

MEMORANDUM

Date: January 30, 2006
To: Transfer 72208 File
From: Corey Skinner
Re: Evaluation of Sufficiency of Information Submitted

Transfer application proposes changing two rights, 45-2444B and 45-11164 (expansion of 45-2444B), used to provide supplemental groundwater for irrigation of a farm located approximately 2.0 – 2.6 miles north and 0.5 – 1.35 miles west of the center of Oakley (within the Oakley Kenyon CGWA). The proposed change consists of changing the supplemental groundwater rights to primary groundwater rights for stock water use associated with a feedlot operation proposed for land located approximately 2.0 – 2.5 miles north and 1.25 – 1.5 miles west of the center of Oakley (adjacent to irrigation pou). The application proposes diverting 29.5 acre feet per annum for the feedlot operation, and discontinuing diversion of groundwater for irrigation use. The proposed point of diversion is the existing irrigation well located approximately 2.0 miles north and 1.0 mile west of the center of Oakley currently listed as the authorized point of diversion for the two rights.

Because the two rights involved with the transfer are supplemental (to Oakley Canal Company water) an analysis is required to determine the extent of the historical beneficial use of the two rights. The power meter that serves the well pump also serves the booster pump that delivers Oakley Canal Company water. In addition, well water or Oakley Canal Company water could be delivered to a different booster pump (north booster) and diverted at that location. Further complicating the analysis of past use is the fact that the vast majority of the farm was sold after the 1999 irrigation season without the groundwater, and the system operation was changed due to the sale and different farm ownership.

The application includes power records for the meter that supplied power to the well and booster pump for a period dating from 1995 -2004. However, it is difficult, if not impossible, to determine exactly when, and how much the well was used based on the power records. Brockway Engineering included an analysis of the power records based on calculating a theoretical PCC value, based on theoretical diversion rates for the booster pump and the well pump in order to analyze the power records. Brockway Engineering's PCC value for the booster pump was calculated at 204.64 kWh /ac-ft and for the well the PCC value was calculated at 429.14 kWh / ac-ft. However, the PCC value for the well was based on a theoretical diversion rate of 1.05 cfs, but the ground water rights proposed to be transferred are limited to a combined diversion rate of 0.60 cfs. If the water right rate limit of 0.60 cfs is used, the PCC value for the well would be 751.9 kWh / ac-ft (approximately 1.75 times higher). The Brockway Engineering analysis of the power records consisted of three separate scenarios as outlined in their narrative and spreadsheets included with the application....

- Scenario # 1 consists of using the theoretical booster pump PCC (204.64 kWh /ac-ft) and calculating pumped volumes from the power records for months when peak demands were greater than 17 kW. *Note that the narrative indicates that the booster pump had a rating of 30 Hp, but IPCo records available to the Department indicate that the booster pump was actually a 60 Hp pump from 1998-2002, and a 30 hp pump was used in 2003 & 2004. The 30 Hp vs 60 Hp difference does not impact the theoretical PCC calculation (diversion rate is in both the numerator and denominator in calculations), but the analysis of the power records should probably include only months with higher peak demands (maybe in the neighborhood of 45 + kW), which would result in a lower overall calculated volume for scenario #1.*
- Scenario # 2 consists of using the theoretical well pump PCC (429.14 kWh / ac-ft) and calculating pumped volumes from the power records for months when peak demands were greater than 30 kW. Essentially the narrative indicates that this is the "maximum average volume withdrawal from the well", basically assuming that all power usage for the meter in months with a peak demand above 30 kW was used for only pumping the well. *Note that the Brockway analysis for this scenario uses a*

theoretical PCC (429.14 kWh / ac-ft) based on a theoretical diversion rate of 1.05 cfs, when the diversion rate limit for the water rights involved in the transfer is only 0.60 cfs. Using the rate limit of 0.60 cfs results in a higher PCC value (751.9 kWh / ac-ft), which will result in lower calculated volumes.

- Scenario # 3 consists of using the sum of the theoretical booster pump PCC (204.64 kWh / ac-ft) and the theoretical well pump PCC (429.14 kWh / ac-ft) and calculating pumped volumes from the power records for months when peak demands are apparently greater than 30 kW. *Note that the Brockway analysis for this scenario uses the theoretical well PCC (429.14 kWh / ac-ft) based on a theoretical diversion rate of 1.05 cfs, when the diversion rate limit for the water rights involved in the transfer is only 0.60 cfs. Using the larger well PCC value (751.9 kWh / ac-ft) based on the water right rate limit in the PCC summation results in an overall higher PCC value and lower calculated volume. Also note if the booster pump is 60 Hp rather than 30 Hp, this analysis could very easily include periods when the booster pump was supplied power, and no power was supplied to the well.*

The application basically proposes using the Scenario # 3 analysis as the amount of water available to transfer. The transfer proposes allowing 29.5 ac-ft per annum, based on a six year average (1995 - 2000) of the volumes obtained by analyzing the power records by using the PCC summation outlined in scenario # 3. However, as previously mentioned the PCC value for the well is based on a theoretical flow rate larger than what the ground water rights allow. If a PCC value for the well is used based on the actual water right limit rather than a theoretical (larger) diversion rate, and the same Scenario # 3 analysis were performed the 29.5 ac-ft would be cut to 19.5 ac-ft.

The scenario # 3 analysis also looks at six years of power records (1995-2000). As mentioned previously a drastic change in operating practices should have occurred in the summer of 2000, due to the sale of part of the farm after the 1999 irrigation season resulting in a redistribution of canal shares amongst the original farm and change(s) in the irrigation system and operation to only serve part of the original farm. In the past, Brockway Engineering indicated that years after the sale of the property should not be viewed as part of the historical use of the well due to changes in the system resulting from the sale. The current narrative alludes to a change resulting from the sale and indicates that a different scenario existed in 1995 - 1999 than what existed in 2000 - present. Coincidentally, in the six-year average used in this transfer, the 2000-year contributes a fairly large amount to the average of 29.5 ac-ft for scenario # 3. If the 2000-year is thrown out of the average, the five-year (1995-1999) average for scenario # 3 would be 22.62 ac-ft, rather than the 29.5 ac-ft proposed. If the water right limit PCC value is used instead of the theoretical rate PCC value (19.5 ac-ft average rather than 29.5 ac-ft) and the 2000-year is thrown out of the average, the five-year (1995-1999) average would be 14.98 ac-ft. It is pretty safe to say that the well was not used in the years 2001, 2002, 2003, and 2004 due to the relatively lower demands (less than 30 kW) on the power records. It seems reasonable that if the 2000-year was included, then maybe the 2001, 2002, 2003, and 2004 years should be included also, which would result in a 10-year average. Using the theoretical PCC value and the scenario # 3 analysis the 10-year average would be 17.69 ac-ft. Using the water right limit PCC value and the scenario # 3 analysis the 10-year average would be 11.72 ac-ft.

Furthermore, the scenario # 3 analysis provides just an estimate of the total amount of canal water and groundwater that was diverted during these years. It should be pretty obvious that the canal water rather than the well could have provided a significant portion of the volumes mentioned in the preceding paragraph. However, I cannot see a way that this portion can be defined with much certainty. From the power records, it is impossible to say that during a particular month only the booster was ran and not the well, or that the booster was ran "x" amount of time and the well was ran only "y" amount of the time. The original transfer application, included some canal company delivery records for some years which might be able to be used to estimate some time the booster was ran. However, just because canal water was delivered, does not necessarily mean that the booster was ran (see narrative mentioning canal company

deliveries could, and were more often, diverted from the north pond, on a different power meter). Examination of the power records and the canal company delivery records does show some months of high canal company deliveries, but little if no power usage at the meter that serves the well and booster. In addition, several canal company deliveries were for a period that extended over two months so somehow this would have to be correlated to monthly power records that do not necessarily cover an actual calendar month (meter actually read several days prior to the end of the month).

For transfer applications that propose changing the nature of use of a water right from irrigation to stock water use for CAFOs, the new use is considered to be 100% consumptive, and the allowable diversion volume (for stock water) is based on the original consumptive use volume (for irrigation). The analysis scenarios # 1, # 2, and # 3 included with the transfer application are attempts to estimate the amount of water diverted prior to applying the water for irrigation purposes. More than likely, some combination of sprinkler systems (hand lines, wheel lines, &/or pivots) was used to irrigate the property. Examination, of the 1991 "Guidelines for the Evaluation of Irrigation Diversion Rates" prepared for the Department by Hubble Engineering, and often referred to as the "Hubble Report", reveals that various types of sprinklers irrigation efficiencies range from 50 % – 90 %. In addition, the narrative that was included with the transfer application references an analysis that was performed by Brockway Engineering to estimate the irrigation water requirement (IWR) for the property. The narrative indicates that an irrigation efficiency of 75% was used in this analysis. Therefore, an assumed irrigation efficiency of 75% appears to be quite reasonable. Using the 14.98 ac-ft allowable diversion volume mentioned previously in this memo (calculated using the Brockway Engineering scenario # 3 analysis, only using a well PCC based on the 0.60 cfs water right limit rather than the theoretical well capacity, and using a five year average from 1995-1996 rather than the six year average from 1995-2000) and applying an irrigation efficiency of 75 %, would allow about 11.2 ac-ft to be transferred to a CAFO facility.

While the 11.2 ac-ft value may not be perfect, due to the impossibility of estimating exactly how much groundwater was pumped vs. how much canal water was pumped, it does reflect the analysis that was included with the application, with some reasonable "corrections". Realistically this 11.2 ac-ft value is not much especially when one considers that an exempt "domestic" well could be drilled in the same area without a water right filing, and could potentially divert up to 14.6 ac-ft per year (13,000 gpd for 365 days per year). If 11.2 ac-ft is allowed to be transferred, it seems reasonable to consider all of the volume to be provided by right 45-2444B, since it is the only right that provides the volume for irrigation use, and expansion right 45-11164 would essentially be taken off the books (perhaps abandoned through the transfer) since it does not provide any volume for irrigation use.

- **Authority to File:**

Application includes copies of a water rights and transfer agreement between the applicants (Hawkers) and the current owner of record (Dennis Smith). Note that the water rights and transfer agreement specifies that the current owner of record (Dennis Smith) will retain ownership of the rights and execute a quitclaim deed after the transfer has been approved and is acceptable to the applicant (Hawkers). This quitclaim deed will convey the ownership of the rights to the applicant who will then have to update IDWR ownership records. In addition, a copy of a 1999 purchase and sales agreement is included with the application showing that the current owner of record (Dennis Smith) sold part of the farm without the groundwater rights involved with the transfer. A recently rerecorded quitclaim deed has also been submitted to accompany the application. This quitclaim deed clarifies that the current owner of record (Dennis Smith) retained ownership of the ground water rights when he sold part of the farm in February of 2000. Note that this was not initially reflected in the February 2000 warranty deed

- **Water Right Validity:**
The rights involved with the transfer were decreed in the SRBA in May of 2005.
- **Injury to Other Water Rights:**
Proposed allowable volume of 11.2 ac-ft is relatively small and is actually less than the legal maximum amount that could be pumped by an exempt "domestic" use. In addition the proposed allowable volume is significantly less than the decreed allowable volume for irrigation use of 292.8 ac-ft. Change in nature of use from irrigation to stock water use being based on historical consumptive use for irrigation results in a reduction in allowable use.
- **Enlargement of Use:**
The proposed allowable volume is significantly less than the decreed allowable volume for irrigation use of 292.8 ac-ft. Change in nature of use from irrigation to stock water use being based on historical consumptive use for irrigation results in a reduction in allowable use.
- **Local Public Interest:**
Application will be subject to public notice and protest.
- **Beneficial Use/Conservation of Water Resources:**
Proposed use (stock water) is recognized as a beneficial use of water.

Review of the application finds there is no clear inconsistency with criteria set forth in Section 42-222 Idaho Code preventing processing of this application.