

## Minutes of the NVC Utilities Committee

Friday, February 22, 2019

### **Meeting with Dirigo Engineering:**

Prior to the Utilities Committee meeting, Jim Lord and Tim Sawtelle from Dirigo Engineering were available from 1 pm to 2 pm to discuss with Committee Members and operators the scope of work and design for additions to the wastewater plant needed to comply with the mandates of our new permit requiring year round decontamination and bacterial testing.

They were asked to define the components of an addition that would allow delivery and storage of treatment chemicals, allow access to both the chlorination and dechlorination chambers for effluent sampling and for addition of treatment chemicals *via* pumped sidestream channels from and back to the tanks, facilities for on-site testing and monitoring, and utilities (water, sewer, bathroom, heat, ventilation, back-up power generation, communications).

These parameters must be decided in order to estimate the size of the proposed facility. Once this is established, Dirigo will consider types of construction and consider a variety of locations within Ruggles Park at distances of 50 to 150 to 300 feet from the in-ground tanks. They will consider an above-grade structure (Bayside Cottage style) versus a below-grade structure dug into the slope of Ruggles Park and covered with contoured dirt and grass. The below grade structure would minimize the visual impact on houses uphill. They strongly felt that construction at a more remote site (i.e. the Reservoir-distance 0.3-0.4 miles) would pose engineering difficulties as well as increased cost.

2:30 pm

The Utilities Committee meeting was convened

In attendance:

Committee members: Richard Brockway, David Crofoot, Gordon Fuller, Judy Metcalf

Absent: Michael Lannan

Also present: Superintendant Dick McElhaney, Bill Paige, Fernie Barton,

The Minutes of the January 11, 2019 meeting were approved unanimously.

Superintendant's Report:

The full report is appended to these minutes. The Committee reviewed the Superintendant's report.

The Wastewater treatment plant was in full compliance with its license parameters in December and January.

Plans to rehabilitate the effluent monitoring and chlorination manhole that had been planned for this summer will be put on hold for performance at a later date in conjunction with upgrades to the treatment plant to comply with our new License's mandate to perform year-round chlorination/dechlorination and effluent testing.

Instead, Dirigo Engineering will design and oversee building of a dry chemical feeding system to allow introduction of dry sodium bisulfite tablets for effluent dechlorination. In discussion, this is a safety issue to get away from the use of liquid sodium bisulfite which has physical characteristics that prevent its use for year-round dechlorination as well as posing unacceptable safety risks to the operator.

**Motion by Metcalf, seconded by Crofoot:** A motion to engage Dirigo Engineering to design and oversee installation of a dry chemical feed system for dechlorination to be completed by the first week in May 2019.

**Discussion:** This is a safety issue that requires solution before starting up seasonal chlorination/dechlorination on May 15, 2019. This is a relatively small project, similar in expense to the deferred rehabilitation of the chlorination manhole. There are advantages to having this designed and overseen by Dirigo because of their experience and thorough understanding of the treatment plant. Dick McElhaney will be the responsible agent for all dealings and communications with Dirigo.

**Vote: 4-0 unanimous in favor.**

**Motion by Metcalf, seconded by Crofoot:** To engage Dirigo Engineering to evaluate the requirements for modification and design of an addition to the wastewater treatment plant to allow for year-round chlorination/dechlorination and testing. **Vote: 4-0 unanimous in favor.**

**Bacterial content of untreated wastewater:** Although the current primary treatment plant deals effectively with both Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) within the limits of our license, the effluent still has significant bacterial content unless chlorinated. The Superintendent submitted unchlorinated effluent for bacterial testing. Tests for both enterococci and coliforms were, not surprisingly, very high. This reinforced the Utilities Committee's eagerness to comply with the new license requirements for year round decontamination and bacterial testing.

**Final Permit:** Discussion by Dick McElhaney with representatives of the EPA indicates that the new Permit will be presented for signature within the next 2-4 weeks. It will contain a **provisional compliance schedule** reflecting the time frame required to design, fund, and build additions to our wastewater treatment plant that allow for year round decontamination and testing. There will be a **Consent Agreement Order** that will be in force until we successfully complete the installation of this infrastructure and begin year round chlorination/dechlorination. This requires reporting to the EPA/DEP every six months to update progress toward fulfillment of the **Consent Agreement**. Our anticipated goal is to substantially complete the infrastructure project by the **end of 2020**.

**Budget effects of year round decontamination:**

Superintendent McElhaney anticipates that the additional costs of chemicals, utilities, and labor to be in the range of \$8000 per year. If the project can be built with current funds on hand, there will be no increased debt-service costs. If borrowing is required to complete the project, debt service will also weigh on annual expenses. It is not yet clear whether this will require an increase in the Sewer User Fee charges.

**Customer Complaint:** The language of the shut off notice needs to be improved. The water bill includes an annual base rate that is broken into three trimesterly billings for customer convenience. This amount is due, whether or not the customer is currently connected or seasonally shut off. The shut off notice should indicate that seasonal water will not be turned back on until the water bill is paid.

**Plumbing Permit:** The committee approved a plumbing permit application from the occupant of 9 Main Street to re-route the house sewer connection and connect to the sewer main.

**Adjournment:** The meeting adjourned at 4 pm.

## Utility Superintendent's Report

February 22, 2019

### Sewer Department

#### December 2018 Effluent Monitoring Data

**The NVC Wastewater Treatment Plant (WTP) was in full compliance with its wastewater discharge license for the month. There were no license exceedances.**

Flow averaged 18,558 gpd compared to 7,906 gpd in 2017. Daily flow ranged from a low of 3,700 gpd to a high of 150,000 gpd (tidal induced) during the month. Precipitation for the month was 3.76" versus 3.63" in 2017.

TSS and BOD<sup>5</sup> averaged 1.0 lbs. /day (12.9 mg/l) and 2.2 lbs. /day (29.0 mg/l), respectively compared to 1.7 lbs/day (14.8 mg/l) and 5.4 lbs/day (47 mg/l) in 2017.

See performance table below for this month's comparisons, averages, year-to-date highs and lows, permit limits, and year-to-date (YTD) exceedances. Testing frequency is continuous for flow, weekly for TSS, BOD<sup>5</sup> and fecal coliform (May thru Sept), daily for pH and settleable solids (S.S.), and twice per day for total residual chlorine (May thru Sept).

## Monthly Performance Table

Parameters	December	November	October	YTD Lo	YTD Hi	YTD Ave	2017 Ave	DEP Monthly Limit	Exceedances
Flow GPD	<b>18,558</b>	27,256	6912	5923	27,256	<b>15,146</b>	<b>12,017</b>	<b>&lt;63,000</b>	0
Precip Inches	<b>3.76</b>	7.0	4.74	.95	8.05	<b>4.22</b>	<b>3.33</b>	n/a	0
TSS lbs/day	<b>1.0</b>	1.8	1.3	0.8	5.9	<b>1.97</b>	<b>1.90</b>	<b>&lt;76</b>	0
TSS mg/l	<b>12.9</b>	8.3	21.3	5.9	64.8	<b>21.5</b>	<b>27.0</b>	<b>&lt;145</b>	0
BOD <sup>5</sup> lbs/day	<b>2.2</b>	4.1	5.5	1.8	15.3	<b>5.10</b>	<b>5.34</b>	<b>&lt;107</b>	0
BOD <sup>5</sup> mg/l	<b>29.0</b>	21.8	94	15.3	165	<b>60.4</b>	<b>70.7</b>	<b>&lt;203</b>	0
TSS% Removal	<b>95.6</b>	97.1	92.7	77.7	98.0	<b>91.8</b>	<b>91.3</b>	<b>&gt;50</b>	0
BOD <sup>5</sup> Removal	<b>90.0</b>	92.5	67.6	43.1	94.7	<b>77.9</b>	<b>75.6</b>	<b>&gt;30</b>	0
pH lo	<b>6.6</b>	6.7	6.7	6.6	6.7	<b>6.7</b>	<b>6.7</b>	<b>&gt;6.0</b>	0
pH Hi	<b>6.9</b>	7.0	7.0	6.9	7.0	<b>7.0</b>	<b>7.0</b>	<b>&lt;9.0</b>	0
S.S. ml/l	<b>&lt;0.1</b>	<0.1	0.1	<0.1	0.2	<0.1	<b>&lt;0.1</b>	<b>Report</b>	0
TRC mg/l	<b>na</b>	na	na	0.02	0.04	0.02	<b>0.02</b>	<b>&lt;.052</b>	0
F Col/100 ml	<b>na</b>	na	na	<b>&lt;1</b>	<b>1</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;15-ave</b>	0
F Col/100 ml	<b>na</b>	na	na	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;50-max</b>	0

**Note:** The last exceedance for flow was **152 months ago (2/2006)**. The last exceedance for fecal coliform was **75 months ago (8/2012)**. The last exceedance for BOD was **50 months ago (9/2014)**. The record annual average low for flow was 12,017 gpd in 2017.

### January 2019 Snapshot

The NVC WTP is expected to be in full compliance with its license limits pending the DEP's completed review of the NVC's discharge monitoring report. Flow will average around 15,148 gpd. The report for precipitation as measured by the Belfast Water District (BWD) at their Little River Station was 3.89 inches.

### Annual Effluent Low Level Mercury (Hg) Test Result

The once-per-year grab sample of effluent was taken on November 30 to test for low level Mercury (Hg). The result was 4.55 ng/L (parts per trillion). This compares favorably to the NVC interim permit limit of 33.4 ng/L for average concentration and 50.1 ng/L for maximum concentration.

### De-Chlorination Manhole

The sewer department has asked Dirigo Engineering to scrap the Department's plans to rehabilitate the effluent metering and chlorination manhole project that was scheduled for this spring along with the Cobe Road water main replacement project. This project will now become a part of the project to provide year-round chlorination facilities.

In its place, Dirigo Engineering has been engaged to determine the viability of installing a dry chemical feeding system into the de-chlorination manhole to add sodium bisulfite tablets as a safer alternative to diluting liquid sodium bisulfite in the control building and then pumping it underground to the manhole to remove chlorine. The goal is to have the feeder in place ahead of the May 15 to September 30 disinfection season.

The Department has also purchased new gas masks with chloro/organic acid canisters for personnel to use when working with sodium hypochlorite (chlorine gas) and liquid bisulfite (sulfur dioxide gas), although in such a confined space as the existing building provides and that is also lacking in proper ventilation, operating staff recognize that even with the use of gas masks, they are not always completely effective.

#### Proposed Draft Permit to Discharge Treated Wastewater

The NVC Sewer Department submitted its written comments to the proposed Draft Permit on January 31. Several days later a phone call was received from the MEDEP/EPA to assure the Department that they will honor the Department's request for a compliance schedule to properly develop a reasonable timeline to construct year-round chlorination facilities. The details of the agreement will presumably be offered through an "Administrative Consent Agreement and Enforcement Order" along with the Final Permit.

A copy of the Department's comment letter was previously sent to Committee Members under separate cover.

#### Dirigo Preliminary Engineering Study to Provide Rear-Round Chlorination

Utility staff, and those Utility Committee members who can attend, will meet with Dirigo Engineering on Friday February 22, 2019 at 1 pm. Dirigo requested this meeting to talk ideas, options and issues, etc. to begin their preliminary engineering study to design and construct new year-round chlorination facilities. Such a facility will enable the NVC to comply with the new effluent limitations of its MEPDES waste water discharge license and EPA 301 (h) permit waiver from the secondary treatment requirements.

A hand written copy of some of the Sewer Department's initial thoughts for consideration are contained in the attachment herewith. Committee Members who are unable to attend, but who would still like to participate, can do so by e-mailing the Utility Superintendent ahead of time with their thoughts so that they can be shared with Dirigo Engineering.

#### Off-Season Bacteria Testing.

Samples of non-chlorinated final effluent were tested for Fecal Coliform (Northeast Labs) and Enterococci (State of Maine Health and Environmental Testing Lab) to establish background data on Thursday, January 24 and Friday January 25.

The sample dates selected followed a day of heavy rains and a good flushing of the system which provided a best case scenario for sampling and measuring numeric background bacteria concentrations.

Under the proposed effluent limits for bacteria, the new "maximum concentration limit not to exceed" for fecal coliform is 31 cfu/100 ml. The test result for fecal coliform was >2400 cfu/100 ml or "too numerous to count" (TNTC).

The "maximum concentration limit not to exceed" for enterococci is 54 cfu/100ml. The test result was 32,550 cfu/100 ml.

## Drinking Water Department

#### December 2018 Usage and Water Quality

Water consumption for the month averaged 11,968 gpd compared to 10,801 gpd in 2017. The weekly free chlorine residual in the drinking water ranged from 0.24 - 0.34 ppm/Cl<sup>2</sup> compared to the recommended goal of >.20 to <1.0 ppm/Cl<sup>2</sup>. The EPA maximum concentration level (MCL) not to be exceeded for chlorine residual is 4.0 ppm. The monthly total and e-coli water sample test results were negative.

### **Customer Complaint**

The NVC office fielded a customer complaint from the Consumer Assistance Division of the Maine PUC in early January. The complaint was filed by the caretaker (daughter we believe) of a seasonal Broadway Street customer. She questioned the receipt of a water and sewer disconnect notice for non-payment since the customer's water had already been turned off for the season. The PUC suggested that "disconnect notices" not be issued to customers if the water has already been shut off.