



# PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date April 2 2016

FROM: Groundwater Section Michael J Thoma  
Reviewer's Name

SUBJECT: Application G- 18203 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: Spencer Mullen County: Jackson

A1. Applicant(s) seek(s) 0.11 cfs from 1 well(s) in the Rogue Basin,  
Sam's Valley subbasin

A2. Proposed use Nursery (80.5 af/yr) 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    | JACK 3697 | 3697               | Bedrock           | 0.11               | 35S/02W-21 SESE       | 160'N, 160'W of SE cor S21                                       |
| 2    |           |                    |                   |                    |                       |                                                                  |
| 3    |           |                    |                   |                    |                       |                                                                  |

\* 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    | 1350             | 218                | 85         | 9/18/1982 | 240             | 0-18               | +2-18                 | 0-240                | 160-240                      | 100              |                | A         |
|      |                  |                    |            |           |                 |                    |                       |                      |                              |                  |                |           |
|      |                  |                    |            |           |                 |                    |                       |                      |                              |                  |                |           |

Use data from application for proposed wells.

A4. **Comments:** \_\_\_\_\_

A5. ☒ **Provisions of the** Rogue (OAR 690-515) 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) 7C (7-yr SWL); 7P (Well Tag); Med. Water-use Reporting ;
  - 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 \_\_\_\_\_ 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 are three wells in the immediate area that OWRD has SWL data for a limited period for and one (JACK 34195) that has a period of record of > 30 yrs. These data show that groundwater levels area stable which implies that the resource is not over-appropriated. There are only a few permitted groundwater POAs in the area near the applicant's proposed POA with the nearest being ~ 3/4 mile away so there is not likely to be significant interference or injury to existing groundwater rights.

There were two well logs submitted with the application that apparently are located on the property. Therefore an OWRD Well ID Tag should be attached to the permitted well (preferably a tag will be affixed to the other well also).

**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    | Bedrock of Payne Cliffs Fm  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|      |                             | <input type="checkbox"/>            | <input type="checkbox"/> |
|      |                             | <input type="checkbox"/>            | <input type="checkbox"/> |

**Basis for aquifer confinement evaluation:** the applicant's proposed POA well log reports SWL >100 ft above 'first water' and the majority of well logs for the area also report SWL above 'first water'

**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                                  |
| 1    | 1    | Snider Cr          | 1265              | 1250-1280         | ~6050            | <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"/>            |

**Basis for aquifer hydraulic connection evaluation:** Similar elevations between GW level and SW level

**Water Availability Basin the well(s) are located within:** Snider Cr > Rogue R – At Mouth (ID# 71626)

**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? |
|------|------|--------------------------|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|-----------------------------------------|
|      |      | <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"/>                |

**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    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (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:**

Interference from pumping could not be estimated because the assumptions of widely accepted analytical stream-depletion models (e.g., Hunt 2003) are not met by the hydrogeology. However, given the distance is > 1 mile and the bedrock likely has a low transmissivity (due to its consolidated, low-yield nature) the interference to the stream will likely be far less than the proposed pumping rate and, given that the proposed pumping rate is only slightly > 1% of the minimum monthly flow for Snider Cr WAB (October Q = 0.90 cfs; proposed Q = 0.11 cfs) it is highly unlikely that the interference will exceed 1% in any month.

- 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:
- ☐ The permit should contain condition #(s) \_\_\_\_\_;
  - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

- C6. **SW / GW Remarks and Conditions:** The proposed POA is > 1 mile from pertinent surface water feature; impacts and interference to streams could not be calculated explicitly but, even if they could, it is highly unlikely that impact would rise to the level of PSI per OAR 690-009.

\*\*Nearby Molby Creek was not evaluated against for PSI because 1) there are no surface-water rights on the creek near the proposed POA, 2) there is no distinct riparian area observed on aerial imagery, and 3) per conversations with local watermaster it flows only following precipitation events and does not likely have a significant baseflow component.

**References Used:**

Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer*. Journal of Hydrologic Engineering. Vol 8(1), pp 12-19

Wiley, T. J., J. D. McClaughry, and J. A. D'Allura. 2011. *Geologic Database and Generalized Geologic Map of Bear Creek Valley, Jackson County, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-11-11.

Wiley, T. K. and J. G. Smith. 1993. *Preliminary Geologic Map of the Medford East, Medford West, Eagle Point, and Sams Valley Quadrangles, Jackson County, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-93-13

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

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

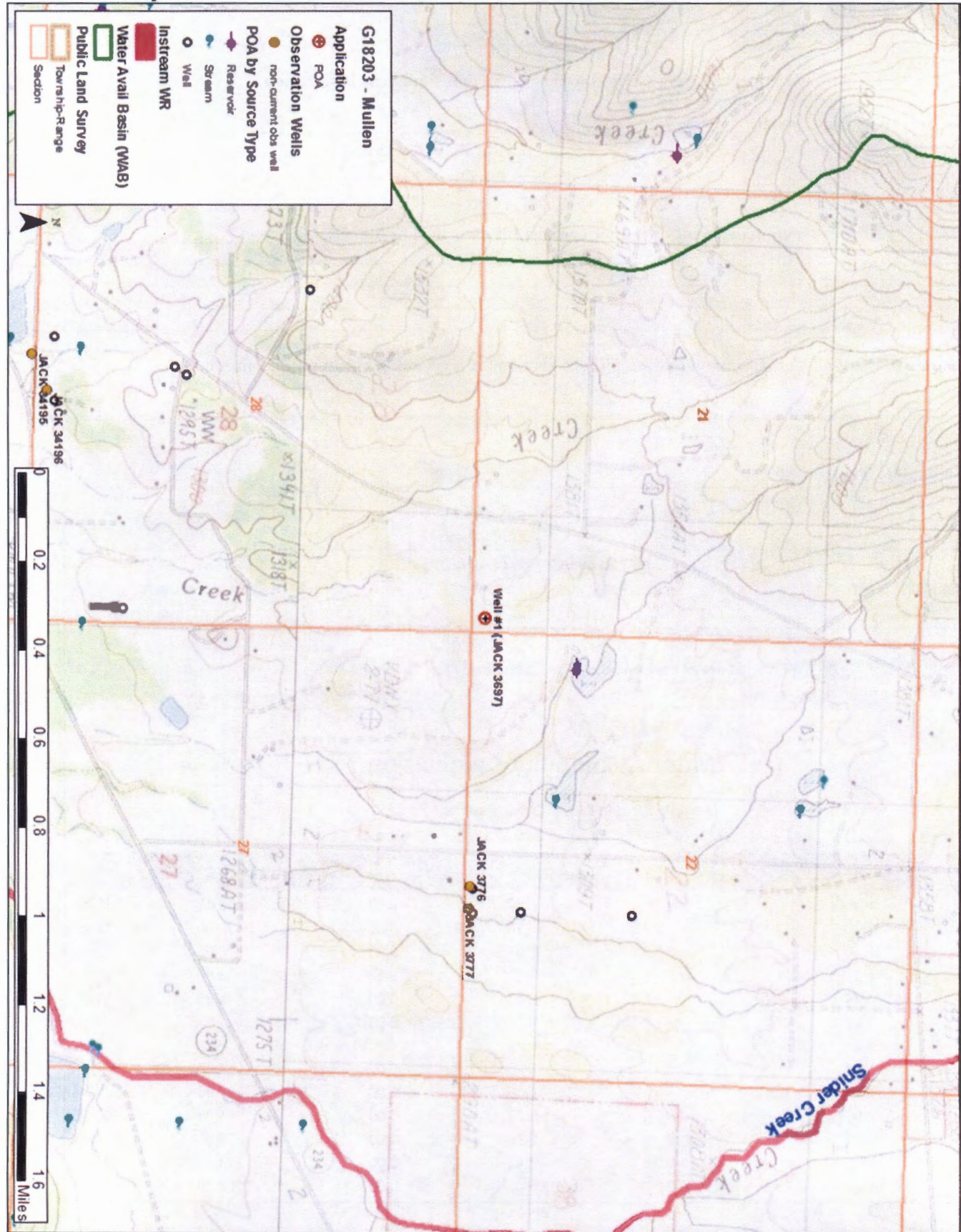
D2. **THE WELL does not appear to meet current well construction standards based upon:**

- 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**

| SNIDER CR > ROGUE R - AT MOUTH<br>ROGUE BASIN |                     |                               |                      |                            |                           |                     |  |
|-----------------------------------------------|---------------------|-------------------------------|----------------------|----------------------------|---------------------------|---------------------|--|
| Water Availability as of 4/2/2016             |                     |                               |                      |                            |                           |                     |  |
| Watershed ID #: 71626 ( <a href="#">Map</a> ) |                     |                               |                      | Exceedance Level: 80%      |                           |                     |  |
| Date: 4/2/2016                                |                     |                               |                      | Time: 11:31 AM             |                           |                     |  |
| Water Availability Calculation                |                     | Consumptive Uses and Storages |                      | Instream Flow Requirements |                           | Reservations        |  |
| Water Rights                                  |                     |                               |                      | Watershed Characteristics  |                           |                     |  |
| <b>Water Availability Calculation</b>         |                     |                               |                      |                            |                           |                     |  |
| Monthly Streamflow in Cubic Feet per Second   |                     |                               |                      |                            |                           |                     |  |
| Annual Volume 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                                           | 8.40                | 1.78                          | 6.62                 | 0.00                       | 26.00                     | -19.40              |  |
| FEB                                           | 17.20               | 2.05                          | 15.10                | 0.00                       | 26.00                     | -10.90              |  |
| MAR                                           | 12.40               | 1.39                          | 11.00                | 0.00                       | 26.00                     | -15.00              |  |
| APR                                           | 8.61                | 0.51                          | 8.10                 | 0.00                       | 11.80                     | -3.70               |  |
| MAY                                           | 4.44                | 0.81                          | 3.63                 | 0.00                       | 4.98                      | -1.35               |  |
| JUN                                           | 2.07                | 1.13                          | 0.94                 | 0.00                       | 4.92                      | -3.98               |  |
| JUL                                           | 1.23                | 1.51                          | -0.28                | 0.00                       | 2.58                      | -2.86               |  |
| AUG                                           | 1.04                | 1.25                          | -0.21                | 0.00                       | 1.60                      | -1.81               |  |
| SEP                                           | 0.94                | 0.82                          | 0.12                 | 0.00                       | 0.96                      | -0.84               |  |
| OCT                                           | 0.90                | 0.27                          | 0.63                 | 0.00                       | 1.00                      | -0.37               |  |
| NOV                                           | 1.01                | 0.18                          | 0.83                 | 0.00                       | 2.55                      | -1.72               |  |
| DEC                                           | 4.33                | 0.91                          | 3.42                 | 0.00                       | 14.70                     | -11.30              |  |
| ANN                                           | 7,760.00            | 759.00                        | 7,000.00             | 0.00                       | 7,390.00                  | 357.00              |  |

Well Location Map



**Water-Level Trends in Nearby Wells**