State of Washington
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE	WATER RIGHT NUMBER
March 30, 2010	S3-30619

MAILING ADDRESS	PHYSICAL ADDRESS
Avista Corporation PO Box 3727, MSC-1 Spokane, WA 99220-3727	Avista Corporation 1411 East Mission Spokane, WA 99220-3727

Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
2,200	CFS	(non-consumptive)

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Hydroelectric Power Generation	2,200		CFS			01/01 - 12/31

Total Diversions under S3-30619, Surface water Claim #015204, and Certificate Nos. 9668 and S3-29070 shall not exceed 8,700 cfs.

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
Spokane	Spokane River	Columbia River	54

SOURCE FACILITY/DEVICE	PARCEL	TWN	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Spokane River/Nine Mile Dam	26064.9021 and 26064.9022 within Gov. Lots 9, 12 and 13	26N	42E	6	S½SE¼	47.462959N	117.323732W

Datum: NAD83/WGS84

Approximately 800 feet North and 1000 feet West of the Southeast Corner of Section 6

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)

26064.9021 and 26064.9022

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Parcel 26064.9021:

In Section 6, Township of 26 North, Range 42 East, W.M. portion of Government Lots 9 and 12 in the Southeast Quarter (SE¼) lying Southeasterly of a line drawn 1,000 feet East of and parallel to the West line of said Government Lots; and

A Portion of Government Lot 9 described as follows: Beginning 1,000 feet East of the southwest corner of said Government Lot 9, thence North 175 feet, thence West 500 feet, thence South 175 feet to the South line of said Lot 9, thence East 209.8 feet, thence North 45 degrees, 54 minutes, East, 130.20 feet, thence South 56 degrees, 06 minutes, 173.3 feet to the South line of said Lot 9; thence East 73.2 feet to the Point of Beginning.

Parcel 26064.9022:

In Section 6, Township of 26 North, Range 42 East, W.M. portion of Government Lot 13, **except** County Road, **and except** following described tract, Beginning at a point on East line of said Section 568.7 feet North of southeast corner, thence West Parallel to South line to point on Easterly side of County Road known as Rutter Parkway #121, thence Southeasterly along Easterly side of Road to East line of Section, thence North along said East line to Point of Beginning, **except road.**

Proposed Works

The existing Nine Mile hydropower facility consists of a 466-foot-long, 58-foot-high dam; a 4,600 acre-foot reservoir; a 120-foot-long, 5-foot-diameter diversion tunnel; and a 4-unit powerhouse with a nameplate capacity of 26.4 MW.

A hydroelectric upgrade is scheduled to take place inside the existing powerhouse, to replace worn out turbine generator units #1 and #2. The proposed new turbines will increase the plant's generation capacity by 14 MW.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	Dec. 31, 2013 (Completion of upgrade)	Dec. 31, 2013 (New Units #1 and #2 put in use.)

Measurement of Water Use

How often must water use be measured?	Weekly
How often must water use data be reported to Ecology?	Annually (Jan 31)
What volume should be reported?	Total Annual Volume
What rate should be reported?	Weekly Peak Rate of Diversion in cfs

Provisions

MEASUREMENTS, MONITORING, METERING AND REPORTING

Water use data shall be recorded weekly and maintained by the property owner for a minimum of five years. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to the Department of Ecology by January 31st of each calendar year.

An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html

Recorded water use data shall be submitted via the Internet. To set up an Internet reporting account, contact the Eastern Region Office. If you do not have Internet access, you can still submit hard copies by contacting the Eastern Region Office for forms to submit your water use data.

Department of Fish and Wildlife Requirement(s)
The intake(s) shall be screened in accordance with Department of Fish and Wildlife screening criteria (pursuant to RCW 77.57.010, RCW 77.57.070, and RCW 77.57.040). Contact the Department of Fish and Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091. Attention: Habitat Program, Phone: (360) 902-2534 if you have questions about screening criteria. http://wdfw.wa.gov/about/regions/

Water Use Efficiency
Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

Schedule and Inspections
Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Annual Power License Fee
This appropriation will increase generation for the two turbines from the existing 10,000 theoretical horsepower to 38,000, with a net increase of an additional 28,000 theoretical horsepower, which is

subject to an annual license fee to be paid in advance to the State of Washington, on or before the first day of January of each year. This authorization is subject to the fees in RCW 90.16.050 and 90.16.090.

Proof of Appropriation
The water right holder must file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the water right. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

Total Diversions under Surface Water Certificate No. S3-30619, Surface Water Claim #015204, and Certificate Nos. 9668 and S3-29070 shall not exceed 8,700 cfs.

Findings of Facts
Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I concur with the investigator that water is available from the source in question; that there will be no impairment of existing rights; that the purposes of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. S3-30619 for a total of 2,200 cfs non-consumptive for the purpose of hydropower generation, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision. 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 all of the following within 30 days of the date of receipt of this decision:

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

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD 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

Signed at Spokane, Washington, this 20th day of September, 2011.

Keith L. Stoffel
Section Manager
Water Resources Program -- Department of Ecology
Eastern Regional Office

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov. To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

BACKGROUND

On March 30, 2010, Avista Corporation (Avista) filed an Application for a Water Right Permit with the Department of Ecology (Ecology) to increase their diversion of the Spokane River to reflect the increased hydraulic capacity of the scheduled hydroelectric project upgrade at the existing Nine Mile dam facility. The applicant requested an increase of 2,200 cfs for non-consumptive hydroelectric power generation. The application was accepted by Ecology for processing and assigned reference number S3-30619.

Project Description

The Spokane River Hydroelectric Project (Project) is owned and operated by Avista. The Project is currently licensed by the Federal Energy Regulatory Commission (FERC) as Project No. 2545, and consists of five hydroelectric developments located on the Spokane River, with one located in northern Idaho (Kootenai County) and four located in eastern Washington (Spokane, Stevens, and Lincoln counties).

The four Spokane River hydroelectric developments (HEDs) in Washington State are referred to as Upper Falls HED (river mile 74.2), Monroe Street HED (river mile 74), Nine Mile HED (river mile 58), and Long Lake HED (river mile 34). The fifth development is located in Post Falls, Idaho and referred to as Post Falls HED (river mile 102). The Project has a total combined installed capacity of 137.67 megawatts (MW).

The Nine Mile HED was constructed in 1908 and has been owned and operated by Avista since 1925 (originally under the name of Washington Water Power). Avista has scheduled to replace the turbine generator units #1 and #2, which were originally installed between 1908 and 1910. Upgrading this outdated equipment will significantly improve the efficiency of this facility. The requested amount would increase the plant's capacity from 6,500 cfs to a total of 8,700 cfs. The 2,200 cfs would be additive to the Nine Mile HED's existing surface water rights, which are based on the existing hydraulic capacity of the HED. Overall river flow will not be affected; however a portion of the flow that previously went over the spillway will now go through the powerhouse.

Table 1 Summary of Application No. S3-30619

Attributes	*Proposed*
Applicant	Avista Corporation
Date of Application	March 30, 2010
Instantaneous Quantity	2,200 cfs
Annual Quantity	Non-consumptive
Source	Spokane River
Point of Diversion	Parcel No. 26064.9021 and 26064.9022, within Government Lots 12 and 13, located within the S½SE¼ of Section 6, Township 26 N., Range 42 E.W.M., in Spokane County, Washington
Purpose of Use	Hydropower
Period of Use	Continuous, Jan. 1 through Dec. 31 each year
Place of Use	The Nine Mile HED is a **non-consumptive** Power Supply Operation. The water will be immediately returned to the Spokane River at the tailrace of the dam, within the same two parcels identified for the Point of Diversion, as follows: Parcel Nos. 26064.9021 and 26064.9022, within Government Lots 9, 12 and 13, located within the SE¼ of Section 6, Township 26 N., Range 42 E.W.M., in Spokane County, Washington.

Legal Requirements for Application Processing

The following requirements must be met prior to processing a water right application:

- **Public Notice**
  A public notice for Application No. S3-30619 was published in the Spokesman Review on April 15 and 22, 2010.

  In response to the public notice, one protest letter was received from Rachael Paschal Osborne on behalf of the Center for Environmental Law and Policy (CELP). Ms. Paschal Osborne raised the following issues and concerns, which are summarized as follows:

1. The application should not be accepted for Ecology-based Priority Processing without the Agency first defining what the criteria should be for making that decision.

2. The project has not undergone adequate SEPA review yet, and does not outline the specifics for review process.

3. Instream flows may be affected by a change in dam operation.

4. Water quality may be affected by changing the operation of the Nine Mile facility.

5. The existing project lacks fish passage.

6. The project has the potential to impair senior water right holders.

7. Avista may have failed to fully utilize its existing water rights for Nine Mile, because it appears that Avista has not "called" junior groundwater rights that deplete instream flows in the Spokane River and theoretically reduce flow available to Avista.

The above public comments have been addressed within this Report of Examination.

- **State Environmental Policy Act (SEPA)**

On September 29, 2010, Avista submitted a completed SEPA checklist to Ecology, along with associated maps for the Nine Mile HED water right application No. S3-30619. Ecology is the lead agency for this SEPA process. After extensive review, Ecology has determined that the project proposal (upgrade to the turbines) will not have a significant adverse environmental impact, and issued a tentative Determination of Non-Significance (DNS) on August 9, 2011. The action provided for the adoption of the following existing environmental documents prepared for the relicensing of the Spokane River Hydroelectric Project:

1. Final Environmental Impact Statement (FEIS) for the Spokane River and Post Falls Hydroelectric Projects, FERC Project Nos. 2545 and 12606 (July 2007) prepared by the Federal Energy Regulatory Commission[1], and
2. Appendix B [401 Cert.] of the FERC Order issuing New License for Project 2545 (June 18, 2009)[2], and
3. Order Modifying and Approving Total Dissolved Gas Monitoring Plan for the Nine Mile Development – Article 401 (December 14, 2010)[3].

[1] http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2007-0295
[2] http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2009-0156
[3] http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2010-0424

No challenges have been filed to the above adopted documents as of the release date of the DNS/Notice of Adoption. Therefore, Ecology has identified and adopted these documents as being appropriate to meet the agency's environmental review needs for the current proposal.

- **Water Resources Statutes and Case Law**
  RCW Chapter 90.03 authorizes the appropriation of public water for beneficial use and describes the process for obtaining a water right. Laws governing the water right permitting process are contained in RCW 90.03.250 through 90.03.340.

  Based on the provisions of RCW 43.21A.690 and RCW 90.03.265, this application has been processed by Pacific Groundwater Group (PGG) under Ecology's Cost-Reimbursement Work Assignment No. PGG002 (master contract No. C1000192).

- **Cost Reimbursement Processing**

  RCW 90.03.265(2) provides that in pursuing a cost-reimbursement project, the department must determine the source of water proposed to be diverted or withdrawn from, including the boundaries of the area that delimits the source. The department must determine if any other water right applications are pending from the same source. A water source may include surface water only, groundwater only, or surface and groundwater together if the department finds they are hydraulically connected. The department shall consider technical information submitted by the applicant in making its determinations under this subsection.

  However RCW 90.03.265(2) provides that the requirement for an applicant to pay for the processing of senior applicants has been removed in situations where it can be determined that the water allocated to one party will <u>not diminish</u> the water available to a senior applicant. Since this requested appropriation is non-consumptive with all water passed through the Nine Mile HED generators, the water use will be neutral to other users and thus can be processed prior to other pending applications.

INVESTIGATION

Site Visit and Information Review

The Nine Mile facility is located along Highway 291 on the Spokane River at River Mile (RM) 58 at Nine Mile Falls. The existing facility in operation consists of a single dam, integral powerhouse, along with a sediment bypass tunnel that was installed in 1996. The proposed project upgrade to replace the turbine generators for Units #1 and #2 will take place within the existing powerhouse.

The Nine Mile HED is a run-of-river facility consisting of a 466-foot-long, 58-foot-high dam; a 4,600 acre-foot reservoir; a 120-foot-long, 5-foot-diameter diversion tunnel; and a 4-unit powerhouse with an existing nameplate capacity of 26.4 MW.

Information for this investigation was obtained during a site visit conducted on June 3, 2011 by Jill Van Hulle of Pacific Groundwater Group, and Avista representatives, Linda Kiefer and David Schwall.

Additional information was obtained from:

- Applicable RCW and WAC chapters
- Ecology records
- Historical aerial photographs and maps
- Geographic Information System (GIS) data
- Support documentation including SEPA documents, information relating to FERC relicensing process, maps, and project descriptions

Project Description

General Background

The Spokane River Hydroelectric Project (Project) is owned and operated by Avista. The Project is currently licensed by FERC as Project No. 2545, and consists of five hydroelectric developments located on the Spokane River, with one in northern Idaho and four in eastern Washington (Spokane, Stevens, and Lincoln counties).

The Spokane River originates at the outlet of Coeur d'Alene Lake in Idaho and flows westerly approximately 111 miles to the confluence with the Columbia River in eastern Washington (which is now within Lake Roosevelt, the impoundment created by Grand Coulee Dam).

The Spokane River hydroelectric developments (HEDs) in Washington include (upstream to downstream) Upper Falls HED (river mile 74.2), Monroe Street HED (river mile 74), Nine Mile HED (river mile 58), and Long Lake HED (river mile 34). The Project's HEDs in Washington have a combined installed capacity of 122.92 megawatts (MW). The Post Falls HED, located in Post Falls, Idaho (river mile 102), has an installed capacity of 14.75 MW and brings the entire system capacity up to 137.67 MW.

The Upper Falls, Monroe Street and Nine Mile HEDs are considered to be run-of-river facilities. 'Run-of-river' as used in the FERC license application means that water flow into the hydroelectric development reservoir is essentially equal to downstream outflow, and the reservoir water levels change little unless under flood conditions, operation and maintenance activities, or other unusual circumstances. The lowermost facility covered under the FERC License No. 2545 Long Lake HED, is a storage-type facility consisting of a 593-foot-long, 213-foot-high main dam; a 247-foot-long, 108-foot-high cutoff dam; and a 148,500-acre-foot reservoir.

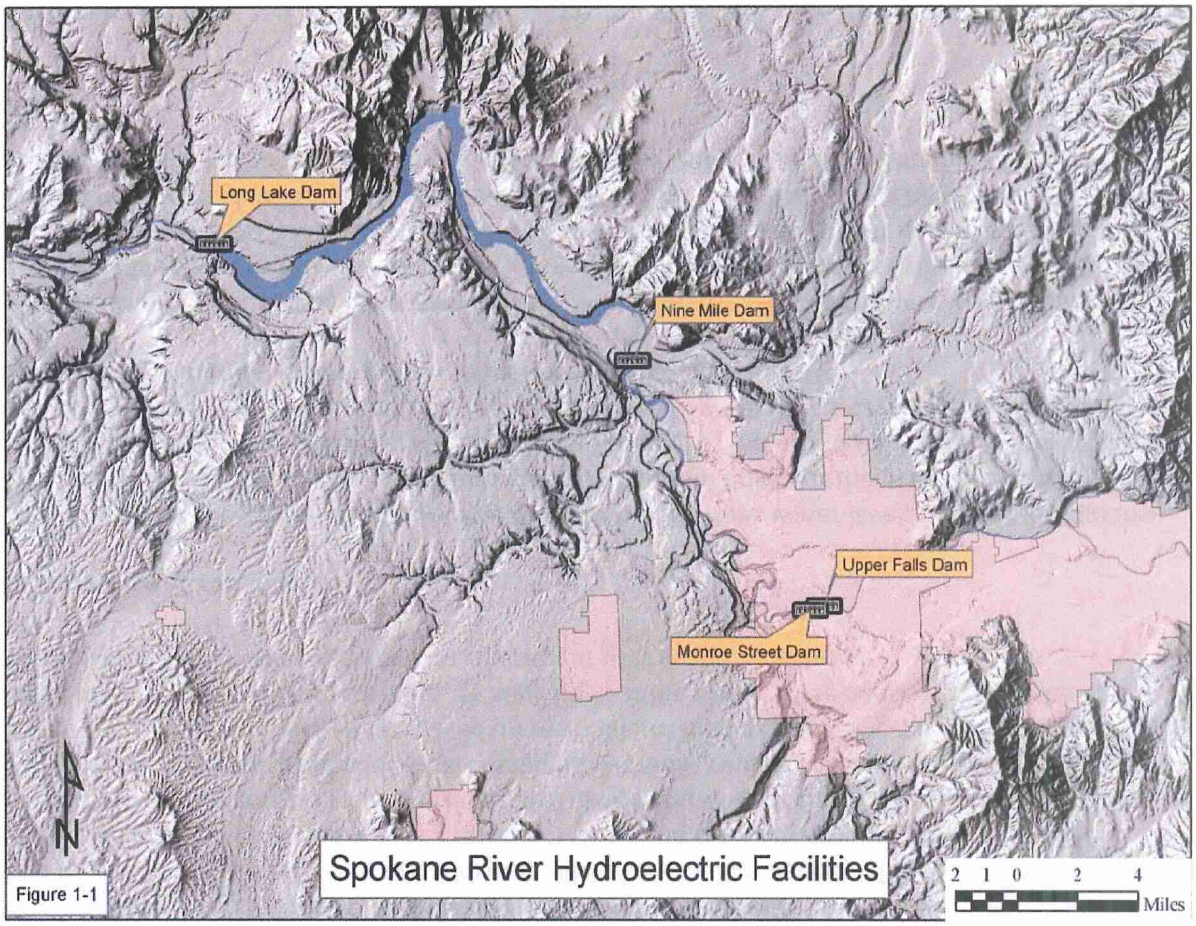


Figure 1-1

Nine Mile Hydroelectric Development Project

Background

The Spokane and Inland Empire Railway Company constructed the Nine Mile facility between 1906 and 1908. The site was originally acquired and the hydroelectric development constructed by the entrepreneur J.P. Graves specifically for the purpose of powering an electric railway system that ran into the Palouse agricultural area south of Spokane. The electric railway system was short lived, however, and by 1922 the railway company was in receivership. The Nine Mile hydroelectric development (HED) was sold to Washington Water Power Company (Avista) in 1925.

When purchased by Washington Water Power Company, the Nine Mile powerhouse contained four generator turbine units with a total capacity of 12 MW. Between 1947 and 1950, an additional 5 feet was added to the existing 5-foot-high flashboards at the top of the dam, increasing the generating capacity to 18 MW. In 1994, Units 3 and 4 were replaced with new, more efficient units, increasing the generating capacity by almost 50 percent to the current 26.4 MW, see Water Right Certificate No. S3-29070.

Installed Infrastructure

Nine Mile Hydro Electric Dam (HED) consists of a single dam and integral powerhouse built in 1908, with a sediment bypass tunnel installed in 1996. The dam is 364-foot-long, 58-foot-high concrete gravity dam with an adjacent 102-foot-long reinforced concrete cutoff wall. The dam incorporates a 225-foot-long concrete overflow spillway with a capacity of 28,500 cfs at water surface elevation 1,606.6 feet. The top of the spillway dam is at elevation 1,596.6 feet. The dam used to accommodate two tiers of 5-foot-high flashboards. In 2010, an inflatable rubber dam structure with a steel plate was installed to replace the annual flashboard structures, and to help maintain a year-round full pool level in the reservoir.

There are four intakes integral to the face of the dam where water is fed to the turbines via steel and concrete bulkhead chambers. Additionally, there is a 120-foot-long, 5-foot-diameter low-level bypass tunnel through the dam at the left side of the powerhouse. The tunnel is capable of passing a flow of 400 cfs at a water surface elevation of 1,606.6 feet.

The powerhouse is a 139-foot-long, 80-foot-wide reinforced concrete facility integral to the dam. It houses four turbine-generator units with a combined installed generating capacity of 26.4 MW and a current hydraulic nameplate capacity of 6,500 cfs.

The infrastructure consists of four Horizontal Francis Turbine generation units. Units 1 and 2 were installed in 1910 and are each rated at 5,000 hp/1,300 cfs hydraulic capacity. These units are worn and need to be replaced. Units 3 and 4 were replaced in 1994 and are each rated at 14,000 hp/1,950 hydraulic capacity. Horizontal Francis Turbines are being evaluated for the replacement turbines for Units 1 and 2, with an estimated additional combined hydraulic capacity of up to 2,200 cfs. The total cfs needed for the upgrade project will be based on the final installed nameplate capacity of the new replacement generators. Fish passage issues have been addressed and are consistent with the guidelines established by the Washington Department of Fish and Wildlife.

Effects to Surface Water Flow

The FERC license for the Project does not include any minimum flow, water level, or other limitations specific to the Nine Mile HED. However, Spokane River instream flows for the project, as a whole, have been established by FERC as identified in Appendix A, Section I of the new Spokane River Project license. This section provides the management requirements for how Avista will manage the Spokane River flows, along with minimum discharge quantities and for what duration.

For the Nine Mile HED, flow below the dam mirrors inflow into the reservoir. There is no bypassed reach at Nine Mile because the powerhouse is integral to the dam. Powerhouse discharge and/or spill over the dam flow directly into the downstream river channel. The new rubber dam installed in 2010 on the spillway helps to maintain the full-pool level during low flow season. During high-flow periods, the rubber dam is controlled to allow the water to pass over the spillway, while maintaining full pool reservoir levels.

The Nine Mile facility has 3,130 acre-feet of storage, and is operated as a 'run-of-river' facility. Therefore, operation of Nine Mile HED is driven primarily by Spokane River flows and the operations of the Post Falls facility.

The Long Lake facility has a reservoir that provides some operating flexibility under differing hydrologic conditions. The Upper Falls, Monroe Street, and Nine Mile HEDs are run-of-river projects and operate in response to Spokane River flows. These flows are influenced by hydrologic conditions and the operations of Post Falls.

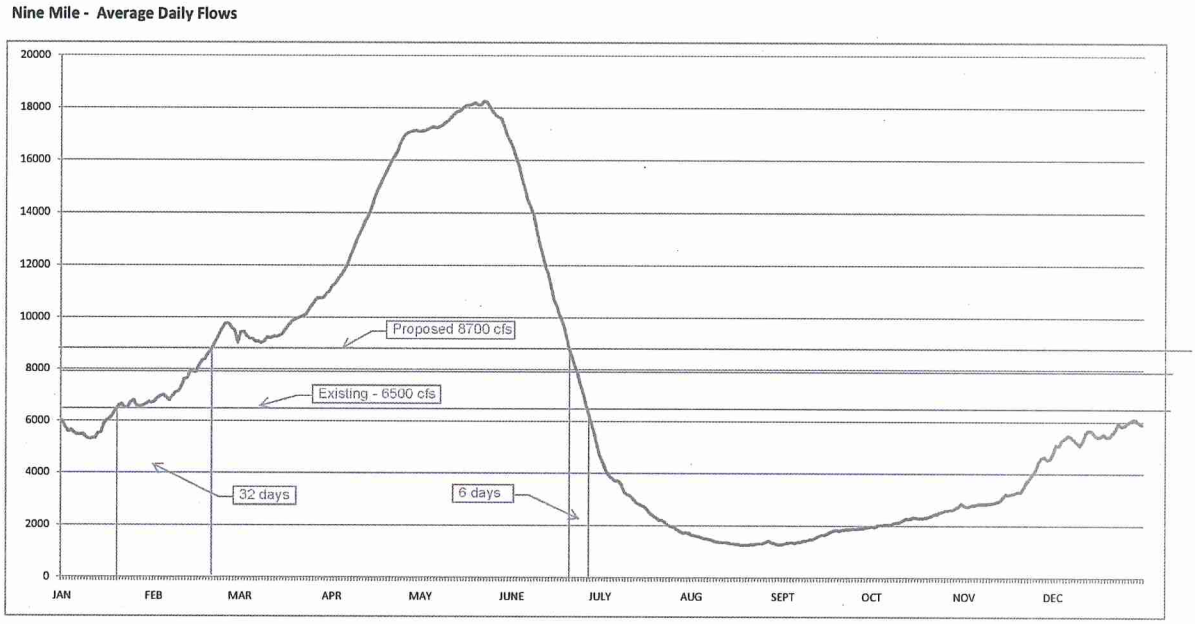
Water Availability and Flow Data

Reasonable estimates of flow at three of the four Spokane River hydroelectric developments are readily available from a series of U.S. Geological Survey (USGS) gages along the Spokane River. Flow data are readily available from the USGS Stream Gauge Site for: USGS Gage No. 12422500 (Spokane River at Spokane, WA); USGS gage # 12424000 located on Hangman Creek; and USGS Gage No. 12433000 (Spokane River at Long Lake, WA) located at river mile 33.88 and just downstream of the Long Lake HED powerhouse.

At the Nine Mile HED, operators monitor generation discharge and spill water discharge to determine the total discharge from the facility. When there is no spill at Nine Mile, the operator calculates the actual inflow by determining the turbine discharge from the tables and then, knowing the change in elevation for the hour and calculating in how much storage is in a foot of the reservoir.

Flow conditions on the Spokane River fluctuate greatly between peak and base flows according to USGS records from 1891 to 2001 (USGS 12422500, Spokane River). Historically, peak flows have occurred between December and June, with the majority occurring during May depending on the timing of rain and snow events. Peak discharge has ranged from 7,610 to 49,000 cubic feet per second (cfs), while base flow during August and September averages approximately 1,750 cfs.

Figure 1 shows the average flows by month along with the current and proposed water right authorizations thus demonstrating those periods during the year when Avista anticipates that additional water is present in the river and will be available for additional power generation.



Existing Water Rights

Operation of the Spokane River Project requires non-consumptive water rights for power generation. In Idaho, the water rights for Post Falls HED is for 5,410 cfs. In Washington, non-consumptive water rights exist for Upper Falls (2,600 cfs), Monroe Street (2,900 cfs), Nine Mile (6,500 cfs), and Long Lake (6,300 cfs) HEDs.

There are six water rights associated with the Nine Mile HED:

File #	Person	Doc	Date	Purpose	Qi	Qa (Af/Yr)	TRS	Source
S3-015203CL	Washington Water Power	Claim	1/1/1908	SR	N/A	4600	26.0N 42.0E 06	SPOKANE RIVER
S3-015204CL	Washington Water Power	Claim	5/14/1908	PO	3000 CFS	2070000	26.0N 42.0E 06	SPOKANE RIVER
9668	Washington Water Power	Cert	12/14/1965	PO	2300 CFS		26.0N 42.0E 06	SPOKANE RIVER
G3-301156CL	Washington Water Power	Claim	12/1/1980	IR,DM	70 GPM	5	26.0N 42.0E 06	WELL
S3-29070C	Washington Water Power	Cert	7/22/1991	PO	1200 CFS		26.0N 42.0E 06	SPOKANE RIVER
G3-29980C	Washington Water Power	Cert	9/20/1996	DS,CO	100 GPM	0.8	26.0N 42.0E 06	WELL

Surface Water Claim #015204, and Certificate Nos. 9668 and S3-29070 authorize 6,500 cfs non-consumptive water supply for power generation. Surface Water Claim #015203 allows for 4,600 Acre-Feet (AC/FT) reservoir storage. Ground water Certificate G3-29980 authorizes 100 gallons per minute (gpm) for cooling water (non-consumptive portion) and for domestic supply. Ground water Claim #301156 authorizes 70 gpm for domestic supply, irrigation of the grounds and fire protection.

Spokane River

The Spokane River basin is bordered by the Upper Columbia basin to the north, the Pend Oreille basin to the northeast, and the Coeur d' Alene basin to the east. The outlet of Coeur d' Alene Lake forms the headwaters of the Spokane River, which flows westerly 111 miles to its confluence with the Columbia River (Lake Roosevelt).

The major tributaries of the Spokane River listed from upstream to downstream include Hangman Creek (also known as Latah Creek), Little Spokane River, and Chamokane Creek (also known as Tshimikain Creek).

In eastern Washington and northern Idaho, there are seven dams on the Spokane River. The City of Spokane owns, operates, and maintains Upriver Dam and is licensed for fifty years under FERC license 3074-WA, 1981-2031. As previously discussed, Avista Corporation owns and operates the other six hydroelectric facilities. Currently, no dam on the Spokane River has a fish passage facility and all dams create fish barriers for upstream migration.

Post Falls Dam has the largest storage capacity of the dams covered under Avista's Spokane River FERC License No. 2545, and operates to meet several interests including: 1) compliance with minimum flow requirements of the FERC license and regulating Spokane River flows, 2) maximizing the storage capacity available in Coeur d' Alene Lake during spring runoff, 3) generating electricity to meet Avista customer energy demands, and 4) considering other upstream and downstream recreational, residential, and commercial interests as well as downstream resource needs.

The Spokane River is in close hydraulic communication with the underlying Spokane Valley/Rathdrum Prairie (SVRP) aquifer. The aquifer is the primary source of drinking water for the rapidly growing population of Spokane, Washington, and nearby communities.

The water-bearing formation is composed of unconsolidated Quaternary glaciofluvial deposits underlying an area of about 350 square miles.

Sources of recharge to the aquifer include infiltration from precipitation, return flow from water applied at land surface, leakage from the Spokane and Little Spokane Rivers and adjacent lakes, and surface water and ground water inflow from tributary basins. The aquifer discharges into the Spokane and Little Spokane Rivers and Lake Spokane. Discharge from the aquifer also occurs through withdrawals from wells.

The aquifer is highly transmissive ranging from about 0.13 million to 11 million feet squared per day and ground-water velocities exceed 60 feet per day in some areas. The Spokane River recharges the SVRP aquifer in places, and ground water discharges to the river in other places.

Since the proposed application is non-consumptive, and without an instream by-pass reach there should be no changes to the interaction between the Spokane River and underlying aquifer system.

Impairment Considerations

Other Water Right Holders

Downstream water right holders will not be affected by increased diversion through the turbines because the diversion would be a non-consumptive use. The project does not permanently remove water from the river, and there are no other water rights or points of diversion for other water uses within the bypass reach.

Senior Water Right Applicants

There are only two other surface water applications pending in the Lower Spokane watershed, and both are for irrigation.

File #	Person	Stat	Doc	Priority Date	Purpose	Qi	UOM	Qa	Irr Acres
S3-30485	Naff Monte	A	New App	4/14/2005	IR	0.04	CFS	0.5	1
S3-30493	Spokane Hutterian Brethren	A	New App	7/11/2005	IR	12.5	CFS	2000	750
S3-30619	Avista Corp	A	New App	3/30/2010	PO	2200	CFS		

RCW 90.03.265 provides that in cost-reimbursement situations, applications that are non-consumptive and will not diminish the amount of water available to other applicants, may be processed ahead of older applications. See http://apps.leg.wa.gov/RCW/default.aspx?cite=90.03.265#.

Instream Flows

As of the time of processing this report, no instream flow regulation has been formally established by WAC for the main stem of the Spokane River. However, maintaining a healthy, functioning river system is an important goal for all parties involved in the project.

Watershed Planning and Instream Flow Status

Watershed Planning under RCW 90.82 is being conducted in the Lower Spokane River Basin.

The Water Resource Inventory Area (WRIA) 55/57 planning group has completed an instream flow study of selected reaches of the Spokane River, along with toe-width measurements on key tributaries. A stakeholder work group was formed in collaboration with the WRIA 55/57 planning group to develop integrated instream flow recommendations for the main stem of the Spokane River.

The work group did not achieve consensus on minimum instream flows for the main stem of the Spokane River. However, they did agree upon control points to manage surface water and their recommendations for minimum instream flows were used as the foundation for conditions in the Section 401 water quality certification of the Avista hydroelectric dam relicense.

Water Quality Considerations

Total Dissolved Gas (TDG)

TDG can be a concern at hydroelectric projects due to the effects of water pouring over the spillway of a dam and plunging into tailrace waters thereby creating air bubbles. When these bubbles are carried to the depth in the dam's stilling basin, the higher hydrostatic pressure forces air from the bubbles into solution. The result is water supersaturated with dissolved nitrogen, oxygen, and the other constituents of air. As the bubbles rise in the aerated zone of the tailrace, some of the gas leaves solution. However, as the bubbles dissipate and the water enters the downstream reach, the remaining TDG will remain unless wind or channel induced turbulence causes more degassing.

TDG may also be increased or decreased by natural phenomena, for instance in the case of the Spokane River system, the Spokane Falls. Plunging waterfalls can generate gas.

TDG levels in the river downstream of Upper Falls and Monroe Street Dam are the result of TDG produced from Spokane Falls and are not related to Dam operation. TDG levels produced by Spokane Falls were some of the highest observed in the Project area during 2003 and 2004 monitoring. Although some dissipation of TDG occurs between Monroe Street and Nine Mile Dams, the elevated TDG levels in the forebay of Nine Mile may be the result of TDG produced at Spokane Falls.

Very little, if any, additional TDG is generated by Nine Mile Dam. Based on monitoring data during 2004, spill at Nine Mile Dam appeared to dissipate TDG. However, TDG concentrations did exceed standards downstream in the tailrace at Long Lake Dam. The Spokane River is listed on Washington State's Water Quality Assessment 303(d) list for TDG at the tailrace of Long Lake Dam.

During the SEPA review process for the Nine Mile HED Water Right Application No. S3-30619, Ecology as lead agency for this SEPA process, issued a tentative Determination of Non-Significance (DNS) on August 9, 2011. The SEPA DNS states that Ecology has determined that the upgrade to the turbines will not have a significant adverse environmental impact. There is some uncertainty in what the effect on Total Dissolved Gas (TDG) will be, but provisions in the 401 Certification for the Spokane River Hydroelectric Project (Washington Department of Ecology Certification Conditions Under Section 401 of the Federal Clean Water Act of the June 18, 2009 FERC Order issuing New License for the Hydropower Relicensing Project No. 2545) address that uncertainty. The provisions in the 401 Certification ensure appropriate monitoring of TDG and a detailed action plan should TDG increase above the licensed limits.

Avista has prepared a TDG Monitoring Plan for the Nine Mile Dam. The Monitoring Plan has been approved by Ecology and as modified by FERC.

Consideration of Protests and Comments

In the May 19, 2010 protest letter from Rachael Paschal Osborne on behalf of the Center for Environmental Law and Policy (CELP), the following issues were raised:

1. The application should not be accepted for Ecology-based Priority Processing without the Agency first defining what the criteria should be for making that decision.

2. The project has not undergone adequate SEPA review yet, and does not outline the specifics for the review process.

3. Instream flows may be affected by a change in dam operation.

4. Water quality may be affected by changing the operation of the Nine Mile facility.

5. The existing project lacks fish passage.

6. The project has the potential to impair senior water right holders.

7. Avista may have failed to fully utilize its existing water rights for Nine Mile, because it appears that Avista has not "called" junior groundwater rights that deplete instream flows in the Spokane River and theoretically reduce flow available to Avista.

Issue 1:

In response to CELP's concerns regarding the appropriateness of priority processing under WAC 173.152.050(2)(b) Avista decided that Cost Reimbursement would be a more appropriate mechanism to evaluate this application.

Issue 2:

CELP's protest letter was released prior to Avista's submittal of the SEPA checklist to Ecology for the Water Right Application No. S3-30619, and prior to the issuance of Ecology's Determination of Non-Significance (DNS) on August 9, 2011. As part of the SEPA DNS determination, Ecology adopted previously prepared environmental reviews that addressed the impacts of the project, specifically the Final Environmental Impact Statement (FEIS) for the Spokane River and Post Falls Hydropower Relicensing Project Nos. 2545 and 12606. The FEIS evaluated the potential impacts on the environment associated with the relicensing of the five hydroelectric developments that make up the 137.65-megawatt (MW) Spokane River Hydroelectric Project No. 2545.

It was Ecology's determination that the anticipated upgrade to the turbines will not have a significant adverse environmental impact. There is some uncertainty in what the effect on Total Dissolved Gas (TDG) will be, but provisions in the 401 Certification for the Spokane River Hydroelectric Project (Washington Department of Ecology Certification Conditions Under Section 401 of the Federal Clean Water Act of the June 18, 2009 FERC Order issuing New License for the Hydropower Relicensing Project No. 2545) address that uncertainty. The provisions in the 401 Certification ensure appropriate monitoring of TDG and a detailed action plan should TDG increase above the licensed limits.

The documents discussed above are available on Avista's website at:

1. For the FEIS (July 2007):
   http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2007-0295
2. For the 401 Certification:
   (a) Appendix B [401 Cert.] of the FERC Order issuing New License for Project 2545 (June 18, 2009):
   http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2009-0156
   (b) Order Modifying and Approving Total Dissolved Gas Monitoring Plan for the Nine Mile Development – Article 401 (December 14, 2010):
   http://www.avistautilities.com/resources/relicensing/spokane/documents.asp?DocID=2010-0424

No challenges to the above adopted documents have been filed as of the release date of this Determination of Non-Significance/Notice of Adoption. Results of the environmental studies, work group meetings, and other pertinent documents from the relicensing process are posted on-line at: http://www.avistautilities.com/resources/relicensing/spokane

Issue 3:

While a new instream flow rule has not been adopted for the Spokane River, the WRIA 55/57 Watershed Planning Group provided recommendations to Ecology and Avista regarding target flows for the River. These flow recommendations have been incorporated into the new Federal Energy Regulatory Commission (FERC) license. Regardless, the Nine Mile HED has limited storage capacity and is operated as a 'run-of-the-river facility'. Issuing this permit will not change the amount of water flowing in the Spokane River; it will only change a portion of the flow that previously went over the spillway that will now go through the powerhouse. Accordingly, there should be no changes to the management of the river that would conflict with future rule establishment.

Issue 4:

The primary water quality concern brought forward for the Spokane hydroelectric facilities is total dissolved gas (TDG), which results from water spilling over some dams and as natural occurrences in higher waterfalls. While some hydroelectric facilities do produce increased gas levels, the Nine Mile facility does not. Therefore, routing more water through the turbines instead of spilling it over the floodway may actually reduce TDG levels in the river below the dam. Ecology noted in the SEPA DNS that there is some uncertainty in what the effect on Total Dissolved Gas (TDG) will be. However, Ecology has stated that provisions in the 401 Certification for the Spokane River Hydroelectric Project address that uncertainty. The provisions in the 401 Certification ensure appropriate monitoring of TDG and a detailed action plan should TDG increase above the licensed limits.

Avista has prepared a TDG Monitoring Plan for the Nine Mile HED. The Monitoring Plan has been approved by Ecology and as modified by FERC in December, 2010.

Issue 5:

The Nine Mile HED is an existing facility that is currently permitted under the authority of State issued water right permits and the federal FERC licensing requirements. Currently none on the Spokane River dams include fish passage – fish passage does not exist above Grand Coulee Dam, and the fishery is managed in support of resident fish that utilize the river.

On June 18, 2009, FERC issued a new 50-year license to operate the Spokane River Project, which includes the Nine Mile HED. Fish passage was evaluated extensively by a wide range of stakeholders during relicensing of the Spokane River Project. Article 411 of the new Spokane River Project license provides for the reservation of Authority to prescribe fishways should they be deemed important in the future, which reads:

> Article 411. *Reservation of Authority to Prescribe Fishways*. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Accordingly the issuance of this permit to authorize additional beneficial use of water already flowing through an existing facility does not preclude provisions being made for future fish passage. However, that determination will be made in a different arena as part of a larger management scheme for federal facilities on the Columbia River and its tributaries.

Issue 6:

There is no evidence to support the contention that senior water right applicants will be impaired by the proposed action because all water flowing in the Spokane River is available immediately downstream of the dam without diminishment to downstream water users.

Issue 7:

The Nine Mile HED is currently authorized to use 6,500 cfs for hydro-electric power generation. While the amount of water reaching Nine Mile and thus available for power generation is dependent on a number of factors, including natural weather conditions and other water users, the primary factor that affects instream flows at the Nine Mile HED is the State and Federal regulated management flow levels established for the Spokane River at the upstream hydro projects. Appendix A, Section I of the new Spokane River Project license provides the management requirements for how Avista will operate the Spokane River flows, along with minimum discharge amounts and for what duration.

Flows fluctuate in the Spokane River near the Nine Mile HED from summertime lows approaching 1,750 cfs to spring peaks that exceed 18,000 cfs. Avista has fully exercised its authorized water rights during those periods of time that water has been physically available. There is no evidence that a portion of the previously issued rights are subject to relinquishment for non-use.

CONCLUSIONS

Under the provisions of RCW 90.03.290, a water right shall be issued upon findings that water is available for appropriation for a beneficial use and that the appropriation thereof, as proposed in the application, will not impair existing rights or be detrimental to the public welfare. After consideration of the facts presented in this report, I make the following conclusions:

Availability

The physical availability of water for this project is based on natural flows in the river and availability of regulated instream flows as released from upriver facilities during low flow season. As previously stated, flows fluctuate in the Spokane River near the Nine Mile HED from summertime lows approaching 1,750 cfs to peaks that exceed 49,000 cfs. Accordingly, there are periods during the year when water will be physically available for appropriation of the requested additional 2,200 cfs of non-consumptive water supply.

Impairment

Authorization of this appropriation will not result in impairment to other water users because all water flowing in the Spokane River is available immediately downstream without diminishment to downstream water users. Instream resources will likewise not be impaired by this project since there are no impacts associated with running more water through the turbines than the spillway.

Public Interest

Hydroelectric power generation is a renewable resource, which reduces the pollutants that would otherwise be emitted if replaced by fossil fuels like coal, oil, or natural gas. Hydro power also helps avoid some of the environmental impacts related to burning fossil fuels such as acid rain, generation of greenhouse gases, and depletion of the ozone layer.

This facility generates power to meet local and regional electricity demands with consideration given to flood management, natural resource protection, and recreation.

Beneficial Use

Hydropower is considered to be a beneficial use of water.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that Water Right Application No. S3-30619 be approved, in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial.

- 2,200 cfs (total diversion rate 8,700 cfs when combined with previously issued water rights)
- Non-consumptive, hydro power production
- Year-round

Point of Diversion

S½SE¼, Section 6, Township 26 North, Range 42 EastW.M.

Place of Use

As described on Page 1 of this Report of Examination.

Jill E Van Hulle

Report prepared by: Jill Van Hulle, Pacific Groundwater Group

Dan Tolleson

Report reviewed by: Dan Tolleson, Water Resources Program

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Avista Corporation
S3-30619
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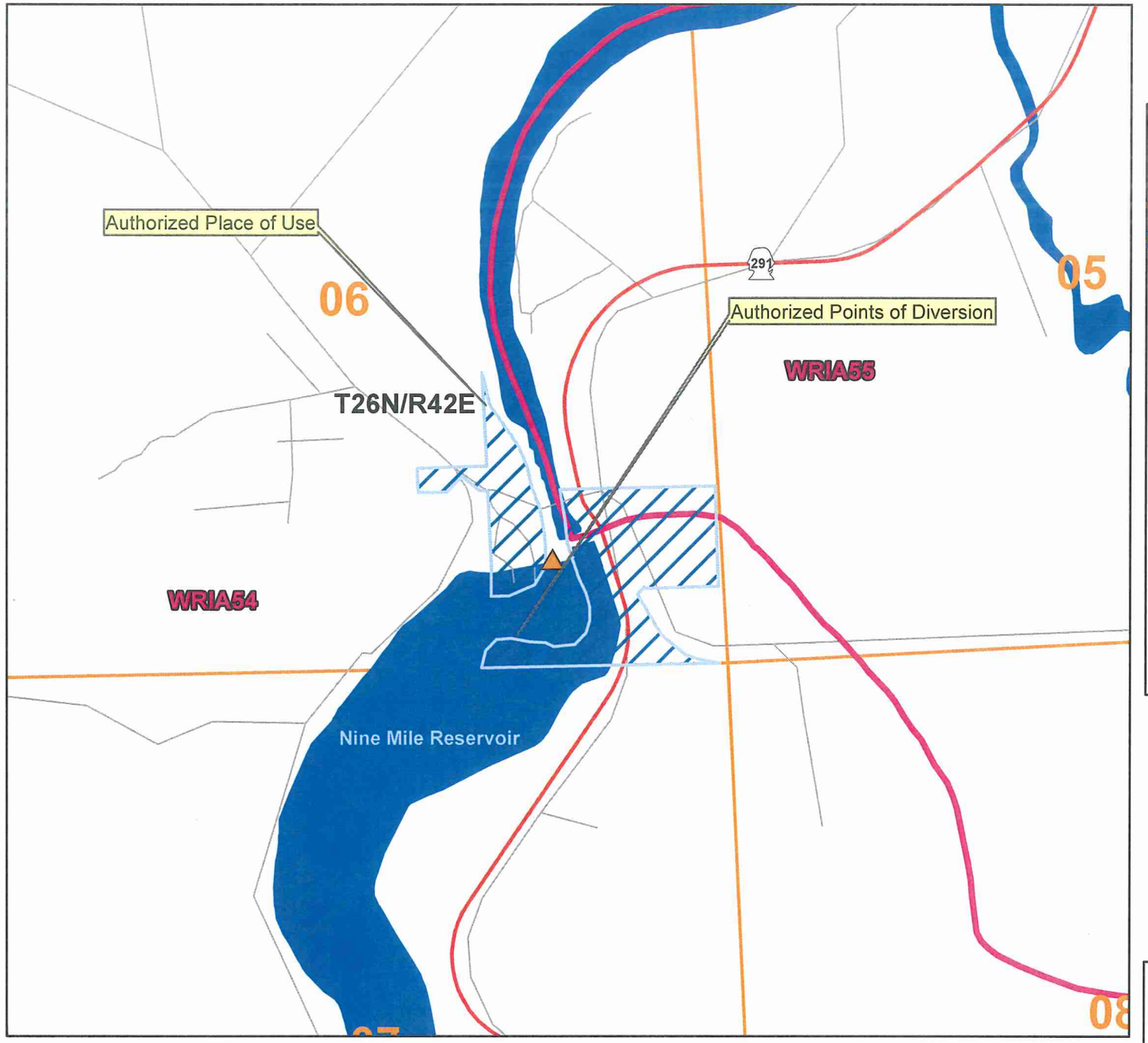
WRIA 54 - Spokane County



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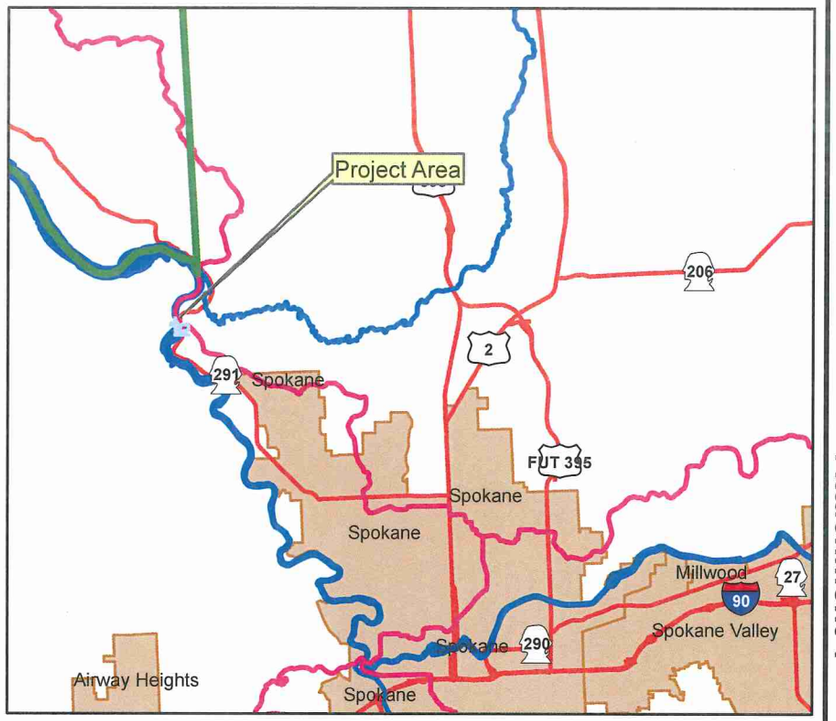

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Legend

- County
- WRIA
- Cities
- Local Roads
- Highways
- Townships
- Sections
- Authorized Point of Diverison
- Authorized Point of Withdrawal
- Authorized Place of Use

Comments:
Place of use, points of withdrawal/diversions are as defined on the cover sheet under the heading, 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

Attachment 1