WATER RESOURCES DEPARTMENT

MEMO Sept 4, 2009

TO: **Application G-** 17236

FROM: **GW:** D Mills
(Reviewer's Name)

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 Ground Water Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below.

X Per ORS 390.835, the Ground Water Section is **unable** to calculate ground water 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 water flows necessary to maintain the free-flowing character of a scenic waterway.**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in _____ Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

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

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **9/4/2009**

FROM: Ground Water/Hydrology Section **Donn Miller**
Reviewer's Name

SUBJECT: Application G- **17236** Supersedes review of **none**
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 ground water 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: **Portland VA Medical Center** County: **Multnomah**

A1. Applicant(s) seek(s) **0.38** cfs from **one** well(s) in the **Willamette** Basin, **Columbia** subbasin Quad Map: **Portland**

A2. Proposed use: **Irrig, Suppl Commercial, Semi-annual Testing** Seasonality: **5/1-9/31 for irrig, year round for others**

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	**proposed**	**1**	**CRB**	**0.38**	**1S/1E-S9 NESE**	**615'W, 305'N fr SE cor NE Qtr of SE Qtr S9**
2						
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	**505**	**E180**	**E180**	---	**E600**	**0-120**	**0-122**	**0-600**	**unknown**	---	---	---

Use data from application for proposed wells.

A4. **Comments: The application correlates its proposed well information to that of MULT 2775/60413 which is about 1100' to the north. It is reasonable that conditions will be similar with CRB being the target aquifer. Some variation is to be expected. There aren't many wells in the area so this one was chosen. The proposed well should enjoy a good section of CRB.**

A5. ☐ **Provisions of the Willamette** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: **N/A. OAR 690-502-0240 only manages unconfined alluvium within ¼ mile of a surface water source.**

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

Application G-17236 continued Date 9/4/2009

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

B1. **Based upon available data,** I have determined that ground water* 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 ground water 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 ground water 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 ground water resource; or

d. ☒ **will, if properly conditioned,** avoid injury to existing ground water rights or to the ground water resource:
   i. ☒ The permit should contain condition #(s) **7I (standard)**;
   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 ground water production from no deeper than _____ ft. below land surface;

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

c. ☐ **Condition** to allow ground water production only from the **basalt** ground water reservoir between approximately **0** ft. and **1000** 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 Ground Water 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. **Ground water availability remarks:** **There is limited ground water level tracking in the CRB of the central Portland area. The nearby well log pair for theupland Dental School well to the north about 1100 feet provides information suggesting water level stability. Some other CRB wells to the north in sections 3 and 4 show water level stability over several years. Wells in these section display lower heads that the Dental School well. The heads in sections 3 and 4 are about 10 feet amsl and are approximately the level of the Willamette River. The head at the Dental School well is about 200 feet amsl. This is the expectation for the head at the proposed, upland well. The GW pumpage in the immediate are seems to be light. There are few CRB well logs and the setting is urban with Portland water service. The proposed use is fairly modest as well. The Willamette Basin rules require measuring, reporting, and decline conditions for new ground water permitting from the CRB. This will help for data collection and any future regulation.**

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

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

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**CRB**	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: CRB aquifers are usually confined. Using MULT 2775/60413 as a model, confinement was found there per the first water and SWL entries. Such conditions are likely at the proposed well also.

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	**Unnamed to SSW**	**E200**	**420-325**	**800-1320**	☐	☒	☐	☐	☒
1	2	**Willamette R**	**E200**	**10**	**3900**	☐	☒	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The CRB confined aquifer setting is generally viewed as not connected to surface water. In addition, the unnamed tributary is intermittent throughout its length.

Water Availability Basin the well(s) are located within: Willamette River @ Mouth

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?
NA		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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: NA

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
NA		%	%	%	%	%	%	%	%	%	%	%	%
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: NA

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 ground water 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** The estimated head at the proposed well is much higher than the Willamette River (200 feet versus 10 feet amsl). This speaks to the lack of meaningful hydraulic connection to the Willamette for permitting purposes. The Unnamed tributary of the Willamette to the south of the proposed well traverses the upland basalts. The topographic map characterizes it as intermittent. This means that ground water discharge to the tributary is the result of more recent precipitation and not longer term discharge from the CRB. This would eclipse the fact that the tributary head level passes over a range of heads that could be the same as that found at the proposed well, once drilled. For example, the tributary head occurs at the distance from the proposed well at the following pairs: 800/420, 1320/325, and 2900/120.

References Used: logs MULT 2775/60413, water level data from several wells, file, USGS reports

Application G- 17236 continued Date 9/4/2009

D. WELL CONSTRUCTION, OAR 690-200

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

D2. **THE WELL does not 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**:

a. ☐ constitutes a health threat under Division 200 rules;
b. ☐ commingles water from more than one ground water reservoir;
c. ☐ permits the loss of artesian head;
d. ☐ permits the de-watering of one or more ground water reservoirs;
e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL**

a. ☐ **was,** *or* ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.

b. ☐ I don't know if it met standards at the time of construction.

D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

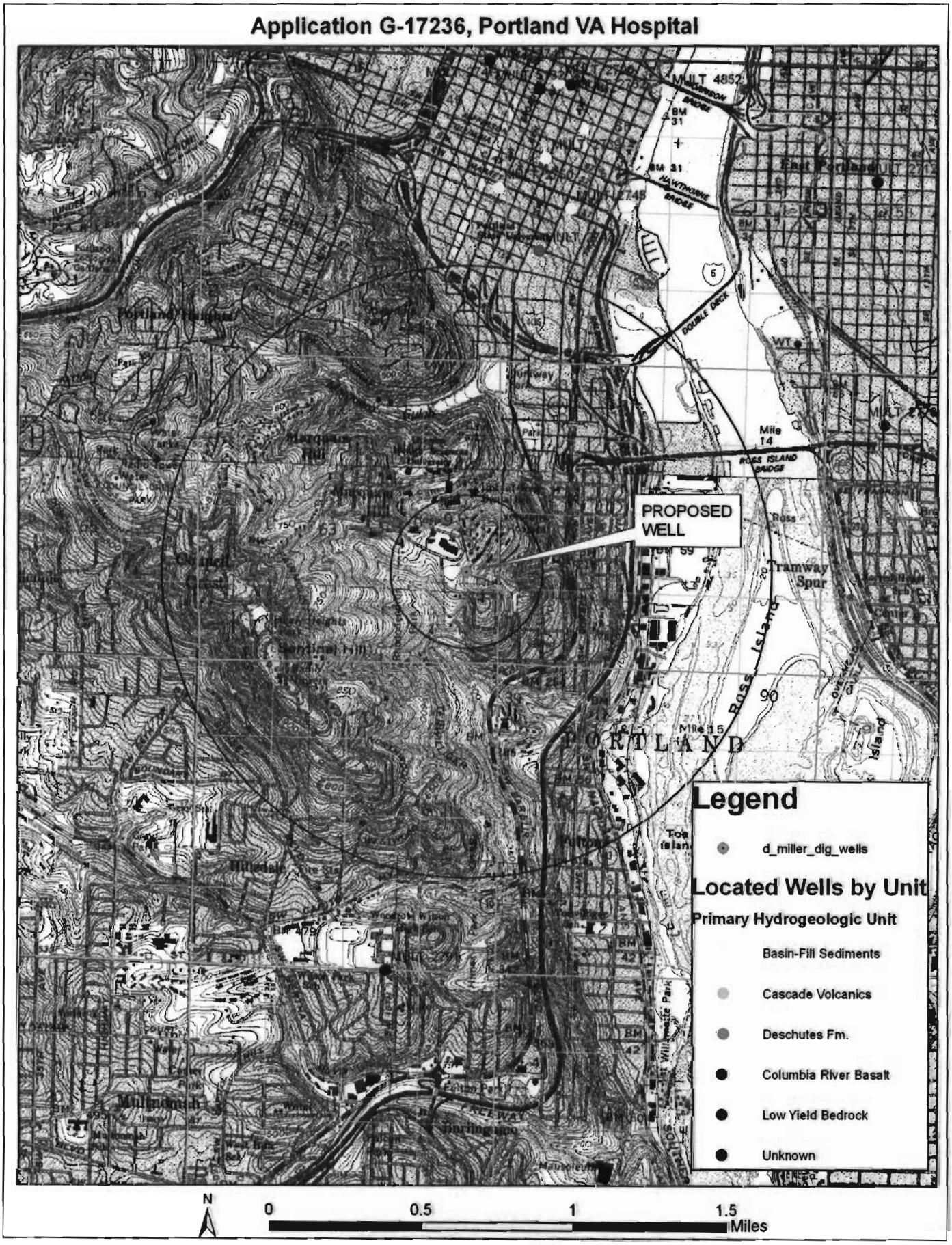
D7. ☐ Well construction deficiency has been corrected by the following actions: _____

_____ _____, 200____.

(Enforcement Section Signature)

D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

Application G-17236, Portland VA Hospital



GW Water Level Input - Standard

Logid MULT 2750 | Well Tag Log | Csg Diam Field | **TRS** 1.00 S / 1.00 E - 4 ADDD

State Obs Well | Well Tag Field | Max Depth 233 | County MULTNOMAH

OWRD Site Name | Quad24 PORTLAND

Owner Well Name WELL #3 / LINCOLN HALL | Lsd Elev 140 | LsdAccuracy 5

Owner PORTLAND STATE UNIVERSITY | Ph Home

Contact | Call Before Visit | Ph Work

Owner | Ph Cell

Comments | FAX

Call First Phone

Well Address

Sow Num	Logid	Source Org	SourceOWRD	Date	Time	MP Hght	Gage PSI	Airline Length	Reprted Wtr Lvl	Verified WL BLS	Export WL BLS	Methoc
	MULT 2750	DRILLER	PERMIT COND PRGRM	08/26/1968					135.333		135.33	UNKN(
	MULT 2750	PE	PERMIT COND PRGRM	02/29/1996		9			115.5	115.5	115.50	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	08/14/1997		-9				113	113.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	01/03/2000		-9			117	117	117.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	01/04/2001		-9			117	117	117.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	12/27/2001		-9			119		119.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	05/06/2003		-9			118		119.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	01/15/2004		-9			119		119.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	12/21/2004		-9			119		119.00	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	12/21/2005		-9			123.33		123.33	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	01/31/2007		-9			126.25		126.25	ETAPE
	MULT 2750	PE	PERMIT COND PRGRM	01/03/2008		-9			120.83		120.83	ETAPE

CRB

GW Water Level Input - Standard

Logid MULT 2740 | Well Tag Log | Csg Diam Field 12 | **TRS** 1.00 S / 1.00 E - 4 CA

State Obs Well | Well Tag Field | Max Depth 230 | County

OWRD Site Name | Quad24

Owner Well Name WELL #1 / CRAMER HALL | Lsd Elev | LsdAccuracy

Owner | Ph Home

Contact | Call | Ph Work

Owner | Before | Ph Cell

Comments | Visit | FAX

Call First Phone

Well Address

Sow Num	Logid	Source Org	SourceOWRD	Date	Time	MP Hght	Gage PSI	Airline Length	Reprted Wtr Lvl	Verified WL BLS	Export WL BLS	Methoc
	MULT 2740	OWRD	WELL LOG	11/18/1965					144	144	144.00	REPOI
	MULT 2740	PE	PERMIT COND PRGRM	02/29/1996		-18			133		133.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	08/14/1997		-18			132		132.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	01/03/2000		-18			135		135.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	01/04/2001		-18			136		136.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	12/27/2001		-18			137		137.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	05/06/2003		-18			136		136.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	01/15/2004		-18			136		136.00	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	12/21/2004		-18			136.08		136.08	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	12/21/2005		-18			140.75		140.75	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	01/31/2007		-18			145.75		145.75	ETAPE
	MULT 2740	PE	PERMIT COND PRGRM	01/03/2008		-18			139.83		139.83	ETAPE
	MULT 2740	CWRE	PERMIT COND PRGRM	02/04/2009		-18			135.75	135.75	135.75	ETAPE

CRB

GW Water Level Input - Standard

Logid MULT 4852 | Well Tag Log | Csg Diam Field | **TRS** 1.00 S / 1.00 E - 3 ba

State Obs Well | Well Tag Field | Max Depth 300 | County MULTNOMAH

OWRD Site Name Waterfront Park Wel | Quad24 PORTLAND

Owner Well Name WATERFRONT PARK | Lsd Elev 29 | LsdAccuracy 5

Owner City of Portland Parks & Recreation Dept | Ph Home

Contact | Call | Ph Work

Owner | Before | Ph Cell

Comments | Visit | FAX

| Call First Phone

Well Address

Sow Num	Logid		Source Org	SourceOWRD	Date	Time	MP Hght	Gage PSI	Airline Length	Reprted Wtr Lvl	Verified WL BLS	Export WL BLS	Methoc
	MULT	4852	OWRD	WELL LOG	06/26/1995					23	23	23.00	REPOI
	MULT	4852	OWNER	PUMP TEST PRGRM	09/25/2003	09:00:00	-2.67			25.42	25.42	25.42	ETAPE

CRB