

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 September 24, 1992	APPLICATION NUMBER G2-28621	PERMIT NUMBER	CERTIFICATE NUMBER
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NAME Hawks Prairie Estates, Inc.			
ADDRESS (STREET) 33650 6th Avenue S, Ste 103	(CITY) Federal Way	(STATE) Washington	(ZIP CODE) 98003

**PUBLIC WATERS TO BE APPROPRIATED**

SOURCE Well
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND 1	MAXIMUM GALLONS PER MINUTE 800	MAXIMUM ACRE-FEET PER YEAR 231
QUANTITY, TYPE OF USE, PERIOD OF USE 231.1 Acre-feet per year	Irrigation (225.5 Acres)	May 1 to October 1

**LOCATION OF DIVERSION/WITHDRAWAL**

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL  
1300 feet South and 700 feet East of the Northwest section corner of Section 35.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) W½ NW¼	SECTION 35	TOWNSHIP N. 19	RANGE, (E. OR W.) W.M. 1W	W.R.I.A. 13	COUNTY Thurston
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**RECORDED PLATTED PROPERTY**

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
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**LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED**

The Southeast quarter of the Southeast quarter of Section 23, T. 19 N., R. 1 W.W.M.  
Also, that part of Government Lot 5, Section 23, T. 19 N., R. 1 W.W.M. described as follows:

Beginning at a point on the West line of said Lot 5, South 1°29'51" West 20.00 feet from its Northwest corner; Thence South 1°29'51" West along said West line 1313.01 feet to the Southwest corner of said Government Lot; Thence South 87°24'46" East along the South line of Government Lot 1337.24 feet to the Southeast corner of said Government Lot; Thence North 1°47'27" East along the East line of said Government Lot 766.59 feet to the meander corner between Sections 23 and 24; Thence North 48°75'20" West along the Government meander line 692.55 feet; Thence North 88°02'59" West 339.69 feet; Thence South 30°43'01" West 182.52 feet; Thence South 42°41'44" West 105.59 feet; Thence South 72°17'45" West 89.20 feet; Thence North 88°02'59" West 86.00 feet; Thence North 1°57'01" East 30.00 feet; Thence North 30°43'01" East 273.78 feet; Thence North 1°57'01" East 118.00 feet; Thence North 88°02'59" West 278.60 feet to the point of beginning.

Together with second class tidelands in front of and adjoining said premises.

Excepting therefrom the following described at the Northwest corner of said Government Lot 5; Thence South 38°02'58" East along the North line of Lot 5 278.60 feet; Thence South 1°57'01" West 138.00 feet; Thence South 10°43'01" West 273.78 feet; Thence South 1°57'01" West 55.00 feet to the true point of beginning; Thence South 12°26'30" East 118.44 feet; Thence South 1°57'01" West 100.00 feet; Thence North 82°26'30" West 160.00 feet; Thence North 1°57'01" East 100.00 feet; Thence South 82°26'30" East 41.56 feet to the true point of beginning.

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**DESCRIPTION OF PROPOSED WORKS**

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6" X 600' well equipped with a pump capable of discharging 800 gpm to the irrigation system.

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**DEVELOPMENT SCHEDULE**

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BEGIN PROJECT BY THIS DATE: started	COMPLETE PROJECT BY THIS DATE: June 1, 2010	WATER PUT TO FULL USE BY THIS DATE: June 1, 2011
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**REPORT**

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**BACKGROUND:**

Under the provisions of Chapters 90.03 and 90.44 Revised Code of Washington (RCW) Hawks Prairie Estates Inc., of Federal Way, Washington filed an application to withdraw ground water from two wells. The amount initially requested was 2,000 gallons per minute for purposes of multiple domestic supply and irrigation of a 150 to 250 acre golf course. The application was assigned No. G2-28621 and given a priority date of September 24, 1992.

Legal notice was published as required. As a result of the public notice the City of Lacey filed a letter of objection.

The City of Lacey expressed concern that the proposed wells would be located within the City's service area, and that the City had not received a request for service from the applicants. In addition, the City was concerned that the proposed appropriation would impact the City's existing well located nearby.

**Amendment**

As a result of a December 1993 meeting with W&H Pacific, Inc., City of Lacey, and Ecology, it was concluded that the application would be amended to lower the instantaneous withdrawal to 800 gpm for irrigation purposes only. The City of Lacey may, in the future, request additional rights for a 2nd or 3rd well for supplemental municipal supply purposes.

On March 4, 1994, Ecology received the amended application to reflect a withdrawal of 800 gpm for irrigation purposes.

I recommend issuance of a permit based on the following report of examination.

**INVESTIGATION:**

In consideration of this application I evaluated information submitted with the application, water-well reports in the project area, recorded water rights, registered claims, relevant hydrogeologic studies, Chapters 173-513 and 173-511 WAC, and consulted with Ecology Water Resource hydrogeologists.

**Location of Project Site**

The proposed project site is located in northern Thurston County in the Hawks Prairie area. Site elevation is approximately 260 feet above sea level. Puget Sound/Hogum Bay is situated approximately 1.5 miles north northeast of the project site. The surface topography slopes to the north/northeast toward Puget Sound. Surrounding land use is comprised of housing developments, single family homes and small farms. Hawks' Prairie Landfill is situated approximately 2 miles south/southeast.

**System Description**

Well Depth: 600 feet  
Casing Diameter: 16 inch  
Static Water Level: 203.2 feet  
Screened: 539' to 590'  
Driller: Armstrong Drilling Co.  
Date Constructed: August 1984  
Yield: 1,000 gpm  
Site Elevation: 260 feet (msl)

## Report Continued

Glacier Park Company filed application no. G2-26544, for the same well but the application has since been canceled. Aquifer testing conducted in 1984 indicated the well had a capacity of 1,000 gpm, however long-term use was recommended at a rate of 800 gpm.

This well has not been used during the last 13 years, and due to vandalism, a recent pump test was conducted during January 1996 to confirm usability.

The pump test analysis report prepared by Rongey/Associates was submitted for review. Testing of the well was conducted not only for usability and capacity, but also to evaluate potential effects the proposed withdrawal may have on neighboring wells. Two nearby wells were monitored; the City of Lacey's 600 foot well producing from the subsea level aquifer, and Meriwood Well No. 1, producing from the overlying sea level aquifer. Lacey's well is situated approximately one-half mile southwest, and the Meriwood well is approximately one mile east southeast from the pumping well. The depth of the completed well is approximately 340 feet below mean sea level.

### Aquifer Characteristics

The well is completed within the sub-sea level aquifer. This aquifer is the deepest known unconsolidated formation in this area, and is referred to as the "Older Gravel" aquifer. The aquifer thickness ranges to 100 feet, and appears to be regional in extent. Test results, combined with drilling and test records for the well suggest at least limited hydraulic continuity between the "Sea Level" and "Older Gravel" aquifers.

The first aquifer encountered in this area is the "Vashon Drift" formation. This shallow aquifer is perched over the permeable Kitsap formation. This unit supplies most local domestic wells and the City of Lacey's wells that serve the Beachcrest area.

The general direction of groundwater movement within the "older gravel" aquifer is north/northeast towards Puget Sound.

The applicant's hydrogeologist concluded:

- "Vicwoods well 35G1 is adequately cleared of debris and in a suitable condition to perform as a project irrigation well."
- "Operation of the City of Lacey 35E1 well and Vicwood's well 35G1 well will not, in terms of pumping interference, seriously impact the current withdrawal rates of either well."
- "The aquifer yielding to these wells has a degree of hydraulic continuity with the "Sea Level" aquifer. This level of interference however is not sufficient to create reductions in the yield of existing wells."
- "Wells producing from the shallow aquifer above the Kitsap formation will not be influenced by the withdrawals of wells 35G1 or 35E1."

Based on the information presented and evaluated for the proposed withdrawal, existing water rights should not be adversely affected. Groundwater flow from the "Sea-level" aquifer and the "Older gravel" aquifer in this vicinity discharges to Puget Sound. Water quality tests show a chloride level of 1 mg/l, which is within state drinking water standards. Because sea-water intrusion is a concern in coastal areas, chloride levels shall be monitored as specified within the provisions section of this report.

### Existing Water Rights

The following recorded water rights, registered claims, and water-well reports are on file with Ecology within approximately a 1.5 mile radius of the project site:

- Thirty-two ground-water rights have been issued authorizing a combined instantaneous withdrawal of 1,992 gallons per minute, 709.3 acre-feet per year. Water is used for single domestic, multiple domestic, and municipal supply, irrigation, fire protection, and commercial/industrial uses.
- Six surface-water rights have been issued authorizing a combined instantaneous diversion rate of 3.4 cubic feet per second, 6.5 acre-feet per year. Water is used for single and multiple domestic supply, power generation and fire protection.

Approximately one hundred groundwater claims, and four surface-water claims are registered that may be within a 1.5 mile radius of the subject well. The majority of claimed use is for domestic supply.

Over eighty water-well reports are on file with Ecology within a 1.5 mile radius of the subject well. Depths of wells in the vicinity range from 38 to 646 feet.

Preliminary Water Conservation Plan

A preliminary water conservation plan was prepared by Richard Carothers Associates, Ltd. The plan outlines the current proposed water use for the Hawks Prairie Estates project, and outlines measures to help minimize water usage. These practices are currently employed at the neighboring golf course, Meriwood, which is under co-ownership with this project owner.

Irrigation requirements are estimated based on average rainfall and evapotranspiration rates. The following table represents the Thurston County area:

	<u>Precipitation</u>	<u>Evapotranspiration</u>	<u>Differential</u>
May	2.00	3.35	-1.35
June	1.88	4.26	-2.37
July	.89	5.12	-4.13
August	1.01	4.40	-3.39
September	2.06	3.13	-1.07

Area golf courses generally receive 1-1/4 to 1-1/2 inches per week on greens, and about one inch per week on tees, fairways, landscape, and open areas. Rough areas receive about 3/4 inches per week. Approximate water requirements for this golf course, landscape, and open areas, can be summarized as follows:

May	25.4 acre-feet
June	44.5 acre-feet
July	77.6 acre-feet
August	63.7 acre-feet
September	20.1 acre-feet
Total	231.1 acre-feet

Calculations are based on 2.8 acres in greens, 3.9 acres in tees, 37.7 acres in fairways, 129.3 acres in rough, 23 acres in roadway landscaping, 16 acres in school landscaping, 7.2 acres in park, 0.8 acres in village center landscaping, and 4.8 acres in conference center landscaping.

A computer controlled irrigation system (Maxicom) will be installed to accurately manage water application on the course, with the capability to manage water application in other areas. These systems allow automatic daily adjustment of water application rates in response to weather conditions. The golf course, landscape, and open areas will be irrigated at night to minimize evaporation losses.

Water Requirements

The water requirement for irrigation of 225.5 acres of golf course, landscape, and open area, should not exceed 231.3 acre-feet per year.

FINDINGS AND CONCLUSIONS:

Based upon the above investigation, I find the following:

1. The Proposed use of water is a beneficial use of water.
2. The source of water requested is not in hydraulic continuity with the Deschutes River or its tributaries. Likewise, the source of water requested is not in hydraulic continuity with the Nisqually River or its tributaries.
3. Water is available for appropriation.
4. The proposed appropriation will not be detrimental to the public welfare.

Report Continued

5. The proposed appropriation will not impair existing water rights.
6. Groundwater from the supplying aquifer discharges to Puget Sound.

RECOMMENDATIONS:

I recommend approval of this application and issuance of a permit to allow withdrawal of 800 gallons per minute, 231.3 acre-feet per year for irrigation. The period of use shall be May 1 through October 1.

The permit shall be subject to all applicable state regulations and the following provisions:

Provisions

The water user is advised that quantities recommended, and the number of acres to be irrigated, may be reduced at the time of issuance of a final water right commensurate with the capacity of the installed system, and the number of acres actually irrigated.

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.

An approved metering device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through -040. Meter readings shall be recorded at least monthly.

A certificate of water right will not be issued until a final investigation is made.

Chloride concentration analysis shall be performed prior to system use, then quarterly when the system is in use, by a laboratory accredited by the Department of Ecology. The resulting data shall be submitted to the Department of Ecology, Southwest Regional Office annually, in the month of February.

If the chloride concentration exceeds 100 mg/L, the withdrawal rate shall be reduced or the pump setting raised to reduce the chloride level to below 100 mg/L.

"Water-pumpage, well-monitoring, and static-water-level data, along with a summary and analysis of the data, shall be submitted annually, or more frequently upon request, to Ecology's Southwest Regional Office Water Resources Program. The data shall be submitted in digital format (ASCII) and shall include the following elements:

For Water Use Reporting:

1. Measurement method (totaling meter, acoustic meter, etc.) for each well
2. Total volume pumped from each well by month in thousands or millions of gallons
3. Unique Well ID number

For Water Level Reporting:

1. Unique Well ID Number
2. Measurement date and time
3. Measurement method (air line, electric tape, pressure transducer, etc.)
4. Well status (pumping, recently pumped, etc.)
5. Water level accuracy (to nearest foot, tenth of foot, etc.)
6. Description of the measuring point (top of casing, sounding tube, etc.)
7. Measuring point elevation above or below land surface to the nearest 0.1 foot
8. Land surface elevation at the well head to the nearest foot.

9. Static water level below measuring point to the nearest 0.1 foot.

For Water Quality Monitoring:

1. Unique Well ID Number
2. Sampling date and time
3. Chloride concentration (mg/L)
4. Submit paper copy of laboratory report"

The applicant is advised that notice of Proof of Appropriation of water (under which the final certificate of water right is issued) should not be filed until the permanent distribution system has been constructed and that quantity of water allocated by the permit has been put to full beneficial use."

REPORTED BY: Vicki Cline Date: July 10, 1997

The statutory permit fee for this application is \$90.20.

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 G2-28621, 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 10th day of July, 1997.

*Gale Blomstrom*

Gale Blomstrom  
Shorelands & Water Resources Supervisor  
Southwest Regional Office

LEGAL CONT

Also, Lot 1 of Section 24, T. 19 N., R. 1 W.W.M. together with all second class tidelands as conveyed by the State of Washington, lying in front of, adjacent to and abutting on said Lot 1 of Section 24.

Also, The West Half of the Northwest quarter and the Northwest quarter of the Southwest quarter of Section 25, T. 19 N., R. 1 W.W.M.

Also, The Southeast quarter of Section 26, T. 19 N., R. 1 W.W.M.

Also, The North one half of Section 35, T. 19 N., R. 1 W.W.M. excepting therefrom county road known as Marvin Road as conveyed to Thurston County by deed recorded under Auditor's File No. 545560.

Together with and subject to easements and reservations of record.

Situate in Thurston County, Washington.