

TAC Item 3.a.ii Useable Groundwater in Storage

Source	Year	Useable Storage	Assumptions
Kunkel and Chase	1969	720,000 AF	<i>Estimated Ground-Water Storage Capacity</i> 100 feet below 1954 GWL underlying 64,000 acres
Dutcher and Moyle	1973	2,200,000 AF	<i>Estimated Usable Ground-Water Storage Capacity</i> 200 feet of saturated thickness
USBR	1993	2,370,000 AF	<i>Extractable Groundwater Volumes</i> 200 feet of dewatering



Groundwater in Storage: Kunkel and Chase, 1969

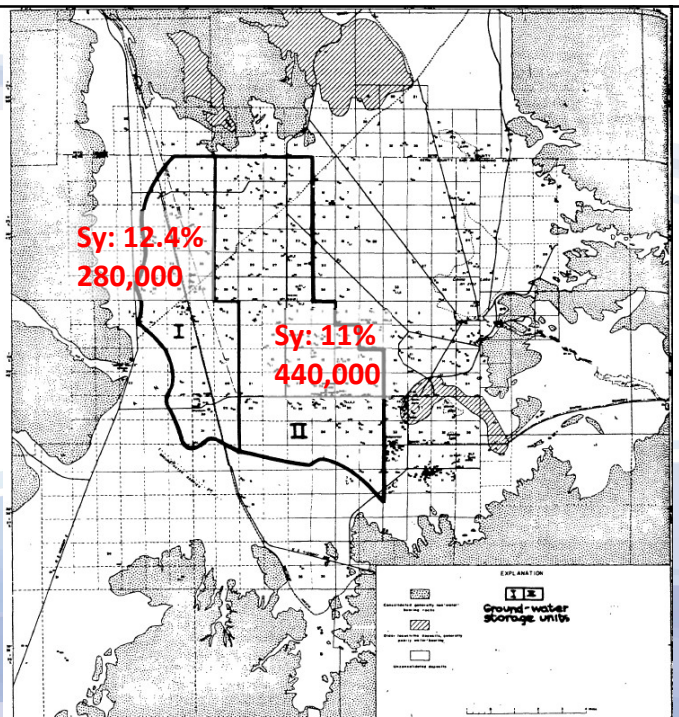
Storage unit I

- Fan deposits on west
- Section lines on the east
- 36 sq mi (23,000 acres)
- DTW: ~100' (east) to 220' (west)
- Average specific yield = 12.4%

Storage unit II

- Section I on west
- Estimated poor quality water on the east
- 64 sq mi (41,000 acres)
- DTW: ~30' (north) to 150' (south)
- Average specific yield = 11% (9.1 to 13.1 %)

Storage calculated for 100 feet of saturated thickness below 1954 groundwater table

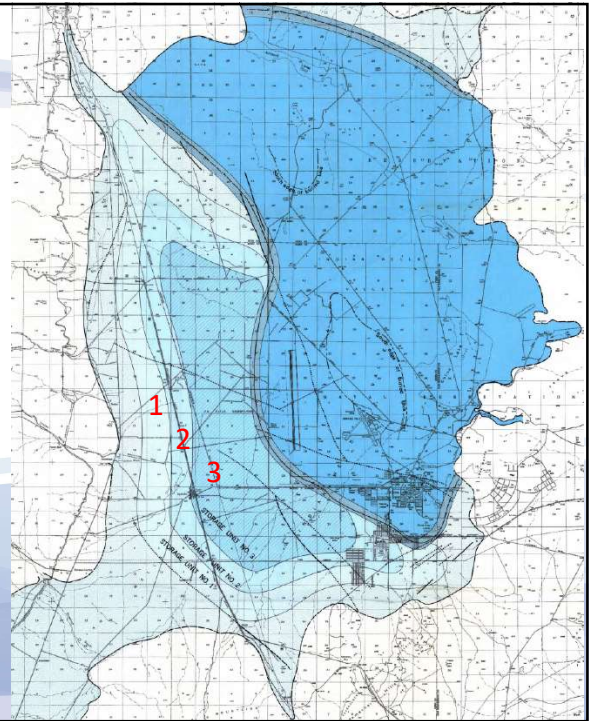


Groundwater in Storage: Dutcher and Moyle, 1973

- Good water quality characteristics
- Economic pumping level
- 180' depth to groundwater
- Storage 200' below 1921 groundwater levels

Storage Unit 1	21,800 acres	SYavg=10%	440,000 AF
Storage Unit 2	19,500 acres	SYavg=15%	580,000 AF
Storage Unit 3	29,500 acres	SYavg=20%	1,180,000 AF
~110 sq miles			2,200,000 AF

- Assumes some type of hydraulic barrier (injection / pumping wells) could be used to prevent inferior water migration.



Groundwater in Storage: USBR, 1993

- Specific yield assumed to be 20%
(references ranged 10-30% for sand aquifers)
- Dewatering to depths of 500-600 feet not unreasonable
- Therefore, as much as 300 feet of aquifer could be dewatered.
- 200 feet considered 'realistic' dewatering depth

Area	100-foot Dewatering	200-foot Dewatering	300-foot Dewatering
	Depth	Depth	Depth
Intermediate	310,000	610,000	920,000
Southwest	360,000	720,000	1,060,000
Northwest	530,000	1,040,000	1,040,000
	1,020,000	2,370,000	3,020,000

