Aquifer Storage and Recovery Project

2008 Accounting Report

prepared for

City of Wichita
Wichita, Kansas

May 2009

Project No. 52846

prepared by

Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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INDEX AND CERTIFICATION

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2008 Accounting Report
City of Wichita

Project 52846

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Certification

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BMcD Engineer, Paul McCormick, P.E.
Date: May 29, 2009
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1.0 INTRODUCTION

The purpose of this report is to provide a summary of the recharge and recovery activities for the City of Wichita Aquifer Storage and Recovery (ASR) project in the *Equus* Beds Aquifer during calendar year 2008 and to provide an accounting of recharge credits claimed for the year as required by the Kansas Department of Agriculture, Division of Water Resources (DWR).

1.1 BACKGROUND

Construction of Phase 1 of the City's ASR project was substantially complete on September 13, 2006. Phase 2 is currently under design. Phase 1, designed to permit recharge of up to 10 million gallons per day (MGD) consists of three diversion wells, a surface water intake, a treatment plant to remove sediment and atrazine from the surface water, 15 miles of pipeline, four recharge wells, two recharge basins and 50 monitoring wells. The Phase 1 recharge facilities are strategically located with the intent of developing a hydraulic barrier to slow the advancement of the Burrton brine plume toward the Wichita well field. A map of the facilities is presented in Figure 1.1.

The first accounting report, submitted in June 2007 detailed the disposition of water and calculated the amount of recharge credits claimed from ASR operations from the limited recharge that occurred during 2006. After substantial completion of the facilities in September 2006, flow in the Little Arkansas River for the balance of the year never exceeded the permitted rate that would trigger operation of the recharge facilities. Term permits in the amount of 90 acre-feet (ac-ft) were granted for the three diversion wells (30 ac-ft each) to be used for pipeline flushing and facility testing. Some of the term permit water used for testing was recharged in the basins and recharge wells as part of the startup testing.

1.2 2008 OPERATIONS

2008 was the second full year of recharge operations for the project. According to the USGS daily average flow statistics, flow in the Little Arkansas River exceeded the minimum limit for diversion and recharge operations a total of 239 days in 2008. The volume of water pumped from the surface intake, the diversion wells, recharge through the basins and recharge wells, and water pumped for maintenance in 2008 is shown in Table 1.1.

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Figure 1.1

ASR PHASE I
FACILITY LOCATIONS

Table 1.1
2008 Metered Diversion, Recharge and Recovery Volumes

Diversions	(gallons)	(acre-feet)
Surface Intake	67,745,248	207.92
DW1	102,289,712.00	313.94
DW2	39,135,213.00	120.11
DW3	112,465,592.00	345.17
	Total	779.22
Recharged (metered):		
RB1	0	0
RB2	64,246,416	197.18
RRW1	35,908,574	110.21
RRW2	63,117,032	193.71
RRW3	39,424,807	121.00
RW1	75,482,050	231.66
	Total	853.76
Recharge Credits Recovered		
RRW1	0	0
RRW2	0	0
RRW3	0	0
	Total	0
Recharge Well Maintenance Pumping		
RRW1	489,724	1.50
RRW2	1,010,223	3.10
RRW3	927,283	2.85
RW 1	930,222	2.85
	Total	10.30

Maintenance pumping is performed periodically to redevelop the wells when recharge efficiency begins to decline. The discharged water is currently sent to Recharge Basin 2. The amounts are deducted from the well recharge credit and are included in Recharge Basin 2 recharge volume.

Details of the water budgets and groundwater modeling to support the recharge credit claimed are presented in the following sections.

1.2.1 Accounting Report Components

The DWR Chief Engineer's Order approving the Wichita ASR applications requires that the accounting shall use a groundwater flow model and specifically address the following items for each cell in the basin storage area.

- Natural and artificial recharge
- Groundwater inflow and outflow
- Evaporation and transpiration
- Groundwater diversions from all non-domestic wells
- Infiltration from streams
- Groundwater discharge to streams
- Calculated recharge credits
- Surface water diversions

* * * * *

2.0 GROUNDWATER MODELING

2.1 BACKGROUND

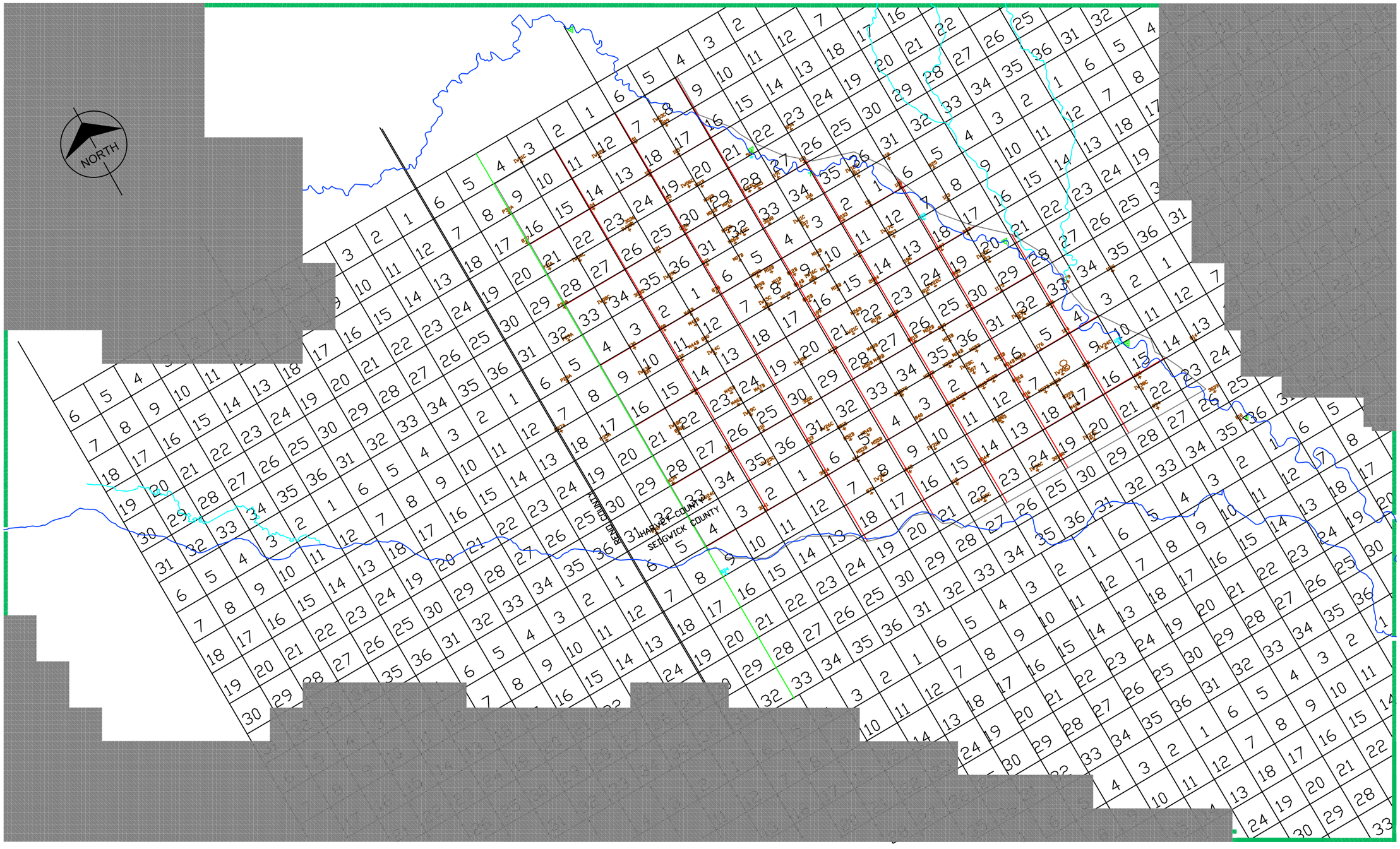
DWR requires a groundwater-based accounting system to track movement of recharge credits as a condition for approval of permits required to capture, store and recover water for beneficial use by the City of Wichita. The groundwater model currently in use was originally developed by the U. S. Geological Survey (USGS) office in Lawrence, Kansas. The model was refined by the U.S. Bureau of Reclamation (USBR) for analysis of chloride migration in the Burrton, Kansas area. The model was later refined and used to evaluate the City's Aquifer Storage and Recovery project.

The USGS groundwater flow model was developed to study stream-aquifer interaction between the Arkansas River and the *Equus* Beds aquifer. The USGS model area included the current study area along the Little Arkansas River. The original USGS model grid consisted of 34 rows, 42 columns and 3 layers. The location and extent of the model area is shown in Figure 2.1.

The model used constant-head nodes along the margins of the model boundary to represent areas where the aquifer extends beyond the model boundary. No-flow boundaries represent areas where shale provides a natural barrier to groundwater flow. The model included areal recharge, evapotranspiration, stream flow and well pumpage. More extensive details of the USGS model including information regarding model set-up, calibration, sensitivity analysis and model results are contained in "Hydrologic and Chemical Interaction of the Arkansas River and the *Equus* Beds Aquifer Between Hutchinson and Wichita, South-Central Kansas," USGS Water-Resources Investigation Report 95-4191 (Myers, et al, 1995).

The USBR modified the USGS model for a contaminant transport study for Groundwater Management District No. 2. In order to improve the accuracy of the transport modeling, the USBR reduced model grid spacing and adjusted the grid cells to a more uniform dimension. This resulted in a model grid consisting of 54 rows and 84 columns. Details of the USBR modeling are given in "Arkansas River Water Management Improvement Study, Modeling of Chloride Transport in the *Equus* Beds Aquifer" (Pruitt, 1993).

Because the primary area of interest during the initial ASR Investigation was the Wichita well field, the model was re-gridded by Burns & McDonnell to provide better resolution in this area. The finest grid spacing was 1000 feet by 1000 feet and resulted in a model domain with 84 rows and 120 columns.



STREAM CELL

CONSTANT HEAD BOUNDARY CELL

NO-FLOW CELL

0 15,000 30,000

APPROXIMATE SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 2.1

ACCOUNTING MODEL AREA AND BOUNDARY CONDITIONS

2.2 MODEL IMPLEMENTATION FOR ASR ACCOUNTING

DWR required that ASR accounting utilize groundwater modeling to track movement of recharged water within the index cells previously established. Wichita's ASR basin storage area (the entire project area) is not a closed basin and groundwater migrates down-gradient from higher water table elevations in the west to lower elevations in the east, eventually discharging to the Little Arkansas River. Water originally recharged in one index cell will eventually migrate to down-gradient index cells. The migration depends on the local gradient which is influenced by natural recharge, municipal and irrigation pumping, and the amount of ASR recharge. Groundwater modeling has been proven to accurately quantify the groundwater movement; however, modeling cannot directly track the movement of recharge credits from one index cell to another and keep it separate from movement of non-recharge water.

In order to track recharge credits, two model runs are implemented, one with the complete ASR recharge and recovery history and one run assuming no ASR recharge or diversion well production. Because the only difference between the two model runs is the water recharged (and recovered), the differences in the water budget between the two model runs are assumed to be due to the impact of ASR operation. For example if the net underflow from one index cell to the next is greater with the ASR model run, the difference is assumed to be due to ASR operation.

This difference represents the migration of ASR credit. The difference is subtracted from the up gradient index cell and added to the down gradient index cell. Recharge credits that are lost to the Little Arkansas River are deducted from the total recharge credits available.

2.3 MODEL SETUP AND IMPLEMENTATION

The groundwater model used for the Wichita ASR accounting has been upgraded and refined with data acquired during various phases of investigation for the ASR project. Basic model refinements for the 2008 accounting runs include reducing model cell size to a uniform 500 feet by 500 feet, resulting in a model with 253 rows and 420 columns. The reduced cell size required repair of stream parameters. Additionally, some adjustments were made to aquifer parameters in areas where additional data was available.

The model was translated into a newer version of the modeling pre- and post-processing software (Groundwater Vistas, V 5.0) and is run in MODFLOW 2000.

The 2008 model update simulates transient conditions from 2003 through 2008. The model units are feet, cubic feet and days. Unless otherwise noted below, units are model units.

2.4 BASIN STORAGE AREA STRESSES FOR MODEL INPUT

2.4.1 Precipitation and Recharge

A percentage of annual precipitation contributes to natural recharge. The USGS used average precipitation from three area weather stations and then distributed the recharge across the model area based on soil type, ground cover and model calibration. The current model employs data from the same locations plus the station that was added at Newton. The calculated natural recharge for each index cell is shown in the model water budget summaries contained in Appendix A.

2.4.2 Stream Flow

Stream flow can contribute to aquifer recharge depending on river stage, river bed conductivity, and elevation of the underlying groundwater table. Variations in river stage and flow are considered in the groundwater model using the MODFLOW stream package in which a starting flow is assigned to the upstream river node with MODFLOW assigning river flow and stage in downstream nodes. The USGS determined that the appropriate starting river flow was that flow with a 70 percent return interval within the modeled stress period. Table 2.1 summarizes the modeled stream flows for each year of the model.

Table 2.1
Model Simulated Stream Flows

	Flow, in cubic feet per second (cfs)					
Stream Name	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Arkansas River	110	121	127	77	269	355
Little Arkansas River	13	12	9.1	2.4	8.6	27
Cow Creek	10	10	10	10	10	10
Sand Creek	1	1	1	1	1	1
East Emma Creek	1	1	1	1	1	1
West Emma Creek	1	1	1	1	1	1
Emma Creek	*Emma Creek flow was calculated by the model as the outflow from East & West Emma Creeks*					

2.4.3 Groundwater Pumping

Water use data for 2008 was obtained from DWR. Water use reported in acre-ft by DWR was converted to average daily pumping rates, and well locations reported in geographic coordinates (latitude and longitude) were converted to model coordinates. The converted data was then imported into the model.

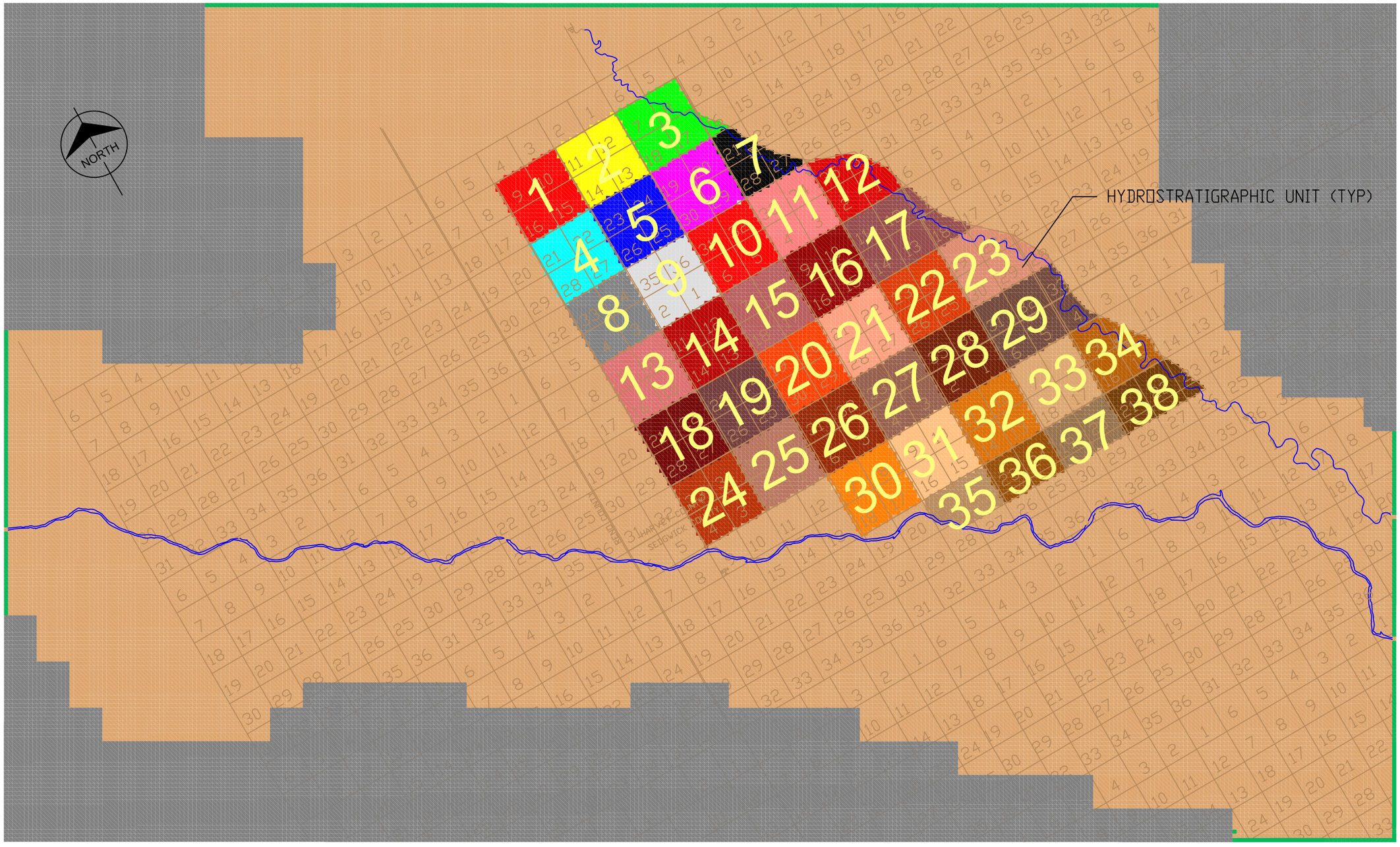
2.5 MODEL CALIBRATION

The current model has a water budget mass balance discrepancy of -0.28 percent, a residual mean of 5.33 feet and absolute residual mean (compared to selected observed January 2008 index well water levels) of 7.38 feet. The absolute residual mean is comparable with that for the USGS model which had a model-wide absolute residual mean of 4.67 feet. The absolute residual mean is the average absolute difference between measured water levels and computed water levels at the same location. The current model uses the level C Index Wells located in Layer 3 of the model for targets. The earlier USGS model used other, older monitoring wells as targets. Calibration differences are due to different monitoring wells being used for targets, seasonal variations in local weather (recharge), timing of local pumping, and other operations factors.

2.6 MODEL WATER BUDGET

MODFLOW permits tracking of groundwater flow throughout the model. This includes flows into and out of the model, flows between cells within the model, and changes in storage on a cell-by-cell basis. With the processing software a group of model cells may be combined into a hydrostratigraphic unit for which a composite water budget can be calculated. For the accounting model, a total of 38 hydrostratigraphic units were established and numbered to represent the 38 ASR index cell areas. For most of the model, the model hydrostratigraphic units roughly match the actual cells; however, on the eastern side of the basin storage area, the Little Arkansas River was not included in an index cell boundary. Because river interaction is an important element for the complete accounting, several index cells were extended eastward in the model to include the river. A map depicting the modeled hydrostratigraphic units (index cells) is shown in Figure 2.2.

Groundwater Vistas can generate a water balance report. A copy of the detailed reports both with and without ASR is included in Appendix C. The water balance reports for the model runs with and without ASR are combined to show net changes in the water budget which are reported in the Index Cell Water Budget Summaries.



- CONSTANT HEAD BOUNDARY CELL
- NO-FLOW CELL

0 15,000 30,000

APPROXIMATE SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 2.2

INDEX ACCOUNTING CELLS AS HYDROSTRATIGRAPHIC UNITS

2.7 SPECIFIC WATER BUDGET COMPONENTS

2.7.1 Natural and Artificial Recharge

2.7.1.1 Natural Recharge

The amount of natural recharge entering an aquifer system is based on many factors including amount of precipitation and surface conditions of soil texture, slope, and type and amount of groundcover. The GMD2 has determined that approximately 20 percent of rainfall is recharged to the aquifer. The USGS groundwater model used average rainfall from Wichita, Hutchison, and Mount Hope for model input. Since that time, an additional weather station in Newton has become available. The USGS distributed natural recharge across the model based on soil type and other factors. The current model retains that distribution adjusted for the average 2008 rainfall total. Table 2.2 summarizes the natural recharge data simulated in the model.

Table 2.2
Modeled Average Annual Precipitation

	Annual Precipitation (inches)					
Station	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Hutchinson	35.42	34.87	40.26	28.14	44.35	28.11
Mount Hope	27.64	39.81	36.97	26.47	35.3	31.05
Wichita	32.60	37.55	36.72	28.59	37.89	29.96
Newton	36.05	33.56	36.18	17.15	35.93	30.26
average	32.93	36.45	37.53	25.09	38.37	29.85

The modeled amount of recharge for each index cell is shown in the model water budget summaries presented in Appendix A.

2.7.1.2 Artificial Recharge

The metered volume of water recharged through the basins and recharge wells is shown in Table 1.1. For the groundwater model, these volumes are considered as well pumpage into the aquifer (both wells and basins).

2.7.2 Groundwater Inflow and Outflow

Groundwater inflow and outflow is the amount of groundwater or underflow migrating into an index cell from other areas and flowing out of an index cell to other areas. The net underflow, positive or negative,

is shown in the model water budget summaries for water movement between index cells or areas outside of the recharge basin area.

2.7.3 Evaporation and Transpiration

Evapotranspiration is estimated in the model. Earlier USGS studies estimated maximum evapotranspiration to be approximately 3.5 in/yr. The model incorporates a maximum value of 3.5 in/yr when the water table is at the surface. The rate is reduced with deeper groundwater level and is 0 when the water table is below 10 feet from the surface. Estimates of evapotranspiration are given for each index cell in the model water budgets.

2.7.4 Groundwater Diversions from Non-Domestic Wells

Groundwater diversions from all non-domestic wells are obtained from DWR in an electronic spreadsheet format. The well location and annual pumping is provided. Well pumpage is obtained from the annual well reports required of all permitted owners.

The amount of pumpage within each index cell in shown in the model water budget summaries. The volume shown in the summary is the net volume for the cell (pumpage minus volume recharged).

2.7.5 Infiltration from Streams

When aquifer levels are lower than water levels in a stream, there is a potential for water inflow or infiltration from the stream to the aquifer. The amount of flow depends on the difference in water levels and the permeability of the streambed. Using the calibrated model, estimates of net flow (water leaving the stream minus water entering the stream) is estimated for each index cell that has a river reach.

Infiltration from the Little Arkansas River was approximately 24,976 acre-feet in 2008 throughout the river reach included in the basin storage area. Infiltration from the Arkansas River in 2008 was 2453 acre-feet. Only IW-35 includes Arkansas River inflows. The estimates are shown in the model index cell water budget.

2.7.6 Groundwater Discharge to Streams

When aquifer levels are higher than water levels in a stream, there is a potential for water inflow or infiltration from the aquifer to the stream. The amount of flow depends on the difference in water levels and the permeability of the streambed. Using the calibrated USGS model, estimates of net flow (water leaving the stream minus water entering the stream) is estimated for each index cell that has a river reach.

The model shows that a total of 76,667 acre-feet of water migrated from the aquifer outside the basin storage area to the Little Arkansas River in 2008. This accounts for about 106 cfs of the average annual flow of 158 cfs for the year. The estimates are shown in the model index cell water budget.

2.7.7 Calculated Recharge Credits

Calculated recharge credits are based on the following for each index cell:

	Previous recharge credit
+	metered additional recharge
-	recharge credits recovered for use or maintenance
+	recharge credits entering by underflow (modeled)
-	recharge credits leaving by underflow or flow to river (modeled)
=	current recharge credit

Some differences in the water budgets with ASR and without ASR are excluded from the recharge credit calculations. For example, cells up-gradient of recharge cells have a reduced underflow to the recharge cell. This difference is not a credit, but shows increased water in storage in the up-gradient (non-recharge) cell. This indicates that the barrier to the Burton Salt Water plume is beginning to form.

A summary of the calculated recharge credits is presented in Table 2.3.

Table 2.3
2008 Recharge Credit Summary
(Acre-Feet)

Index Cell	Previous Recharge Credit	2008 Metered Recharge	2008 Metered Recovery	Net Recharge Credit Underflow Entering Index Cell	Net Recharge Credit Underflow Leaving Index Cell	Net Recharge Credit Loss to River	Current Recharge Credit
1	----			----	----	----	----
2	122.6	110.2	1.5	123.5	172.1	----	182.6
3	177.2			209.7	20.0	0.0	366.9
4	----			----	----	----	----
5	197.3	314.7	6.0	52.6	257.5	----	301.1
6	51.8			162.1	153.4	----	60.5
7	6.0			34.8	0.3	75.7	0.0*
8	----			----	----	----	----
9	120.6	231.7	2.9	44.3	175.8	----	217.8
10	45.1			126.2	109.9	----	61.4
11	17.0			24.6	6.6	9.8	25.3
12	1.2			11.1	1.0	11.8	0.0*
13	----			----	----	----	----
14	241.3	197.2	0.0	-36.9	106.9	----	294.7
15	22.0			78.4	57.9	----	42.5
16	8.9			30.0	17.8	----	21.0
17	1.1			12.0	2.3	5.3	5.6
18	----			----	----	----	----
19	0.4			15.0	16.3	----	0.0*
20	2.0			24.9	19.6	----	7.3
21	2.1			18.9	9.2	----	11.8
22	0.3			6.2	2.5	----	4.1
23	0.0			1.5	0.1	0.9	0.6
24	----			----	----	----	----
25	0.1			2.2	0.1	----	2.2
26	0.3			5.4	4.5	----	1.2
27	0.4			7.1	1.7	----	5.8
28	0.1			3.8	1.5	----	2.4
29	0.0			0.9	0.1	0.1	0.7
30	0.0			0.4	0.0	----	0.5
31	0.0			0.9	0.5	----	0.4
32	0.0			0.9	0.1	----	0.8
33	0.0			0.4	0.1	----	0.3
34	0.0			0.1	0.0	0.0	0.0
35	0.0			0.2	0.0	0.0	0.1
36	0.0			0.1	0.1	----	0.1
37	0.0			0.1	0.0	----	0.1
38	0.0			0.0	0.0	0.0	0.0
Total	1018.12	853.7	10.3	961.4	1137.9	103.6	1617.9

* Zeroed due to model configuration.

2.7.8 Surface Water Diversions

Surface water was diverted, treated and recharged in the recharge basins. The volume diverted is shown in Table 1.1.

* * * * *

APPENDIX A - 2008 INDEX CELL WATER BUDGET SUMMARIES

City of Wichita
2008 ASR Accounting

Index Cell 1

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	24,152	24,152	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 2	573,667	579,749	-6,082	-50.96
Index Cell 4	303,817	308,218	-4,401	-36.88
Outside Basin Area	109,045	106,269	2,776	23.26
Net Underflow Between Index Cells				-64.58
	Upgradient Cell - No Recharge Credits			
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 2

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	24,294	24,294	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 1	0	0	0	0.00
Index Cell 3	557,755	542,879	14,876	124.65
Index Cell 5	271,720	273,752	-2,031	-17.02
Index Cell 6	25,160	24,724	436	3.66
Outside Basin Area	125,729	118,469	7,260	60.84

Net Underflow Between Index Cells 172.12

Metered recharge	Gallons	AF
RRW-1 2007	43,267,211	132.78
RRW-1 2008	35,908,574	110.20
Total	79,175,785	242.98

City of Wichita
2008 ASR Accounting

Index Cell 3

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	116,853	23,859	92,993	779.21
Stream	965,723	1,033,820	-68,097	-570.60
Recharge	0	0	0	0.00
ET	3,168	3,190	-21	-0.18
Storage	29	27	2	0.01
Flows Between Index Cells Index Cell Number				
Index Cell 2	0	0	0	0.00
Index Cell 6	225,714	223,741	1,973	16.53
Index Cell 7	36,810	37,334	-524	-4.39
Outside Basin Area	145,951	145,539	412	3.45
Net Underflow Between Index Cells				16.53

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

City of Wichita
2008 ASR Accounting

Index Cell 4

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	29,728	29,728	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 1	117,174	117,006	168	1.41
Index Cell 5	548,216	559,003	-10,787	-90.39
Index Cell 8	223,206	225,366	-2,160	-18.10
Index Cell 9	25,335	25,719	-384	-3.22
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				-110.30
	Upgradient Cell - No Recharge Credits			
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 5

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	89,829	89,829	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 2	71,628	56,894	14,734	123.46
Index Cell 4	0	0	0	0.00
Index Cell 6	526,000	510,387	15,613	130.82
Index Cell 9	271,973	271,585	388	3.25
Net Underflow Between Index Cells				257.53

Metered recharge	Gallons	AF
RRW-2 2007	69,205,807	212.38
RRW-2 2008	63,117,032	193.70
RRW-3 2007	75,386,013	231.35
RRW-3 2008	39,424,807	120.99
Total	247,133,659	758.42

City of Wichita
2008 ASR Accounting

Index Cell 6

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	266,131	266,131	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 2	0	0	0	0.00
Index Cell 3	47,466	37,315	10,150	85.05
Index Cell 5	0	0	0	0.00
Index Cell 7	332,732	328,395	4,337	36.34
Index Cell 9	35,385	35,058	327	2.74
Index Cell 10	204,017	200,802	3,215	26.94
Index Cell 11	17,723	17,445	278	2.33
Net Underflow Between Index Cells				153.40
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 7

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	40,726	40,726	0	0.00
Stream	325,316	316,287	9,029	75.66
Recharge	0	0	0	0.00
ET	2,071	2,068	3	0.03
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 3	0	0	0	0.00
Index Cell 6	3,539	6,791	-3,253	-27.26
Index Cell 11	207,627	210,345	-2,718	-22.77
Outside Basin Area	90,057	90,023	34	0.29
Net Underflow Between Index Cells				-49.74
Metered recharge (no recharge facilities)				

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Index Cell 8

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	70,968	70,968	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 4	77,798	80,759	-2,961	-24.81
Index Cell 9	529,180	537,310	-8,130	-68.12
Index Cell 13	193,778	194,742	-964	-8.07
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				-101.01
	Upgradient Cell - No Recharge Credits			
Metered recharge (no recharge facilities)				

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Index Cell 9

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	182,285	182,285	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 4	0	0	0	0.00
Index Cell 5	47,883	39,574	8,309	69.62
Index Cell 6	3,825	3,463	361	3.03
Index Cell 8	0	0	0	0.00
Index Cell 10	529,511	517,533	11,978	100.37
Index Cell 13	0	0	0	0.00
Index Cell 14	241,702	242,510	-808	-6.77
Index Cell 15	49,270	48,131	1,140	9.55
Net Underflow Between Index Cells				175.80

Metered recharge	Gallons	AF
RB-1 2007	0	0.00
RB-1 2008	0	0.00
RW-1 2007	100,523,612	308.50
RW-1 2008	75,482,050	231.65
Total	176,005,662	540.14

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Index Cell 10

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	170,102	170,102	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 6	87,207	82,987	4,220	35.36
Index Cell 9	0	0	0	0.00
Index Cell 11	342,351	336,782	5,569	46.67
Index Cell 15	245,501	242,173	3,328	27.88
Net Underflow Between Index Cells				109.91
Metered recharge (no recharge facilities)				

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Index Cell 11

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	69,358	69,358	0	0.00
Stream	109,538	108,371	1,167	9.78
Recharge	0	0	0	0.00
ET	36	36	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 6	0	0	0	0.00
Index Cell 7	343	0	343	2.88
Index Cell 10	7,878	8,904	-1,027	-8.60
Index Cell 12	241,748	240,709	1,039	8.70
Index Cell 15	0	0	0	0.00
Index Cell 16	205,971	205,541	430	3.61
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				6.58
Metered recharge (no recharge facilities)				

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Index Cell 12

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	20,585	20,585	0	0.00
Stream	461,058	459,647	1,411	11.82
Recharge	0	0	0	0.00
ET	1,710	1,710	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 11	18,852	19,347	-496	-4.15
Index Cell 16	2,103	2,155	-52	-0.44
Index Cell 17	174,221	174,103	118	0.99
Outside Basin Area	25,785	25,779	6	0.05
Net Underflow Between Index Cells				-3.55
Metered recharge (no recharge facilities)				

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Index Cell 13

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	65,747	65,747	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 8	173,918	178,180	-4,262	-35.71
Index Cell 9	6,107	6,521	-413	-3.46
Index Cell 14	487,784	491,132	-3,348	-28.06
Index Cell 18	211,581	211,840	-258	-2.16
Index Cell 19	45,186	45,091	95	0.80
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				-68.60

Upgradient Cell - No Recharge Credits

Metered recharge
(no recharge facilities)

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Index Cell 14

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	135,098	135,098	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 9	108,074	103,505	4,568	38.28
Index Cell 13	0	0	0	0.00
Index Cell 15	460,916	454,518	6,398	53.61
Index Cell 19	220,426	218,636	1,790	15.00
Net Underflow Between Index Cells				106.89

Metered recharge	Gallons	AF
RB-2 2007	66,897,663	205.30
RB-2 2008	64,246,416	197.16
Total	131,144,079	402.47

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Index Cell 15

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	228,534	228,534	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 9	0	0	0	0.00
Index Cell 10	50,122	49,231	891	7.47
Index Cell 11	2,600	2,396	204	1.71
Index Cell 14	0	0	0	0.00
Index Cell 16	379,776	376,266	3,510	29.41
Index Cell 19	0	0	0	0.00
Index Cell 20	206,571	204,390	2,181	18.27
Index Cell 21	15,874	15,744	130	1.09
Net Underflow Between Index Cells				57.95
Metered recharge (no recharge facilities)				

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Index Cell 16

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	274,923	274,923	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 11	288	187	101	0.85
Index Cell 12	0	0	0	0.00
Index Cell 15	3,056	3,130	-74	-0.62
Index Cell 17	256,110	254,792	1,317	11.04
Index Cell 21	143,202	142,418	784	6.57
Net Underflow Between Index Cells				17.84
Metered recharge (no recharge facilities)				

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Index Cell 17

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	70,973	70,973	0	0.00
Stream	300,875	300,245	630	5.28
Recharge	0	0	0	0.00
ET	908	907	1	0.01
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 12	6,174	5,884	290	2.43
Index Cell 16	25,325	25,568	-244	-2.04
Index Cell 22	179,004	178,793	212	1.77
Index Cell 23	126,728	126,734	-7	-0.06
Outside Basin Area	22,337	22,319	18	0.15
Net Underflow Between Index Cells				2.26
Metered recharge (no recharge facilities)				

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Index Cell 18

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	134,030	134,030	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 13	309,816	312,558	-2,741	-22.97
Index Cell 19	291,329	291,895	-566	-4.74
Index Cell 24	72,685	72,653	31	0.26
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				-27.45
	Upgradient Cell - No Recharge Credits			
Metered recharge (no recharge facilities)				

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Index Cell 19

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	156,853	156,853	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 13	0	0	0	0.00
Index Cell 14	117,290	120,889	-3,598	-30.15
Index Cell 15	4,807	4,977	-170	-1.43
Index Cell 18	0	0	0	0.00
Index Cell 20	364,406	362,790	1,616	13.54
Index Cell 24	0	0	0	0.00
Index Cell 25	92,547	92,285	262	2.20
Index Cell 26	17,002	16,935	67	0.56
Net Underflow Between Index Cells				16.30
Metered recharge (no recharge facilities)				

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Index Cell 20

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	60,985	60,985	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 15	59,633	60,898	-1,265	-10.60
Index Cell 19	0	0	0	0.00
Index Cell 21	388,314	386,726	1,588	13.31
Index Cell 26	181,033	180,286	747	6.26
Net Underflow Between Index Cells				19.57

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

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Index Cell 21

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	338,254	338,254	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 15	0	0	0	0.00
Index Cell 16	13,104	13,173	-69	-0.58
Index Cell 20	0	0	0	0.00
Index Cell 22	169,520	168,965	555	4.65
Index Cell 27	185,967	185,425	542	4.54
Index Cell 28	40,039	39,973	66	0.55
Net Underflow Between Index Cells				9.16
Metered recharge (no recharge facilities)				

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Index Cell 22

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	122,038	122,038	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 17	0	0	0	0.00
Index Cell 21	26,548	26,566	-18	-0.15
Index Cell 23	167,698	167,515	183	1.54
Index Cell 28	141,172	141,039	133	1.11
Net Underflow Between Index Cells				2.49
Metered recharge (no recharge facilities)				

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Index Cell 23

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	87,841	87,841	0	0.00
Stream	314,716	314,608	108	0.91
Recharge	0	0	0	0.00
ET	941	941	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 17	0	0	0	0.00
Index Cell 22	42,772	42,811	-39	-0.33
Index Cell 28	2,521	2,523	-2	-0.01
Index Cell 29	150,663	150,653	10	0.08
Outside Basin Area	16,951	16,951	0	0.00
Net Underflow Between Index Cells				-0.26
Metered recharge (no recharge facilities)				

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Index Cell 24

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	116,238	116,238	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	5,276	5,272	4	0.03
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 18	160,720	161,164	-444	-3.72
Index Cell 19	7,666	7,700	-34	-0.29
Index Cell 25	217,578	217,653	-75	-0.63
Outside Basin Area	150,261	150,250	10	0.09
Net Underflow Between Index Cells				-4.55

Upgradient Cell - No Recharge Credits

Metered recharge
(no recharge facilities)

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Index Cell 25

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	111,404	111,404	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 19	124,963	125,748	-785	-6.58
Index Cell 24	0	0	0	0.00
Index Cell 26	226,192	226,155	38	0.32
Index Cell 30	6,502	6,500	2	0.02
Outside Basin Area	73,834	73,819	15	0.12
Net Underflow Between Index Cells				0.14

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

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Index Cell 26

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	217,383	217,383	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 19	0	0	0	0.00
Index Cell 20	63,074	63,898	-824	-6.90
Index Cell 25	0	0	0	0.00
Index Cell 27	269,666	269,194	472	3.96
Index Cell 30	82,179	82,118	60	0.51
Net Underflow Between Index Cells				4.46

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

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Index Cell 27

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	121,395	121,395	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 21	123,246	123,476	-230	-1.93
Index Cell 26	0	0	0	0.00
Index Cell 28	323,201	322,903	298	2.49
Index Cell 30	0	0	0	0.00
Index Cell 31	98,032	97,891	141	1.18
Net Underflow Between Index Cells				1.75

Metered recharge
(no recharge facilities)

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Index Cell 28

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	285,470	285,470	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 21	0	0	0	0.00
Index Cell 22	28,902	28,888	14	0.12
Index Cell 23	0	0	0	0.00
Index Cell 27	0	0	0	0.00
Index Cell 29	180,210	180,111	99	0.83
Index Cell 31	0	0	0	0.00
Index Cell 32	133,902	133,839	63	0.53
Index Cell 33	11,015	11,012	3	0.03
Net Underflow Between Index Cells				1.50
Metered recharge (no recharge facilities)				

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Index Cell 29

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	106,918	106,918	0	0.00
Stream	165,816	165,800	16	0.13
Recharge	0	0	0	0.00
ET	5	5	0	0.00
Storage	269	259	10	0.08
Flows Between Index Cells Index Cell Number				
Index Cell 23	1,467	1,467	0	0.00
Index Cell 28	22,533	22,536	-2	-0.02
Index Cell 33	101,790	101,773	17	0.14
Index Cell 34	36,545	36,544	1	0.01
Outside Basin Area	4,341	4,341	0	0.00
Net Underflow Between Index Cells				0.12
Metered recharge (no recharge facilities)				

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Index Cell 30

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	321,676	321,676	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	1,636	1,636	1	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 25	0	0	0	0.00
Index Cell 26	158,154	158,359	-205	-1.72
Index Cell 27	7,571	7,586	-16	-0.13
Index Cell 31	238,434	238,427	8	0.06
Outside Basin Area	29,083	29,078	4	0.03
Net Underflow Between Index Cells				-0.03

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

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Index Cell 31

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	171,812	171,812	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 27	158,714	158,879	-165	-1.38
Index Cell 28	5,111	5,114	-3	-0.03
Index Cell 30	27,395	27,406	-12	-0.10
Index Cell 32	309,747	309,691	56	0.47
Index Cell 35	106,563	106,544	19	0.16
Index Cell 36	13,628	13,627	2	0.01
Outside Basin Area	0	0	0	0.00
Net Underflow Between Index Cells				0.52

Values in yellow cells not included in Net Underflow Between Index Cells calculation

Metered recharge
(no recharge facilities)

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Index Cell 32

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	241,917	241,917	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	5	4	1	0.01
Flows Between Index Cells Index Cell Number				
Index Cell 28	74,720	74,751	-31	-0.26
Index Cell 31	0	0	0	0.00
Index Cell 33	286,908	286,882	26	0.22
Index Cell 36	108,570	108,558	12	0.10
Net Underflow Between Index Cells				0.06
Metered recharge (no recharge facilities)				

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Index Cell 33

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	256,516	256,516	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	432	432	0	0.00
Storage	2,897	2,869	28	0.24
Flows Between Index Cells Index Cell Number				
Index Cell 28	0	0	0	0.00
Index Cell 29	18,141	18,142	-1	-0.01
Index Cell 32	0	0	0	0.00
Index Cell 34	157,183	157,174	8	0.07
Index Cell 36	0	0	0	0.00
Index Cell 37	88,856	88,852	5	0.04
Net Underflow Between Index Cells				0.10
Metered recharge (no recharge facilities)				

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Index Cell 34

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	22,314	22,314	0	0.00
Stream	287,886	287,880	6	0.05
Recharge	0	0	0	0.00
ET	13	13	0	0.00
Storage	1,239	1,237	2	0.02
Flows Between Index Cells Index Cell Number				
Index Cell 29	2,947	2,946	0	0.00
Index Cell 33	0	0	0	0.00
Index Cell 37	0	0	0	0.00
Index Cell 38	51,458	51,457	0	0.00
Outside Basin Area	15,296	15,296	0	0.00
Net Underflow Between Index Cells				0.01
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 35

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	26,460	26,460	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	4,528	4,527	0	0.00
Storage	0	0	0	0.00
Flows Between Index Cells Index Cell Number				
Index Cell 31	376,132	376,173	-42	-0.35
Index Cell 36	247,394	247,391	3	0.03
Outside Basin Area	118,157	118,156	1	0.01
Net Underflow Between Index Cells				-0.32
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 36

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	124,713	124,713	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	60	60	0	0.00
Storage	194	190	4	0.04
Flows Between Index Cells Index Cell Number				
Index Cell 31	0	0	0	0.00
Index Cell 32	243,289	243,304	-15	-0.12
Index Cell 33	14,164	14,165	-1	0.00
Index Cell 35	0	0	0	0.00
Index Cell 37	142,287	142,283	4	0.03
Outside Basin Area	114,879	114,876	3	0.03
Net Underflow Between Index Cells				-0.07
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 37

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	94,788	94,788	0	0.00
Stream	0	0	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	3,120	3,113	7	0.06
Flows Between Index Cells Index Cell Number				
Index Cell 33	93,393	93,394	-2	-0.01
Index Cell 34	4,283	4,283	0	0.00
Index Cell 36	0	0	0	0.00
Index Cell 38	62,406	62,405	1	0.01
Outside Basin Area	85,659	85,658	1	0.01
Net Underflow Between Index Cells				0.01
Metered recharge (no recharge facilities)				

City of Wichita
2008 ASR Accounting

Index Cell 38

Flows Within Index Cell	Outflow rate with ASR (ft^3/day)	Outflow rate without ASR (ft^3/day)	Outflow rate change due to ASR (ft^3/day)	Outflow change due to ASR (AF/year)
Well	6,291	6,291	0	0.00
Stream	101,603	101,603	0	0.00
Recharge	0	0	0	0.00
ET	0	0	0	0.00
Storage	2,169	2,168	1	0.01
Flows Between Index Cells Index Cell Number				
Index Cell 34	57,077	57,077	0	0.00
Index Cell 37	0	0	0	0.00
Outside Basin Area	38,663	38,663	0	0.00
Net Underflow Between Index Cells				0.00
Metered recharge (no recharge facilities)				

APPENDIX B - 2008 WATER BUDGET REPORT WITH ASR

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

		With ASR		Without ASR	
Summary of HSU Zone Number	**1**	1.00		1.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		0.00	24152.29	0.00	24152.29
Stream		0.00	0.00	0.00	0.00
Lake		0.00	0.00	0.00	0.00
Recharge		21251.98	0.00	21251.98	0.00
ET		0.00	0.00	0.00	0.00
Storage		23080.27	0.00	23254.30	0.00
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 2		0.00	573667.00	0.00	579749.00
HSU Zone 4		117173.50	303817.10	117005.70	308218.30
HSU Zone 39		849896.20	109045.40	856947.80	106269.30
TOTAL FLOWS		1011402.00	1010682.00	1018460.00	1018389.00
Error		0.07		0.01	

Summary of HSU Zone Number	**2**	2.00		2.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		12972.99	24294.18	0.00	24294.18
Stream		0.00	0.00	0.00	0.00
Lake		0.00	0.00	0.00	0.00
Recharge		29548.29	0.00	29548.29	0.00
ET		0.00	0.00	0.00	0.00
Storage		17109.53	0.00	17757.70	0.00
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 1		573667.00	0.00	579749.00	0.00
HSU Zone 3		0.00	557755.10	0.00	542879.40
HSU Zone 5		71628.09	271720.40	56894.43	273751.80
HSU Zone 6		0.00	25160.41	0.00	24724.05
HSU Zone 39		299842.40	125728.80	300197.30	118468.50
TOTAL FLOWS		1004768.00	1004659.00	984146.80	984117.90
Error		0.01		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

		With ASR		Without ASR	
Summary of HSU Zone Number	**3**	3.00		3.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		0.00	116852.60	0.00	23859.18
Stream		0.00	965723.10	0.00	1033820.00
Lake		0.00	0.00	0.00	0.00
Recharge		25535.91	0.00	25535.91	0.00
ET		0.00	3168.38	0.00	3189.53
Storage		5441.23	28.64	5716.22	27.09
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 2		557755.10	0.00	542879.40	0.00
HSU Zone 6		47465.82	225714.10	37315.40	223741.20
HSU Zone 7		0.00	36809.59	0.00	37333.58
HSU Zone 39		858215.30	145950.70	856177.00	145539.00
TOTAL FLOWS		1494413.00	1494247.00	1467624.00	1467509.00
Error		0.01		0.01	

Summary of HSU Zone Number	**4**	4.00		4.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		0.00	29727.73	0.00	29727.73
Stream		0.00	0.00	0.00	0.00
Lake		0.00	0.00	0.00	0.00
Recharge		29380.41	0.00	29380.41	0.00
ET		0.00	0.00	0.00	0.00
Storage		32681.62	0.00	33934.82	0.00
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 1		303817.10	117173.50	308218.30	117005.70
HSU Zone 5		0.00	548216.00	0.00	559003.40
HSU Zone 8		77797.99	223206.20	80759.22	225366.30
HSU Zone 9		0.00	25335.01	0.00	25718.77
HSU Zone 39		500312.50	0.00	504574.90	0.00
TOTAL FLOWS		943989.60	943658.40	956867.70	956821.80
Error		0.04		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

	With ASR		Without ASR	
Summary of HSU Zone Number **5**	5.00		5.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	36848.70	89829.29	0.00	89829.29
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	28568.78	0.00	28568.78	0.00
ET	0.00	0.00	0.00	0.00
Storage	26289.77	0.00	27822.33	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 2	271720.40	71628.09	273751.80	56894.43
HSU Zone 4	548216.00	0.00	559003.40	0.00
HSU Zone 6	0.00	526000.20	0.00	510387.30
HSU Zone 9	47883.37	271972.80	39574.33	271584.90
TOTAL FLOWS	959527.10	959430.30	928720.60	928696.00
Error	0.01		0.00	

Summary of HSU Zone Number **6**	6.00		6.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	266130.50	0.00	266130.50
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	16562.04	0.00	16562.04	0.00
ET	0.00	0.00	0.00	0.00
Storage	15505.80	0.00	16500.58	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 2	25160.41	0.00	24724.05	0.00
HSU Zone 3	225714.10	47465.82	223741.20	37315.40
HSU Zone 5	526000.20	0.00	510387.30	0.00
HSU Zone 7	3538.57	332731.60	6791.40	328394.80
HSU Zone 9	3824.80	35385.04	3463.46	35057.71
HSU Zone 10	87207.18	204016.50	82987.44	200801.70
HSU Zone 11	0.00	17722.84	0.00	17445.03
TOTAL FLOWS	903513.10	903452.20	885157.50	885145.10
Error	0.01		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

		With ASR		Without ASR	
Summary of HSU Zone Number	**7**	7.00		7.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		0.00	40725.69	0.00	40725.69
Stream		21820.59	325316.20	22590.34	316287.10
Lake		0.00	0.00	0.00	0.00
Recharge		5196.50	0.00	5196.50	0.00
ET		0.00	2070.89	0.00	2067.90
Storage		2219.98	0.00	2370.24	0.00
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 3		36809.59	0.00	37333.58	0.00
HSU Zone 6		332731.60	3538.57	328394.80	6791.40
HSU Zone 11		343.15	207627.00	0.00	210344.60
HSU Zone 39		270263.10	90057.00	270336.10	90022.51
TOTAL FLOWS		669384.50	669335.30	666221.50	666239.30
Error		0.01		0.00	

Summary of HSU Zone Number	**8**	8.00		8.00	
Flows Within HSU		Inflow	Outflow	Inflow	Outflow
Constant Head		0.00	0.00	0.00	0.00
River		0.00	0.00	0.00	0.00
Drain		0.00	0.00	0.00	0.00
GHB		0.00	0.00	0.00	0.00
Well		0.00	70968.05	0.00	70968.05
Stream		0.00	0.00	0.00	0.00
Lake		0.00	0.00	0.00	0.00
Recharge		25512.07	0.00	25512.07	0.00
ET		0.00	0.00	0.00	0.00
Storage		40181.37	0.00	43086.64	0.00
Flows Between HSUs					
HSU Number		Inflow	Outflow	Inflow	Outflow
HSU Zone 4		223206.20	77797.99	225366.30	80759.22
HSU Zone 9		0.00	529180.10	0.00	537309.60
HSU Zone 13		173918.00	193778.20	178180.20	194741.80
HSU Zone 39		408910.80	0.00	411642.20	0.00
TOTAL FLOWS		871728.50	871724.40	883787.30	883778.70
Error		0.00		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

	With ASR		Without ASR	
Summary of HSU Zone Number **9**	9.00		9.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	27306.36	182284.90	0.00	182284.90
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	16847.85	0.00	16847.85	0.00
ET	0.00	0.00	0.00	0.00
Storage	34316.08	0.00	36959.03	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 4	25335.01	0.00	25718.77	0.00
HSU Zone 5	271972.80	47883.37	271584.90	39574.33
HSU Zone 6	35385.04	3824.80	35057.71	3463.46
HSU Zone 8	529180.10	0.00	537309.60	0.00
HSU Zone 10	0.00	529511.30	0.00	517533.20
HSU Zone 13	6107.45	0.00	6520.79	0.00
HSU Zone 14	108073.60	241702.00	103505.20	242510.10
HSU Zone 15	0.00	49270.34	0.00	48130.50
TOTAL FLOWS	1054524.00	1054477.00	1033504.00	1033496.00
Error	0.00		0.00	

Summary of HSU Zone Number **10**	10.00		10.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	170101.70	0.00	170101.70
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	29090.57	0.00	29090.57	0.00
ET	0.00	0.00	0.00	0.00
Storage	24612.51	0.00	26507.65	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 6	204016.50	87207.18	200801.70	82987.44
HSU Zone 9	529511.30	0.00	517533.20	0.00
HSU Zone 11	7877.62	342351.00	8904.42	336781.70
HSU Zone 15	50122.35	245501.20	49231.43	242173.40
TOTAL FLOWS	845230.90	845161.00	832068.90	832044.20
Error	0.01		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

	With ASR		Without ASR	
Summary of HSU Zone Number **11**	11.00		11.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	69358.23	0.00	69358.23
Stream	0.00	109537.50	0.00	108370.70
Lake	0.00	0.00	0.00	0.00
Recharge	20986.84	0.00	20986.84	0.00
ET	0.00	35.93	0.00	35.66
Storage	12602.87	0.00	13541.81	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 6	17722.84	0.00	17445.03	0.00
HSU Zone 7	207627.00	343.15	210344.60	0.00
HSU Zone 10	342351.00	7877.62	336781.70	8904.42
HSU Zone 12	18851.79	241747.90	19347.31	240709.40
HSU Zone 15	2599.89	0.00	2395.56	0.00
HSU Zone 16	287.83	205971.20	186.63	205540.80
HSU Zone 39	11908.39	0.00	11911.74	0.00
TOTAL FLOWS	634938.40	634871.60	632941.20	632919.20
Error	0.01		0.00	

Summary of HSU Zone Number **12**	12.00		12.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	20585.13	0.00	20585.13
Stream	5736.44	461057.80	5876.06	459646.60
Lake	0.00	0.00	0.00	0.00
Recharge	6963.92	0.00	6963.92	0.00
ET	0.00	1710.04	0.00	1709.83
Storage	2517.85	0.00	2682.26	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 11	241747.90	18851.79	240709.40	19347.31
HSU Zone 16	0.00	2103.26	0.00	2155.28
HSU Zone 17	6173.91	174221.20	5884.05	174103.30
HSU Zone 39	441155.50	25784.93	441174.80	25779.08
TOTAL FLOWS	704295.50	704314.10	703290.50	703326.60
Error	0.00		-0.01	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

	With ASR		Without ASR	
Summary of HSU Zone Number **13**	13.00		13.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	65747.28	0.00	65747.28
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	26981.46	0.00	26981.46	0.00
ET	0.00	0.00	0.00	0.00
Storage	38270.93	0.00	41192.55	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 8	193778.20	173918.00	194741.80	178180.20
HSU Zone 9	0.00	6107.45	0.00	6520.79
HSU Zone 14	0.00	487783.50	0.00	491131.80
HSU Zone 18	309816.40	211581.30	312557.60	211839.50
HSU Zone 19	0.00	45186.46	0.00	45091.30
HSU Zone 39	421477.00	0.00	423047.50	0.00
TOTAL FLOWS	990324.00	990324.00	998520.90	998510.80
Error	0.00		0.00	

Summary of HSU Zone Number **14**	14.00		14.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	23532.00	135098.10	0.00	135098.10
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	16374.11	0.00	16374.11	0.00
ET	0.00	0.00	0.00	0.00
Storage	37825.13	0.00	40854.53	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 9	241702.00	108073.60	242510.10	103505.20
HSU Zone 13	487783.50	0.00	491131.80	0.00
HSU Zone 15	0.00	460915.80	0.00	454517.90
HSU Zone 19	117290.30	220426.00	120888.60	218636.00
TOTAL FLOWS	924507.10	924513.50	911759.10	911757.30
Error	0.00		0.00	

2008
Accounting Model
Detailed Hydrostratigraphic Unit Water Budget

	With ASR		Without ASR	
Summary of HSU Zone Number **15**	15.00		15.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	228534.10	0.00	228534.10
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	28564.74	0.00	28564.74	0.00
ET	0.00	0.00	0.00	0.00
Storage	31765.27	0.00	34192.03	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 9	49270.34	0.00	48130.50	0.00
HSU Zone 10	245501.20	50122.35	242173.40	49231.43
HSU Zone 11	0.00	2599.89	0.00	2395.56
HSU Zone 14	460915.80	0.00	454517.90	0.00
HSU Zone 16	3055.68	379776.00	3129.79	376266.40
HSU Zone 19	4806.94	0.00	4977.13	0.00
HSU Zone 20	59633.06	206571.00	60897.66	204390.20
HSU Zone 21	0.00	15873.63	0.00	15743.95
TOTAL FLOWS	883513.00	883476.90	876583.10	876561.60
Error	0.00		0.00	

Summary of HSU Zone Number **16**	16.00		16.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	274923.30	0.00	274923.30
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	29288.46	0.00	29288.46	0.00
ET	0.00	0.00	0.00	0.00
Storage	22069.14	0.00	23484.69	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 11	205971.20	287.83	205540.80	186.63
HSU Zone 12	2103.26	0.00	2155.28	0.00
HSU Zone 15	379776.00	3055.68	376266.40	3129.79
HSU Zone 17	25324.57	256109.50	25568.09	254792.30
HSU Zone 21	13103.84	143202.00	13172.57	142417.60
TOTAL FLOWS	677636.50	677578.40	675476.30	675449.70
Error	0.01		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **17**	17.00		17.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	70973.26	0.00	70973.26
Stream	0.00	300875.10	0.00	300244.80
Lake	0.00	0.00	0.00	0.00
Recharge	31461.27	0.00	31461.27	0.00
ET	0.00	908.29	0.00	907.28
Storage	9847.89	0.00	10342.17	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 12	174221.20	6173.91	174103.30	5884.05
HSU Zone 16	256109.50	25324.57	254792.30	25568.09
HSU Zone 22	0.00	179004.10	0.00	178792.50
HSU Zone 23	0.00	126727.50	0.00	126734.30
HSU Zone 39	260747.60	22336.83	260764.00	22318.83
TOTAL FLOWS	732387.40	732323.60	731463.10	731423.10
Error	0.01		0.01	

Summary of HSU Zone Number **18**	18.00		18.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	134030.40	0.00	134030.40
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	26993.44	0.00	26993.44	0.00
ET	0.00	0.00	0.00	0.00
Storage	31567.81	0.00	33464.55	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 13	211581.30	309816.40	211839.50	312557.60
HSU Zone 19	0.00	291328.80	0.00	291894.70
HSU Zone 24	160719.90	72684.80	161163.50	72653.44
HSU Zone 39	376884.80	0.00	377675.30	0.00
TOTAL FLOWS	807747.30	807860.40	811136.20	811136.10
Error	-0.01		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **19**	19.00		19.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	156852.70	0.00	156852.70
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	27035.44	0.00	27035.44	0.00
ET	0.00	0.00	0.00	0.00
Storage	36239.35	0.00	38632.19	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 13	45186.46	0.00	45091.30	0.00
HSU Zone 14	220426.00	117290.30	218636.00	120888.60
HSU Zone 15	0.00	4806.94	0.00	4977.13
HSU Zone 18	291328.80	0.00	291894.70	0.00
HSU Zone 20	0.00	364405.50	0.00	362789.80
HSU Zone 24	7665.89	0.00	7700.37	0.00
HSU Zone 25	124963.00	92547.29	125747.70	92284.85
HSU Zone 26	0.00	17001.66	0.00	16934.65
TOTAL FLOWS	752844.90	752904.40	754737.60	754727.70
Error	-0.01		0.00	

Summary of HSU Zone Number **20**	20.00		20.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	60985.03	0.00	60985.03
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	22143.58	0.00	22143.58	0.00
ET	0.00	0.00	0.00	0.00
Storage	33769.97	0.00	35687.19	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 15	206571.00	59633.06	204390.20	60897.66
HSU Zone 19	364405.50	0.00	362789.80	0.00
HSU Zone 21	0.00	388314.10	0.00	386726.10
HSU Zone 26	63074.29	181033.00	63897.85	180285.80
TOTAL FLOWS	689964.30	689965.10	688908.60	688894.60
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **21**	21.00		21.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	338253.60	0.00	338253.60
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	20408.31	0.00	20408.31	0.00
ET	0.00	0.00	0.00	0.00
Storage	29313.94	0.00	30466.40	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 15	15873.63	0.00	15743.95	0.00
HSU Zone 16	143202.00	13103.84	142417.60	13172.57
HSU Zone 20	388314.10	0.00	386726.10	0.00
HSU Zone 22	26548.08	169520.00	26566.36	168965.30
HSU Zone 27	123246.20	185967.00	123476.40	185425.40
HSU Zone 28	0.00	40038.92	0.00	39973.08
TOTAL FLOWS	746906.20	746883.40	745805.10	745789.90
Error	0.00		0.00	

Summary of HSU Zone Number **22**	22.00		22.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	122037.50	0.00	122037.50
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	21895.73	0.00	21895.73	0.00
ET	0.00	0.00	0.00	0.00
Storage	15387.99	0.00	15822.84	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 17	179004.10	0.00	178792.50	0.00
HSU Zone 21	169520.00	26548.08	168965.30	26566.36
HSU Zone 23	42771.81	167697.80	42811.25	167514.60
HSU Zone 28	28902.11	141171.80	28887.76	141039.00
TOTAL FLOWS	457481.80	457455.10	457175.40	457157.50
Error	0.01		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **23**	23.00		23.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	87840.94	0.00	87840.94
Stream	10798.61	314716.10	10827.46	314607.90
Lake	0.00	0.00	0.00	0.00
Recharge	8028.59	0.00	8028.59	0.00
ET	0.00	940.56	0.00	940.54
Storage	3429.07	0.00	3500.49	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 17	126727.50	0.00	126734.30	0.00
HSU Zone 22	167697.80	42771.81	167514.60	42811.25
HSU Zone 28	0.00	2521.44	0.00	2523.06
HSU Zone 29	1467.28	150662.70	1467.32	150652.70
HSU Zone 39	298371.20	16950.97	298367.70	16950.60
TOTAL FLOWS	616520.00	616404.50	616440.40	616327.00
Error	0.02		0.02	

Summary of HSU Zone Number **24**	24.00		24.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	116237.60	0.00	116237.60
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	12203.95	0.00	12203.95	0.00
ET	0.00	5276.09	0.00	5272.26
Storage	12329.26	0.00	12773.13	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 18	72684.80	160719.90	72653.44	161163.50
HSU Zone 19	0.00	7665.89	0.00	7700.37
HSU Zone 25	0.00	217578.10	0.00	217653.00
HSU Zone 39	560443.40	150260.70	560637.00	150250.30
TOTAL FLOWS	657661.40	657738.40	658267.50	658277.10
Error	-0.01		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **25**	25.00		25.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	111404.00	0.00	111404.00
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	15158.62	0.00	15158.62	0.00
ET	0.00	0.00	0.00	0.00
Storage	19645.01	0.00	20517.40	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 19	92547.29	124963.00	92284.85	125747.70
HSU Zone 24	217578.10	0.00	217653.00	0.00
HSU Zone 26	0.00	226192.20	0.00	226154.50
HSU Zone 30	0.00	6502.41	0.00	6500.39
HSU Zone 39	197913.30	73833.93	198013.50	73819.35
TOTAL FLOWS	542842.30	542895.50	543627.30	543625.90
Error	-0.01		0.00	

Summary of HSU Zone Number **26**	26.00		26.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	217383.00	0.00	217383.00
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	20024.50	0.00	20024.50	0.00
ET	0.00	0.00	0.00	0.00
Storage	29891.05	0.00	30847.70	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 19	17001.66	0.00	16934.65	0.00
HSU Zone 20	181033.00	63074.29	180285.80	63897.85
HSU Zone 25	226192.20	0.00	226154.50	0.00
HSU Zone 27	0.00	269665.80	0.00	269193.60
HSU Zone 30	158153.80	82178.73	158358.70	82118.46
TOTAL FLOWS	632296.10	632301.80	632605.90	632592.90
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **27**	27.00		27.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	121394.60	0.00	121394.60
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	16070.27	0.00	16070.27	0.00
ET	0.00	0.00	0.00	0.00
Storage	27890.71	0.00	28519.82	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 21	185967.00	123246.20	185425.40	123476.40
HSU Zone 26	269665.80	0.00	269193.60	0.00
HSU Zone 28	0.00	323200.50	0.00	322902.90
HSU Zone 30	7570.62	0.00	7586.18	0.00
HSU Zone 31	158714.00	98031.76	158879.00	97890.51
TOTAL FLOWS	665878.40	665873.10	665674.30	665664.40
Error	0.00		0.00	

Summary of HSU Zone Number **28**	28.00		28.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	285469.80	0.00	285469.80
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	15574.46	0.00	15574.46	0.00
ET	0.00	0.00	0.00	0.00
Storage	14633.59	0.00	14914.28	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 21	40038.92	0.00	39973.08	0.00
HSU Zone 22	141171.80	28902.11	141039.00	28887.76
HSU Zone 23	2521.44	0.00	2523.06	0.00
HSU Zone 27	323200.50	0.00	322902.90	0.00
HSU Zone 29	22533.22	180209.50	22535.58	180111.00
HSU Zone 31	5111.05	0.00	5114.26	0.00
HSU Zone 32	74720.30	133902.10	74751.22	133839.10
HSU Zone 33	0.00	11014.89	0.00	11011.50
TOTAL FLOWS	639505.30	639498.30	639327.90	639319.10
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **29**	29.00		29.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	106918.10	0.00	106918.10
Stream	8369.86	165816.00	8370.80	165800.40
Lake	0.00	0.00	0.00	0.00
Recharge	9173.84	0.00	9173.84	0.00
ET	0.00	5.41	0.00	5.41
Storage	2226.07	269.38	2291.55	259.33
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 23	150662.70	1467.28	150652.70	1467.32
HSU Zone 28	180209.50	22533.22	180111.00	22535.58
HSU Zone 33	18141.06	101789.70	18142.26	101773.10
HSU Zone 34	2946.85	36544.66	2946.37	36544.00
HSU Zone 39	68005.88	4340.85	68006.01	4340.80
TOTAL FLOWS	439735.70	439684.60	439694.50	439644.10
Error	0.01		0.01	

Summary of HSU Zone Number **30**	30.00		30.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	321675.50	0.00	321675.50
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	11640.16	0.00	11640.16	0.00
ET	0.00	1636.22	0.00	1635.69
Storage	16037.70	0.00	16238.90	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 25	6502.41	0.00	6500.39	0.00
HSU Zone 26	82178.73	158153.80	82118.46	158358.70
HSU Zone 27	0.00	7570.62	0.00	7586.18
HSU Zone 31	27394.72	238434.20	27406.30	238426.70
HSU Zone 39	612796.00	29082.53	612859.60	29078.36
TOTAL FLOWS	756549.70	756552.80	756763.80	756761.10
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **31**	31.00		31.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	171812.40	0.00	171812.40
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	13625.29	0.00	13625.29	0.00
ET	0.00	0.00	0.00	0.00
Storage	17442.64	0.00	17652.40	0.00
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 27	98031.76	158714.00	97890.51	158879.00
HSU Zone 28	0.00	5111.05	0.00	5114.26
HSU Zone 30	238434.20	27394.72	238426.70	27406.30
HSU Zone 32	0.00	309746.90	0.00	309691.10
HSU Zone 35	376131.50	106562.50	376173.40	106543.50
HSU Zone 36	0.00	13628.27	0.00	13626.62
HSU Zone 39	49306.04	0.00	49310.45	0.00
TOTAL FLOWS	792971.40	792969.80	793078.70	793073.20
Error	0.00		0.00	

Summary of HSU Zone Number **32**	32.00		32.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	241917.30	0.00	241917.30
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	18651.10	0.00	18651.10	0.00
ET	0.00	0.00	0.00	0.00
Storage	6540.06	5.12	6640.80	4.50
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 28	133902.10	74720.30	133839.10	74751.22
HSU Zone 31	309746.90	0.00	309691.10	0.00
HSU Zone 33	0.00	286908.20	0.00	286882.10
HSU Zone 36	243288.80	108570.30	243303.60	108558.40
TOTAL FLOWS	712128.90	712121.20	712125.60	712113.50
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **33**	33.00		33.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	256516.20	0.00	256516.20
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	16688.17	0.00	16688.17	0.00
ET	0.00	431.69	0.00	431.68
Storage	75.31	2896.66	81.60	2868.50
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 28	11014.89	0.00	11011.50	0.00
HSU Zone 29	101789.70	18141.06	101773.10	18142.26
HSU Zone 32	286908.20	0.00	286882.10	0.00
HSU Zone 34	0.00	157182.50	0.00	157174.30
HSU Zone 36	14164.40	0.00	14164.93	0.00
HSU Zone 37	93392.55	88856.24	93394.10	88851.51
TOTAL FLOWS	524033.20	524024.40	523995.50	523984.50
Error	0.00		0.00	

	With ASR		Without ASR	
Summary of HSU Zone Number **34**	34.00		34.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	22313.85	0.00	22313.85
Stream	42914.11	287885.90	42914.43	287880.30
Lake	0.00	0.00	0.00	0.00
Recharge	2078.60	0.00	2078.60	0.00
ET	0.00	13.04	0.00	13.03
Storage	317.64	1239.28	317.64	1236.87
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 29	36544.66	2946.85	36544.00	2946.37
HSU Zone 33	157182.50	0.00	157174.30	0.00
HSU Zone 37	4283.17	0.00	4283.20	0.00
HSU Zone 38	57076.92	51457.61	57076.71	51457.13
HSU Zone 39	80740.77	15296.13	80740.80	15296.12
TOTAL FLOWS	381138.40	381152.60	381129.70	381143.70
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **35**	35.00		35.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	26459.56	0.00	26459.56
Stream	292730.70	0.00	292751.20	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	6755.45	0.00	6755.45	0.00
ET	0.00	4527.93	0.00	4527.50
Storage	2762.17	0.13	2783.61	0.13
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 31	106562.50	376131.50	106543.50	376173.40
HSU Zone 36	0.00	247394.00	0.00	247390.90
HSU Zone 39	363289.50	118156.80	363305.50	118155.80
TOTAL FLOWS	772100.30	772670.00	772139.40	772707.30
Error	-0.07		-0.07	

Summary of HSU Zone Number **36**	36.00		36.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	124712.90	0.00	124712.90
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	7482.96	0.00	7482.96	0.00
ET	0.00	59.98	0.00	59.98
Storage	1132.37	194.46	1147.39	190.02
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 31	13628.27	0.00	13626.62	0.00
HSU Zone 32	108570.30	243288.80	108558.40	243303.60
HSU Zone 33	0.00	14164.40	0.00	14164.93
HSU Zone 35	247394.00	0.00	247390.90	0.00
HSU Zone 37	0.00	142286.50	0.00	142282.60
HSU Zone 39	261378.70	114878.70	261385.90	114875.50
TOTAL FLOWS	639586.60	639585.80	639592.10	639589.50
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number **37**	37.00		37.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	94787.84	0.00	94787.84
Stream	0.00	0.00	0.00	0.00
Lake	0.00	0.00	0.00	0.00
Recharge	7638.86	0.00	7638.86	0.00
ET	0.00	0.00	0.00	0.00
Storage	0.00	3120.28	0.00	3112.86
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 33	88856.24	93392.55	88851.51	93394.10
HSU Zone 34	0.00	4283.17	0.00	4283.20
HSU Zone 36	142286.50	0.00	142282.60	0.00
HSU Zone 38	0.00	62406.14	0.00	62405.17
HSU Zone 39	104868.70	85659.49	104869.80	85658.17
TOTAL FLOWS	343650.40	343649.50	343642.70	343641.30
Error	0.00		0.00	

Summary of HSU Zone Number **38**	38.00		38.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	0.00	0.00	0.00	0.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	6291.42	0.00	6291.42
Stream	1920.83	101602.80	1920.83	101602.70
Lake	0.00	0.00	0.00	0.00
Recharge	4261.13	0.00	4261.13	0.00
ET	0.00	0.00	0.00	0.00
Storage	121.77	2169.32	121.77	2168.34
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 34	51457.61	57076.92	51457.13	57076.71
HSU Zone 37	62406.14	0.00	62405.17	0.00
HSU Zone 39	85627.51	38662.73	85627.47	38662.64
TOTAL FLOWS	205795.00	205803.20	205793.50	205801.80
Error	0.00		0.00	

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	With ASR		Without ASR	
Summary of HSU Zone Number	39.00		39.00	
Flows Within HSU	Inflow	Outflow	Inflow	Outflow
Constant Head	10198420.00	1048829.00	10198580.00	1048832.00
River	0.00	0.00	0.00	0.00
Drain	0.00	0.00	0.00	0.00
GHB	0.00	0.00	0.00	0.00
Well	0.00	3262171.00	0.00	3262171.00
Stream	7968962.00	9149621.00	7976624.00	9142338.00
Lake	0.00	0.00	0.00	0.00
Recharge	1163320.00	0.00	1163386.00	0.00
ET	0.00	862280.90	0.00	862182.20
Storage	1469493.00	217044.30	1456045.00	211959.90
Flows Between HSUs				
HSU Number	Inflow	Outflow	Inflow	Outflow
HSU Zone 1	109045.40	849896.20	106269.30	856947.80
HSU Zone 2	125728.80	299842.40	118468.50	300197.30
HSU Zone 3	145950.70	858215.30	145539.00	856177.00
HSU Zone 4	0.00	500312.50	0.00	504574.90
HSU Zone 7	90057.00	270263.10	90022.51	270336.10
HSU Zone 8	0.00	408910.80	0.00	411642.20
HSU Zone 11	0.00	11908.39	0.00	11911.74
HSU Zone 12	25784.93	441155.50	25779.08	441174.80
HSU Zone 13	0.00	421477.00	0.00	423047.50
HSU Zone 17	22336.83	260747.60	22318.83	260764.00
HSU Zone 18	0.00	376884.80	0.00	377675.30
HSU Zone 23	16950.97	298371.20	16950.60	298367.70
HSU Zone 24	150260.70	560443.40	150250.30	560637.00
HSU Zone 25	73833.93	197913.30	73819.35	198013.50
HSU Zone 29	4340.85	68005.88	4340.80	68006.01
HSU Zone 30	29082.53	612796.00	29078.36	612859.60
HSU Zone 31	0.00	49306.04	0.00	49310.45
HSU Zone 34	15296.13	80740.77	15296.12	80740.80
HSU Zone 35	118156.80	363289.50	118155.80	363305.50
HSU Zone 36	114878.70	261378.70	114875.50	261385.90
HSU Zone 37	85659.49	104868.70	85658.17	104869.80
HSU Zone 38	38662.73	85627.51	38662.64	85627.47
TOTAL FLOWS	21966220.00	21922300.00	21950120.00	21925060.00
Error	0.20		0.11	