

**PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS**

TO: Water Rights Section Date June 22, 2010

FROM: Ground Water/Hydrology Section Josh Hackett  
Reviewer's Name

SUBJECT: Application G- 17381 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 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:** Federal Correctional Institution **County:** Yamhill

A1. Applicant(s) seek(s) 0.013 cfs from 1 well(s) in the Willamette Basin,  
\_\_\_\_\_ subbasin Quad Map: Sheridan

A2. Proposed use: Irrigation Seasonality: March 1 – October 31

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    | YAMH 7649 | 1                  | Low-Yield Bedrock | 0.013              | 6S/6W-2 NE-NE         | 300' S, 4600'E fr NW cor S 2**                                   |
| 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    | 205              | 131                | ?          | ?        | 155             | 0-23               | 0-23                  | 15-155               | 115-155                      | 3.5              |                | A         |
|      |                  |                    |            |          |                 |                    |                       |                      |                              |                  |                |           |
|      |                  |                    |            |          |                 |                    |                       |                      |                              |                  |                |           |
|      |                  |                    |            |          |                 |                    |                       |                      |                              |                  |                |           |
|      |                  |                    |            |          |                 |                    |                       |                      |                              |                  |                |           |

Use data from application for proposed wells.

A4. **Comments:** \*\* The legal location provided by the applicant was 300'S, 3950'E fr NW cor S2, but according to the map provided by the applicant, the well is actually located 300'S, 4600'E fr NW cor S2. This review will use the location provided on the map.

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: The applicant's well produces from a confined aquifer, so the pertinent basin rules do not apply.

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

**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) 7B, 7N;
- 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 \_\_\_\_\_ ground water 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 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:** \_\_\_\_\_

The applicant's well is located in an area that contains mostly fine-grained alluvial sediments from land surface to a depth of approximately 20 feet. Low-yield marine shales and sandstones are found beneath the unconsolidated alluvial sediments. The applicant's well produces water from fractures within the low-yield marine rocks. The low-yield aquifer system is characterized by large amounts of drawdown and production rates typically less than 10 gpm.

No water-level data is available to assess the stability of the groundwater system. This suggests the need for long-term monitoring.

\_\_\_\_\_  
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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               |
|----------|-----------------------------|-------------------------------------|--------------------------|
| <b>1</b> | <b>Low-Yield Bedrock</b>    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|          |                             | <input type="checkbox"/>            | <input type="checkbox"/> |
|          |                             | <input type="checkbox"/>            | <input type="checkbox"/> |
|          |                             | <input type="checkbox"/>            | <input type="checkbox"/> |
|          |                             | <input type="checkbox"/>            | <input type="checkbox"/> |

**Basis for aquifer confinement evaluation:** Water levels in nearby wells rise above water-bearing zones. This indicates the wells produce from a confined aquifer.

**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<br>ft msl | SW Elev<br>ft msl | Distance<br>(ft) | Hydraulically Connected?            |                          |                          | Potential for Subst. Interfer. Assumed? |                                     |
|----------|----------|---------------------------------------|-------------------|-------------------|------------------|-------------------------------------|--------------------------|--------------------------|-----------------------------------------|-------------------------------------|
|          |          |                                       |                   |                   |                  | YES                                 | NO                       | ASSUMED                  | YES                                     | NO                                  |
| <b>1</b> | <b>1</b> | <b>South Yamhill River</b>            | <b>190</b>        | <b>180-190</b>    | <b>3350</b>      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input checked="" type="checkbox"/> |
| <b>1</b> | <b>2</b> | <b>Unnamed Trib. To S. Yamhill R.</b> | <b>190</b>        | <b>190-220</b>    | <b>4700</b>      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input checked="" type="checkbox"/> |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |
|          |          |                                       |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |

**Basis for aquifer hydraulic connection evaluation:** Water level elevations in nearby wells are coincident with local streams. This suggests groundwater may discharge to proximal stream reaches. However, due to the physical properties of the low-yield aquifer system, the hydraulic connection is likely to be very inefficient.

**Water Availability Basin the well(s) are located within:** 162: S YAMHILL R > YAMHILL R – AB COZINE CR

**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? |
|----------|----------|--------------------------|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|-----------------------------------------|
| <b>1</b> | <b>1</b> | <input type="checkbox"/> | <input type="checkbox"/> | <b>MF162A</b>           | <b>15.00</b>                 | <input type="checkbox"/> | <b>40.30</b>           | <input type="checkbox"/>     | <b>&lt;&lt;25%</b>         | <input type="checkbox"/>                |
| <b>1</b> | <b>2</b> | <input type="checkbox"/> | <input type="checkbox"/> | <b>n/a</b>              |                              | <input type="checkbox"/> | <b>40.30</b>           | <input type="checkbox"/>     | <b>&lt;&lt;25%</b>         | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|          |          | <input type="checkbox"/> | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |

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? |
|--|------|--|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|-----------------------------------------|
|  |      |  | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|  |      |  | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|  |      |  | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |
|  |      |  | <input type="checkbox"/> |                         |                              | <input type="checkbox"/> |                        | <input type="checkbox"/>     |                            | <input type="checkbox"/>                |

**Comments:** The cone of depression is expected to be deep and narrow in a low-yield bedrock system. This suggests that stream depletion is likely to be much less than 25% after 30 days.

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:**



**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #: \_\_\_\_\_ 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.

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**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).**

\_\_\_\_\_

**Water Availability Tables**S YAMHILL R > YAMHILL R - AB COZINE CR  
WILLAMETTE BASIN

Water Availability as of 6/22/2010

Watershed ID #: 162

Exceedance Level: 80%

Date: 6/22/2010

Time: 9:06 AM

**Water Availability Calculation**Monthly Streamflows in Cubic Feet per Second  
Storage at 50% Exceedance in Acre-Feet

| Month | Natural Stream Flow | Consumptive Uses and Storages | Expected Stream Flow | Reserved Stream Flow | Instream Flow Requirement | Net Water Available |
|-------|---------------------|-------------------------------|----------------------|----------------------|---------------------------|---------------------|
| JAN   | 1,290.00            | 29.00                         | 1,260.00             | 0.00                 | 15.00                     | 1,250.00            |
| FEB   | 1,470.00            | 27.20                         | 1,440.00             | 0.00                 | 15.00                     | 1,430.00            |
| MAR   | 1,260.00            | 19.40                         | 1,240.00             | 0.00                 | 15.00                     | 1,230.00            |
| APR   | 764.00              | 15.40                         | 749.00               | 0.00                 | 15.00                     | 734.00              |
| MAY   | 378.00              | 25.50                         | 353.00               | 0.00                 | 15.00                     | 338.00              |
| JUN   | 171.00              | 46.50                         | 125.00               | 0.00                 | 15.00                     | 110.00              |
| JUL   | 79.00               | 70.00                         | 8.97                 | 0.00                 | 15.00                     | -6.03               |
| AUG   | 47.70               | 58.60                         | -10.90               | 0.00                 | 15.00                     | -25.90              |
| SEP   | 40.30               | 35.70                         | 4.63                 | 0.00                 | 15.00                     | -10.40              |
| OCT   | 53.80               | 9.45                          | 44.40                | 0.00                 | 15.00                     | 29.40               |
| NOV   | 363.00              | 14.60                         | 348.00               | 0.00                 | 15.00                     | 333.00              |
| DEC   | 1,220.00            | 27.30                         | 1,190.00             | 0.00                 | 15.00                     | 1,180.00            |

**Detailed Report of Instream Flow Requirements**

Instream Flow Requirements in Cubic Feet per Second

| Application # | Status      | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   |
|---------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MF162A        | CERTIFICATE | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| IS73556A      | CERTIFICATE | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 | 14.20 |
| IS73557A      | CERTIFICATE | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 | 12.70 |
| IS73558A      | CERTIFICATE | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| IS73559A      | CERTIFICATE | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 |
| Maximum       |             | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |

Well Location Map**G-17381, Federal Correctional Institution**