthracite. The units have PVC air grids and header/lateral underdrains buried under 12" depth of graded support gravel.

Observations

Upon to the author's arrival on Tuesday, 04/01/25, filter #3 (2230) and filter #5 (2250) were taken off-line, drained and opened. Prior to entering the filter, an O_2 monitor was used to confirm that safe oxygen levels existed within the filter tanks. An O_2 monitor was worn continuously by the service technician while in the filters.

Tanks and Components

The painted steel tanks are in excellent condition. No structural concerns were identified on the interior or exterior of the tanks. The inlet distributors are in good condition and are within acceptable level tolerances.

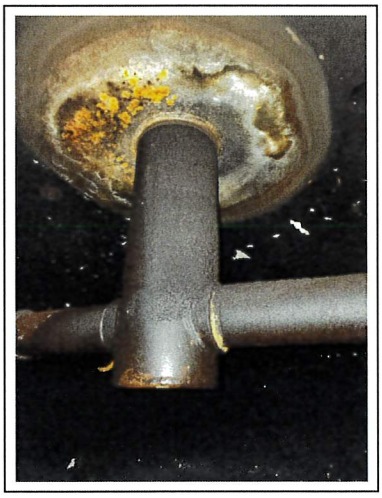


Figure 1 – Inlet distributor in Filter #5 (2250). The white area at top is where air accumulates during a filter run

Filter Media

The filter media surface in both filters was in excellent condition. No significant mounds or other surface irregularities to report. Some minor iron accumulation is present of the media surface.

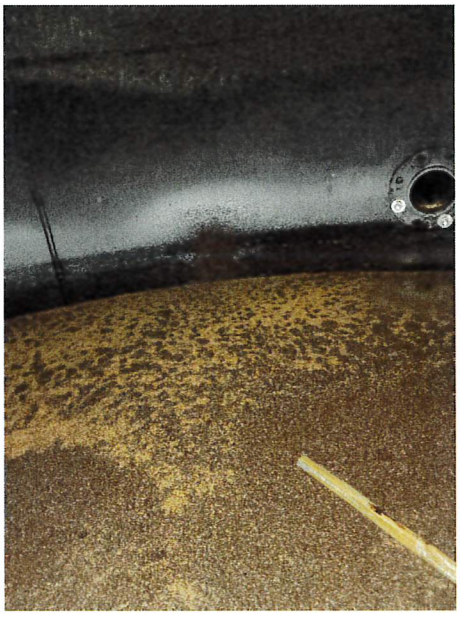


Figure 2 - Example of media surface in filter 3 (2230). Flat and generally free of debris

Media Excavations / Core Sampling

Media was manual excavated down to the support gravel in one (1) location within each filter.

Samples from each type of media were collected and one (1) quart samples of the Greensand Plus and anthracite were forwarded for laboratory evaluation. Results of the testing for uniformity coefficient and effective size have been provided at the end of this report.

Description	Greensand Plus	Intermix	Anthracite
Design	E.S. 0.30 – 0.35mm UC ≤ 1.5 Depth – 19"	0"	E.S. 0.7 – 0.80 mm UC ≤ 1.65 Depth – 18"
Filter 3	E.S. 0.36 mm UC = 1.44 Depth – 5"	2"	E.S. 0.75 mm UC = 1.32 Depth – 16"
Filter 5	E.S. 0.35 mm UC = 1.39 Depth – 12"	1"	E.S. 0.76 mm UC = 1.27 Depth – 18"

Media Results

Through the evaluation of Roberts original design drawings, the design free board was calculated to be approximately 37 ½". This measurement is from the top of the up-turned influent distributor elbows to the media surface. Current freeboard values are below.

Filter	Freeboard
3	42"
5	42"

The following observations were also made:

1. Filter freeboard is approximately 5" greater than design. This suggests that each filter has lost approximately 40 cubic feet of filter media. Up to ½' of media loss per year is considered "acceptable".

2. Multiple filter media depth measurements were collected from Filter #5. The media depth measurements varied greatly, from 24" to 36". This variance suggest that Filter #5 has experienced significant gravel migration. It is likely that the shallow Greensand Plus depth measurement from Filter #3 is also a reflection of gravel displacement and not necessarily only Greensand Plus loss.

Air Scour

Following each inspection, the filters were refilled by opening the effluent valve. Once the water level was above the filter media surface, the effluent valve was again closed and the air scour system in each vessel was tested. Air scour distribution was excellent in each of the filters tested.

Figure 2: Air Scour pattern from filter #3 (2230)

Conclusions / Recommendations

1. The drain down screens in filters 3 and 5 were clean and in good condition. These screens tend to foul, which will interfere with the filter drain down prior to backwash. Be sure to inspect these screens during all future inspections.

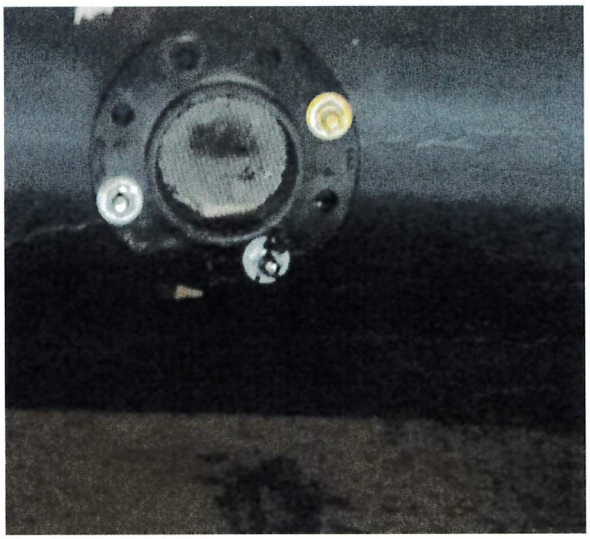


Figure 3: Drain down-screen in filter #5 (2250)

2. Both Filter 3 and Filter 5 appear to have significant gravel migration. This is likely the primary reason the Greensand Plus measurements are so shallow. By comparing the freeboard measurements to the design measurement, we can estimate that each filter has lost approximately 4 ½" of media.

   The gravel migration present is likely being caused by the plant's operating procedure of refilling empty filters using the filter influent (filling empty tanks from the top). This practice will often cause air to become entrained in the filter media and will can cause significant gravel migration. WSP has already worked with the plant to develop a new procedure where empty filters are refilled slowly, from the bottom, using backwash/finished water.

   The gravel migration in Filters 3 and 5 is substantial enough to suggest that filter rehabilitation / re-bedding is recommended. Consideration should be given to rebuilding these five (5) filters before gravel/media migration begins to impact filter and underdrain performance.

MATERIAL ANALYSIS

PROJECT:	SEABROOK, NH	**PROJECT NO.:**	3891
CLIENT:	WATER SERVICE PROFESSIONALS OF PA, INC. 10 PETTITS BRIDGE ROAD JAMISON, PA 18929	**DATE:**	4/23/25

On April 17, 2025, four filter media samples were delivered to our laboratory for sieve analyses. All testing was performed in accordance with AWWA Specification B100-16. Following are the test results:

ANTHRACITE (#30)		
Sieve Size (ASTM C136)	**Particle Size (mm)**	**% Passing**
#12	1.729	100.0
#14	1.446	99.9
#16	1.201	95.8
#18	1.013	70.1
#20	0.884	28.1
#25	0.699	3.3

Test	**Result**
Effective Size (mm)	0.75
Uniformity Coefficient	1.32

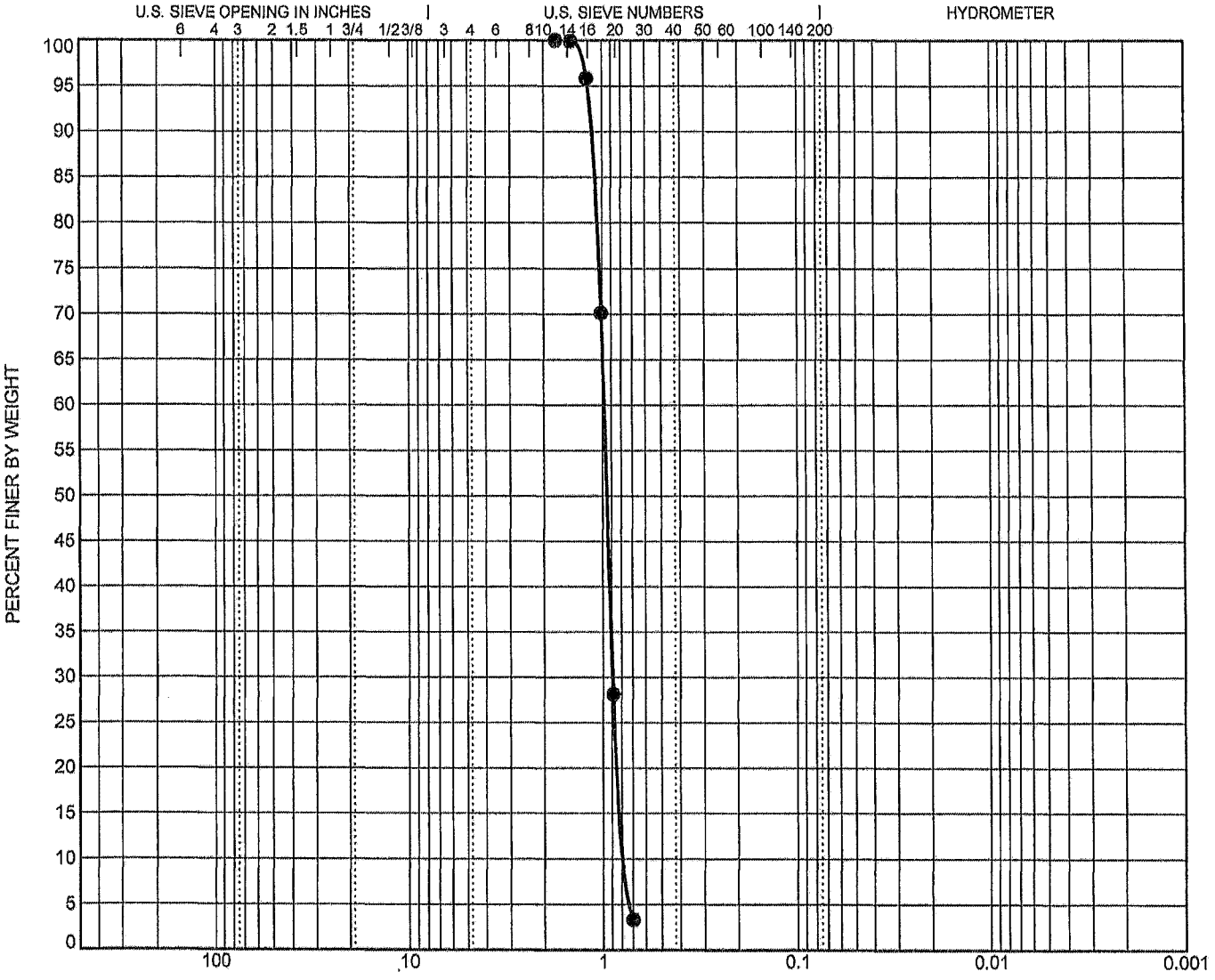
ANTHRACITE (#50)		
Sieve Size (ASTM C136)	**Particle Size (mm)**	**% Passing**
#14	1.446	100.0
#16	1.201	97.9
#18	1.013	77.6
#20	0.884	25.8
#25	0.699	1.6

Test	**Result**
Effective Size (mm)	0.76
Uniformity Coefficient	1.27

Attachments (2 pages)

REPORT NO. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



% +3"	%Gravel	%Sand	%Silt	%Clay
0.0	0.0			

LL	PI	D90	D60	D50	D30	D15	D10	Cc	Cu
		1.155	0.98	0.949	0.889	0.781	0.745	1.08	1.32

REMARKS	USCS	AASHTO

PROJECT NUMBER 67:3891

PROJECT NAME WATER SERVICE PROFESSIONALS 2025 - VARIOUS

LOCATION Seabrook, NH

DATE 4/22/25

MATERIAL DESCRIPTION

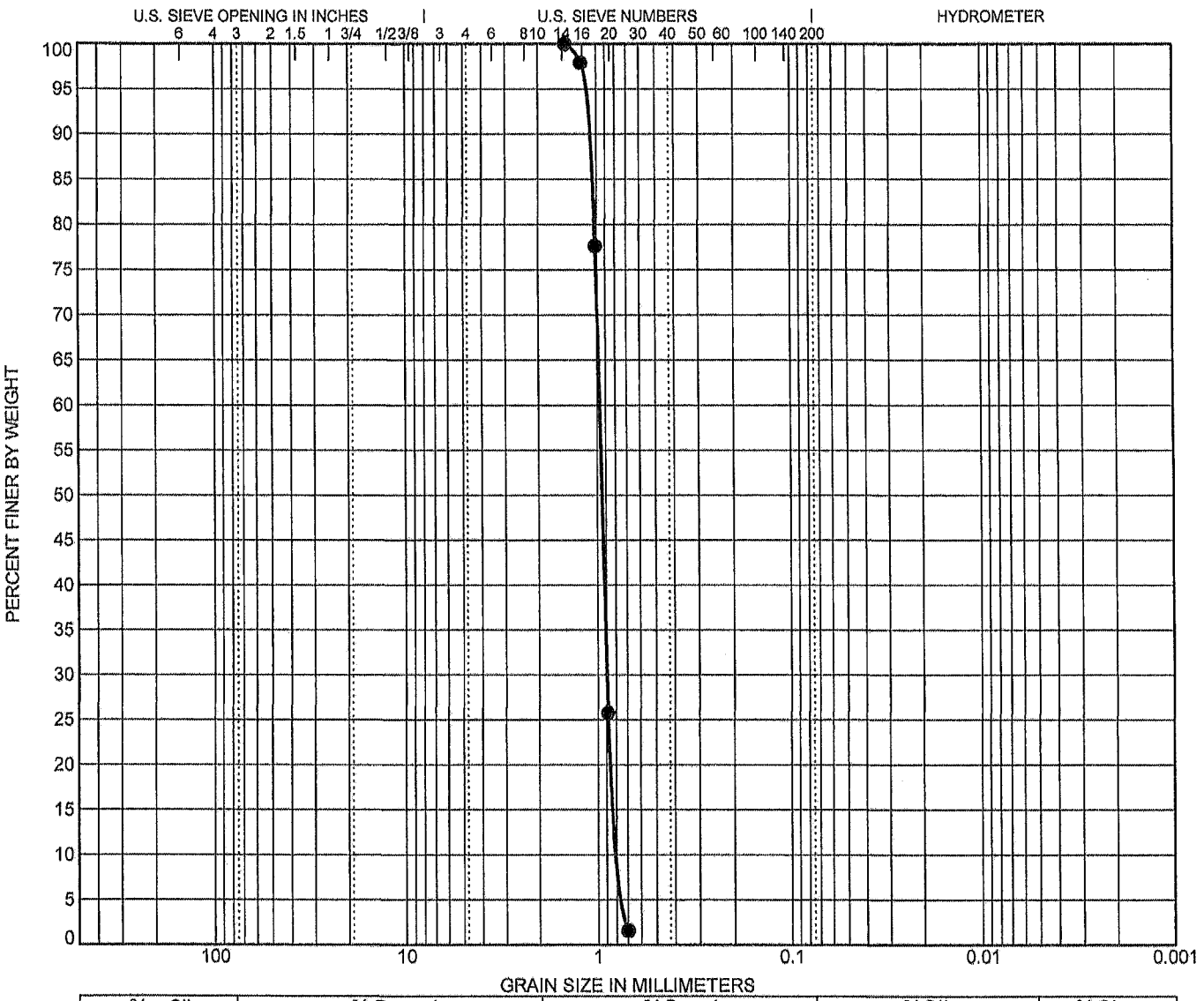
Anthracite (#30)

ECS Midwest, LLC
1125 Valley Belt Road
Brooklyn Heights, Ohio 44131
Telephone: 216-741-7007
Fax: 216-741-7011

CURVE # ____

REPORT NO. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



% +3"	%Gravel	%Sand	%Silt	%Clay
0.0	0.0			

LL	PI	D90	D60	D50	D30	D15	D10	Cc	Cu
		1.124	0.967	0.942	0.894	0.796	0.759	1.09	1.27

REMARKS	USCS	AASHTO

PROJECT NUMBER 67:3891

PROJECT NAME WATER SERVICE PROFESSIONALS 2025 - VARIOUS

LOCATION Seabrook, NH

DATE 4/22/25

MATERIAL DESCRIPTION

Anthracite (#50)

ECS Midwest, LLC
1125 Valley Belt Road
Brooklyn Heights, Ohio 44131
Telephone: 216-741-7007
Fax: 216-741-7011

CURVE # _____

MATERIAL ANALYSIS

PROJECT:	SEABROOK, NH	**PROJECT NO.:**	3891
CLIENT:	WATER SERVICE PROFESSIONALS OF PA, INC. 10 PETTITS BRIDGE ROAD JAMISON, PA 18929	**DATE:**	4/23/25

GREENSAND PLUS (#30)		
Sieve Size (ASTM C136)	**Particle Size (mm)**	**% Passing**
#20	0.879	100.0
#25	0.696	91.4
#30	0.579	74.3
#35	0.492	53.5
#40	0.404	25.0
#45	0.346	5.0
#50	0.288	0.8

Test	**Result**
Effective Size (mm)	0.36
Uniformity Coefficient	1.44

GREENSAND PLUS (#50)		
Sieve Size (ASTM C136)	**Particle Size (mm)**	**% Passing**
#20	0.879	100.0
#25	0.696	95.3
#30	0.579	80.7
#35	0.492	60.9
#40	0.404	31.6
#45	0.346	7.6
#50	0.288	1.1

Test	**Result**
Effective Size (mm)	0.35
Uniformity Coefficient	1.39

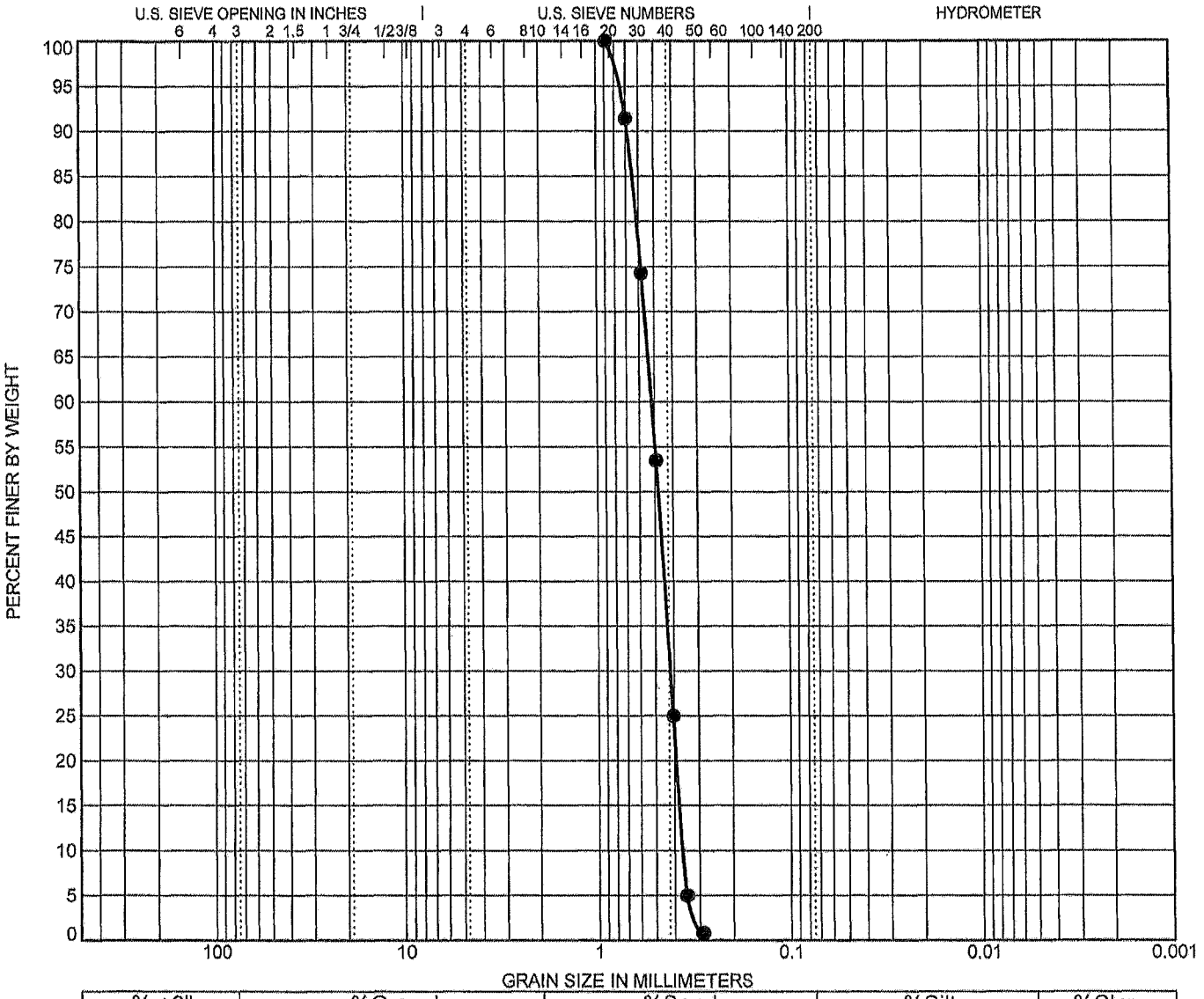
If you have any questions, please do not hesitate to contact our office.

TECHNICIAN: DONALD HOLLENBAUGH

Attachments (2 pages)

REPORT NO. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



% +3"	%Gravel	%Sand	%Silt	%Clay
0.0	0.0			

LL	PI	D90	D60	D50	D30	D15	D10	Cc	Cu
		0.689	0.519	0.48	0.418	0.374	0.36	0.94	1.44

REMARKS	USCS	AASHTO

PROJECT NUMBER 67:3891

PROJECT NAME WATER SERVICE PROFESSIONALS 2025 - VARIOUS

LOCATION Seabrook, NH

DATE 4/22/25

MATERIAL DESCRIPTION

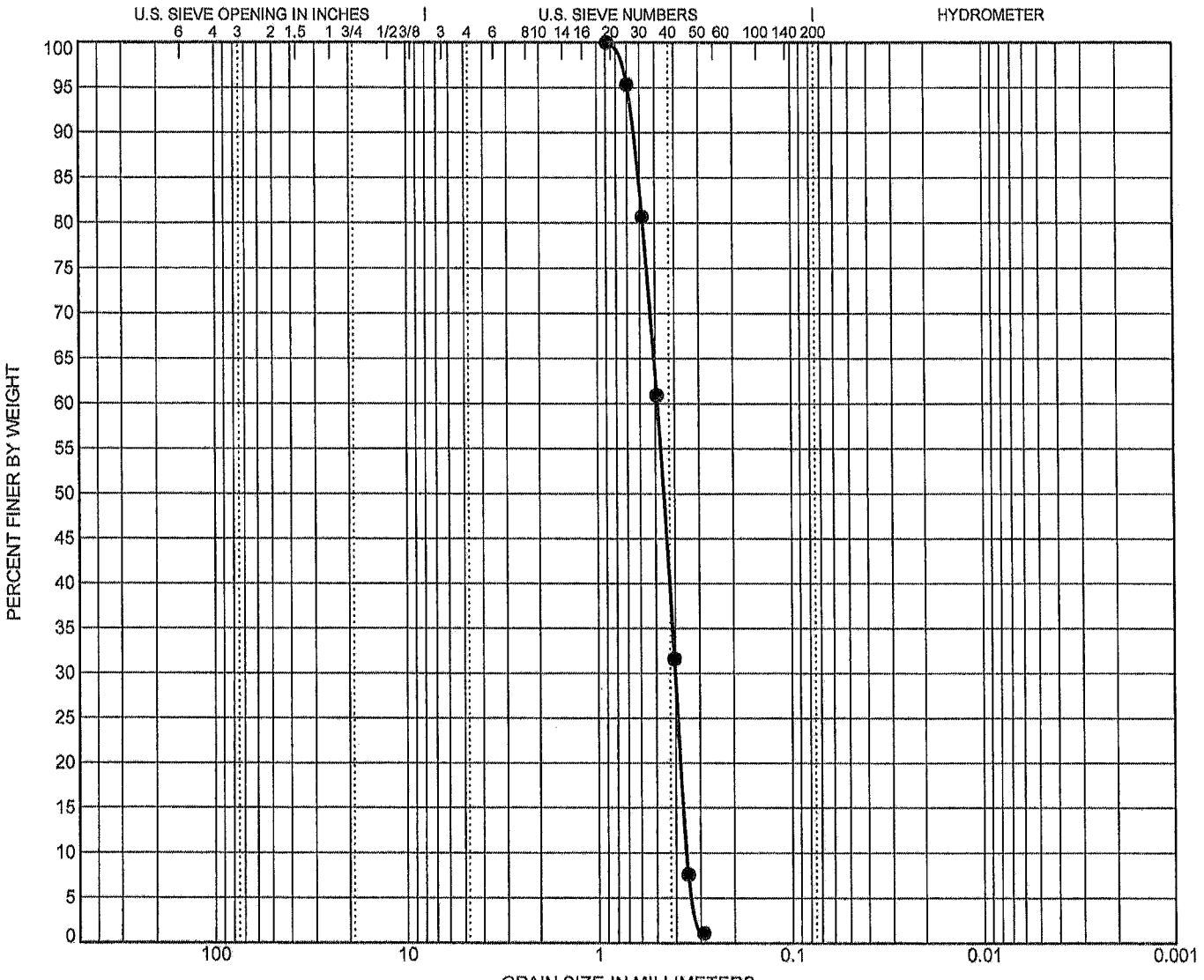
Greensand Plus (#30)

ECS Midwest, LLC
1125 Valley Belt Road
Brooklyn Heights, Ohio 44131
Telephone: 216-741-7007
Fax: 216-741-7011

CURVE # ____

REPORT NO. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



% +3"	%Gravel	%Sand	%Silt	%Clay
0.0	0.0			

LL	PI	D90	D60	D50	D30	D15	D10	Cc	Cu
		0.654	0.489	0.457	0.4	0.363	0.351	0.93	1.39

REMARKS	USCS	AASHTO

PROJECT NUMBER 67:3891

PROJECT NAME WATER SERVICE PROFESSIONALS 2025 - VARIOUS

LOCATION Seabrook, NH

DATE 4/22/25

MATERIAL DESCRIPTION

Greensand Plus (#50)

ECS Midwest, LLC
1125 Valley Belt Road
Brooklyn Heights, Ohio 44131
Telephone: 216-741-7007
Fax: 216-741-7011

CURVE # _____

GEOSPHERE
ENVIRONMENTAL MANAGEMENT INC.

Mr. George Eaton
Chief Operator
Seabrook Water Department
550 Route 107
Seabrook, NH 03874

May 15, 2025

Re: Gravel Packed Well GPW #2
Redevelopment Activities
Project Completion Report

Dear George,

Geosphere Environmental Management, Inc. (GEOSPHERE) is pleased to submit this Project Completion Report to Seabrook Water Department (SEABROOK). This report outlines the activities that occurred as part of the redevelopment of gravel packed well GPW #2 and highlights the major aspects of the completed activities and results that took place between October 15, 2024 and March 31, 2025.

PROJECT TASKS

The redevelopment of Sand and Gravel Well GPW #2 consisted of the following three tasks:

- **Task 1** – Remove and Replace Existing Well Pump and Equipment for Inspection
- **Task 2** – Downhole Video Inspection of GPW #2
- **Task 3** – Redevelopment of GPW #2 Using Traditional Chemical Methods

PROJECT SUMMARY

The completion summary of Task 1 through Task 3 is outlined is as follows:

Task 1 – Remove and Replace Existing Well Pump and Equipment for Inspection

SEABROOK contracted Barrie Miller Well and Pump (Barrie Miller) to pull the existing pump and associated equipment from GPW #2. GEOSPHERE provided all oversight and project management of this task. On October 15, 2024, Barrie Miller personnel removed 37 feet of 6-inch diameter column pipe. Significant layers of iron bacteria were observed both inside and outside of the four (4) sections of column pipe (see photographs in **Attachment A**). Significant iron/manganese fouling was observed on the existing Goulds submersible 50-hp motor (Model: SRJHO) or the 6-foot long by 8-inch diameter shroud that covered the well pump and motor. GEOSPHERE filed for a temporary groundwater discharge permit with Jonathan Whaland of NHDES for the discharge of surge water during redevelopment activities. A copy of the temporary groundwater discharge permit is provided in **Attachment B**.

51 PORTSMOUTH AVENUE, EXETER, NEW HAMPSHIRE 03833
Telephone: 603-773-0075 Fax: 603-773-0077
www.geospherenh.com

Task 2 – Downhole Video Inspection of GPW #2

On October 15, 2024, prior to redevelopment activities, Barrie Miller attempted a downhole video inspection of GPW #2. Due to equipment malfunction, no video was able to be recorded. However, some observations were able to be made based on visuals and short cellphone videos. Iron bacteria buildup was observed on the screen, especially near the top of it. Copies of the pre-redevelopment downhole video clips are included under **Electronic Attachments**.

On January 16, 2025, a post-redevelopment downhole video was performed. The screen was observed to be very clean and in good condition.

GEOSPHERE has been unable to acquire the post-redevelopment downhole video from Barrie Miller, but will send it to SEABROOK upon acquisition.

Task 3 – Redevelopment of GPW #2 Using Traditional Chemical Method

On October 15, 2024, redevelopment equipment was installed in GPW #2. Two (2) 24-inch diameter surge blocks were installed at a depth of approximately 48-feet btoc and 40-feet btoc.

On October 16, 2024, Barrie Miller performed a 1-hour pre-redevelopment specific capacity test. Water was pumped to waste into a temporary overflow/settling basin. Static water level prior to the test was measured at 21.19 feet below top of casing (btoc). The well was pumped at an initial rate of 88 gallons per minute (gpm), but was increased to 137 gpm by the end of the test. At the end of the 1-hour pre-redevelopment test, a drawdown of 7.66 feet was observed; resulting in a pre-redevelopment specific capacity of 13.7 gpm/foot of drawdown (gpm/ft. DD).

On October 17, 2024, periodic pumping and surging continued for approximately 4-hours. Upon the conclusion of pumping and surging intervals, 55-gallons of muriatic acid was added to the well and allowed to sit overnight in order to penetrate the screen and surrounding formation.

On October 18, 2024, the well was surged for approximately 4 hours before adding soda ash to the discharge basin to neutralize the acid. The well was then pumped and surged periodically for approximately 4.5 hours. Chlorine was then added to the well and let set over the weekend.

On October 22, 2024, the well was periodically pumped and surged for approximately 5 hours. A dechlorinate was then added and the well was pumped for an additional hour.

On October 23, 2024, the well was periodically pumped and surged and Barrie Miller ran a 1-hour specific capacity test. The 1-hour specific capacity test resulted in a specific capacity of 40.29 gpm/ft. DD (224 gpm with 5.56 feet of drawdown). This specific capacity demonstrates an increase of 125.3% from the pre-redevelopment specific capacity of 17.88 gpm/ft. DD.

On February 13, 2025, as requested by SEABROOK, Barrie Miller arrived with 38.6 feet of new 6-inch column assembly to replace the column pipe. A new pump (Model: FW10IC) was installed, along with a new motor shaft to replace the rusted out pieces. Additionally, the motor was reconditioned to improve performance.

On March 31, 2025, an additional 4-hour specific capacity test was run by SEABROOK which resulted in a specific capacity of 28.4 gpm/ft. DD (202 gpm with 7.1 ft of drawdown). The withdrawal rate was run at approximately 200 gpm for the entirety of the 4-hour test. The results of this 4-hour specific capacity test are included as **Attachment C**.

CONCLUSIONS AND RECOMENDATIONS

1. As a result of redevelopment activities, GPW #2's specific capacity has been improved to 40.29 gpm/ft. DD. This specific capacity rating is 125.3% greater than the original specific capacity rating (17.88 gpm/ft. DD) of GPW #2 at the beginning of the redevelopment.

2. GEOSPHERE recommends that when there is a decrease in specific capacity of 15% - 20%, a well should be redeveloped. This is shown in **Attachment D**.

If you have any questions or require further information, please do not hesitate to contact our office.

Sincerely,
GEOSPHERE ENVIRONMENTAL MANAGEMENT, INC.

Raymond W. Talkington, Ph.D., P.G.,
President/Principal Hydrogeologist

Sophia Carson
Project Hydrogeologist

Attachments

Attachment A – Photographs
Attachment B – Temporary Groundwater Discharge Permit NHDES
Attachment C – Seabrook 4-hour Specific Capacity Test Results
Attachment D – Specific Capacity vs. Time Plot
Electronic Attachment – Downhole Video Inspections

Attachment A

Photographs

PHOTOGRAPHS
GPW #2 Redevelopment

October 2024

Discharge Catch Basin

PHOTOGRAPHS
GPW #2 Redevelopment

October 2024

Pre-Redevelopment Column Pipe with Iron Buildup

Attachment B

Temporary Groundwater Discharge Permit NHDES

TEMPORARY GROUNDWATER DISCHARGE PERMIT APPLICATION

Drinking Water and Groundwater Bureau
Groundwater Discharge Program

RSA/Rule: RSA 485-A:6, VII; 485:3, X; Env-Wq 402

The TEMPORARY GROUNDWATER DISCHARGE PERMIT is a nonrenewable permit issued under RSA 485-A:13 and Env-Wq 402 for the temporary discharge of nondomestic wastewater including that which has received treatment by best available technology. (Examples include groundwater remediation, dewatering projects, pump tests, discharges or treated water to the ground or groundwater, etc.)

SUBMIT:

- ONE SIGNED AND COMPLETED APPLICATION TO THE MUNICIPALITY IN WHICH THE DISCHARGE WILL OCCUR.
- ONE SIGNED AND COMPLETED APPLICATION TO NHDES AT THE ADDRESS BELOW.

TO: NHDES/Water Division
Drinking Water & Groundwater Bureau
Discharge Permit Coordinator
P.O. Box 95
Concord, NH 03302-0095

If you have any questions, please contact the Discharge Permit Coordinator at (603) 271-2858.

FOR STATE USE ONLY

Date Received: _____
Site No: _____

Rivers Coordinator Notified Date: _____

CERTIFICATION OF MUNICIPAL NOTIFICATION

In order to meet the requirements of Env-Wq 402, the undersigned certifies that on 9/24/24 (date) a copy of this completed permit application was given to the Town/City Clerk of **Seabrook, NH** (the town in which the proposed discharge will be located).

Date: 9/24/24 Signed: Laura Kaehler
Applicant (Landowner)

I. Facility

Name: Seabrook Water Supply Well GPW #2		
Address: 46 True Road		
City: Seabrook	State: NH	ZIP: 03874
Latitude & Longitude of discharge point(s): 42.8939, -70.9134		
Property Tax Map: 2	Lot Number 5	

II. **Applicant** (if you are a contact person for the applicant check this box ☒)

Name: Lauren Kaehler – Geosphere Environmental Management, Inc.		
Daytime Telephone: (603)773-0075 ext. 12	Fax:	
Mailing Address: 51 Portsmouth Ave		
City/Town: Exter	State: NH	ZIP: 03833
Email Address (Contact Person): lkaehler@geospherenh.com		
Contact Person Telephone: See Above	Fax:	

III. Facility Owner (complete only if different from Applicant)

Owner Name: George Eaton	☐Owner	☒Operator
Daytime Telephone: (603)474-9921		
Mailing Address: 550 Route 107		
City/Town: Seabrook	State: NH	ZIP: 03874
Email Address (Contact Person): gmeaton@seabrooknh.org		
Contact Person Telephone: See above	Fax:	

IV. Property Owner (complete only if different from Applicant or Facility Owner)

Name:		
Daytime Telephone:		
Mailing Address:		
City/Town:	State:	ZIP:
Email Address (Contact Person):		
Contact Person Telephone:	Fax:	

V. Please provide the following information related to the proposed temporary discharge:

a. The purpose of the temporary discharge (e.g. groundwater remediation, well rehab or pumping test, construction dewatering, etc.).
Well Redevelopment

b. Proposed Discharge Location

☒ Include a clear color copy of a USGS topographic map or equivalent map which depicts the facility or site location, the discharge location and the location of the closest sanitary sewer.

Location of discharge, if different from facility:

Address:		
City:	State:	ZIP:
Latitude & Longitude of discharge point(s):		
Property Tax Map:	Lot Number	

c. Location of closest sanitary sewer:
None available

d. Proposed Discharge Rate
Proposed starting date: October 2024
Estimated discharge: Up to 250 gpm for 4 hours per day
Estimated number of days discharge will be required: 5 days

e. Proposed Discharge Method
Describe the method and materials used for the temporary discharge; include a description of any erosion control measures used at the point of discharge:
Pump discharge directly into a holding tank for energy dissipation, sediment removal, and neutralization of acid/chlorine, as necessary. Overflow onto the ground, on to tarp with haybales surrounding for further dissipation. Infiltration into the ground, on site.

VI. Groundwater Contamination Information, Treatment and Discharge Monitoring

a. Provide a summary of the most recent groundwater monitoring results, including total VOCs (laboratory results should also be attached to the application) of the source water for the temporary groundwater discharge:

Location	Compound(s) Exceeding Water Quality Standards	Concentrations (ug/L)
	None anticipated – existing water supply	

b. Proposed Treatment
Type of treatment proposed (include a description of the wastewater, information on influent and effluent water quality and on sludge or other by-products generated:
If acid is to be used, development water will be pumped into a holding tank for neutralization and sediment removal. The overflow of the tank will be onto tarp and into energy dissipating haybales. Residual chlorine will be neutralized before discharge in a similar way.

c. Provide a description of the proposed monitoring and sampling program for the water discharged at the site (applicable only if the source water for the discharge is known to contain, or is anticipated to contain, contamination):
pH will be monitored if acid neutralization is necessary.

Applicant/Owner Certification Statement and Signature

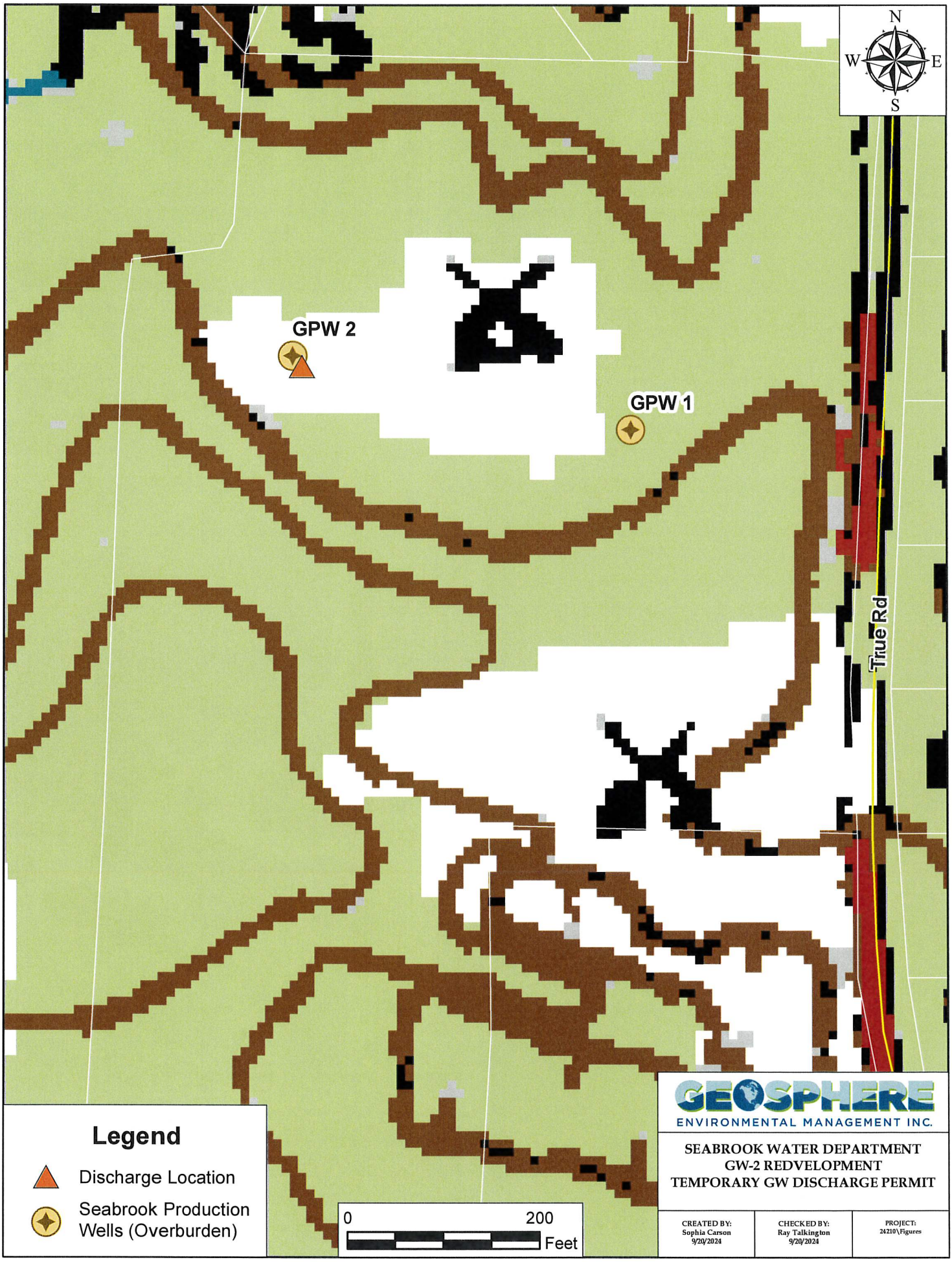
☒**By signing this application the signer certifies that the information contained in or otherwise submitted with this application is true, complete and not misleading to the best of the signer's knowledge and belief.**

☒**By signing this application the signer understands that submission of false, incomplete or misleading information is grounds for:**

- **Denying the application;**
- **Revoking any application that is granted based on the information; and**
- **If the signer is acting as, or on behalf of, a listed engineer as defined in Env-C 502.10, debarring the listed engineer from the roster.**

☒**By signing the application, the signer and applicant agree to comply with all applicable rules and conditions of this permit and to not discharge to the holding tank(s) until written permission from the department has been received.**

Signature of Applicant or Contact	Date 9/20/24
Signature of Facility Owner (if not Applicant)	Date 9/20/24
Signature of Property Owner(if not Applicant or Facility Owner)	Date



GEOSPHERE
ENVIRONMENTAL MANAGEMENT INC.

SEABROOK WATER DEPARTMENT
GW-2 REDVELOPMENT
TEMPORARY GW DISCHARGE PERMIT

CREATED BY:	CHECKED BY:	PROJECT:
Sophia Carson 9/20/2024	Ray Talkington 9/20/2024	24210\Figures

GEOSPHERE
ENVIRONMENTAL MANAGEMENT INC.

SEABROOK WATER DEPARTMENT
GW-2 REDVELOPMENT
TEMPORARY GW DISCHARGE PERMIT

CREATED BY:	CHECKED BY:	PROJECT:
Sophia Carson 9/20/2024	Ray Talkington 9/20/2024	24210\Figures

Attachment C

Seabrook 4-hour Specific Capacity Test Results

150 → 200 GPM

Pumping Test Data for (By RL & _____) G.F. well #2 3/31/25

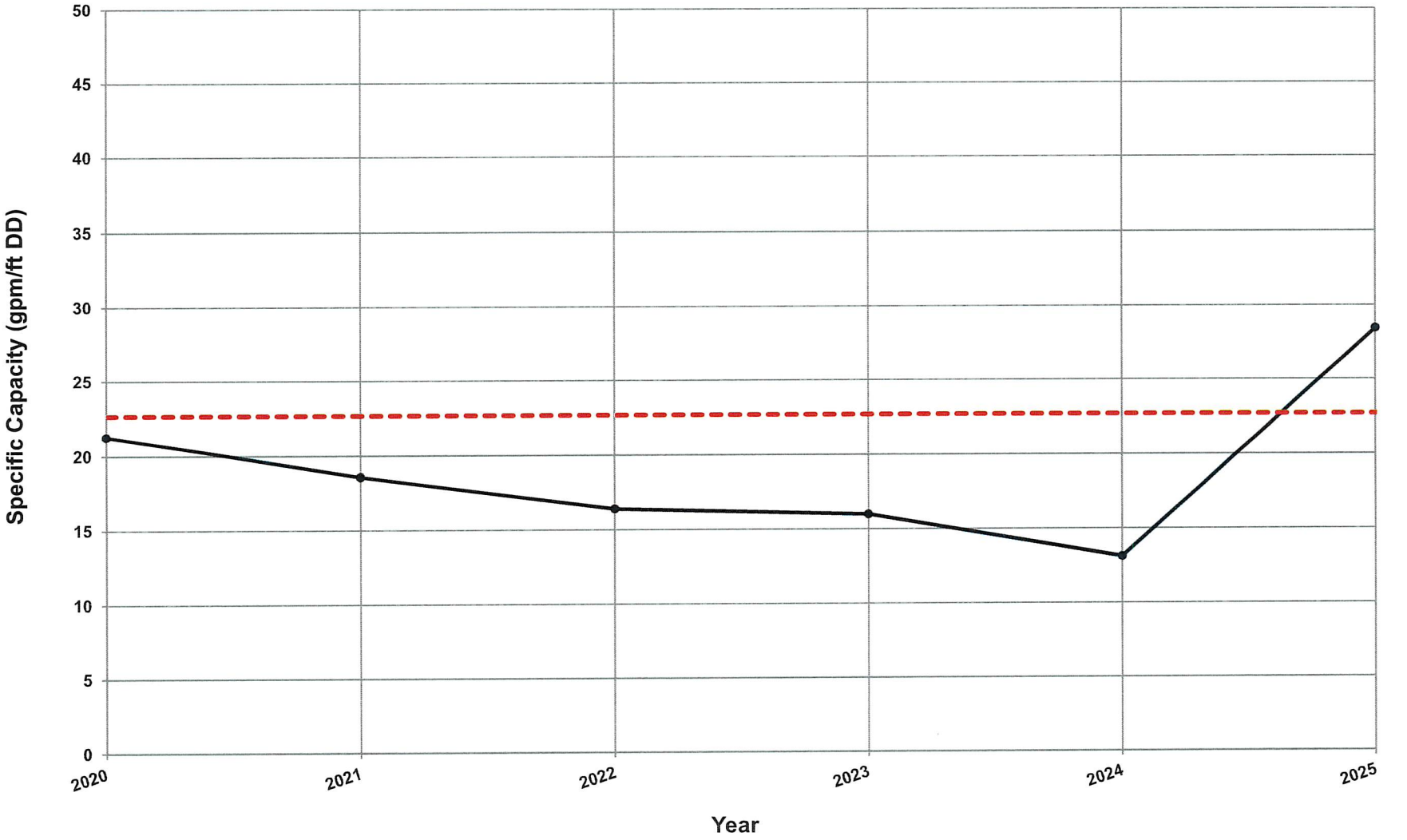
Date 3/31/25	Time (Minutes)	Static W.L. (Feet) Electric Tape	Pumping Rate GPM	Pumping Level (Feet) Electric Tape	Water Level (Feet) Transducer/PLC	Drawdown	Specific Capacity (gpm/foot DD)
Obs Well	24.8	(1)	(2)	(3)	(4)	(5) = (3) - (1)	(6) = (2)/(5)
	0	–	–	–	13.6	–	–
8:00 AM	15	28.5	133	–	11.0	3.7	35.9
8:15 AM	30	30.7	200	–	7.8	5.9	33.8
8:30 AM	45	31.0	200	–	7.4	6.2	32.2
8:45 AM	60	31.3	202	–	7.1	6.5	31.0
9:00 AM	75	31.3	199	–	7.1	6.5	30.6
9:15 AM	90	31.4	200	–	7.0	6.6	30.3
9:30 AM	105	31.5	201	–	6.9	6.7	30.0
9:45 AM	120	31.6	201	–	6.9	6.8	29.5
10:00 AM	135	31.7	200	–	6.8	6.9	28.9
10:15 AM	150	31.7	201	–	6.8	6.9	29.1
10:30 AM	165	31.7	202	–	6.7	6.9	29.2
10:45 AM	180	31.8	203	–	6.7	7.0	29.0
11:00 AM	195	31.8	202	–	6.6	7.0	28.8
11:15 AM	210	31.8	203	–	6.6	7.0	29.0
11:30 AM	225	31.8	202	–	6.6	7.0	28.8
11:45 AM	240	31.9	203	–	6.5	7.1	28.5
12:00 PM	Rec. in 20 min.	31.9	202	–	6.5	7.1	28.4
12:20 PM	–	25.9	–	–	12.5	–	–

- Transducer Verification: _____ + _____ - 7.25 (PVC Length) = _____ vs 250.00 (transducer length below top well casing)

Attachment D

Specific Capacity vs. Time Plot

Seabrook Water Department
GPW #2
Specific Capacity vs. Time



TOWN OF SEABROOK WASTEWATER DEPT
PO Box 456 • 274 State Route 286
Seabrook, NH 03874
(603) 474-8012

April 28, 2025

Dear Resident/Homeowner,

The department has seen a significant increase in service calls to the pump station located at:

31 Worthley Ave

If you are receiving this letter your home / property is in the zone that discharges to this station. In an effort to keep this pump station working as efficiently as possible and to avoid catastrophic failure, we are asking that you review the attached flyer and adhere to these guidelines.

We appreciate your support in helping to keep our sewer system clean!

Tips on how to:

FLUSH SMART

Help Keep Our Sewer System Clean!

A recent survey shows that towns have spent an average of

$40,500

dealing with unflushable items in their sewer systems!

Product labels can be misleading. Some items that claim to be "flushable" can clog sewer systems and lead to costly repairs...

DO NOT FLUSH

Baby wipes	Facial wipes, tissue	Cleaning wipes
Diapers	Cotton swabs, Balls, Pads	Paper towels, rags
Sanitary pads	Makeup sponges, sheet masks	Cooking oil, grease, fats, and motor oil
Tampons & condoms	Dental floss, teeth whitening strips	Medicines, syringes, bandages
Toilet paper tubes, packaging	Hair, hair weaves	Trash, cat litter, charcoal, food items

...Just because things are small enough to flush doesn't mean you should

When in doubt, throw it out!

A Friendly Message From The Sewer Department

COLLECTION SYSTEM CAPACITY, MANAGEMENT, OPERATIONS & MAINTENANCE PROGRAM

2024 ANNUAL REPORT

NPDES PERMIT NO: NH0101303

March 2025

THE TOWN OF SEABROOK,
NH WASTEWATER
DEPARTMENT
274 RTE 286 – WRIGHT'S ISLAND
SEABROOK NH 03874

Table of Contents

ATTACHMENTS

SECTION 1 : Seabrook CMOM Program

A. CMOM Program and Collection System Overview

This annual report provides a summary of completed and planned activities for implementation of the Seabrook Collection System Capacity, Management, Operation, and Maintenance (CMOM) Plan. The Town's CMOM program is an on-going continuous effort to properly maintain the Seabrook NH collection system.

The Town of Seabrook owns and maintains approximately 50-miles of sanitary sewer collection system serving most of the Town's population. Within the collection system network are 74 simplex pumping stations (maintained by the Sewer Department on private property), 2 custom pump stations (Route 286 & Centennial Street), 3 major wastewater pumping stations (Route 107, Rocks Road, Route 1A), 19 minor (duplex) pumping stations, and 2 storm water drain stations. There are no combined sewers in Seabrook.

B. Goals of the CMOM Program

The primary goals of Seabrook's CMOM program are as follows:

1) **Identification of Potential Overflow Sites**
   - **a)** Using the annual sewer inspection and flushing program we will continue to search for suspected or potential overflow sites within the sewer system including gravity sewers, manholes, pump stations and force mains.
2) **Inflow/Infiltration (I/I) Prevention**
   - **a)** Working with the Town's Planning Board, Building Department and through participation on the Technical Review Committee we will continue to monitor and inspect sewer construction activities in Town as new sewer extensions and building service connections are constructed.
   - **b)** Disconnect and/or redirect illegal sump pumps and roof down spouts that are found to be connected to the collection system.
   - **c)** Monitor pump station flow trends to identify acute or chronic (extended) periods of extraneous flows more than average daily/monthly/yearly flows for each pump station.
   - **d)** Continue with the program of sending written notices to resident's whose services are found to be contributing extraneous flow to the sewer system as a result of sewer video inspections and routine maintenance of pump stations.
3) **Public Outreach/Public Education**
   - **a)** Provide town residents with information on the importance of wastewater treatment through our website and by increasing our social media presence. In 2024 we will continue our efforts to educate the public on the importance of capital improvements and funding through our asset management program
   - **b)** Continue the practice of responding to all homeowner requests for assistance with sewer system problems even if problems are suspected to rest solely with the homeowner.
   - **c)** Use all of our outreach methods to educate on the importance of restricting private

sources of extraneous inflow as well as providing guidance documentation on household flushing

4) Emergency Management
   a) Maintain accurate records and expand on the current database of vendors, suppliers and contractors who provide parts, supplies and manpower to assist the Seabrook Sewer Department with responding to sanitary sewer system emergencies.

In the event of an emergency our on-call operator is notified automatically by our SCADA alarm system or by phone. All Public Safety departments are provided with an updated on call rotation schedule and contact list. There are several fail-safe notifications in place to ensure a timely response to all emergencies. Our operators have access to the GIS database and SCADA system remotely by handheld device.

A. Staffing

Staffing at the Seabrook Sewer Department includes: the Superintendent, Chief Operator, Collection System Foreman, Chief Mechanic, Lab Technician, IPP Coordinator, three (3) Operators, one (1) Mechanic, one (1) part time laborer, and a secretary.

Each member of the WWTF and collection systems staff performs multiple duties related to the operation and maintenance of both facilities. The collection system Foreman oversees the maintenance and repairs of collection system components. The Foreman has at his disposal laborers, and operators to carry out the operation, maintenance, repair, and testing functions required to ensure reliable operation of the collection system. Independent contractors are used as needed.

The following positions were vacant and/or filled in 2024:

- **Lab Technician:** In April 2024 our existing lab tech was promoted to IPP Coordinator, the open lab tech position was filled in April when we hired our part time laborer as full time lab technician.
- **IPP Coordinator:** This position was vacated in March when somebody retired, it was filled in April when we promoted the lab technician.
- **Secretary:** This position was vacated in September after somebody retired, and was filled in January of 2025
- **Part Time Laborer:** This position was filled in February, and then vacated again in April.

Training: All new staff members were provided with comprehensive in-house collection system training prior to being placed onto after-hours emergency response duty.

SECTION 1 : Seabrook CMOM Program

B. Information Management

Information management at the facility includes a full Supervisory Control and Data Acquisition (SCADA) system that captures and retains historic data on the collection system operation such as raw wastewater flow into the WWTF; pump station operations,

alarms, loss of power; emergency generator run time (weekly exercise and emergency operation) and pump run time. Preventive maintenance activities pertaining to the collections system have been recorded using the GIS system. Including but not limited to: PS maintenance and repairs, manhole inspections, and flushing logs. All of this information is stored in a web-based system and is easily accessible through the PeopleGISQuickAsset (QA) tool. This tool provides staff the ability to create, issue, and complete asset work orders in the field. Staff can also add missing or incomplete asset information in real-time.

Improvements in Information Management completed in 2024 and planned for 2025 include:

- Continued use of iPads for work order management through GIS and remote operation of the SCADA system
- Finished replacement of pump station PLC's and Radios.
- Continue uploading paper sewer tie card records to GIS for remote access.

C. Annual Budget and Expenditures

The Sewer Department maintains an annual budget for operations and maintenance that is subject to approval at Town Meeting; with a default budget if the main budget is not approved. The annual budget is derived from a combination of sewer user fees and the overall tax base. Capital improvement projects (typically projects in excess of $25,000) are subject to special approval at annual Town Meeting through warrant article. The current funding levels are adequate to operate and maintain the current WWTF and sanitary sewer system.

The Town tracks expenditures for maintenance separately between the collection system and treatment plant facilities. A general breakdown of the collection system maintenance spending is presented in the table below with more important items noted.

Table I

Maintenance Activity	2024 Direct Cost
SCADA and PLC Upgrades	$66,500
Preventative Maint. Program	$22,000
General Maint & Repairs Major PS	$17,000
Sewer Jetting	$13,000
Worthley Pump #1 Replacement	$9,950
Annual Generator Service	$3,275
Generator Repairs	$4,500
Submersible Station Maintenance	$7,000
Lower Collins Manhole Work	$8,750
Centennial Odor Control Media Replacement	$3,300
Centennial PS Repairs	$4,825
TOTAL	*$160,100*

SECTION 2: Management Plan and Budget

Specific line items within the 2024 annual budget related to maintenance include the following. As indicated in Table 2, these budgets are for the department and may include costs for both the collection system and the treatment plant.

Table II

Budget Line Item	2024 Budget
SCADA Upgrades	120,000
New Equipment	70,000
Equipment Maintenance	95,000
Building Maintenance	17,000
Equipment Rental	5,000
Total Sewer Department Budget	**$2,350,816**

D. Warrant Articles Presented in 2024

There were no warrant articles relevant to the collections system on the ballot for 2024.

SECTION 3: Annual Maintenance Program

A. Preventive Maintenance & Monitoring Program

Seabrook maintains an ongoing preventive maintenance program to reduce potential overflows and bypasses caused by malfunctions or failures of the sanitary sewer system. The Town has its own basic video inspection equipment with limited capabilities and jetting equipment. The current annual preventive maintenance program includes the following:

- Annual inspection and sewer main jetting with a goal of inspection and/or jetting an average of 5 miles per year of sanitary sewers.
- Use annual inspections to eliminate extraneous flows from sump pumps, pipe leaks, manhole leaks, etc.
- Manhole maintenance including reset rims and covers, repair brick work and repair leaking or damaged service connections.
- Major pump station maintenance including weekly inspections, complete and thorough cleaning (annually), and comprehensive alarm testing (annually).
- Weekly exercising of pump station generators.
- Repair or replace sewer pipe found to be leaking or damaged.

B. Collection System Activities

- 5.8 miles of gravity sewer cleaned and inspected.
- Annual wet well cleaning and inspection to all town owned pumping stations was completed.
- Repaired wet well isolation gate at Rt 286 pump station after it broke during wet well cleaning.
- Annual service and testing of generators were completed and documented by Scherbon Consolidated Inc.
- All water backflow prevention devices were inspected and serviced, if required.
- Simplex pump station on South Main St was upgraded with new break-away flange, pump, and control panel.
- Worthley Ave pump #1 was replaced.
- A St force main bypass access pipe was dug up and obstructions were removed, making the pipe usable.
- Autumn Way submersible duplex station pump bases upgraded.
- All pump station PLCs and HMIs were upgraded, the master PLC at the facility was also upgraded and SCADA was updated, improving communications with pump stations.
- The Hampton sewer system for Sun Valley was connected to Seabrook's sewer system while the bridge project is underway and the connection will be utilized in the event

Table III

Flushing Log

Street Name	Pipe Length (ft)	Street Name	Pipe Length (ft)
A St	1901	Jean Dr	1400
Amy Dr	400	Mill Ln	1682
B St	1291	New Zealand Rd	1952
B St Cross Count.	1094	Pages Ln	1384
Carroll Ln	900	Pineo Farms	1280
Chase Park Rd	198	Rocks Rd	1788
Chase Way	1796	Route 1	2804
Dearborn Ave	1474	Stard Rd	2133
Foggs Ln	549	Weare Rd	3895
Gove Rd	2002	Whitaker Way	550

30,473 ft (5.77 miles)

C. Industrial Pretreatment Activities

Our Industrial Pre-Treatment Department conducted a total of 4 physical inspections of the 50 hydro mechanical and gravity grease interceptors that discharge directly to the Seabrook sanitary sewer system, issuing one violation warning for failure to properly maintain a grease interceptor to owners of food establishments.

Table IV

Permitting

PERMIT CLASS	JAN 2024	GAIN/LOSS	VIOLATION	JAN 2025
1	5	0/0	0	5
2	7	0/0	0	7
3	91	0/1	0	90
TOTAL	**103**	**0/1**	**0**	**102**

D. New Connections

The Seabrook Sewer Department approved 17 permit applications in 2024 for new connections to the system. Three of these new connections were residential and 14 were commercial connections, all were reviewed and inspected by the collections system foreman.

E. 2025 Planned Collection System Maintenance Activities

For 2025 the Sewer Department has planned the following collection system maintenance andmonitoring activities:

- Regular preventive maintenance activities at main pump stations with corrective maintenance as needed.
- Continued cross training of all staff members to become proficient in all aspects of the various department operations.

SECTION 3: Annual Maintenance Program

- Continue to transfer paper-based collection system information to a digital GIS mapping system.
- Continue with the annual program of sewer main jetting.
- Continue to review current maintenance protocols and ordinance requirements for privately owned sewer collection systems
- Update pump station O&M Manuals and add to our GIS system
- Replacement of worn-out manhole covers and frames during street repaving
- The 2019 Coastal Resiliency grant is being used to harden the facility and its collections system against the impending coastal flooding expected to be more common in the future. We are currently in the planning process.
- Necessary pump replacements at one or more Gorman Rupp stations
- Replace the Centennial St pump station biofilter sections that were damaged during the January 2025 force main repair.
- Repair wet well isolation valve at Centennial St pump station.
- Build inverts in six manholes on Goulds Way, True Rd, and Walton Rd.

SECTION 4: Overflow Response

The Town of Seabrook experienced only one reportable overflow event in 2023.

- 06/13/24: A failure of the power supply to the PLC at our Rocks Rd pump station caused the pumps to not run overnight, an alarm tagging issue in our new master PLC caused the communications failure alarm to not be properly routed through our SCADA system and no alarm was generated. We estimate that 10,000 gallons of raw wastewater overflowed from the pump station wet well before we got it under control.

SECTION 5: System Capacity Evaluation

A. System Capacity

Sewage is conveyed through the sanitary sewer system to the wastewater treatment facility (WWTF). The WWTF was built in 1995 with a design average daily flow (ADF) of 1.8 MGD. Most of the collection system was built around the same time as the WWTF. There are no combined storm water sewers and no combined storm water sewer overflow (CSO) discharge locations in the collection system. There are no known areas within the collection system that have limitations on collections capacity. In 2024 the WWTF operated at an ADF of approximately 0.798 MGD, which is approximately 44% of design flow capacity. The plant was able to handle all peak flows in 2024. See Attachment 4 for a summary of flows for the past five years. Flows in 2024 have shown no significant increase or decrease from the previous years. There were no reported backups in the collection system due to capacity limits in 2024.

Attachment I
Flow History & Solids Table

Seabrook Wastewater Effluent Ocean Discharge Totals

	2020 Monthly Total MG	2020 Daily Avg MGD	2021 Monthly Total MG	2021 Daily Avg MGD	2022 Monthly Total MG	2022 Daily Avg MGD	2023 Monthly Total MG	2023 Daily Avg MGD	2024 Monthly Total MG	2024 Daily Avg MGD
January	21.12	0.68	17.53	0.57	21.90	0.71	25.14	0.81	29.96	0.97
February	19.27	0.66	15.30	0.55	21.58	0.77	21.20	0.76	21.77	0.78
March	20.79	0.67	17.02	0.55	22.24	0.72	25.92	0.84	26.76	0.86
April	21.23	0.71	15.38	0.51	21.84	0.73	22.11	0.74	28.84	0.96
May	20.07	0.65	16.39	0.53	20.98	0.67	25.03	0.81	24.67	0.80
June	18.82	0.63	15.52	0.52	20.96	0.70	23.01	0.77	23.31	0.78
July	20.49	0.66	19.23	0.62	20.38	0.66	25.75	0.83	24.19	0.78
August	20.29	0.66	21.69	0.70	23.14	0.75	25.76	0.83	24.50	0.79
September	16.87	0.56	21.82	0.73	20.52	0.68	24.19	0.81	22.29	0.74
October	17.71	0.57	20.93	0.68	21.32	0.69	22.17	0.72	21.77	0.70
November	17.05	0.57	22.73	0.76	20.33	0.68	20.86	0.70	20.66	0.69
December	17.93	0.58	21.18	0.68	22.45	0.72	25.92	0.84	22.49	0.73
Totals	231.64	MG	224.72	MG	257.64	MG	287.06	MG	291.21	MG
Average per day	0.635	MG	0.616	MG	0.706	MG	0.786	MG	0.798	
MG = million gallons										
% of design flow	35%		34%		39%		44%		44%	
Biosolids wet tons										
Totals	1685	Tons	1714	Tons	1747	Tons	1752	Tons	1656	Tons
dry tons	207		226		230		234		219	

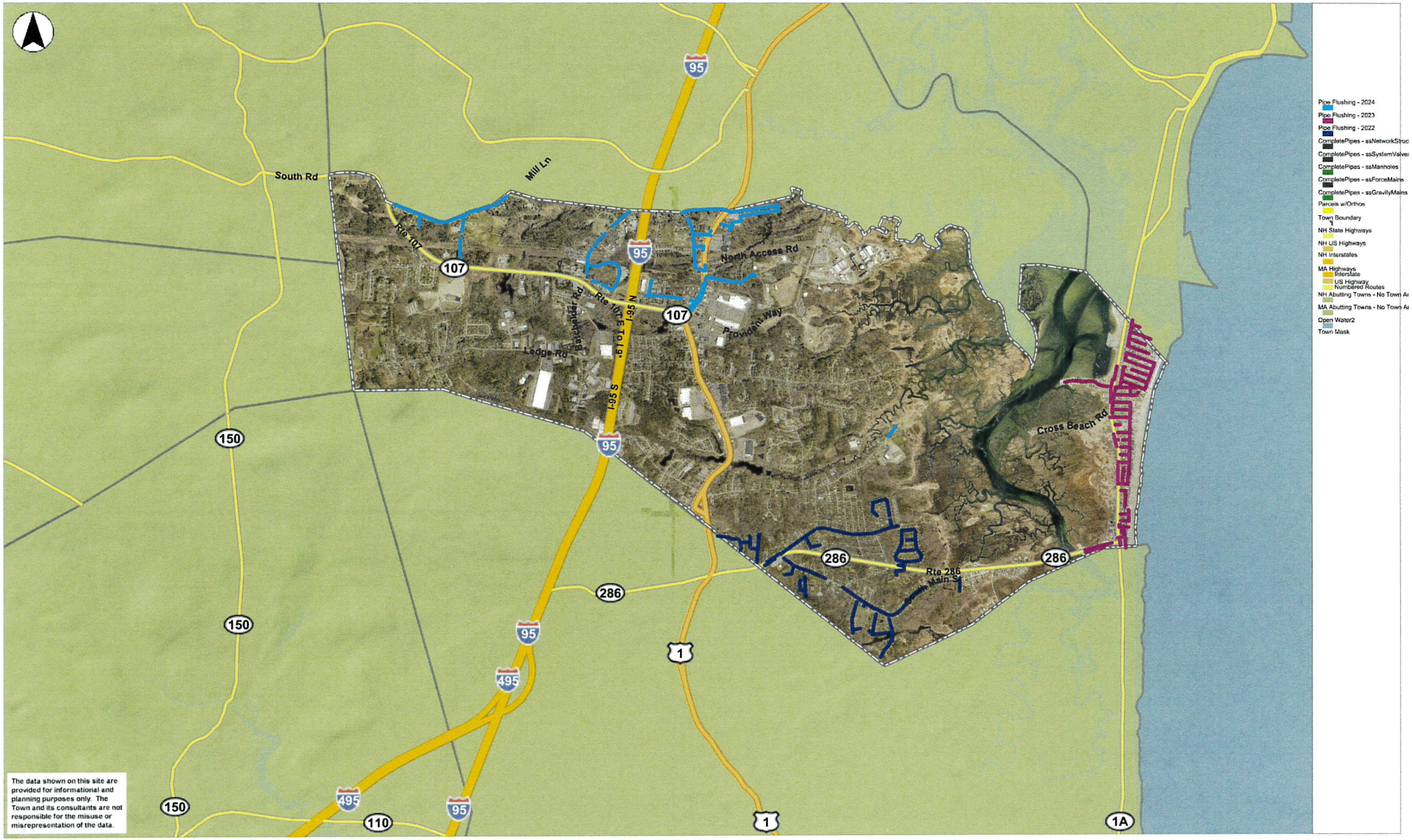
Attachment II
Collection System
Maintenance Map

The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

0 1900 3800 ft

Printed on 04/08/2025 at 08:23 AM

SS Collection System - Seabrook NH



The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

0 3900 7800 ft

Printed on 04/08/2025 at 08:22 AM

SS Collection System - Seabrook NH