



**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

**RESERVOIR
AMENDED REPORT OF EXAMINATION**

TO CONSTRUCT A RESERVOIR AND STORE FOR BENEFICIAL USE
WATERS OF THE STATE OF WASHINGTON
This Report of Examination (ROE) Supersedes the ROE issued May 3, 2011

APPLICATION DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
June 15, 2010	R4-35364		

NAME			
Green Canyon, LLC			

ADDRESS (STREET)	(CITY)	(STATE)	ZIP CODE
206 West First Street	Cle Elum	WA	98922

NAME OF STREAM OR OTHER SOURCE FOR RESERVOIR SUPPLY	TRIBUTARY OF (IF SURFACE WATERS)
Yakima River	Columbia River

NUMBER OF ACRE-FEET STORED WHEN RESERVOIR IS FULL	USE(S) TO BE MADE OF IMPOUNDED WATER
100	Recreation

LOCATION OF IMPOUNDING STRUCTURE

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)				
SW¼				

SECTION	TOWNSHIP	RANGE	W.R.I.A.	COUNTY
30	20 N.	16 E.W.M.	39	Kittitas

LEGAL SUBDIVISIONS OF LANDS IN WHICH THE SUBMERGED AREA IS TO BE LOCATED

That portion of Lot 1 boundary line adjustment, recorded in Volume 31, at Page 111, more particularly described as: Beginning at the northwest corner of said Lot 1; thence south 00° 22' 57" east, 1,051.54 feet along west line of said Lot 1; thence south 85° 25' 44" east, 32.70 feet; thence south 78° 08' 28" east, 807.15 feet; thence south 72° 08' 05" east, 176.26 feet; thence south 63° 06' 57" east 14.72 feet; thence south 58° 06' 24" east, 366.87 feet; thence north 89° 35' 37" east, 517.19 feet; thence north 89° 51' 33" east, 125.06 feet; thence north 00° 25' 35" east, 675.63 feet to the northeast corner of said Lot 1; thence north 86° 41' 33" west, 125.30 feet; thence north 80° 27' 43" west, 276.02 feet; thence north 65° 39' 48" west, 345.18 feet; thence north 61° 00' 19" west, 410.49 feet; thence north 48° 31' 11" west, 334.71 feet; thence north 66° 21' 38" west, 336.47 feet; thence north 82° 35' 03" west 342.20 to the point of beginning, all within the SW¼ of Section 30, T. 20 N., R. 16 E.W.M., Kittitas County, Washington.

CONSTRUCTION OF IMPOUNDING STRUCTURE

HEIGHT OF DAM (FEET)	LENGTH ON TOP (FEET)	WIDTH ON TOP (FEET)
11.5 feet (maximum, interior) 5 feet (maximum, exterior)	Approximately 2,000 feet bermed length above existing grade	10 feet

SLOPE OF FRONT OR WATER SIDE (Number of feet horizontal to one foot vertical)	SLOPE OF BACKSIDE (Number of feet horizontal to one foot vertical)
Varies between 5:1 and 12:1	3:1 where above existing grade

HEIGHT OF DAM ABOVE WATER LINE AT Normal Operating Pool Level (NOPL) (FEET)
1.5 feet

TYPE OF CONSTRUCTION OF DAM AND CONSTRUCTION MATERIALS
Below grade excavation with earthen berm along southern side

LOCATION AND APPROXIMATE DIMENSIONS OF SPILLWAY INCLUDING CREST LENGTH
TBD

LOCATION, SIZE AND TYPE OF VALVE AND OUTLET CONDUIT STRUCTURE
TBD

# OF ACRES SUBMERGED WHEN RESERVOIR IS FILLED TO NOPL	MAXIMUM DEPTH (feet) AT NOPL	APPROXIMATE AVERAGE DEPTH (feet)
12	10	8

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
July 1, 2014	July 1, 2015	July 1, 2024

BACKGROUND

Project Description

Reservoir Application

On June 15, 2010, Green Canyon, LLC (a Sapphire Skies, LLC Company) of Cle Elum, Washington (the applicant) filed three applications with Washington State Department of Ecology (Ecology) for a reservoir project referred to as Henshaw Lake. The applications request to divert (S4-35365), store (R4-35364), and release (S4-35366) surface waters of the state. The applicant requested authorization for the storage of up to 100 acre-feet (ac-ft) of water for the beneficial use of recreation and mitigation (augmentation) of Yakima River instream flows.

On May 3, 2011 Ecology issued a Report of Examination for R4-35364, authorizing storage of water in the reservoir for recreation and mitigation purposes. Since issuance of that Report of Examination the applicant has arranged to provide mitigation storage through Ecology's Bureau of Reclamation Water Storage and Exchange Contract, and the mitigation purpose of use under R4-35364 and the request to release water for mitigation under S4-35366 are no longer required. The purpose of this report is to amend the Report of Examination for R4-35364 to reflect the recreation-only purpose of use for the reservoir.

Legal Requirements for Application Processing

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

- **RCW 90.03.370**
This statute allows Ecology to authorize Reservoir Permits and Secondary Use Permits. Applications for these Permits are subject to the provisions of RCW 90.03.250 through 90.03.320 which include but is not limited to review of the following: beneficial use, availability, impairment, and public interest.
- **Beneficial Use**
Ecology must determine if the proposed use(s) are beneficial.
- **Availability of Water**
Ecology must determine if water is available for appropriation for the time and amounts requested. Water availability includes physical availability and legal availability.
- **Impairment of Existing Water Rights**
Ecology must determine if the appropriation can be authorized without impairing existing water rights.
- **Public Interest**
Ecology must determine if the appropriation can be made without detriment to the public interest.
- **RCW 90.03.255**
This statute directs Ecology to take into consideration the benefits and costs, including environmental effects, of any water impoundment or other resource management technique that is included as part of a water right application.
- **Public Notice**
Green Canyon LLC (a subsidiary of Sapphire Skies LLC) of Cle Elum, Washington submitted an application for a Permit to Construct a Reservoir on June 15, 2010. The application was accepted and assigned control No. R4-35364. Public Notice on this application was published in the Kittitas County Daily Record on July 16, 2010, and July 23, 2010. The Department of Ecology's Central Regional Office received no protests during the 30-day period.
- **State Environmental Policy Act (SEPA)**
On November 19, 2009, Kittitas County (SEPA lead agency) issued a Mitigated Determination of Non-Significance for the Henshaw Lake 26- Lot Performance Based Cluster Plat (P-07-44). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. Kittitas County determined that certain mitigation measures or conditions were necessary in order to issue a Determination of Non-Significance. Those conditions related to: water and septic, land use and recreation, cultural resources and historic preservation, air, transportation, noise, lights and aesthetics, plants and wildlife, and utilities and services. No appeals were filed.

INVESTIGATION

The investigation of Reservoir Application No. R4-35364 included review of supporting documents submitted by the applicant, related water right documents, SEPA documents, USGS topographic maps, aerial photos, and correspondence between the applicant (Dave Blanchard of Sapphire Skies LLC), the applicant's consultants (Tim Flynn and Joe Morrice of Aspect Consulting), the applicant's attorney (Tom McDonald of Cascadia Law Group), Paul LaRiviere (Washington State Department of Fish and Wildlife), and Department of Ecology staff.

Site Visit

Kurt Walker of the Department of Ecology, observed the subject property on September 8, 2009, during a routine site visit related to permit application G4-35247 (Flatwater residential development water supply). The applicant's consultant, Joe Morrice of Aspect Consulting, and Bernard Henshaw (property owner at that time) were also present.

Description of the Reservoir

Purpose of Reservoir

The purpose of the reservoir is for recreational use, including boating, water skiing, swimming, etc.

Reservoir Design

Design drawings of the planned reservoir submitted to Ecology in support of this application show the reservoir to be approximately 12 acres in size with a maximum water depth of approximately 10 feet. The maximum storage volume at full pool elevation will be 100 ac-ft. The reservoir will be constructed as an earthen structure, excavated below existing grade. Along the south side of the reservoir the existing grade is below the full pool elevation, and an earthen berm will be constructed above grade to contain water. The berm will have a maximum height of about 5 feet above grade, with a ten foot width at the top. The front (water side) face of the berm is designed at a 12:1 slope, and the back side of the berm is designed with a 3:1 slope. The reservoir design includes a minimum of 1.5 feet of freeboard between the top of the berm and the full pool water elevation.

Reservoir Operation and Mitigation Offered

After initial filling, reservoir operation will consist of annual refills (diversions) to replace water lost to evaporation. Annual re-fills will occur between May 1 and July 29. Annual refill quantities necessary to maintain lake levels for recreational use were estimated as the difference between evaporation from the reservoir surface and precipitation falling directly on the lake. Based on Appendix A of the Washington Irrigation Guide (WIG), average annual precipitation in the Cle Elum area is 22.65 inches was. Evaporation from the reservoir surface was estimated using the ASCE Penman-Monteith equation for evapotranspiration from an alfalfa reference crop (K_c), corrected for an open water surface using the following formula from Allen and Robison (2007: $\text{evaporation} = K_c \times 0.6$). For the Cle Elum area, average annual evaporation from the reservoir surface was estimated to be about 30.3 inches. Estimated annual evaporation exceeds annual precipitation by about 7.65 inches; applied over the 12 acre surface area of the reservoir this equates to an average annual loss from the reservoir of about 7.7 ac-ft.

The applicant has proposed mitigation to offset the impacts of the planned diversion. All diversions, including the initial fill and annual refills, will be limited to surplus or uncommitted instream flow rights available in the Sapphire Skies Water Exchange (SSWE). The SSWE was created by the transfer of pre-1905 water rights to instream flow and water banking purposes through the Trust Water Right Program (TWRP). Northland Resources, LLC (a Sapphire Skies, LLC company) and Ecology have entered into a Trust Water Right Agreement regarding the conveyance, storage, and acceptance of the instream flow rights. As a result of these transfers, the SSWE holds instream flow rights based on the quantity of CU associated with the originating water rights. These CU values have been quantified on a month-by-month basis (see Table 2.) The SSWE currently holds instream flow rights represented by the following approved applications:

- **CS4-02223CTCLsb2@1 (Pasco).**
This application, approved by Ecology on April 19, 2010, permanently changes an unperfected change authorization for year-round domestic supply and seasonal irrigation and stock watering to instream flow for water banking purposes. The historic authorized point of diversion is an unnamed spring, tributary to Spex Arth Creek and the Yakima River. Consumptive use recognized under this Trust Water Right is 55 acre-feet per year (ac-ft/yr).
- **CS4-01676(B)CTCL@1 (Newton).**
This application, approved by Ecology on May 14, 2010, permanently changes the use of Acquavella Adjudicated Court Claim No. 01676 from seasonal irrigation and stock watering to instream flow for water banking purposes. The historic authorized point of diversion is the Younger Ditch diversion from the Yakima River. Consumptive use recognized under this Trust Water Right is 73.7 ac-ft/yr.
- **CS4-00365CTCLsb5 (Henshaw).**
This application, approved by Ecology on May 24, 2010, permanently changes the use of a portion of Acquavella Adjudicated Court Claim No. 00365 from seasonal irrigation to instream flow for water banking purposes. The historic authorized point of diversion is the Younger Ditch diversion from the Yakima River. Consumptive use recognized under this Trust Water Right is 89 ac-ft/yr.

Table 2
Instream Flow Rights (Consumptive Use) in the Sapphire Skies Water Exchange (ac-ft)

Water Right	Apr	May	Jun	Jul	Aug	Sep	Annual
Pasco ¹	0.09	4.2	11.5	15.9	14.0	9.2	55.0
Newton ²	0	15.7	26.6	31.4	0	0	73.7
Henshaw	0	1.4	17.3	28.6	25.2	16.5	89.0
Total	0.09	21.3	55.4	75.9	39.2	25.7	217.7

Notes: ¹ Pasco water right includes approximately 0.01 ac-ft per month CU mitigation credits from October through March.

² CU mitigation credits under the Newton water right will be used prior to July 29 each year.

Deducting the CU associated with previously approved appropriations¹ relying on mitigation through the SSWE from the instream flow rights (mitigation) noted in Table 2 results in an annual surplus of 8.5 ac-ft. On a seasonal basis this includes a surplus CU of 21.4 ac-ft in May, June, and July, with a deficit of 12.9 ac-ft from October through April. The October through April deficit for the permitted projects is addressed through a combination of private storage and mitigation release and Ecology’s Bureau of Reclamation Water Storage and Exchange Contract using a portion of the mitigation credit surplus from May, June, and July. Subtracting the winter deficit from the May through July surplus results in 8.5 ac-ft of CU credits available to refill the reservoir in May, June, and July. The applicant proposes to mitigate for the annual reservoir refill of 7.7 ac-ft by assigning an equal quantity from the SSWE to the state to be used for instream flow purposes. Refilling of the reservoir would be limited to the period of May 1 through July 29, when CU credits are available in the SSWE.

Water Availability

Water will be diverted from the Yakima River between May 1 and July 29 and conveyed to the property via the Younger Ditch. Yakima River water is physically available during this period. However, on May 10, 1905, the United States withdrew/reserved all unappropriated surface waters of the Yakima River Basin. Surface water rights with priority dates subsequent to May 10, 1905 are subject to curtailment and thus not available in all years. To address the legal availability of water, the applicant has proposed mitigation in the form of pre-1905 priority instream flow rights from the SSWE to offset the new diversions/appropriations. These rights are summarized above in Table 2.

Impairment of Existing Water Rights

On May 10, 1905, the United States withdrew/reserved all unappropriated surface waters of the Yakima River Basin. The applicant has offered mitigation in the form of pre-1905 priority instream flow rights from the SSWE to offset the new diversions/appropriations. The Yakima River reaches benefiting from the SSWE instream flow rights are located at or upstream of the new proposed point of diversion. As a result, the diversion and use will be water budget neutral with respect to TWSA, and is not expected to have any impact to other main stem Yakima River water right holders, so long as the provisions in this ROE are adhered to.

Public Interest

When investigating a water right application, Ecology is required to consider whether the change is detrimental to the public interests. No detriment to the public interest was identified during the investigation of this application.

CONCLUSIONS

1. Recreation is a beneficial use of water.
2. Water is available for appropriation and beneficial use, so long as an equal or greater quantity of water is assigned to the state in the form of suitable Trust Water Right(s) consistent with the Trust Water Right Agreement between Sapphire Skies and the Department of Ecology.
3. Existing Water Rights will not be impaired, so long as the provisions in this ROE are adhered to.
4. The appropriation will not be detrimental to the public interest, so long as the provisions in this ROE are adhered to.

¹ Appropriations include new non-exempt groundwater permits for irrigation and domestic supply, permit-exempt Water Budget Neutral determinations, and additional mitigation credits provided to the Bureau of Reclamation under terms of Ecology’s Bureau storage contract.

Recommendations

It is recommended that a permit be issued for the storage and beneficial use (recreation) of 100 ac-ft of surface water from the Yakima River.

PROVISIONS

1. The construction of the reservoir may not be located within 100 feet from any non-project well(s).
2. Storage and use of water in the Henshaw Reservoir/ Lake is limited by the constraints of surplus or uncommitted instream flow rights available in the Sapphire Skies Water Exchange. Nothing in this reservoir permit should be construed as authority to divert or withdraw additional water of Washington State.
3. This authorization shall in no way excuse the permit holder from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by other programs of the Department of Ecology.
4. The water sources and/or water transmission facilities may not be located entirely upon the land owned by the applicant. Therefore, the applicant is advised that issuance of a permit by this department for appropriation of the waters in question does not convey a right of access to, or other right to use, land which the applicant does not legally possess.
5. Approved measuring devices shall be installed and maintained for the source (Yakima River) authorized by this permit and outtake(s) from Younger Ditch 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>
6. Water use data shall be recorded weekly and maintained by the property owner for a minimum of five years. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to the Department of Ecology by January 31st of each calendar year.
7. The applicant will comply with all the requirements of Chapter 173-175 WAC and requirements issued from the Office of Dam Safety, Water Resources Program, Department of Ecology.
8. Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project locations, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.
9. The permit holder shall file the notice of Proof of Appropriation of water 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.

Report By: _____ Date: _____
Mark C. Schuppe, Water Resources Program

FINDINGS OF FACT AND DECISION

Upon reviewing the above report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I find water is available for storage, is for a beneficial use, and as provisioned will not impair existing rights and is not detrimental to the public interest.

Therefore, I ORDER a permit be issued under Reservoir Application No. R4-35364, subject to existing rights and indicated provisions, to allow the storage of public water for the amount specified in the foregoing report.

Signed at Yakima, Washington, this _____ day of _____ 2012.

Mark Kemner, Section Manager
Water Resources Program/CRO

REFERENCES:

Allen, R. and Robison, C., 2007. Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho. University of Idaho.

Natural Resources Conservation Service. 1997. Washington Irrigation Guide. Appendix B: Climatic Station for Consumptive Use (WA 210-VI-WAIG).

DRAFT