

MEMO

TO: 63-33423 Gem State Academy
FROM: Sandy Hemenway
DATE: 10/7/2010
REF: Licensing Review

The original 2/4/2010 approved Permit 63-33185 was owned by Gem State Academy. The Parent 63-33185 was split into 63-33422 and 63-33423. There is no ownership change issues, since all property never changed ownership, but is still owned by the Idaho Conference of Seventh Day Adventists, Inc./Gem State Academy (Tax Lot information was updated 8/2/2009, showing the same information). Proof of application of water to beneficial use was due on or before 2/1/2011. 63-33423 is for 1.5 acres domestic-irrigation use (landscaping, gardens, and lawns) for 3 homes, not covered by 63-11308. There are no overlaps for irrigation use for this POU. 63-33423 and 63-11308 share the same points of diversion. There is no supplemental water, since Wilder Irrigation District confirmed that the POU is classified as High Ground, and cannot receive surface water.

On 6/28/2010, IDWR received from Terry Scanlan, of SPF Engineering, a copy of the Proof of Beneficial Use (signed 6/22/2010), and the Field Report conducted on 4/6/2010. 63-33185 was split into 63-33422 (referred to as 63-185 Part A in the 4/6/2010 field exam), and 63-33423 (referred to as 63-33185 Part B). For 63-33422, the Licensing Review Memo describes the system and information pertaining to that water right, and is contained in file 63-33422. **For 63-33423**, the system consists of 2 Groundwater sources (same sources as on License 63-11308). 63-33423 consists of domestic irrigation for 3 residences. The primary well (well 5) is located behind the gym in the middle of the SESW of Section 10. It consists of a 16-inch casing, variable speed Berkeley 6T275, 30 Hp submersible pump, 4-inch discharge, 45 psi, 120 ft static, constructed 9/25/1995, and 310 ft deep. At well 5, there is a McCrometer propeller type flow meter, with 4-inch discharge. The secondary/backup well (well 1) is located in the SWSW of Section 10 (near the corner of 10th Street and Karcher). A isolation valve can be opened for use of well 1, in the event that well No. 5 requires service or to meet demand. Well 1 was drilled on 5/21/1969, has a 16-inch casing, 304 ft deep, 133 ft. static, has a 10 Hp unknown-make submersible pump, 2-inch discharge, and runs at 45 psi. A flow test was conducted by Anderson and Kelly Consultants in Engineering and Geology in 1970 with results of 2.0 gpm/ft.

The field exam recommended amendments for changing a point of diversion and adding a point of diversion (which was covered in the approved 2/5/2010 Transfer 75497 with 63-11308 involving wells #1 and #5, for domestic, commercial, irrigation).

On 10/5/2010, in a phone conversation with Jamie Delmore, Public Drinking Water Program Coordinator, at Southwest District Health Dept. (208) 455-5403, she confirmed which well logs belonged to Well No. 1 and Well No. 5. Kendall Thomas, Maintenance Supervisor at Gem State Academy (208) 989-6926, also confirmed the locations of the wells, and dates they were drilled.

The System Capacity was calculated in the following manner:

Well No. 1:

- (1) License 63-11308 (for wells #1, 2, and 3) shows well #1 with capacity of 0.25 cfs.
- (2) On 3/3/1970 Anderson and Kelly Consultants conducted a flow test on well #1 at 2.0 gpm/ft of draw down (copy included with 4/6/2010 field exam). They recommended permanent pumping equipment be designed to produce 175gpm (0.39 cfs) with a setting at 230 ft.
- (3) A theoretical for well #1: $(8.8) \times (10 \text{ Hp}) \times (0.7 \text{ eff}) / [(133 + 10) + (2.31 \times 45 \text{ psi})] = 0.23 \text{ cfs}$ (BACK-UP WELL).

Well No. 5:

- (1) **The 1995 Well Log Range** shows 2 (2)-hr pump tests. 400 gpm (0.89 cfs), and 690 gpm (1.53 cfs).
- (2) **The Berkley Pump Curve** shows: 300 gpm (0.67 cfs).
- (3) **Theoretical for well #5:** $(8.8) \times (30 \text{ Hp}) \times (0.7 \text{ eff}) / [(120 + 10) + (2.31 \times 45 \text{ psi})] = 0.79 \text{ cfs}$ (PRIMARY WELL).

SPF Engineering used 0.75 eff., but IDWRs standard is .70 eff. unless a higher efficiency can be demonstrated by the operator (Appendix 2 Procedure for Determining Rate of Flow).

In the 4/6/2010 Field Exam conducted by SPF Engineering, they calculated the system capacity as (0.22 cfs well 1 + 0.69 cfs well 5 = 0.91 cfs).

RECOMMENDED CAPACITY OF SYSTEM: 0.25 cfs (well #1, as licensed) + 0.67 cfs (pump curve, well #5) = 0.92 cfs system capacity. At the current time Gem State Academy is using well #1 as a back-up well, but it is interconnected with the same system utilized by well #5. For this reason, the capacity of the system is 0.92 cfs.

RECOMMENDED VOLUME:

Vir = 1.5 acres X 4.5 afa = 6.8 afa

Vdr = 0.03 cfs X 260 X 1.9835 = 15.5 afa

Vdr (entire system capacity) = 0.92 cfs X 260 X 1.9835 = 474.5 afa (205.8 afa 63-11308, on same system)

V = 6.8 afa

RECOMMENDED CFS:

0.02 cfs X 1.5 acres = 0.03 cfs.

63-33423 capacity of system is 0.92 cfs.

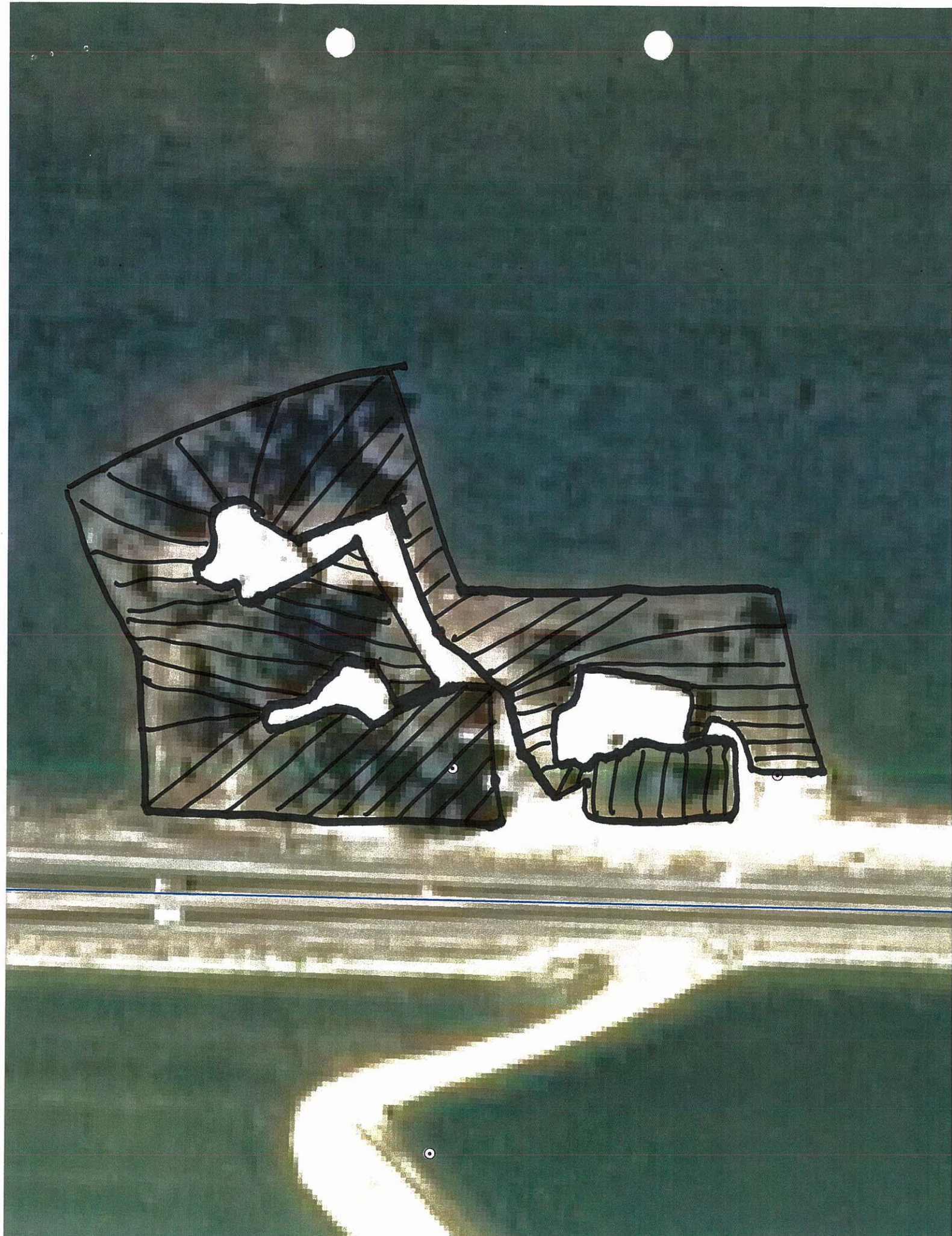
License 63-11308 was limited to the capacity of 0.62 cfs and 205.8 af. With the 2/5/2010 transfer 75497, and wells #1 and #5 making up the combined system capacity of 0.92 cfs, there will be no problem supplying the additional 0.03 cfs for 1.5 acres irrigation. Even if the primary well #5 (0.67cfs capacity) is the only source being utilized, the capacity of that one well is sufficient to supply the additional 0.03 cfs to irrigate the 1.5 acres in question for 63-33423 (63-11308 was limited to 0.62 cfs).

RECOMMENDED PERIOD OF USE:

Same as on Permit. 3/1 - 11/15.

CONDITIONS:

No. 121 was replaced with 103 with Licensing.



 **Check Administrative Area Results**



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Season Of Use 3/1 - 11/15
Headgate Requirement 4.5
Consumptive Use 3.5
DEQ Nitrate Priority Lower Boise/Canyon County
Irrigation Company BOISE PROJECT BOARD OF CONTROL
Irrigation Company WILDER IRRIGATION DISTRICT
Source Water Plumes SOMERSET WEST WATER CORP
Source Water Plumes LAKEVIEW WATER COMPANY 1
Source Water Plumes GEM STATE ACADEMY
Administrative Basin 63
Water District 63 - Boise River



No Details Available For This Record

