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State of Utah
DEPARTMENT OF NATURAL RESOURCES
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Beryl Enterprise Groundwater Management Plan

DRAFT – October 7, 2011

Introduction

This document presents the State Engineer's groundwater management plan for the Beryl Enterprise area. The objectives of this groundwater management plan are to limit the groundwater withdrawals to safe yield, protect the physical integrity of the aquifer, and protect water quality. The intent of this plan is to provide specific management guidelines for this area under the statutory provisions within Section 73-5-15 of the Utah Code.

For the purposes of this plan, the Beryl Enterprise area consists of the area, which physically drains to the Utah portion of the Beryl Enterprise Groundwater basin as, illustrated in Figure 1.

The safe yield for the groundwater basin has been determined to be approximately 34,000 acre-feet per year. The current average depletion from the groundwater system is estimated at approximately 65,000 acre-feet per year. The total reduction needed to return the withdrawals to safe yield is estimated as 31,000 acre-feet per year of depletion. The groundwater withdrawals in this area have for over 40 years consistently exceeded the safe yield of the aquifer making this a critical management area as defined in section 73-5-15 of the Utah Code.

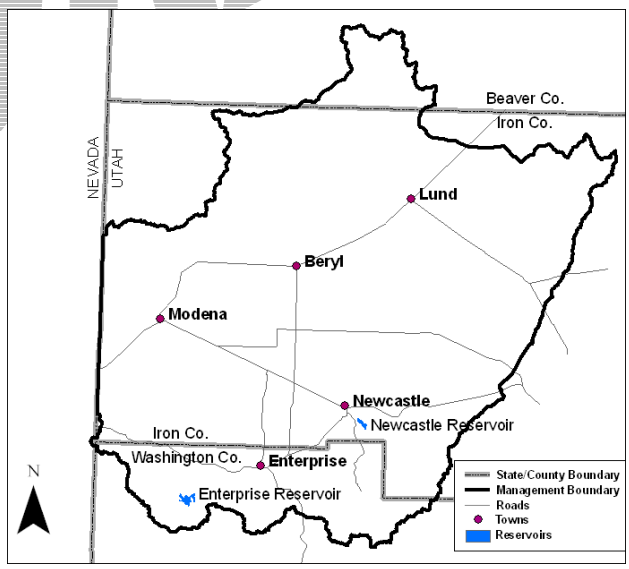

Figure 1 - Ground water Management Plan Boundary

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Water Regulation

The regulation schedule to reduce the depletion is displayed in Table 1. The schedule is a gradual implementation approach, authorized by statute for critical management areas, which consists of two phases. The first phase reduces the total depletion by 10% at the end of an approximate 40-year period. The second phase reduces the depletion by an additional 5% at the end of 10-year periods until the target reduction of 31,000 acre-feet is achieved or evidence indicates that additional reductions are not necessary.

The regulated reductions required by this plan shall be implemented by priority date of the water rights regardless of the nature of use (i.e. Irrigation, Stockwatering, Municipal, Domestic, Mining, or Other). The Sate Engineer will maintain a priority list on the Division of Water Rights website which reflects depletion by water right for purposes of this groundwater management plan.

Table 1 - Groundwater Management Plan Regulation Schedule

Phase	Percent Reduction	Acre Feet Reduction*	Cumulative Percent Reduction	Cumulative Acre Feet Reduction*	Time Frame	Required Reduction Date
1	5 %	3,250 acft	5 %	3,250 acft		Oct. 31, 2030
	5 %	3,250 acft	10 %	6,500 acft	20 yr	Oct. 31, 2050
2	5 %	3,250 acft	15 %	9,750 acft	10 yr	Oct. 31, 2060
	5 %	3,250 acft	20 %	13,000 acft	10 yr	Oct. 31, 2070
	5 %	3,250 acft	25 %	16,250 acft	10 yr	Oct. 31, 2080
	5 %	3,250 acft	30 %	19,500 acft	10 yr	Oct. 31, 2090
	5 %	3,250 acft	35 %	22,750 acft	10 yr	Oct. 31, 2100
	5 %	3,250 acft	40 %	26,000 acft	10 yr	Oct. 31, 2110
	5 %	3,250 acft	45 %	29,250 acft	10 yr	Oct. 31, 2120
	3 %	1,750 acft	48 %	31,000 acft	10 yr	Oct. 31, 2130

* Reductions based on percent of total depletion of 65,000 acre-feet/year

Depletion Calculations

For purposes of the groundwater management plan annual depletions from irrigation will be calculated using an annual crop survey prepared by the distribution system commissioner. The crop survey will tabulate irrigated acres for every crop type in the management plan boundary. It will include acreage supplied by both surface and underground sources. The crop survey will be published every year in the "Beryl Enterprise Water Distribution System Annual Water Report." The total depletion from irrigation will be calculated by multiplying the number of acres of crops irrigated by the estimated crop consumptive use values from the *Enterprise/Beryl Junc. Station* published in "Consumptive Use of Irrigated Crops in Utah, Research Report 145." Any reduction in use by either a decrease in acres or through the irrigation of less consumptive crops will be accounted for as a reduction from the total depletion. The baseline for irrigation from which future reductions will be calculated is the current legal amount of irrigation in the area,

27,795 acres of alfalfa, multiplied by the consumptive use value for alfalfa, 2.4925 feet, which equals 69,280 acre-feet. This baseline accounts for acreage supplied by both surface and underground sources.

If there are reductions in irrigation because water use is changed to new use through the application process, then the baseline for irrigation will be adjusted to reflect the decrease in irrigation rather than the decrease in depletion. If a decrease in depletion from the system results from the change application then this decrease will be accounted for by the State Engineer. Depletions from uses other than irrigation will be computed on the basis of standard practices by the State Engineer and supplemented by actual reporting provided by the water right holder. Depletion reductions achieved from uses other than irrigation reported to the Division of Water Rights will be considered along with those accounted under change applications.

An estimate of the total depletion, the amount of reductions achieved, and any modification to the baseline amount of irrigation will be published each year in the "Beryl Enterprise Water Distribution System Annual Water Report."

Adaptive Management

The plan's objective is to reduce the depletion from the system to the safe yield of the aquifer. To determine the effectiveness of the plan water level measurements will be used. As withdrawals approach safe yield it is anticipated that groundwater levels will stabilize without further decline. The stepped reductions in depletions over long intervals as specified in the management plan are intended to provide an opportunity for measured water level response to the changes in groundwater pumping. A reduction in the rate of groundwater level decline over time will be used as an indicator of approaching equilibrium of recharge versus withdrawal from the groundwater system. If during any phase of the plan it is determined that safe yield has been reached, future reductions will not be implemented. This plan may also be amended at any time in the same manner it was adopted.

Voluntary Arrangements

In consultation with the State Engineer, water users may agree to participate in a voluntary arrangement to manage withdrawals based on a system other than priority date. Table 1 specifies the amount and schedule of the reductions to be met. If a voluntary arrangement is successful in accomplishing required reductions within the timeframe specified in Table 1, the State Engineer will not order reductions in use based on priority date.

Change Application Considerations

There is a current policy that change applications proposing to move groundwater rights to the district titled the "Heavily Pumped" area will be denied. As part of this management plan this policy restriction will be eliminated. Thus change applications proposing to move groundwater rights anywhere within the management plan boundary will be reviewed on their individual merits and may be approved.