Oregon
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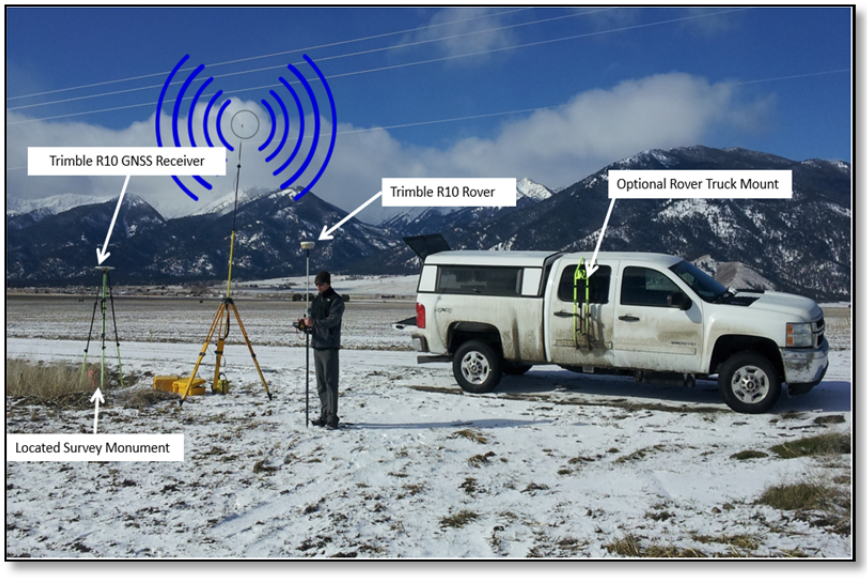
Date: 17 July 2018

To: Harney Basin Groundwater Study Advisory Committee

From: Jerry Grondin OWRD Hydrogeologist

Subject: OWRD Groundwater Study Activity Update

1. Well Measuring Point Elevation Surveying
   - Surveyors = DOGAMI Oregon Lidar Consortium
   - OWRD staff (directions, notes, photos, public)
   - Total wells = 201 on list (see map showing 199 wells)
     a. 108 wells outside completed Lidar coverage
     b. 93 within completed Lidar coverage
   - Week 1: 10 to 18 June 2018 (Darrick)
     a. 82 wells attempted
     b. 81 wells completed
        - 75 outside completed Lidar coverage
        - 6 within completed Lidar coverage
     c. 1 well outside completed Lidar coverage unsuccessful due to no signal
   - Week 2: 29 July to 4 August 2018 (Jerry)
     a. Date change due to logistical reasons
     b. As many of remaining 119 wells as possible
        - 32 outside completed Lidar coverage (Weaver Springs & Western wells)
        - 87 within completed Lidar coverage (priority = Recorder wells and surrounding wells)



A Trimble R10 base station antenna located over a known reference point. Corrected GPS position and elevation information is transmitted either by Internal Radio or by a Trimmark III base radio to the R10 GPS rover unit.

Harney Basin

Synoptic GW Level Wells
199 Candidates for
Well MP Elevation Surveying

Oregon Water Resources Department
May 2018

Explanation

Candidate Wells for Well MP Elevation Surveying and Lidar Coverage in the Harney Basin

- Harney_Selected_Wells_for_Well_MP_Elevation_Surveying
- DOGAMI_OLC_Lidar_Projects_Completed_03_13_2018
- DOGAMI_OLC_Lidar_Projects_in_Progress_03_13_2018
- DOGAMI_OLC_Lidar_Projects_Developing_03_13_2018
- Other_Completed_Lidar_Projects_03_13_2018
- Harney_Basin

Software: ESRI ArcMap ver. 10.1
Source File: S:\groups\gwater\grondin\areas\Harney_Valley\arcview\Harney_Valley_POU_GW_Recharge_2014_Analysis.mxd

Oregon Lambert Projection, NAD 83 (EPSG# 2992)

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2. Observation Well Drilling
   - OSU Burns Agricultural Research Station
     a. Wells = 3: very shallow, shallow, deep
     b. Contract = Down Right Drilling
     c. Drill date = under discussion (hopefully summer)
   - Future Drilling
     a. Uncertain, depends on budget, other projects
     b. Drill date = spring 2019 (earliest date)
     c. Potential sites include Silver Creek Valley
3. Geologic Mapping
   - Geologic map for entire Harney Basin:
     a. USGS: Sherrod & Keith (2018)
   - Quadrangle mapping by DOGAMI
     a. Bob Houston completing previous mapping
     b. Jason McClaughry continues mapping effort
     c. Mapping effort coordinated with OWRD
4. Geologic Hydraulic Properties
   - OWRD Groundwater Permit Pump Tests:
     a. Harney County: 43 pump tests (one test per well)
        - Calculated transmissivity = all 43 tests
        - Calculated storage coefficient = 0 tests
        - Tests rated excellent quality = 0 tests
        - Tests rated good quality = 7 tests
        - Tests rated fair quality = 28 tests
        - Tests rated poor quality = 6 tests
        - Tests with no quality rating = 2 tests
     b. Need to review each of these tests
   - OWRD Harney "Well Test" Database now Running:
     a. Specific capacity derived from well logs
     b. Accesses 2,414 well logs in or near Harney Basin

565 = air test	310 = bailer test	1438 = pump test
27 = undetermined test	27 = flowing well	29 = no test recorded
12 = uncertain		

     c. Specific capacity calculated = 1746 well logs
     d. Transmissivity calculated = 1632 of the 1746
     e. Have ability to "corrected" values for calculations in addition to original values
   - Future Activity:
     a. Analyze specific capacity data
     b. Analyze OWRD GW permit pump test data
     c. Conduct strategic aquifer tests:
        - Conduct in vicinity of observation wells
        - Pumping well and observation wells
        - Calculate transmissivity & storage coefficent
        - November 2018 to February 2019
     d. Conduct beginning of irrigation season tests:
        - Conduct in vicinity of observation wells
        - Monitor nearby pumping & GW levels

5. Groundwater Level Measurements
    - Completed:
        a. May 2018 quarterly
        b. Instrument OWRD GW permit observation well (Silver Creek Valley above Moon Reservoir)
    - Future:
        c. August 2018 quarterly
        d. November 2018 quarterly
        e. Instrument new observation wells at OSU Burns Agricultural Research Station