

MEMORANDUM

TO: Water Right File 63-33669

FROM: Daniel Nelson – Analyst 3

DATE: January 22, 2018

SUBJECT: Licensing Review of Water Right 63-33669

This field exams for these rights were performed by Certified Field Examiner Alexandra Clark of SPF Water Engineering. All of the diversion rates, volumes, and overlapping water rights appear to have been properly addressed. I was not able to replicate the irrigated acres of the irrigation place of use.

The Idaho Department of Water Resources (Department) mapping technology doesn't have current aerial photography, so we were not able to verify the places of use using the Department mapping system. I was able to verify the places of use for the ponds and the irrigation uses using Google Earth. The maps are included with this memo. The field examiner created approximately 60 shapes to define the irrigation place of use. I tried to recreate the same shape files, and I came up with approximately ½ acre less than the field examiner. With all of the very small individual irrigated areas, I am inclined to go with the field examiner's assessment, since they were the ones visiting the site.

Irrigation Storage and Irrigation From Storage:

Another issue dealt with the irrigation storage and irrigation from storage. From the information provided, there appears to be very little irrigation storage and irrigation from storage. The system is designed to operate the irrigation system from canal water, and then when the canal water isn't adequate, the water from the ponds gravity flow to the irrigation system. The entire system based on maintaining a head elevation pressure in the pipeline of approximately 2564 feet.

The water from the canal comes onto the property at an elevation of approximately 2571 feet. This creates a head in the pipeline to Irrigation diversion structure #1. At irrigation diversion structure #1, the water elevation is kept at 2564.74 feet by allowing water to go through the Bodily Property diversions.

Water from irrigation structure #1 can then go to the irrigation pump station (Elevation 2556) or go to the ponds. The pond level is at 2564.45 feet. Therefore, the water in the pipeline between the pond and irrigation structure #1 is relatively static. If the water from the pond exceeds the 2564 elevation level, water from the pond is pushed down to irrigation structure #1. If the pond falls below 2564 feet in elevation, water from the canal is pushed to the pond. Once the pond level falls below 2564 feet, a float valve in the pond automatically turns on the well to maintain the pond level and supply water from the well to irrigation structure #1. The entire concept is based on maintaining the water elevation in irrigation structure #1 at 2564 feet.

When you use this type of system, the actual irrigation storage and irrigation from storage is very small, because the storage component only utilizes the storage and from storage components based on the float valve at the pond that turns on or off the well pump. There is no way that this volume can be calculated, so using pond capacity should be adequate to ensure that they have the ability to completely empty the ponds if necessary. Therefore, I am recommending that the irrigation storage and irrigation from storage be limited to the 5 af when combined with the other storage uses volumes.

Water Right Overlap:

The field report states that wastewater irrigation right 63-4935 overlaps the place of use. Review of water right records confirm this overlap. The field report includes a draft change of ownership form, but the change of ownership has not been submitted as of the date of this memorandum. A combined limitation limit is required for this permit, but the permit holder only owns a portion of water right 63-4935. Since we cannot split the water right without the proper documentation, we will need to include the entire water right in the combined limitation condition. The condition will read as follows:

Rights 63-4935 and 63-33669 when combined shall not exceed a total diversion rate of 0.54 cfs, a total annual maximum diversion volume of 122 af at the field headgate, and the irrigation of 27 acres.



The upper Google earth map shows approximately 6.5 acres. The certified field examiner found 7 acres. Due the number of tight irrigated spaces, this could be a result of rounding issues. Therefore, I am going to agree with the examiner that 7 acres were irrigated. The

