

Fish Creek Reservoir Company – Aquifer Recharge Plan

Fish Creek Reservoir – right 37-1162 (AJ recommendation)

- 1922 priority
- irrigation storage - 14411 afy
- provides supplemental water for irrigation of 8066.3 acres
- ground water right 37-14273 (2.4 cfs) also used in service area
- service area includes lands above reservoir (exchange storage with natural flow)

Fish Creek Dam

- historical operation of the dam – close outlet in November, store water through beginning of irrigation season (base flow 10 to 20 cfs), extremely high runoff years water is released prior to use for irrigation, limited storage and use data available
- concerns about the structural integrity of the dam required changes resulting in reduced storage volume to 5515 af (8896 af foregone storage) beginning in 2005

Proposed Aquifer Recharge Project

- foregone storage proposed to be used for aquifer recharge and marketed for mitigation purposes
- proposed to use Water Supply Bank to administer, lease 8896 afy and rent to users as needed at \$ rate based on market conditions
- Fish Creek has not normally discharged to other surface streams, in high runoff years the discharge is to Carey Lake which generally evaporates or infiltrates, extremely high years result in overflow to laterals at the end of Little Wood Irrigation District and ultimate infiltration
- proposed recharge potential
Mean – 5579 afy
Median – 6714 afy
Maximum – 8896 afy
Minimum – 0 afy
- measurement proposal – since flow in Fish Creek could be a combination of natural flow, storage deliveries and foregone storage, measure flow below last irrigation diversion from Fish Creek (Hot Springs Ditch). Add channel seepage above that which would have normally occurred due to irrigation deliveries (note: historical storage deliveries later in the season would have added to recharge in the past).

- channel seepage in Fish Creek - proposed to be credited to recharge, proposal assumes credit exists when irrigation deliveries would not have been occurring; however, credit should consider typical seepage when storage was delivered historically
- evaporation in Fish Creek reach to recharge site is estimated at 6.9 afy

Water Right and Other Issues

- need authorization to change from irrigation storage to ground water recharge

supplemental irrigation typically changed based on average historic use - consider maximum due to nature of surface water/storage

future mitigation use resulting from recharge should be limited to historic consumptive use based on typical irrigation efficiency, evaporation and conveyance losses (percentage of measured recharge) because not all stored water was consumed

recharge use diversion rate – should be based on historic inflow (minus natural flow releases) during storage period, could view as recharge storage instead of flow rate with point of redirection to recharge site (fill irrigation storage first, release recharge from storage as it enters reservoir)

was storage water carried over from prior years - report indicates limited data is available, carryover storage would reduce historic storage

- need mechanism to approve and account for mitigation credits used as a result of the recharge

Option 1 – transfer right to recharge use – need conditions addressing future mitigation quantities, company enters into private agreements for use as mitigation with department approvals for mitigation plans and updates to records, no protection from forfeiture unless water is diverted and used as recharge, recharge could be continuous regardless of rental for mitigation

Option 2 – (not desired) lease to bank and rent all back out by company for recharge – same conditions as option 1, one time fee is set at \$14 per acre foot with 10% to bank ($8896 \times 14 \times 0.1 = \12454.4), greater than 5 years requires board approval and advertising

Option 3 – lease to bank and rent as needed for mitigation – lease could be conditioned to rent only as recharge for mitigation purposes, rental administered by bank at fee indicated on lease application, rentals greater than 5 years require advertising and board approval, protected from forfeiture while in bank, recharge could not occur unless rented (bank requires no diversion and use unless water is rented), conditions necessary in lease to ensure company remains responsible for recharge diversions.

- Question about recharge potential at the recharge site, how will recharge occur (designed ponds with permitting or flow across lava beds)?

recommend condition limiting use to mitigation for existing rights instead of new appropriations for public interest (exception might be to make current users in service area whole)
should state consider purchase for long-term recharge?