United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N 2	3 ME0101009011	12 231208 17	18 C	19 DGB	20 1

Remarks

21 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	BI	QA	Reserved
67 2 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*

Northport Village Corporation
813 Shore Road
Northport Village, Maine 04849

Entry Time/Date
9 am 12/8/23

Permit Effective Date
September 4, 2019 - Filed

Exit Time/Date
12pm 12/8/23

Permit Expiration Date
September 3, 2024

Permit application received?

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

Chuck Applebee
Wastewater and Public Works Director
Northport Village Corporation
813 Shore Road
Northport Village, Maine 04849

Other Facility Data *(e.g., SIC NAICS, and other descriptive information)*

301H discharge.

- Collection system
- Preliminary treatment – grinder pumps
- Flow measurement –weir/ultrasonic
- Coagulant addition ??
- Primary Tanks
- Disinfection
- Dechlorination

Name, Address of Responsible Official/Title/Phone and Fax Number

Bill Paige
Village Agent
Northport Village Corporation
813 Shore Road
Northport Village, Maine 04849

Contacted X Yes ☐ No

Section C: Areas Evaluated During Inspection *(Check only those areas evaluated)*

X	Permit	X	Self-Monitoring Program	X	Pretreatment		MS4
X	Records/Reports		Compliance Schedules		Pollution Prevention		
X	Facility Site Review	X	Laboratory		Storm Water		
X	Effluent/Receiving Waters	X	Operations & Maintenance		Combined Sewer Overflow		
X	Flow Measurement	X	Sludge Handling/Disposal		Sanitary Sewer Overflow		

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

SEV Codes ☐☐☐☐☐ SEV Description _____

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date: 1/19/24
David G. Bowie	MEDEP/Augusta 207 992 7810 David.g.bowie@maine.gov	

Rating codes:
S=Satisfactory M= Marginal U=Unsatisfactory N/C= Not Checked N/A=Not Applicable W=Work in progress, N/E = Not Evaluated or condition unknown

Compliance Schedules and Issues

(use this section to record issues discovered during pre-inspection file review)

Issue	Description
Previous Inspections	8/5/2011, 7/26/2013, 12/5/2014, 8/28/2015, 7/21/2017, 7/27/2018, 8/2/2019
DMR's (incl. Exceedances)	09/2013 – BOD5 excursion; 08/2013 – BOD5 & Enterro excursions; 08/2013 – Enterro excursion.
Permit Compliance	Q, BOD5, TSS, SS, Fecal, Enterro, TRC, pH, Hg. Wet weather plan and O&M Manual for plant and collection required. 530 D form, 503 sludge reporting requirement. Grade I operator required
Spills	None
Enforcement	2003 and 2012 CA - AO 2019
CSO's	No permitted CSOs
WET tests/Priority Pollutants	Only Mercury required annually - NO WET, PP or ACHEM
I+I, collection system condition.	If not already in place the Need to develop a program for systematic cleaning, inspection, and repair of the collection stem components. Plan and work completed must be documented.
Other	

Permit Verification

Permittee	***Exp. September 3, 2024***	Current copy onsite? **YES**
State and EPA permits consistent?	Yes – EPA issued	
List location of all discharge points	Atlantic Ocean Penobscot Bay - 001A	
Discrepancies (describe below)	None	
Name and Mailing address	S	Northport Village Corporation, 813 Shore Road, Northport Village, Maine 04849
Receiving water name and location	S	Atlantic Ocean, West Penobscot Bay 44 22' 51.44" N : 68 57' 02.27" W
Facility changes since last 3560	S	None
Principal product / production rates	S	Domestic sewage with seasonal impact.
New, different, or increased discharges?	S	None
Are all discharges permitted?	S	Yes
Seasonal ??		
Chlorination	S	Hypochlorite used as the disinfectant to meet the Fecal Coliform and Enterro kill requirements – year round chlorination
- Restrictions (flow rate, sliding scales)	S	None
- Issues (tourist, agri. etc.)	S	No issues, but this is a summer influenced area.
Comments:		

Facility Site Review

Facility type Domestic Wastewater Treatment Built: ???? Upgraded: ????			
Major process type Activated sludge, RBC, Lagoon?	Primary settling tanks, disinfection with ocean discharge	Receiving water - Class SB Classification – Ocean	
Operator's Name - Contract		License #	License Level/Type-???
% design capacity for →	Organic Load: Influent?? - 107 # BOD5 effluent limit	Flow: 0.063 MGD limit	
Bypass? No- none designed – local overflows		With chlorination? N/A	
Sewer rate - Not determined – need rate		Last Sewer Use Ordinance update – ?? – needs update??	

Growth Plan?	W	Number of connection and how many are seasonal?
Operational budget adequate?	N/E	Not determined
Capital Equipment and plant upgrade fund?	**N/E**	Not Determined
O&M manual current?		O&M plan last updated 2021, it needs to be reviewed and updated as needed annually by plant staff to include any plant or collection system changes. That annual review and any changes must be documented.
Effective Preventative Maintenance Plan? (describe)	S	Ongoing efforts for plant improvement and maintaining current plant conditions are evident.
Any large equip w/o backup?	No	The generators is singular in its function.
Adequate spare parts available?	Yes	Spare pumps units as needed
Response chain of command?	S	Board – plant contract operator and operations staff
Pollution Prevention(P2) plan?	N/A	
Wet Weather/High Flow plan current?		Wet Weather Plan last updated in July 2022.
I/I, SSE plan?		Need to confirm the presence or absence of any I/I inflow in the collection system and at the plant. ***Has there ever been and is there a planned project?***
Sewer work done since last insp.?	??	Not Determined
Sewer work planned?	??	Not Determined
SPCC plan required? Approved and available?	N/A	The aggregate volume of Oil containers meeting the criteria for inclusion in the SPCC requirement does not even approach 1320 gallons. Because of the proximity to the Ocean, the site should still have any oil/lubricant containers on spill pallets or in containment. Chemical containers are currently being stored on spill containment pallets.

Comments

Staff	Adequate licensed staffing? (Describe)	S	Licensed plant operator on staff
	Written job descriptions?	W	Should be part of O&M manual
	Staff training – Adequate/approprate & complete?	W	Annual ?– Is there a curriculum?
	Does staff maintain collection system and pump stations?	S	Yes – contractor brought in for major work

Contract operator

Facility Site Review (cont.)

Design/Operation problems	Collection System	W	The collection system should be inspected, and the condition of the system components determined. The sources if any inflow and infiltration (I/I) should be determined and plans made to eliminate those contributions.
	Pump Stations	OK	Alarms should be reported to via phone
	I/I System Maintenance	W	Infiltration should be investigated
	Force Mains	OK	
	Backup power	S	Plant and stations have available back up
	Settling Tanks	OK	
	Disinfection	OK	Has controlled dosing system
	Coagulation	W	None currently needed
	Process control	W	Some historic disinfection issues related to solids interference
	Outfall	OK	
Comments			

Safety	Records	S	On site at multiple locations	
	Written SOPs	W	Unknown	
	Training	S	New operator orientation and annual staff – is there a curriculum?	
	SDS sheets	S	SDS sheets are in use and updated as needed	
	Labeling	S	All Chemical tanks and containers are labeled	
	Gas monitors	W	Unknown – Hazardous atmosphere entry or work is performed by contractor	
	Hoist/winch	S	No hoists or winces on site	
	Eye wash stations/emer. shower?	S	Eye wash bottles	
	Washroom	No	N/A	
Comments: Please be sure that any pump stations have safety netting or grates to prevent falls into the stations wet wells. Confined space entry and any work requiring lock out/tag out is done by contractors.				

General	Grounds maintenance	S	Adequately maintained - yes
	Bldg. maintenance	S	Adequately maintained. -yes
	Housekeeping	S	Good
	Equipment/System age	S	varies
	Pump Stations	S	ok
	Security	S	Locked structures, locked power panels and hatches – no Fences
Comments			

Standby power	Available? (describe)	Yes	Diesel unit with belly tank at main pump station
	Runs what?	S	Complete station
	Alarm system?	S	Run alarm with autodialer
	Auto or hand start?	Yes	Auto and hand ??
	Test Run?	S	The plant backup power generator is run how weekly. Under load?
Comments: There is a fixed position generator located at main pump station.			

Pretreatment – N/A – Industrial waste survey was completed the current permit cycle?

Industrial process wastewater accepted? List and describe industries - NONE
Describe pretreatment program (include any problems and enforcement actions since last 3560 inspection). EPA Approved?__N/A_____

Physical Plant – Operation and Maintenance

CSO's	# and location of CSO's	Separated %	Abatement plan available?
	# and location of CSO's recently eliminated		
Comments --- ***No Designed CSOs***			

Main Pump Station	Motor control		Automated primarily	Auto? XXX	Manual? XXX
	Backup Power	S	Generator		
	Type/Size of pump	N/E			
	Spares & Repairs	N/E			
	How often checked	N/E			
	Overflow/bypass	N/E			
	Cleaning & Debris disposal	N/E			
	Maintenance & Logs	N/E			
	Safety issues	N/E			
	Alarm	N/E			
Comments:					

Headworks	Flow Distribution	S	Distribution manhole with isolation valves
	Bar rack/Comminutor	N/A	No
	Screenings	N/A	No – all solids enter tanks
	Grit removal(describe)	S	Settled out in in pump stations and the #1 primary settling tank
	Overflow/bypass	No	
	Debris disposal	S	Landfill
	Maintenance	S	Good
	Odor control	N/A	None?
	Safety issues	S	Ok – non observed - any confined space work is performed by contractor
Comments:			

Physical Plant (cont.)

Primary Settling Tank(s)	How is flow proportionally controlled to the tanks?	S	Flow distribution weirs in splitter manhole
	Number of tanks operated and each tanks volume?	S	(12) 7,750 gallon settling tanks total – (3) separate 4 tank trains, with each train operated in series. Trains are alternated???.
	Sludge Baffles in good shape?	S	Yes- inspected every year
	Scum Baffles in good shape?	S	Yes- inspected every year
	Inspection/Operations & Maintenance Logs	S	Sludge depth checked how often??? . Operation and maintenance logs should be kept and maintained.
	Odor?	S	None today
	Sludge removal - Primary tank	W	Land spread on DEP approved site or taken off island???. Please continue to track document annual amounts generated, disposal method and destination. Determine status relative to any current PFAS and disposal issues.
	Septic Tanks in good shape?	S	Yes?? What is the inspection frequency.
Comments:			

Flow measurement

Type of flow measurement device – 30 degree V-notch Ultrasonic Meter with totalizer and chart		Location? Effluent of settling tanks
Date last commercial calibration? 2023		Contractor
Flow chart adequate for all flow rates?	S	Yes
Flow measurement problems?	?	possibly during high tides?
Flow measurements verified?	unknown	
Comments: A V-notch weir and ultrasonic flowmeter are used to measure flow in this chamber. Hypochlorite solution for disinfection is added prior to the Chlorine Contact tank (CCT). Is there still evidence that the high tide can influence back as far as this chamber, raising the water level on the discharge side of the weir ??. At the time of inspection, the weir and the chamber appeared to be working normally as designed.		

Disinfection	Seasonal?	No- year round chlorination, but ther is a need to increase dosage in the summer. Year round Fecal and Enterro is 4/15 – 10/31			
	Contact Tank	S	Sodium hypochlorite feed to head of CCT.	Detention Time (DT)?	
	Chlorinator	S	Disinfection system contains how two chemical pumps for hypochlorite delivery. Large hypo tank on site.		
	Accumulated Sludge and cleaning	S	Sludge removed from this tank every time the settling tanks are pumped Continue to document the pumping and cleaning of the contact tank.		
	Sampling	S	Effluent of CCT	Performed ASAP	
	Chlorine checklist?	N/A			
Comments - The CCT is accessible via two manhole covers. It appears that there is sufficient hypo being applied to act effectively, but there with the resent bacteria compliance issues in 2023 it is evident that some carryover from the three settling trains is entering the CCT, this will chemically consume active hypochlorite and degrade the effectiveness of your disinfection efforts. Is the site still considering UV disinfection?					

Physical Plant (cont.)

Dechlorination	Year round?	Yes	Seasonal?	**No *****	Chemical?	Sodium Bisulfite
	Dechlorinator	S	Flow proportioned?	Feed rate?	Contact time? Ave. Min.	
	Dechlorinator storage	S	Storage tank labeled? Yes	Separate drain? N/A	Containment? Yes	
	Dechlorinator	S				
	Sampling location	S	Dechlorination manhole			
Comments – *** Increased dechlorination chemical feed rates required in the summer to counteract increased hypochlorite dosing and possible solids interference?						

Septage Mgt.	Septage accepted?	NO	Gallons accepted	Permit Limit
	Mgt. Plan?	N/A		
	Where rec'd?	N/A		N/A
	Towns served	N/A		
	Agreements	N/A		
Comments – ***Septage not received***				

Sludge treatment and disposal

Sludge Disposal	Sludge	S	Type - Septic tank solids % Solids - N/A
	Storage	S	Sludge is stored in septic tanks as part of treatment process until it is removed by contractor for disposal at permitted site-
	Odor	S	No
	Disposal	W	Where is the sludge taken for disposal ?
	Stabilized?	N/A	Unknown
	Disposal site approved?	W	Not determined
Comments – Septic contractor extracts solids and hauls it to disposal site Annual 503 Report is required			

Effluent

Effluent discharge point	S	Atlantic Ocean, West Penobscot Bay 44 22' 51.44" N : 68 57' 02.27" W – Class SB -
Final Effluent quality - observation	S	This is a primary treatment plant and the effluent looks good for this system and technology today
Outfall piping	W	What is the condition of the outfall piping and has the out-fall piping been inspected since it has been installed ??
Tidal influence ??	W	Is there a duckbill valve to prevent backflow in place on the outfall effluent piping?.
Comments –. **Please arrange to have the complete length of the outfall piping inspected to ensure the structural integrity and functionality of that treatment plant component.**		

Laboratory

Describe reference for analytical methods: Standard Methods and EPA
Describe QA/QC program/procedures: Buffers for pH meter and calibration for TRC meter. Contract Lab has QC/QA for mercury, Fecal, Enterro, BOD5 and TSS DMRQA Not Required?

Self-Monitoring Program

Sampling -

List tests required by permit and where sample analysis is done

Test	Method?	Analyzed?		Name and cert. #	Preservation?
		Onsite	Contractor		
pH	SM4500-H+B	XX			Run immediately
Settleable Solids		XX			Run immediately
TRC		XX			Run immediately
BOD5	SM5210B		XX		Ice
TSS	SM2540D		XX		Ice
Mercury	EPA 1631		XX		Ice
Fecal	SM9223B		XX		Ice
Enterro	SM9230D		XX		Ice

Parameters sampled agree with permit?		S	yes
Freq. of analysis agrees with permit?		S	yes
Effluent sampling		S	influent and effluent samplers – yes are they flow-proportioned - yes.
Proper holding times?		S	BOD, TSS, Fecal, Hg and Enterococci samples are delivered to Northeast Labs. Samples are iced during transport and lab sets them up within the Method-required hold times.
All effluent monitoring results reported?		S	yes
Sampling Locations	Influent	S	Yes – at headworks
	Effluent	S	Yes - prior to discharge point
	24 hr flow proportioned composite	S	Yes – BOD5 and TSS composite , grab for SS, TRC, Fecal, Enterro, pH and Hg
	Refrigerated	S	yes – sampling cooler and iced during transport
	Temp verified	S	yes – sampling cooler and receiving lab documents temperature the COC sheets
	Hold times	S	ok

Comments

Please be sure the pH probe electrode in the storage solution required by the manufacturer when not in use and rinsed with distilled water after every calibration or sample measurement. Low level mercury is now being sampled at a once-a-year frequency; a sample had been collected for 2023, waiting on test results.

Records/Reports

Records – date, time source, initialed?	S	Yes – lab records provide comparative compliance data – 49 form has some operational data		
Bench sheets	S	Date collected? yes		
	S	Date analyzed? yes		
Consistent with /DMR/49 form?	S	yes		
49 Form?	S	Operational data and compliance data is on the form		
DMR's	S	Missing data? No -ok		
	S	Incorrect name, address?	No - ok	
Records kept 3 yrs.?	S	yes		
Blank water source	S	Purchased		
Chemical expiration dates	S	Buffers and treatment chemicals are used prior to expiration dates - yes ??		
Chain of custody form?	S	COC forms and logs		
Appropriate equipment	S	On site lab equipment and plant equipment functional - yes??		
Equipment calibrated and maintained? (dates)	S	Flow meters??	Yes ??	
Calibration and maintenance records?	S	pH ,flow and temp all verified ??		

Comments

Requirements, Comments, Notes 2023 Inspection:

Requirements:

Please arrange to have the complete length of the outfall piping inspected to ensure the structural integrity and functionality of that treatment plant component.

Is there a duckbill valve to prevent backflow in place on the outfall effluent piping? If not, plan to install a device to control tidal backflow from occurring.

If not already in place, please develop a program for systematic cleaning, inspection, and repair of the collection stem components. The plan of work planned and completed must be documented.

Please be sure the pH probe electrode is in the storage solution required by the manufacturer when not in use and rinsed with distilled water after every calibration or sample measurement

Recommendations:

None

Comments from 2021 Inspection: ***Please review these and confirm these issues have been resolved.***

While I was looking for potential issues that could contribute to high Enterococci results, I think that there are in fact multiple effects in play:

- The dechlorination chamber, the CCT, and even to some extent the weir chamber showed signs of tidal back-up or back-flow; most noticeably in the dechlorination chamber and the CCT. That could lead to either regrowth, inoculation, or a potential biochemical interference with the IDEXX test. There could be true positives (natural regrowth or inoculation) or false positives (interference). If only the IDEXX method interference is at work, then a dilution of 10 – 1 (you're using 8 – 1, which may also work) should eliminate that. If it's regrowth or inoculation, then they're actually true positives. Fernie attempts to get only the flow coming off the tablet dechlorinator.
- It was clear that wastewater solids had carried through the treatment trains in use and contaminated the chlorine contact tank – this material now needs to be pumped out. As I could only see the surface of the water in the tank, I could not determine if there was any amount of settled solids present; if there is, that should be removed, too. This can really degrade your ability to disinfect by consuming active hypochlorite that should otherwise be killing bacteria and pathogens still present at reasonable levels in the discharge from the trains. The two main drivers of solids carryover would be hydraulic overloading of the train(s) in use, and the longer term buildup of solids in the treatment train tanks that is both limiting available settling volume and solubilizing or re-suspending into the train(s) supernatant. To address this, solids in the treatment trains need to be monitored and removed before they become a compliance problem downstream. Flow for the month of August averaged 19,780 gpd, with a high of 23,930 gpd and a low of 12,770 gpd. With a design monthly average capacity of 63,000 gpd, that should not have posed a hydraulic problem. With high occupancy and usage over the summer, however, your BOD and TSS concentrations may have been substantially higher than the 290 mg/l default value in your license. I've seen POTW residential commercial loading levels range from about 225 mg/l on the low side to about 450 mg/l on the high side.
- Annually, I'd suggest that you plan on having all trains on-line in July and August, with the tanks initially pumped down to be as free of solids as possible. Maybe March through June, and September through November you'd have either two or one train active, depending on flow, and one train active December through February. Through these times you should be pumping the sludge out of the tanks of the trains that you take off line (after giving them a little time to compress the solids layer), with the ultimate goal of having any train you're bringing on-line free of accumulated solids. Don't leave any single train on-line too long, so that it builds up too high and too old a solids level. You should monitor your CCT regularly; any solids or scum buildup should be removed if you find it. Ideally, optimum operation of your treatment trains will prevent that from happening