

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

**REPORT OF EXAMINATION**

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

**Surface Water** (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

**Ground Water** (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

|                                 |                                |               |                    |
|---------------------------------|--------------------------------|---------------|--------------------|
| PRIORITY DATE<br>August 4, 1990 | APPLICATION NUMBER<br>G2-27829 | PERMIT NUMBER | CERTIFICATE NUMBER |
|---------------------------------|--------------------------------|---------------|--------------------|

|                                |                   |                       |                          |
|--------------------------------|-------------------|-----------------------|--------------------------|
| NAME<br>McKenna Water District |                   |                       |                          |
| ADDRESS (STREET)<br>PO Box 143 | (CITY)<br>McKenna | (STATE)<br>Washington | (ZIP CODE)<br>98558-0143 |

**PUBLIC WATERS TO BE APPROPRIATED**

SOURCE  
Well 3 (White Water Well)

TRIBUTARY OF (IF SURFACE WATERS)

|                               |                                   |                                     |
|-------------------------------|-----------------------------------|-------------------------------------|
| MAXIMUM CUBIC FEET PER SECOND | MAXIMUM GALLONS PER MINUTE<br>270 | MAXIMUM ACRE-FEET PER YEAR<br>168.5 |
|-------------------------------|-----------------------------------|-------------------------------------|

QUANTITY, TYPE OF USE, PERIOD OF USE  
79.5 Acre-feet per year (Primary)    Municipal    Year-round, as needed  
86 Acre-feet per year (Supplemental)

**LOCATION OF DIVERSION/WITHDRAWAL**

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL  
400 feet South and 1,000 feet East of the Northwest corner of Section 21.

|  |               |                   |                              |                |                  |
|--|---------------|-------------------|------------------------------|----------------|------------------|
| LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)<br>NW $\frac{1}{4}$ NW $\frac{1}{4}$ | SECTION<br>21 | TOWNSHIP N.<br>17 | RANGE, (E. OR W.) W.M.<br>2E | W.R.I.A.<br>11 | COUNTY<br>Pierce |
|--|---------------|-------------------|------------------------------|----------------|------------------|

**RECORDED PLATTED PROPERTY**

|     |       |                                    |
|-----|-------|------------------------------------|
| LOT | BLOCK | OF (GIVE NAME OF PLAT OR ADDITION) |
|-----|-------|------------------------------------|

**LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED**

Area served by the McKenna Water District as described in a Department of Health approved water system plan; ALL of Section 21, and that portion of Section 28 located North of the Nisqually River, situated in T. 17 N., R. 2 E.W.M. Pierce County.

DESCRIPTION OF PROPOSED WORKS

An 8-inch well, completed at a depth of 212 feet.

DEVELOPMENT SCHEDULE

|  |  |   |
|--|--|---|
| BEGIN PROJECT BY THIS DATE:<br>Started | COMPLETE PROJECT BY THIS DATE:<br>November 1, 1997 | WATER PUT TO FULL USE BY THIS DATE:<br>November 1, 2002 |
|--|--|---|

REPORT

BACKGROUND:

On August 14, 1990 Satellite Water Systems filed for a permit to appropriate public ground water from a well. The application was subsequently assigned to the McKenna Water District. A withdrawal rate of 270 gallons per minute (gpm) was requested for municipal supply for the town of McKenna.

On July 24, 1996 the Department of Health recommended, in writing, that Ecology expedite a decision on this application.

A legal notice of the proposed appropriation was published. No protests were filed.

Based on the provisions of Chapters 90.03 and 90.44 Revised Code of Washington, and the following investigation, I recommend approval of application G2-27829.

INVESTIGATION:

In consideration of this application, I conducted a field visit on August 16, 1996. Further investigations included a review of existing water rights, neighboring well logs, and analysis of the information submitted with the application.

The town of McKenna is located adjacent to the Nisqually River in Pierce County, approximately 20 miles south of Tacoma, and about two miles east of Yelm in neighboring Thurston County. McKenna is situated in the Nisqually River watershed, Water Resources Inventory Area 11.

Currently, the McKenna Water District uses three wells, two of which were hand dug and are completed at less than 20 feet below ground surface. These shallow wells are in hydraulic continuity with the Nisqually River. Due to the vulnerable nature of these shallow wells, both in terms of potential for surface water contamination and reliability of supply, the Department of Health supports the abandonment of these shallow sources in favor of the new well (White Water Well) applied for under this filing.

Existing Water Rights

The McKenna Water District operates under the authorization of Ground Water Claim 002896, and Ground water certificates G2-25434 and G2-25435.

Ground Water Claim 002896 was registered in 1971, and describes a continuous use of water since 1908 by the McKenna Lumber Company, and subsequently the McKenna Water Company. The source well is a shallow, hand-dug well with a concrete encasement. Affidavits submitted with the water right claim indicate that water was used for domestic supply to the town of McKenna for 130 homes.

This claim appears to represent a valid, vested water right. However, because the claim has not been adjudicated, Ecology is unable to assign formal quantity to the claim. In general, a claim is considered valid to the extent that it has been perfected. Based on average water use calculations and information provided by the applicant, it appears that the claim could potentially be adjudicated for 79.5 acre-feet per year.

Ground water certificates G2-25434 and G2-25435 authorize the combined annual withdrawal of 86 acre-feet per year. Certificate G2-25434 authorizes the use of two shallow wells, one of which appears to be the same well described by the original claim. Certificate G2-25435 permits the use of a third well, completed at a depth of 115 feet. The withdrawal rate is intended to be additive and allows the District to pump up to 260 gpm from the three wells.



## Report Continued

Combined, the rights currently allocated to the McKenna Water District amount to 165.5 acre-feet per year.

### Demand Forecast

The 1995 water consumption for the 210 customers in the District's service area amounted to 32,523,600 gallons or 99.6 acre-feet for the year. The short-term demand for the next two years, including existing connections and those to which services have already been committed will total approximately 300 connections, a demand amount of approximately 150 acre-feet per year.

The McKenna Water District is in the process of drafting a water system plan which will include estimated growth and demand. Preliminary estimates for the year 2010 indicate that 575 water service connections may be needed. Based on current water use patterns, McKenna will ultimately need to secure rights for an additional 125 acre-feet per year.

### Well Construction and Pump Test

Depth: 212 feet, below ground surface  
Casing: 8-inch  
Screens: From 200 to 210 feet  
Static level: Flowing  
Driller: Started by King Bros. Drilling, completed by Richardson Well Drilling  
Completed: May 1995

The White Water well was originally developed by King Brothers Drilling. After the pending application was assigned to the McKenna Water District, the District determined that the actual production was considerably below what was originally reported. The well was redeveloped by Richardson Drilling and re-tested in 1995.

A 12-hour pump test was conducted on June 1, 1995. A constant withdrawal rate of 475 gpm resulted in 158 feet of drawdown. Recovery was complete, and the static water level returned to the pre-test level in 42 minutes. The estimated drawdown at a withdrawal rate of 270 gpm is about 85 feet below ground level.

The District's shallow, hand-dug wells are completed in a layer of recessional outwash that lies over a glacial till formation. The White Water well is completed at a depth of 212 feet. The well drilling record shows the presence of several alternating layers of water-bearing sand and gravel interspersed with less permeable layers of clay and cemented sand material. The high static water level, 2 feet below ground surface, indicates the target aquifer is under artesian pressure and likely to be confined.

### Effects of the Proposed Ground-Water Withdrawal on the Nisqually River

The White Water well is situated about 1,000 feet east of the Nisqually River. The well is completed in a confined aquifer, which appears to be separated from the uppermost water-bearing zones by 80 feet of less permeable material. Based on the completion depth, it is unlikely that this ground water withdrawal will impact the Nisqually River in the vicinity of the production well.

Under the provisions of WAC 173-511, *Instream Resources Protection Program - Nisqually River Basin, Water Resources Inventory Area 11*, instream flows were established for the Nisqually River in 1981. These restrictions include ground water in hydraulic continuity with the surface waters, if it can be determined that the withdrawal will have an adverse impact of the surface system.

McKenna Water has agreed to discontinue use of the shallow wells after the White Water well is on-line. The shallow wells will be properly abandoned so as to not pose a continued health threat via aquifer contamination. As both water right claim 002896 and certificate G2-25434<sup>5</sup> specifically authorize withdrawals from the shallow wells and McKenna Water does not intend to continue using water from the shallow aquifer, the documents shall be voluntarily relinquished.

The use of ground water from the deeper aquifer will not have an adverse affect on surface water in the Nisqually River in the vicinity of McKenna. Any potential impacts to the Nisqually River are likely to occur in the lower, tidally influence reaches of the river. Any impacts, however, that might result to the Nisqually River from use of the White Water Well will be mitigated by the discontinued use of the existing shallow wells, and subsequent relinquishment of the water rights.

1/10/97  
corrected

J. J. Walsh

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Neighboring Water Rights

Ecology records indicate that eighteen ground water certificates have been issued within a one mile radius of the White Water well. The combined withdrawal rate of these wells amounts to 3,035 gallons per minute; and the annual quantity allocated totals 1,266.7 acre-feet per year. These rights were issued primarily for multiple domestic supply. The nearest large water users are the Nisqually Pines development, and the City of Yelm, located northwest of McKenna.

Drilling records for 18 wells constructed within a quarter mile radius around the White Water Well were reviewed. Well depths ranged from 45 feet to a depth of 212 feet. The shallower of these wells, 45 to 80 feet deep, are completed in a water bearing layer of sand and gravel that appears to be hydraulically coupled with the river system. The deeper wells, averaging about 115 feet below ground surface, are completed in a layer of sand and gravel situated beneath a layer of less permeable cemented sand and clay. At a depth of 212 feet, it is unlikely that the White Water well will affect neighboring water users.

Quantities for Permit

This permit will be issued for 165.5 acre-feet per year, of which 86 acre-feet will be supplemental to rights already issued under remaining certificate G2-25435. 79.5 acre-feet will be issued as primary supply contingent upon the relinquishment of Claim #002896.

CONCLUSIONS:

In accordance with Chapters 90.03 and 90.44 RCW, I find that water is available from the source in question, and that the appropriation, as recommended below, is for a beneficial use and should not impair senior rights or be detrimental to the public welfare.

RECOMMENDATIONS:

I recommend that this application be approved and a permit be issued to allow appropriation of 270 gpm, 165.5 acre-feet per year (79.5 acre-feet primary allocation, and 86 acre-feet supplemental) from the White Water well for municipal supply.

The permit shall be subject to the following provisions:

Provisions

"McKenna Water has agreed that Water Right Claim #002896 and Certificate #G2-25435<sup>5</sup> shall be voluntarily relinquished, and the shallow wells properly abandoned in accordance with state well drilling regulations."

The water appropriated under this application will be used for public water supply. The State Board of Health rules require public water supply owners to obtain written approval from the Office of Water Supply, Department of Health, Mail Stop 7822, Building 3, Olympia, Washington 98504-7822, prior to any new construction or alterations of a public water supply system.

Installation and maintenance of an access port as described in WAC 173-160-355 is required. An air line and gauge may be installed in addition to the access port.

Issuance of this water right is subject to the implementation of the minimum requirements established in the Conservation Planning Requirements, Guideline and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs, July 1994, and as revised.

Under RCW 90.03.005 and 90.54.020(6), conservation and improved water use efficiency must be emphasized in the management of the states water resources, and must be considered as a potential new source of water. Accordingly, as part of the terms of this water right, the applicant shall prepare and implement a water conservation plan approved by Department of Health. The standards for such a plan may be obtained from either the Department of Health or the Department of Ecology.

Report Continued

The applicant is advised that the quantity of water allocated by this permit may be reduced at the time of final certificate issuance to reflect system capacity, and actual usage.

An approved metering device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through -040 (installation, operation, and maintenance requirements are attached). Meter readings shall be recorded at least monthly.

REPORTED BY: Jill Walsh Date: November 1, 1996

The statutory permit fee for this application is \$20.00.

#### 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 appropriation and the appropriation as recommended, is a beneficial use and will not be detrimental to existing rights or the public welfare.

Therefore, I **ORDER** a permit be issued under Ground Water Application Number G2-27829, subject to existing rights and indicated provisions, to allow appropriation of public ground water for the amount and uses specified in the foregoing report.

Signed at Olympia, Washington, this 1st day of November, 1996.

*Gale Blomstrom*

Gale Blomstrom  
Shorelands & Water Resources Supervisor  
Southwest Regional Office

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