

STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

PENNICHUCK EAST UTILITY, INC.

DOCKET NO. DW 19-___

**Petition for License to Construct and Maintain
a Water Main Under Locke Lake**

PRE-FILED DIRECT TESTIMONY

OF

John J. Boisvert

December 12, 2019

1 **Professional and Educational Background**

2 **Q. What is your name and what is your position with Pennichuck East Utility, Inc.?**

3 **A.** My name is John J. Boisvert. I am the Chief Engineer of Pennichuck East Utility, Inc.
4 (hereinafter “PEU” or the “Company”). I have worked for PEU since February 1, 2006. I
5 am a licensed professional engineer in New Hampshire and Maine.

6 **Q. Please describe your educational background.**

7 **A.** I have a Bachelor of Science degree and a Master of Science degree in Civil Engineering
8 from the University of New Hampshire in Durham, New Hampshire. I also have a
9 Master’s degree in Environmental Law and Policy from Vermont Law School in South
10 Royalton, Vermont.

11 **Q. Please describe your professional background.**

12 **A.** Prior to joining PEU, I served as a Team Leader for Weston & Sampson Engineers of
13 Portsmouth, New Hampshire in their Water Practices Group from 2000 to 2006. Prior to
14 Weston & Sampson, I was employed by the Layne Christensen Company of Shawnee
15 Mission, Kansas as Regional Manager for their Geosciences Division in Dracut,
16 Massachusetts from 1994 to 2000. I completed graduate school in 1992 and was employed
17 by Hoyle, Tanner & Associates of Manchester, New Hampshire as a Project Engineer from
18 1992 to 1994. Prior to entering full time graduate programs at the University of New
19 Hampshire and Vermont Law School, I was employed by Civil Consultants of South
20 Berwick, Maine as a Project Engineer from 1986 to 1989 and by Underwood Engineers of
21 Portsmouth, New Hampshire as a project Engineer from 1985 to 1986.

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1 **Q. What are your responsibilities as Chief Engineer of the Company?**

2 **A.** As Chief Engineer, I am responsible for the planning, design, permitting, construction, and
3 startup of major capital projects, including pipelines, reservoirs/dams, building structures,
4 pumping facilities, treatment facilities, and groundwater supplies. I also oversee and
5 direct the Company's Asset Management Initiative and provide regular technical assistance
6 to PEU and its affiliate's Water Supply Department, Operations Department, Customer
7 Service Department, and Senior Management.

8 **Q. What is the purpose of your testimony?**

9 **A.** I will be explaining the need and construction of a 3-inch diameter water main installed in
10 an 8-inch diameter pipe sleeve under the bed of Locke Lake in Barnstead, New Hampshire.

11 **Project Overview**

12 **Q. Please explain the problem this main is intended to address.**

13 **A.** The main will address several problems and concerns including:

- 14 1. The high cost to treat water from the Airstrip Well using disposable adsorptive
15 filter media at the Airstrip Station versus treating the water at the Peacham Road
16 treatment facility using less costly co-precipitation and filtration.
- 17 2. The lowering of arsenic standard from 10 parts per billion (ppb) to 5 ppb by the
18 New Hampshire Department of Environmental Services (NHDES) will further
19 increase the cost to treat Airstrip Well water using disposable adsorptive media
20 making treatment at Peacham Road even less costly and more reliable and
21 predictable ensuring compliance with the new standard at a lower cost.
- 22 3. PEU will no longer need to maintain a separate treatment/storage and pumping
23 station for the Airstrip Well reducing long term operations and maintenance costs.

1 4. The crossing of the lake will minimize the amount of pipeline that would need to be
2 installed most of which would need to be installed in public roadways. There will
3 be approximately 850 feet of pipe associated with the lake crossing as opposed to
4 8,000 to 11,000 feet needed to install pipeline around Locke Lake to the Peacham
5 Road treatment facility depending upon the path determined to be more feasible.

6 **Q. Please describe whether PEU considered any other alternatives to addressing the**
7 **problems identified above and why PEU did not pursue them.**

8 **A.** In light of the lowering of the arsenic standard, PEU may have considered abandoning the
9 use of the Airstrip Well because of the treatment cost. However, PEU is under mandate
10 from NHDES to develop additional sources of supply for the Locke Lake community
11 water system (See Attachment JJB – 1 for the NHDES Sanitary Survey). The volume of
12 water delivered from the Airstrip Well is necessary and the abandonment of the well would
13 further reduce the supply of water to Locke Lake. PEU has evaluated additional
14 groundwater sources in the Locke Lake region and to date have not found any feasible
15 alternatives that would enable compliance with the capacity requirements of the NHDES.
16 PEU could continue to treat the water from the Airstrip Well using the more costly
17 adsorptive media but the alternative treatment at Peacham road is significantly less. The
18 treatment process at Peacham Road (co-precipitation) removes arsenic for about one-tenth
19 (1/10) of the cost of the disposable adsorptive media resin employed at the Airstrip Station.
20 If the water from the Airstrip Well is treated at the Peacham Road Treatment Facility, PEU
21 expects to save approximately \$30,500.00 in annual treatment expense based on the
22 experience in 2018 with the current arsenic standard of 10 ppb. That savings is expected to
23 double based on the new arsenic standard of 5 ppb which would require twice the number

1 of adsorptive media change outs each year. The savings in treatment costs more than
2 covers the principal and interest payments of the SRF loan, the State and local property
3 taxes, and the operational expense of treatment resulting in lower cost to the ratepayer.

4 **Q. Does the Company expect to serve additional customers as a result of this project?**

5 **A.** No.

6 **Q. Please describe the location of the proposed project.**

7 **A.** Attachment JJB- 2 is a map of the project location. Detailed drawings (construction plans)
8 are provided in Attachment JJB-3. The pipeline is located under Locke Lake between
9 Georgetown Road and Varney Road. The length of pipeline directly under Locke Lake is
10 approximately 850 feet. The pipeline crosses two properties owned by the Locke Lake
11 Colony Association (the Association). The property on Varney Road is maintained as a
12 beach/recreational area and the property on Georgetown Drive is also a beach.

13 **Q. Does PEU or its staff have experience with river crossings?**

14 **A.** Yes. In house engineering staff has designed river and lake crossings using horizontal
15 directional drilling (“HDD”). In particular a 1,000-foot crossing of the Saco River in
16 Conway, New Hampshire to connect PEU’s Birch Hill community water system to the
17 North Conway Water Precinct; a 900-foot crossing under Locke Lake to replace an
18 existing main crossing; and a technically challenging crossing of the Merrimack River to
19 install a 16-inch water main.

20 **Q. Please describe the project and the timing of construction, including the anticipated**
21 **in-service date.**

22 **A.** The overall project is to convey raw water (untreated), via a dedicated pipeline, from the
23 Airstrip Well of the Locke Lake community water system to the Peacham Road treatment

1 facility for filtration of arsenic and manganese. Water from the Airstrip Well is currently
2 treated at a stand-alone treatment and storage facility. The treatment process uses an
3 adsorptive disposable media to remove arsenic while manganese remains untreated. The
4 treatment cost using the adsorptive media is significantly more expensive than the more
5 conventional filtration process of coprecipitation employed at the Peacham Road treatment
6 facility. The section of the project for which the license is sought is an approximately 850
7 foot pipeline crossing under the bed of Locke Lake connecting to existing pipeline on
8 Georgetown Drive and Varney Road. The design drawings for the project are provided in
9 Attachment JJB-3. PEU proposes to install the 3-inch diameter pipeline an 8-inch
10 diameter sleeve. The 8-inch diameter sleeve will be installed using HDD under the
11 lakebed. The optimal time to complete the work is in the winter. Ice-covered lake
12 conditions make the tracking and locating (alignment and depth) of the pipeline by
13 positioning contractor personnel and tracking equipment on the ice a more “fixed” position
14 as opposed to tracking construction progress from a boat. Tracking from a boat would
15 require specially trained personnel and more sophisticated equipment making the project
16 more costly. When polled, the HDD contractors suggested a \$30,000 to \$40,000 increase
17 in cost to track and monitor by boat as opposed to tracking from the ice surface. The
18 anticipated in-service date for the pipeline is June 1, 2020.

19 **Q. Is PEU hiring contractors to perform the construction?**

20 **A.** Yes, the project will be publicly advertised and competitively bid. The selected contractor
21 will be that meeting the project qualifications with the lowest bid price.

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1 **Q. Is the project within PEU's franchise territory?**

2 **A.** Yes. On December 11, 2009, by Order No. 25,051 in Docket No. DW 09-051, the
3 Commission approved the transfer of the water system serving the Locke Lake Colony
4 Association to PEU from Pittsfield Aqueduct Company, Inc.

5 **Land Rights**

6 **Q. Please explain who owns the submerged lands of the lake.**

7 **A.** Locke Lake was created in the 1960s when the stream was dammed. The property was
8 privately owned before it was flooded. After the development was constructed and after
9 the formation of the home owners association, the Locke Lake Colony Association
10 ("Association") became the owner of the common lands, which include the submerged
11 lands.

12 **Q. Has PEU secured any rights from the Association with respect to this project?**

13 **A.** PEU is in the process of securing all rights and easements from the Association necessary
14 to cross under the lake. Please see Attachment JJB-4 for a draft copy of the easement plat
15 forwarded to the Association on December 11, 2019. The easement is 30-foot wide and
16 runs across the Association's property from Georgetown to Varney Roads. The easement
17 comprises approximately 36,191 square feet, or .83 acres.

18 **Impact of Project on Public Rights**

19 **Q. Will the project impede the public's use of the lake?**

20 **A.** No. The public has no access to the lake. The land surrounding the lake is either privately
21 owned or owned by the Locke Lake Colony Association.

22 **Q. Will the project impact water quality in the lake?**

23 **A.** No. The project involves the land under the bed of the lake.

1 **Q. Please explain whether the completed project is expected to affect any State interest**
2 **in the waters of Locke Lake.**

3 **A.** As noted in the petition, PEU is not aware of the extent to which the State may have an
4 interest in the waters of this artificial lake. PEU has filed its petition to make sure that if
5 the State has an interest in the waters, that PEU obtains a license. The State might have an
6 interest in the waters of the stream prior to damming but there is no present public access to
7 the lake or public boat launch. Only members of the Locke Lake Colony Association and
8 their guests are allowed to access the beaches and marina on the lake. There is a public
9 boat launch on Half Moon lake, however, the two lakes are connected by only a low head
10 spillway and culvert and there is no appreciable means by which to navigate from one lake
11 to the other. Given these facts, the completed project is not expected to impede any public
12 interest the State may have in the waters of Locke Lake.

13 **Q. Is the construction of the project going to result in the abandonment of other assets or**
14 **structures in the waters of Locke Lake?**

15 **A.** No.

16 **Project Funding**

17 **Q. Please describe how the Company will finance the construction project?**

18 **A.** The project is being funded through a loan from the State Revolving Fund (SRF). Using
19 the SRF loan funds for this project was approved by the Commission in Order No. 26,189.

20 **Permits**

21 **Q. Please identify all local, State, and Federal permits the Company will need to obtain**
22 **for this project.**

1 **A.** PEU is submitting a Shoreland Permit by Notification application to the NHDES because
2 of the proximity of the project to Locke Lake. Under the present design of the project,
3 PEU will not need a wetland or alteration of terrain permit from the State. No local or
4 Federal permits are needed for this project.

5 **Q.** **Does this complete your testimony?**

6 **A.** Yes.