State of Utah - Department Of Natural Resources **Division of Water Rights**

PUBLIC MEETING – BERYL / ENTERPRISE GROUNDWATER MANAGEMENT PLAN

August 6th, 2007 7:00 pm Enterprise High School Auditorium, 565 S 200 E Enterprise, UT 84725

I Water Management Definitions

- Consumptive Use (Irrigation)
  - The quantity of water used by the crop plus the quantity evaporated from the cropped area.
- Net irrigation requirement
  - Consumptive use minus effective precipitation.
  - For alfalfa in the Beryl Enterprise area the net irrigation requirement is 2.49 acre-feet/acre/year.
- Depletion
  - That part of the withdrawal that has been consumed and does not return to the groundwater aquifer.
  - The wellhead diversion minus return flow to the groundwater aquifer.
- Irrigation Diversion Allowance (Duty)
  - The quantity of water required to satisfy irrigation requirements of alfalfa taking into account the conveyance and application losses of flood irrigation practices.
  - In the 71 area the irrigation diversion allowance is 4.0 acre-feet / acre / year.
- Voluntary Arrangement
  - Subsection 4(c), 73-5-15, Groundwater Management Plan
  - Water users may agree & participate in an arrangement whereby water is distributed to the group as if the group owned the water rights collectively.

II. Possible Management Plan Approaches

- Objectives of management plan
  - According to statute ground water management plans must:
    - Limit withdrawals to safe yield
    - Be based on the principles of prior appropriation
  - Safe yield is achieved when ground water levels stabilize.
  - Ground water levels stabilize when the depletion from the system is limited to safe yield
- Approach 1 (Stepped approach)
  - No action for a set period of time
  - Reduce diversions according to priority date by set amount
  - Monitor diversions (meters) and groundwater levels for set period of time
  - Continue cycle until safe yield achieved
- Approach 2 (Import New Water)
  - Lake Powell Pipeline
  - Other options
  - Economics

- Approach 3 (Immediate & Gradual Approach)
    - Begin immediately to reduce diversions
    - Reduce diversions each year according to priority
    - Monitor diversions (meters)
    - Monitor ground water levels and adjust annual reductions as needed
- Approach 4 (Crop Types)
    - Reduce diversions / depletions by replacing high water demand crops with lower water demand crops
    - Adjust cropping patterns over time from mostly alfalfa to grain, potatoes & corn.
    - Reduce depletions to equal safe yield
    - Monitor acres irrigated and crop type
- Approach 5 (Proposal set forth by Escalante Water Users)
    - 1 year to develop resolution
    - Reduce the duty from 4.0 to 3.2 acre-feet/acre
    - 3.2 acre-feet/acre average over 5 years
    - Metering using power records
    - Cut water use 10%, 40-years (2,500 acres)
    - Compensation program ($10 million) 50% local & 50% state funding

III. Water Right Records

- Average annual pumping estimated to be 85,000 acft
- Approved water right diversions = 113,136 acft/year
- Approved water right depletions = 64,689 acft/year
- Diversion and depletion estimates for each water right have been calculated
    - Tabulated on Division website (http://www.waterrights.utah.gov).
    - Values will continue to be updated and verified.

IV. Safe Yield

- Safe Yield – The amount of groundwater that can be withdrawn from the basin over a period of time without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical and chemical integrity. 73-5-15(1)(b)
- Long term recharge is estimated at 34,000 acft/year from the USGS study "Hydrology Of The Beryl-Enterprise Area, Escalante Desert"
- Recharge calculated from depletion and change in aquifer storage
    - Average value of actual total depletion is estimated at 65,000 acft/year.
    - Average annual change in water stored in the aquifer for the last five years is a decrease of 31,425 acft/year.
    - Depletion – Change in Aquifer Storage = Natural Recharge (Safe Yield) of **34,000 acre-feet/year.**

V. Future Direction

- Review your water right records and any other information presented
- Presentations and data are online at http://www.waterrights.utah.gov.
- Submit written comment by September 30, 2007