

MEMORANDUM

TO: 67-14322

FROM: SANDY HEMENWAY

DATE: 9/16/2010

REF: Review for Licensing

The following review will show evidence that the License should be issued as Irrigation for **8.1 acres, for 0.10 cfs and 32.4 af**, once a signed amendment for licensing has been received by IDWR with the appropriate fee of \$50. The amendment for licensing will correct the legal description for the Place of Use. Domestic use will not be included on the License for 67-14322, as indicated on the Proof of Beneficial Use submitted by Mr. Eckhardt on 7/27/2005, since it was not included on the approved Permit. On 9/9/2010 Mr. Eckhardt stated that he has no intentions of filing a new application for a permit for domestic use, but rather it will remain "exempt," Idaho Code 42-111, for the present time (phone conversation memo enclosed in file). The shapefile area calculated was 58,080 sq ft - 3250 sq ft house - 5000 sq ft pavement = 49830/43560 = 1.14 acres irrigated around house. The Irrigated Acreage where the Eckhardt home is located is greater than the allowable Domestic external use for ½ acre. For this reason, the 1.14 acres around the house is included within the irrigation component total. The two separate POU shapefiles make up a total of 8.1 acres. After review with management, the decision was to keep POU irrigation at 8.1 acres, since the square footage of the house and pavement is so minimal, that when drawing a shapefile, the location of a line could increase the total acreage. Also, if a limit was set between the amounts of acres of only 0.10 acres, it would be too hard to detect any changes.

At the time of the 8/26/2010 field exam, the irrigated acres were confirmed and irrigation systems were installed (POD/groundwater source with 8" casing, 5 Hp Grundfos variable speed submersible pump, 42 psi, 2 inch discharge, 2" buried PVC to house, 40 gallon pressure tank, with ¾" buried PVC to pressurized sprinkler system of variable pop-up Toro nozzles and drip system for the grounds surrounding house/garden. 4" buried PVC to gate valve, The 4" buried PVC runs down the hill, then 4" buried PVC runs North to South on the east border of the POU with 15 risers to attach handline for irrigation to fenced area for livestock (livestock were currently out to open range grazing **See 8/26/2010 Field Exam Figure 6**). The irrigated acres were confirmed using an 8/6/2002 Lansat Spot Imagery, Reference No: 0537261a 20020810 (See 8/26/2010 Field Exam Figure 7).

During the 8/26/2010 field exam, it was determined that place of use legal description was different from that described on the approved Permit. Reviewing the original application for permit, it indicated 5.0 acres in each of Section 1 and Section 36 with a handwritten note written to the side stating "at legal below," then (3)-handwritten notations written at the bottom of the form indicating the quarter-quarters. The

approved Permit did not describe the handwritten (3) different quarter-quarters "at legal below," but rather 5 acres in each of (2)-quarter-quarters. Tax Lot information shows Eckhardt Family LLC (Jim Eckhardt) owing 239.8 acres starting in Section 1 NWNE and NENE, and 639.0 acres starting in Section 36 SWSE and SESE, so there are no issues with ownership for the POU, and there are no overlaps for irrigation.

ADDITIONAL INFORMATION:

Agreement to Mitigate

6/10/2002, signed document by James Eckhardt, to mitigate in the future if necessary.

Application for Permit

6/22/2002. Original map submitted with application had the entire T12N R6W Section 36, and T11N R6W Section 1 outlined, but only 5 acres assigned to each Section, for Irrigation use. Well upgrade fee was submitted 6/25/2002 for \$125, receipt W029374.

Permit

On 8/26/2002, the permit was approved for Irrigation of 5 acres T11N R6W Sec 1, and 5 acres T12N R6W Sec 36, with the Season of Use: 3/15 – 10/31.

Proof of Beneficial Use

7/27/2005 submitted with \$50 fee, receipt C078694 (License Fee 0 – 0.02 cfs, 0 – 20 af = \$50). Proof of Beneficial Use was submitted for "1 Domestic household," and "10 acres irrigation," and "0.10 cfs."

Field Exam

On 8/26/2010, a field exam was conducted confirming domestic use, a stockwater tank from the overflow, and irrigation at the POU. Domestic internal use and stockwater (overflow from the system) are exempt from recording requirements. The external use is included with the irrigation use component since irrigation of the grounds around the house are >1/2 acre. A detailed field exam with diagrams, calculations, and pictures are included in the file.

Amendment of License

Indicates the confirmed location for the Irrigation POU, and includes grounds around the house in the irrigation component since it involves >1/2 acre irrigation (**See 8/26/2010 Field Exam Figure 6, for POU locations**).

Current Owner

6/25/2008 updated Tax Lot information shows Eckhardt Family Limited Partnership as the owner of the property. During the 8/26/2010 field exam, James Eckhardt stated that he wants the water right to show the current owner as James Eckhardt.

Physical Measurement:

Administrative Memo, Application Processing No. 51 and Permit Processing No. 16, Appendix1 Flow Chart for Determining if Flow Measurement is Required, states: Ground water, Less than 0.20 cfs, No Measurement Required. No physical measurement was collected, since the handline was already dismantled and stacked, and there was no access to install a polysonic. The drillers report had a well test of 75 gpm that was used as an indicator for the capacity of the system. Nozzle conversions and the theoretical on the well were closely related, and were used for the recommendation for licensing. (See 8/26/2010 Field Exam Page 2 (E) Flow Calculations).

System Description

8 inch casing, 5 Hp Grundfos variable speed submersible pump, 65 ft static, 42 psi, 2 inch discharge to house, 40 gallon pressure tank with auxiliary booster pump, ¾ inch buried PVC to variable pop-up Toro nozzles and drip system surrounding the house and garden area, a gate valve to buried 4 inch PVC that runs to the POU southwest of the house, to 4 inch buried PVC that runs north to south on east border with 15 risers to hook up 4 inch hand line (20 ft sections, 5/16 inch nozzles with 3 gpm restrictors). There also is a 2400 gallon tank at the house, but it stores water from a spring for fire protection. The well and spring sources do not co-mingle, nor are they tied into the same system in any way.

System Capacity/ Diversion Rate

Theoretical Rate of Flow = $(8.8) (5.0 \text{ hp}) (0.7 \text{ eff}) / (2.31 \times 42 \text{ psi}) + 200 = 0.103 = 0.10 \text{ cfs}$. The Well Drillers Report showed a yield of 75 gpm with a drawdown of 200 ft for only 3 hours (depth of well is 217 ft). For this short time being pumped, the capacity of the system would be 0.17 cfs. Nozzle Discharge calculations measuring the average width of the POU using 20 ft sections, confirmed an average of 18 sections with 5/16 inch nozzles with 3 gpm restrictors. Without the restrictors, each nozzle would have the capacity of $0.04 \text{ cfs} = 18.98 / 448.8 = 30.0 \times (0.09765625) \times 6.48$. With the 3gpm restrictor = $3 \text{ gpm} / 448.8 = 0.0066 \times 18 \text{ nozzles} = 0.12 \text{ cfs}$ capacity of the system. **Recommend License for 0.10 cfs, as shown on Permit.**

Volume

Irrigation Vir: $8.1 \text{ acres} \times 4.0 = 32.4 \text{ af}$

$V_{dr} = 0.10 \times 230 \times 1.9835 = 45.6 \text{ af}$

$V = 32.4 \text{ af}$

Recommend Total Volume: 32.4 af

POU Location

A 8/6/2002 Lansat spot Imagery, Reference No. 0537261a 20020810 confirmed irrigation at the POU, and confirmed during the 8/26/2010 Field Exam. Tax Lot Information shows Eckhardt Family LLC (Jim Eckhardt) owning 239.8 acres starting in Sec 1 NWNE and NENE, and 639.0 acres starting in Section 36 SWSE and SESE. Changes in location of POU are addressed in the amendment for license for irrigation use. Domestic use, which is exempt at the present time, is not included on the amendment for license, even though it was shown on the proof of beneficial use

received by IDWR 7/27/2005, it was not included on the approved Permit. The yard and garden area Irrigated Acreage where house is located was 58080 - 3250 sq ft house - 5000 sq ft pavement = 49830/43560 = 1.14 acres irrigated around the house, which was included within the irrigation component total.

POU Overlaps

67-4485 Stockwater, from spring source is located in the same quarter-quarter, but not on the POU for irrigation.

POD Overlaps

None

Season of Use

IDWR standard season of use for Section 1 is 3/01 thru 11/15, and for Section 36 it is 3/15 thru 10/31. The majority of the property irrigated is located in Section 36, and for this reason the season of use for this license is 3/15 thru 10/31 (as approved on permit).

Remarks/Conditions

Condition 121 was replaced with 103 (for licensing). Condition 01M Measuring Device, since there is >5 acres irrigation.

Based on this review, the following is recommended for License:

Season of Use 3/15 thru 10/31.

Irrigation 8.1 acres, 0.10 cfs, 32.4 af

Total Diversion Rate and Volume: 0.10 cfs, 32.4 af.