

MEMORANDUM

TO: Steve Lester

FROM: Angie Grimm

DATE: April 19, 2012

RE: SMT Investors/Scheff Complaint Investigation

Rick Collingwood and I conducted a site investigation on 4/13/12. We meet with Eric Orr (farmer of property) on site. Mr. Orr showed us the two PODs (Well #1 and Well #2), the irrigation system, and the POU (irrigated acres) associated with water right 61-12112. We were able to determine the irrigation system in place, the extent of irrigation, the location of and details regarding ponds on the property, and the degree of compliance with water right conditions.

Summary of Complaint and Site Investigation

Timeline of Events:

- Jim Scheff submitted complaint 4/6/2012. Mr. Scheff sent a copy to the property owners (various companies in Arizona, one of which is SMT Investors).
- Complaint stated Mr. Scheff's domestic well's static water level is declining due to excessive consumptive use by a neighboring properties' irrigation practices. He requested IDWR look into the irrigation practices associated with the neighboring property and determine if use is in accordance to the water right(s) and if water is being wasted.
- Rick Collingwood accompanied me for the site visit 4/13/2012. We met with Eric Orr on site. Visited the second well added to the system (Well #2) first then visited the original well (Well #1).

Site Investigation:

- **Well #2 Diversion Info:**
 - Location = NENE Sec 11 T2S R5E – N 43.27307° W116.81939°.
 - IDWR Tag No. A0004702 – IDWR Monitoring Well No. 02S 05E 11AAB1.
 - Well Pump & Motor = 60 hp GE motor Model No. 5K6257xH12A Serial No. DKJ417463.
 - Booster = 25 hp booster.
 - No flowmeter.
 - Well motor Idaho Power meter number = 36 454 086 (no other uses).

- Booster Idaho Power meter number = 36 454 087 (no other uses).
- 10" discharge pipe from the well to 8" buried mainline.
- Pressure down line of booster = 50 psi.
- Total well depth and depth of bowls for irrigation pump unknown.
- Static water level 327.41 ft (3/19/12).
- Piping to hoses off 10" discharge pipe historically irrigated pasture and supplemented large pond area directly south of Well #2. Valve to these hoses closed. Mr. Orr said he does not irrigate pasture or put water into ponds from either well.
- 4" PVC piping off 8" line into small shed adjacent to Well #2. Mr. Orr stated PVC line goes to 1,000 gallon storage tank used by house southwest of Well #2. This piping not in place at time of Adjudication staff site visit in 1994.

➤ **Well #1 Diversion Info:**

- Location = NESE Sec 11 T2S R5E – N 43.26584° W115.82299°.
- Well Pump & Motor = 200 hp US Electric motor serial no. cc1009917 w/ Singer ELine Pump no. 54862.
- 10" discharge pipe w/ inline flowmeter (does not appear operational). Could not read flow reading, totalizer read 175276 (units and multiplier unknown). Maybe same flowmeter in place at time parent right (61-7384) licensed.
- Well motor Idaho Power meter number = 41 121 919 (no other uses).
- 10" discharge line to 12" manifold at 'Y' back down to 10" then 8" buried mainline.
- 4" line from manifold at 'Y' to trees on far west edge of property. Historically used for irrigation of trees and wild fire protection measure, but Mr. Orr says no water diverted now for those purposes.
- Pressure readings downline of 'Y' to the north (towards pivot) ~18 psi to the south (towards handlines) ~54 psi. Not clear why only ~18 psi to the north, when all pressure readings in system ~50 psi.
- Total well depth unknown. Bowls set at ~430 ft per Mr. Orr.

➤ **Irrigation System Info:**

- 8" buried mainline w/ 1 pivot + ~50 operational risers set 50 ft apart for handlines.
- Up to 10 handlines w/ 32 sprinklers set 40 ft apart on each line.
- 1/8" nozzles on 1/2 of handlines, 9/64" nozzles on other 1/2.
- Pivot runs on low (~660 gpm per Mr. Orr) most of time. Pivot can run on high (~950 gpm per Mr. Orr), but doesn't allow for concurrent use of handlines.

➤ **Typical Irrigation Practices:**

- Run pivot with 4 handlines (2 w/ 1/8" nozzles and 2 w/ 9/64" nozzles) for 3 days (cooler months) to 7 days (hotter months) 24 hrs a day.

- Turn pivot off run 10 handlines (5 w/ 1/8" nozzles and 5 w/ 9/64" nozzles) for 7 days 24 hrs a day.
- Repeat process for irrigation season. Usually begin irrigating first week of April and ends late September.
- Booster on when pivot running, operation of 10 handlines does not require use of booster.
- Sprinkler head pressure = 50 psi
- Diversion rate 1,160 gpm (2.58 cfs) 24 hrs/7days a week with both wells and booster running (maximum extent of typical use) per Mr. Orr.
- Irrigating 222 acres per Mr. Orr. Analysis of 2011 aerial photography indicates as much as 243 acres irrigated. Pivot irrigating winter wheat. Done by 15th of July. Rest of farm in barley now, chop end of May. Then plant beans.

➤ **Pond(s) Info:**

- Large pond area (3-4 connected excavations) south of Well #2 (NE NE Sec 11) filled with spring snowmelt runoff via natural channel(s). Evidence portion (~40 ft) of access road to gravel pit washed out recently likely by this year's runoff event in channel that drains to large pond area. Excavations forming this pond area occurred sometime between 1987 and 1992 (aerial photography).
- Pond (W ½ SW NE Sec 11) fills with snowmelt runoff, but also catches sprinkler runoff.
- Two smaller ponds (NW NW NW and W ½ SW SE Sec 11) are result of sprinkler runoff.
- No water is pumped from these ponds for any purpose. No water is deliberately pumped to these ponds from either well per Mr. Orr.
- Number of water fowl and other wildlife seen at large pond area south of Well #2.

- Map and photos attached for reference. Used information above to estimate diversion from the system. See attached notes for calculations.

Conclusions:

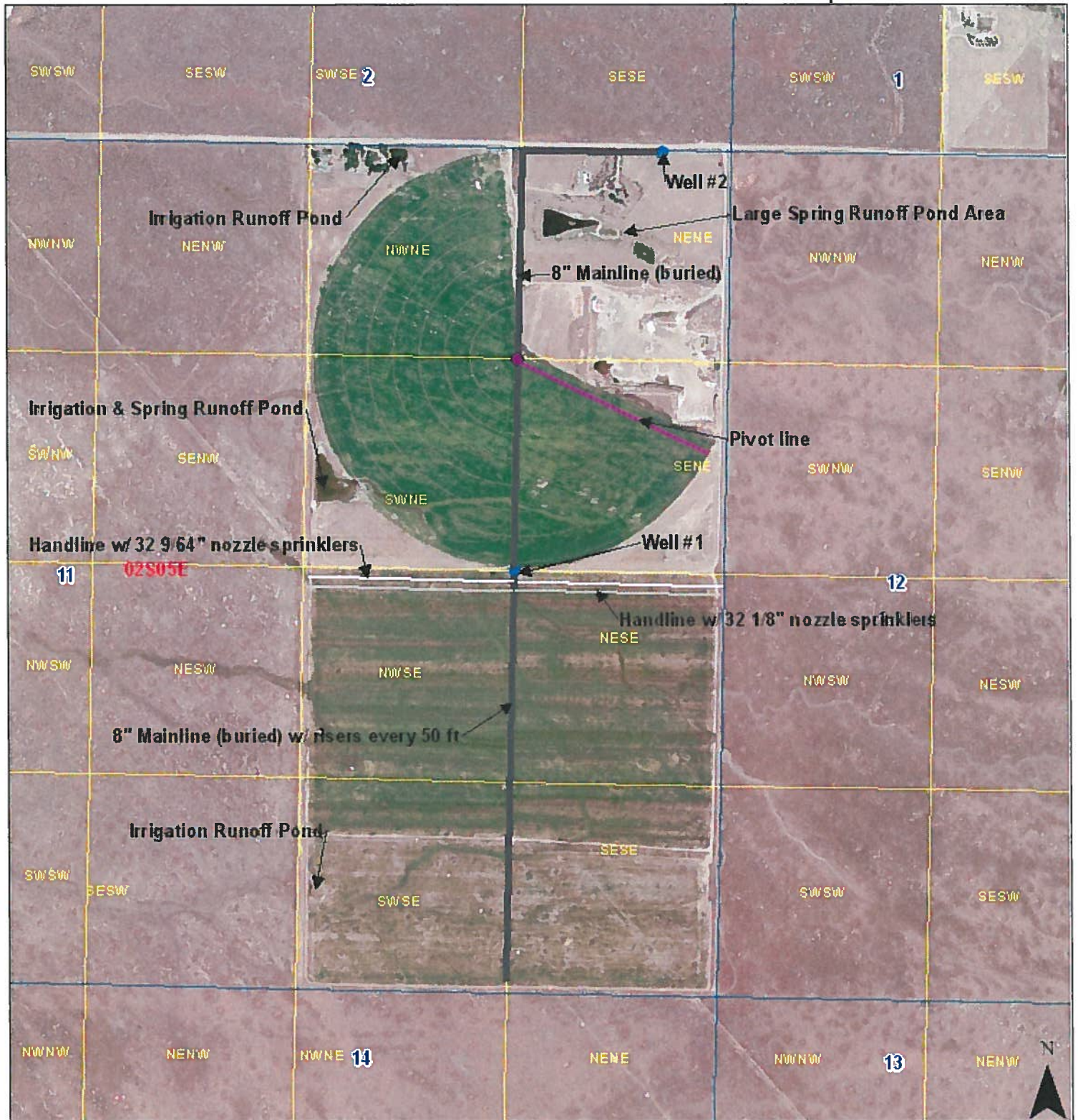
- **Total system capacity = 3.31 cfs** (theoretical calculation using HP equation).
- **Diversion rate = 2.58 cfs** (pivot w/ 4 handlines – Mr. Orr estimated) **or 2.67 cfs** (10 handlines - estimate based on irrigation system components).
- **Annual diversion volume typical irrigation season (April 1 to Sept 30) = 952.8 AFA** (assuming diversion rate of 2.58 cfs ½ of typical irrigation season and 2.67 cfs other ½). Water right is limited to 992.0 AFA. **Typical irrigation practices in place = 952.8 AFA < 992.0 AFA = use within water right.**

- **Annual diversion volume entire irrigation season (April 1 to Oct 31) = 1,114.3 AFA (assuming same diversion rates above). If irrigated entire irrigation season, may likely exceed water right volume limitations (1,114.3 AFA > 992.0 AFA).**
- **243 acres irrigation is less than water right limitation of 248 acres** inside 318 acre PPU. Irrigation within each 40-ac tract does not exceed limitations.
- Water right requires means of flow measurement in place for both PODs. **No functional flowmeters** found on the wells. Individual power meters offer possibility of PCC computations, but must have approval of this method from IDWR Water Distribution Section.
- There are **no recorded water rights authorizing storage (ponds)** on the property.
- Property formally enrolled in CREP set-aside program. Confirmed CREP agreement terminated in 2008.

Recommendations for Further Action:

- IDWR should formally inform property owners, Mr. Eric Orr, and Mr. Jim Scheff findings of this site visit by sending a copy of this memo or other documentation.
- IDWR Western Regional staff may wish to seek the assistance of IDWR Water Distribution section to confirm current diversion volume for system and compliance options with regard to the measurement device condition.
- IDWR should inform property owners of flow measurement device/means condition of water right and discuss options for compliance with this condition with regard to both wells.
- IDWR should inform property owners of water right requirement for storage associated with ponds on property. Subsequent filling of a water right application, especially for large pond area, requesting use of surface water for wildlife and/or aesthetic storage may be required.

SMT Investors/Scheff Site Visit Map



Legend

- 61-12112 POD
- Township/Range
- Sections
- QQ

0 0.05 0.1 0.2 0.3 0.4 0.5 Miles

2011 Bing Aerial Photo



SMT Investors/Scheff Complaint 4/13/2012 Photo #1: Well #2 facing south.



SMT Investors/Scheff Complaint 4/13/2012 Photo #2: Well #2 booster pump facing southeast. 8" pipe to mainline on left side of photo.



SMT Investors/Scheff Complaint 4/13/2012 Photo #3: Well #2 diversion system facing east. 8" pipe to mainline going into ground. Booster pump and well in background. PVC pipe in upper right of photo goes to buried 1,000 gallon storage tank for house.



SMT Investors/Scheff Complaint 4/13/2012 Photo #4: Well #1 facing north. Dysfunctional flowmeter on discharge pipe on left side of photo.



SMT Investors/Scheff Complaint 4/13/2012 Photo #5: Well #1 diversion system facing west. 10" discharge pipe from well in foreground of photo to 12" manifold that splits diverts water to mainline north (right) to pivot and mainline south (left) to risers for handlines.



SMT Investors/Scheff Complaint 4/13/2012 Photo #6: Large pond area south of Well #2 facing northwest. Pond area consists of several connected excavations.