WATER RESOURCES DEPARTMENT MEMO April 01, 2015

TO: **Application G-** 17987

FROM: M. Thomas / K. Woznick **- Groundwater Section**

SUBJECT: **Scenic Waterway Interference Evaluation**

_____ YES
__X__ NO

The source of appropriation is within or above a Scenic Waterway

_____ YES
__X__ NO

Use the Scenic Waterway condition (condition 7J)

_____ Per ORS 390.835, the Groundwater Section is able to calculate groundwater interference with surface water that contributes to a Scenic Waterway. The calculated interference distribution is provided below.

_____ Per ORS 390.835, the Groundwater Section is unable to calculate groundwater interference with surface water that contributes to a scenic waterway; therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface flows necessary to maintain the free-flowing character of a scenic waterway.

DISTRIBUTION OF INTERFERENCE

Calculate interference as the monthly fraction of the annual consumptive use and fill in the table below. If interference cannot be calculated, per criteria in 390.839, do not fill in the table but check the "unable" option above, thus informing the Water Rights Section that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in the _____ Scenic Waterway by the following amounts, expressed as a proportion of the annual consumptive use pumped from the well.

Monthly Fraction of Annual Consumptive Use

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 04/01/2015

FROM: Groundwater Section Michael J. Thoma / Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 17987 Supersedes review of
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: Conduit 3 Hydroelectric Project LLC County: Multnomah

A1. Applicant(s) seek(s) 0.045 cfs from 1 well(s) in the Willamette Basin, Johnson Cr. subbasin Quad Map: Gladstone / Mount Tabor

A2. Proposed use Commercial (non-contact cooling) Seasonality: Year-round

A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	**PROP**[a]	EW-1	Alluvium	0.045	01S/02E-12 SW-NW	390'S, 130'W of ctr of NW qtr S12[c]
2	**PROP**[a]	IW-1	Alluvium		01S/02E-12 SW-NW	375'S, 135'W of ctr of NW qtr S12
3						
4						
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	234		30-60[b]		150[a]	0-30[a]	0-150[a]		100-150[a]			
2	234		30-60[b]		100[a]	0-30[a]	0-100[a]		70-100[a]			

Use data from application for proposed wells.

A4. **Comments:** [a]Wells are proposed – information is based on proposed well construction diagrams provided with application. [b]SWLs are based on limited well log data in the area and mapped water table contours by Gannett and Caldwell (1998). [c]Location information has been updated by Ted Ressler of GSI from the original permit application map to show metes and bounds of IW-1 and correct location of reference corner. The updated map is attached.

Well #2 (IW-1) is the proposed injection well. Information about it is included here and in table C1 and used to identify whether the extraction and injection well will penetrate the same aquifer and thus result in non-consumptive use. Well #2 is not included in the evaluation for PSI.

A5. ☐ **Provisions of the** Willamette – Columbia River Subbasin Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments:

A6 ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area:
Comments:

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

a. ☐ **is** over appropriated, ☐ **is not** over appropriated, *or* ☒ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☐ **will not** *or* ☒ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;

c. ☐ **will not** *or* ☒ **will** likely to be available within the capacity of the groundwater resource; or

d. ☒ **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
   i. ☒ The permit should contain condition #(s) **7L (Injection);**;
   ii. ☐ The permit should be conditioned as indicated in item 2 below.
   iii. ☒ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;

c. ☒ **Condition** to allow groundwater production only from the **alluvial** groundwater reservoir ~~between approximately _____ ft. and _____ ft. below land surface;~~

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** There is little groundwater production in the area of the proposed well due to the urban environment and use of municipal water supply for residents. There is also only limited groundwater data available but the nearest wells where water levels have been historically measured (MULT 2838 and MULT 60838, see Figure 1) show stable water levels (**Figure 2**). Additionally the applicants' proposed use is non-consumptive since groundwater that is extracted will be injected into a nearby well.

Condition 7L requires that the applicant notify and receive the proper permits for injection of the used water from Oregon DEQ.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**Alluvial material of Troutdale Frm.**	☐	☒
2	**Alluvial material of Troutdale Frm.**	☐	☒
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Based on limited well logs available in the area the aquifer at the proposed depth of the POA (150 ft) is likely unconfined sedimentary material of the Troutdale Frm. (Swanson et al., 1993).

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	1	**Johnson Cr.**	**~170**	**225-240**	**7300**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The proposed well is on the opposite side of Powell Butte from Johnson Creek (see Figure 1) and over 1 mile from the creek at the shortest distance and ~3 mi to the point where the creek elevation is coincident with estimated groundwater elevations. The aquifer system near the proposed POA is likely more influenced by the regional groundwater system which flows from the hills to the south to the Columbia River to the north than by local creeks. Additionally, as the use is non-consumptive, there will be not net impact to streams.

Water Availability Basin the well(s) are located within: The proposed well is not within a designated WAB

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: ______________________________

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:

i. ☐ The permit should contain condition #(s)_____;

ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions** Sections C3-C5 do not apply since it was determined that the proposed well is not effectively hydraulically connected to nearby surface water sources and that the proposed use is non-consumptive.

References Used: OWRD Well Log Database – Accessed 02/03/2015

Swanson, R. D., W. D. McFarland, J. B. Gonthier, and J. M. Wilkinson. 1993. *A description of hydrogeoloic units in the Portland Basin, Oregon and Washington*. USGS Water Resources Investigations Report 90-4196.

Gannett, M. W. and R. R. Caldwell. 1998. *Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington*. USGS Professional Paper 1424-A, 32p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

a. ☐ review of the well log;

b. ☐ field inspection by _____;

c. ☐ report of CWRE _____;

d. ☐ other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

N/A – no hydraulic connection, non-consumptive use

Figure 1: Location map. Extraction (EW-1) and injection (IW-1) well are at same location at the scale of the map.

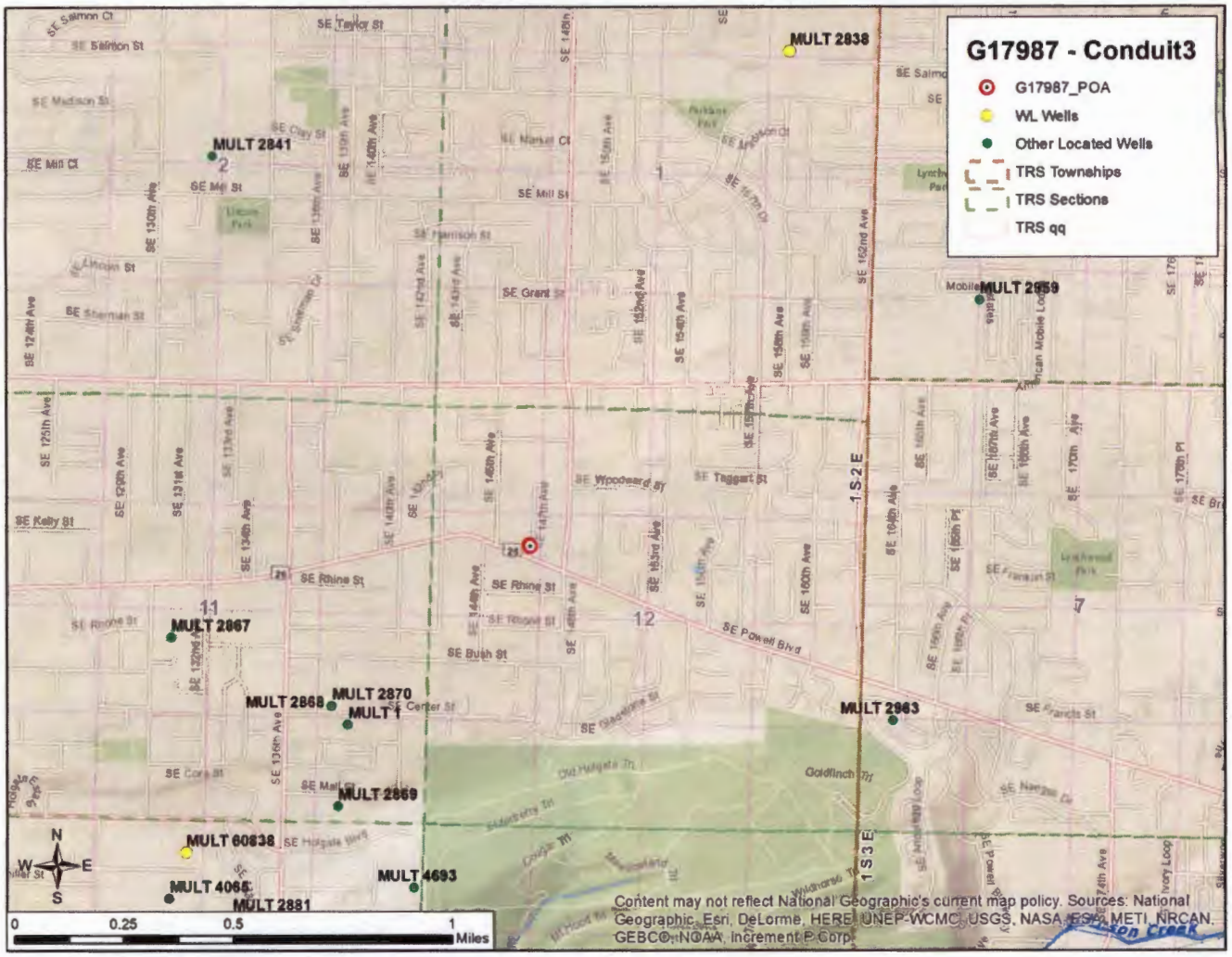
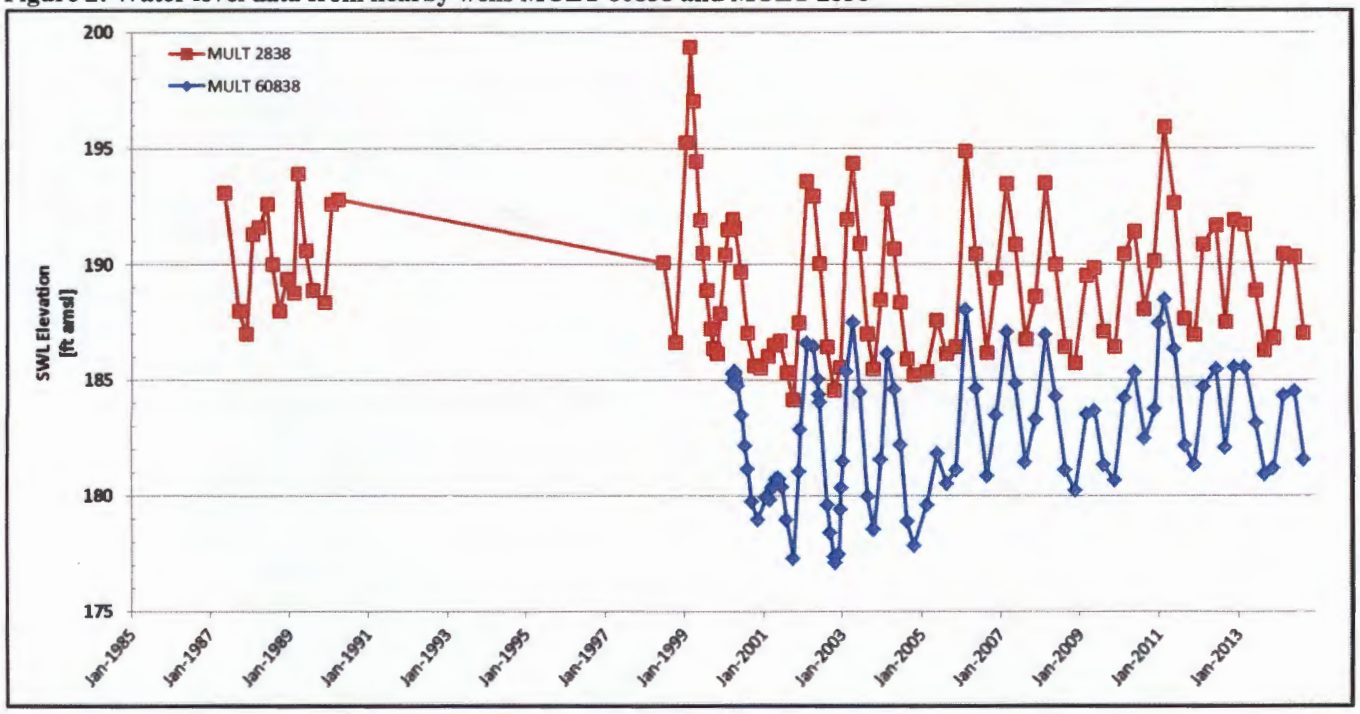


Figure 2: Water level data from nearby wells MULT 60838 and MULT 2838



revised map
by applicant (Ted Ressler)
02/09/2015
-MJT

Application for a Permit to Use Groundwater

In the Name of Lucid Energy

Township 1 South, Range 2 East, Section 12, DLC 33 (W.M.)

LEGEND

- Proposed Point of Appropriation (POA)
- Injection Well
- Water Mainline
- Place of Use (POU)
- Tax Lot

Disclaimer

This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.

Map Notes

Date: February 9, 2015
Data Sources: METRO, BLM
Prepared By: GSI Water Solutions, Inc.

POA Location Description

EW-1
Located 390 feet South and 130 feet West from the center of the Northwest quarter of Section 12, Township 1 South, Range 2 East (W.M.)

IW-1
Located 375 feet South and 135 feet West from the center of the Northwest quarter of Section 12, Township 1 South, Range 2 East (W.M.)

N

0 60 120
Feet

GSI Water Solutions, Inc.