STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
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January 16, 2015

Mr. Craig Collar
Assistant General Manager
Public Utilities District No. 1 of Snohomish County
2320 California Street
Everett, WA 98206-1107

RE: Hancock Hydroelectric Project (FERC No. 13994),
Order No. 10718 Water Quality Certification Order

Dear Mr. Collar:

The request for certification under Section 401 of the Clean Water Act (33 USC § 1341) for the licensing of the Hancock Creek Hydroelectric Project (FERC No. 13994) in unincorporated King County, Washington, has been reviewed. On behalf of the State of Washington, the Department of Ecology certifies that reasonable assurance exists that the Hancock Creek Hydroelectric Project, subject to and limited by the conditions stated by the enclosed Order, will comply with applicable provisions of 33 USC 1311, 1312, 1313, 1316, 1317, and other appropriate requirements of state law.

This certification shall be deemed withdrawn if the Federal Energy Regulatory Commission (FERC) does not issue a license for Hancock Creek Hydroelectric Project within five years of the date of this issuance. This certification may be modified or withdrawn by Ecology prior to the issuance of the license based upon additional new information or changes to the project. If the certification is withdrawn, the applicant will then be required to reapply for the certification under Section 401 of the Clean Water Act.

This certification is subject to the conditions contained in the enclosed Order. If you have any questions, please contact Monika Kannadaguli at 425-649-7028. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Kevin C. Fitzpatrick
Water Quality Section Manager

Enclosure
By Certified Mail No.: 7008 1140 0000 2359 9012
cc: FERC Secretary, Kimberley Bose
FERC Service List for Hancock Hydroelectric Project (FERC No. 13994)
Josh Baldi, Department of Ecology, via e-mail: JBAL461@ecy.wa.gov
Monika Kannadaguli, Water Quality Program, Department of Ecology
Sonia Wolfman, State of Washington Office of Attorney General, via e-mail: SoniaW@atg.wa.gov
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NWRO Files: FERC/ Hancock Creek Hydroelectric Project

401 Certification Order

Hancock Creek Hydroelectric Project
Owned and Operated by
Public Utility District No. 1 of Snohomish County

Certification Order No. 10718
FERC License No. 13994

By

Monika Kannadaguli
Water Quality Program
Northwest Regional Office/Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

January 16, 2015

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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To: Mr. Craig Collar
Assistant General Manager
Public Utilities District No. 1 of Snohomish County
2320 California Street
Everett, WA 98206-1107

Order Docket No.	10718
Site Location	Snohomish County, Washington
WRIA	7

PURPOSE

On October 17, 2013, Public Utility District No. 1 of Snohomish County (SNOPUD) filed an application with the Washington State Department of Ecology (Ecology) requesting issuance of a 401 Water Quality Certification under the provisions of Section 401 of the Clean Water Act (33 USC § 1341) to be submitted with its application for a relicense to the Federal Energy Regulatory Commission (FERC) for the Hancock Creek Hydroelectric Project, FERC No. 13994. This application was later withdrawn by SNOPUD on, and received by Ecology on, October 3, 2014. SNOPUD reapplied for the Hancock Creek Hydroelectric Project on, and Ecology received the application on, October 3, 2014.

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as currently proposed by SNOPUD and conditioned by this ORDER will be conducted in a manner that will comply with state water quality standards and other applicable requirements of state law.

BACKGROUND

Hancock Creek Hydroelectric Project was originally developed by a subsidiary of Puget Sound Energy working with Weyerhaeuser. Study of Hancock Creek, in King County, Washington, and its potential for hydropower development began in the 1980s. The proposed Hancock Creek Project was originally licensed in 1993 (FERC No. 9025). The project was designed, licensed, and permits were obtained, but construction did not proceed for economic reasons. The license was acquired by a small company, Balaton Power, in early 2000 through a sales agreement and transfer of the license. Balaton Power had intentions to develop the project and amended the original license. The original license was amended in a FERC Order issued in February 2002 that included changes in project facilities and capacity. However, Balaton Power was not able to obtain financing to construct the project. The project license was terminated by the FERC in April 2004 due to failure to start construction. Arch Ford acquired the project assets in 2007, and the property at the diversion weir, intake, penstock, and powerhouse was conveyed to his limited liability company (Hancock Power LLC) via quitclaim deed in 2009. Hancock Power LLC sold the Project assets to the SNOPUD (District) in 2010. The Pre-Application Document (PAD) and Notice of Intent were filed by SNOPUD on September 9, 2011. The District also filed a request to use the Traditional Licensing Process (TLP), which the FERC approved on November 8, 2011.

PROJECT SITE DESCRIPTION

Hancock Creek Hydroelectric Project is located approximately 5 miles northeast of the City of Snoqualmie, Washington, within the Snoqualmie River Basin. Refer to maps provided in Appendix D for project location and vicinity. The basin extends over portions of both King and Snohomish Counties and contains about 1,800 square miles of land and water area. The Snoqualmie River originates in the Cascade Mountains, draining the western slopes in three major river forks. The forks meet at a confluence one mile upstream of the town of Snoqualmie. Snoqualmie Falls, 0.5 mile downstream of the town, has a vertical drop of 268 feet and serves as a natural barrier for anadromous fish migration.

The project site is currently surrounded by the Hancock Forest Management Snoqualmie Tree Farm. This is a relatively small (6.0 megawatt) run-of-the-river hydroelectric project, utilizing the power potential of a drop of about 1,129 feet of head on Hancock Creek. Run-of-the-river means that there is a very small reservoir (approximately 0.63 acre-feet) so the hydroelectric plant operates following natural stream flow.

FINDINGS

1) Hancock Project Ownership and Easement

Lands surrounding the Project are owned by Hancock Timber Resource Group (HTRG), a private corporation, and are managed for commercial timber production by the Hancock Forest Management Group (HFM), with the exception of approximately 20 privately owned lots located on the north shore of Lake Hancock.

The District owns lands associated with the Project as previously licensed by the FERC to the Weyerhaeuser Company as Project No. 9025 in the 1990s. The District and HTRG are in the process of amending ownership as described in the District's FLA to obtain necessary ownership and easements consistent with the FLA and the TRMP. Easements are required for management of mitigation areas, forest road access for permanent maintenance, and for temporary construction staging and access.

2) Hancock Project Production and Capacity

The Project will be operated as a run-of-the-river facility. At the powerhouse tailrace, streamflow in the bypass reach will combine with seasonally available water diverted for power production.

Within Hancock Creek, stream flow gages will be operated near the Project intake and immediately downstream of the powerhouse.

3) Land Use

The Basin is in private ownership. Land use of the area includes intensive timber management and production and some recreational home sites. Dispersed recreation use (hunting and fishing) is common throughout the area. Power generation will be an additional water use once the project is in operation.

4) Precipitation and Project Operation during Low, Mean, and High Water Years

Climate in the vicinity is strongly influenced by macro topography. The Cascade Mountain Range forms a barrier to the movement of maritime continental air masses. On the western slopes of the Cascades, winters are wet and mild, while summers are cool and comparatively

dry. Mean annual precipitation in the Snoqualmie River Basin ranges from approximately 80 inches at 1,000 feet to 130 inches at higher elevations. Seventy five percent of yearly precipitation occurs from October through March, with much of the winter precipitation falling as snow at higher elevations. August and September are typically the driest months.

The plant will generally operate in the mid-range of its full load capability for about six months of the year. For about three months of the year, it will operate near full capability (usually in spring high run-off periods and during winter rain storms). For about two and a half to three months in the summer, the Project will be off-line due to low stream flows. Therefore, operating options for peaking would vary based on time of year. Seventy five percent of annual precipitation occurs from October through March, with much of the winter precipitation falling as snow at higher elevations. August and September are typically the driest months. Over the long term, the plant is expected to operate about 75% of the time. As a run-of-the-river plant, operation will be adjusted during low, mean, and high-water years; that is, the plant will operate only when stream flows allow.

Typically, the plant will be operated 24 hours per day, 7 days per week when water is available in excess of the minimum instream flow requirement and sufficient to meet turbine minimum flow requirements. However, there may be times during the year when it is necessary to shut down the plant due to low stream flow conditions. As a run-of-the-river project, the Hancock Creek Project will have no year-round dependable capacity.

5) Project Facilities

As described in the Final License Application filed by SNOPUD with the FERC on August 1, 2014, and subsequent supplemental filings. Minor changes in facility dimensions may occur during final design, but basically, the Project Facilities include the following:

Diversion Weir

A weir and intake structure will be constructed on Hancock Creek at RM 1.6. The weir will be designed to permit the passage of excess stream flow without obstruction and will maintain the normal water surface at elevation 2,172 feet. Built of reinforced concrete, the weir will be 6 feet high and 45 feet long. The passage of excess stream flow without obstruction is accomplished through spill over the 8-foot tall by 45-foot wide spillway with sloped rock-fill upstream and downstream. According to the design report filed as part of the Final License Application, the 100-year flood for Hancock Creek is 931 cfs, which passes over the spillway at a calculated depth of 3.6 feet. A HEC-RAS analysis performed on Hancock Creek by EES Consulting in 2012 indicates that a narrow area of Hancock Creek upstream of the project at an existing bridge provides hydraulic control and indicates that the project does not impact pre-Project water levels upstream of this existing control point.

Intake Structure

The intake structure (elevation ~2180 feet) will be constructed on the right bank. It will be a reinforced concrete structure with a trash rack, fish screens, and a closure gate. The intake structure will be about 25 feet wide, 59 feet long, and 16.5 feet high. After passing through the trash rack, water will flow through wire mesh fish screens having a minimum total wetted area of 220 square feet, and into the penstock inlet.

Cleaning of the intake fish screens will be accomplished automatically via the use of self-cleaning traveling fish screens. Water surface level sensors will trigger automatic cleaning, and would alert Project staff and will affect plant shutdown if the conditions worsen.

A small amount of flow into the intake structure will not pass through the screen, but will transport fish back into the stream through a bypass pipe. It will be designed to maintain an attraction velocity in accordance with the fishery agency's specifications.

Penstock

Water will be conveyed from the intake to the powerhouse through a penstock consisting of approximately 7,310 linear feet of buried 44-inch and 39-inch diameter pipeline. The penstock will be routed on the right (north) bank of Hancock Creek. The entire penstock corridor is within a commercial tree farm and subject to harvest at approximate 35 to 45 years rotations.

The penstock would be installed in a trench and backfilled with the possible exception of areas of high groundwater or close bedrock contact where the penstock may be placed at existing grade and buried.

The penstock consists of a 44-inch diameter high density polyethylene (HDPE) or steel pipe in the low pressure section about 3,600 feet long, and a 39-inch diameter steel high pressure section about 3,710 feet long. The penstock generally follows a 50-foot wide corridor to be used for construction; the width of the working corridor has been narrowed to a 30-foot wide corridor in critical areas or buffers to reduce impacts.

Powerhouse

The powerhouse will be sited on the north side of Hancock Creek, about 200 feet upstream from the North Fork Snoqualmie River at RM 0.4. The powerhouse will be a reinforced concrete and cement masonry unit block structure about 48 feet wide by 60 feet long. The floor elevation of the powerhouse will be at approximate elevation 1,056 feet msl. The building will be about 40 feet tall for a bridge crane to install or remove pieces of equipment. The elevation of the tailrace where it joins Hancock Creek will be at approximate elevation 1,042 feet msl. The building will house a 2-jet horizontal Pelton turbine generator. Auxiliaries and equipment will be arranged on the machine floor. Office and storage space will also be located in the powerhouse.

Tailrace

The turbine discharge flow will be conveyed to the creek in a riprap-lined channel approximately 12 feet wide by approximately 80 to 100 feet long, before entering the creek. The design of the Project will also provide that, if a load rejection occurs, flows in the penstock will be automatically deflected from spinning the turbine to provide flow continuation downstream of the powerhouse and allow control of ramping rates in the diversion reach and downstream of the powerhouse.

Switchyard

The step up transformer will be located in a switchyard near the powerhouse. It will be surrounded by an impervious trench capable of containing accidental leakage from the transformer. The entire switchyard will be enclosed within a security fence.

Impoundment

The Hancock Creek weir will impound approximately 0.63 acre feet of water. The pool will occupy a surface area of 0.18 acres and extend approximately 190 feet upstream. As a run-of-the-river facility, the impoundment has no active storage volume; the gross total volume of the pool is approximately 0.63 acre-feet. A summary of the physical characteristics of the impoundment is identified in Table 1.

Table 1. Impoundment details

Surface Area	7,860 ft2 (0.18 acres)
Volume	27,450 ft3 (0.63 acre feet)
Max Depth	6 feet
Mean Depth	3.5 feet
Flushing Rate	50 cfs
Shoreline Length	425 feet
Substrate Composition	Cobble and gravel

Turbine and Generator

One 6.0 MW 2-jet horizontal impulse (Pelton) type turbine will be used. The turbine will produce 8,043 hp at a gross head of 1,116 feet and a maximum flow of 81 cfs. The turbine rotational speed will be 450 rpm. The generator will be a synchronous type rated at 6,000 kva at 0.9 power factor, 6,900 kV, 3 phase, 60 Hz, and will be provided with a brushless excitation system.

Transmission Line

The transmission line will be a 34.5 kV buried line. The line will extend approximately 800 feet from the Hancock substation, located adjacent to the powerhouse, to logging road #4200 where it will connect to the buried line from the Black Creek Hydroelectric Project. Depending on the final design of the Black Creek transmission line, it may be necessary to improve a portion of the line to provide added capacity for the Hancock plant. The transmission line will follow a portion of the access road that joins the two power plants. Most of this road is an existing logging road that is currently being extended to provide access to the Black Creek powerhouse. Another segment of the transmission line will be located on a logging road, parallel to, and west of the access road.

Additional Equipment

To maintain adequate fishery spawning flows downstream of the powerhouse in the event of an emergency plant shutdown, flows will be diverted around the powerhouse to the channel downstream. Diversion will be through the nozzle flow deflector. The turbine will have a governor system to allow speed control during startup and to synchronize the unit. During operation, the load will be controlled as a function of available stream flow using the powerhouse's computerized control system and the headwater surface elevation sensors.

The turbine will be fitted with an inlet valve which will be used for emergency shutdown in the event of malfunction of the governor system, or long-term shutdown of the turbine. The generator will be equipped with a brushless excitation and voltage regulation system. The neutral will be grounded through a single-phase distribution transformer. Surge protection equipment will be installed to protect the generator against possible winding insulation damage due to lightning or switching surge voltages.

A central hydraulic oil pump and accumulators will be supplied to meet station requirements. Each critical hydraulic load will have its own accumulator sized to meet emergency shutdown requirements. An air compressor with a storage tank will be provided to meet station compressed air requirements.

A 120 VDC battery system will meet switchgear and other station requirements. The batteries will be station-type lead calcium, with a dual charger arrangement and a circuit breaker type load distribution center. A computerized control system will be installed to permit automatic station operation. When the plant is operating automatically, the computer will start and stop the turbine, synchronize the generator, and control the nozzle openings. The computer will also log data and act as a remote terminal of a Supervisory Control and Data Acquisition (SCADA) system. Manual and semi-automatic operation of the station will also be possible.

6) Water Rights

The Project holds a current non-consumptive water permit for 81 cfs for this project (water permit number S1-26154). Water rights permit allows a diversion of up to 81 cfs while maintaining minimum instream flows of 5 cfs in the October 16 – June 15 time period and 20 cfs in the June 16 – October 15 time period. The report of examination for this water right indicates that the criteria of RCW 90.03.290 were met.

7) Dams in the Snohomish River Basin

There are approximately 62 dams and/or diversion structures located throughout the Snohomish River Basin WRIA 07; 25 of which are in King County and 37 in Snohomish County. Hydroelectric projects that are in immediate vicinity of Hancock Creek Hydroelectric are Calligan Creek Hydroelectric, Snoqualmie Falls Hydroelectric, Twin Falls Hydroelectric, and Black Creek Hydroelectric project.

8) Site Access

Access to the general vicinity is by Interstate-90. Access to the project site is gained from the town of Snoqualmie via Hancock Forestry Management group logging roads. The powerhouse and intake will be accessed by improving and extending existing forestry roads. Access to the intake will include improving an existing forestry road which is a spur off Road 4310. The improved road would be surfaced with gravel, and be approximately 16 feet wide and approximately 440 feet in length (the existing road is approximately 220 feet in length, and would be extended approximately 220 feet). Access to the powerhouse will include improving an existing forestry road which is a spur off Road 4200. The improved road will be surfaced with gravel, and be approximately 16 feet wide and approximately 1,190 feet in length (the existing road is approximately 990 feet in length, and would be extended approximately 200 feet). A road to the left abutment would be constructed to allow access during the construction phase, and will be approximately 800 feet in length.

Access to the penstock will be by existing roads at several locations along the penstock route. Where grades allow, a maintenance road may be constructed to allow inspection of the penstock alignment and vegetation control activities.

All roads in the project vicinity are planned to be jointly used for purpose of project access and for use by adjoining property owners for forest management purposes.

9) Approvals required by Department of Ecology

- Clean Water Act Section 401 Water Quality Certification Order
- Water Rights Permit (S1-26154P have been issued)
- General Construction Stormwater NPDES permit
- Coastal Zone Management Consistency Determination

10) Water Quality

Preliminary water quality monitoring data collected in the proposed Hancock Creek Project Area showed that conditions were well within State standards (FERC 2002, 401 certification application), as well as within the range of tolerable temperatures for rainbow and cutthroat trout (Bell 1986, 401 certification application).

Hancock Creek is a tributary to north fork of Snoqualmie River and an important cold water source. There is a total maximum daily load (TMDL) requirement for temperature for the Snoqualmie River and Hancock Creek's cool water helps to minimize downstream temperature impairment problems. Maintaining the natural temperature regime contribution to the North Fork Snoqualmie River is required by the TMDL and the surface water quality standards, WAC 173-201A-200(c). During project operation, generation water will be drawn at the intake structure before passing it through buried penstock and then it will be released back to the Hancock Creek at the tailrace. The bypass reach and generation water mix in the tailrace prior to Hancock Creek's confluence with the north Fork of Snoqualmie River.

SNOPUD is required to maintain minimum instream flow in the bypass reach. Passing generation water through buried penstock is not expected to cause any increase in water temperature downstream, in fact the buried penstock may cause some cooling effect. However, there is a theoretical warming potential for water in the bypass reach prior to mixing with generation water in the tailrace if the project is operated during low natural flow conditions.

While estimates of thermal effects in the bypass reach from diverting water out of Hancock Creek are unavailable, the potential for measurable temperature increases above the allowable incremental increase of 0.3 °C in the bypass reach as a result of project operation are unlikely as the Project will not be operated during summer because natural flows will likely be lower than the required minimum instream flow. Therefore the Project is not expected to cause any temperature increment effect on the natural water temperature regime in the bypass reach during this critical low flow period or at the confluence of the north fork Snoqualmie River during the critical period designated in the TMDL. Graph showing the project's mean daily water temperature prior to construction (from 2011-2014) is provided in Appendix B.

The District will be monitoring water temperature, turbidity, and discharge in Hancock Creek during five years of normal Project operations in order to evaluate the changes in water temperature, and to ensure compliance with state water quality standards.

11) Construction

The project will be under construction for a period of about 18-24 months. Timing of specific project components (e.g. in-water work or certain land-disturbing activities) would be scheduled within regulatory allowed work-windows. Anticipated construction start date

would be spring 2015; however, actual start date could vary depending upon issuance of permits, licenses, and need for energy resources as indicated by the District's Integrated Resource Plan. Specific scheduling of construction of each Project feature will be based upon seasonal climatic and stream flow conditions, degree of ground disturbance caused by particular construction activities, and the risk of sediment generation and delivery to the Creek posed by combinations of soil, water, slope stability, and topographic factors.

Approximately 1,200 cubic yards of concrete will be required to construct the powerhouse, thrust block, tailrace, diversion, and intake structures. No quarry sites are anticipated and no on-site soils will be used for concrete aggregates. All concrete will be delivered by truck from nearby commercial plants.

All in-channel construction work will be completed in dry with the exception of construction of cofferdams, which will be done in accordance with permit requirements. Resident fish at the site will be removed to downstream pool habit, prior to construction.

The creek will be diverted around the work site in one or more bypass pipes. A temporary upstream cofferdam will be installed to divert and transition the flow into the bypass. The cofferdam will be constructed using gravel-filled bags. The gravel will be clean and bags will be of the appropriate size and strength that can be placed and removed without tearing or breaking. The upstream face of the cofferdam will likely be lined with plastic sheeting to reduce seepage. During work within the dewatered creek bed, sumps will be located to capture any seepage from the upstream cofferdam. This seepage will be pumped and routed downstream below the worksite if clean, or to upland areas for release if turbid.

No fresh concrete or concrete by-products will be allowed to enter the stream at any time during construction of the Project. In-stream channel work will be constructed in the dry and all forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete from getting into a stream.

Water quality monitoring for all in-water work will be conducted throughout the Project. Sampling will be conducted in Hancock Creek at the Powerhouse site and at the diversion/intake site near the bypass pipe discharge. Records of all monitoring information will be documented in the site log book and related monitoring forms.

12) Fish

No anadromous fish are present in the Hancock Creek Project Area. Access to Hancock Creek by returning adult salmon or steelhead is blocked by Snoqualmie Falls on the Snoqualmie River at about RM 40.5, approximately 9.2 river miles downstream from the mouth of Hancock Creek.

Fish species known to inhabit the Snoqualmie River basin upstream of Snoqualmie Falls include cutthroat trout, rainbow trout, eastern brook trout (*Salvelinus fontinalis*), mountain whitefish (*Prosopium williamsoni*), largescale sucker (*Catostomus macrocheilus*), longnose dace (*Rhinichthys cataractae*), shorthead sculpin (*Cottus confuses*), and mottled sculpin (*Cottus bairdi*), western brook lamprey (*Lampetra richardsoni*), and threespine stickleback (*Gasterosteus aculeatus*) (Overman 2008). No studies have reported observations of native char (bull trout and Dolly Varden) above Snoqualmie Falls, including during snorkel surveys designed to detect their presence (Berge and Mavros 2001). Nonetheless, the upper Snoqualmie basin is designated Core Area/Core Habitat for ESA-Threatened bull trout (*Salvelinus confluentus*) by the USFWS. Currently, all three Snoqualmie River Forks are managed for wild trout (Overman 2008).

Resident trout found in Hancock Creek include rainbow trout, cutthroat trout, and brook trout (Weyerhaeuser 1991, R2 2001, District 2011, District 2012, District 2013). Fish population surveys in Hancock Creek were initially conducted in late 1980s. These surveys included electrofishing and snorkel surveys near both the proposed diversion and powerhouse sites. Surveys used standard methods for sampling small wadeable streams and were conducted during the summer low flow season of 1986, and the summer low flow of 1989. In 1986, the electrofishing surveys near the lake outlet and the bridge captured 75 rainbow trout, no brook trout, and no cutthroat trout. In October 1989, 12 rainbow trout were captured, ranging from 55 mm-195 mm in length. Snorkeling throughout the bypass reach resulted in observations of 138 juvenile and adult rainbow trout.

Six subsequent surveys in Hancock Creek were conducted using snorkeling gear in accordance with the Project's Fisheries Monitoring Plan (a requirement of the original FERC license, Project No. 9025) (CES 1992, R2 2001, Cedarock 2010, District 2011, District 2012, District 2013a). These six independent efforts were each undertaken as the "first year" of monitoring in advance of Project construction to document pre-Project trout populations. The surveys were conducted in a series of eight pools established as the monitoring index area. The R2 (2001), Cedarock (2010), and District (2011, 2012) surveys generally replicated the CES (1992) survey, although some changes in habitat were documented.

The results of fish population surveys conducted in the proposed Project bypass reach over the past 23 years indicate that rainbow trout is the predominant species in Hancock Creek. Population density is considered low to moderate; likely resulting from prevailing habitat conditions and limited spawning habitat beyond that present at the lake outlet. While considered self-sustaining, populations are most likely periodically augmented by emigrants from Lake Hancock. Migration between the lake and creek is one directional because of numerous barriers to upstream passage. Populations are isolated between barriers with movements restricted within localized areas. At the outlet to Lake Hancock, spawning has been historically observed in a short reach of the creek presumably by stocks with an allacustrine life history (WDG 1985). Recent spawning surveys (District 2011, 2012, 2013) further confirm this life history pattern with 100% of the observed redds in a 760-foot index area located 200 feet downstream of the lake. This reach will not be impacted by Project operation.

13) Tributary Rivers and Streams

Hancock Creek is a tributary of the North Fork Snoqualmie River with the confluence at about river mile (RM) 6.2 (Appendix D, Figure 5). The headwaters of Hancock Creek originate in the foothills of the western North Central Cascade Mountains. Just over 4.9 miles in length, the creek falls approximately 2,000 feet at an average gradient of 8 percent. Covering about 8.4 square miles, the Hancock Creek drainage area can be divided into the following three separate units: Upstream of Lake Hancock, Lake Hancock, and Downstream of Lake Hancock. The 2-mile stretch upstream of Lake Hancock originates at about elevation 3,200 feet mean sea level (msl) and falls at an average gradient of 7 percent until entering the lake at approximate elevation 2,172 feet msl.

14) Determination of Minimum Flows

Ecology identified the correct flows based on an Instream Flow Incremental Method (IFIM) study that was submitted to FERC in 1991. This study included identifying habitat needs for

resident trout (Physical Habitat Simulation (PHABSIM) study) in Hancock Creek. Based on this study, instream flows were agreed on by interested parties including WDFW. The adaptive management component uses trout monitoring information over a period of years to make sure these flows are adequate to protect trout and if not, flows can be adjusted upward. Since flow and habitat conditions have not significantly changed between the present and when the study was done and since this is the same type of study the state currently performs when developing minimum instream flow water rights adopted in agency rules, the original IFIM study is sufficient.

15) Opportunity for Stakeholders and Public Participation

A draft copy of this Order was provided to all the stakeholders listed on the FERC website and posted on Ecology's website for public comments. Prior to final issuance this Order was also provided to SNOPUD to confirm that the information provided here is most current at the time of the issuance of 401certification. All the comments received during consultations with stakeholders and during public comments period were adequately addressed prior to the issuance of this amended 401 Certification Order.

AUTHORITIES

In exercising authority under Section 401 of the Clean Water Act (33 USC § 1341) and the Washington State Water Pollution Control Act (RCW 90.48.260), Ecology has investigated this application pursuant to the following:

1) Conformance with all applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under Sections 301, 302, 303, 306, and 307 of the Clean Water Act (33 USC Sections 1311, 1312, 1313, 1316, and 1317, FWPCA Sections 301, 302, 303, 306, and 307).

2) Conformance with any and all applicable provisions of Chapter 90.48 RCW, including the provision to use all known, available, and reasonable technologies (AKART) to prevent and control pollution of state waters as required by RCW 90.48.010.

3) Conformance with the state water quality standards as provided for in Chapter 173-201A WAC authorized by 33 USC 1313 and by Chapter 90.48 RCW, and with other appropriate requirements of state law that are related to compliance with such standards.

4) Conformance with RCW 90.56, which prohibits discharge of oil, fuel, or chemicals into state waters or onto land where such contaminants could potentially drain into state waters.

5) Conformance with the Minimum Flows and Levels Act, RCW 90.22 and the Water Resources Act, RCW 90.54.

Certification of this proposal does not authorize SNOPUD to exceed applicable ground water quality standards (WAC 173-200) or sediment quality standards (WAC 173-204). Furthermore, nothing in this Certification shall absolve SNOPUD from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments occurring as a result of Hancock Hydroelectric Project construction or operation.

This certification will cease to be valid if the project is constructed and operated in a manner not consistent with the FERC license.

CURRENT STANDARDS

1) Washington State Water Pollution Control Act

The intent of actions required in this certification is to support the goals of the state of Washington to "maintain the highest possible standards to ensure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wildlife, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known, available, and reasonable technologies (AKART) by industries and others to prevent and control the pollution of the waters of the state of Washington" (RCW 90.48.010).

2) Washington State Water Quality Standards (WAC 173-201A, 2006)

Hancock Creek is a tributary to the North Fork of the Snoqualmie River in *Water Resource Inventory Areas* (WRIA) 7. Based upon the new standards, use-based water quality characteristics for Hancock Creek are listed below (WAC 173-201A-600):

Core summer habitat, extraordinary primary contact recreation and all other water supply and miscellaneous uses.

Designated freshwater uses in the State standards include subcategories under aquatic life, recreation, water supply, and miscellaneous uses. The entire north fork of Snoqualmie River basin is designated for domestic, industrial, and agricultural water supply and stock watering; wildlife habitat; timber harvest; commerce and navigation; boating; and aesthetics. The basin is also designated as Core Summer Salmonid Habitat for which specific numerical criteria are established for water quality parameters applicable to the Hancock Creek as explained in Table 2.

3) Toxics and Oil Spills [WAC 173-201A-260(2)(a), 2006 and RCW 90.56]

Toxic concentrations shall be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health. RCW 90.56 prohibits any discharge of oil, fuel, or chemicals into state waters or onto land where such contaminants could potentially drain into state waters.

COMPLIANCE WITH STANDARDS

Waters of the state are assigned designated uses under WAC 173-201A. Hancock Creek is designated as Core Summer Salmonid Habitat for which specific numerical criteria are established for temperature, total dissolved gas (TDG), turbidity, dissolved oxygen (DO), and pH (Table 2). The Hancock Creek Hydroelectric Project shall meet or exceed the requirements for all designated and existing uses under state water quality standards.

Table 2. Applicable 2006 numerical water quality criteria for the Hancock Creek

Parameter	Condition	Value
Temperature	Highest 7- DADMAX.	16ºC.[1]
Dissolved Oxygen	Lowest 1-day minimum.	9.5 mg/L.
Turbidity	Turbidity shall not exceed:	5 NTU over background when background is <= 50 NTU -or- 10% increase in turbidity when background is > 50 NTU.
Total Dissolved Gas (TDG)	% Saturation.	Total dissolved gas shall not exceed 110% of saturation at any point of sample collection.
pH		Range within 6.5-8.5, with a human-caused variation within the above range of < 0.2 units.
Toxic Substance Criteria	See WAC 173-201A-240 and 250.	

[1] When waterbody's termperature is higher than the criteria due to natural conditions, then human actions considered cumulatively may not increase the 7-DADMax temperature more than 0.3 ºC above natural conditions. WAC 173-201-200(1)(c)(i).

The state standards for contact recreation that apply to the Hancock Creek are based on fecal coliform bacteria criteria as summarized in Table 3.

Table 3. State water quality standards for fecal coliform for extraordinary and primary contact recreation

Extraordinary primary contact recreation	Fecal coliform organism levels must not exceed a geometric mean value of 50 colonies/100mL, with not more than 10% of all samples (or any single sample when less than 10 sample points exist) obtained for calculating the geometric mean value > 100 colonies/100 mg/L.

SPECIFIC CONDITIONS

S1. Instream Flow

Instream flows shall be maintained in any bypass reach and downstream of the project, in a quantity sufficient to meet water quality and quantity goals and standards for the waterway, as provided in WAC 173 201A and RCW 90.48, RCW 90.54, and RCW 90.22. Continuous flows must be met or exceeded throughout the year as provided in Table 4:

Table 4. Release at diversion weir

Day of Year	Minimum Instream Flow	Measurement location
June 16 through October 15	20 cfs or inflow whichever is less	Immediately downstream of the Hancock Creek Intake
October 16 through June 15	5 cfs or inflow, whichever is less	Immediately downstream of the Hancock Creek Intake

If project operation results in excursion of any of the above minimum flow requirements, the SNOPUD shall notify the commission, WDFW, and Ecology as soon as possible but no later than 10 business days after such an incident (use the non-compliance notification form provided in Appendix G for reporting).

S2. Down Ramping and Flow Continuation

The down ramping rate will be consistent with the previous license (FERC Project No. 9025, License Article 411) as identified in Table 5, and will be implemented for Project startup and shutdown operations.

Table 5. Down ramping rate criteria for the Hancock Creek Hydroelectric Project downstream of the diversion and powerhouse.

Day of Year	Daylight* Rate (inches/hour)	Nighttime Rate (inches/hour)
November 1 through June 15	2	2
June 16 through October 31	2 (when instream flow is greater than or equal to critical flow); 1 (when instream flow is less than critical flow - critical flow set at 40 cfs)	1
* Daylight is defined as 1 hour before sunrise to 1 hour after sunset.		

The powerhouse shall be equipped with deflector shields designed to allow for the continuation of flow out of the powerhouse when any turbine is wholly or partially taken off-line.

Design and install mechanical deflectors in front of the Pelton turbine, to provide flow continuation past the turbine for emergency situations when the turbine or generator function must be terminated. This flow continuation system will be operated according to the following criteria:

(a) When flows exceed the annual 10% exceedance flow, no flow continuation will be required (Based on actual USGS data and synthesized records. Economic Engineering Services 2009);

(b) When flows are less than the critical flow (the flow above which there is no risk of stranding) flow continuation will be maintained for a minimum of 24 hours; and

(c) At all other times, a minimum of six hours of flow continuation will be provided.

S3. Adaptive Flow Management

SNOPUD shall implement the Instream Flow Adaptive Management Plan (IFAMP) filed with the Commission on April 25, 2014. The IFAMP documents how the Licensee will implement a program to adaptively manage instream flows based upon the results of resident trout monitoring. The IFAMP was developed with input from WDFW and Ecology.

SNOPUD will implement 5-year increment flow-increases to be adjusted if monitoring indicates a decrease in the resident trout population index as described in Table 6 below.

Table 6. Instream flow adaptive schedule for adjustment based on trout monitoring results

Years of Project Operation	1-5 years	6-10 years	11-15 years	16+ years
	Start	Flow Adjustment Schedule in cfs**		
Month	Flows in cfs*	1st	2nd	3rd
October 1-15	20	20	20	20
October 16-31	5	6	7	8
November	5	6	7	8
December	5	6	7	8
January	5	6	7	8
February	5	6	7	8
March	5	6	7	8
April	5	6	7	8
May	5	6	7	8
June 1-15	5	6	7	8

Years of Project Operation	1-5 years	6-10 years	11-15 years	16+ years
	Start	Flow Adjustment Schedule in cfs**		
Month	Flows in cfs*	1st	2nd	3rd
June 16-30	20	20	20	20
July	20	20	20	20
August	20	20	20	20
September	20	20	20	20
* Stated flow level or natural flows whichever are less.				
** Flow increases to be adjusted only if approved monitoring plan determines a decrease in the resident trout population index occurred. The first adjustment could occur as early as Year 3 if there are two sequential catastrophic declines in the population index.				

Results will be examined following the statistical analyses and decision criteria described in the Trout Monitoring Plan (TMP) after each annual post-project snorkel survey is completed. The Licensee will provide WDFW and Ecology the results of the analyses and the Licensee's recommendations by October 31st of each year as part of the annual reporting under the TMP. WDFW will have 30 days to review the material and provide written comments to the Licensee. If needed, a consultation meeting will be held approximately two weeks after the survey results are submitted to review the status of the statistical evaluation. The intent of this approach is to work interactively with resource agency personnel to ensure proposed flow releases do not harm fisheries resources. Should unexpected events occur, with obvious adverse effects on the results of the evaluation, all parties will take such effects into deliberation.

If results of the monitoring plan determine that increases in flows are warranted (according to criteria defined in the evaluation plan), then the Licensee will increase flows in Hancock Creek bypass reach according to the schedule in Table 6 (above) no later than February 28th of the following year.

The time periods for initial Project operation will also be used to determine the appropriate survey schedule following any FERC-mandated increase in the minimum instream flow release. For instance, if a modification to the minimum flow release is implemented prior to February 28th, the next scheduled snorkel survey will describe conditions under the new flow regime. If a flow adjustment is implemented between March 1 and June 15, the snorkel survey conducted in the following year will be used to evaluate trout abundance under the new flow regime.

The Licensee shall conduct surveys of trout abundance in the Project reach annually in accordance with the TMP and the IFAMP (Appendix H) until the FERC determines the prescribed flow regime adequately protects the aquatic resources of Hancock Creek. Pre-Project baseline snorkel surveys of the eight selected pools in the Project reach were conducted during August and September 1992, 2001, 2010, 2011, 2012, 2013, and 2014 to date. The Licensee shall repeat three surveys between August and September each year until the Project is constructed and continue these surveys for at least five years following power generation. Project construction is expected to start during fall 2016 with Project operation expected in the winter 2017.

Table 7. Trout Monitoring Plan, activities and reporting*

Activities	Frequency	Timing
Conduct Pre-Operation Surveys	Annually, until commencement of operation	August 15-September 15, as conditions allow
Provide Pre-Operation Survey Report (Annual Report) to WDFW for Review	Annually, after conduct of pre-operation survey	October 31
Conduct Post-Operation Surveys	Annually for 5 years after commencement of operation	August 15-September 15, as conditions allow
Provide Post-Operation Survey Report (Annual Report) to WDFW for Review	Annually for years 1-4 after commencement of operation	October 31
Provide Final Post-Operation Survey Report to WDFW for Review	5th year after commencement of operation	December 31
File Final Post-Operation Survey Report with FERC	Once	60 days (by March 1st) after providing Final Post-Operation Survey Report to WDFW for review

* If Project Operations Begins:	Then Initial Post Operation Survey Occurs:
August 16-December 2016	August 2017
January 1-February 28 2017	August 2017
March 1-August 2017	August 2018

S4. Flow Measurement and Reporting

Install a calibrated weir at the diversion to ensure that required flows are maintained and ramping rates are in compliance. Calibration procedures for flow measurement shall be in accordance with manufacturers' recommendations and be made available to Ecology upon request.

With approval from WDFW and Ecology, SNOPUD shall determine the location of a gage to record tailrace stage in Hancock Creek below the powerhouse. SNOPUD shall install, operate, and maintain this stage gage. The gage will record the tailrace stage every 15 minutes for the duration of the Project license. SNOPUD will provide the stage data to the agencies and Snoqualmie Tribe within 30 days after the date of the agencies' or tribes' request for the data.

Table 8. Instream flow monitoring and reporting

Activity	Frequency	Timing
Operate and maintain previously installed USGS gage 12142300	Continuous	Duration of project
Record and report USGS gage data	15-minute intervals	Year around
Flow recording gage at weir, as required for fish screens (S6)	Continuous	Year around
Determine location of stage gage below powerhouse	Once	By end of March 2016
Record stage below powerhouse	15 minute intervals	Duration of project
Provide stage data to agencies	As needed	Within 30 days after request for data
Notify Ecology, WDFW, and FERC of flow deviation including down ramping and flow continuation	Each occurrence	No later than 10 business days after occurrence

S5. Tailrace Fish Exclusion

SNOPUD must build a tailrace exclusion barrier to prevent upstream migration of fish into the tailrace. The design of the barrier must be approved by WDFW.

S6. Fish Screen

SNOPUD must install self-cleaning, traveling composition fish screens in the intake chamber upstream of the penstock inlet consistent with the previous license (FERC Project No. 8864, License Article 414).

S7. Upstream Fish Passage

SNOPUD shall install volitional passage for resident fish at the project intake facilities consistent with that filed with the FERC on August 15, 2014, and consistent with that provided under existing channel conditions. Passage will be provided using flows no greater than the release of previously licensed minimum instream flow rate of 5 cfs at the Hancock intake.

S8. Sediment and Woody Debris Passage

SNOPUD shall pass all accumulation of sediment and woody debris that is located at the project intake and weir to downstream of the project intake and weir.

S9. Construction Activities

SNOPUD must prepare and implement a water quality protection plan (WQPP) for all project-related construction, maintenance, and repair work that is in- or near-water that has the potential to impact surface and/or groundwater quality. A full-time Pollution Control Inspector must be made available to supervise implementation of the WQPP. WQPP must include, but not be limited to, the following elements:

a) Stormwater Pollution Prevention Plan (SWPPP) for Upland Construction Work

SNOPUD is required to develop a SWPPP for upland construction activities. The SWPPP must specify the Best Management Practices (BMPs) and other control measures to prevent pollutants from entering state's surface water and ground water from upland construction activities. The SWPPP must also specify the management of chemicals, hazardous materials, and petroleum (spill prevention and containment procedures), including refueling procedures, preventive measures in the event of a spill, and reporting and training requirements. The SWPP must also specify water quality monitoring protocols and notification requirements.

b) In-Water-Work Protection Plan for In-Water Construction Work

SNOPUD is required to develop an In-Water-Work Protection Plan for construction activities that require work within surface waters. This plan must specifically address the BMPs and other control measures to prevent contaminants from entering surface water and ground water. In addition to construction activities, this work includes, but is not limited to, the application of herbicides, pesticides, fungicides, disinfectants, and lake fertilization.

The plan must address water quality monitoring provisions for all in-water work, including monitoring outside the area that could be influenced by the work, and at the point of compliance throughout the project. This includes, but is not limited to, construction and maintenance of, or emergencies from, any of the following:

fish collection structures, generation turbines, penstocks, hatcheries, transportation facilities, portable toilets, boat ramps, access roads, transmission corridors, structures, gravel augmentation projects, and staging areas for all project-related activities.

The plan must include the following minimum requirements:

i. Locations of samples

Locations of water quality sampling sites must be identified and described in the plan and on a map of the project area. At a minimum, sampling shall take place at the point of compliance as specified in WAC 173-201A-200(1)(e)(i), which allows temporary area of mixing for turbidity resulting from disturbance of in-place sediments in Hancock Creek. Background samples must be collected outside the area of influence of in-water work. Background samples shall be collected concurrently and at the same frequency as the point of compliance samples.

ii. Number of samples

Number and frequency of water quality samples must be specified in the plan.

iii. Parameter to be sampled

Turbidity, pH, oil and sheen, temperature and dissolved oxygen (DO) must be sampled for this project.

iv. Equipment

Sampling must be done using properly calibrated instruments.

c) Best Management Practices for Construction Work

BMPs used for the upland construction activities must be consistent with the *Stormwater Management Manual for Western Washington* (most recent edition at the time of the issuance of NPDES Construction Stormwater Permit) or equivalent. SNOPUD must identify the site-specific BMPs for upland and in-water construction work and list them in the WQPP. Some of the recommended BMPs are listed below.

i. Construction stormwater, sediment, and erosion control best management practices (BMPs) suitable to prevent exceedances of state water quality standards must be in place before starting construction at the site. Sediment and erosion control measures must be inspected and maintained prior to and during project implementation. All reasonable measures must be taken to minimize the impact of construction on waters of the state. Water quality constituents of particular concern are turbidity, dissolved oxygen, temperature, suspended sediment, oil and sheen, and pH.

ii. All necessary measures must be taken to minimize the disturbance of existing riparian, wetland, or upland vegetation. Work in or near the waterway must be done so as to minimize turbidity, erosion, and other water quality impacts.

iii. SNOPUD must ensure that any fill materials placed for habitat improvements in any waters of the state do not, by reference to applicable standards, contain toxic materials in toxic amounts.

iv. All construction debris must be properly disposed of on land above the limits of flood water in an approved upland disposal site. SNOPUD must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

v. SNOPUD must ensure that fill (soil) placed for the proposed project does not contain toxic materials in toxic amounts.

vi. If cast in place, wet concrete/grout must be prevented from entering waters of the state. Forms for any concrete/grout structure must be constructed to prevent leaching of wet concrete/grout. Impervious materials must be placed over any exposed concrete/grout not lined with the forms that will come in contact with state waters. Forms and impervious materials must remain in place until the concrete/grout is cured.

vii. Work in or near the water that may affect fish migration, spawning, or rearing must cease immediately upon a determination by Ecology or WDFW that fisheries resources may be adversely affected.

viii. All equipment must be placed safely so that it cannot accidentally enter a waterway or cause water quality degradation to state waters. Mobile equipment that enters the water must be maintained such that a visible sheen from petroleum products does not appear.

ix. Care must be taken to prevent any petroleum products, paint, chemicals, or other harmful materials from entering the water.

x. Prior to blasting the bedrock for the intake structure and penstock, SNOPUD must remove overburden from above the rock.

xi. All possible measures, such as blast mats, must be used to prevent rock from entering state waters during blasting.

SNOPUD is required to apply for a construction stormwater NPDES permit at least 60 days prior to start of construction.

S10. Water Quality Monitoring, Reporting and Adaptive Management

a) <u>During Construction</u>

Water quality monitoring must be conducted per the WQPP as explained above. WQPP must be submitted to Ecology for review at least two (2) months prior the initiation of any construction related work and all the subsequent modifications to the plan must be submitted to Ecology at least thirty (30) days before implementation. A copy of the WQPP must be in the possession of the on-site construction manager, and the plan must be made available for review by Ecology staff upon request. Results of water quality sampling, as determined by the WQPP, must be submitted to Ecology on a monthly basis during construction.

If any project component has a long-term impact on a regulated water quality parameter, characterization monitoring must be performed for the impacted parameter(s), and a monitoring plan must be outlined in the WQPP.

SNOPUD must submit all the reports (including monthly discharge monitoring reports, DMRs) and documents required by the construction stormwater NPDES permit in a timely manner.

Any construction related activities resulting in dead or dying fish are not allowed. Any such activity shall cease immediately and Ecology's Water Quality Program, Northwest Regional Office shall be notified immediately by telephone at (425) 649-7000, a 24-hour number.

Notification of noncompliance during construction and operation phases must be made to Ecology within 24 hours of detection or observation of occurrence of the noncompliance followed by a detailed report within five (5) days of detection or observation of the noncompliance. Noncompliance events must be reported on noncompliance notification form (NNF) provided in Appendix G.

Water quality parameters' monitoring frequencies and locations for Hancock Creek Hydroelectric Project during construction are provided in Appendix B, Table 9, Figure 1.

b) Post Construction and During Project Operation

SNOPUD must complete a comprehensive Annual Water Quality Monitoring Report for Hancock Creek Hydroelectric facility. The report must include the monitoring data, result analysis, reports of non-compliance events (if any), documentation of actions taken by SNOPUD to bring the site in compliance after non-compliance and analysis of project effects on water quality standards. The report must be submitted no later than March 31st of the following year in a format acceptable to Ecology.

Suspension or modification of water quality monitoring as described above may be requested if, after a minimum of five (5) years of complete, reliable data collection following the completion of the project construction, demonstrates that there are no violations of water quality standards.

If exceedances of water quality standards are detected through sampling and monitoring, the applicant must immediately take action to stop, contain, and prevent unauthorized discharges or otherwise stop the violation and correct the problem. Any observed values in excess of the water quality standards for, temperature and turbidity, must be reported to Ecology's Northwest Regional Office within six weeks of obtaining monitoring data for that particular noncompliance event. Noncompliance events must be reported on noncompliance notification form (NNF) provided in Appendix G. All and any completed noncompliance notification forms must be included in annual water quality monitoring report too.

Ecology may, where necessary to protect water quality, require that SNOPUD implement a more rigorous water quality sampling program for the listed or additional parameters in accordance with the amendment of certification process described under general conditions.

Post construction water quality monitoring locations and frequencies are provided in Appendix B, Table 10, Figure 2.

The Snoqualmie River Basin has a TMDL for temperature. Hancock Creek is an important cold water source for Snoqualmie River downstream. During project operation SNOPUD is required to monitor the temperature on a continuous basis at four different locations, namely upstream of intake (RM 1.55), downstream of intake (RM 1.45), in bypass reach (RM 0.3), and downstream of the powerhouse (RM 0.1) (Table 10 and Figure2). The Annual Water Quality Monitoring report must include the analysis about the impact of project operation on the water quality temperature in the bypass reach and downstream of powerhouse.

The Hancock Creek Hydroelectric Project is required to meet or exceed the state water quality standards during project operation. If the monitoring data submitted as part of Annual Water Quality Monitoring report indicates that project operation has caused any exceedances of water quality standards, Ecology may require SNOPUD, by way of agency order, to limit or modify future project operations as Ecology finds is necessary to assure ongoing compliance.

S11. Temporary and Emergency Modification to Flows and Ramping Rates

a) The instream flow and/or ramping requirements of this Certification may be temporarily suspended and modified if and as necessary to accommodate a temporary operational condition or constraint, when the occurrence of such condition or constraint limits SNOPUD's ability to comply with such requirements. In connection with any temporary suspension or modification of such requirements, SNOPUD shall: (i) notify the NOAA Fisheries, USFWS, Ecology WDFW and Snoqualmie Tribe thereof and (ii) obtain Ecology's prior approval and (iii) submit a noncompliance notification.

b) In the event that either: (i) a natural event outside of the control of SNOPUD, or, (ii) a condition affecting the safety of the project or project works occurs, and under circumstances where such event or condition does not allow for consultation to occur before responding, then the flows and/or ramping rates may be temporarily modified following any consultation with Ecology that is possible given the emergencies of the event. If the flow is so modified, SNOPUD shall notify Ecology, FERC, NOAA Fisheries, Ecology WDFW and Snoqualmie Tribe as soon as practicable after the condition is discovered, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency action procedure. SNOPUD shall document these events in its Annual Water Quality Monitoring report.

S12. Oil Spill Prevention and Control

[In the context of this section, "spills" will refer to oil, paint, or chemical spills as opposed to the release of water from the Hancock Creek Hydroelectric Project.]

A Spill Prevention, Containment, and Countermeasure (SPCC) Plan must be prepared that covers, as applicable within the Clean Water Act, any petroleum-based equipment to be used at the site, including the powerhouse and any equipment associated with the powerhouse, that holds or contains oil, fuel, or other petroleum products that are potentially detrimental to water quality and the biota. The plan must be kept on site. The plan shall be submitted to Ecology for approval within one (1) year of license issuance. The plan must include, at a minimum, the following BMPs and spill response requirements.

In addition to fulfilling the requirements under the SPCC regulations, the BMPs and spill response procedures listed below will apply.

a) Best Management Practices

i. Care must be taken to prevent any petroleum products, paint, chemicals, or other harmful materials from entering waters of the state.

ii. Visible floating oils released from any project-related construction or Hancock Creek Hydroelectric Project operation shall be immediately contained and removed from the water.

iii. All oil, fuel, or chemical storage tanks shall be contained and located on impervious surfaces so as to prevent spills from escaping to surface waters or ground waters of the state.

iv. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Refueling of equipment on land shall occur where there is no potential of spilling fuel into rivers, creeks, wetlands, or other waters of the state. Equipment that requires refueling in-water shall be maintained and operated to prevent any visible sheen from petroleum products from appearing on the water. Proper security shall be maintained to prevent vandalism.

v. Oil and grease usage should be regularly monitored. Observation of significant increase in usage should trigger an investigation for leaks, followed by any required maintenance or corrective action.

vi. No emulsifiers or dispersants are to be used in waters of the state without prior approval from the Department of Ecology, Northwest Regional Office.

vii. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall be contained for proper disposal, and shall not be discharged into state waters.

b) Spill and Release Response

i. In the event of a discharge or release of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and clean-up efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Clean-up shall include proper disposal of any spilled material and used clean-up materials.

ii. Samples shall be collected and analyzed to assess the extent of the spill and to assure all contaminants have been thoroughly removed.

iii. Spills into state waters, spills onto land with a potential for entry into state waters, or other significant water quality impacts, shall be reported immediately or no later than 24 hours after discovery to the Department of Ecology, Northwest Regional Office, at 425-649-7000 (24-hour phone number). SNOPUD shall provide a written follow-up report to Ecology within two (2) weeks of the incident stating what occurred, whether the incident was due to natural events or human-related activities, SNOPUD's response, a plan detailing long-term corrective actions and monitoring protocols if needed, any measures SNOPUD proposes to reduce future similar occurrences, results of any samples taken, and any additional pertinent information.

Additional BMPs are listed in Appendix A of this Order.

GENERAL CONDITIONS

Certification of this proposal does not authorize the Licensee to exceed applicable state water quality standards approved by the Environmental Protection Agency (currently codified in Chapter 173-201A WAC), ground water quality standards (currently codified in Chapter 173-200 WAC), and sediment quality standards (currently codified in Chapter 173-204 WAC), and other appropriate requirements of state law. Furthermore, nothing in this Order absolves the Licensee from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments occurring as a result of activities associated with project operations and FERC license conditions.

G1. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the State Water Pollution Control Act (RCW 90.48), or changes in or amendments to the Clean Water Act, such provisions, standards, criteria, or requirements shall apply to the Hancock Creek Hydroelectric Project and any attendant agreements, orders, or permits. Ecology will notify SNOPUD through an Administrative Order of any such changes or amendments applicable to Hancock Creek Hydroelectric Project.

G2. When a construction project meets the coverage requirements of the NPDES permit and State Waste Discharge General permit for stormwater discharges associated with construction activity, SNOPUD shall either, at Ecology's discretion, apply for the general permit and comply with the terms and conditions of the permit or apply for and comply with the terms of an individual NPDES permit.

G3. Discharge of any solid or liquid waste to the waters of the state of Washington without approval from Ecology is prohibited.

G4. SNOPUD shall obtain Ecology review and approval before undertaking any change to the Hancock Creek Hydroelectric Project or its operations that might significantly and adversely affect the water quality or compliance with any applicable water quality standard (including designated uses) or other appropriate requirement of state law.

G5. The Washington State Department of Fish and Wildlife (WDFW) requires a Hydraulic Project Approval (HPA) (under RCW 77.55) for in water work that will use, divert, obstruct, or change the natural flow or bed of state waters. All in-water construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of Hancock Creek within the project boundaries and scope of Hancock Creek Hydroelectric Project shall obtain HPA coverage as required by WDFW prior to commencing work.

G6. Ecology retains the right, by further Order, to modify schedules or deadlines provided under this Order or provisions it incorporates.

G7. Ecology retains the right, by further Order, to amend this Order if it determines that its provisions are no longer adequate to provide reasonable assurance of compliance with applicable water quality standards or other appropriate requirements of state law that are related to protection of water quality or aquatic resources. Amendments of this certification shall take effect immediately upon issuance, unless otherwise provided in the order of amendment, and shall be appealable to the Pollution Control Hearings Board pursuant to RCW 43.21B. Ecology shall transmit such amending orders to FERC to update FERC's records as to the current certification conditions.

G8. This Order does not exempt, and is provisional upon, compliance with other statutes and codes administered by federal, state, and local agencies, including the state's Coastal Zone Management Act.

G9. Ecology reserves the right to issue orders, assess or seek penalties, and to initiate legal actions in any court or forum of competent jurisdiction for the purposes of enforcing the requirements of this Order. Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

G10. The conditions of this Order shall not be construed to prevent or prohibit SNOPUD from either voluntarily or in response to legal requirements imposed by a court, FERC, or any other body with competent jurisdiction, taking actions which will provide a greater level of protection, mitigation, or enhancement of water quality or of existing or designated uses.

G11. Copies of this Order and associated permits, licenses, approvals, and other documents shall be kept on the Hancock Creek Hydroelectric Project site and made readily available for reference by SNOPUD, its contractors and consultants.

G12. SNOPUD shall allow Ecology access to inspect the Hancock Creek Hydroelectric Project and project records required by this Order for the purpose of monitoring and compliance with its conditions. Access shall occur after reasonable notice, except in emergency circumstances.

G13. SNOPUD shall, upon request by Ecology, fully respond to all reasonable requests for materials to assist Ecology in making determinations under this Order and any resulting rulemaking or other process.

G14. Any work that is out of compliance with the provisions of this Order, or project operation conditions that result in distressed, dying or dead fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, or violation of turbidity criteria is prohibited.

FAILURE TO COMPLY WITH THIS ORDER

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

In the event of noncompliance, SNOPUD must immediately take the following actions:

a) Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance, correct the problem and, if applicable, immediately repeat sampling and analysis of any noncompliance.

b) Assess the cause of the water quality problem and take appropriate measures to correct the cause of the problem and/or prevent further environmental damage.

c) Observed violations, including any spill, must be reported in the annual monitoring report. Violation report must include nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001 (2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

a) File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

b) Serve a copy of your appeal and this Order on Ecology in paper form – by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320.

ADDRESS AND LOCATION INFORMATION FOR APPEAL PROCESS

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Monika Kannadaguli
Department of Ecology
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ADDITIONAL INFORMATION

Pollution Control Hearings Board Website: www.eho.wa.gov/Boards_PCHB.aspx

Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board: http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B

Chapter 371-08 WAC – Practice and Procedure:
http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08

Chapter 34.05 RCW – Administrative Procedure Act:
http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05

Laws: www.ecy.wa.gov/laws-rules/ecyrcw.html

Rules: www.ecy.wa.gov/laws-rules/ecywac.html

SIGNATURE

Kevin C. Fitzpatrick
Water Quality Section Manager
Water Quality Program
Northwest Regional Office

January 16, 2015
Date

APPENDIX A

RECOMMENDED SPCC PLAN BMPS FOR HANCOCK CREEK HYDROELECTRIC PROJECT*

Spill Response

a) Establish in agreement with the Department of Ecology, site oil spill cleanup material inventory and include an inventory list at each site. Hancock Creek Hydroelectric Project operators and any staff required to respond to an oil spill must have input on the inventory levels, type, product brand, and quality of the oil spill cleanup supplies maintained on-site. Purchase good quality spill cleanup supplies.

b) In the event of an oil spill, properly dispose of used/contaminated materials and oil, and as soon as possible restock new supplies. Include records of proper disposal in the oil consumption records and keep copies of disposal records of contaminated cleanup supplies at the District's office for inspection; provide these records to Ecology immediately upon request.

c) If applicable, ensure that operational work boats and trained boat operators are available at the project. Install mechanisms as appropriate to safely launch or lower work boats into areas where work boats would be deployed in the event of an oil spill.

d) Install stair cases, permanent ladders, etc. as applicable allowing for oil spill response staff to safely reach areas anticipated that could, in the event of an oil spill, need to be accessed to deploy sorbent pads and boom materials.

Oil-Water Separators (OWS)

a) Have a maintenance plan for the OWS. This maintenance plan must include a process to periodically inspect and ensure quality assurance that they will work as designed.

b) OWS shall not include rain or other water run-off, except as designed.

c) Perform periodic and appropriate maintenance and inspection on a schedule to include cleaning of sediment.

d) Clean and service the OWS in the event of an oil spill incident where oil is introduced into the OWS.

e) Evaluate each OWS for inflows to account for a total transformer container failure during a major rain event to ensure that oil would not be "washed through" the OWS during such an event.

Transformers

a) Transformer deck containment area surfaces must be impervious. Conduct periodic inspections and resurfaced areas, fill cracks, caulk metal plate footings, or otherwise ensure that containment areas will contain all spill fluids.

b) Obtain pre-approval from Ecology before breaching containment areas for reasons other than containment area maintenance.

c) Remove oil from transformers prior to moving them from the transformer containment area, unless the transformer is continuously monitored during the move. If transformers are moved with oil, keep spill containment equipment handy.

* Ecology recommends implementing only those BMPs (or equivalents) that are applicable to this project.

Sumps

a) Locate oil sensors on the surface of the water in each sump, in addition to the oil sensors located at the bottom of each pumping cycle. Inspect and test these sensors annually or sooner if needed to ensure that they will work as designed. Include in the inspection provisions to verify that the oil sensors located at the bottom of each pumping cycle are properly placed at the proper level. Visually inspect these areas each week if oil is suspected to be present, such as in the event of an oil sensor alarm or the observance of an oil or grease spill in the turbine pit of sufficient volume to reach the sump. Any oil detected in the sumps requires immediate Ecology (425-649-7000) and NRC notification and cleanup.

b) Immediately repair those oil leaks in the turbine pit that are of sufficient volume that can reach the sump and that cannot be placed under a containment pan.

c) Install handrails and mechanisms so the sump covers can be removed for a visual inspection of the sump. Provide waterproof lighting in the sumps or spotlights adequate to view the surface water in the sumps. Provide a mechanism to satisfactorily deploy and recover sorbent boom in the sumps at each project.

Oil, fuel, and chemical storage containers, containment areas, and conveyance systems

a) Provide proper containment around each storage container (including transformers) or around a combination of storage containers as appropriate and agreed upon by Ecology. Proper containment equals the volume of the container plus 10 per cent.

b) Recalculate required containment areas to ensure proper containment still exists after major equipment changes. For example, when converting from water cooled transformer to an air cooled unit, re-calculate oil volume and compare to containment area. Calculate containment volumes from *maximum* storage volumes, not normal oil level volumes.

c) Provide external oil level gauges for governor oil tanks, transformers, and other oil tanks that contain over 100 gallons of oil. Provide appropriate level markings for these gauges.

d) Regularly check all fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc, for drips or leaks. Maintain and properly store them to prevent spills into state waters.

e) Do not refuel equipment within 50 feet of rivers, creeks, wetlands, or other waters of the state.

f) When working on transformers and other equipment that might spill or drip oil, provide full oil spill containment capacity plus 10 per cent.

g) Inspect containers once per week. Maintain container inspection sheets to include maximum container volume and an exact reading recording of the oil level by the staff/operator conducting the inspection. Weekly inspection readings must be consistent; provide training to the staff/operator to ensure consistent and accurate readings.

h) Keep oil consumption records maintained at the District office; provide these records to Ecology immediately upon request.

i) In the event that any Hancock Project modifies the oil transfer operation to include hard-plumbing to reservoirs such as the governor oil tank from the oil tank room, or other extensive modifications, Ecology notification and approval of such modification should be conducted.

j) Contain wash water containing oils, grease, or other hazardous materials resulting from wash-down of equipment or working areas for proper disposal, and do not discharge this water into state waters.

Other

a) Identify and map floor drains. Post these maps at the Hancock Project in a conspicuous location for use by operators and other personnel in the event of an oil spill. Seal floor drains that are no longer needed.

b) Maintain site security at each Hancock Project site to reduce chance of oil spills.

c) Keep SPCC Plans as required and historical spill records on-site. Provide these to Ecology immediately upon request.

APPENDIX B

WATER QUALITY MONITORING – MAPS AND GRAPHS

Table 9. Hancock Creek Hydroelectric Project - During construction water quality parameters' monitoring frequencies and locations

	Parameter	Work window	Frequency of monitoring
Monitoring location: Approximately River Mile 1.55 (Upstream of weir, baseline monitoring)			
1	Temperature	during construction	Once per week
2	DO	during construction	Once per week
3	Turbidity	during construction	Once per week
4	pH	during construction	Once per week
Monitoring location: Approximately River Mile 1.45 (In bypass reach)			
1	Temperature	during construction	Once per week
2	DO	during construction	Once per week
3	Turbidity	during no in-water work	Once per week
4	Turbidity	during in-water work	Once daily
5	pH	during no in-water work	Once per week
6	pH	during in-water work	Once daily
Monitoring location: Approximately River Mile 0.1 (Downstream of powerhouse)			
1	Temperature	during construction	Once per week
2	DO	during construction	Once per week
3	Turbidity	during no in-water work	Once per week
4	Turbidity	during in-water work	Once daily
5	pH	during no in-water work	Once per week
6	pH	during in-water work	Once daily

Figure 1. Hancock Creek Hydroelectric Project - Map showing construction water quality parameters' monitoring locations

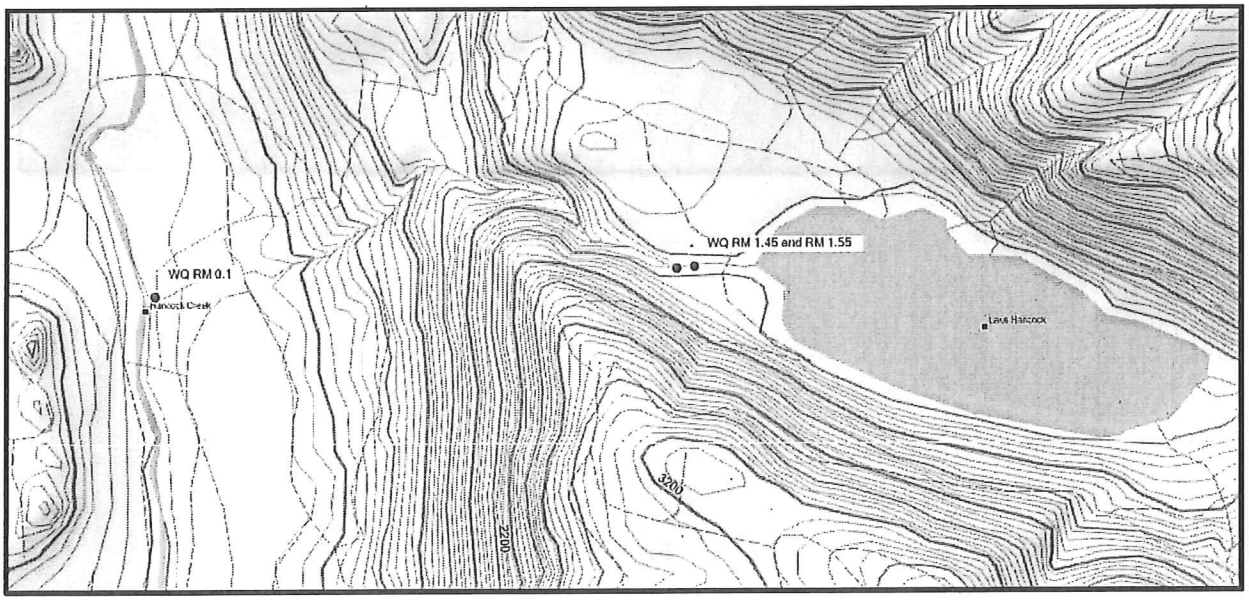


Table 10. Hancock Creek Hydroelectric Project - Post construction water quality monitoring locations and frequencies

Parameter	Upstream of Intake (RM 1.55)	Downstream of Intake (RM 1.45)	Upstream of Powerhouse in bypass reach (RM 0.3)	Downstream of Powerhouse (RM 0.1)	Frequency
Temperature	X	X	X	X	Continuous
Turbidity			X		Continuous during December and January
Flow & stage		X	X		Real time and continuous
Stage only				X	Real time and continuous
-RM stands for river mile.					

Figure 2. Hancock Creek Hydroelectric Project - Map showing post construction water quality monitoring locations

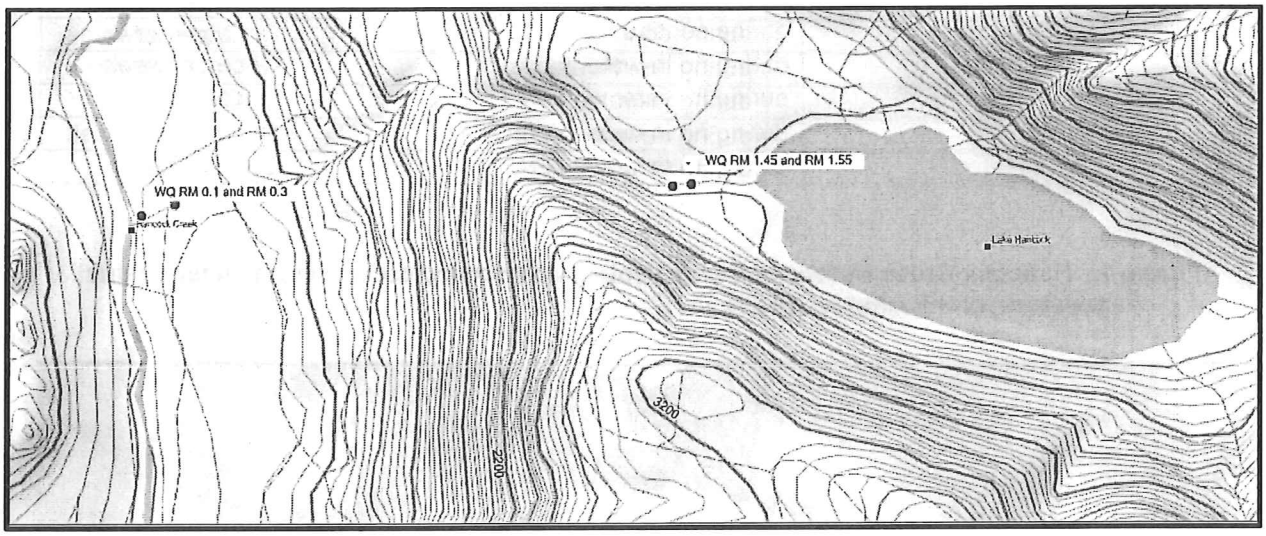
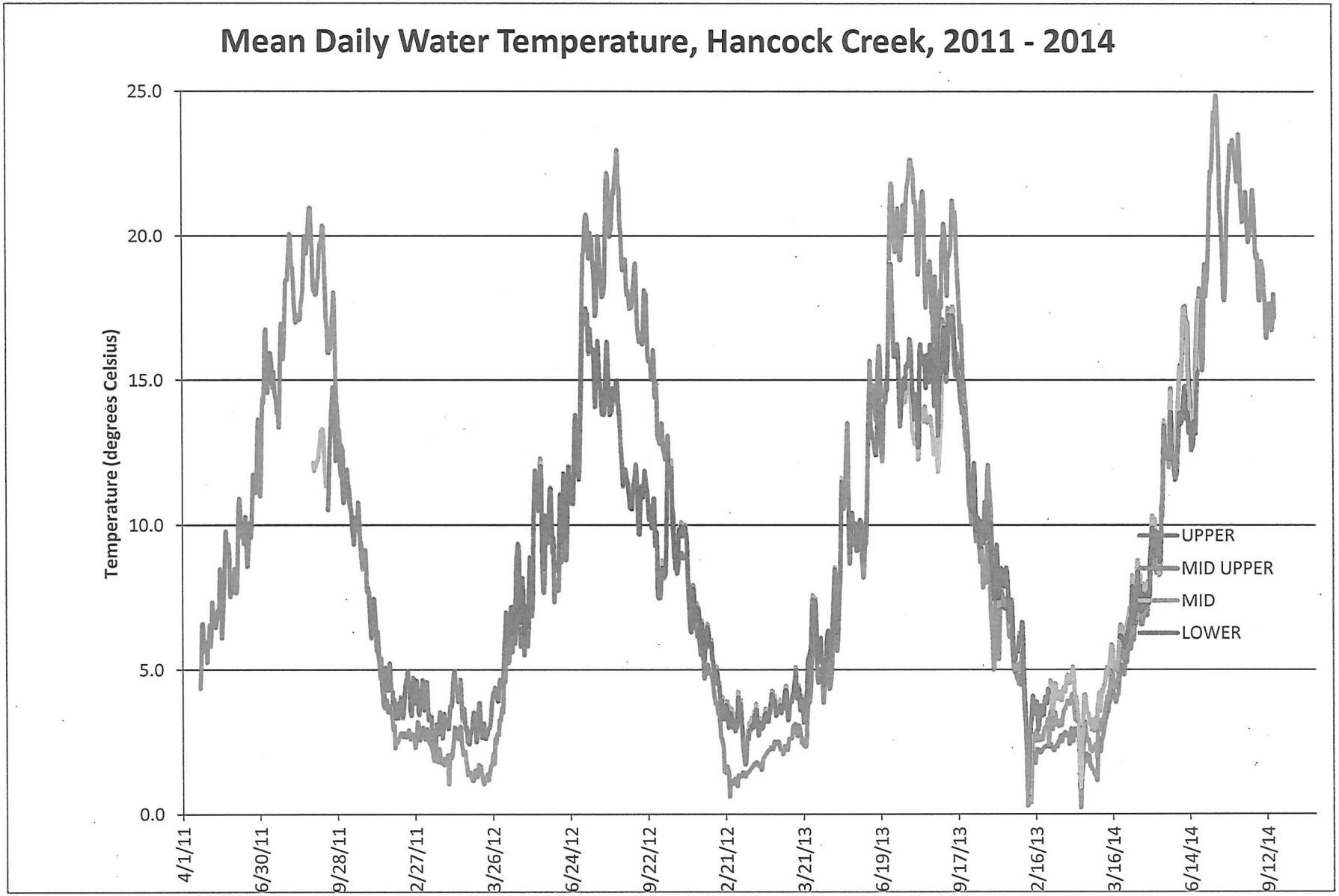


Figure 3. Hancock Creek Hydroelectric Project mean daily water temperature prior to construction, from 2011-2014



APPENDIX C

ACRONYMS AND ABBREVIATIONS FOR HANCOCK CREEK HYDROELECTRIC PROJECT

401 Certification	Water quality certification pursuant to Section 401 of the CWA, 33 U.S.C. § 1341, issued by WDOE.
7-DADMax	7-day average of the daily maximum temperatures
AKART	all known, available, and reasonable technologies
ARC	Aquatic Resource Committee
°C	degrees Celsius
certification	Section 401 water quality certification
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*
CZMA	Coastal Zone Management Act
City	City of Everett
Department	Department of Ecology
District	Snohomish Public Utility District
DO	dissolved oxygen
DOE	Department of Ecology
EA	environmental assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FLA	Final Licensing Application
HPA	Hydraulic Project Approval
Hancock Project	Hancock Creek Hydroelectric Project
kW	Kilowatt
Licensee	Snohomish Public Utility District
LWD	large woody debris
mgd	million gallons per day
mg/L	milligrams per liter
MW	Megawatt
MWh	megawatt-hour
NTU	nephelometric turbidity unit
Project	Hancock Creek Hydroelectric Project
RCW	Revised Code of Washington
RM	river mile
TRMP	Terrestrial Resources Management Program
WDFW	Washington Department of Fish and Wildlife
WQPP	Water Quality Protection Plan
WRIA	Water Resource Inventory Area

APPENDIX D

MAPS AND FIGURES FOR HANCOCK CREEK HYDROELECTRIC PROJECT

Figure 4. Hancock Creek Hydroelectric Project site map

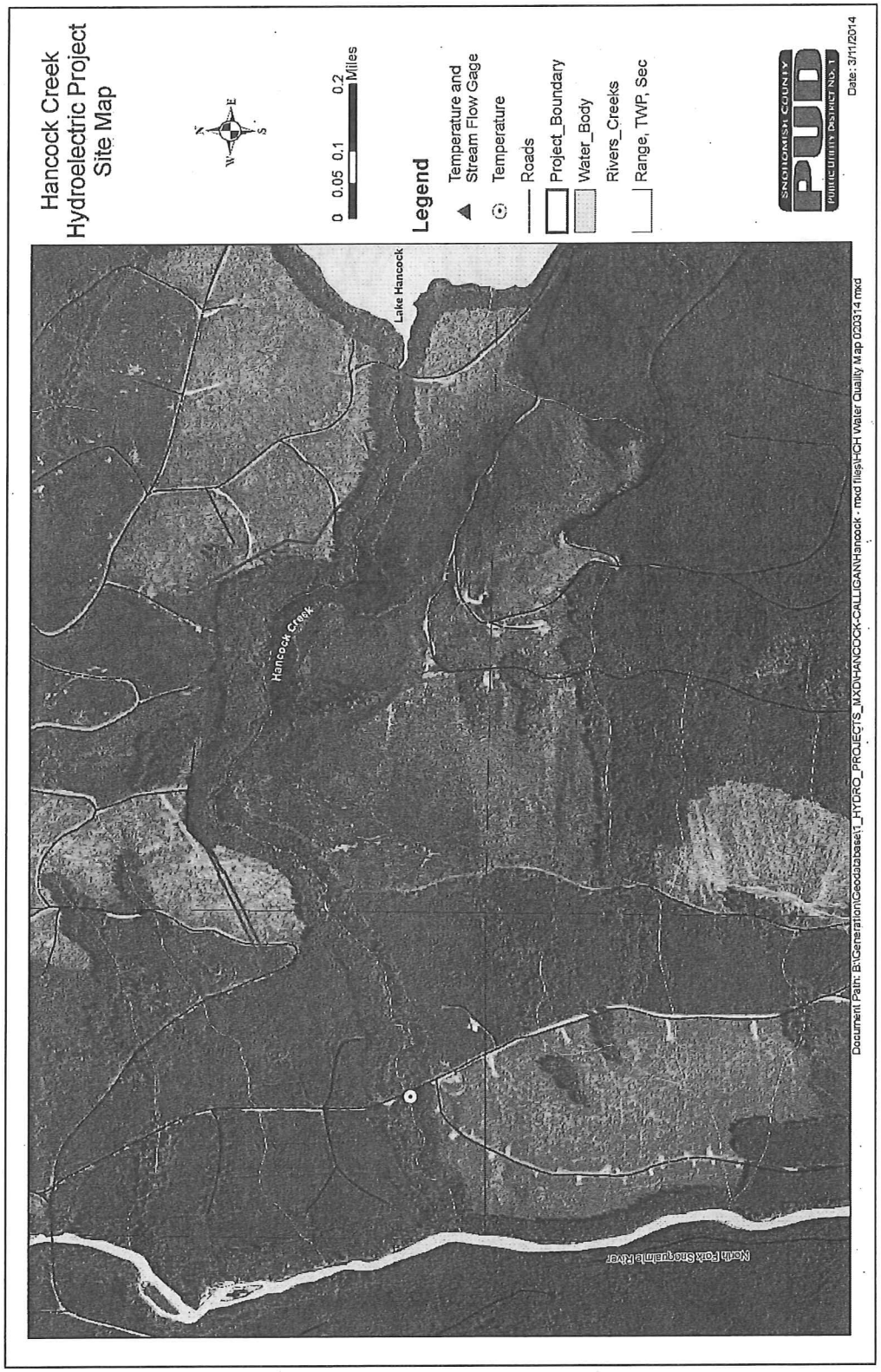
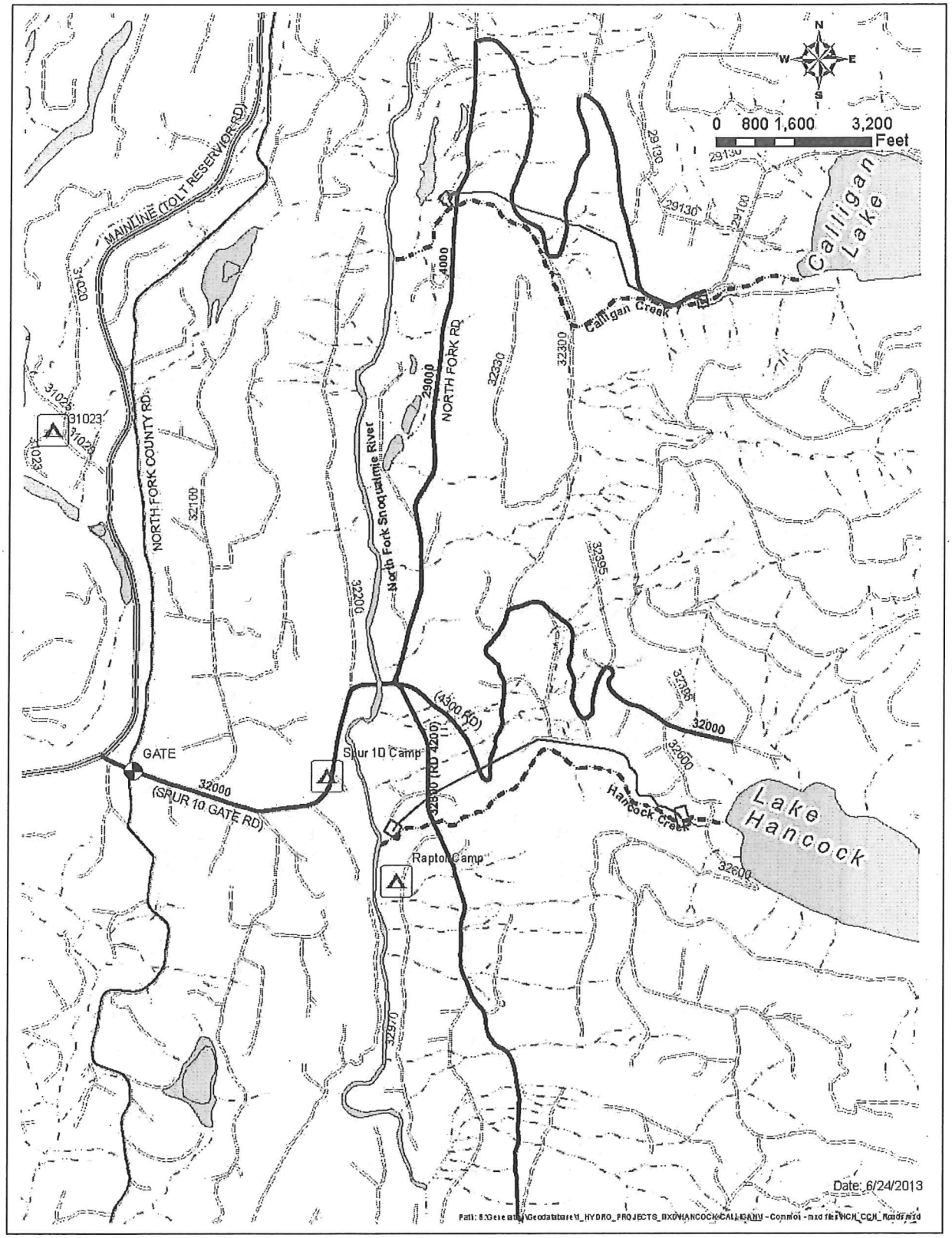


Figure 5. Road access, water bodies in vicinity and project facilities for Hancock Creek Hydroelectric Project



APPENDIX E

SUBMITTAL REQUIREMENTS

Refer to the specific section for submittals related details. Unless indicated otherwise, submittals shall be sent to:

Monika Kannadaguli
401 Hydropower Certification Manager
Department of Ecology
Northwest Regional Office
Water Quality Section
3190 160th Avenue SE
Bellevue, WA 98008-5452

APPENDIX F

SUMMARY OF HANCOCK PROJECT FEATURES

Location of Intake:	Hancock Creek, RM 1.6, Sec. 8, T24N, R9E, WM
Diversion Weir:	
Length	45 feet
Crest Elevation*	2,172.0 feet
Normal Water Surface Elevation	2,172.0 feet
Maximum Height	6 feet
Intake Structure:	
Width	25 feet
Length	59 feet
Minimum Wetted Area of Fish Screens	220 square feet
Access Deck Elevation	2,176.0
Penstock:	
Penstock Length (44 inches)	3,600 feet
Penstock Length (39 inches)	3,710 feet
Tailrace Length	140 feet
Location of Power House:	Hancock Creek, RM 0.04, Sec. 7, T24N, R9E WM
Latitude	47°34'19"N
Longitude	121°42'51"W
Power Plant:	
Number of units Type	2 Jet Horizontal Pelton
Total Plant Capacity	6.0 MW
Rating:	
Flow	81 cfs
Gross Head	1,116 feet
Horsepower	8,043
Output	6.0 MW
Transmission Line:	New Construction:
Voltage	34.5 kV
Length	800 feet
Type	Underground

APPENDIX G

NONCOMPLIANCE NOTIFICATION FORM

(Please contact Ecology if you need an electronic copy of this form)

DEPARTMENT OF ECOLOGY, WA Noncompliance Notification Form (Report only ONE noncompliance per form)		
1. FERC #:		2. Date of reporting (mm/dd/yy):
3. Licensee Name:		4. Date of noncompliance (mm/dd/yy):
5. Ecology 401 certification Order#:		6. Time of noncompliance (mm/dd/yy):
7. Facility Name and Address:		
	Parameter	**Monitoring Results**
8. Type of noncompliance (write only one parameter per form, for more than one parameter violation use another form)		
9. Location of noncompliance (if applicable):		
10. Impacted water body (if applicable):		
11. Description of noncompliance (attach additional sheets if required):		
12. Probable cause of noncompliance, if known (attach additional sheets if required):		
13. List all the steps taken to correct the noncompliance and prevent reoccurrence (attach additional sheets if required):		
14. Have you provided follow-up compliance monitoring data (Yes or No):		
15a. If the noncompliance has been corrected (Yes or No):		
15b. If you answered "No" for 14., give the anticipated time required for correction:		
16. Other Comments:		
Mail to: Department of Ecology, Northwest Regional Office, Water Quality, 3190 160th Ave SE Bellevue, WA 98008 I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in acordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.		
Name and Title of Principal Executive Officer or Authorized Agent		Signature
Reference all attachments here:		( )- Phone Number