

WR File Nr: R1-28150
WR Doc ID: 2285542

State of Washington
**PROTESTED REPORT OF
 EXAMINATION**
 APPLICATION TO STORE WATER
 FOR BENEFICIAL USE

PRIORITY DATE
August 15, 2002

WATER RIGHT NUMBER
R1-28150

MAILING ADDRESS
 JB & JM HELSELL LLLP
 155 LIME QUARRY ROAD
 EASTSOUND WA 98245

SITE ADDRESS (IF DIFFERENT)

Purpose and Quantity

PURPOSE	STORAGE QUANTITY		UNITS	PERIOD OF USE
	ADDITIVE	NON-ADDITIVE		
Recreation, wildlife, domestic use, stock watering, irrigation, and for mitigation to augment flow into Fish Trap Creek	55 at normal pool elevation and 82 at dam crest		AF (acre-feet)	01/01 - 12/31

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
SAN JUAN	Fish Trap Creek	Deer Harbor	2-SAN JUAN

Location of Impounding Structure

SOURCE NAME	PARCEL	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Fish Trap Creek	273131001000	37	02	31	NE¼ SW¼	48.649688°N	123.002476°W

LEGAL DESCRIPTION OF SUBMERGED LANDS

The area submerged by Hessel Pond is within the NE¼ of SW¼ of Section 31, Township 37 North, Range 2 West, W. M.

Attachment 1 shows the location of the authorized place of use and impoundment structure. Attachment 2 describes the legal description of property on which water is to be used.

Specifications of Impounding Structure

HEIGHT OF DAM	LENGTH ON TOP (ft)	WIDTH ON TOP (ft)
17	150	50
SLOPE OF FRONT OR WATER SIDE (horizontal: vertical)		SLOPE OF BACKSIDE (horizontal: vertical)
5H:1V		4H:1V
NORMAL OPERATING POOL LEVEL (ELEVATION FT)		HEIGHT OF DAM ABOVE WATER LINE AT NOPL (ft)
Approximately 250 feet above mean sea level		3
TYPE OF DAM AND CONSTRUCTION MATERIALS		
Earth Fill – Compacted Clay		
LOCATION AND APPROXIMATE DIMENSIONS OF SPILLWAY INCLUDING CREST LENGTH		
There is no spillway on the dam. A 12-inch diameter ductile iron pipe spillway is on the NE arm of the lake (away from the main dam) over a bedrock ridge which flows into an adjacent basin.		
LOCATION, SIZE AND TYPE AND OUTLET VALVE AND OUTLET CONDUIT STRUCTURE		
A 6-inch PVC pipe with a shut off valve was constructed through the dam.		
NUMBER OF ACRES SUBMERGED WHEN RESERVOIR IS FILLED TO NOPL	MAXIMUM DEPTH (FEET) AT NOPL	APPROXIMATE AVERAGE DEPTH (FEET)
6.5	14	9

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	January 1, 2019	January 1, 2020

Provisions

1. Mitigation Requirement

The approval of this reservoir permit is contingent on development and testing of an acceptable Mitigation Plan finalized within five years when Completion of Project is due. If the Mitigation Plan is not developed to the satisfaction of the Department of Ecology within five years the permit will be cancelled and a certificate will not be issued. The elements of the Mitigation Plan must address all actions necessary to implement, monitor, maintain, and report on the effectiveness of the Mitigation Plan, in perpetuity.

The Mitigation Plan shall be submitted to Ecology as a written document and address restoration of the Fish Trap Creek watershed hydrology. It shall entail reconfiguring the dam outlet(s) to ensure stream flows to hydrate Fish Trap Creek, and/or releasing flows at times when water is needed to maintain life functions of anadromous fish downstream.

2. Proof of Appropriation

After the Mitigation Plan has been approved and proven effective, the water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the full quantity of water required by their project has been stored and put to full beneficial use. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity used for mitigation, place of use, and satisfaction of provisions.

3. 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, diversions, and measuring devices.

4. Dam Safety

Dam owners are required to evaluate the safety of their dam and all appurtenant works and to make modifications, as become necessary, to reasonably secure safety to life and property. For current requirements, please contact the dam safety office at the Department of Ecology.

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 purpose(s) of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. R1-28150, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearings 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 the following within 30 days of the date of receipt of the Order.

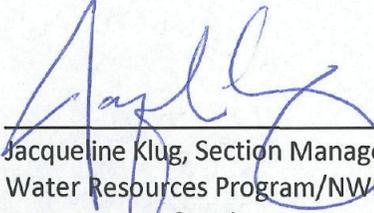
File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- 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.

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

Signed at Bellevue, Washington, this 8 day of January, 2014.



 Jacqueline Klug, Section Manager
 Water Resources Program/NWRO
 Department of Ecology

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>.

INVESTIGATOR'S REPORT

Application for Water Right -- Helsell
 Water Right Control Number R1-28150
 Jerry Liszak, Department of Ecology

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number R1-28150.

Table 1 Summary of Requested Water Right

Applicant Name:	JB & JM Helsell LLLP
Date of Application:	8/15/2002
Location of Impoundment Structure	NE¼ of SW¼ of Section 31, Township 37 North, Range 2 West, W. M.

County	Waterbody	Tributary To	WRIA
San Juan	Fish Trap Creek	Deer Harbor	2-San Juan

SOURCE FOR RESERVOIR SUPPLY Fish Trap Creek	TRIBUTARY OF Deer Harbor
NUMBER OF ACRE FEET STORED WHEN RESERVOIR IS FULL 55 at normal pool elevation and 82 at dam crest	USE(S) TO BE MADE OF IMPOUNDED WATER Recreation, wildlife, domestic use, stock watering, irrigation, and for mitigation to augment flow into Fish Trap Creek

CONSTRUCTION DETAILS OF IMPOUNDMENT STRUCTURE

Note: NOPL means Normal Operating Pool Level

HEIGHT OF DAM (FEET) 17	LENGTH ON TOP (FEET) 150	WIDTH ON TOP (FEET) 50
SLOPE OF FRONT OR WATER SIDE (Number of feet horizontal to one foot vertical): 5H:1V	SLOPE OF BACKSIDE (Number of feet horizontal to one foot vertical): 4H:1V	
HEIGHT OF DAM ABOVE WATER LINE AT NOPL (FEET) 3	Dam ID Number SJ02-724	

TYPE OF CONSTRUCTION OF DAM AND CONSTRUCTION MATERIALS:
COMPACTED CLAY

LOCATION AND APPROXIMATE DIMENSIONS OF SPILLWAYS

Spillway on the NE arm of the lake (away from the main dam) – 12-inch diameter ductile iron pipe

# OF ACRES SUBMERGED WHEN RESERVOIR IS FILLED TO NOPL	MAXIMUM DEPTH (FEET) AT NOPL	AVERAGE DEPTH (FT)
6.5	14	9

BACKGROUND

In 1976, Mr. Helsell attempted to excavate a wetland near the headwaters of Fish Trap Creek to create an open water pond. The soil was too wet to excavate properly so he constructed a dam which created a pond 5 feet deep over the wetland. The dam raised the water level high enough to divert discharge over a low ridge to the east, so a 12-inch diameter overflow culvert was placed there at the northeast arm of the pond. This resulted in flow to the southeast through Helsell’s farm via Skull Creek into West Sound, as opposed to the natural Fish Trap Creek drainage to the south into Deer Harbor. The dam at the south end of the pond had significant leakage which allowed minimal flow into Fish Trap Creek.

In 2000 Mr. Helsell applied to the County to reconstruct his “leaking, unsafe dam and excavate a portion of the wetland”. He hired Azous Environmental Sciences to do an environmental assessment which concluded “the proposal was not likely to have a significant adverse environmental impact”. A Determination of Non-Significance (DNS) was determined for a State Environmental Policy Act (SEPA) by the County. The Azous report mentioned the dam will be constructed with a bypass outlet to allow a minimum in-stream flow to Fish Trap Creek to maintain historical stream flows, and also aid private efforts to restore native salmon runs to the West Sound Creek system (aka Skull Creek). A Grading and Excavating Permit was issued by the County.

Subsequently the pond was drained and the entire wetland excavated. Prior to excavation, the area of the reservoir was a dead sphagnum (peat) bog with relict inter-glacial sediments and fossil fauna at the bottom. This acted as a huge reservoir with low evapotranspiration and year-round slow release of cool water to the south to Deer Harbor via Fish Trap Creek. Rather than rebuilding the first dam, a larger 17-foot high dam was built approximately 150 yards downstream from the previous 1976 dam site, which significantly enlarged the reservoir. Water levels are reported to be identical to what they were with the 5-foot dam, however, the pond is deeper due to the deeper bog excavation. The new dam location was picked because of bedrock for leakage control. The new dam location was not addressed in the Azous wetland report. No permits were applied for the new dam at the new location. However, the County allowed it under the existing Grading and Excavating Permit. Mr. Helsell said the overall depth of the reservoir is 14 feet due to the deeper wetland bog excavation.

The bypass outlet, mentioned in the Azous report, to Fish Trap Creek was never constructed as there were no conditions on the Grading and Excavating Permit to require it. However a 6-inch PVC pipe with a shut off valve was constructed through the dam. The shut off valve has never been opened to allow

flow into Fish Trap Creek. All overflow occurs through the 12-inch diameter culvert at the northeast arm of the pond into Skull Creek.

At the time of my site visit on August 25, 2009, I measured 5 gpm leaking through the new dam under the 6-inch PVC pipe. Mr. John Helsell recently sent me a letter stating, "As of October 1, 2013, the dam is leaking 1 gpm with a full lake." Fish Trap Creek discharge is now mainly runoff from the lower valley. Winter flows in Fish Trap Creek were less than 0.25 cfs in 2008-2009, while additional water from overflow increased the discharge of Skull Creek several fold. [Personal communication from Russel Barsh, Director Center for the Historical Ecology of the Salish Sea (Kwiáht)].

On August 15, 2002, Mr. Helsell filed the subject after-the-fact-application for a reservoir permit for his pond. The application mentions that the reservoir flows into an unnamed stream (Skull Creek) which flows into West Sound. There was no mention of Fish Trap Creek in the application. Mr. Helsell also filed application S1-28147 for domestic water, irrigation and stock watering from the pond and Skull Creek.

Legal Requirements for Approval of Appropriation of Water

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted and used. Notice of this application was published in THE ISLANDS' SOUNDER on May 27, 2009 and June 3, 2009.

Consultation with the Department of Fish and Wildlife

The Department of Ecology gave notice to the Department of Fish and Wildlife (WDFW) of this application to store water. A letter dated February 5, 2009, from Steve Boessow of WDFW, requested DENIAL of this application based upon a review of fish resources, type and amount of water use, condition of habitat, and amount of water available. Despite the fact that the reservoir has been in place for a number of years, WDFW cannot support moving water out of the original stream. Subsequently after a site visit to the Helsell reservoir, and learning it has been in place for over thirty years, Steve Boessow recommended modification of the structure to minimize impacts to fish.

INVESTIGATION

Proposed Use and Basis of Water Demand

This application is for a reservoir permit for an existing pond, Helsell's Pond, for storage of water to be used for recreation, irrigation, stock watering and domestic water use. In addition a surface water application, S1-28147A, was submitted for the proposed withdrawal of water for the irrigation, stock watering and domestic use portion from the pond. This water use application will not be processed until an acceptable Mitigation Plan has been approved for the reservoir permit R1-28150.

Geographic Setting of the Reservoir

The USGS Waldron Island topographic map shows Hessel's Pond at an elevation of approximately 250 feet above mean sea level (MSL). The pond lies in the Fish Trap Creek watershed with its headwaters about 2,000 feet to the north of the pond at a topographic high at the basin's headwaters. The drainage continues to the south about 7,000 feet and empties into Deer Harbor. (See Attachment 1 for location.)

Orcas Island Geohydrology

The geology in the vicinity of Hessel's Pond consists of the Turtleback terrane, a Paleozoic arc-plutonic and volcanic unit. Water Supply Bulletin No. 46 mapped the Turtleback Complex consisting of gabbro, diorite, and quartz diorite with minor pyroxenite and serpentine.

Mean annual precipitation in the area is from 30 to less than 32 inches per year. Recharge to the ground water system on Orcas Island occurs from percolation of precipitation. Recharge in the watershed area around Hessel's Pond is from 0.5 to less than 1.0 inch per year (USGS, 2002).

Site Visit

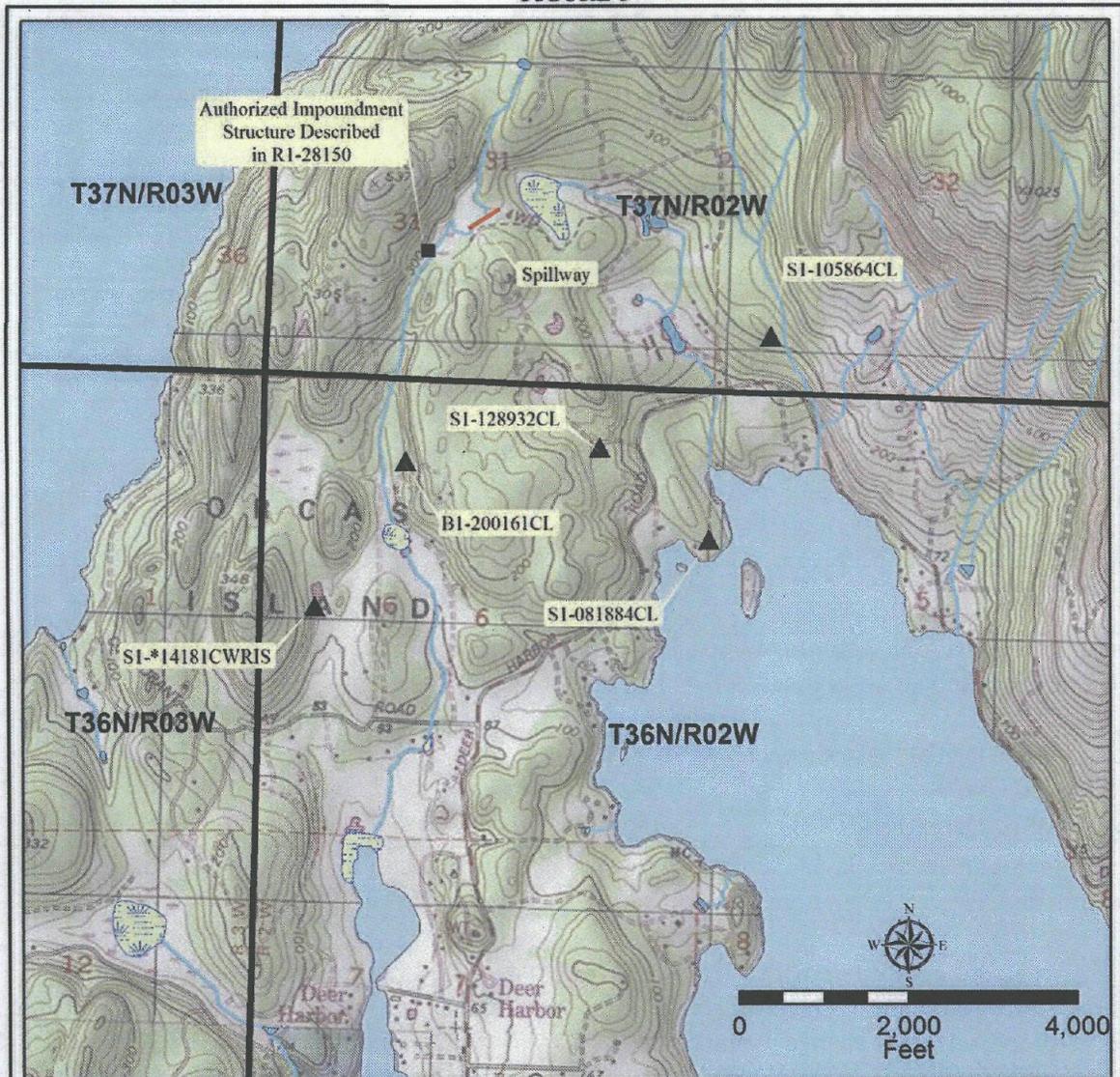
On August 25, 2009, Douglas Johnson and David Cummings, of the Washington State Department of Ecology (Ecology) Dam Safety Program, and I, of Ecology Water Resources Program, met with John Hessel who gave us a tour of his reservoir. Also during our inspection were two biologists looking into fisheries issues with the dam; Steven Boessow of Washington State Department of Fish and Wildlife, and Kimbal Sundberg, lead for the WRIA 2 Technical Advisory Group.

On March 17, 2011, Buck Smith and I, along with Russel Barsh, Barbara Rosenkotter, Kimbal Sundberg, and Bob Warinner, met with Mr. Hessel to discuss possible mitigation schemes and test the valve on the 6-inch pipe under the dam.

Other Surface Water Rights in the Vicinity

Figure 1 shows the locations of all surface water rights, including claims, in the vicinity of the subject reservoir application. There is one water right certificate and four claims (also listed in Table 1). Claims are designated with a CL at the end of the number. A water right claim is a statement of the beneficial use of water that occurred prior to the adoption of the water right code and is not authorized by a state-issued permit or certificate. The Department of Ecology cannot verify the validity of these claims, as water right claims can only be confirmed in an adjudication by a Washington State Superior Court.

FIGURE 1



-  Stream
-  Water Body
-  Wetland
-  Diversion Locations as indicated in Water Right Claims and Certificates
-  Impoundment Structure associated with R1-28150



Surface Water Right Claims and Certificates
 In the Area of Fishtrap Creek Near
 Water Right Document R1-28150
 Section 31, T 37N, R 02W W.M.
 WRIA 2, San Juan County, Orcas Island

The information contained within this map was compiled from a variety of sources and is subject to change without notice. This map is intended for informational purposes only.

The neighboring water rights are summarized in Table 1 below:

Water Right Document	Priority Date	Location	Qi (cfs)	Qa (afy)	Purpose of Use / Source
S1-*14181C	01/04/1957	S. 06, T.36N., R.2W.	0.10	20	IR, ST / unnamed stream
S1-128932CL	09/?/1915	SW¼ SE¼ S. 06, T.36N., R.2W.	1.0	2.5	IR, ST, DS / unnamed stream
S1-081884CL	? filed 1974 short form claim	S. 05, T.36N., R.2W.	?	?	? / "surface water"
S1-105864CL	? filed 1973 short form claim	SW¼ SW¼, S. 32, T.37N., R.2W.	?	?	? / spring
B1-200161CL	1973, short form claim filed 1974	SE¼ NW¼ S. 06, T.36N., R.2W.	(gpm) 30	10	IR, DS, ST / two wells, unnamed stream and ponds

DS=Single Domestic, IR=Irrigation, ST=Stock Watering, Qi=Instantaneous Rate, Qa=Annual Volume in acre-feet per year

In addition there is one water right application, S1-28147, which was submitted by Mr. Helsell to divert water from the subject reservoir.

Ecology's well log database shows no water wells within one-half mile of the reservoir.

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. A water right application may not be approved if it would:

- Interrupt or interfere with the availability of water at the authorized point of diversion of a surface water right. A surface water right conditioned with instream flows may be impaired if a proposed use or change would cause the flow of the stream to fall to or below the instream flow more frequently or for a longer duration than was previously the case.
- Degrade the water quality of the source to the point that the water is unsuitable for beneficial use by existing users (e.g., via sea water intrusion).

The surface water certificate, S1-*14181C, is located on a unnamed stream which is tributary to Fish Trap Creek. This unnamed stream connects to Fish Trap Creek approximately one mile downstream of the Helsell reservoir. Since the stream is tributary to Fish Trap Creek, there is no possibility of impairment to water right certificate S1-*14181C from the Helsell reservoir. In fact there are no water rights existing on Fish Trap Creek.

The combined groundwater/surface water claim, B1-200161CL, is located in Fish Trap Creek downstream of the Helsell reservoir. It is not known if the surface water portion has been used since it

appears to be located in a portion of the creek that is now dry. Furthermore, the claim may be invalid since it lists the date first put to use as 1973. A valid surface water claim would have to be put to use before the water code of 1917 and a groundwater claim would have to be put to use before July 1945. As previously stated, the Department of Ecology cannot verify the validity of a claim, as a water right claim can only be confirmed in an adjudication by a Washington State Superior Court, which would require documented proof.

The other three water right claims noted above are in other drainage systems which are not connected to drainages related to the Helsell reservoir. Therefore there is no possibility of impairment to any of the water rights in the vicinity of the Helsell reservoir application.

Water Availability

For water to be available for appropriation, it must be both physically and legally available.

Physical availability

For water to be physically available for appropriation there must be ground or surface water present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses. In addition, the following factors are considered:

- Volume of water represented by senior water rights, including federal or tribal reserved rights or claims;
- Water right claims registered under Chapter 90.14 RCW;
- Ground water uses established in accordance with Chapter 90.44 RCW, including those that are exempt from the requirement to obtain a permit; and
- Potential riparian water rights, including non-diversionary stock water.
- Lack of data indicating water usage can also be a consideration in determining water availability, if the department cannot ascertain the extent to which existing rights are consistently utilized and cannot affirmatively find that water is available for further appropriation.

Legal availability

To determine whether water to be legally available for appropriation, the following factors are considered:

- Regional water management plans – which may specifically close certain water bodies to further appropriation.
- Existing rights – which may already appropriate physically available water.
- Fisheries and other instream uses (e.g., recreation and navigation). Instream needs, including instream and base flows set by regulation. Water is not available for out of stream uses where further reducing the flow level of surface water would be detrimental to existing fishery resources.
- The Department may deny an application for a new appropriation in a drainage where adjudicated rights exceed the average low flow supply, even if the prior rights are not presently being exercised. Water would not become available for appropriation until existing rights are relinquished for non-use by state proceedings.

There are currently no regulatory closures or legal restrictions affecting water availability on Orcas Island.

Beneficial Use

The proposed use of water is defined in statute as a beneficial use (RCW 90.54.020(1)).

Public Interest Considerations

Consideration of Protests and Comments

In response to public notice of this application, the Department of Ecology received a protest from the following party:

Protestant	Date of Protest
San Juan County Community Development & Planning	July 1, 2009

A protest was received from San Juan County Community Development & Planning. It was signed by Barbara Rosenkotter, Lead Entity Coordinator for Salmon Recovery, and Kimbal Sundberg, Lead for San Juan County Salmon Recovery Technical Advisory Group. They claim the reservoir has negatively impacted flows in Fish Trap Creek and Deer Harbor Estuary (aka Cayou Lagoon). Significant funds have been spent to enhance salmon recovery and protection efforts in Deer Harbor Estuary. Restoring flows to Fish Trap Creek are necessary for restoration of Deer Harbor Estuary. At a minimum, instream flows should be quantified and reserved before any further water rights are permitted in this watershed. They suggest to restore the hydrology would entail reconfiguring the outlets to ensure stream flows to Fish Trap Creek, and releasing flows at times when additional water is needed to maintain life functions of anadromous fish downstream.

Steve Boessow of WDFW requested we require a Hydraulic Project Approval (HPA) as a condition of approving a permit and recommended modification of the dam to minimize impacts to fish. He wrote: "Despite the fact that the reservoir has been in place for a number of years, WDFW cannot support moving water out of the original stream. If San Juan County were to act on their plans for estuary restoration in Cayou Lagoon, flows in Fish Trap Creek would benefit recovery of the habitat. We recommend that the application or permit be amended to restore the flow into Fish Trap Creek. Any work done on ponds, reservoirs or streams will require consultation with a WDFW Area Habitat Biologist"

Conclusions

As a result of my investigation and determinations, I find the following:

- Water is both physically and legally available.
- There will be no impairment of existing rights.
- The use will be beneficial and the approved storage volume is reasonable.
- There will be no detriment to the public interest as long as mitigation measures are followed according to provisions on the permit.

Responses to Protest and Others Concerns

When Mr. Helsell removed the wetland peat bog and built his dam, it dewatered Fish Trap Creek and diverted water flow to the adjacent basin of Skull Creek. This was overlooked at the time by the County and the damage was done many years ago. There are no fish present in Fish Trap Creek, except juvenile salmonids including coho salmon and coastal cutthroat trout in the downstream habitat. Fish impacts were likely in the estuaries due to the change in freshwater input from the wetland bog. If San Juan County were to act on their plans for estuary restoration in Cayou Lagoon, flows in Fish Trap Creek would benefit recovery of the habitat. The Deer Harbor Estuary Habitat Restoration Project report makes good arguments for a more natural flow in Fish Trap Creek that would likely enhance the habitat in the creek and estuary.

An effort should be made to partially restore the creeks hydrology by reconfiguring Helsell's reservoir so Fish Trap Creek receives some of its historical timing, magnitude and frequency of stream flows. The protestants' stated their willingness to work with Mr. Helsell to resolve these flow issues. It would be detrimental to the public interest to approve this reservoir application to permit without a mitigation plan. Mitigation plans allow Ecology to approve applications, where they would otherwise have been denied. On February 11, 2011, Ecology issued a Preliminary Permit to Mr. Helsell which instructed him to develop a Mitigation Plan. Russel Barsh, Director Kwiáht Center for the Historical Ecology of the Salish Sea (Kwiáht), WDFW, and the protestants', committed to work with Mr. Helsell to develop suitable mitigation. It has been over two years since the request for a Mitigation Plan was sent. The parties have entertained several ideas with Mr. Helsell, however development of a Mitigation Plan has come to an impasse.

Russel Barsh of Kwiáht discussed the concept of building a secondary impoundment immediately downstream of Helsell's dam in order to capture excess water released from the reservoir in the winter that could be used for a seasonal timed release from the secondary impoundment. Mr. Helsell was willing to donate land for construction, but unable to contribute to its cost.

Ecology has suggested raising the overflow to Skull Creek and release water from the 6-inch pipe in the dam to shift some overflow into Fish Trap Creek. Operating the pipe during fish critical periods may be better than continuous flow so water could be saved for summer/fall use when needed. Our recommended mitigation is to release water to Fish Trap Creek during August, September, and October, to help support juvenile salmonids including coho salmon and coastal cutthroat trout in the downstream habitat. A minimum 0.05 cfs (22.4 gpm) release for three months based on potential storage capacity has been calculated to be available without detriment to the reservoirs use. This may not be sufficient to achieve the salmonid restoration goal, and seepage in the ground with evapotranspiration may preclude released water from reaching the restored downstream habitat. And reservoir water may be so warm that it will not support salmonids. Piping the released water to the downstream habitat may alleviate some of these problems, but would require additional construction.

A letter from Mr. Helsell dated March 4, 2013, requested an extension of time to submit a mitigation plan to allow him to address a recent problem of leakage from his pond. This raises concern that raising the overflow to Skull Creek at the northeast arm of the lake may jeopardize the safety of the dam. Therefore partial blockage of the spillway at the northeast arm of the lake with controlled release of water

to Fish Trap Creek during August, September, and October may exacerbate the leakage problem and contribute to dam failure.

A possible solution may be to build a spillway in the dam at a slightly lower level than the spillway pipe at the northeast arm of the lake. Or alternatively build a spillway on the dam at the same level as the current northeast spillway and only block the lower couple inches of the northeast spillway. This would allow overflow into Fish Trap Creek during the rainy season which will flush Cayou Lagoon and saturate the soils downstream of the dam. Saturated soils may slowly release some cooler water in the summer. This option may not provide water to release in late summer for salmonids; however it would be an improvement over the current situation. The benefit of winter storm overflow is that it will not require continuous manipulation and management to control release from a pipe. Ecology would consider this favorably as acceptable mitigation.

Due to the recent notice of leaking from Helsell's pond, yet no Mitigation Plan submitted or in effect, Ecology will issue a performance based Permit allowing adaptive strategies in order to provide Mr. Helsell five years to develop and demonstrate a Mitigation Plan. This will allow for changing conditions as the Mitigation Plan is developed. Ecology will not issue a final water right Certificate until satisfied that the mitigation is successful and will be perpetually managed. Provisions of the Mitigation Plan must address all actions necessary to implement, monitor, maintain, and report on the effectiveness of the mitigation in perpetuity.

If there is no progress and a Mitigating Plan is not finalized in the permitted time, or the dam is deemed unsafe, the dam may need to be removed or replaced by a smaller control structure. Russel Barsh suggested the lake could be partially refilled with materials such as sands and gravels, and extensive re-vegetation, to get close to historical storage capacity, water quality and habitat quality to allow return of the amphibians and birds that used to inhabit the bog. This would mimic pre-excavated bog and function as a cool reservoir with low evapotranspiration and year-round release of water. Russel's Kwiáht team has completed a similar project on a 7-acre wetland restoration on Lopez Island. He indicated his team would be very interested in participating in any effort to design and build such a reservoir that could eventually replace Helsell's pond, as well as post-construction monitoring.

In addition to the mitigation concepts discussed above, Mr. Helsell must comply with requests from the Ecology Dam Safety Office as outlined in a letter to Mr. Helsell from Jerald LaVassar dated March 6, 2013.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that this application be approved in the amounts and within the limitations listed below and subject to the provisions beginning on page 2.

If you need this publication in an alternate format, please call Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Selected References

In considering this application, my investigation included, but was not limited to, research and/or review of:

- Information supplied with the reservoir application
- Aerial photos from the San Juan County Tax Assessors Web site
- The USGS Waldron Island and Eastsound 7.5 minute topographic maps
- Orr, L.A., Bauer, H.H. and Wayenberg, J.A. 2002, Estimates of Ground-Water Recharge from Precipitation to Glacial-Deposit and Bedrock Aquifers on Lopez, San Juan, Orcas, and Shaw Islands, San Juan County, Washington, U.S. Geological Survey Water-Resources Investigations Report 02-4114, 114 pages.
- Russell, R.H. ed., 1975, Geology and Water Resources of the San Juan Islands, San Juan County, Washington, Washington Department of Ecology Water Supply Bulletin No 46, 171 pages.
- Deer Harbor Restoration Project Team, October 2005, Deer Harbor Estuary Habitat Restoration Project Orcas Island, Washington, Environmental Assessment and Feasibility Study Report
- Azous, A., 2000, Wetland N-173, Orcas Island, Located on Parcel 27131001
- A database search for water rights on the same source of supply
- Notes and GPS data from my site visit on August 25, 2009



Purpose of Use and Authorized Quantities

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

Storage Volume

The amount of water recommended (82 acre-feet) is the maximum volumetric storage limit.

Purposes of Use

For recreation, wildlife, domestic use, stock watering, irrigation, and for mitigation to augment flow into Fish Trap Creek.

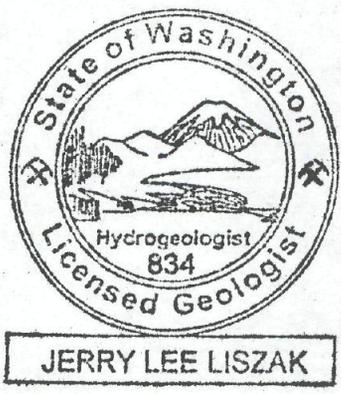
Location of Impoundment Structure

Reservoir Location: 1530 Feet North and 1820 Feet East from the South West Corner of Section 31, Township 37 North, Range 2 West of the Willamette Meridian

Place of Use

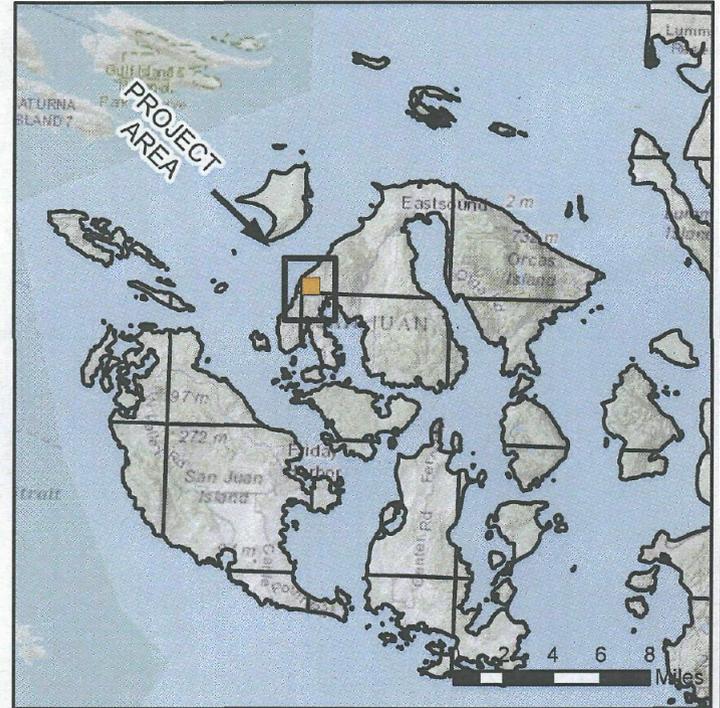
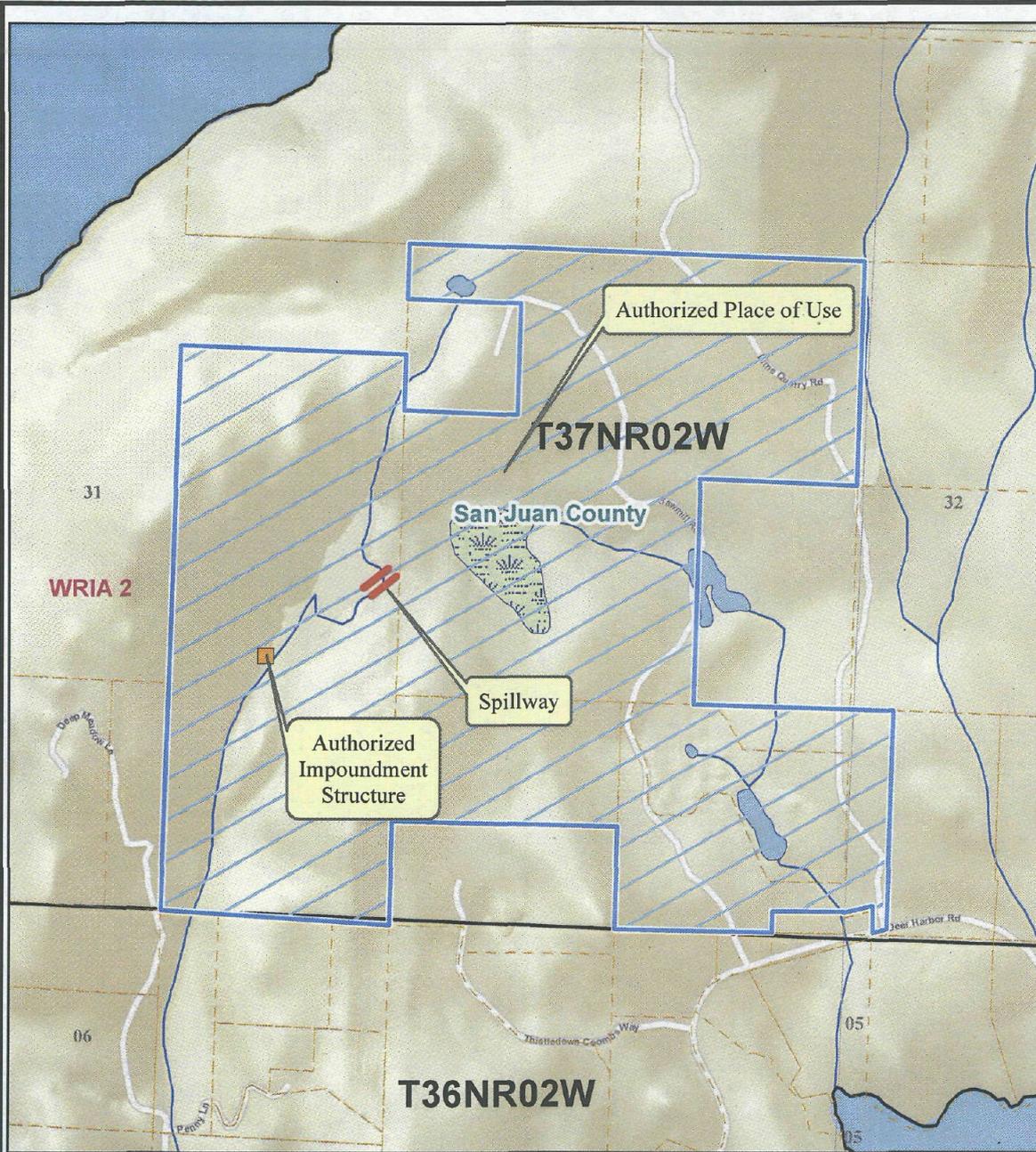
As described on Attachment 2, and as shown in Attachment 1.

Report by: *Jerry Liszak* 1/08/2014
Jerry L. Liszak, LG, LHG Date



Licensed Geologist/Hydrogeologist No. 834

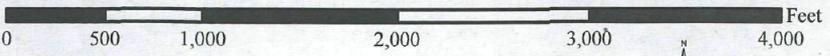
JB & JM Helsell LLLP
 Water Right R1-28150
 Section 31 T37N R02W W.M.
 WRIA 2 - San Juan County



ATTACHMENT 1

Legend

-  Authorized Place of Use
-  Authorized Impoundment Structure
-  Wetland
-  Water Body
-  Parcels
-  Townships
-  Sections



Map Date: 10/23/2013



Place of use and point(s) of diversion/withdrawal are as defined on the cover sheet under the headings, 'LOCATION OF DIVERSION/WITHDRAWAL' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

Attachment 2: LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Parcels: 273131001000, 273144001000, 273144003000, 273144004001, 273144004001, 273144004002, 273143003000, 273143001000.

That portion of section 31, Township 37 North, Range 02 West of the Willamette Meridian, described as follows:

The South 660 Feet of the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$;

The East $\frac{1}{2}$ of the SW $\frac{1}{4}$;

The SW $\frac{1}{4}$ of the NE $\frac{1}{4}$, EXCLUDING the South 655 feet of the North 985 feet of the West 655 feet of said SW $\frac{1}{4}$ of the NE $\frac{1}{4}$;

The NW $\frac{1}{4}$ of the SE $\frac{1}{4}$;

The North 740 feet of the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$;

The SE $\frac{1}{4}$ of the NE $\frac{1}{4}$;

The West 420 feet of the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$;

The SE $\frac{1}{4}$ of the SE $\frac{1}{4}$, EXCLUDING the South 125 feet of the East 410 feet of said SE $\frac{1}{4}$ of the SE $\frac{1}{4}$.

TOGETHER WITH that portion of Section 32, Township 37 North, Range 2 West of the Willamette Meridian, described as follows:

The West 250 feet of the SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ lying North of County Road AKA Deer Harbor Road, EXCLUDING the following described portion:

Beginning at the Southwest corner of Section 32, Township 37 North, Range 2 West of the Willamette Meridian, thence North Along Section line 125 Feet, thence N76°16'21"E 172.42 feet, Thence S0°12'11"W to Section line 160 feet more or less to North margin of County Road AKA Deer Harbor Road, thence along said northern margin of county road S74°59'58"W 42.45 feet, thence N87°36'25"W 129 feet to the point of beginning.

All lying within in Orcas Island, San Juan County, Washington.

NAD 1983 HARN State Plane Washington South (Feet).