



State of Idaho

DEPARTMENT OF WATER RESOURCES

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C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

September 29, 2010

CAROL LYNN MACGREGOR
1109 WARM SPRINGS AVE
BOISE ID 83712

RE: Response to your letter dated November 4, 2009 regarding Permits 65-13912 and 65-13913 and Summary of the Department's Technical Review of Material Submitted Thus Far by the Permit Holder

Mrs. MacGregor:

On November 9, 2009, the Idaho Department of Water Resources received a letter from you regarding the development of permit 65-13912 and 65-13913. In the letter, you requested that the Department approve diversion system plans based on submittals by Terry Scanlan of SPF Water Engineering, LLC (SPF) dated March 3, 2008 and Bill Carter of Musgrove Engineering, PA (Musgrove) dated July 9, 2009. In addition, you provided water measurement data for review. It is only recently that the Department has obtained all of the reference material cited in your letter and in the submittals described above and been in a position to respond to your requests. I apologize for the delay and hope that you find that the intent of my letter, to answer your questions and provide technical feedback from the Department, has been met to your satisfaction.

WR 65-13912

In your November 9, 2009 letter, concerning water right permit 65-13912, you requested that the Department approve the spring diversion system plans and specifications as provided by SPF and Musgrove. My technical review comments are provided below and are structured to mirror the conditional language contained on the permit. The conditional numbers referenced apply to the original water right permit.

Condition 5:

Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality.

- 1) The report submitted by SPF is silent on whether permitting by the Department of Environmental Quality was (1) needed and (2) obtained. In your letter it appears that you are looking for confirmation from the Department of Water Resources that no action is necessary on your part. Please be aware that it is the responsibility of the permit holder to determine, what, if any, water quality permitting requirements exist with the Idaho Department of Environmental Quality.

Condition 7:

Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works of a type acceptable to the Department as part of the diverting works.

- 1) No flow measurement device appears to have been installed; SPF indicates flow measurement can be obtained with a bucket and stopwatch. The Department has published minimum acceptable standards pertaining to water measurement devices¹. A bucket and stopwatch is not recognized by those standards. Therefore, the plans and specifications as currently submitted are deficient in this regard. A procedure for requesting a variance from the minimum standards is outlined in the document. However, in light of the hearing record and the Final Order², it seems unlikely that the Department would recognize a bucket and stopwatch as a legitimate means of continuous flow rate measurement.
- 2) No lockable controlling works have been provided. If needed, SPF identifies that the pump can be locked out at the disconnect switch. This solution only accommodates an "on" and "off" scenario and does not allow for a middle ground of partial diversion. However, although not ideal, this solution is acceptable to the Department provided detail on how to lock out the disconnect switch is provided and/or addressed on the plans and specifications.

Condition 9:

*Prior to construction of diversion works for the surface low-temperature geothermal water from Belvidere Hot Springs, the right holder must submit plans and specifications for the spring diversion to the Department, and the Department must approve the plans and specifications. The plans and specifications **must provide for direct water delivery to water rights no. 65-12891 and no. 65-13332, at no cost to the holder of those rights, to replace reductions in the quantity or temperature of water historically diverted under water rights nos. 65-12891 and 65-13332 caused by diversions under permit no. 65-13912.** Emphasis added.*

- 1) The as-built sketch provided by SPF does not identify any components in the diversions works

¹ Minimum Acceptable Standards for Open Channel and Closed Conduit Measuring Devices, 10/2009. This document is available to the public at the following web address:

<http://www.idwr.idaho.gov/WaterManagement/WaterMeasurement/PDFs/MinAccepStand.pdf>.

² Former Director Karl Dreher's Final Order, In the Matter of Applications to Appropriate Water Nos. 65-13912, 65-13913, and 65-13986 in the Name of Carol Lynn MacGregor dated October 4, 2006.

that can accommodate the direct delivery of water to senior geothermal water users Duane Pancheris (65-12891) and Darwin Pancheris (65-13332). In addition, the explanation provided by SPF that "the discharge from the pumps has a threaded attachment point that could be used to connect additional pipe" in the future, is insufficient. The Department anticipates a permanent fitting, sufficient valving, and piping (approximately 200 feet of piping as identified in the SPF submittal) such that water can be made available to senior geothermal water users at your property line if and when needed. Therefore, as currently submitted the plans and specification are deficient in this regard.

Condition 10:

Prior to construction of the diversion works and delivery system and the diversion of water under this right, the right holder shall submit detailed designs to the Department for approval for use of low-temperature geothermal water in heating the spa buildings and associated hot water soaking pools or swimming pools. The designs must be based on computations using recognized engineering methodologies that determine the temperatures and quantities of water necessary to provide the low-temperature geothermal water for heating the spa buildings and to maintain sufficient temperature and pass through of hot water to the proposed pools.

- 1) Engineering Computations have been prepared by Musgrove using standard engineering practices supporting the rate and volumes of geothermal water diverted under WRs 65-1972, 65-1973, and permit 65-13912 in heating a single-residence home and one private hot tub. The engineering report conducted by Musgrove concluded that 27 GPM (0.06 CFS) was sufficient to heat the home and private hot tub as currently configured. Existing water rights 65-1972 and 65-1973 allow for the combined diversion of 0.05 CFS for domestic use. From this I conclude that only 0.01 CFS of beneficial use has thus far been developed under permit 65-13912. If no additional beneficial use is developed under this water right than the existing engineering computations by Musgrove are sufficient. If additional beneficial use is anticipated, than additional engineering computations will be required for review prior to any additional development.

Conclusions

The existing as-built sketch of the diversion system constructed for water rights 65-1972 and 65-1973 and submitted on behalf of permit 65-13912 is acceptable to the Department with the following amendments. The plans must be modified to include a measuring device that complies with the Department's minimal acceptable standards, the plans must be modified to include a description of how power to the diversion pump can be "locked out", and the plans must be modified to include sufficient plumbing (fittings, valving, & piping) to provide water to senior geothermal water users as identified in Condition 9. Although not mandatory, for legibility and clarity of review, it is my preference that modified plans submitted to the Department for future review be in standard CAD format.

WR 65-13913

It is my understanding from your letter dated November 4, 2009 that all development associated with water right permit 65-13913 is on hold. It is also my understanding based upon your letter,

correspondence and submittals from SPF, and the technical review performed by Geologica, Inc³ (Geologica), that the pump diversion test required by Condition 10 of the permit, as submitted by SPF on June 4, 2008 and approved by the Department on June 24, 2008, was not completed in compliance with the approved pump diversion plan or to the satisfaction of the parties involved, including yourself. The Department supports the decision to repeat the pump diversion test in the future such that it fulfills the objectives and requirements of the approved pump diversion plan. However, please be aware, per the conditional language of your permit, you cannot move forward with any beneficial use development associated with this permit until the Department has had a chance to review the future pump diversion test results and conclusions and come to a final decision regarding this permit as outlined in Condition 10 of the permit.

Closing

This concludes my technical review of the material submitted thus far regarding permits 65-13912 and 65-13913. I hope that I have adequately addressed the concerns you have expressed in prior correspondence. If you have any questions concerning this matter please contact me directly by phone at (208) 287-4914 or by email at mathew.weaver@idwr.idaho.gov.

Respectfully,



Mat Weaver, PE

Staff Engineer

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³ Letter document titled "Review and Recommendations MagGregor Geothermal Well Test and Water Quantity Allocation Permit 65-13913 Cascade, ID" received by the Department from Geologica dated February 26, 2009.