Oregon Water Resources Department Water Rights Services Division

Water Rights Application
Number G-17512

Prior to the issuance of a permit, the Department must receive permit recording fees in the amount of \$450.00. Please include your application number on your check made out to the Oregon Water Resources Department.

Proposed Final Order

Summary of Recommendation: The Department recommends that the attached draft permit be issued with conditions.

Application History

On December 7, 2011, Crystal Clear Energy LLC submitted an application to the Department for the following water use permit:

- Amount of Water: 3.34 CUBIC FEET PER SECOND (CFS)
- Use of Water: INDUSTRIAL USE (GEOTHERMAL HEATING & COOLING);
 POWER DEVELOPMENT
- Source of Water: PRODUCTION WELL HAMMERSLEY WELL (LAKE 2326) IN HAMMERSLY CREEK BASIN
- Injection Wells: WELL 2, WELL 3, AND WELL 4 IN HAMMERSLY CREEK BASIN
- Area of Proposed Use: LAKE COUNTY WITHIN SECTION 3, SECTION 4, SECTION 9, SECTION 10, SECTION 15, SECTION 16, SECTION 17, SECTION 21, AND SECTION 22, TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

On April 6, 2012, the Department mailed the applicant notice of its Initial Review, determining that "The appropriation of 3.34 CFS from Hammersley Well (LAKE 2326) in Hammersly Creek Basin for year-round industrial use (geothermal heating & cooling) and power development is allowable." The applicant did not notify the Department to stop processing the application within 14 days of that date.

On April 10, 2012, the Department gave public notice of the application in its weekly notice. The public notice included a request for comments, and information for interested persons about obtaining future notices and a copy of the Proposed Final Order.

Within 30 days of the Department's public notice, written comments were received from Giles Coon, Dugan Caffrey, Dan Van Den Berg, and Daron Lasley, a group of nearby homeowners who rely solely on geothermal heating of their homes and domestic hot-water supply, and from the Town of Lakeview. The commentors expressed concerns about how the proposed groundwater use under this application may negatively affect their existing wells either by lowering the static water level and/or lowering the temperature of the groundwater used in their respective homes and businesses.

In reviewing applications, the Department may consider any relevant sources of information, including the following:

- any applicable basin program
- applicable statutes, administrative rules, and case law
- the amount of water available
- the rate and duty for the proposed use
- any general basin-wide standard for flow rate and duty of water allowed
- the need for a flow rate and duty higher than the general standard
- pending senior applications and existing water rights of record
- any applicable comprehensive plan or zoning ordinance
- recommendations by other state agencies
- the Scenic Waterway requirements of ORS 390.835
- designations of any critical ground water areas
- any comments received

Findings of Fact

Department staff, the applicant, and the commentors met on several occasions to discuss a monitoring system and additional permit conditions, which are included in the attached draft permit.

The Goose & Summer Lake Basin Program allows industrial use (geothermal heating & cooling) and power development.

An assessment of ground water availability has been completed by the Department's Ground Water/Hydrology section. A copy of this assessment is in the file. Ground water will likely be available within the capacity of the resource, and if properly conditioned, the proposed use of ground water will avoid injury to existing ground water rights.

Ground Water Findings Under OAR 690-009

The Department determined, consistent with OAR 690-009-0040(4), that the proposed ground water use will not have the potential for substantial interference with surface water.

In making this determination, the Department considered whether:

- (a) There is a hydraulic connection from the proposed well(s) to any surface water sources.
- (b) The point of appropriation is a horizontal distance less than one-fourth mile from the surface water source;
- (c) The rate of appropriation is greater than five cubic feet per second, if the point of appropriation is a horizontal distance less than one mile from the surface water source;
- (d) The rate of appropriation is greater than one percent of the pertinent adopted minimum perennial streamflow or instream water right with a senior priority date, if one is applicable, or of the discharge that is equaled or exceeded 80 percent of time, as determined or estimated by the Department, and if the point of appropriation is a horizontal distance less than one mile from the surface water source;
- (e) The ground water appropriation, if continued for a period of 30 days, would result in stream depletion greater than 25 percent of the rate of appropriation, if the point of appropriation is a horizontal distance less than one mile from the surface water source.

According to the Department's rules, the potential for substantial interference is assumed if (a) and either (b) or (c) or (d) or (e) are met. For this application, the Department determined that there is no potential for substantial interference, because either (a) is not met, or (b), (c), (d) or (e) are not met, or both.

Hammersley Well (LAKE 2326) in Hammersly Creek Basin is not within or above a State Scenic Waterway.

The Department finds that the amount of water requested, 3.34 CFS, is an acceptable amount.

The proposed ground water use is not within a designated critical ground water area.

Conclusions of Law

Under the provisions of ORS 537.621, the Department must presume that a proposed use will ensure the preservation of the public welfare, safety and health if the proposed use is allowed in the applicable basin program established pursuant to ORS 536.300 and 536.340 or given a preference under ORS 536.310(12), if water is available, if the proposed use will not injure other water rights and if the proposed use complies with rules of the Water Resources Commission.

The proposed use requested in this application is allowed in the Goose & Summer Lake Basin Program.

Water is available for the proposed use.

The proposed use will not injure other water rights.

The proposed use complies with other rules of the Water Resources Commission not otherwise described above.

The application is in compliance with the State Agency Coordination Program regarding land use.

No proposed flow rate and duty of water higher than the general basin-wide standard is needed.

For these reasons, the required presumption has been established.

Under the provisions of ORS 537.621, once the presumption has been established, it may be overcome by a preponderance of evidence that either:

- (a) One or more of the criteria for establishing the presumption are not satisfied; or
- (b) The proposed use would not ensure the preservation of the public welfare, safety and health as demonstrated in comments, in a protest . . . or in a finding of the department that shows:
 - (A) The specific aspect of the public welfare, safety and health under ORS 537.525 that would be impaired or detrimentally affected; and
 - (B) Specifically how the identified aspect of the public welfare, safety and health under ORS 537.525 would be impaired or be adversely affected.

In this application, all criteria for establishing the presumption have been satisfied, as noted above. The presumption has not been overcome by a preponderance of evidence that the proposed use would impair or be detrimental to the public interest.

The Department therefore concludes that the proposed use would ensure the preservation of the public welfare, safety and health as described in ORS 537.525.

When issuing permits, ORS 537.628(1) authorizes the Department to include limitations and conditions which have been determined necessary to protect the public welfare, safety, and health. The attached draft permit is conditioned accordingly.

Recommendation

The Department recommends that the attached draft permit be issued with conditions.

DATED August 20, 2013

E. Timothy Wall.

E. Timothy Wallin, Water Rights Program Manager for Phillip C. Ward, Director

Protests

Under the provisions of ORS 537.153(7) (for surface water) or ORS 537.621(8) (for ground water), you can protest this Proposed Final Order. Protests must be received in the Water Resources Department no later than **October 4**, **2013**. Protests must be in writing, and must include the following:

- Your name, address, and telephone number;
- A description of your interest in the Proposed Final Order, and, if you claim to represent the public interest, a precise statement of the public interest represented;
- A detailed description of how the action proposed in the Proposed Final Order would impair or be detrimental to your interest;
- A detailed description of how the Proposed Final Order is in error or deficient, and how to correct the alleged error or deficiency;
- Any citation of legal authority to support your protest, if known;
- To affect the department's determination that the proposed use in this application will, or will not, ensure the preservation of the public welfare, safety and health as described in ORS 537.525, ORS 537.621(2)(b) requires that a protest demonstrate, by a preponderance of evidence any of the following: (a) One or more of the criteria for establishing the presumption are, or are not, satisfied; or (b) The specific aspect of the public welfare, safety and health under

ORS 537.525 that would be impaired or detrimentally affected, and specifically how the identified aspect of the public welfare, safety and health under ORS 537.525 would be impaired or be adversely affected;

- If you are the applicant, the protest fee of \$350 required by ORS 536.050; and
- If you are not the applicant, the protest fee of \$700 required by ORS 536.050 and proof of service of the protest upon the applicant.
- If you are the applicant, a statement of whether or not you are requesting a contested case hearing. If you do not request a hearing, the Department will presume that you do not wish to contest the findings of the Proposed Final Order.
- If you do not protest this Proposed Final Order and if no substantive changes are made in the Final Order, you will not have an opportunity for judicial review, protest or appeal of the Final Order when it is issued.

Requests for Standing

Under the provisions of ORS 537.153(7) (for surface water) or ORS 537.621(8) (for ground water), persons other than the applicant who support a Proposed Final Order can request standing for purposes of participating in any contested case proceeding on the Proposed Final Order or for judicial review of a Final Order.

Requests for standing must be received in the Water Resources Department no later than **October 4**, **2013**. Requests for standing must be in writing, and must include the following:

- The requester's name, mailing address and telephone number;
- If the requester is representing a group, association or other organization, the name, address and telephone number of the represented group;
- A statement that the requester supports the Proposed Final Order as issued;
- A detailed statement of how the requester would be harmed if the Proposed Final Order is modified; and
- A standing fee of \$200. If a hearing is scheduled, an additional fee of \$500 must be submitted along with a request for intervention.

After the protest period has ended, the Director will either issue a Final Order or schedule a contested case hearing. The contested case hearing will be scheduled only if a protest has been submitted and either:

- upon review of the issues, the director finds that there are significant disputes related to the proposed use of water, or
- the applicant requests a contested case hearing within 30 days after the close of the protest period.

If you do not request a hearing within 30 days after the close of the protest period, or if you withdraw a request for a hearing, notify the Department or the administrative law judge that you will not appear or fail to appear at a scheduled hearing, the Director may issue a Final Order by default. If the Director issues a Final Order by default, the Department designates the relevant portions of its files on this matter, including all materials that you have submitted relating to this matter, as the record for purpose of proving a prima facie case upon default.

You may be represented by an attorney at the hearing. Legal aid organizations may be able to assist a party with limited financial resources. Generally, partnerships, corporations, associations, governmental subdivisions or public or private organizations are represented by an attorney. However, consistent with OAR 690-002-0020 and OAR 137-003-0555, an agency representative may represent a partnership, corporation, association, governmental subdivision or public or private organization if the Department determines that appearance of a person by an authorized representative will not hinder the orderly and timely development of the record in this case.

This document was prepared by Kerry Kavanagh. If you have any questions about any of the statements contained in this document I am most likely the best person to answer your questions. You can reach me at 503-986-0816.

If you have questions about how to file a protest or a request for standing, please refer to the respective sections in this Proposed Final Order entitled "Protests" and "Requests for Standing". If you have previously filed a protest and want to know its status, please contact Patricia McCarty at 503-986-0820.

If you have other questions about the Department or any of its programs please contact our Customer Service Group at 503-986-0801. Address all other correspondence to:

Water Rights Section, Oregon Water Resources Department, 725 Summer St NE Ste A, Salem OR 97301-1266. Fax: 503-986-0901.

COUNTY OF LAKE

DRAFT PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS DRAFT PERMIT IS HEREBY ISSUED TO

CRYSTAL CLEAR ENERGY LLC 220 NORTH G ST LAKEVIEW, OR 97630

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: G-17512

SOURCE OF WATER: HAMMERSLEY WELL (LAKE 2326) IN HAMMERSLY CREEK BASIN

PURPOSE OR USE: INDUSTRIAL USE (GEOTHERMAL HEATING & COOLING) AND POWER DEVELOPMENT

MAXIMUM RATE: 3.34 CUBIC FEET PER SECOND

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: DECEMBER 7, 2011

WELL LOCATIONS:

PRODUCTION WELL - HAMMERSLEY WELL (LAKE 2326) - SE 1/4 NW 1/4, SECTION 3, T39S, R20E, W.M.; 1506 FEET SOUTH AND 1631 FEET EAST FROM NW CORNER, SECTION 3

INJECTION WELL - WELL 2 - SE 1/4 NE 1/4, SECTION 4, T39S, R20E, W.M.; 1400 FEET SOUTH AND 80 FEET WEST FROM NE CORNER, SECTION 4

INJECTION WELL - WELL 3 - SW 1/4 SW 1/4, SECTION 3, T39S, R20E, W.M.; 4545 FEET SOUTH AND 1065 FEET EAST FROM NW CORNER, SECTION 3

INJECTION WELL - WELL 4 - SE 1/4 NW 1/4, SECTION 10, T39S, R20E, W.M.; 1390 FEET SOUTH AND 2020 FEET EAST FROM NW CORNER, SECTION 10

THE PLACE OF USE IS LOCATED AS FOLLOWS:

NW 1/4 NW 1/4 NW 1/4 SW 1/4 SW 1/4 SW 1/4 SECTION 3

TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

THE PLACE OF USE IS LOCATED AS FOLLOWS (CONTINUED):

ALL SECTION 4

ALL

SECTION 9

NE ¼ NW ¼ NW 1/4 NW 1/4

SW ¼ NW ¼

SE ¼ NW ¼

NE ¼ SW ¼

NW ¼ SW ¼

SW ¼ SW ¼

SE ¼ SW ¼

NE ¼ SE ¼ NW 1/4 SE 1/4

SW ¼ SE ¼

SE ¼ SE ¼

SECTION 10

ALL

SECTION 15

ALL

SECTION 16

NE ¼ NE ¼

SE ¼ NE ¼

SECTION 17

NE ¼ NE ¼

SE ¼ NE ¼

NE ¼ SE ¼

SE ¼ SE ¼

SECTION 21

TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

THE PLACE OF USE IS LOCATED AS FOLLOWS (CONTINUED):

NW 1/4 NE 1/4
SW 1/4 NE 1/4
NE 1/4 NW 1/4
NW 1/4 NW 1/4
SW 1/4 NW 1/4
SE 1/4 NW 1/4
NE 1/4 SW 1/4
NE 1/4 SW 1/4
NW 1/4 SW 1/4
SW 1/4 SW 1/4
SW 1/4 SW 1/4
SW 1/4 SW 1/4
SE 1/4 SW 1/4
SW 1/4 SE 1/4
SW 1/4 SE 1/4
SECTION 22

TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

Measurement, recording and reporting conditions:

- A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each production well and at each injection well, which shall be located within 50 feet of the wellhead.
- B. Adjacent to each totalizing flow meter shall be a clearly visible monument with a sign noting the flow meter.
- C. The permittee shall maintain the meter(s) in good working order.
- D. The permittee shall record monthly readings at each totalizing flow meter, and shall submit a report which includes the recorded amounts to the Department annually or more frequently as may be required by the Director. Further, the Director may require the permittee to report general water-use information, including the place and nature of use of water under the permit.
- E. The permittee shall allow the watermaster access to the totalizing flow meter(s); provided however, where any meter is located within a private structure, the watermaster shall request access upon reasonable notice.
- F. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

Prior to the use of water under this permit, the permittee shall install equipment at a nearby domestic well (LAKE 2368) for the purpose of continuously recording both downhole temperature and water level. equipment shall be approved by the Department and provided by the permittee. The Department may provide assistance to the permittee, as resources allow, by authorizing the use of appropriate Departmental equipment and staff to install and maintain the equipment, including regular downloading of recorded data. If the downhole temperature of LAKE 2368 is altered by greater than ten (10) degrees Fahrenheit as a result of the production or injection of low-temperature fluid under the terms of this permit, the water user shall discontinue use of, or reduce the rate and volume of withdrawal from the authorized well. The period of non-use or restricted use shall continue until the downhole temperature rises above the temperature which triggered the action or until the Department determines, based on the permittee's and/or the Department's data and analysis, that no action is necessary because the aguifer in question can sustain the observed thermal alteration without adversely impacting the resource or senior water rights.

Prior to use of water under this permit, the permit holder must register the injection activity with the Oregon Department of Environmental Quality's Underground Injection Control Program, which can be contacted at 2020 SW 4th Ave, Ste 400, Portland OR 97201, or 503-229-5263.

The Department requires the water user to obtain, from a qualified individual (see below), and report annual static water levels for each well on the permit. The static water level shall be measured in the month of March. Reports shall be submitted to the Department within 30 days of measurement.

The permittee shall report an initial March static water-level measurement once well construction is complete and annual measurements thereafter. Annual measurements are required whether or not the well is used. The first annual measurement will establish a reference level against which future measurements will be compared. However, the Director may establish the reference level based on an analysis of other water-level data. The Director may require the user to obtain and report additional water levels each year if more data are needed to evaluate the aquifer system.

All measurements shall be made by a certified water rights examiner, registered professional geologist, registered professional engineer, licensed well constructor or pump installer licensed by the Construction Contractors Board. Measurements shall be submitted on forms provided by, or specified by, the Department. Measurements shall be made with equipment that is accurate to at least the standards specified in OAR 690-217-0045. The Department requires the individual performing the measurement to:

- A. Associate each measurement with an owner's well name or number and a Department well log ID; and
- B. Report water levels to at least the nearest tenth of a foot as depth-to-water below ground surface; and
- C. Specify the method of measurement; and
- D. Certify the accuracy of all measurements and calculations reported to the Department.

The water user shall discontinue use of, or reduce the rate or volume of withdrawal from, the well(s) if any of the following events occur:

- A. Annual water-level measurements reveal an average water-level decline of one or more feet per year for five consecutive years; or
- B. Annual water-level measurements reveal a water-level decline of 5 or more feet in fewer than five consecutive years; or
- C. Hydraulic interference leads to a decline of 10 or more feet in any neighboring well with senior priority.
- D. The Department Ground Water Section Staff approved static ground water level measurements at well LAKE 2424 (state observation well 381) is below 30 feet below land surface.

The period of restricted use shall continue until the water level rises above the decline level which triggered the action or the Department determines, based on the permittee's and/or the Department's data and analysis, that no action is necessary because the use is not contributing to the decline or contributing to the groundwater level being below 30 feet below land surface at well LAKE 2424 (state observation well 381) or because the aquifer in question can sustain the observed declines without adversely impacting the resource or causing substantial interference with senior water rights. The water user shall not allow excessive decline, as defined in Commission rules, to occur within the aquifer as a result of use under this permit. If more than one well is involved, the water user may submit an alternative measurement and reporting plan for review and approval by the Department.

Dedicated Measuring Tube: Wells with pumps shall be equipped with an unobstructed, dedicated measuring tube pursuant to figure 200-5 in OAR 690-200. For existing wells with a pump installed, installation of the measuring tube shall occur when the pump is removed or replaced and/or when the well is deepened or reconstructed or altered.

All wells shall be constructed to extract or inject groundwater from and to the same water-bearing zone within the basalt unit (this includes tuff breccia) below the basin sediments. To meet this criterion, each well shall have at minimum continuous casing and continuous seal from land surface, through the sediment to the productive portion of the basalt unit.

The location of all injection wells shall be at a distance from a point near the mouth of Hammersley Canyon that is equal to or less than the distance of the production well from the same point near the mouth of Hammersley Canyon. Otherwise, the use is subject to regulation, including possible immediate cancellation of the permit. The point location is 400 feet east of the west quarter corner of Section 3 in Township 39 South, Range 20 East, W.M.

The use described in this permit is authorized if and only if 100 percent of the groundwater extracted from the production well(s) is injected in the authorized injection well(s), which can be confirmed by flow-meter data. Otherwise, the use is subject to regulation, including possible immediate cancellation of the permit.

All water produced under this permit shall be injected into the authorized well(s). Prior to receiving a certificate of water right, the permit holder shall submit documentation affirming that any applicable additional requirements of the Department's Division 230 rules have been met.

Groundwater production shall occur from the predominantly basalt unit (this includes tuff breccia) below the predominantly basin-fill unit by casing and sealing through the basin-fill unit into the basalt unit.

Prior to using water from any well listed on this permit, the permittee shall ensure that the well has been assigned an OWRD Well Identification Number (Well ID tag), which shall be permanently attached to the well. The Well ID shall be used as a reference in any correspondence regarding the well, including any reports of water use, water level, or pump test data.

STANDARD CONDITIONS

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

If the number, location, source, or construction of any well deviates from that proposed in the permit application or required by permit conditions, this permit may be subject to cancellation, unless the Department authorizes the change in writing.

If substantial interference with surface water or a senior water right occurs due to withdrawal of water from any well listed on this permit, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal shall be regulated until or unless the Department approves or implements an alternative administrative action to mitigate the interference. The Department encourages junior and senior appropriators to jointly develop plans to mitigate interferences.

The well(s) shall be constructed in accordance with the General Standards for the Construction and Maintenance of Water Wells in Oregon. The works shall be equipped with a usable access port, and may also include an air line and pressure gauge adequate to determine water level elevation in the well at all times.

If the riparian area is disturbed in the process of developing a point of appropriation, the permittee shall be responsible for restoration and enhancement of such riparian area in accordance with ODFW's Fish and Wildlife Habitat Mitigation Policy OAR 635-415. For purposes of mitigation, the ODFW Fish and Wildlife Habitat Mitigation Goals and Standards, OAR 635-415, shall be followed.

The use may be restricted if the quality of downstream waters decreases to the point that those waters no longer meet state or federal water quality standards due to reduced flows.

Where two or more water users agree among themselves as to the manner of rotation in the use of water and such agreement is placed in writing and filed by such water users with the watermaster, and such rotation system does not infringe upon such prior rights of any water user not a party to such rotation plan, the watermaster shall distribute the water according to such agreement.

Prior to receiving a certificate of water right, the permit holder shall submit to the Water Resources Department the results of a pump test meeting the Department's standards for each point of appropriation (well), unless an exemption has been obtained in writing under OAR 690-217. The Director may require water-level or pump-test data every ten years thereafter.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

Completion of construction and application of the water shall be made within five years of the date of permit issuance. If beneficial use of permitted water has not been made before this date, the permittee may submit an application for extension of time, which may be approved based upon the merit of the application.

Within one year after making beneficial use of water, the permittee shall submit a claim of beneficial use, which includes a map and report, prepared by a Certified Water Rights Examiner.

Issued

DRAFT - THIS IS NOT A PERMIT

E. Timothy Wallin, Water Rights Program Manager for Phillip C. Ward, Director

Mailing List for PFO Copies

Application #G-17512

PFO Date August 20, 2013

Original mailed to applicant:

CRYSTAL CLEAR ENERGY LLC 220 NORTH G ST LAKEVIEW, OR 97630

SENT VIA EMAIL:

- 1. WRD Watermaster #12
- 2. chuck.kelley9@gmail.com
- 3. dugancalkv@hotmail.com
- 4. dougcoon@hotmail.com

Copies Mailed By:______(SUPPORT STAFF) on:______(DATE)

Protest/ Standing Dates checked

Copies sent to:

- 1. WRD File # G-17512
- 2. WRD Water Availability: Shawn Turner

Copies sent to Other Interested Persons (CWRE, Agent, Well Driller, Commenter, etc.)

3. Darryl Anderson, CWRE #5,

Anderson Engineering and Surveying Inc. PO Box 28, Lakeview OR 97630

- 4. Dugan Caffrey, PO Box 1015, Lakeview, OR 97630 (paid \$20)
- 5. Daron Lasley, 9598 Hillcrest Lane, Lakeview, OR 97630
- 6. Dan Van Den Berg, 20253 Valley View Rd, Lakeview, OR 97630
- 7. Giles Coon, 20243 Valley View Rd, Lakeview, OR 97630
- 8. Town of Lakeview, Attention: Ray Simms, Manager, 525 N 1st Street, Lakeview, OR 97630
- 9. DEQ, Water Quality Division, DEQ UIC Program, Attention: David Cole, 2020 SW 4th Ave, Suite 400, Portland OR 97201

CASEWORKER: Kerry Kavanagh