

MEMORANDUM

TO: 63-32076, 63-33164, and 63-32646 files

FROM: Angela Grimm

DATE: May 30, 2014

RE: Calculations of Water Rights Splits for Pending Ownership Change 63-32076 and 63-33164

Robert Coleman called IDWR to inquiry as to what water rights are appurtenant to his property (Lots 1 thru 4 Blk 1 Crystal Lakes Phase 1) in the S ½ SE Section 15 T2N R3W. The following summarizes the splits associated with rights 63-32076 and 63-33164, portions of which are appurtenant to the Coleman property.

Irrigation use parent rights 63-32076 and 63-33164:

63-32076: 0.38 cfs / 90.0 afa / 20 ac (158 ac PPU)

63-33164: 1.90 cfs / 446.8 afa / 99.3 ac (158 ac PPU)

63-32076 + 63-33164: No combined limit (rights are not staked), but share common PPU.

Diversion rate per acre calculation for irrigation use:

63-32076: $0.38 \text{ cfs} \div 20 \text{ ac} \approx 0.019 \text{ cfs/ac}$

63-33164: $1.90 \text{ cfs} \div 99.3 \text{ ac} \approx 0.019 \text{ cfs/ac}$

Volume per acre calculation for irrigation use:

63-32076: $90.0 \text{ afa} \div 20 \text{ ac} = 4.5 \text{ afa/ac}$

63-33164: $446.8 \text{ afa} \div 99.3 \text{ ac} \approx 4.5 \text{ afa/ac}$

63-32076 Split:

Coleman = $(12.2 \text{ ac} / 158.0 \text{ ac PPU}) \times 20 \text{ irrigated ac} \approx \mathbf{1.5 \text{ irrigated ac}}$

=> $(0.38 \text{ cfs} \div 20 \text{ ac}) \times 1.5 \text{ ac} = \mathbf{0.03 \text{ cfs}}$ [$0.03 \text{ cfs} \div 1.5 \text{ ac} \approx 0.019 \text{ cfs/ac}$]

=> $(90.0 \text{ afa} \div 20 \text{ ac}) \times 1.5 \text{ ac} = \mathbf{6.8 \text{ afa}}$ [$6.8 \text{ afa} \div 1.5 \text{ ac} \approx 4.5 \text{ afa/ac}$]

Crystal Lakes Development Co (remainder) = $20.0 \text{ irrigated ac} - 1.5 \text{ irrigated ac}$
(Coleman) = **18.5 irrigated ac**

=> $(0.38 \text{ cfs} \div 20 \text{ ac}) \times 18.5 \text{ ac} = \mathbf{0.35 \text{ cfs}}$ ($0.38 \text{ cfs} - 0.03 \text{ cfs} = 0.35 \text{ cfs}$)
[$0.35 \text{ cfs} \div 18.5 \text{ ac} \approx 0.019 \text{ cfs/ac}$]

=> $(90.0 \text{ afa} \div 20 \text{ ac}) \times 18.5 \text{ ac} = \mathbf{83.2 \text{ afa}}$ ($90.0 \text{ afa} - 6.8 \text{ afa} = 83.2 \text{ afa}$)
[$83.2 \text{ afa} \div 18.5 \text{ ac} \approx 4.5 \text{ afa/ac}$]

63-33164 Irrigation Use Split:

Coleman = $(12.2 \text{ ac} / 158.0 \text{ ac PPU}) \times 99.3 \text{ irrigated ac} \approx \mathbf{7.7 \text{ irrigated ac}}$

=> $(1.90 \text{ cfs} \div 99.3 \text{ ac}) \times 7.7 \text{ ac} = \mathbf{0.15 \text{ cfs}}$ [$0.15 \text{ cfs} \div 7.7 \text{ ac} \approx 0.019 \text{ cfs/ac}$]

=> $(446.8 \text{ afa} \div 99.3 \text{ ac}) \times 7.7 \text{ ac} = \mathbf{34.6 \text{ afa}}$ [$34.6 \text{ afa} \div 7.7 \text{ ac} \approx 4.5 \text{ afa/ac}$]

Crystal Lakes Development Co (remainder) = 99.3 irrigated ac – 7.7 irrigated ac
(Coleman) = **91.6 irrigated ac**

=> $(1.9 \text{ cfs} \div 99.3 \text{ ac}) \times 91.6 \text{ ac} = \mathbf{1.75 \text{ cfs}}$ ($1.90 \text{ cfs} - 0.15 \text{ cfs} = 1.75 \text{ cfs}$)

$[1.75 \text{ cfs} \div 91.6 \text{ ac} \approx 0.019 \text{ cfs/ac}]$

=> $(446.8 \text{ afa} \div 99.3 \text{ ac}) \times 91.6 \text{ ac} = \mathbf{412.2 \text{ afa}}$ ($446.8 \text{ afa} - 34.6 \text{ afa} = 412.2 \text{ afa}$)

$[412.2 \text{ afa} \div 91.6 \text{ ac} \approx 4.5 \text{ afa/ac}]$

63-33164 Diversion to Storage & Aesthetic Storage Use Split:

Coleman $\approx 4.6 \text{ ac}$ of total 7.4 ac proposed ponds surface area = $4.6 \div 7.4 \approx 62\%$

Diversion to Storage = 62% of 0.07 cfs = **0.04 cfs**

Aesthetic Storage = 62% of 12.9 afa = **8.0 afa**

Crystal Lakes Development Co (remainder) = 100% - 62% (Coleman) = 38%

Diversion to Storage: 38% of 0.07 cfs = **0.03 cfs** ($0.07 \text{ cfs} - 0.04 \text{ cfs} = 0.03 \text{ cfs}$)

Aesthetic Storage: 38% of 12.9 afa = **4.9 afa** ($12.9 \text{ afa} - 8.0 \text{ afa} = 4.9 \text{ afa}$)

Of the 12.2 acres purchased by Mr. Coleman, approximately 11.2 acres are within the SE SE and 1.0 acres are within the SW SE of Section 15 T2N R3W. The irrigation place of use for the Coleman portions of the rights above should be described as such.

Consequently, the remaining 145.8 acres of the Crystal Lakes Development portions of the rights should be described as follows: 19.0 ac NESW, 19.0 ac SESW, 20.0 ac NESE, 40.0 ac NWSE, 39.0 ac SWSE, and 8.8 ac SESE of Section 15 T2N R3W.

In summary, Mr. Coleman will have portions of water rights 63-32076 and 63-33164 authorizing irrigation of 9.2 acres total within his 12.2 acre property and diversion of 8.0 afa at a rate of 0.04 cfs into his pond for evaporative losses. Mr. Coleman is in the process of having a portion of permit 63-32646 assigned to him authorizing diversion of up to 80.6 afa at a rate up to 3.35 cfs to fill the capacity of his pond.

Calculations above are based on the premise that Mr. Coleman owns 12.2 acres. Mr. Coleman indicated during several phone conversations that he owns Lots 1, 2, 3 and 4 of Blk 1 in Crystal Lakes Subdivision Phase 1. Canyon County tax lot data indicates these four lots total 12.2 acres. Actual splits of water rights should be adjusted as needed upon evaluation of property ownership documentation once the Notice of Change in Water Right Ownership is filed.