National Pollutant Discharge Elimination System Factsheet

SECTION 1 FACILITY SUMMARY

APPLICANT Firstlight CT Hydro LLC

PERMIT NO. CT0030815

APPLICATION NO. 202201758

DATE APPLICATION RECEIVED February 22, 2022

LOCATION ADDRESSJunction of Routes 169 and 97

Taftville, CT 06380

FACILITY CONTACT Daniel Timlake

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Burlington, MA 01803

DMR CONTACT Daniel Timlake

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SECRETARY OF STATE BUSINESS ID 1304725

PERMIT TERM 5 Years

PERMIT CATEGORY Minor National Pollutant Discharge Elimination System

(NPDES)

SIC & NAICS CODE(S) 4911, 2221111

APPLICABLE EFFLUENT GUIDELINES N/A

PERMIT TYPE Issuance

OWNERSHIP Private

RECEIVING WATER 001-002 Shetucket River

WATERBODY SEGMENT ID'S CT3800-00_02

WATERBODY CLASSIFICATION B

DISCHARGE LOCATIONS DSN 001 & 002 Latitude 41.571190 Longitude -72.047165

*All discharge points are with 20 feet of each other

COMPLIANCE ACTIONS NA

DEEP STAFF ENGINEER Patrick Bieger

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1.1 PERMIT FEES

Application Fee:

Filing Fee	Invoice No.: DEP384995	Amount: \$1,300	Date Paid: 2/22/2022
Processing Fee	Invoice No.: NA	Amount: NA	Date Paid: NA

Annual Fee:

	WASTEWATER CATEGORY (Per RCSA Sec. 22a-430-7)	FLOW CATEGORY	DSN	ANNUAL FEE (Per RCSA Sec. 22a-430-7 and CGS Sec. 22a-6f)
	Turbine Leakage	69,120 gpd	001-002	\$0
TOTAL				\$0

1.2 OTHER PERMITS

The Permittee has no other discharge permits.

1.3 APPLICATION SUBMITTAL INFORMATION

On February 22, 2022, the Department of Energy and Environmental Protection ("DEEP") received an application (Application 202201758) from FirstLight CT Hydro LLC ("Permittee", "Applicant") in Taftville, for the issuance of its NPDES Permit No. CT0030815. Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes ("CGS"), the Applicant caused a Notice of Permit Application to be published in The Bulletin newspaper on February 11, 2022. On April 4, 2022, the application was determined to be timely and administratively sufficient.

The Permittee seeks authorization for the following in Application 202201758:

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
001		34,560	Turbine Leakage from turbine 4	None	Shetucket River
002		34,560	Turbine Leakage from turbine 5	None	Shetucket River

1.4 DESCRIPTION OF INDUSTRIAL PROCESS

FirstLight CT Hydro LLC is a business that performs hydroelectric generation. Wastewater from this process is discharged to Shetucket River by way of DSN 001 and 002 under this proposed permit.

1.5 FACILITY DESCRIPTION

The Applicant's facility is a Federal Energy Regulatory Commission (FERC) licensed hydroelectric generation plant located at the junction of Routes 169 and 97 in Taftville, Connecticut. This hydroelectric generation plant is a run-of-river station and operates at a frequency determined by water levels and flow from the Shetucket River. The turbines were placed into operation in 1906. The facility consists of five water powered turbines, with a total capacity of 1,780 kilowatts. There have been no major construction or changes to the facility since 1906; however, supplemental modernization improvements have occurred on the turbines. This facility is located on a shared property with other tenants.

Turbine 1 is located in an independent building adjacent to the dam and has not operated in the last year. Turbines 2 and 3 are located on the eastern side of the power canal adjacent to the office buildings. Turbines 4 and 5 are located beneath the shared building complex along the eastern side of the power canal. Based on the configuration and construction of turbines 1-3 there is no leakage or cooling water discharged from these turbines and therefore do not need coverage under this permit. All water consists of river water that is contained within the turbines. Turbines 4 and 5 both contain two locations where turbine leakage collects and discharges below the building and through the floor to the river below. Discharges from turbines 4 and 5 are comprised of waters collected from the containment structures surrounding the stuffing box of the turbine. This water leaks from the containment box above and below the headcover, and discharges below the turbines via dedicated outlets.

The waters from below and above the headcover are characteristically the same. For this reason, the discharge locations from each turbine are represented by a single DSN in the permit. Representative sampling can occur from either the stuffing box or head cover leakage discharge pipe since the leakage from both sources are coming from the same turbine unit and are consistent in quality. Each turbine discharge has a proposed average flow of 15,969 gallons per day (gpd) and a proposed max daily flow of 17,280 gpd. DSN 001 represents the discharges from turbine 4 and DSN 002 represents the discharges from turbine 5. The discharge and sampling location of both turbines 4 and 5 currently require a confined space entry permit.

1.6 FACILITY CHANGES

This is a new permit, hence there were no requested changes to the facility for this permit issuance.

1.7 TREATMENT SYSTEM DESCRIPTION

The discharge consists of only turbine leakage made solely of river water. There is no treatment system at the facility.

1.8 COMPLIANCE HISTORY

Is the Permittee subject to an	ongoing enforceme	ent action?	⊠Yes	$\square N_0$

Consent Order Number WC5435 ("the order"), issued November 9, 2006, required FirstLight to investigate all discharges from hydroelectric facilities, including Taftville Station, and submit discharge permit applications for all facilities with unpermitted wastewater discharges. DEEP received the report "Investigation and Remediation of Discharges at Ten Hydroelectric Stations" on June 6, 2008, and an addendum "Investigation and Remediation of Discharges at Ten Hydroelectric Stations Addendum" required by Paragraph B.2.d of the order on November 2, 2009, and a subsequent report with an updated monitoring plan on March 29, 2024. DEEP issued an approval on May 2, 2024, indicating that FirstLight was in compliance with Paragraph B.2.d. of the order. The reports identified the discharges of turbine and building leakage from this facility.

1.9 GENERAL ISSUES RELATED TO THE APPLICATION

1.9.1 FEDERALLY RECOGNIZED INDIAN LAND

As provided in the permit application, the site is not located on federally-recognized Indian land.

1.9.2 COASTAL AREA/COASTAL BOUNDARY

The activity is not located within a coastal boundary as defined in CGS 22a-94(b).

1.9.3 ENDANGERED SPECIES

As provided in the permit application, the site is not located within an area identified as a habitat for endangered, threatened or special concern species.

1.9.4 AQUIFER PROTECTION AREAS

As provided in the permit application, the site is not located within a protected area identified on a Level A or B map.

1.9.5 CONSERVATION OR PRESERVATION RESTRICTION

As provided in the permit application, the property is not subject to a conservation or preservation restriction.

1.9.6 PUBLIC WATER SUPPLY WATERSHED

As provided in the permit application, the site is not located within a public water supply watershed,

SECTION 2 RECEIVING WATER BODY INFORMATION

The water classification of section CT3800-00_02 of the Shetucket River is B. Class B waters are designated for habitat for fish and other aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply.

There are no applicable TMDLs for the receiving waterbody.

SECTION 3 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

3.1 EFFLUENT GUIDELINES

No categories found under the Effluent Limit Guidelines and Standards of Title 40 Code of Federal Regulations (CFR) Chapter 1 Subchapter N match the description of wastewaters discharged by DSNs 001-002. The Steam Electric Power Generating Point Source Category under 40 CFR Part 423 was reviewed for applicability as the facility is a hydroelectric power plant. Under the Applicability in 423.10, it was determined that this category applies to electricity resulting primarily from fossil-type fuels or nuclear fuel. The Applicant uses water turbines to generate electricity; therefore, this activity would not fall under 40 CFR Part 423. There is no applicable federal effluent limit guideline for the proposed discharges.

3.2 POLLUTANTS OF CONCERN

The following pollutants are included as monitoring pollutants in the permit for the reasons noted below:

POLLUTANT	POLLUTANT WITH AN APPLICABLE TECHNOLOGY- BASED LIMIT	REASON POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
pH			X	
Oil and Grease				X

3.3 BASIS FOR LIMITS

Technology and water-quality based requirements are considered when developing permit limits. Technology-based limits represent the minimum level of control imposed under the Clean Water Act ("CWA"). Industry-specific technology-based limits are set forth in 40 CFR 405 - 471 (EPA's Effluent Limitation Guidelines) and in RCSA Section 22a-430-4(s)(2).

Water quality-based limits are designed to protect water quality and are determined using the procedures set for in EPA's *Technical Support Document for Water Quality-Based Toxics Control*, 1991 ("TSD"). When both technology and water quality-based limits apply to a particular pollutant, the more stringent limit would apply. In addition, water quality-based limits are required when any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) is or may be discharged at a level that causes, has reasonable potential to cause, or contributes to an excursion above any water quality criteria. Numeric water quality criteria are found in RCSA Section 22a-429-9 of the *Connecticut Water Quality Standards*.

3.4 Zone of Influence

A zone of influence has not been allocated in this permit.

3.5 RESONABLE POTENTIAL ANALYSIS

Pursuant to CWA Part 301(b)(1)(C) and 40 CFR Part 122.44(d)(1), NPDES permits must contain any requirements in addition to Technology Based Effluent Limits ("TBELs") that are necessary to achieve water quality standards established under Part 303 of the CWA. See also 33 U.S.C. Part 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." 40 CFR Part 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any Water Quality Standards ("WQSs"), EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. See 40 CFR Part 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain Water Quality Based Effluent Limitations ("WQBELs") or require additional monitoring if there is insufficient data to develop a WQBEL, for that pollutant. See 40 CFR Part 122.44(d)(1)(i).

There are no parameters found present in the discharge that have a reasonable potential to cause or contribute to an excursion above the WQSs; however, monitoring for pH and Oil and Grease is included in the permit to further characterize the discharges.

3.6 WATERBODY AMBIENT CONDITIONS

Parameter	Value
7Q10	49.337 cfs

The 7Q10 was found by using Cervione's regression equation:

7Q10 = 0.67Asd + 0.01Atill, where Asd and Atill are the drainage areas of stratified drift and till covered bedrock.

Using USGS's StreamStats, the stratified drift was 13% and the drainage area at the location of discharge is 515 square miles.

3.7 WHOLE EFFLUENT TOXICITY

The Permittee shall comply with effluent standards or prohibitions established by CWA Part 307(a) and RCSA Section 22a-430-4(l) and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life.

If toxicity is suspected in the effluent, DEEP may require the Permittee to perform acute or chronic whole effluent toxicity testing. Toxicity is not expected in the effluent due to the characteristics of the discharge. The wastewater is comprised mainly of turbine leakage and turbine dewatering. Both these waters are taken from the Shetucket River upstream of the discharge. No chemicals or other substances are added to the waters while they are in the turbine. Therefore, the water discharged from the turbines are characteristically similar to the Shetucket River.

3.8 WATER QUALITY BASED EFFLUENT LIMITATIONS

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA Part 301(b)(1)(C) and 40 CFR Part 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

The Water Quality Standards for a Class B surface water is 6.5-8.0 S.U. This limit has been applied as an end-of-pipe limit in the permit.

3.9 TECHNOLOGY BASED EFFLUENT LIMITATIONS

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA Part 301(b) and 402 to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 CFR Part 125 Subpart A and RCSA Section 22a-430-4(1)(4)(A).

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Part 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA Part 402(a)(1). EPA promulgates New Source Performance Standards (NSPS) under CWA Part 306 and 40 CFR Part 401.12. *See also* 40 CFR Part 122.2 (definition of "new source") and 122.29.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA Part 402(a)(1)(B) and RCSA Section 22a-430-4(m) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

There are no federal TBELs for hydroelectric generation wastewaters.

3.10 COMPARISON OF LIMITS

After preparing and evaluating applicable TBELs and WQBELs, the most stringent limits are applied in the permit. Pollutants of concern that only require monitoring without limits are not included in the below table.

PARAMETER	UNITS	LIMITS WATER QUALITY Water Quality Standards	
FARAMETER		pH Minimum	pH Maximum
рН	S.U	6.5	8.0

3.11 SAMPLING FREQUENCY, TYPE, AND REPORTING

Sample Type	Sample Frequency	Parameter	Reason
Grab Sample	pН	RCSA Section 22a-430-4(1)(4)(A) and 22a-430-4(m) Source: River Water	
Grao Sample	Semi-Annually	Oil and Grease	RCSA Section 22a-430-4(1)(4)(A) and 22a-430-4(m) Source: Possible oil leakage, machine failure, or maintenance issue

3.12 OTHER PERMIT CONDITIONS

NA

3.13 COMPLIANCE SCHEDULE

This permit does not contain a compliance schedule.

3.14 ANTIDEGRADATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR 131.12) and consistent with the Connecticut Antidegradation Policy included in the Connecticut Water Quality Standards (Section 22a-426-8(b-f) of the RCSA). Tier 1 Antidegradation review applies to all existing permitted discharge activities to all waters of the state. Tiers 1 and 2 Antidegradation reviews apply to new or increased discharges to high quality waters and wetlands, while Tiers 1 and 3 Antidegradation reviews apply to new or increased discharges to outstanding national resource waters.

This discharge is an existing discharge, and the Permittee does not propose an increase in volume or concentration of constituents. Therefore, only the Tier 1 Antidegradation Evaluation and Implementation Review was conducted to ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved, consistent with Connecticut Water Quality Standards, RCSA Sec.22a-426-8(a)(1). This review involved:

- An evaluation of narrative and numeric water quality standards, criteria and associated policies;
- The discharge activity both independently and in the context of other dischargers in the affected waterbodies; and
- Consideration of any impairment listed pursuant to Part 303d of the federal Clean Water Act or any TMDL established for the waterbody.

The Applicant and its discharges have existed since 1906 with minor modifications to the turbines and the facility. The source water for the Applicant's facility is the Shetucket River upstream, and the Applicant does not add chemicals nor alter the water prior to it discharging back to the Shetucket River. DEEP has determined the discharges will not have a negative impact on the water quality of the Shetucket River.

DEEP has determined that the discharges and activities associated with this permit are consistent with the maintenance, restoration, and protection of the existing and designated uses of the Shetucket River.

3.15 ANTI-BACKSLIDING

This is the first permit for the facility and its wastewater discharges; hence an anti-backsliding evaluation is not required to be performed.

3.16 CATEGORICAL DISCHARGE CONDITIONS

There are no applicable federal or state categorical discharge regulations for these discharges.

3.17 VARIANCES AND WAIVERS

The Permittee did not request a variance or a waiver.

3.18 E-REPORTING

The Permittee is required to electronically submit documents in accordance with 40 CFR Part 127.

SECTION 4 SUMMARY OF NEW PERMIT CONDITIONS AND LIMITS FROM THE PREVIOUS PERMIT

This facility has not previously been regulated by a NPDES permit.

SECTION 5 PUBLIC PARTICIPATION PROCEDURES

5.1 INFORMATION REQUESTS

The application has been assigned the following numbers by DEEP. Please use these numbers when corresponding with this office regarding this application.

APPLICATION NO. 202201758 PERMIT ID NO. CT0030815

Interested persons may obtain copies of the application from Daniel Timlake, 143 West Street, Suite E, New Milford CT, 860-350-3617 or Daniel.timlake@firstlightpower.com.

The application is available for inspection by contacting Patrick Bieger at Patrick.bieger@ct.gov, at the Department of Energy and Environmental Protection, Bureau of Materials Management and Compliance Assurance, 79 Elm Street, Hartford, CT 06106-5127 from 8:30 - 4:30, Monday through Friday.

Any interested person may request in writing that his or her name be put on a mailing list to receive notice of intent to issue any permit to discharge to the surface waters of the state. Such request may be for the entire state or any geographic area of the state and shall clearly state in writing the name and mailing address of the interested person and the area for which notices are requested.

5.2 PUBLIC COMMENT

Prior to making a final decision to approve or deny any application, the Commissioner shall consider written comments on the application from interested persons that are received within 30 days of this public notice. Written comments should be directed to Patrick Bieger, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127 or Patrick.bieger@ct.gov. The Commissioner may hold a public hearing prior to approving or denying an application if in the Commissioner's discretion the public interest will be best served thereby and shall hold a hearing upon receipt of a petition signed by at least twenty-five (25) persons. Notice of any public hearing shall be published at least thirty (30) days prior to the hearing.

Petitions for a hearing shall be submitted within thirty (30) days from the date of publication of this public notice and should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. The Office of Adjudications will accept electronically-filed petitions for hearing in addition to those submitted by mail or hand-delivered. Petitions with required signatures may be sent to deep.adjudications@ct.gov; those mailed or delivered should go to the DEEP Office of Adjudications, 79 Elm Street, Hartford, CT 06106. If the signed original petition is only in an electronic format, the petition must be submitted with a statement signed by the petitioner that the petition exists only in that form. Original petitions that were filed electronically must also be mailed or delivered to the Office of Adjudications within 30 days of electronic submittal. Additional information can be found at www.ct.gov/deep/adjudications.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). If you are seeking a communication aid or service, have limited proficiency in English, wish to file an ADA or Title VI discrimination complaint, or require some other accommodation, including equipment to facilitate virtual participation, please contact the DEEP Office of Diversity and Equity at 860-418-5910 or by email at deep.accommodations@ct.gov. Any person needing an accommodation for hearing impairment may call the State of Connecticut relay number - 711. In order to facilitate efforts to provide accommodation, please request all accommodations as soon as possible following notice of any agency hearing, meeting, program, or event.