

MEMORANDUM

Date: November 7, 2008
To: Water Right File 63-31177, 63-31178 and 63-31505.
From: medl
Re: license review

Applicant

It is not apparent from the information in the backfile that the incentive for these ground water rights was to replace surface water irrigation that the Frisbys were required to relinquish. The Frisbys wanted to keep irrigating these POU's with surface water but were prohibited from doing so. Therefore the permit conditions requiring surface water use in preference to ground water were incompatible with the motive for the permits. The Frisby Farm had expanded its surface water use to acres beyond those that Black Canyon Irrigation District (BCID) inventory had allocated and was being curtailed. In order to keep all the acreage in production, ground water was sought.

In 2001, Scanlan Engineering conducted an investigation on behalf of the Frisbys to determine the flow direction and availability of water supply for 63-31177 and 63-31178. His report supports exemption from the administrative hold in Basin 63 primarily because at these 2 well sites, the groundwater flow is in the direction of the Payette and Snake Rivers where water is available for appropriation.

United States Bureau of Reclamation (USBoR) protested 63-31177 and 63-31178 because some of the proposed irrigated acreage was within the boundary of BCID. BCID administers USBoR water. The Frisbys hold BCID irrigation shares and had an irrigation system which co-mingled ground water and BCID water. IDWR hearing officer, Gary Spackman, presided over negotiations which resulted in a settlement agreement between the three parties (Frisbys, USBoR and BCID). To resolve the protests, specific conditions must be added to any permit or license issued to the Frisbys in connection with 63-31177 and 63-31178.

Proof of Beneficial Use for 63-31177 and 63-31178 were due July 1, 2007. Proof for 63-31505 was due August 1, 2007. Proof of Beneficial Use for all three rights was submitted on July 2, 2007 and included the fee necessary to solicit field exams from IDWR personnel. However, the permit holder hired SPF Water Engineering, LLC. to perform the Beneficial Use Field exams. The exams were conducted 5/21/08 by Terry Scalan. The three exam write-ups were completed 6/12/08 and the three exam reports were received at IDWR on 6/16/08. Accompanying the reports was a cover letter requesting that the exam fee, which had been submitted with the Proof of Beneficial Use forms, be refunded to the Frisbys. Typically the fees are a necessary component to timely and complete proof and cannot be refunded without putting the processing of a water right in jeopardy. However, Gary Spackman approved the refund to this permit holder.

Source and POD

63-10785, 63-31505 and 63-31178 are diverted from the same well, which is known as the East well in the SPF Water Engineering field exam narrative. 63-31177 is diverted from a separate well, known as the West well.

Transfer 63-10785 consolidates all the ground water use to the same POU, eliminating the mingling of ground and surface water.

63-31505 is an appropriation for an increased diversion rate to lands irrigated under water rights 63-10785 and 63-31178.

Water rights 63-10785, 63-31505 and 63-31178 should all have had the same point-of-diversion but I found that the Permit layer POD and the Application layer POD each had a single and separate water right associated with them. And 63-10785 had a nominal POD associated with it. I completed a correlation of the various GIS points and water rights.

Place of Use

On June 27, 2008, I phoned SPF Water Engineering, and spoke briefly to Lori Graves about the field exam write-ups. Lori had been an IDWR Western region employee when these permits were initiated. Her 6/14/02 memo appears earlier in this file and summarizes the Frisby rights at that time. As an SPF Water Engineering employee, Lori had typed the field exam narrative based on Terry Scanlan's notes. She was able to clarify some general points for me and to supply electronic copies of the shape files that SPF had created for the Frisby exams. I imported the SPF shape files into the IDWR database. Because of Department database rounding conventions, the shapes Lori provided to me did not exactly match the field examiners acreage recommendation for either permit. I edited the grid acreage in the database so that the total acreage for each license would match the acreage requested and confirmed by the exam.

An amendment for 63-31177 will be needed before licensing acreage in NWNW sec 25.

Water Use

I phoned the irrigation system designer from Agri-lines, Jeff Forsberg, to verify that the booster pump was the constraint to the system capacity on the East well (POD for 63-31505, 63-10785 and 63-31178) and that the well pump was the constraint to the capacity on the West well system (POD for 63-31177). He confirmed both constraints for me. I also asked Mr. Forsberg about the status and condition of the wells. He stated that they were good wells; that no reconditioning had been needed in his experience with them. IDWR did not have any additional information on the older, East well. If there had been a major overhaul of that well within the time frame of these permits, some record of that work should have been provided to IDWR. So it is reasonable to assume that the East well is essentially the same as it was in 1977 when the pumping test was done and that a linear extrapolation of the 1977 drawdown is also reasonable for estimating a 2008 pumping level.

The permit holder was not seeking a $Q > 0.2$ cfs/acre so a measurement was not required for any of the exams. Pump curves were provided for both systems. An additional equation and calculation which confirmed that the booster pump would be operating without cavitation was included in the exam narrative for the West well system.

The field examiner found that the irrigated acres on these systems have been isolated from the acres irrigated by Black Canyon Irrigation District water. BCID water rights which appear to partially overlap the East well POU (63-31505, 63-10785 and 63-31178) are 65-2433 and 65-2900. Becky Anderson, of BCID's Notus office, was able to provide maps which demonstrated that no overlap currently exists.

After some discussion with Shelley Keen, my supervisor, I have licensed the two water rights that are sourced from the east well differently than the examiner had recommended.

Given that the target rate is 0.02 cfs/acre and that the target volume for this area is 4.5 af/acre, the following steps outline the rate and volume calculations I used for the licenses:

- 1) The rate and volume provided by 63-10785 is spread across 292 acres.
- 2) Then 63-31178 adds 0.02 cfs/acre and 4.5 af/acre for the 10 acres not covered by 63-10785. And 63-31178 adds the amounts required to bring the remaining 111 acres (121-10) of its place-of-use up to 0.02 cfs/acre and 4.5 af/acre.
- 3) Then 63-31505 makes up the difference, bringing the remaining 181 acres (302-121) up to 0.02 cfs/acre and 4.5 af/acre.

Please refer to the attached spreadsheet for a tabulated summary.

Conditions

Permit conditions suggested that surface water would be supplemented by these GW rights. In the field exam narrative, SPF Water Engineering requested removal of conditions associated with surface water rights because they were no longer pertinent. The surface water use is not described nor is it explained away in these field exam reports. I collected the additional information needed to remove the surface water conditions and I added the settlement conditions which were the result of Mr. Spackman's hearings.

Both wells are capable of delivering more water than each individual permit. Right 63-31177 will be limited to the rate approved by the permit. Rights 63-31178 and 63-31505 are each limited by their respective permitted rates and the system capacity of the east well limits the combined use of 63-10785, 63-31178 and 63-31505.

Frisby's East well									
RECOMMENDATIONS				LICENSE CALCULATIONS					
WR#	acres	rate (cfs)	volume (af)	acres calc	acres	rate calc	rate/acre	vol calc	vol/acre
63-10785	292	1.7	824.7			$1.7/292=$	0.0058	$824.7/292=$	2.8243
				$302-292=$	10	$10*0.02=$	0.2	$10*4.5=$	45
					111	$111*(.02-.0058)=$	1.5738	$111*(4.5-2.824)=$	186.0010
63-31178	121 within 302	2.42	544.5		121		1.7738		231.0010
					292		1.7		824.7
							3.4738		1055.7010
				$302-121=$	181	$181*(.02-.0058)=$	2.5662	$181*(4.5-2.824)=$	303.2990
							6.04		1359
						subtotal rate = 3.47			
						capacity = 4.91			
63-31505	302	1.92	990.2		181	$4.91-3.474=$	1.4362		303.3
sum		6.04	2359.4		302		4.91		1359
system capacity		4.91							
ppu	302				ppu		target rate		target volume
annual volume			$4.5*302=1359$		302		0.02 cfs/acre		4.5 afa/acre
combined use	302	4.91	1359						
						difference from target not covered by 63-10785 to be covered by 63- 31178			
						licensed through 63-31178			
						subtotal WR#63-10785+WR# 63-31178			
						calc'd rate not possible because total (6.04 cfs) would exceed system capacity			
						licensed through 63-31505			