

**SUPPLEMENT TO THE
BONNEVILLE UNIT DEFINITE PLAN REPORT**

**WATER SUPPLY APPENDIX, VOLUME 6
UTAH LAKE AND JORDAN RIVER**



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Central Utah Project Completion Program

Chapter 1

October 2004



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



SCOPE OF THIS APPENDIX VOLUME

This volume describes and documents the analysis of Utah Lake and Jordan River operations under full Bonneville Unit development as described in the 2004 Supplement to the 1988 Bonneville Unit Definite Plan Report (DPR). Specific topics include water rights, water exchanges, Utah Lake levels, Jordan River flows, and water quality. This volume supports the supplement to the 1988 DPR and Volume 1 of the Water Supply Appendix to the DPR.

Other Chapters and Attachments in this Volume 6 include the following:

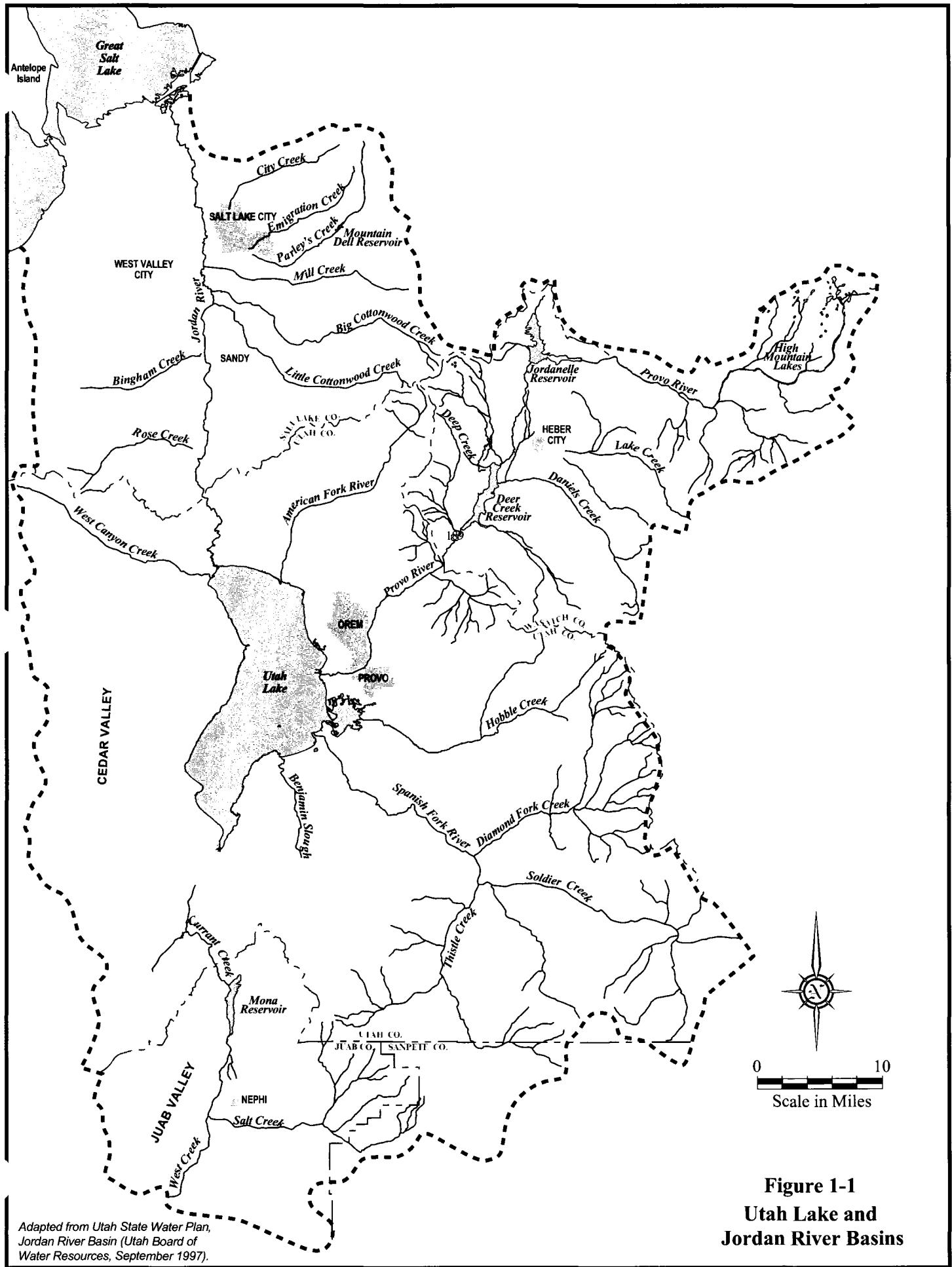
- Chapter 2 – Overview of Bonneville Unit Operations Relating to Utah Lake
- Chapter 3 – Hydrologic Setting and Current Operation
- Chapter 4 – Water Rights, Return Flows, and Exchanges
- Chapter 5 – Yield of Central Utah Water Conservancy District’s Utah Lake Water Rights
- Chapter 6 – Utah Lake Operation With Bonneville Unit
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- Attachment A – Interim Water Distribution Plan for Utah Lake
- Attachment B – Utah Lake Modeling Results – Bonneville Unit Conditions
- Attachment C – Utah Lake Spreadsheet Model – Bonneville Unit Conditions
- Attachment D – Flow of Jordan River – Bonneville Unit Conditions
- Attachment E – Utah Lake Salinity Analysis (LKSIM 2000) – Bonneville Unit Conditions

BACKGROUND ON UTAH LAKE OPERATIONS

Utah Lake is a shallow, semi-saline remnant of ancient Lake Bonneville, a 20,000-square-mile lake that covered much of northern and central Utah more than 10,000 years ago. From geological evidence, it appears that Lake Bonneville reached a peak depth of about 1,050 feet before spilling into the Snake River Valley tributary to the Columbia River. The overflow and erosion at Red Rock Pass is believed to be the first major event that caused drawdown of the lake. The ensuing drier years resulted in further reductions in Lake Bonneville. Great Salt Lake and Utah Lake are the remaining separate bodies of water that occupy the lowest portions of Salt Lake and Utah Valleys. Utah Lake drains to the Great Salt Lake by way of the Jordan River; the Great Salt Lake is a highly saline terminal lake.

INFLOW AND OUTFLOW

Major perennial streams that feed Utah Lake are, from north to south, the American Fork River, Provo River, Hobble Creek, and Spanish Fork River. Figure 1-1 shows Utah Lake, major tributary streams, the Jordan River, and the Jordan River tributary streams in Utah and Salt Lake Valleys.



Utah Lake has a surface area of 150 square miles and an average depth of 9.2 feet (Jackson and Stevens 1981). Its bottom is highly silted, resulting in high turbidity that is most pronounced during periods of wind when wave action stirs up the lake bed sediments. The lake serves as an important irrigation and industrial water supply for lands and uses in northern Utah and Salt Lake counties. While the water is adequate for most irrigation and industrial uses, it is not suitable for municipal and manufacturing purposes because of its relatively high salinity, suspended solids, and organic matter. Historically, the lake provided fish, and the shoreline provided small game for the Indian cultures and the early settlers. The lake continues to provide a warm-water commercial and public fishery, boating and recreational opportunities, and important waterfowl habitat.

Utah Lake was developed as a storage reservoir in 1872, when gates were placed at the Jordan River outlet at the north end of the naturally formed lake. The storage provided by Utah Lake has been used primarily to supplement irrigation diversions from the Jordan River. Utah Lake water is also used to facilitate water exchanges by using lake water on lands that were formerly irrigated from Wasatch Front streams, thus allowing the higher quality mountain streams to be used for domestic and municipal uses. While generally adequate for irrigation, because of high total dissolved solids (TDS). Utah Lake water is not suitable for domestic use without blending it with other higher quality waters.

WATER STORAGE

During years of high inflow to Utah Lake, the control gate structure on Utah Lake and the hydraulic constrictions of the Jordan River have caused the lake to rise and flood adjacent, primarily agricultural lands. The resulting conflict between the landowners adjacent to the lake and the water users was eventually settled in 1885 by an agreement in which a "compromise level" of the lake was agreed upon and a marker was set at elevation 4,489.34 (subsequently modified to 4,489.045) feet above sea level. Whenever runoff forecasts during the lake filling season indicated the lake level would exceed that elevation, the outlet gates were opened prior to and during the flood inflow season to permit outflow discharges comparable to natural outflow conditions until the lake level again subsided to compromise level after the flood period. At compromise level, the lake has a total surface area of about 95,000 acres and a total capacity of about 870,000 acre-feet.

A pumping plant was installed at the outlet to the Jordan River in 1902 to permit lowering the lake below its natural outlet, thereby increasing the active capacity of the lake as a reservoir. The pumping plant has been modified and enlarged several times to a capacity of about 1,050 cubic feet per second (cfs). The pumps are capable of lowering the lake 9 to 10 feet below the compromise level. However, lowering the lake more than 8.7 feet below compromise level has required dredging to provide a flow channel from the lake to the pumps. Additional pumps were installed and used at Pelican Point in 1934 and 1935. These pumps were capable of drawing the lake down to 12 feet below the compromise level. The Pelican Point pumping facilities were later dismantled. The maximum depth of the lake is about 14 feet below the compromise level.

Over the years, parties with vested interests in the lake disagreed over the exact elevation of the compromise level. In 1985, a more accurate elevation was established through a new agreement as 4,489.045 feet above mean sea level. New control gates near the head of Jordan River were installed in 1985, and the channel from Utah Lake to the Jordan Narrows was enlarged to facilitate greater discharge than historically permitted. The Jordan Narrows are approximately 5-3/4 miles north of the lake's outlet, straight line distance.

Revised operating procedures for the lake provide that, whenever the level of Utah Lake is at or below compromise level, the gates shall be closed except as necessary for water delivery. Whenever the lake is above compromise level, the control gates shall be fully opened, except for when they must be partially closed to limit the discharge from the lake and the downstream tributary accretions to 3,400 cfs, as measured at 21st South in Salt Lake City, upstream of the Surplus Canal diversion structure.

The level of Utah Lake has varied widely in response to climatic conditions. Water surface elevations have ranged from a low of about 4,477.2 feet in 1935 to a high of 4,494.7 feet in June of 1984. Annual fluctuations in the lake level range from 2.4 to 6.1 feet and result from varying winter and spring inflows, evaporation, and release of water for irrigation, domestic, and industrial uses. Historical releases for irrigation and industrial uses average about 252,000 acre-feet annually to meet primary and secondary storage rights and direct flow rights. The historical annual inflow for the 1950 to 1999 period common to Bonneville Unit operations studies averaged nearly 617,000 acre-feet. However, the historical inflow varied from about 286,000 acre-feet in 1961 to nearly 1,300,000 acre-feet in 1984.

At intervals of about 30 years, Utah Lake has risen to levels significantly above compromise level. In 1922 and 1952, the lake peaked at about 3.5 feet above the compromise level, and the Jordan River flow at the Jordan Narrows, located about 10 miles north of Utah Lake, was about 1,400 cfs. The more recent 1983 to 1985 high elevation cycle resulted in a lake level of about 5.65 feet above compromise level and a peak outflow at the Jordan Narrows of over 3,000 cfs. It is estimated that with the gate structure and Jordan River channel improvement from the lake to the Jordan Narrows, the peak level for the 1983 to 1985 high runoff period would be reduced to about 2.7 feet above compromise level. Peak discharge at the Jordan Narrows would be about 2,500 cfs based on present conditions. The evaporation rate on Utah Lake is about 4 feet annually, resulting in an average annual evaporation loss of about 330,000 acre-feet.

STATE ENGINEER'S WATER DISTRIBUTION PLAN

In 1992, the Utah State Engineer completed and distributed a plan entitled "Distribution of Water Within the Utah Lake Drainage Basin" (Distribution Plan) (Utah Division of Water Rights, 1992). The purpose of the Distribution Plan was to establish a general framework within which the water rights within the basin could be administered. A detailed description of the Distribution Plan is provided in Attachment A, Interim Water Distribution Plan for the Utah Lake Drainage Basin. Figure 1-2 is a schematic drawing of various storage terms used in the Distribution Plan.

The Distribution Plan includes the following definitions:

- Booth Decree: A 1909 court case Salt Lake City Corp., Utah and Salt Lake Canal Co., East Jordan Irrigation Co., North Jordan Irrigation Co., and South Jordan Canal Co. (Plaintiffs) versus J. A. Gardner and A. J. Evans (Defendants). The Booth Decree covered water rights in Utah Lake and the Jordan River.
- Inactive Storage (Utah Lake): The portion of Utah Lake that is not accessible to the pumps and, therefore, cannot be diverted. The inactive storage has been set at 160,000 acre-feet (8.7 feet below compromise level).
- Morse Decree: A 1901 decree resulting from a series of court cases including Case 2861, Salt Lake City Corp. (Plaintiffs) versus Salt Lake City Water and Electrical Power Co. (Defendant); Case No. 3449, J. Geoghegan (Plaintiff) versus Salt Lake City Corp. (Defendant); and Case No. 3459, J. Geoghegan (Plaintiff) versus Utah and Salt Lake Canal Co. (Defendant). This decree defined the water rights on the Jordan River with respect to each other.
- Priority Storage: Legal storage under a water right. Such water stored is not subject to call by other right(s) and can be diverted and used in accordance with the right.
- Primary Storage (Utah Lake): The first 125,000 acre-feet of active storage in Utah Lake, which is set aside to satisfy the diversion requirement of the primary rights in Utah Lake in years of successive drought.
- Primary Water Rights (Utah Lake): The water rights defined in the Morse Decree to have storage rights in Utah Lake.
- Secondary Water Rights (Utah Lake): The storage rights in Utah Lake established by applications to appropriate water and as confirmed by the Booth Decree.
- System Storage: Includes the total active storage in Utah Lake, excluding the primary storage, plus water stored in upstream reservoirs under later priority date water rights that is subject to call by Utah Lake rights. The maximum value of system storage is 585,000 acre-feet.

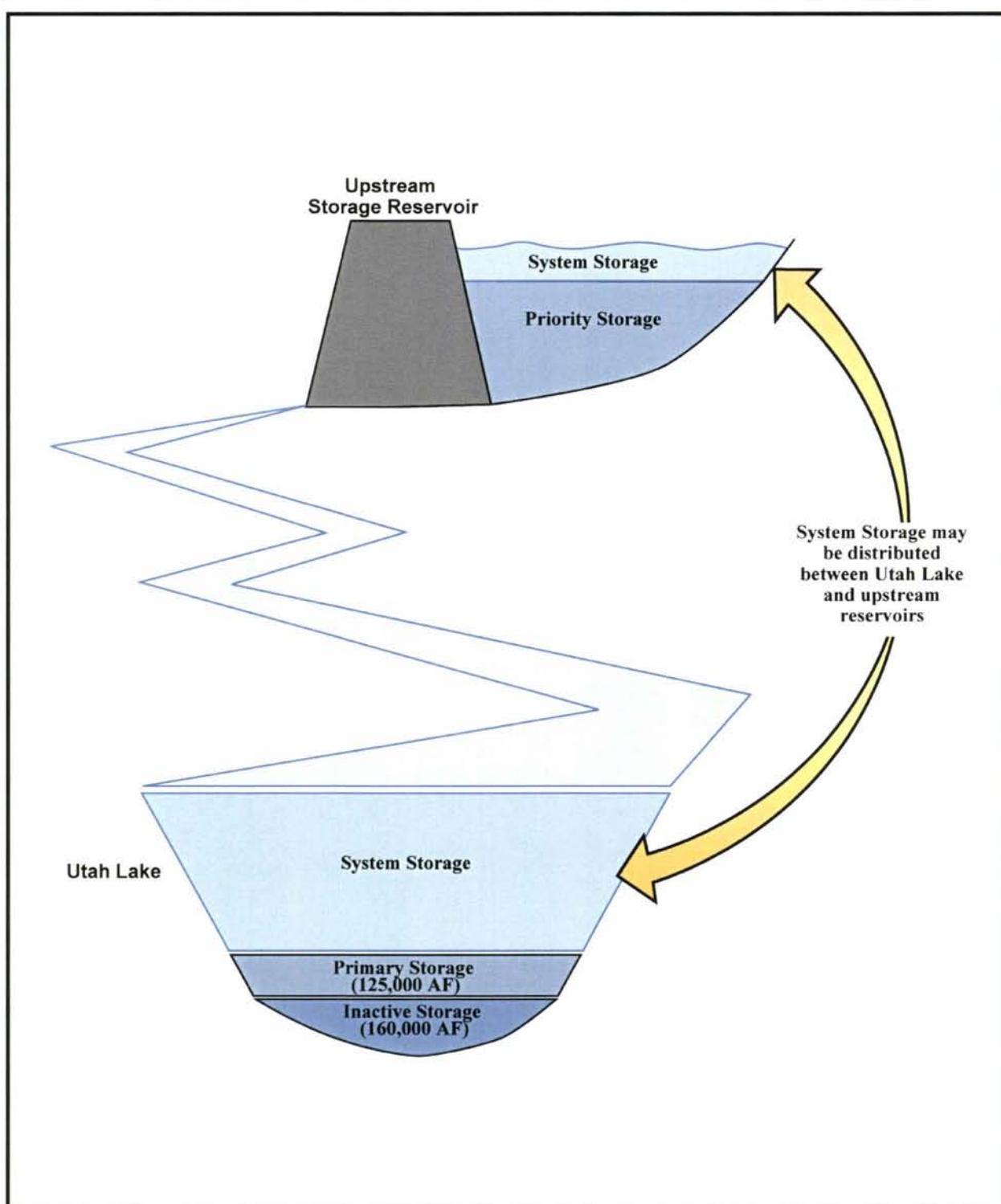


Figure 1-2
Utah Lake Distribution Plan Schematic

The Distribution Plan sets forth the quantity of Utah Lake storage associated with the primary and secondary Utah Lake-Jordan River water rights and the relationship between Utah Lake water rights and the water rights on tributary streams. The plan provides that the Utah Lake drawdown be limited to 8.7 feet below the compromise level, resulting in 160,000 acre-feet of inactive capacity and 710,000 acre-feet of active capacity for Utah Lake. The first 125,000 acre-feet of active storage is dedicated to providing for primary water rights during drought periods. The remaining 585,000 acre-feet of active storage is referred to as system storage and is used to supply the diversion requirements of both primary and secondary water rights.

The system storage may be held in Utah Lake or upstream storage, subject to call for Utah Lake uses. To establish the relationship between water rights in Utah Lake and water rights in upstream reservoirs, which are generally later in priority, criteria were developed to maximize beneficial use of water while still protecting prior rights. The plan requires a system storage target of 585,000 acre-feet from November 1 through April 14. The target value gradually decreases thereafter to a minimum of 125,000 acre-feet on October 31. Whenever the total system storage in Utah Lake and upstream reservoirs exceeds the specified target values for system storage, any excess system storage may be converted to priority storage in upstream reservoirs according to the priority of the upstream rights. Once converted, priority storage is under the full control of the owner and no longer subject to calls by Utah Lake users.

BACKGROUND ON JORDAN RIVER OPERATIONS

The Jordan River is 44 miles long (not including meanders) and flows north from the outlet of Utah Lake to the Great Salt Lake. As the Jordan River flows to the Great Salt Lake, it is fed by tributary streams. Seven major streams (Little Cottonwood Creek, Big Cottonwood Creek, Mill Creek, Parley's Creek, Emigration Creek, Red Butte Creek, and City Creek) and 13 smaller streams originate in the Wasatch Range east of the river. Six streams (such as Bingham Creek and Butterfield Creek) originate in the Oquirrh Mountains on the west side of the river.

Historical Use

Before settlement of the Salt Lake Valley, the Jordan River meandered from its entry into Salt Lake Valley at the Jordan Narrows across a broad floodplain to the Great Salt Lake (Utah Division of Water Rights, 1997). A forest of cottonwood trees traced its path along the valley floor. Numerous oxbows, marsh areas, and riparian zones provided home to a diverse community of wildlife. The Jordan River is reported to have been an excellent fishery in the early years following the first settlement of the valley. Since that time, the forest has been cut, the river channeled, the water polluted, the oxbows and wetlands filled, and much of the wildlife displaced. A considerable amount of pollution resulted from mining operations in both the Wasatch Front canyons and the Oquirrh Mountains. These mining activities have affected Jordan River quality since before the turn of the century but were at a peak from the early to middle part of this century. While some short sections of the Jordan River may have been straightened or channelized at an earlier date, the bulk

of the Jordan River channelizing occurred during the 1950s and 1960s under the concept that a channelized river was the best method for handling flood flows.

The history of water development and use in the Jordan River Basin covers a period of over 150 years. Initial use was primarily to irrigate cropland. Only small amounts were diverted for culinary or community use. This has changed in that now the major demand in Salt Lake Valley is for M&I water. The main body of Mormon Pioneers arrived in the Salt Lake Valley in July 1847. Water was diverted from City Creek and conveyed in ditches to irrigate land near where the Salt Lake City and County Building now stands. By the spring of 1848, over 5,000 acres had been brought under irrigation and by 1850, farming communities had been established on Big Cottonwood Creek, Mill Creek, Little Cottonwood Creek, Parley's Creek, Emigration Canyon, and along the Jordan River. During this period, many of the ditches and canals were constructed to divert water from streams entering the valley from the east and from the Jordan River. Some of these are still in use.

By 1860, practically all of the waters of the mountain streams had been appropriated for agricultural uses and by families dependent upon farming for their livelihood. Salt Lake City was almost entirely dependent upon City Creek, and the need for additional water resources was recognized. As early as 1864, Salt Lake City began looking into boring artesian wells and bringing water from Utah Lake and/or the Jordan River to the city.

In 1882, construction on the Jordan and Salt Lake City Canal was completed and Jordan River water was brought to Salt Lake City. While this water was adequate for irrigation of crops, it was not suitable for domestic use. This led to the first Exchange Agreement in 1888 whereby Jordan River water was exchanged for higher quality water from Emigration Canyon and Parley's Creek. Over the years, many other water exchange agreements were made in the valley. The development of Utah Lake into a storage reservoir made more water available in the Jordan River.

Current Conditions

At intervals along its length, flows from the Jordan River are diverted, then replenished from seepage, wastewater discharge, and irrigation return flow. The largest diversions occur at, and just downstream of the Jordan Narrows, located about 10 miles north of Utah Lake near the Utah-Salt Lake County line.

The upper 10-mile section of the Jordan River is slow and meandering. The channel is wide and was dredged in the mid-1980s to increase its capacity to release flows from Utah Lake. Like Utah Lake, the river carries a high silt and nutrient load. Its substrate is primarily adobe clay with silt in the backwaters.

Figure 1-3 is a map of the Jordan River system and its principal canals. Tributary flows from the Wasatch Front streams enter the River periodically, although most are dry for the majority of the year. Irrigation withdrawals occur at a number of locations. Despite withdrawals, the Wasatch Front streams are all shown as terminating at the Jordan River. On the other hand, the Oquirrh Mountain streams, except for Bingham Creek, are depicted as terminating short of the Jordan River. Because of the intermittent and ephemeral nature of these streams for much of the year, surface water flows often do not reach the Jordan River.

Although there are no established instream flow requirements within the Jordan River Basin, there are established water rights for several private and public bird refuges along the shores of the Great Salt Lake. Currently these water rights provide that water flows continually in the Jordan River and many of its tributaries.

UTAH LAKE'S ROLE IN BONNEVILLE UNIT OPERATIONS

The CUPCA, enacted on October 30, 1992, modified the authorization for the Bonneville Unit with changes to various features and systems that affect the operation of Utah Lake and certain provisions about Utah Lake itself. On December 19, 2002, Public Law 107-366 was enacted which amended CUPCA and authorized construction of alternate features to deliver M&I water. The greatest change facilitated by these two Acts has been the redirection of the remaining available Bonneville Unit water supply from irrigation use to M&I use. Other changes included provisions for instream flows in certain streams tributary to Utah Lake.

CUPCA prohibited construction of certain features in Utah Lake previously proposed as part of the Irrigation and Drainage System, namely facilities to pump water from Utah Lake to the Mosida area west of the lake, and diking-off of Goshen and Provo Bays in Utah Lake. (Some of these changes were anticipated in the 1988 DPR).

A number of changes have occurred in the Bonneville Unit as result of studies conducted and projects planned and completed under CUPCA. The quantity of water available for transbasin diversion from Strawberry Reservoir was reduced because more fishery flow releases were required from the Strawberry Collection System to tributaries of the Duchesne River. The reduction in transbasin diversion was matched by a reduction in water delivery along the Wasatch Front. The District purchased water rights in Utah Lake, which the federal government will acquire to combine with Strawberry Reservoir water in exchange for Provo River water stored in Jordanelle Reservoir.

Project water stored in Strawberry Reservoir that was to be delivered to Utah Lake through the Spanish Fork River was reduced; provisions were made to convey roughly 60 percent of this project water to the lower Provo River and Hobble Creek for release to Utah Lake, thereby contributing to instream flows for the June sucker Restoration Implementation Project (JSRIP) and other fish and wildlife benefits.

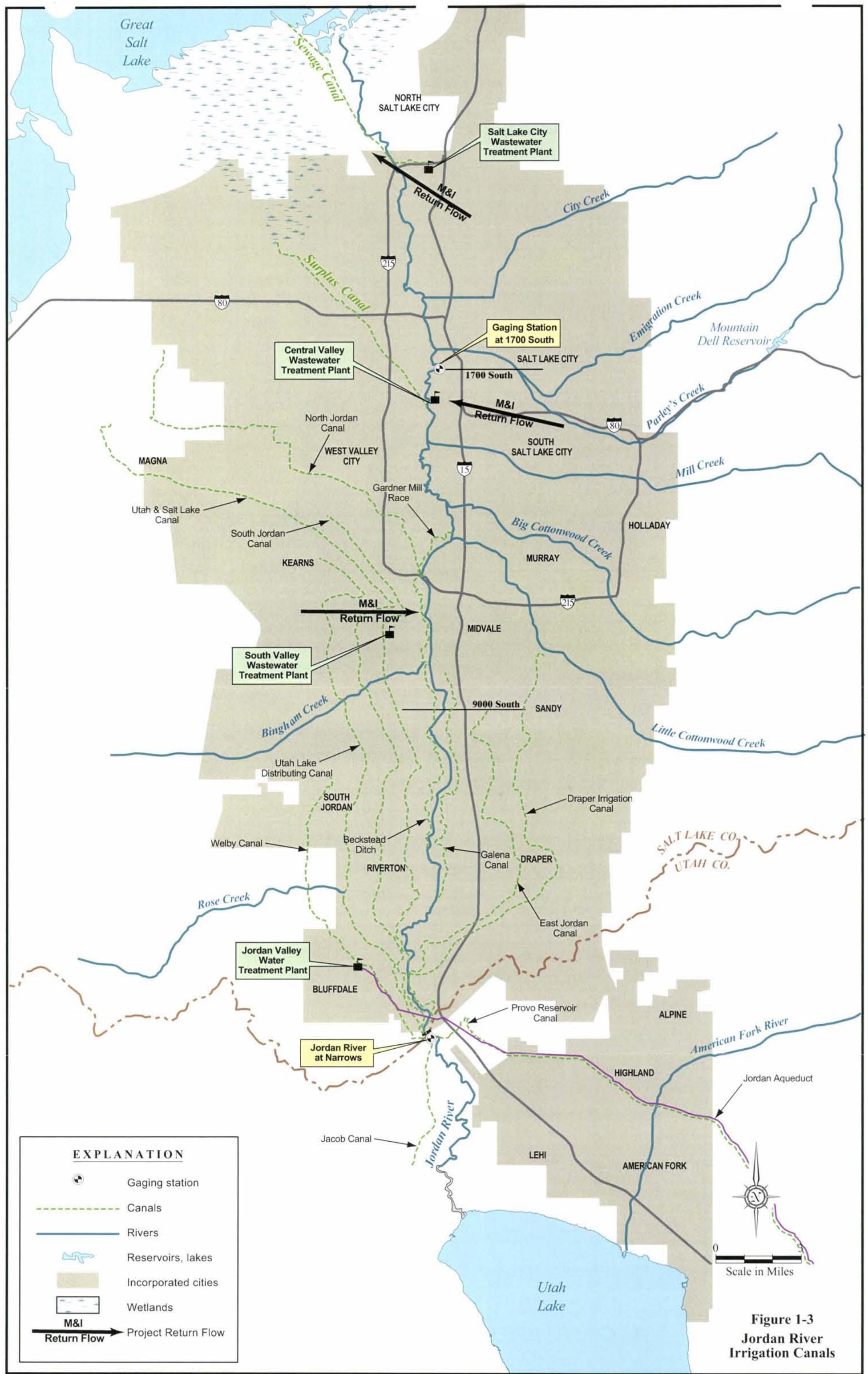


Figure 1-3
Jordan River
Irrigation Canals

Diamond Fork System operation now requires the maintenance of statutorily mandated minimum flows in Diamond Fork Creek and Sixth Water Creek. The minimum flow provisions could occasionally result in the release of more water to Utah Lake than is needed for the exchange to Jordanelle Reservoir.

Provo River operations require the maintenance of minimum flows. CUPCA directed the CUWCD to acquire Provo River water rights to help meet the minimum flows on the lower Provo River. Diversions from the Provo River to northern Utah County were reduced through conservation measures by water user agencies resulting in their "turning back" some of the project water to Interior. The conserved water will be stored in Jordanelle Reservoir and be seasonally released for June sucker spawning flow augmentation in the Provo River.

These minor changes in the Bonneville Unit plan do not essentially alter the way that Utah Lake is intended to operate. They do however modify the volumes of project and non-project water delivered to and withdrawn from the Lake, which must be done without impacting the Lake or Jordan River flows or water deliveries.

Central Utah Project Completion Program

Chapter 2

October 2004



UTAH RECLAMATION
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OVERVIEW OF BONNEVILLE UNIT OPERATIONS RELATING TO UTAH LAKE

Under the Bonneville Unit, Utah Lake will serve as a common operational interface between the Bonneville Unit M&I and ULS Systems. Project water from Strawberry Reservoir will be conveyed through the Diamond Fork System to the ULS System and through the ULS System to the Lake. Non-project water flows out of Utah Lake and into the Jordan River, which flows from Utah Lake to the Great Salt Lake. The Jordan River also conveys Utah Lake water to users who divert the water from the river. The delivery and withdrawal (by exchange) of Bonneville Unit water to and from Utah Lake is shown on Figure 2-1.

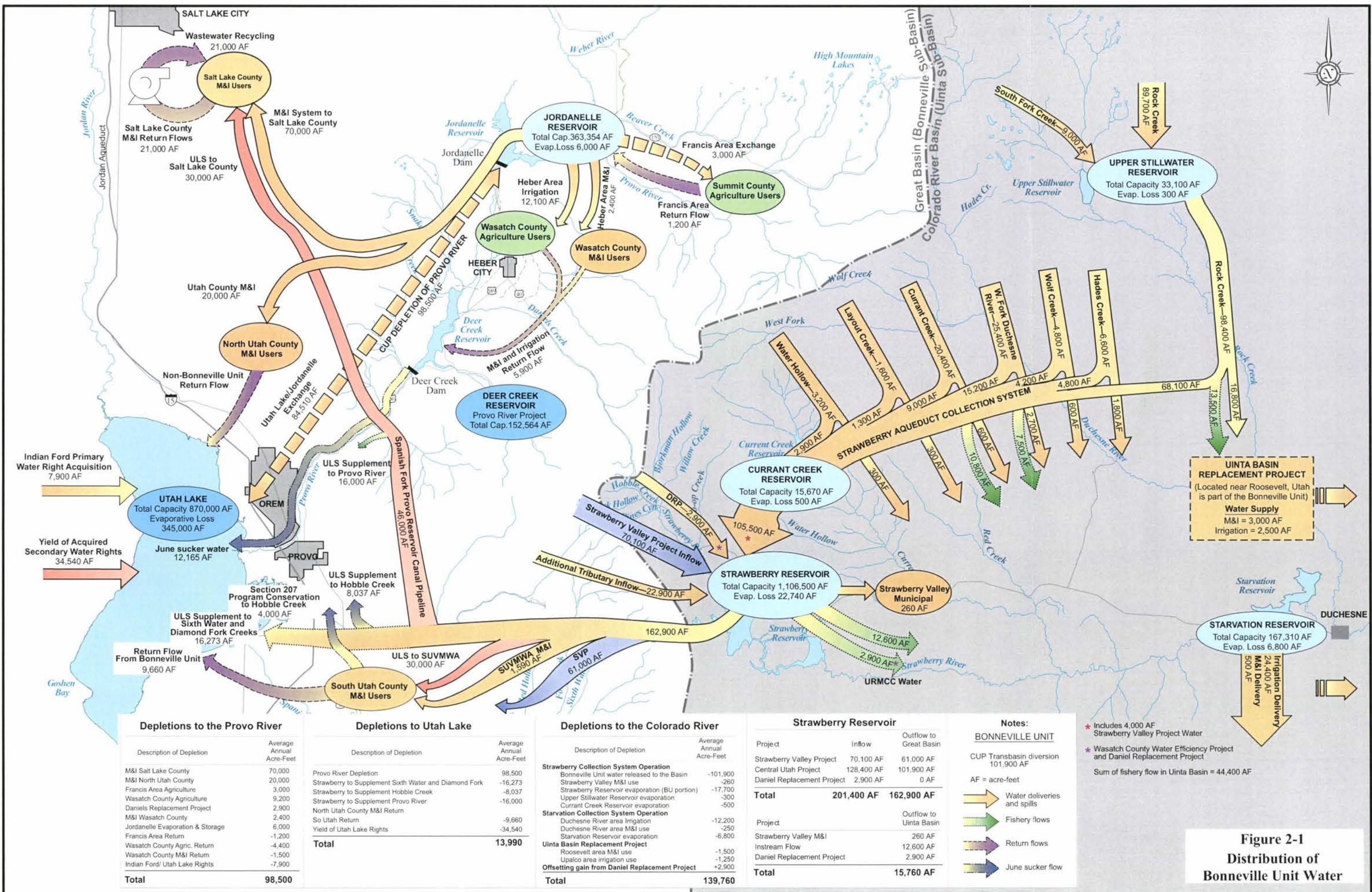
The operation of the Bonneville Unit is intertwined with Utah Lake's inflow, elevations, water quality, and outflows, even though project deliveries to Utah Lake are only about 7 percent of the historical average inflow to the Lake of 617,000 acre-feet. The M&I System's operation reduced the amount of Provo River inflow to Utah Lake by about 98,500, but releases from Strawberry Reservoir, project return flows, and acquisition of water rights in Utah Lake replace the depleted water as needed to preserve the lake's operating regime with that of historic conditions. Utah Lake will receive the following project water originating in Strawberry Reservoir:

- Water from Strawberry Reservoir for exchange to Jordanelle Reservoir (to replace Bonneville Unit M&I water withheld from Utah Lake by Jordanelle Dam and Provo River diversions),
- Return flows from Bonneville Unit M&I water use in southern Utah County, and
- Water to meet instream flow requirements on Diamond Fork and Sixth Water creeks, if required, in excess of needs for water for exchange to Jordanelle Reservoir.

The following subsections describe the relationships between the Bonneville Unit systems and Utah Lake and/or the Jordan River.

DIAMOND FORK SYSTEM

The Diamond Fork System provides the conveyance facilities for transbasin diversion of project water from Strawberry Reservoir in the Colorado River Basin to the Utah Lake drainage basin. The Diamond Fork System conveys CUP and SVP water in two parallel tracks--Diamond Fork Creek and a closed pipeline system with outlets to the creeks. At the end of the Diamond Fork System, the transbasin diversion is either conveyed in the pipelines of the ULS System or released into the Spanish Fork River. Both the ULS pipelines and the Spanish Fork River convey Bonneville Unit water to Utah Lake. However, the division of flow does not affect the average annual amount of water delivered to the Lake of 40,310 acre-feet.



MUNICIPAL AND INDUSTRIAL SYSTEM

The M&I System provides M&I water to Salt Lake County and northern Utah County and M&I and supplemental irrigation water to Wasatch County. The system provides flood control, recreation, and fish and wildlife benefits. Jordanelle Dam and Reservoir are the major features of the M&I System. The 300-foot-high dam and reservoir located on the Provo River about 6 miles north of Heber City, were completed in 1994. Total capacity of the reservoir is 363,354 acre-feet with an active capacity of 314,006 acre-feet and a exclusive flood control capacity of 49,348 acre-feet.

Water is developed in the reservoir by storing Provo River flows that are in excess of downstream rights, and out-of-priority diversions that can be replaced from Strawberry Reservoir. The effect of the M&I System on Utah Lake is to reduce the annual inflow to the lake by about 98,500 acre-feet.

Of this reduction, about 84,510 acre-feet is replaced in Utah Lake by releases from Strawberry Reservoir to ensure downstream rights are met.

Return flows from the use of Bonneville Unit water delivered from the M&I System to Utah County would flow into Utah Lake. Releases of Bonneville Unit water to meet minimum instream flows on the Provo River flow into Utah Lake. Return flows from the use of Bonneville Unit M&I water in Salt Lake County will be tributary to the Jordan River. Return flows from Bonneville Unit water provided in the Heber and Francis areas return to Provo River reservoirs.

UTAH LAKE DRAINAGE BASIN WATER DELIVERY SYSTEM

The proposed ULS System would begin along the Spanish Fork River at the confluence with Diamond Fork Creek, and extend north along the Wasatch Front to the Provo River and south to Mona Reservoir. The ULS System's Spanish Fork - Provo Reservoir Canal Pipeline would run north from the Spanish Fork Canyon Pipeline and would convey Strawberry Reservoir water to the Provo Reservoir Canal and the Jordan Aqueduct, both of which convey diverted Provo River water to Salt Lake County; and to the lower Provo River to provide supplemental flows. The Spanish Fork - Santaquin Pipeline, running south from the Spanish Fork Canyon Pipeline would deliver Strawberry Reservoir water for M&I use in southern Utah County. The Mapleton/Springville Lateral Pipeline would deliver supplemental water to Hobble Creek. The ULS System's relationship to Utah Lake would consist of 1) the delivery of Strawberry Reservoir water to the lake by releases through the Spanish Fork River, Hobble Creek, and the Provo River, 2) delivery of return flows from the use of Bonneville Unit water in southern Utah County, and 3) the acquisition of water rights in Utah Lake and dedication of the yield from the rights to the Bonneville Unit water supply. Each of these actions compensate for the reduction in Provo River inflows. A schematic diagram of ULS water deliveries is shown in Figure 2-2.

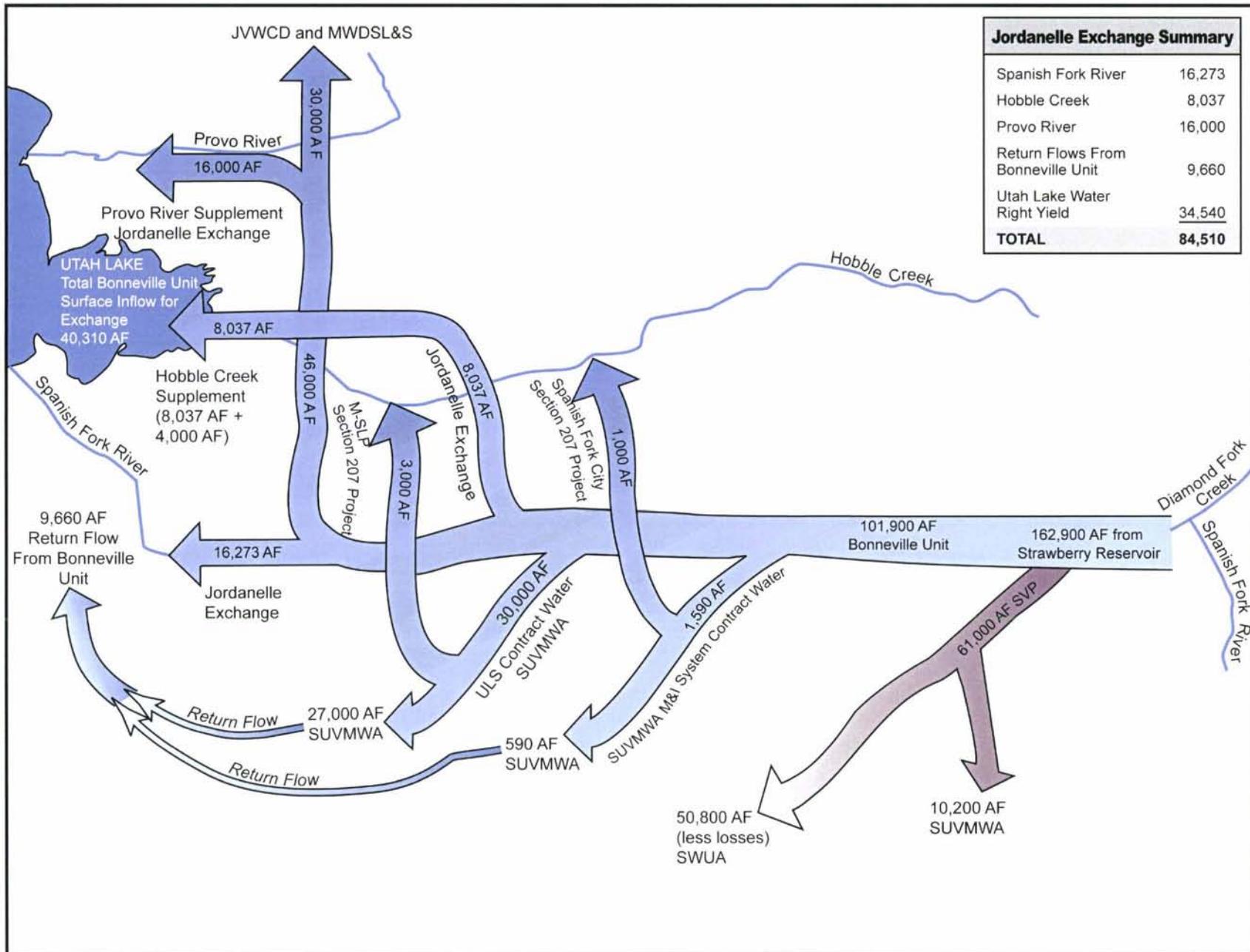


Figure 2-2
Utah Lake System Water Deliveries
Under the Bonneville Unit

Central Utah Project Completion Program

Chapter 3

October 2004

Chapter 3



DEPARTMENT OF THE
INTERIOR
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MARCH 3, 1902
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COMMISSION



UTAH LAKE SURFACE WATER INFLOWS, OUTFLOWS, AND LAKE LEVELS

The inflow to Utah Lake consists of natural streamflow, reservoir releases, discharge from drains, treated municipal sewage effluent, and precipitation on the lake. These categories include about 80 identified sources. Excluding precipitation, the total historical annual inflow to Utah Lake averaged 617,000 acre-feet annually for the 1950 to 1999 period. This total inflow varied from about 286,000 acre-feet in 1961 to more than 1,300,000 acre-feet in 1984. Gaging records have been maintained on major tributaries, including the Provo and Spanish Fork rivers, and on some of the other tributaries. However, much of the surface and underground inflow and precipitation contribution is ungaged. Based on historical estimates, about 70 percent of the inflow accrues from surface water inflow, 15 percent from groundwater inflow, and 15 percent from precipitation on the lake. Precipitation on the lake surface averages about 110,000 acre-feet per year.

The historical inflow to Utah Lake has been computed from monthly lake content, evaporation, precipitation, and outflow records from the Jordan River and Utah Lake Commissioner's reports ($\text{inflow} = \text{outflow} + \text{evaporation} - \text{precipitation} + \text{change in content}$). For making projections, the computed monthly historical inflow is modified to reflect future non-project development and operations in addition to Bonneville Unit operations. The modifications include full development and operation of the Provo River Project and changes in Utah Lake operations consistent with the Distribution Plan.

Utah Lake outflows consist of releases to the Jordan River (to meet demands and as a result of spills), evaporation from the lake surface, and intermittent pumping of irrigation water to adjacent lands. Releases to Jordan River vary as discussed below. Evaporation is a significant loss of water from the lake, having historically averaged approximately 340,000 acre-feet per year. Pumping from the lake has declined and currently averages less than 10,000 acre-feet per year.

Utah Lake and Jordan River water rights encompass decreed rights and application rights. Water rights defined by the Morse Decree to have storage rights in Utah Lake are called *primary rights*. Water rights established by applications to appropriate water which were confirmed by the Booth Decree are referred to as *secondary rights*. Under the Distribution Plan, the primary rights have been identified at 189,307 acre-feet annually and the secondary rights at 112,739 acre-feet, for an annual total of 302,046 acre-feet. For projected conditions, the historical releases from Utah Lake were adopted as a representation of releases consistent with water rights and water supply. Historical data on releases to the Jordan River were limited to a maximum of 302,000 acre-feet in any one year, consistent with the total water rights. The minimum release was about 120,000 acre-feet in 1961, when dry year conditions limited the available water. Average release (including spills) over the period 1950-1999 was about 370,000 acre-feet.

The historical levels of Utah Lake are based on end of month lake elevations from the Utah Lake and Jordan River Commissioner's reports. The river commissioner's measurements are taken at a gage

located at the head of the Jordan River, 125 feet southeast of the pumping station, and about 4 miles southwest of Lehi. The historical conditions reflect the effects of depletions to Utah Lake as projects were developed. The Provo River Project, which came on line in the mid 1940's is the most notable development. The historical conditions also include periods of both extreme drawdown and flooding. In 1961 and 1962 the lake was pumped nearly dry. In 1952, and again in 1983 through 1986, which were high runoff years, lands around the lake were flooded. Since that time, agreements have been made and facilities have been modified which would tend to mitigate these extreme events.

Jordan River Flows

The Jordan River begins with releases from Utah Lake to meet irrigation and industrial demands in northern Utah County and Salt Lake County (up to 302,000 acre-feet annually) consistent with water rights and the Distribution Plan for Utah Lake and the Jordan River. Spills or flood control releases occur when the lake reaches and exceeds the Compromise Level. Most of the water released from the lake for irrigation is diverted from the Jordan River at the Jordan Narrows. As the river flows toward the Great Salt Lake, flows increase as a result of tributary inflow, irrigation and M&I return flows, and other accretions. At about 21st South, just upstream from the gage at 17th South, a portion of the Jordan River flow is diverted into the Surplus Canal and conveyed to the Great Salt Lake. The remainder of the flow continues in the river and enters the South Shore Wetlands of the Great Salt Lake.

The releases to the Jordan River from Utah Lake to meet downstream irrigation diversion rights are declining as irrigated agriculture gives way to urban development. However, a compensating trend is anticipated to develop as the Jordan Valley Water Conservancy District (JVWCD) and other users call for releases under Utah Lake irrigation water rights they have acquired and convert the water to M&I use.

UTAH LAKE GROUNDWATER INFLOWS

The principal groundwater reservoir in Utah Valley consists of a series of confined (or artesian) aquifers in the unconsolidated basin-fill deposits. These basin-fill deposits consist of interbedded and laterally discontinuous layers and lenses of sand, gravel, clay, and silt. The sand and gravel units form the aquifers, while the silt and clay act as confining units. The confined aquifers are laterally connected to an unconfined aquifer in the unconsolidated deposits along the mountains that adjoin the valley. Confined aquifers supply most of the water produced from wells. A shallow unconfined aquifer overlies the confined aquifer but is not a major source of water due to relatively poor well yields.

Sources of recharge to the aquifer system include subsurface inflow from the fractured bedrock beneath the mountains, infiltration from natural channels and irrigation canals that cross the primary

recharge area, and infiltration from irrigation and precipitation. Discharge of groundwater is to springs, evapotranspiration, wells, natural channels and irrigation canals, and Utah Lake.

In the future, when cities in Utah County are pumping their total legal water rights, groundwater levels and groundwater inflows to Utah Lake might be reduced. The Utah Division of Water Rights is currently developing a groundwater management plan for Utah and Goshen Valleys. The main effect of this plan will be to manage surface and groundwater conjunctively in the basin and encourage the efficient use of Utah Lake waters. This could have the result of moving water represented by shares of Utah Lake water to wells in Utah and Goshen Valleys. This plan could affect future Utah Lake operation as well as groundwater levels. Utah Valley is closed to new water right appropriations, but new wells can be drilled by acquiring existing water rights and changing the point of diversion.

Because Utah Lake is not a source of groundwater recharge to the confined aquifers, and because the water level in Utah Lake is below that of the groundwater levels in the confined aquifers in Utah Valley (under normal conditions), the water level of Utah Lake has little affect on the discharge of wells and springs in Utah Valley. This basic hydrogeologic relationship is also shown in the USGS's MODFLOW groundwater model of southern Utah Valley. Therefore, any changes in the operation of Utah Lake which might result from operation of the Bonneville Unit will not affect the quantity or quality of discharge from springs adjacent to the lake.

USES OF UTAH LAKE WATER

Historically, Utah Lake has been used as an irrigation water supply for agricultural lands in northern Utah County and in Salt Lake County. Major crops irrigated with Utah Lake water include alfalfa, corn, barley, wheat, and oats. In the early 1980s, several large orchards were planted on the west side of West Mountain at the southern end of Utah Lake, adjacent to Goshen Bay. These orchards were irrigated by pumping water from Utah Lake. However, during the drought cycle that occurred in the late 1980s, the TDS concentrations increased to the point where the lake water was no longer suitable for irrigating orchards. Consequently, a pipeline was constructed around West Mountain, and many of the orchards are now irrigated from other higher quality sources. However, some orchards are still irrigated with Utah Lake water.

Utah Lake water has also been used for industrial purposes such as mining and ore processing. Also, in the mid-1980s, the Salt Lake County Water Conservancy District conducted a pilot operation in which it used a small quantity of Utah Lake water for culinary water supply. In this pilot operation, Utah Lake water was blended with other higher quality supplies and treated for culinary use. The pilot operation was discontinued in the late 1980s.

In recent years, as Salt Lake County has continued to urbanize, communities in the county have planned or developed pressurized irrigation systems for watering lawns and gardens. These

communities have received complaints from residents that the Utah Lake water has damaged or killed many of the ornamental plants and shrubs used in landscaping. Although other communities are considering the installation of pressurized irrigation systems, they are studying the water quality aspect of using Utah Lake water on residential landscaping prior to plan implementation. A discussion on limitations in using Utah Lake water for irrigation is presented in Chapter 8 of this document.

The JVWCD has included future demineralization of Utah Lake water in its water use master plan. The treatment will involve a membrane treatment process such as reverse-osmosis to condition the water for outdoor use in secondary systems, as described in Water Supply Appendix Volume 2.

JORDAN RIVER WATER CONVEYANCE

The Jordan River has historically conveyed Utah Lake releases to the Jordan Narrows where most of the irrigation diversions occur. As noted above, releases to the Jordan River to meet downstream irrigation diversion rights are declining from historical amounts as irrigated agriculture in Salt Lake County gives way to urban development. However, a compensating trend is anticipated to develop as the JVWCD and other users call for releases under irrigation rights they have acquired and convert the water to M&I use. Under appropriate adjustments in points of diversion, the JVWCD would pump the water from the alluvial valley fill along the river and allow the streamflow to infiltrate the bed and banks of the river and recharge the alluvial aquifer. While not a routing strategy for Bonneville Unit water, this practice could facilitate certain water conservation measures promoted by the CUP, which are discussed in Water Supply Appendix Volume 2.

As discussed earlier in this volume, the flows in the Jordan River are affected by natural runoff and its regulation in Utah Lake. During wet years, releases of excess water are required and during dry years the lake level may be too low to meet downstream demand. The dry-year water availability conditions may be an important factor in the development of plans for future use of Utah Lake water for M&I purposes as discussed above.

In the future, 21,000 acre-feet of Bonneville Unit return flows will be tributary to the Jordan River, which would convey unspecified amounts northwestward to the Great Salt Lake. The amounts discharged to the river would depend on the amount and development schedule of wastewater recycling projects. The amount of return flow that would potentially be released to the river is unknown, and depends on the scale of wastewater recycling.

Central Utah Project Completion Program

Chapter 4

October 2004

Chapter 4



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



This chapter addresses Bonneville Unit water rights, return flows, and exchanges relating to Utah Lake and the Jordan River. The retention of Provo River water in Jordanelle Reservoir and its replacement with water from Strawberry Reservoir, return flows to Utah Lake, and acquisition of water rights in Utah Lake involve a complex set of water exchanges under several Bonneville Unit water rights, and place importance on accounting for return flows.

UTAH LAKE WATER RIGHTS

The Bonneville Unit operation depends on rights to the diversion of water from Utah Lake to be exchanged to Jordanelle Reservoir. This section addresses water rights available and those still pending that constitute the yield of the CUWCD's secondary Utah Lake water rights acquired by the United States. A survey of all existing Utah Lake water rights was made to evaluate the coverage of rights. That survey is described in Volume 2 of this appendix. That investigation was made to verify the volume of water covered by the rights, estimate the acre-feet currently in use and their points of diversion (upstream or downstream of Utah Lake), and the ownership of large blocks of water still available for call from the lake.

WATER RIGHTS FILINGS

Federal Water Rights

The United States has filed applications for water rights in Utah Lake for the Bonneville Unit. The applications deal with both previously unappropriated water, and the recovery of Strawberry Reservoir water released to Utah Lake and return flows from use of Bonneville Unit water in the Utah Lake drainage basin. The water rights will be used to facilitate water exchanges to Jordanelle Reservoir and to allow water to be stored in Jordanelle Reservoir in accordance with the Distribution Plan. The federal filings are as follows:

- Application No. 37093, with a priority date of July 13, 1965, seeks to appropriate up to 195,000 acre-feet of return flows from project water used for irrigation, municipal, and industrial purposes under the Bonneville Unit and unappropriated water from Utah Lake. The State Engineer approved this application on September 29, 1999.

Application No. 40523 with a priority date of March 18, 1971, seeks to appropriate up to 300,000 acre-feet of surplus flows of the Provo River and return flows from project water used in areas tributary to the Provo River above Jordanelle and Deer Creek reservoirs. This water will be stored in these reservoirs and used for domestic, stockwatering, irrigation, Power, fish, wildlife, recreation, and quality control purposes within the District's service areas. The State Engineer approved this application on June 7, 1985.

- Application No. 40528 with a priority date of March 18, 1971, seeks to appropriate 21,000 acre-feet of surplus flows and Bonneville Unit return flows in Currant Creek for storage in Mona Reservoir. This application was in support of the irrigation water supply under the previously proposed Irrigation and Drainage System which has now been replaced by the Utah Lake Drainage Basin Water Delivery System. Approval is pending.
- Exchange application No. 398 seeks to exchange up to 300,000 acre-feet of Bonneville Unit water in Utah Lake for flows of the Provo River which are surplus to water rights above Utah Lake, but covered by existing rights in Utah Lake. Bonneville Unit water in Utah Lake is to be supplied under Application Nos. 36639 (the principal Bonneville Unit water right which appropriates water from the Strawberry and Duchesne Rivers), 40523, and 37093. This application has a priority date of March 18, 1971, and was approved by a memorandum decision.
- Acquired 7,900 acre-feet of Water Right No. 55-9695 which is described below.

The water yields from these rights depend on two factors. The first is the amount of water entering Utah Lake under the operational categories covered by the rights (i.e., releases from Strawberry Reservoir and return flows from M&I water delivery). The second factor is the way that the Distribution Plan permits exchanges from the lake and dictates the status of water in Jordanelle Reservoir, as described below under Utah Lake Exchanges. Because of the Distribution Plan, the second factor is also affected by natural runoff conditions in the Utah Lake drainage basin.

District's Water Rights

The District has acquired two large water rights that provide for diversion of water from Utah Lake and the Jordan River. The District acquired these rights for potential unspecified future use in its service area. The rights are as follows:

- Water Right No. 55-9327 provides for the diversion of 25,000 acre-feet of water. This is a decreed right granted by the Booth Decree of June 5, 1909, and is a primary storage right. Of the 25,000 acre-feet, the U.S. Department of Interior owns 7,900 acre-feet, the community of Elk Ridge in south Utah County was assigned 237 acre-feet by the Central Utah Water Conservancy District, and the Central Utah Water Conservancy District owns the remaining 16,863 acre-feet. This right was segregated from Water Right No. 57-7624 on November 10, 1997. Prior to the segregation, Water Right No. 57-7624 provided for diversion of 39,600 acre-feet of water, including 3,600 acre-feet of carrier water which must remain in the Jordan River. The Central Utah Water Conservancy District owned 25,000 acre-feet of that amount, and Salt Lake City owned 14,600 acre-feet of that amount, including the carrier water. Its portion of Water Right No. 57-7624 was originally acquired by the Central Utah Water Conservancy District on August 16, 1988.

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- Water Right Nos. 59-14, 15, and 20 provide for diversion of 57,073 acre-feet and have a priority date of August 6, 1909 and February 28, 1911. The water right certificate was issued on March 27, 1969. This is a secondary water right. The diversion right was acquired from Kennecott Copper Corporation on December 31, 1987.

The District's secondary water right to Utah Lake water would be acquired by the Department of the Interior as part of the implementation of the ULS System. The yield from this water right, discussed below, would contribute to the exchange of Utah Lake water for the Provo River retained water in Jordanelle Reservoir.

JWWCD Water Rights

Certain Utah Lake water rights have historically provided water for irrigation of lands annexed by the JWWCD as urban development replaced agricultural use of the lands. The JWWCD has acquired many of these rights to supply water for future M&I use as discussed above. Those water rights are described in Water Supply Appendix Volume 2.

Jordan River Flow Rights

There are no Jordan River flow rights, per se. However, there is a requirement that carrier water be released to the river along with releases from Utah Lake to meet demands under some rights. The carrier water needs to remain in the river, even if the rest of the right is exchanged upstream.

Jordan River Diversion Rights

Most of the water released from the Lake for irrigation is diverted from the Jordan River at the Jordan Narrows. The rights under which this water is diverted are basically Utah Lake diversion rights.

BONNEVILLE UNIT RETURN FLOWS TO UTAH LAKE AND JORDAN RIVER

Return flows of Bonneville Unit water are an important part of the total project water supply. The project plan includes accounting for availability and reuse of return flows for project purposes. In some instances these return flows are used to facilitate exchanges. The exchanges allow project water to be used more efficiently than would be possible if the water had to be delivered directly from the original source.

The operation of Utah Lake and the Jordan River under Bonneville Unit conditions includes return flows from five county areas. The gross amounts of these return flows are summarized in Table 4-1. Some of these return flows will be subject to Utah Lake evaporation losses and spills and the entire amount may not be useable.

TABLE 4-1
Summary of Bonneville Unit Return Flows
Tributary to Utah Lake and Jordan River
Units: acre-feet

Area and Type of Water Use	Average Annual Return Flow To		Total
	Provo River/ Utah Lake	Jordan River	
Summit County Irrigation	1,200	n.a.	1,200
Wasatch County M&I and Irrigation	5,900	n.a.	5,900
Southern Utah County M&I	9,660	n.a.	9,660
Northern Utah County M&I	7,000 ¹	n.a.	7,000
Salt Lake County M&I	n.a.	21,000	21,000
Column Totals	23,760	21,000	44,760
Creditable Return Flow Totals	16,760	21,000	37,760

¹ This return flow is assumed not to qualify as Bonneville Unit water creditable for exchange to Jordanelle Reservoir because the water producing the return flow originated in the Provo River, however there has been no State Engineer ruling.

SUMMIT COUNTY RETURN FLOWS

The Summit County return flows of 1,200 acre-feet stem from the delivery of 3,000 acre-feet of irrigation water from the Bonneville Unit M&I system by exchange for use in the Francis area. The return flows return to Jordanelle Reservoir where they contribute to the water supply of the Bonneville Unit M&I System.

WASATCH COUNTY RETURN FLOWS

Return flows from the application and use of 15,100 acre-feet of Bonneville Unit irrigation water and 2,400 acre-feet of M&I water in Wasatch County produce an estimated 5,900 acre-feet of return flow. These return flows are captured in Deer Creek Reservoir, from which they are subsequently released to meet Bonneville Unit demands downstream of the reservoir.

SOUTHERN UTAH COUNTY RETURN FLOWS

Bonneville Unit return flows in southern Utah County result from the use of 27,590 acre-feet of CUP M&I water delivered in southern Utah County. These return flows are estimated to average approximately 9,660 acre-feet per year. The return flow estimate is based on 35 percent of the applied outdoor water returning to the Lake. Return flow factors are administratively determined by the Utah Division of Water Rights based on best scientific and professional judgement. The State

Engineer's office has preliminarily indicated that a 35 percent return flow factor would be appropriate. This return flow will be captured in Utah Lake, exchanged to Jordanelle Reservoir, and used as part of the M&I System water supply.

NORTHERN UTAH COUNTY M&I RETURN FLOWS

In northern Utah County, the delivery and use of 20,000 acre-feet of Bonneville Unit M&I water for municipal and secondary system use would produce a return flow of 7,000 acre-feet to Utah Lake. In previous Bonneville Unit documents, it was stated that this return flow to Utah Lake would be credited and exchanged to Jordanelle Reservoir. The number has been adjusted to account for the nature and administration of various project water rights, whether they involve trans-basin water, basin water, or a combination of both. The State Engineer has informed the District that return flows from water that is not imported to the Utah Lake basin would accrue to the lake as part of the water rights of those individuals and entities that have Utah Lake water rights. This is the case even if the supplied water is the result of an exchange of imported water delivered to Utah Lake. Consequently, return flows from the 20,000 acre-foot delivery in north Utah County are not available to the project.

SALT LAKE COUNTY M&I RETURN FLOWS

The Bonneville Unit return flows in Salt Lake County are calculated as 15 percent of the 70,000 acre-feet delivered from the Bonneville Unit M&I System, since much of the water originates as natural basin runoff that is exchanged for imported water will be re-used, and 35 percent of the 30,000 acre-feet that would be delivered through the ULS features of the Bonneville Unit. Thus the total of the estimated return flows that may be approved by the Utah State Engineer for re-use is approximately 21,000 acre-feet. The 21,000 acre-feet of return flows includes 15,000 acre-feet from the Jordan Valley service area and 6,000 acre-feet from the Metropolitan Water District of Salt Lake and Sandy service area. Table 4-2 summarizes the combined flows from the various Salt Lake County wastewater treatment plants for 2050. A comparison of the total CUP and non-CUP return flows from M&I use is also presented.

TABLE 4-2
Summary Projection of Salt Lake County Return Flows in 2050
From CUP and Non-CUP M&I Water Use

Wastewater Plant	CUP	Non-CUP	Total
South Valley	9,250	36,000	45,250
Central Valley	8,750	70,000	78,750
Salt Lake	3,000	39,000	42,000
Magna	0	350	350
Total	21,000	139,350	166,350

Note: Not all of the return flows could be recycled because of requirements in the wildlife refuge along the south shore of the Great Salt Lake. Water supply requirements for the refuge have not been defined.

SALT LAKE COUNTY RETURN FLOW RECYCLING POTENTIAL

The combined return flows in Salt Lake County from M&I water delivered by the ULS System and the M&I System amount to 21,000 acre-feet, which is the total return flow credit that may be approved by the Utah State Engineer. Approximately 15,000 acre-feet of the 21,000 acre-feet would return from the JVWCD service area to the South Valley and Central Valley wastewater treatment facilities and is included in future water recycling plans for meeting municipal and industrial needs in the JVWCD area. The remaining 6,000 acre-feet would return to the Salt Lake City Wastewater Treatment Plant located on the south shore of the Great Salt Lake at a point too far below the M&I service area to be economically recycled.

WATER EXCHANGES IN UTAH LAKE

As stated earlier, Bonneville Unit operation includes a complex set of water exchanges to develop the full water supply. The majority of these exchanges are made through Utah Lake. PROSIM2000, which was developed to simulate operation of Provo River and Utah Lake under Bonneville Unit conditions, models these exchanges. In modeling these exchanges, PROSIM assumes a coordinated operation of Jordanelle and Deer Creek Reservoir that is occurring under the 1994 Agreement. Under this agreement, water may be temporarily stored in either reservoir. The water would be stored as high in the system as possible to maximize the operational flexibility.

EXCHANGE MECHANISMS

The four basic mechanisms listed below are used for exchange of Utah Lake water to Jordanelle Reservoir under Bonneville Unit operation. A brief description of each of these mechanisms follows in the following paragraphs.

1. System storage conversion under the Distribution Plan
2. System storage conversion after lowering the Conversion Line
3. Direct exchange of Utah Lake water rights
4. Direct exchange of releases from Strawberry Reservoir to Utah Lake

System Storage Conversion Under Distribution Plan

The Distribution Plan provides for an up to 585,000 acre-feet system storage, which is used to supply the diversion requirements of both primary and secondary Utah Lake water rights. The system storage may be held in Utah Lake or upstream storage, subject to call for Utah Lake uses. The Distribution Plan requires a system storage target of 585,000 acre-feet from November 1 through April 14. The target value gradually decreases thereafter to a minimum of 125,000 acre-feet on October 31. Whenever the total system storage in Utah Lake and upstream reservoirs exceeds the specified target values for system storage, any excess system storage may be converted to priority

storage in upstream reservoirs according to the priority of the upstream rights. Once converted, priority storage is under the full control of the owner and no longer subject to calls by Utah Lake users. Jordanelle Reservoir will be used to store Bonneville Unit system storage under the guidelines of the Distribution Plan and in accordance with Bonneville Unit water rights on the Provo River. When the total volume of system storage crosses the conversion line this stored water will be converted to priority storage in accordance with the Distribution Plan guidelines.

System Storage Conversion After Lowering the Conversion Line

As part of the ULS System, the DOI would acquire the District's secondary water rights in Utah Lake. These rights would amount to approximately 57,000 acre-feet and would yield an average of at least 34,540 acre-feet. The acquired water rights would be used to convert or exchange water to Jordanelle Reservoir under approved water rights used in conjunction with the State Engineer's Utah Lake Distribution Plan. By holding the Utah Lake rights that it has acquired in the Lake (rather than releasing them to a downstream user), the volume of system storage in the lake is raised (or not lowered), and the Bonneville Unit is more likely to be able to convert the system storage previously stored in Jordanelle and Deer Creek reservoirs to priority storage. The District and/or DOI can tell the State Engineer that it intends to hold its water rights in the Lake and request that the State Engineer lower the system storage conversion line accordingly. This will make it possible for the CUP (or the PRP) to convert at a Lake level that is up to 120,000 acre-feet lower than the normal conversion line in the months of April and May.

Direct Exchange of Utah Lake Water Rights

Based on a recent memorandum decision by the State Engineer, under certain circumstances the CUWCD's Utah Lake water rights can be directly exchanged with system storage in Jordanelle Reservoir. This would be instead of using them to lower the conversion line, as described above. The choice of which use of the rights would depend upon the specifics of the situation and authorizations from the State Engineer. Under the direct exchange, a certain amount of the Bonneville Unit system storage in Jordanelle and Deer Creek Reservoirs would become priority storage and an equal amount of the District's rights in the Lake (acquired by DOI under the ULS) would become available to the other Utah Lake water users.

Direct Exchange of Releases From Strawberry Reservoir to Utah Lake

Under Bonneville Unit operation, a special storage account is created in Utah Lake for storing transbasin diversion water developed by the project. This account holds water released directly from Strawberry Reservoir to Utah Lake. The majority of these direct releases are used to provide flows in Sixth Water, Diamond Fork Creek, Hobble Creek, or the lower Provo River for fish and wildlife habitat. The District's account will also hold project return flows from the ULS System that enter

Utah Lake. Because the ULS system water is new water to the Utah Lake drainage, the District has the right to capture and re-divert or exchange this return flow.

Any water stored in the District's Utah Lake account will be held on a space-available basis. When Utah Lake is full and begins to spill, water held in the District's account will be the first water to spill. Water stored in this account will be subject to evaporation losses. The evaporation losses will be equal to the incremental amount of evaporation caused by the increased storage in Utah Lake. There are no seepage losses charged on water stored in Utah Lake.

Water held in the District's Utah Lake account will be used to make exchanges with system storage held in Jordanelle and Deer Creek Reservoirs. It will be used to maximize the amount of priority storage. In some years all of the system storage in Jordanelle and Deer Creek Reservoirs can be converted to priority storage under one of the previously described mechanisms. This generally occurs when there is a relatively large quantity of system storage available. In those years, the water in the District's Utah Lake account will remain in the account for exchange in subsequent years. In other years, system storage is held in Jordanelle Reservoir, but the total system storage throughout the system is below the amount required for conversion to priority storage. In those years, water held in the District's Utah Lake account will be exchanged with the system storage in Jordanelle Reservoir. Under this exchange the system storage in Jordanelle and Deer Creek Reservoir becomes priority storage and water in the District's Utah Lake account becomes system storage.

In extreme drought years there is not enough water in the Utah Lake drainage to provide adequate priority storage in Jordanelle Reservoir under the exchange mechanisms described above. In those years, large quantities of water (60,000 to 70,000 acre-feet) will be released from Strawberry Reservoir to Utah Lake. This water will then be exchanged with Bonneville Unit system storage held in Jordanelle and Deer Creek Reservoirs.

Central Utah Project Completion Program

Chapter 5

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UTAH RECLAMATION
MITIGATION
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RELEASES FROM UTAH LAKE

The historical releases to the Jordan River to meet downstream irrigation diversions rights are declining as irrigated agriculture gives way to urban development. However, a compensating trend is anticipated as the JVWCD and others acquire irrigation rights to provide water for M&I use. Under appropriate adjustments in points of diversion, the JVWCD would pump the water from the alluvial valley fill along the river and allow the streamflow to infiltrate the bed and banks of the river and recharge the alluvial aquifer. While not a routing strategy for Bonneville Unit water, this practice would facilitate water conservation measures promoted by the CUP. Operation of the Bonneville Unit will cause an average annual depletion of 98,500 acre-feet to the Provo River, as described in Volume 5 of this appendix. The depletion is made up by credits consisting of releases from Strawberry Reservoir, Bonneville Unit return flows, acquisition of CUWCD's Utah Lake water rights, and changes in Utah Lake evaporation, spills, and storage.

CUWCD WATER RIGHTS PROPOSED FOR ACQUISITION

As noted in Chapter 2, the CUWCD has acquired water rights in Utah Lake, consisting of 25,000 acre-feet of primary rights from Salt Lake City and 57,073 acre-feet of secondary rights. Primary rights are water rights defined by the Morse Decree to have storage rights in Utah Lake; secondary rights are storage rights in Utah Lake established by applications to appropriate water and confirmed by the Booth Decree. The Department of the Interior has acquired 7,900 acre-feet of these primary rights to offset the effect of the loss of the Indian Ford Exchange on the M&I System water supply. As part of the ULS System, the DOI would acquire the District's secondary water rights in Utah Lake. These rights would amount to 57,073 acre-feet and would yield an average of at least 34,540 acre-feet.

WATER SUPPLY FROM CUWCD WATER RIGHTS**Proposed Operation**

Simulated operation studies for the Bonneville Unit have shown that in successive dry years the amount of Utah Lake system storage would be depleted and the total amounts would fall below the target levels required for conversion to priority storage. Under these circumstances the Distribution Plan would not provide adequate priority storage in Jordanelle Reservoir to meet Bonneville Unit demands. The studies indicated that in successive dry years there is a need for the water available under the District's secondary Utah Lake water rights to lower the conversion line or for direct exchange to Jordanelle Reservoir.

In order to provide an adequate water supply in Jordanelle Reservoir for the M&I System when Utah Lake's total system storage level fails to allow conversion of all of the CUP system storage in Jordanelle and Deer Creek reservoirs, the CUWCD's Utah Lake water rights would be used to lower the conversion line or would be directly exchanged with system storage in Jordanelle Reservoir. The

choice of which use of the rights would depend upon the specifics of the situation and authorizations from the State Engineer. Under the exchange, the system storage in Jordanelle and Deer Creek Reservoirs would become priority storage and the District's rights in the Lake (acquired by DOI) would become available to the other Utah Lake water users. Under the alternative use, the District and DOI would inform the State Engineer that they intended to hold their rights in the Lake, he would lower the conversion line accordingly, and the CUP and PRP would both have an improved opportunity to convert their system storage in Jordanelle and Deer Creek reservoirs. In either case, the acquired Utah Lake water rights would be used to replace the converted system storage.

Operation studies were performed to verify that the use of the CUWCD/DOI rights in Utah Lake (either to lower the conversion line or to directly exchange to Jordanelle) would not change flows in the Jordan River below the Narrows or adversely impact Utah Lake/Jordan River water users.

As required by Utah water law, these operations would only be made to the extent that they did not interfere with prior water rights. In most years, the secondary Utah Lake water rights acquired from the CUWCD would remain in Utah Lake to increase the total amount of system storage available. Under the Distribution Plan, when Utah Lake system storage is above predetermined levels, system storage held in upstream reservoirs would be converted to priority storage. Once converted to priority storage, the water is no longer subject to call by downstream Utah Lake water users. By increasing the amount of available system storage, or by reducing the secondary water rights calls on Utah Lake, more water stored in Jordanelle and Deer Creek Reservoirs could be converted to priority storage and more water in Strawberry Reservoir is able to be directly delivered to meet ULS water demands.

ANNUAL YIELD OF THE UTAH LAKE WATER RIGHTS

The historical average yield of the CUWCD's 57,073 of secondary water rights was about 45,978 acre-feet. The approach used was to catalogue the historical quantities of water diverted by all of the owners of Utah Lake secondary rights during the period 1950 through 1999. Historical diversions for the period after CUWCD acquired the rights were estimated, since the rights were held in the Lake during this period. It was found that historically, the total yield of the 112,739 acre-feet of Utah Lake secondary rights was 112,739 acre-feet in 29 out of the 50 years. The minimum yield was zero in 1992, and less than 50 percent in seven other years. The average yield over the 50 year period was estimated to be 90,822 acre-feet or 80.6 percent). Given that the CUWCD's rights amount to 50.6 percent of the total, it is reasonable to assume that they would have had a historical yield equal to 50.6 percent of the total. This calculation indicates that the yield of the 57,073 acre-feet of CUWCD secondary rights would be 45,978 acre-feet.

The historical deliveries and the historical yield estimates described above were not based upon operation of Utah Lake under the Utah Lake Distribution Plan. They were based upon historical water demands and historical operation of Utah Lake, operations that will be different in the future. It is not known whether or how the Distribution Plan and future demands and operations may affect

the average yield of the secondary rights in Utah Lake. What is known is that operation studies conducted under the provisions of the Distribution Plan show that Utah Lake can be operated without significantly changing Utah Lake levels, Jordan River water rights deliveries, or flows below the Narrows. These studies indicate that the historical yield of the CUWCD water rights is probably a good indication of the likely future yield.

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UTAH RECLAMATION
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OVERVIEW

The operation of Utah Lake under full Bonneville Unit operation would not be significantly different from the operation of the past, or from future operation under the Distribution Plan without the project. The operation of the Bonneville Unit M&I System retains Provo River flow in Jordanelle Reservoir for delivery in Summit, Wasatch, northern Utah, and Salt Lake counties in the aggregate amount of 98,500 acre-feet. However, the Bonneville Unit has been formulated to compensate for the reduction in Provo River inflow by delivering Strawberry Reservoir water to Utah Lake, retaining the water yield of the acquired rights in Utah Lake, and contributing return flows to Utah Lake from use of Bonneville Unit M&I water in Utah County.

METHOD OF ANALYSIS

The Utah Lake water budget analysis focuses on the comparison between the reduction in inflow attributable to the Bonneville Unit and the compensatory provisions in the form of releases to the lake and including the yield of the acquired water rights in the lake. Bonneville Unit operation would reduce the average inflow to Utah Lake from the Provo River by approximately 98,500 acre-feet per year. Of this amount, 84,510 acre-feet must be replaced in Utah Lake to keep the downstream water supply whole. The Bonneville Unit compensatory measures would credit the lake with releases to the lake of about 40,310 acre-feet per year, return flows of about 9,660 acre-feet per year, and water rights yield averaging at least 34,540 acre-feet per year, for a total of 84,510 acre-feet. The key to determining the equivalence between water retention by the Bonneville Unit M&I System and the compensatory water amounts for the lake is the model operation studies that account for the timing of inflows and outflows in the context of the water rights, diversion demands from the lake, and the provisions of the State Engineer's Distribution Plan, all of which have been incorporated in the model analysis presented below.

MODEL DESCRIPTION

The operation of Utah Lake was simulated using both the Provo River Simulation Model (PROSIM2000) and by using a spreadsheet model called the Utah Lake Spreadsheet Model. The former is a prioritized water rights model of the Utah Lake System, developed under the CUPCA. The latter is a mass balance spreadsheet accounting model with a monthly time step developed to perform simplified inflow-outflow studies of Utah Lake. The spreadsheet tracks Utah Lake inflows, outflows, and storage. Inputs to the model include inflows from the major rivers developed using PROSIM2000 and other tools. These inflows include the Provo, American Fork, and Spanish Fork rivers, along with other inflows such as return flows, groundwater inflows, and demands on the lake. The simulation ends at the Jordan Narrows, downstream from the outlet from Utah Lake. The model provides 50 years of monthly output describing the flows, deliveries, and reservoir storage, based on the data, assumptions, and operating rules used in simulating Bonneville Unit operating conditions. The following methodologies and parameters are applied in the Utah Lake Spreadsheet Model:

- Historical releases associated with the 7,900 acre-feet of Indian Ford water acquired as part of the M&I System water supply would remain in the lake and be exchanged to Jordanelle Reservoir. DOI acquired 7,900 acre-feet of CUWCD Utah Lake water rights in 2001. These water rights will be operated to benefit the water supply of the M&I System.
- The water available each year from CUWCD secondary rights of 57,073 acre-feet is assumed to have the same average pattern as the remainder of Utah Lake secondary rights. The acre-feet of yield of the CUWCD secondary rights are held in Utah Lake, and water is converted or exchanged to Jordanelle accordingly. Historical calls on Utah Lake are reduced by the proportion associated with the CUWCD secondary rights. If Utah Lake is above Compromise Level, or significantly above the conditions without the ULS System, the full historical deliveries associated with the CUWCD secondary rights are assumed. When Utah Lake water rights are being exchanged upstream to Jordanelle Reservoir, they cannot also be used to deliver water downstream. However, if the water rights are not needed to convert system storage in Jordanelle Reservoir, the DOI would have the option of delivering this water to a user downstream, instead of exchanging them upstream. Delivering the water to a downstream user during wet years will tend to avoid Utah Lake levels that are higher than historical.
- The analysis makes use of historically based inflow data, except in the case of Provo River, CUP water from Strawberry Reservoir, and return flows from ULS and inter-related actions. These inflows are calculated separately, in the individual operations studies for the Provo and Spanish Fork rivers.
- Because of concern that Bonneville Unit operation might alter Jordan River flows, diversions, and return flows, Jordan River flow changes were represented at the outlet to Utah Lake and at Jordan Narrows.

The Utah Lake Spreadsheet Model was calibrated and checked by comparing results with PROSIM2000 and with independent simulation runs of the LKSIM2000 model described in Chapter 8. LKSIM2000 produces a time series showing the total volume required to balance the cumulative water balance inputs. By using the Utah Lake spreadsheet model outputs as LKSIM2000 model inputs, the two models are exactly compared for errors in water balance.

The effect of changes in Utah Lake water rights on the ability to convert or exchange CUP system storage in Jordanelle and Deer Creek reservoirs were estimated using PROSIM2000 and the Provo River Spreadsheet Model. Results of this analysis are documented in Volume 5 of this appendix covering Provo River Hydrology. Provo River inflows to Utah Lake came from those modeling studies.

HYDROLOGIC DATA BASE

The Utah Lake Spreadsheet Model was developed to simulate Utah Lake operation for the 1950 to 1999 water years. Thus the inflow and outflow data from October 1949 through September 1999 were used. This period of study represents a broad range of historical runoff conditions, including extend dry and wet periods, and is consistent with the period of analysis used to analyze the operation of other Bonneville Unit systems.

Inflow to Utah Lake for Bonneville Unit conditions was developed by modifying the historical monthly inflow to reflect future CUP and PRP on the Provo River, releases from Strawberry Reservoir to Utah Lake, return flow from the Municipal and Industrial (M&I) System, return flow from ULS System deliveries of CUP water, ULS inter-related actions flow increases, reduced return flows associated with the inter-related actions, and retention of the acquired water rights yield in Utah Lake. The Utah Lake Spreadsheet Model is listed in Attachment C, Utah Lake Water Budget Analysis - Bonneville Unit Conditions.

UTAH LAKE STORAGE PROJECTIONS

The model simulation for Bonneville Unit conditions produced maximum and minimum Utah Lake storage contents varying from about 219,000 acre-feet in 1963 to about 1,121,000 acre-feet in 1983, with an average of 687,200 acre-feet over the 1950 to 1999 period. Table 6-1 presents the projected end-of-month storage content of the lake in terms of average, wet year, and dry year conditions. Based on inspection of the inflow data, the years 1961, 1977 and 1992 were selected as dry years and 1952, 1983 and 1986 were selected as wet years. The model results of the three-year sets were then averaged to calculate dry- and wet-year monthly average storage volumes. The entire 50-year simulation was averaged to calculate monthly average results. Figure 6-1 shows the monthly values graphically. The complete monthly results of the operational modeling are presented in Attachment C, Utah Lake Water Budget Analysis - Bonneville Unit Conditions. Utah Lake contents, surface area, and elevation are summarized in Attachment B, Utah Lake Modeling Results.

TABLE 6-1
Utah Lake Monthly Content Under Bonneville Unit Operation
(Units: 1,000 acre-feet)

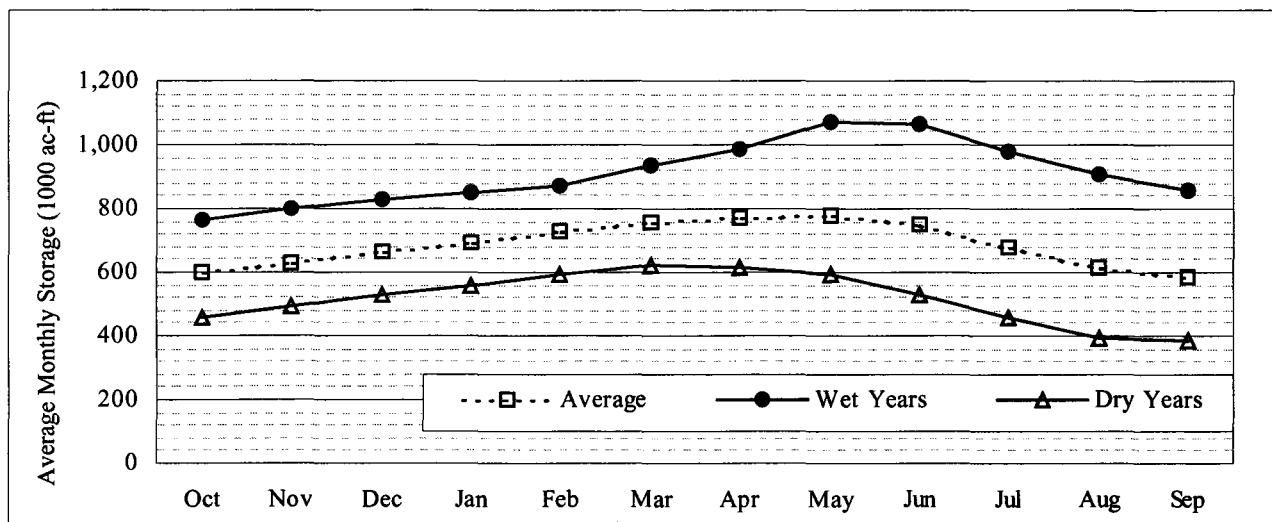
Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Ave
Average	597.0	628.3	660.9	695.6	728.9	755.1	770.3	781.2	750.8	676.1	615.4	587.5	687.3
Wet Years ¹	763.9	798.9	827.4	847.9	873.3	938.7	985.6	1,072.8	1,065.0	977.0	909.2	854.7	909.5
Dry Years ²	458.2	492.0	528.5	559.4	594.3	620.0	617.2	594.0	530.7	455.3	396.3	387.5	519.5

Notes:

¹ The three wettest years (1952, 1983, and 1986) were averaged to calculate the values shown in the table.

² The three driest years (1961, 1977, and 1992) were averaged to calculate the values shown in the table.

Figure 6-1
Utah Lake Monthly Content Under Bonneville Unit Operation



Points of comparison for the contents of Utah Lake are the storage at the Compromise Level (essentially the full storage condition) of about 870,000 acre-feet, of which 710,000 acre-feet is the active storage capacity. The inactive storage pool is about 160,000 acre-feet. The top of the inactive pool is 8.7 feet below the Compromise Level, or approximate elevation 4480.3 feet. This elevation was set by the Utah State Engineer's Distribution Plan, which was described previously in this Volume 6. This 160,000 acre-feet minimum elevation corresponds approximately to the minimum water surface elevation at which the outlet pumps can operate.

The tabulated average values show a range of Utah Lake contents from approximately 587,000 acre-feet to 781,000 acre-feet. The monthly averages for the three wet years ranged from approximately 760,000 acre-feet to 1,073,000 acre-feet. The wet years do not include the 50-year high of approximately 1,121,000 acre-feet that occurred in simulated June 1984. The monthly averages for the three dry years ranged from 387,000 acre-feet to 620,000 acre-feet. The dry years do not include the 50-year low of simulated October 1963 when the contents dropped to approximately 219,000 acre-feet.

With the acquisition of Utah Lake water rights from the CUWCD, the average secondary water right demand on Utah Lake would be reduced to an estimated 55,666 acre-feet under full Bonneville Unit operation. With shortages comparable to the historical condition, the average release for this demand would be about 44,844 acre-feet annually. Simulated annual releases to secondary users vary from 8,500 acre-feet in 1992 to 55,666 acre-feet in most years. Water associated with the

acquired water rights would remain in Utah Lake and be used to offset the decrease in inflow to the lake under Bonneville Unit conditions.

The average reduction in Provo River inflow to Utah Lake is about 98,500 acre-feet. This reduction includes the Indian Ford Exchange (contract dated February 19, 1977, between U.S. Department of the Interior and the CUWCD). The Strawberry Reservoir releases add about 40,310 acre-feet, and the ULS System return flows provide an increase in inflow of about 9,660 acre-feet annually.

Utah Lake Evaporation losses for Bonneville Unit conditions averaged 345,000 acre-feet over the 1950 to 1999 period, ranging from 281,000 acre-feet to 387,000 acre-feet annually. The evaporation loss under Bonneville Unit conditions would be about the same as under historical conditions.

Spills from Utah Lake would average about 118,000 acre-feet per year under Bonneville Unit conditions as compared to an average of 127,000 under historical conditions. This change is largely due to operations under the Utah Lake Distribution Plan. The comparative annual spills are exactly the same under pre-ULS and Bonneville Unit conditions.

UTAH LAKE LEVEL PROJECTIONS

The model simulation for Bonneville Unit conditions produced Utah Lake water levels varying from about 4,481.2 feet in 1963 to about 4,491.6 feet in 1983 for the 1950 to 1999 period. Table 6-2 presents the projected end-of-month water levels of the lake in terms of average, wet year, and dry year conditions. As noted above, years 1961, 1977 and 1992 were selected as dry years and 1952, 1983 and 1986 were selected as wet years. The model results of the three-year sets were then averaged to calculate dry- and wet-year average water levels. The entire 50-year simulation was averaged to calculate the monthly average results. Table 6-2 lists the monthly values, rounded to the nearest foot. The water levels for all months of the study recorded to the nearest tenth of a foot are presented in Attachment B, Utah Lake Modeling Results.

TABLE 6-2
Utah Lake Monthly Water Level Under Bonneville Unit Operation
(Units: feet above mean sea level)

Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Ave
Average	4,486	4,486	4,487	4,487	4,487	4,488	4,488	4,488	4,488	4,487	4,486	4,486	4,487
Wet Years ¹	4,488	4,488	4,489	4,489	4,489	4,490	4,490	4,491	4,491	4,490	4,489	4,489	4,489
Dry Years ²	4,484	4,485	4,485	4,486	4,486	4,486	4,486	4,486	4,486	4,485	4,484	4,484	4,485

Notes:

¹ The three wettest years (1952, 1983, and 1986) were averaged to calculate the values shown in the table.

² The three driest years (1961, 1977, and 1992) were averaged to calculate the values shown in the table.

A point of comparison for the water levels is the Compromise Level of 4,489.045 feet above mean sea level. As discussed in Chapter 1, a water level rise to that elevation during the natural runoff

period triggers spill releases to the Jordan River until the water surface elevation declines back to that level. Conversely, a historical lake drop of more than 8.7 feet below that level (below elevation 4480.3) has required dredging to provide a flow channel from the lake to the pumps that provide water to the Jordan River. The maximum depth of the lake is about 14 feet below the Compromise Level, or approximately 4,475 feet. Historical water surface elevations have ranged from a low of about 4,477.2 feet in 1935 to a high of 4,494.7 feet in June of 1984.

The tabulated values show that the average monthly Utah Lake water levels are within approximately 3 feet of the Compromise Level. Wet year average values range from 1 foot below to 2 feet above the Compromise Level. The dry year average ranges from 3 feet to 6 feet below compromise level. The minimum water level produced by the model simulation was 4,481.2, or four feet above the historical minimum.

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A short chapter on the Jordan River is included since an obvious question would be – What are the affects on the Jordan River? Under the Bonneville Unit there would be no effect on the Jordan River below the many diversions points located at the Jordan Narrows. The material in this chapter is presented to help the reader understand this.

OVERVIEW

The outflow from Utah Lake to the Jordan River under Bonneville Unit conditions reflects the acquisition of water rights in the lake for the Bonneville Unit. Under Bonneville Unit conditions, the water yield of the acquired rights would remain in Utah Lake to compensate for the reduction in inflow from the Provo River resulting from the operation of the Bonneville Unit M&I System. That system retains Provo River flow in Jordanelle Reservoir for delivery in Wasatch, northern Utah, and Salt Lake counties. Except in very wet conditions the water yielded by the acquired water rights would no longer be potentially available for release to the Jordan River for downstream use.

METHODS OF ANALYSIS

Jordan River flows below Utah Lake were estimated under Bonneville Unit conditions using the Utah Lake Spreadsheet Model. The model accumulates inflow to Utah Lake, releases water to meet primary and secondary water rights demands, estimates the inflow from precipitation and the outflow from evaporation, and calculates spill when the Lake is above Compromise. As a simplification, the model assumes that all Jordan River diversions associated with Utah Lake are diverted at the Narrows. A schematic diagram of the Jordan River from Utah Lake to the Narrows is presented in Figure 7-1.

JORDAN RIVER FLOWS UNDER BONNEVILLE UNIT CONDITIONS

Figure 7-2 and Table 7-1 present modeled Jordan River Flows from the outlet of Utah Lake to Jordan Narrows. The average plot is the average of all years modeled. The wet year plot is the average of the three wettest years (1952, 1983, and 1986). The dry year plot is the average of the three driest years (1961, 1977, and 1992). The average flows shown and listed are the average of the 50 monthly values for each month shown.

Figure 7-3 presents modeled Jordan River flows immediately downstream of the Jordan Narrows after river diversions at the narrows. Attachment C, Flow of Jordan River - Bonneville Unit Conditions, contains complete monthly flow data for the 1950 through 1999 period under Bonneville Unit conditions.

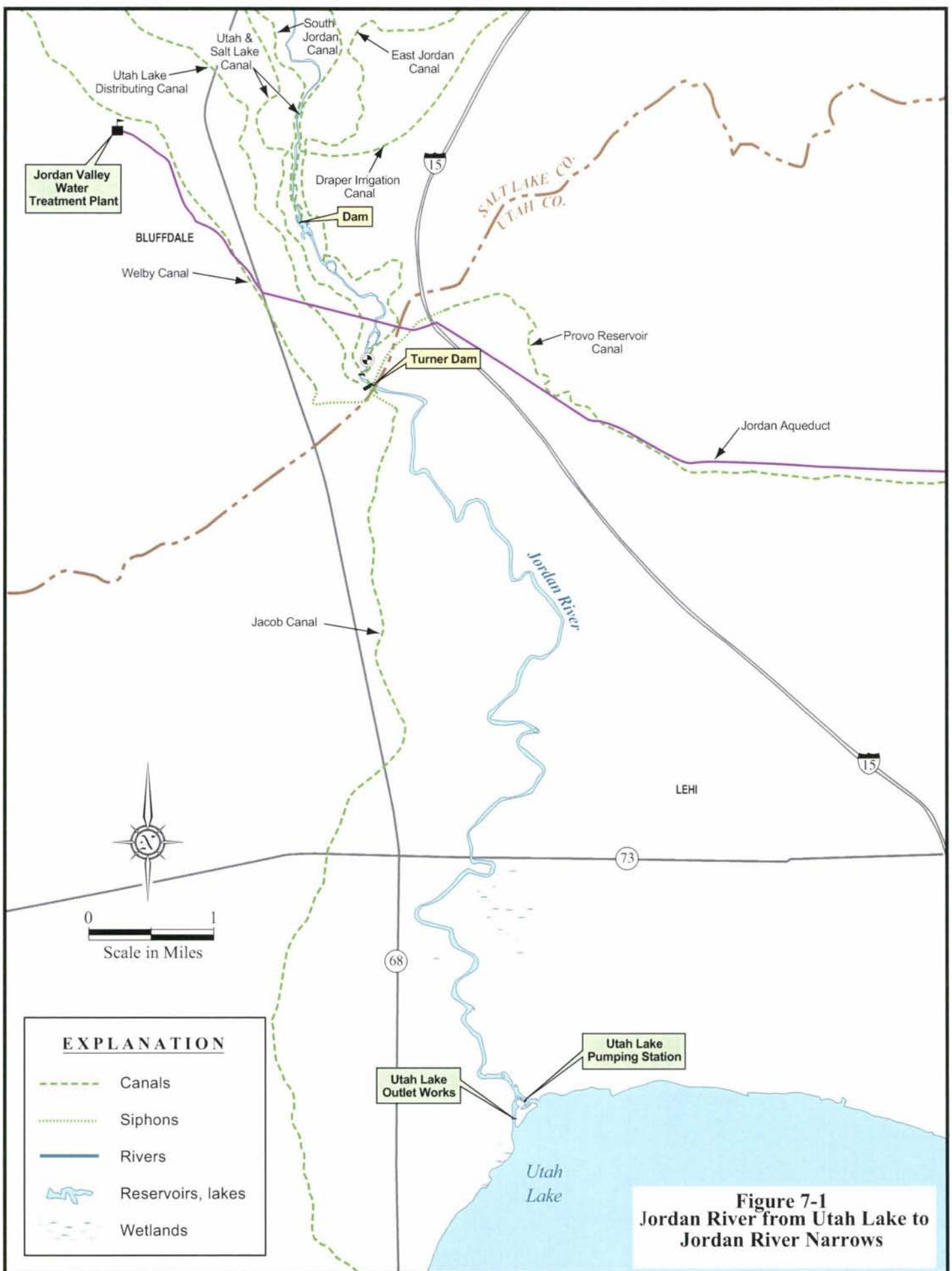


TABLE 7-1
Jordan River Flows Under Bonneville Unit Operation

Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Sum/Average
Jordan River below Utah Lake Outlet													
Flow in acre-feet													
Average	14,017	9,058	11,792	14,867	17,053	25,324	32,221	49,462	51,601	52,027	43,178	30,227	350,828
Wet Years ¹	12,813	16,243	39,682	44,306	58,316	89,608	99,398	123,511	119,595	101,698	77,751	53,920	836,840
Dry Years ²	11,112	847	847	239	276	304	7,201	27,518	31,799	35,386	26,424	13,206	155,157
Flow in cfs													
Average	228	152	192	242	305	412	542	804	867	846	702	508	484
Wet Years ¹	208	273	645	721	1,045	1,457	1,671	2,009	2,010	1,654	1,265	906	1,155
Dry Years ²	181	14	14	4	5	5	121	448	534	576	430	222	214
Jordan River below Jordan Narrows													
Flow in acre-feet													
Average	3,379	5,473	8,534	11,688	13,508	19,756	20,690	15,201	11,103	4,339	2,521	1,895	118,087
Wet Years ¹	0	11,172	34,236	38,860	53,245	81,947	86,625	82,292	72,490	45,808	27,357	15,793	549,825
Dry Years ²	0	0	0	0	0	0	0	0	0	0	0	0	0
Flow in cfs													
Average	55	92	139	190	241	321	348	247	187	71	41	32	163
Wet Years ¹	0	188	557	632	954	1,333	1,456	1,338	1,218	745	445	265	759
Dry Years ²	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

1. The three wettest years (1952, 1983, and 1986) were averaged to calculate the values shown in the table.
2. The three driest years (1961, 1977, and 1992) were averaged to calculate the values shown in the table.

Figure 7-2
Jordan River Flows Above Jordan Narrows Under Bonneville Unit Operation

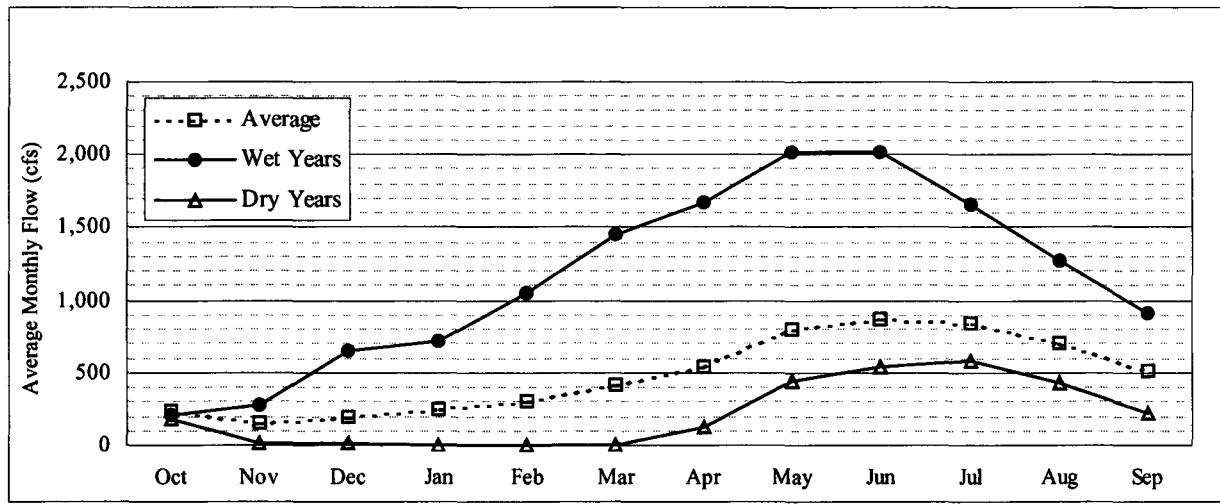
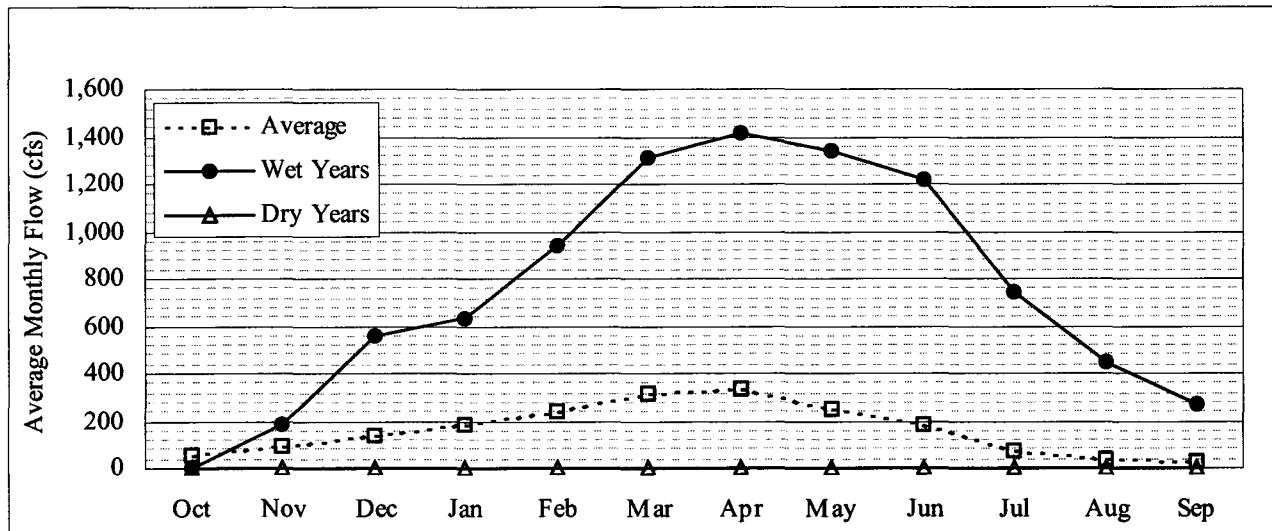


Figure 7-3 presents modeled Jordan River Flows downstream of the Jordan Narrows.

Figure 7-3
Jordan River Flows Below Jordan Narrows Under Bonneville Unit Operation



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Chapter 8



UTAH RECLAMATION
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This chapter presents analyses of the salinity of Utah Lake under Bonneville Unit operating conditions. The salinity, expressed in terms of total dissolved solids (TDS) measured in milligrams per liter (mg/L) or parts per million (ppm) is a factor in the use of Utah Lake water, particularly in the conversion of diversion rights from irrigation use to M&I use.

The water quality parameter analyzed in this supplemental DPR is salinity in TDS.

FACTORS AFFECTING UTAH LAKE WATER QUALITY

Utah Lake receives water from about 80 different sources, ranging from high quality water from Wasatch Front streams, to irrigation drainage and treated municipal wastewater of lower quality. Evaporation from the lake has a concentrating effect on the dissolved minerals in the lake and those carried in by inflows. Outflows from the lake consist of releases to the Jordan River and one or more direct irrigation diversions, which are the sole means of discharging dissolved minerals from the lake.

The lake serves as the "salinity balance." This means the lake's salinity increases to the concentration at which the TDS of the water released to the Jordan River is in balance with the weighted average TDS of the inflows. In other words, the Lake salinity stabilizes at the TDS at which the mass of salt released to the Jordan River is equal the mass of salt in all the inflows to the lake. For perspective, an acre-foot of water at a TDS of approximately 735 milligrams per liter (mg/L) contains one ton of salt. The numerous sources of inflow to Utah Lake result in a highly complex system for analyzing water quality. TDS in the tributaries and in the lake vary markedly over time.

Water quality in Utah Lake is strongly affected by the lake's large net evaporation loss, which concentrates the total dissolved solids in the lake. The high levels of TDS are further compounded by mineral springs that occur in the lake bed. This has resulted in typical TDS concentrations of 900 mg/L through much of the lake (Fuhriman et al. 1981). Because of its shallow depth, winds commonly suspend the sediments of the lake, giving the nutrient-rich waters a milky-gray, turbid appearance during most of the year. The lake is used to temporarily store irrigation water and also receives effluent from municipal and industrial wastewater treatment facilities.

METHOD OF ANALYSIS

Utah Lake was modeled as a storage reservoir that has inflows with various salinities and outflows reflecting the Lake's salinity. A computer model (LKSIM2000) was used as the basis for estimating Utah Lake TDS under Bonneville Unit conditions. Relationships between monthly inflow and TDS were established for each of about 80 different sources of inflow. The model was developed and calibrated for historical conditions prior to modeling future Bonneville Unit conditions.

LKSIM2000 TDS MODEL

TDS modeling was performed using the LKSIM model. This model is essentially a mass balance model that calculates water and salt balances for Utah Lake on a monthly time step. Early versions of the model were developed in the 1970's by Drs. LaVere Merritt and Dean Fuhriman, and since about 1985 Dr. Wood Miller, professors of civil and environmental engineering at Brigham Young University. This model includes input for 57 surface sources, 19 fresh and mineral groundwater sources, and precipitation. The current version, LKSIM2000, is used routinely by the CUWCD and their consultants to evaluate lake salt concentrations associated with various water management scenarios for Utah Lake.

DATABASE

Water quality (TDS) and flow data used as input to the model were based on extensive historical monitoring. These inputs were combined in the model to produce Utah Lake TDS concentrations for the corresponding 50-year time period (October 1949 to September 1999) under Bonneville Unit operating conditions. Background on LKSIM2000, the methods used to develop inflows, inflow water quality data, and model calibration are contained in Appendix E to this Volume.

MODELING RESULTS

Figure 8-1 and Table 8-1 show the average, wet year, and dry year TDS concentrations in Utah Lake for the 1950 to 1999 period under the simulated Bonneville Unit operating conditions. The wet years (1952, 1983 and 1986) and the dry years (1961, 1977 and 1992) were those selected in the storage analysis described in Chapter 7. Monthly values for the entire 50-year simulation were averaged to calculate average-year results. The 50-year modeled average was 932 mg/L. The highest modeled TDS concentration, 1,700 mg/L, occurred in 1961, the year of lowest historical inflow. During the high Utah Lake level in 1984, the modeled TDS reached a low of about 445 mg/L. Attachment E of this appendix contains the details of the analysis. These TDS concentrations also apply to the Jordan River to the Jordan Narrows. The TDS concentrations for each month of the 50-year period of analysis are in Attachment E, Utah Lake Salinity Analysis (LKSIM2000) - Bonneville Unit Conditions.

TABLE 8-1
Utah Lake Average, Wet, and Dry Year TDS Concentrations (mg/L)

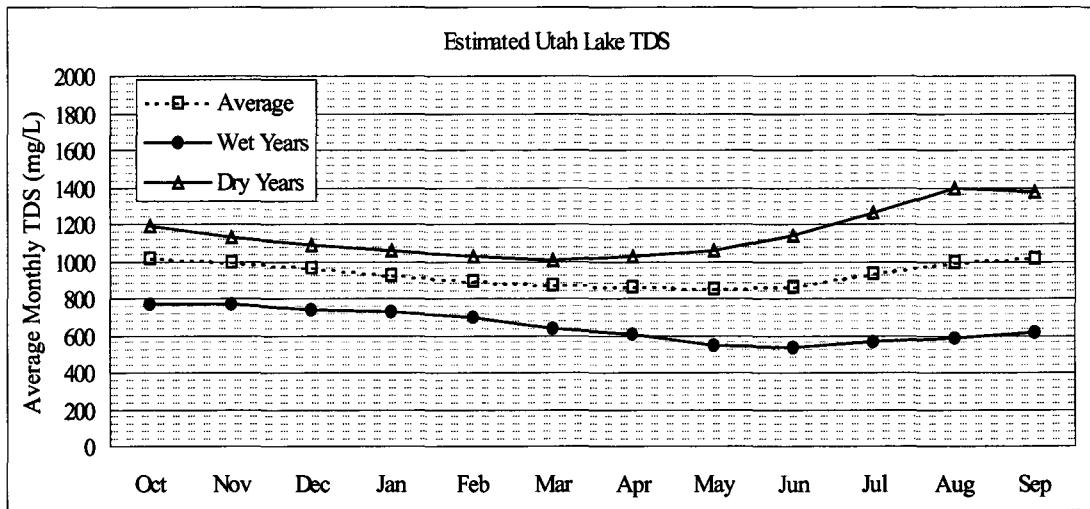
Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
Average	1,019	994	961	925	896	874	867	849	863	929	991	1,014	932
Wet Years ¹	774	766	743	724	696	640	604	545	532	564	588	614	649
Dry Years ²	1,185	1,131	1,086	1,052	1,021	1,008	1,029	1,054	1,135	1,266	1,399	1,374	1,145

Notes:

¹ The three wettest years (1952, 1983, and 1986) were averaged to calculate the values shown in the table.

² The three driest years (1961, 1977, and 1992) were averaged to calculate the values shown in the table.

Figure 8-1
Utah Lake TDS Concentrations



AFFECT OF WATER QUALITY ON WATER USES

The quality of Utah Lake water affects present and future water users in two areas--1) suitability for culinary use and 2) suitability for irrigated agriculture and residential/community landscaping. The following subsections describe the suitability of Utah Lake water for these purposes.

CULINARY WATER SUPPLY POTENTIAL

Although Utah Lake water has not historically been used for drinking water, other than under a small-scale trial blending operation, Utah Lake is being considered as a source of future drinking water for the JVWCD. As mentioned in Chapter 3, the JVWCD has plans to treat and use up to 50,000 acre-feet of Utah Lake water for drinking water. Under this plan the water would be treated using a membrane treatment process which includes microfiltration and reverse osmosis. This proposal is discussed further in Volume 2 of the Water Supply Appendices.

CROP AND LANDSCAPE IRRIGATION

The effects of Utah Lake salinity on crops and other vegetation are difficult to quantify because of seasonal and annual variations in the lake's salinity concentrations, soil conditions of the cultivated areas, and methods of irrigation. Additionally, the salinity tolerances among plant species vary widely. An increasing amount of Utah Lake water will be used for landscape irrigation in the future. From past efforts, it has been found that untreated Utah Lake water is detrimental to some ornamental plants used in urban landscaping.

IRRIGATION WATER TECHNICAL STANDARDS AND CLASSIFICATION

Data in the scientific literature report several different units and measurements for salinity. Drinking water standards often report salinity with respect to TDS; parameters for irrigation water and soils are more commonly reported by electrical conductivity (EC) and/or sodium adsorption ratios. Although there is a tight correlation between EC and TDS, the values cannot be converted exactly. Salinity data from Utah Lake have been measured and reported as TDS within the context of this report. These data can be converted to EC to facilitate comparisons with published irrigation water quality parameters. Data for EC are often reported by different units and can be confusing. Equivalent quantities for EC at 25°C are 1 decisiemens per meter (dS/m) = 1 millimho per centimeter (mmho/cm). For an approximation of EC in units of dS/m, one may divide the TDS by 640 (Hershey 1993).

Salinity data from Utah Lake had been measured and reported as TDS within the context of this report. Generally, salinity of irrigation water can be divided into the four classes given below with respect to conductivity (Richards 1954, Kandiah 1987, van der Leeden et al. 1990). These classes, converted from the published EC values are presented in Table 8-2, along with the percentage of time that Utah Lake water falls within each class.

TABLE 8-2 Classification of Utah Lake Water Quality for Bonneville Unit Conditions			
Class	Water Salinity Description	TDS (mg/L)	Percentage of Time Within Class
C1	Low	0-160	0
C2	Moderate	160-480	0.5 %
C3	High	480-1,440	96.0%
C4	Very High	1,440+	3.5%

Low salinity or C1 water can be used to irrigate most crops on most soils with little likelihood that soil salinity will develop. Some leaching is required, but this occurs under normal irrigation practices except in soils of extremely low permeability. C2 water can be used if a moderate amount of leaching occurs. Plants with moderate salt tolerances can be grown in most cases without special practices for salinity control. C3 water cannot be used on soils with restricted drainage. Even with adequate drainage, special management for salinity control may be required, and plants with good salt tolerance should be selected. C4 water is not suitable for irrigation under ordinary conditions, but may be used occasionally under very special circumstances. The soils must be permeable, drainage must be adequate, irrigation water must be applied in excess to provide considerable leaching, and very salt-tolerant crops should be selected.

A literature review indicated several documented studies reported on the effects of irrigation and salinity on ornamental, vegetable, field, forage, grass, and fruit crops. Higher salinity levels in irrigation water have been studied with successful results. For example, the salinity tolerance of five ornamental species was studied by Zurayk et al. (1993). Plants were grown in pots and irrigated with

saline water at 5 dS/m and 15 dS/m levels. Begonia plants died at the lower level and therefore were classified as salt-sensitive. Geranium, colerus, and chlorophytum survived at the higher level, but their weight and height were significantly stunted at 15 dS/m. These plants were classified as moderately salt-tolerant. Mesembryanthemum was classified as salt-tolerant because no significant decrease was measured with either of the salt treatments. In their study of flower crops, Sonneveld and Voogt (1983) found carnations and chrysanthemums to be salt-tolerant, gerberas and hippeastrums moderately tolerant, and anthuriums to be most sensitive to salt. Bernstein (1965) found that most fruit crops were sensitive to salinity. Salt tolerance of ornamental plants has been reported by Carpenter (1970) and Zelazny (1968). Salt tolerance of field, vegetable, fruit, and forage crops has been reported by van der Leeden et al. (1990), Richards (1954), Bernstein (1958), and Kandiah (1987).

Table 8-3 summarizes the information above and other cited references. In the table, plants are listed as having high, moderate, or low tolerances to salt. Although the literature is somewhat conflicting, the plants listed under the moderate salt tolerance category in the plant species tables would be expected to grow in the C2 and C3 ranges of salinity, especially if the soils were managed accordingly. The high salt-tolerant species would grow within the C3 and C4 ranges.

UTAH LAKE WATER SUITABILITY FOR IRRIGATION

As shown in Table 8-2, under Bonneville Unit conditions, Utah Lake water quality falls within the C3 class 96 percent of the time and within the C4 class 3.5 percent of the time. The lake water is almost never within the C1 or C2 classes. Therefore, the plants listed in Table 8-3 as having a low salt tolerance cannot be irrigated with raw or unblended Utah Lake water. Plants listed as having a moderate salt tolerance will likely be damaged when the lake's water quality falls within the C4 class. Plants with high salt tolerance could be irrigated with Utah Lake water with no or few adverse effects.

JORDAN RIVER WATER QUALITY

Because a major portion of the water released from Utah Lake is diverted at the Jordan Narrows and because inflows of various qualities occur river downstream of the Jordan Narrows, the water quality of the Jordan River downstream of the Narrows was not included in this analysis.

The water quality in the Jordan River from Utah Lake to the Jordan Narrows is essentially the same as the water quality in Utah Lake. Therefore, the TDS in this reach of the river under the Bonneville Unit would be very similar to that of Utah Lake.

TABLE 8-3
Salt Tolerance of Selected Crops

High Salt Tolerance	Moderate Salt Tolerance	Low Salt Tolerance
Field Crops		
Barley (grain) Beet, sugar	Castorbeans Corn, field Flax Oats (grain) Rye (grain) Sorghum Sunflower Wheat (grain)	Beans, field
Forage and Grass Crops		
Alkaligrass, Nuttall Barley Bermuda grass Fescue, tall Sacaton, alkali Saltgrass Trefoil, bird's-foot Wheatgrass, tall Wheatgrass, western Wildrye, Canada	Alfalfa Brome, smoot Brome, mountain Canarygrass, reed Clover, Huban Clover, strawberry Fescue, meadow Gramia, blue Harding grass Milkvetch Oatgrass, tall Oats (hay) Orchardgrass Rye (hay) Ryegrass, perennial Sudan grass Sweet clover, white Sweet clover, yellow Wheat (hay) Wildrye, beardless	Burnet, small Clover, white Clover, Alsike Clover, Red Clover, Ladino Foxtail, meadow

TABLE 8-3
Salt Tolerance of Selected Crops
(continued)

High Salt Tolerance	Moderate Salt Tolerance	Low Salt Tolerance
Vegetable Crops		
Asparagus	Broccoli	Beans, green
Beets, garden	Cabbage	Celery
Kale	Carrot	Radish
Spinach	Cauliflower	
	Corn, sweet	
	Cucumber	
	Lettuce	
	Onion	
	Peas	
	Pepper, bell	
	Potatoes, white rose	
	Squash	
	Tomato	

Central Utah Project Completion Program

Chapter 9

October 2004

Chapter 9



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



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Central Utah Project Completion Program

Attachment A

October 2004



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



**Utah Lake Drainage Basin Water Delivery System Bonneville Unit, Central Utah Project
2004 Supplement to the 1988 Definite Plan Report**

**Water Supply Appendix
Volume 6 Attachment A: Utah Lake Salinity Analysis**

October 2004

UTAH LAKE INTERIM WATER DISTRIBUTION PLAN

UTAH LAKE INTERIM WATER DISTRIBUTION PLAN

EFFECTIVE NOVEMBER 1, 1992

April 16, 1993

Dear Water Users:

RE: Water Supply Update Under The Water Distribution Plan For the Utah Lake Drainage Basin

On November 1, 1992, the River Commissioners were directed to begin distributing water under the Water Distribution Plan for the Utah Lake Drainage Basin. At this time, no major problems have developed. However, we are just approaching the time that irrigation and increased municipal demands will be placed upon the system.

In order to provide you with timely information about the distribution of water, under the plan, I have developed a water supply update which shows the accounting for both system and priority storage, and other pertinent data. If this proves useful, I propose to issue a monthly update for the remainder of the year. In doing so, I want to keep all water users apprised of the handling of system and priority storage, and any other water distribution issues which arise.

Should you have concerns about the distribution of water under this plan, or questions about the enclosed data, please feel free to contact this office.

Sincerely,

Robert L. Morgan, P.E.
State Engineer

INTERIM WATER DISTRIBUTION PLAN FOR THE UTAH LAKE DRAINAGE BASIN

I. INTRODUCTION

Utah is experiencing significant growth in those counties located along the Wasatch Front. Associated with this growth we are seeing more demands being placed on our limited water resources, such as the conversion from irrigation to municipal water use.

With the projects currently under construction and those planned for the future, it would appear that Utah Lake and its major tributaries will be facing a number of changes in the manner in which these systems have historically been operated. This is not to imply that such changes will have a negative impact, rather with proper planning these changing water use practices can be handled and existing water rights protected. In addition, there are a number of major transbasin diversions into the Utah Lake drainage which need to be better regulated. Diversions between the basins or subbasins presently total over 300,000 acre-feet annually.

There have been a number of requests made of the State Engineer in recent years to make decisions on matters which significantly affect water distribution in the Utah Lake drainage basin. After reviewing this matter, it appears that some direction is needed to better clarify the relationship between water rights in the basin; particularly between storage rights in Utah Lake and storage rights on the upstream tributaries. The State Engineer believes that in order for the river commissioners to properly administer the numerous diversions, the extent of the rights and their relationship, one with another, needs to be fully understood by everyone involved. In simple terms, we need to begin to manage the water rights on the Provo River, Spanish Fork River, Utah Lake, Jordan River, and other sources in the basin as one system. The objective is not to remove local control or involvement in the management of the waters. Rather, the objective is to ensure the equitable distribution of water, according to the respective water rights, and to address problems from a more regional point of view.

The State Engineer prepares this interim distribution plan under authority of Sections 73-2-1, 73-5-1, -3, and -4, Utah Code Annotated 1953, to distribute the waters in the Utah Lake drainage basin. Some of the issues which are presented in this document are beyond the State Engineers' administrative authority in distribution matters, and it is not his intent to resolve such issues in implementing this plan. Such items will be addressed and ultimately resolved in the court adjudication process as set forth under Chapter 4, Title 73, Utah Code Annotated. This interim distribution plan is NOT part of the adjudication process, nor will it prejudice anyone's claims during such action.

This document is intended to establish a general framework within which the respective rights can be administered. The distribution guidelines follow the priority doctrine of "first in time, first in right"; and where rights are equal in priority, each of those rights receives a proportionate share of the total water available to divert under that priority. The State Engineer realizes that flexibility will be required as the plan is implemented, and many problems that arise will need to be handled on a case-by-case basis. It is also noted that there are many agreements between water users, and such

agreements will be taken into account, when appropriate. Transbasin diversions (imported water) into the Utah Lake drainage will be administered in accordance with their individual water rights.

The issues presented in this document have been divided into five subject areas:

1. Water rights in Utah Lake
2. Relationship between storage rights in Utah Lake and upstream reservoirs
3. Direct flow water rights
4. Other distribution issues
5. Issues to be resolved through the general adjudication procedure

For each subject there is a background section and a distribution guidelines section. The background section is intended to give the reader some general information about the issue and some justification for the distribution guidelines.

II. DEFINITIONS OF TERMS USED IN PROPOSED DISTRIBUTION PLAN

Active Storage (Utah Lake): The storage capacity of Utah Lake between compromise elevation and 8.7 feet below compromise (the maximum active storage is 710,000 acre-feet).

Adjudication: The judicial process by which all water right claims in a given hydrologic area are evaluated, defined and then established by court decree pursuant to Chapter 4, Title 73, Utah Code Annotated.

Booth Decree: A 1909 court case: Salt Lake City Corp., Utah and Salt Lake Canal Co., East Jordan Irrigation Co., North Jordan Irrigation Co. and South Jordan Canal Co. (Plaintiffs) versus J. A. Gardner and A. J. Evans (Defendants). The Booth Decree covered water rights in Utah Lake and the Jordan River.

Compromise Elevation: The maximum legal storage elevation in Utah Lake. Compromise elevation was first established in 1885, and was recently modified in 1985 to be 4489.045 feet above mean sea level. When the lake is at this elevation, the total storage capacity is approximately 870,000 acre-feet, of which 710,000 acre-feet is active storage capacity and 160,000 acre-feet is inactive storage capacity. Whenever the level of Utah Lake is above the compromise level, the control gates are required to be fully opened. The exception to this rule occurs when fully opening the control gates causes the Jordan River to exceed a maximum flow rate that is specified in the 1985 Compromise Agreement (Civil No. 64770)

Delivery Schedule: A schedule listing the allowable diversion rate in cubic feet per second per acre, for specific time periods during the irrigation season.

Direct Flow Right: A water right that diverts water from a surface source according to its respective priority date.

Distribution Plan: Guidelines for the distribution of water within a drainage basin or hydrologic system.

Diversion Requirement: The amount of water needed to satisfy the beneficial uses set forth under a water right.

Inactive Storage (Utah Lake): The portion of Utah Lake that is not accessible to the pumps, and therefore, cannot be diverted. The inactive storage is currently estimated to be 160,000 acre-feet (8.7 feet below compromise)

Irrigation Duty: The annual quantity of water in acre-feet per acre considered to be reasonably necessary to meet the beneficial use requirements of irrigated land. The irrigation duty takes into consideration the consumptive use requirements of crops, irrigation efficiency and conveyance losses.

Morse Decree: A 1901 decree resulting from a series of court cases: Case No. 2861 - Salt Lake City Corp. (Plaintiffs) versus Salt Lake City Water and Electrical Power Co. (Defendant); Case No. 3449 - J. Geoghegan (Plaintiff) versus Salt Lake City Corp. (Defendant); and Case No. 3459 - J. Geoghegan (Plaintiff) versus Utah and Salt Lake Canal Co. (Defendant). This decree defined the water rights on the Jordan River with respect to each other.

Priority Storage: Legal storage under a water right. Such water stored is not subject to call by other right(s) and can be diverted and used in accordance with the right.

Primary Storage (Utah Lake): The first 125,000 acre-feet of active storage in Utah Lake which is set aside to satisfy the diversion requirement of the primary rights in Utah Lake in years of successive drought. See figure 1.

Primary Storage Rights (Utah Lake): The water rights defined in the Morse decree to have storage rights in Utah Lake.

Proposed Determination Book: The State Engineer's report and recommendation to the district court in general adjudication proceedings of all the water rights within the adjudication drainage area.

Provo River Decree: A 1921 decree resulting out of the court case: Provo Reservoir Company vs. Provo City (Case No. 2888). The Provo River decree defined certain water rights in the Provo River drainage.

Secondary Storage Rights (Utah Lake): The storage rights in Utah Lake established by applications to appropriate water and as confirmed by the Booth Decree.

Storage Right: The legal right to store water in accordance with a water right's respective priority date.

Subbasin: Individual drainage system within a larger drainage basin. For example, the Provo River system can be considered to be a subbasin within the larger Utah Lake drainage basin.

System Storage: The total active storage water in Utah Lake, excluding the primary storage, plus water stored in upstream reservoirs under junior priority date water rights. The maximum value of system storage is 585,000 acre-feet and varies during the year as shown in Table 3. System storage, whether in Utah Lake or upstream reservoirs, is subject to call to satisfy the diversion requirements of primary and secondary Utah Lake storage rights.

Real-time gages: A measuring device that allows instantaneous access to data.

Transbasin diversions: Imports or exports of water from one drainage basin or distribution system to another.

Welby-Jacob Memorandum Decisions: Seven memorandum decisions issued in 1989 by the State Engineer regarding change applications which provided for the transfer of high quality Provo River water from the Welby and Jacob districts of the Provo River Project for use by the Salt Lake County Water Conservancy District (SLCWCD). The water supply for the Welby and Jacob districts was replaced under both primary and secondary storage rights acquired in Utah Lake.

III. WATER RIGHTS IN UTAH LAKE

A. Background

There is not a clear understanding of how the uses of Utah Lake water relate to the quantity of storage in Utah Lake. The approach set forth in this document looks at the water rights served from Utah Lake in terms of beneficial use, which is referred to as the "annual diversion requirement."

Water in Utah Lake is stored in order for the users to meet their diversion requirement. Thus, the storage capacity of Utah Lake does not define the water rights. Rather, it is the quantity of water necessary to satisfy the beneficial uses that is the limit and measure of the water rights.

The relationship of one water right to another is also not generally understood. The water rights in Utah Lake were set forth in both the Morse (1901) and Booth (1909) decrees. The Morse decree identified two groups of water rights: 1) Direct flow rights on the Jordan River; and 2) Water rights in Utah Lake. The Booth decree (1909) allowed for additional appropriations of water from Utah Lake and set a maximum limit on the diversions under the storage rights that were set forth in the Morse decree. This maximum limit was 185,000 acre-feet annually and in part is based upon a 3.0 acre-feet per acre duty. In this proposed distribution plan, we refer to the rights that were defined in the Morse decree as primary storage rights, and all subsequent rights established under applications to appropriate water as secondary storage rights.

In 1989, the State Engineer approved a number of change applications, in conjunction with the so-called Welby-Jacob exchange, to transfer the use of water under the primary and secondary storage rights in Utah Lake. In evaluating these change applications, the sole supply irrigated acreage for each water right was determined. For the purposes of this document, the same sole supply acreages as set forth in the respective memorandum decisions, are used to calculate the allowable annual diversion requirement.

The acreage amounts used in this plan, and in the Welby-Jacob Exchange Project, are subject to adjudication by the court. This distribution plan does not purport to adjudicate these acreage amounts.

In the "Proposed Determination of Water Rights in Utah Lake and Jordan River Drainage Area, Salt Lake County, West Division" (Proposed Determination), the State Engineer has recommended an irrigation duty of 5.0 acre-feet per acre. This duty also appears reasonable for those lands located east of the Jordan River. The proposed determination book covering the west side of the Jordan River indicates that potential conveyance losses for canals over one mile in length are not included in the irrigation duty. Such losses are to be determined in a supplemental report to the court in conjunction with the general adjudication proceedings

Since the potential conveyance losses have not been finalized, a diversion requirement of 5.0 acre-feet per acre is used to determine the total annual diversion requirement for the irrigation rights.

Before getting into the distribution guidelines, a review of some basic information on Utah Lake may be helpful. The total storage capacity of Utah Lake at compromise elevation (4489.045 feet) is approximately 870,000 acre-feet. Of this, approximately 160,000 acre-feet is inactive storage (verbal communication, Brad Gardner, Utah Lake-Jordan River

Commissioner). The inactive storage elevation is 8.70 feet below compromise elevation. The active storage capacity of Utah Lake is 710,000 acre-feet. The average annual inflow (1951-90) to Utah Lake from all sources is about 726,000 acre-feet. Of this, 346,000 acre-feet is discharged to the Jordan River and about 380,000 acre-feet is lost to evaporation.

B. Distribution Guidelines

In distributing the waters of Utah Lake among the primary and secondary storage rights in the Lake, the following guidelines will be followed:

1. The annual diversion requirement for the primary and secondary storage rights in Utah Lake are as set forth in Table 1.
2. The water users of Utah Lake are responsible to maintain the pumps and channels in Utah Lake to allow water to be withdrawn from the lake down to 8.70 feet below compromise elevation.
3. In order to protect the primary storage rights during consecutive years of drought, the first 125,000 acre-feet of active storage capacity in Utah Lake shall be dedicated solely for the use of the primary storage rights when all other active storage has been used. This 125,000 acre-feet of storage is hereafter referred to as "primary storage".
4. The remaining 585,000 acre-feet of active storage in Utah Lake up to compromise level, which may be stored in Utah Lake or in upstream reservoirs (subject to call by Utah Lake water rights, as set forth under Section 4.2 of this document), shall be referred to as "system storage". System storage is to be used to supply the annual diversion requirements of both primary and secondary storage rights.

Table 1 - Annual diversion requirement for primary and secondary storage rights in Utah Lake. The quantities of water for the irrigation rights are based on the irrigated acreages (sole supply acreage) set forth in the Welby-Jacob memorandum decisions and an irrigation duty of 5.0 acre-feet per acre. For the municipal and industrial rights the allowable annual diversion as set forth under the water right(s) was used.

WR NUMBER	Primary Storage Rights (1870)	Irrigated Acreage	Acre-Feet
59-3499	Utah and Salt Lake Canal Company	7,063.65	35,318
59-5269	SLCWCD(1) - Salt Lake County Water Conservancy District	2,071.01	10,355
59-3500	South Jordan Canal Company	4,850.05	24,250
59-5270	SLCWCD(1)	1,076.92	5,385
57-7637	East Jordan Irrigation Company	8,092.96	40,465
59-5268	SLCWCD(1)	1,587.04	7,935
59-3496	North Jordan Irrigation Company	1,069.99	5,350
57-5272	SLCWCD	2,099.72	10,499
5722	SLCWCD(1)		
57-7624	Salt Lake City	Municipal	11,000
57-7624	CUWCD	Municipal	25,000
59-3517	Kennecott Utah Copper Corporation	Ind	13,750
Total for Primary Rights			189,307
Secondary Storage Rights		Acreage	Acre-feet
59-13	Utah Lake Distributing Co. (1908)	7,945.37	39,727
59-5271	SLCWCD(1)	687.81	3,439
57-23	Draper Irr. Co. & Sandy Canal Co. (1908)	2,100	10,500
59-5273	SLCWCD	400	2,000
59-14, 15 & 20	Central Utah Water Conservancy Dist. (Kenn. Storage Rights 1912) (2)	Ind	57,073
Total for Secondary Rights			112,739
Overall Total			302,046

- (1) Rights/shares held by respective irrigation companies in behalf of Salt Lake County Water Conservancy District by agreement dated Sept. 19, 1988.
 (2) Does not include any storage which may be claimed/allowed under 59-23

5. All water stored upstream which is subject to call under the priority of the Utah Lake rights (system storage) shall be delivered to Utah Lake, according to priority, when either the active storage in Utah Lake is at or below 125,000 acre-feet or the diversion requirements of earlier priority water rights in Utah Lake are not satisfied.

6. When all the system storage in Utah Lake and upstream reservoirs has been used, the secondary rights shall cease diversions. At such time, the active storage in Utah Lake shall be at or below 125,000 acre-feet.

7. After all of the system storage in Utah Lake and in upstream

reservoirs has been used, and secondary rights have ceased diversions, the primary storage shall be allocated to the primary rights in the following percentages and will be available on demand within the constraints of the respective water rights:

Table 2 - The percentage of primary storage in Utah Lake allocated to each primary water right.

WATER RIGHT NUMBER(S)	OWNER	
59-3499	Utah and Salt Lake Canal Company	18.7%
59-3500	South Jordan Canal Company	12.8%
57-7637	East Jordan Irrigation Company	21.4%
59-3496	North Jordan Irrigation Company	2.8%
57-7624	Salt Lake City	5.8%
59-5268/5273, 5722	Salt Lake County Water Conservancy District	18.0%
57-7624	Central Utah Water Conservancy District	13.2%
59-3517	Kennecott Utah Copper Corporation	7.3%

IV. RELATIONSHIP OF STORAGE RIGHTS IN UTAH LAKE AND UPSTREAM RESERVOIRS

A. Background

The relationship between upstream storage water rights and storage rights in Utah Lake must be clarified so all of the storage reservoirs within the Utah Lake drainage basin can be regulated in accordance with their respective priority dates. The upstream storage reservoirs have a unique relationship with Utah Lake storage rights. This section addresses only the storage rights. Direct flow rights are addressed independently in Section V.

The upstream storage rights generally have later priority dates than the Utah Lake storage rights, with only a few exceptions. However, in analyzing the storage rights within the basin, it appears that in most years, the existing storage reservoirs can divert and use water without impairing the prior rights in Utah Lake. Although during drought years, this has not always been the case.

The State Engineer has studied the historical practices and water supply conditions in the basin. From these studies, it appears that adequate safeguards can be developed to allow upstream reservoirs to divert and store water during most periods of time without impairing prior water rights. However, these safeguards generally require that predictions of the total water supply be made early in the year. Predicting whether the rights in Utah Lake will receive their full annual diversion requirement is difficult early in the year. As the year progresses, and the water supply conditions become more apparent, these predictions can be made with a higher degree of confidence. In order to allow later priority upstream rights to store water, criteria are needed to determine when the rights in Utah Lake will likely be satisfied. Until the prior storage rights in Utah Lake are satisfied, water stored upstream will be held as system storage, subject to call by water rights in Utah Lake. Also, provisions to replace or exchange water to Utah Lake during drought periods to allow storage upstream will be considered.

Applying the following guidelines will ensure with a high degree of certainty that the rights in Utah Lake will be satisfied. These guidelines dictate when the upstream reservoirs can convert their system storage to what is referred to as priority storage. After the water is converted to priority storage, it is no longer subject to call to Utah Lake and can then be released from the reservoir and used.

Under this proposal, storage waters will be accounted for based on a November through October period. The irrigation season in much of the Utah Lake drainage runs from about April through October, except in the higher elevations. During the non-irrigation season, the water demand is much lower than during the irrigation season and generally the storage season begins in November.

B. Distribution Guidelines

In order to maximize the beneficial use of the water and still protect prior rights, the State Engineer will use the following criteria to govern the distribution of water between storage rights in Utah Lake and reservoirs on upstream tributaries.

1. Upstream storage rights junior to Utah Lake water rights may store water under their respective priority dates relative to each other and

subject to the conditions set forth in this section.

2. System storage is defined as the top 585,000 acre-feet of active storage capacity in Utah Lake and is used to satisfy the diversion requirement of both primary and secondary rights. Any portion of this 585,000 acre-feet stored upstream which is subject to call by Utah Lake, as provided for under paragraph 5., shall also be accounted for as system storage.

3. Priority storage is defined to be the legal storage under a reservoirs' water right and is not subject to call by any other water right.

4. Any water stored by junior appropriators before the total system storage in or available to Utah Lake exceeds the quantities set forth in Table 3, is subject to call by the rights served from Utah Lake.

5. System storage held in upstream reservoirs shall not be diverted for use and must be held in storage and available for release to Utah Lake, until such storage is converted to priority storage according to the criteria in Table 3 or replacement water is provided.

6. Whenever the total system storage exceeds the values set forth in Table 3, any excess system storage shall be converted to priority storage. Water is converted from system to priority storage according to the priority dates of the respective rights, and in accordance with any other restrictions applicable to a particular water right.

7. Once water has been converted to priority storage or is designated as priority storage by the river commissioner at the time it is stored, it can be released from the reservoir and used as provided for under the respective water right.

8. Any time the storage capacity in Utah Lake drops below the primary storage capacity (the first 125,000 acre-feet of active storage capacity), upstream storage rights with later priority dates will not be allowed to divert water to storage.

9. Any time the active storage capacity in Utah Lake drops below the primary storage level (125,000 acre-feet), the Utah Lake rights may call on the system storage water which has been held upstream. The quantity subject to call is limited to the lesser of either the quantity of system storage held upstream or the amount needed to satisfy the diversion requirements and bring Utah Lake up to the primary storage level.

Table 3 - Quantity of total system storage
required before upstream storage reservoirs
can convert system storage to priority storage.

Date	System storage in Utah Lake and/or Upstream Reservoirs (units: ac-ft)
November 1	585,000
December 15	585,000
January 15	585,000
February 15	585,000
March 15	585,000
April 15	575,000
May 15	475,000
June 15	400,000
July 15	350,000
August 15	250,000
September 15	200,000
October 31	125,000

NOTE: Values can be interpolated from the table to determine
system storage on any particular day.

10. System storage in upstream reservoirs can be replaced in Utah Lake
with waters from other sources or other rights. Once such replacement
is made, a like quantity of system storage can be converted to priority
storage and used. Such replacement or exchange of water shall have
prior approval of the State Engineer.

V. DIRECT FLOW RIGHTS

A. Background

One of the objectives of this proposed distribution plan is to administer the waters within the basin as one system. In so doing, we need to take into account what the effects of diversion and water use from a source may have on other rights in the basin. The distribution of water between all rights, except those rights specifically denoted in Sections III and IV as among themselves, shall be done based upon priority. This approach distributes the water in accordance with the priority doctrine on a basin wide basis.

B. Distribution Guidelines

In distributing water among the water rights in the basin, except those rights addressed in Sections 3.0 and 4.0 as among themselves, the following guidelines will be used:

1. The direct flow water rights on all tributaries will be administered according to the respective priority dates. The affect that diversions from one source may have on diversions from another source will be taken into account.
2. The primary direct flow rights on the Jordan River as set forth in the Morse decree shall have a call on the water in Utah Lake if the accretionary flows to the Jordan River are insufficient to satisfy their rights.

VI. OTHER DISTRIBUTION ISSUES

A. Background

The State Engineer believes that there are several other issues that should be considered when examining better ways to manage and distribute water in the basin. Most of these issues are directly related to improving the record keeping of imported water and enhancing the communication between the five river commissioners who are affected by this plan.

One issue that deserves special discussion is a proposed 5,000 acre-feet regulation pool in Jordanelle Reservoir (Section B.1) to be used by the Provo River commissioner in distributing water. Based upon past experiences, calculating the natural flow of the Provo River from reservoir stage readings at Deer Creek Reservoir has presented numerous problems for the commissioners. It is important that the river commissioner not waste his time dealing with such problems. Because the direct flow rights on the Provo River are senior to nearly all the storage rights it is necessary for the commissioner to compute natural flow in the river. The precision of reservoir content measurements on Deer Creek, and presumably on Jordanelle, are inadequate for daily calculation of natural flow based on changes in reservoir content. Just .10 foot error in measurement when Deer Creek Reservoir is nearly full represents about 300 acre-feet. Thus, when the wind is blowing it can substantially affect the natural flow calculation. The result is a wide fluctuation in the natural flow available to the class A rights on the Lower Provo River. With Jordanelle Reservoir now being built, the natural flow computation for both Heber Valley rights and the Lower Provo River will be even more complicated. If the commissioner had a regulation pool he could smooth out the natural flow bypasses as they should be.

The administration of exchange applications is another important distribution issue. The basic purpose of exchange applications is to facilitate distribution. Under such an application a water user is required to measure the quantity of water released to a stream and then a like quantity can be diverted at another location. In regulating exchange applications, the State Engineer attempts to have releases and subsequent diversions occur as concurrently as possible to insure that other water rights are not adversely effected. Some exchange applications involve waters from more than one distribution system. In such cases, the State Engineer needs to establish lines of authority and/or coordination between the river commissioners.

The State Engineer has reviewed the water rights covering the transbasin diversion into and out of the basin. Nearly all of these water rights are certificated and the rights are generally well defined. Thus, the major issue regarding transbasin diversions is to implement better accounting procedures.

Although not addressed in the distribution guidelines, the future water quality of Utah Lake is another important issue that must be considered. Currently there are many unknowns over what the future operation of Utah Lake and upstream storage reservoirs will be. This makes it very difficult to predict the future salinity concentrations in the Lake. Under Utah water law, a water user is entitled to have his right protected as to both quantity and quality. We believe that the Central Utah Water Conservancy District and the Bureau of Reclamation could

significantly affect the future salinity levels of Utah Lake by the decisions they will be making in the near future. It appears they are very aware of this problem and are looking at alternatives to control the salinity level of Utah Lake.

B. Distribution Guidelines

The State Engineer is proposing that the following recommendations be implemented to facilitate the distribution of water:

1. All exports of water from a river system shall be regulated by the duly appointed river commissioner for the system from which the export is made. Such diversions shall be regulated in accordance with the individual water right.
2. River commissioners shall report diversions on all systems on a water rights basis.
3. All transbasin diversions shall be equipped with real-time gages. Such data shall be accessible via a computer using a modem or other method as approved by the State Engineer.
4. The State Engineer is recommending that a 5,000 acre-foot regulation pool be established in Jordanelle Reservoir to be used by the commissioner for distribution system regulation. Such a regulation pool would be subject to space availability.
5. In regulating exchange applications, they will be administered as closely to a concurrent release and diversion basis as is feasible. Under no circumstances will deficits or credits be allowed to be carried over from year to year.

VII. ADJUDICATION ISSUES

A. Background

There are a number of issues that are beyond the scope of the distribution plan and will need to be addressed in the general adjudication. However, ultimately any actions taken in the adjudication will affect the distribution of water. Therefore, several adjudication issues are discussed in this document in order to apprise the water users of potential recommendations which may be made by the State Engineer to the court in the adjudication.

On the Provo River system there are no priority dates assigned to the class A rights on the Lower Provo River or class 1 through 17 on the Upper Provo River. The distribution of water has worked well under this system for over 70 years, and if conditions did not change we could continue to operate under the class system. However, we are beginning to see significant changes in the water use practices within the drainage basin, especially on the Provo River. To assess the potential impact as a result of a change in water use, and in order to properly administer the water rights on a basin-wide basis, it is imperative that the respective priority dates between the water rights be established. Therefore, as part of the general adjudication process, the State Engineer is proposing that priority dates for all water rights in the basin be determined.

Another issue that needs to be carefully analyzed and considered is the irrigation diversion requirement (duty) for irrigated lands in the basin. In conjunction with the proposed determination of water rights that the State Engineer must submit to the court for its consideration, an irrigation duty is recommended. In making this recommendation the State Engineer calculates the consumptive use requirements of the crops and considers the on-farm efficiency, canal losses and other related factors. The irrigation duty is expressed in terms of acre-feet per acre.

Related closely to the issue of duty is the issue of whether a delivery schedule should be implemented to specify an allowable diversion rate (Example - 1 cubic foot per second per 60 acres) during any period of the irrigation season. The total volume of water that can be diverted under the delivery schedule is the annual irrigation duty that is established.

B. Recommendations for the Adjudication

The State Engineer will consider making the following recommendations in his report to the court in the general adjudication:

1. All water rights within the basin shall have a priority date determined and assigned to it as part of the adjudication process.
2. An irrigation diversion requirement (duty) and delivery schedule shall be determined and submitted to the court for each subbasin or distribution system.

Central Utah Project Completion Program

Attachment B

October 2004



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



**Utah Lake Drainage Basin Water Delivery System Bonneville Unit, Central Utah Project
2004 Supplement to the 1988 Definite Plan Report**

**Water Supply Appendix
Volume 6 Attachment B: Utah Lake Salinity Analysis**

October 2004

UTAH LAKE MODELING RESULTS – BONNEVILLE UNIT CONDITIONS

Table 1: Simulated Reservoir Contents in 1,000 acre-feet

Table 2: Simulated Water Surface Elevation in feet

Table 3: Simulated Water Surface Area in acres

Bonneville Unit Operations Reservoir Contents (1000 acre-feet)
Utah Lake

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	559.0	537.3	582.1	635.5	680.2	702.2	718.5	750.0	731.4	670.9	608.1	568.8	645.3
1951	570.0	602.5	645.1	693.7	730.9	751.5	781.5	826.5	809.7	739.8	686.2	631.7	705.8
1952	643.2	683.7	742.1	803.7	847.4	870.0	937.2	1,062.2	1,023.0	927.6	865.8	818.5	852.0
1953	813.8	863.4	869.2	869.2	870.0	870.0	870.0	847.6	827.7	753.3	687.6	646.0	815.6
1954	642.7	671.3	705.3	745.7	776.1	811.0	807.6	747.6	698.3	621.4	546.2	507.7	690.1
1955	503.3	530.4	560.9	608.7	647.7	693.7	722.5	699.2	667.2	587.3	510.2	465.2	599.7
1956	461.6	493.7	531.1	580.9	623.0	645.1	620.8	602.4	542.4	471.9	410.5	360.4	528.6
1957	350.7	382.8	421.8	457.6	494.7	522.5	580.4	614.3	617.5	542.2	479.0	439.2	491.9
1958	439.4	482.0	521.4	560.1	607.0	650.0	678.9	702.3	647.4	567.6	514.0	472.8	570.2
1959	463.4	495.1	533.8	573.8	621.8	649.7	656.7	628.3	571.8	500.9	446.4	416.3	546.5
1960	417.8	430.2	472.7	515.6	565.0	601.2	604.1	573.1	509.5	406.7	338.8	304.8	478.3
1961	314.7	363.8	395.1	420.9	450.2	468.9	475.8	434.5	361.7	301.2	255.3	247.0	374.1
1962	264.7	284.8	315.8	344.0	396.5	434.4	476.1	482.8	433.0	354.8	290.3	255.6	361.1
1963	266.5	288.5	302.2	335.1	363.3	386.8	418.6	392.8	361.7	289.5	225.9	219.4	320.8
1964	219.0	252.7	285.5	322.8	355.6	401.9	439.3	481.4	498.5	424.7	352.3	313.4	362.3
1965	309.3	341.7	397.6	443.3	463.9	492.8	522.0	520.9	527.7	479.1	439.3	441.4	448.3
1966	452.2	487.2	551.8	589.4	631.4	678.0	665.2	653.8	590.2	508.7	452.0	423.5	557.0
1967	433.3	455.9	506.9	543.3	590.1	626.8	620.3	624.4	655.8	595.0	530.1	497.9	556.6
1968	502.9	536.1	573.9	617.2	668.2	705.7	735.3	742.0	753.8	700.3	666.5	624.0	652.2
1969	635.7	675.4	720.1	767.1	819.5	841.7	870.0	868.0	870.0	803.4	747.7	713.3	777.7
1970	738.6	770.9	803.0	848.5	870.0	870.0	870.0	870.0	843.8	774.1	711.6	692.0	805.2
1971	703.7	766.6	789.6	836.9	864.4	870.0	870.0	868.7	855.7	768.9	707.0	688.0	799.1
1972	745.8	763.3	804.9	839.8	868.3	870.0	866.0	849.4	810.5	721.6	661.7	625.8	785.6
1973	656.7	692.1	729.8	771.0	817.0	856.5	870.0	891.9	870.0	795.3	745.4	716.2	784.3
1974	734.6	784.0	813.2	856.0	870.0	870.0	870.0	859.8	839.1	762.9	692.0	644.1	799.6
1975	667.5	705.6	731.9	778.8	823.9	854.3	870.0	871.8	919.2	857.0	768.9	735.7	798.7
1976	759.6	804.9	854.5	866.5	870.0	870.0	870.0	865.3	794.7	732.5	660.6	631.2	798.3
1977	627.6	647.7	688.7	715.6	750.6	781.9	784.7	796.1	728.4	657.6	599.5	553.8	694.4
1978	579.6	599.9	633.4	688.9	734.9	798.8	867.3	870.0	830.3	746.7	682.2	689.9	726.8
1979	689.0	740.9	780.8	825.3	870.0	870.0	870.0	848.6	773.1	699.4	646.7	602.9	768.1
1980	628.7	667.5	710.4	777.1	860.3	861.0	868.0	903.1	870.0	796.2	812.3	755.9	792.5
1981	776.0	814.3	853.3	865.0	870.0	870.0	870.0	870.0	799.4	729.4	653.7	623.3	799.5
1982	681.8	715.1	763.2	810.4	866.8	864.0	870.0	913.8	890.3	836.0	770.3	805.5	815.6
1983	855.5	870.0	870.0	870.0	885.5	967.4	977.8	1,062.8	1,120.7	1,033.8	970.6	906.3	949.2
1984	889.2	897.3	903.8	902.7	897.3	929.7	1,005.5	1,113.3	1,118.2	1,033.8	966.2	906.5	963.6
1985	884.2	870.0	870.0	870.0	870.0	890.5	942.6	984.4	905.3	854.6	786.6	756.1	873.7
1986	792.9	842.7	870.0	870.0	886.9	978.1	1,040.1	1,091.9	1,050.3	968.8	890.5	838.7	926.7
1987	870.0	870.0	870.0	870.0	870.0	870.0	870.0	864.7	800.7	725.1	678.1	642.6	816.8
1988	665.8	709.1	741.5	789.0	823.5	837.7	856.0	834.8	762.5	677.0	606.4	611.5	742.9
1989	578.9	606.7	636.8	662.0	708.6	767.2	775.6	725.6	665.2	568.3	499.9	561.2	646.3
1990	586.8	612.4	638.8	696.4	746.0	775.9	745.4	722.4	659.8	573.2	493.8	458.4	642.4
1991	479.8	499.8	522.9	549.7	588.3	614.6	628.7	633.5	605.3	498.0	427.8	417.5	538.8
1992	432.3	464.7	501.8	541.5	582.2	609.2	591.2	551.4	502.1	407.1	334.0	361.6	489.9
1993	375.0	412.0	445.3	510.9	569.6	651.7	662.9	726.2	710.8	649.7	593.8	572.4	573.4
1994	592.6	624.2	657.4	694.0	733.6	756.8	765.8	745.9	679.8	587.5	520.0	479.9	653.1
1995	515.3	553.8	587.1	645.9	687.0	725.4	740.4	847.2	839.9	788.3	731.8	689.5	696.0
1996	712.8	739.5	779.3	792.7	850.6	859.0	866.0	870.0	868.0	798.5	737.9	717.0	799.3
1997	724.6	779.9	820.2	870.0	870.0	870.0	885.2	934.9	925.5	834.9	800.8	793.0	842.4
1998	823.1	867.0	866.5	870.0	870.0	870.0	870.0	918.1	929.9	870.0	807.0	805.7	863.9
1999	819.0	862.7	870.0	870.0	870.0	870.0	870.0	898.7	870.0	808.9	758.2	725.7	841.1
Average	597.0	628.3	660.9	695.6	729.0	755.1	770.2	781.2	750.7	676.0	615.3	587.5	687.2
Maximum	889.2	897.3	903.8	902.7	897.3	978.1	1,040.1	1,113.3	1,120.7	1,033.8	970.6	906.5	963.6
Minimum	219.0	252.7	285.5	322.8	355.6	386.8	418.6	392.8	361.7	289.5	225.9	219.4	320.8

Bonneville Unit Operations Water Surface Elevation (feet)
Utah Lake

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	4,485.6	4,485.3	4,485.8	4,486.5	4,487.0	4,487.2	4,487.4	4,487.7	4,487.5	4,486.9	4,486.1	4,485.7	4,486.6
1951	4,485.7	4,486.1	4,486.6	4,487.1	4,487.5	4,487.8	4,488.1	4,488.6	4,488.4	4,487.6	4,487.0	4,486.4	4,487.3
1952	4,486.5	4,487.0	4,487.7	4,488.3	4,488.8	4,489.0	4,489.7	4,491.0	4,490.6	4,489.6	4,489.0	4,488.5	4,488.9
1953	4,488.4	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,488.8	4,488.6	4,487.8	4,487.1	4,486.6	4,488.5
1954	4,486.5	4,486.9	4,487.2	4,487.7	4,488.0	4,488.4	4,488.4	4,487.7	4,487.2	4,486.3	4,485.4	4,485.0	4,487.1
1955	4,484.9	4,485.2	4,485.6	4,486.2	4,486.6	4,487.1	4,487.4	4,487.2	4,486.8	4,485.9	4,485.0	4,484.4	4,486.1
1956	4,484.4	4,484.8	4,485.2	4,485.8	4,486.3	4,486.6	4,486.3	4,486.1	4,485.4	4,484.5	4,483.8	4,483.1	4,485.2
1957	4,483.0	4,483.4	4,483.9	4,484.4	4,484.8	4,485.1	4,485.8	4,486.2	4,486.3	4,485.4	4,484.6	4,484.1	4,484.8
1958	4,484.1	4,484.7	4,485.1	4,485.6	4,486.1	4,486.6	4,487.0	4,487.2	4,486.6	4,485.7	4,485.0	4,484.5	4,485.7
1959	4,484.4	4,484.8	4,485.3	4,485.7	4,486.3	4,486.6	4,486.7	4,486.4	4,485.7	4,484.9	4,484.2	4,483.8	4,485.4
1960	4,483.9	4,484.0	4,484.5	4,485.1	4,485.6	4,486.1	4,486.1	4,485.7	4,485.0	4,483.7	4,482.8	4,482.4	4,484.6
1961	4,482.5	4,483.2	4,483.6	4,483.9	4,484.3	4,484.5	4,484.6	4,484.1	4,483.1	4,482.3	4,481.7	4,481.6	4,483.3
1962	4,481.8	4,482.1	4,482.5	4,482.9	4,483.6	4,484.1	4,484.6	4,484.7	4,484.1	4,483.1	4,482.2	4,481.7	4,483.1
1963	4,481.9	4,482.2	4,482.4	4,482.8	4,483.2	4,483.5	4,483.9	4,483.5	4,483.1	4,482.2	4,481.3	4,481.2	4,482.6
1964	4,481.2	4,481.7	4,482.1	4,482.6	4,483.1	4,483.7	4,484.1	4,484.6	4,484.9	4,483.9	4,483.0	4,482.5	4,483.2
1965	4,482.5	4,482.9	4,483.6	4,484.2	4,484.4	4,484.8	4,485.1	4,485.1	4,485.2	4,484.6	4,484.1	4,484.2	4,484.2
1966	4,484.3	4,484.7	4,485.5	4,485.9	4,486.4	4,486.9	4,486.8	4,486.7	4,485.9	4,485.0	4,484.3	4,483.9	4,485.6
1967	4,484.1	4,484.3	4,485.0	4,485.4	4,485.9	4,486.4	4,486.3	4,486.3	4,486.7	4,486.0	4,485.2	4,484.8	4,485.5
1968	4,484.9	4,485.3	4,485.7	4,486.3	4,486.8	4,487.3	4,487.6	4,487.7	4,487.8	4,487.2	4,486.8	4,486.3	4,486.7
1969	4,486.5	4,486.9	4,487.4	4,487.9	4,488.5	4,488.7	4,489.0	4,489.0	4,489.0	4,488.3	4,487.7	4,487.3	4,488.1
1970	4,487.6	4,488.0	4,488.3	4,488.8	4,489.0	4,489.0	4,489.0	4,489.0	4,488.8	4,488.0	4,487.3	4,487.1	4,488.3
1971	4,487.2	4,487.9	4,488.2	4,488.7	4,489.0	4,489.0	4,489.0	4,489.0	4,488.9	4,488.0	4,487.3	4,487.1	4,488.3
1972	4,487.7	4,487.9	4,488.3	4,488.7	4,489.0	4,489.0	4,489.0	4,488.8	4,488.4	4,487.4	4,486.8	4,486.4	4,488.1
1973	4,486.7	4,487.1	4,487.5	4,488.0	4,488.5	4,488.9	4,489.0	4,489.3	4,489.0	4,488.2	4,487.7	4,487.4	4,488.1
1974	4,487.6	4,488.1	4,488.4	4,488.9	4,489.0	4,489.0	4,489.0	4,488.9	4,488.7	4,487.9	4,487.1	4,486.6	4,488.1
1975	4,486.8	4,487.3	4,487.5	4,488.1	4,488.6	4,488.9	4,489.0	4,489.1	4,489.6	4,488.9	4,488.0	4,487.6	4,488.3
1976	4,487.9	4,488.3	4,488.9	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,488.2	4,487.6	4,486.7	4,486.4	4,488.3
1977	4,486.4	4,486.6	4,487.1	4,487.4	4,487.8	4,488.1	4,488.1	4,488.3	4,487.5	4,486.7	4,486.0	4,485.5	4,487.1
1978	4,485.8	4,486.1	4,486.4	4,487.1	4,487.6	4,488.3	4,489.0	4,489.0	4,488.6	4,487.7	4,487.0	4,487.1	4,487.5
1979	4,487.1	4,487.6	4,488.1	4,488.6	4,489.0	4,489.0	4,489.0	4,488.8	4,488.0	4,487.2	4,486.6	4,486.1	4,487.9
1980	4,486.4	4,486.8	4,487.3	4,488.0	4,488.9	4,488.9	4,489.0	4,489.4	4,489.0	4,488.3	4,488.4	4,487.8	4,488.2
1981	4,488.0	4,488.4	4,488.9	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,488.3	4,487.5	4,486.7	4,486.3	4,488.3
1982	4,487.0	4,487.4	4,487.9	4,488.4	4,489.0	4,489.0	4,489.0	4,489.5	4,489.3	4,488.7	4,488.0	4,488.4	4,488.5
1983	4,488.9	4,489.0	4,489.0	4,489.0	4,489.2	4,490.1	4,490.2	4,491.0	4,491.6	4,490.7	4,490.1	4,489.4	4,489.9
1984	4,489.2	4,489.3	4,489.4	4,489.4	4,489.3	4,489.7	4,490.5	4,491.5	4,491.6	4,490.7	4,490.0	4,489.4	4,490.0
1985	4,489.2	4,489.0	4,489.0	4,489.0	4,489.0	4,489.3	4,489.8	4,490.2	4,489.4	4,488.9	4,488.1	4,487.8	4,489.1
1986	4,488.2	4,488.8	4,489.0	4,489.0	4,489.2	4,490.2	4,490.8	4,491.3	4,490.9	4,490.1	4,489.3	4,488.7	4,489.6
1987	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,488.3	4,487.5	4,486.9	4,486.5	4,488.5
1988	4,486.8	4,487.3	4,487.7	4,488.2	4,488.5	4,488.7	4,488.9	4,488.7	4,487.9	4,486.9	4,486.1	4,486.2	4,487.7
1989	4,485.8	4,486.1	4,486.5	4,486.8	4,487.3	4,487.9	4,488.0	4,487.5	4,486.8	4,485.7	4,484.9	4,485.6	4,486.6
1990	4,485.9	4,486.2	4,486.5	4,487.2	4,487.7	4,488.0	4,487.7	4,487.4	4,486.7	4,485.7	4,484.8	4,484.4	4,486.5
1991	4,484.6	4,484.9	4,485.1	4,485.5	4,485.9	4,486.2	4,486.4	4,486.4	4,486.1	4,484.8	4,484.0	4,483.9	4,485.3
1992	4,484.0	4,484.4	4,484.9	4,485.4	4,485.8	4,486.2	4,486.0	4,485.5	4,484.9	4,483.7	4,482.8	4,483.1	4,484.8
1993	4,483.3	4,483.8	4,484.2	4,485.0	4,485.7	4,486.6	4,486.8	4,487.5	4,487.3	4,486.6	4,486.0	4,485.7	4,485.7
1994	4,486.0	4,486.3	4,486.7	4,487.1	4,487.6	4,487.8	4,487.9	4,487.7	4,487.0	4,485.9	4,485.1	4,484.6	4,486.7
1995	4,485.1	4,485.5	4,485.9	4,486.6	4,487.0	4,487.5	4,487.6	4,488.8	4,488.7	4,488.2	4,487.5	4,487.1	4,487.1
1996	4,487.3	4,487.6	4,488.1	4,488.2	4,488.8	4,488.9	4,489.0	4,489.0	4,489.0	4,488.3	4,487.6	4,487.4	4,488.3
1997	4,487.5	4,488.1	4,488.5	4,489.0	4,489.0	4,489.0	4,489.2	4,489.7	4,489.6	4,488.7	4,488.3	4,488.2	4,488.7
1998	4,488.5	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.6	4,489.7	4,489.0	4,488.4	4,488.4	4,489.0
1999	4,488.5	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.0	4,489.3	4,489.0	4,488.4	4,487.8	4,487.5	4,488.7
Average	4,485.9	4,486.3	4,486.7	4,487.1	4,487.4	4,487.7	4,487.9	4,488.0	4,487.7	4,486.8	4,486.1	4,485.8	4,487.0
Maximum	4,489.2	4,489.3	4,489.4	4,489.4	4,489.3	4,490.2	4,490.8	4,491.5	4,491.6	4,490.7	4,490.1	4,489.4	4,490.1
Minimum	4,481.2	4,481.7	4,482.1	4,482.6	4,483.1	4,483.5	4,483.9	4,483.5	4,483.1	4,482.2	4,481.3	4,481.2	4,482.6

Bonneville Unit Operations Water Surface Area (acre)

Utah Lake

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	84,994	84,208	85,770	87,461	88,692	89,326	89,709	90,620	90,092	88,445	86,628	85,304	87,704
1951	85,459	86,509	87,704	89,070	90,092	90,753	91,549	92,917	92,367	90,356	88,815	87,342	89,454
1952	87,580	88,815	90,488	92,231	93,619	94,181	96,224	99,480	98,518	95,927	94,041	92,640	93,760
1953	92,503	94,041	94,181	94,181	94,181	94,181	94,181	93,619	92,917	90,753	88,943	87,704	92,640
1954	87,580	88,445	89,326	90,488	91,413	92,503	92,367	90,620	89,198	86,985	84,523	83,101	88,943
1955	82,940	83,892	84,994	86,747	87,827	89,070	89,837	89,198	88,321	86,080	83,101	81,329	86,509
1956	81,329	82,459	83,892	85,770	87,104	87,704	86,985	86,509	84,366	81,656	79,186	76,988	83,892
1957	76,647	78,010	79,686	81,165	82,619	83,577	85,770	86,866	86,985	84,366	81,977	80,347	82,459
1958	80,347	82,138	83,577	84,994	86,628	87,827	88,692	89,326	87,704	85,304	83,261	81,656	85,459
1959	81,329	82,619	84,050	85,459	87,104	87,827	88,074	87,223	85,459	82,780	80,674	79,352	84,523
1960	79,519	80,020	81,656	83,419	85,149	86,509	86,628	85,459	83,101	79,019	75,949	74,367	81,977
1961	74,903	77,158	78,518	79,686	80,838	81,492	81,817	80,184	76,988	74,188	71,983	71,606	77,669
1962	72,361	73,473	74,903	76,298	78,518	80,184	81,817	82,138	80,184	76,817	73,652	71,983	76,988
1963	72,550	73,652	74,367	75,775	77,158	78,181	79,519	78,351	76,988	73,652	70,334	69,887	75,252
1964	69,887	71,794	73,473	75,252	76,817	78,852	80,347	81,977	82,780	79,686	76,647	74,903	77,158
1965	74,724	76,124	78,685	80,511	81,329	82,459	83,577	83,577	83,892	81,977	80,347	80,511	80,674
1966	80,838	82,298	84,681	86,080	87,342	88,568	88,198	87,951	86,080	83,101	80,838	79,686	84,994
1967	80,184	81,002	83,101	84,366	86,080	87,223	86,985	87,104	87,951	86,235	83,892	82,619	84,839
1968	82,940	84,208	85,459	86,985	88,321	89,454	90,224	90,488	90,753	89,198	88,321	87,104	87,951
1969	87,461	88,568	89,837	91,149	92,776	93,338	94,181	94,181	94,181	92,231	90,620	89,581	91,549
1970	90,356	91,281	92,231	93,619	94,181	94,181	94,181	94,181	93,479	91,413	89,581	89,070	92,231
1971	89,326	91,149	91,822	93,198	94,041	94,181	94,181	94,181	93,760	91,281	89,454	88,943	92,095
1972	90,620	91,017	92,231	93,338	94,181	94,181	94,181	94,181	93,619	92,503	89,837	88,198	87,223
1973	88,074	89,070	90,092	91,281	92,640	93,900	94,181	94,905	94,181	91,958	90,488	89,709	91,686
1974	90,224	91,686	92,503	93,760	94,181	94,181	94,181	93,900	93,338	91,017	89,070	87,704	92,095
1975	88,321	89,454	90,092	91,549	92,917	93,760	94,181	94,326	95,778	93,900	91,281	90,224	92,095
1976	91,017	92,231	93,760	94,181	94,181	94,181	94,181	94,041	91,958	90,224	88,074	87,342	92,095
1977	87,223	87,827	88,943	89,709	90,753	91,549	91,686	92,095	90,092	88,074	86,390	84,839	89,070
1978	85,770	86,509	87,342	88,943	90,224	92,095	94,181	94,181	93,057	90,620	88,692	88,943	89,964
1979	88,943	90,356	91,549	92,917	94,181	94,181	94,181	93,619	91,413	89,198	87,704	86,509	91,149
1980	87,223	88,321	89,581	91,413	93,900	93,900	94,181	95,195	94,181	92,095	92,503	90,885	91,958
1981	91,413	92,503	93,760	94,041	94,181	94,181	94,181	94,181	92,095	90,092	87,951	87,104	92,095
1982	88,692	89,709	91,017	92,503	94,181	94,041	94,181	95,629	94,905	93,198	91,281	92,367	92,640
1983	93,760	94,181	94,181	94,181	94,760	97,233	97,465	99,480	100,978	98,759	97,233	95,339	96,671
1984	94,760	95,050	95,339	95,195	95,050	96,075	98,162	100,722	100,850	98,759	97,117	95,339	97,117
1985	94,615	94,181	94,181	94,181	94,181	94,905	96,522	97,581	95,339	93,760	91,686	90,885	94,326
1986	91,958	93,479	94,181	94,181	94,760	97,465	98,999	100,225	99,240	97,233	94,905	93,338	95,927
1987	94,181	94,181	94,181	94,181	94,181	94,181	94,181	94,041	92,231	89,964	88,568	87,580	92,640
1988	88,321	89,454	90,488	91,822	92,776	93,198	93,760	93,198	91,017	88,568	86,628	86,747	90,488
1989	85,770	86,628	87,461	88,198	89,454	91,149	91,413	89,964	88,198	85,304	82,780	85,149	87,704
1990	86,080	86,747	87,461	89,198	90,620	91,413	90,488	89,837	88,074	85,459	82,459	81,165	87,580
1991	81,977	82,780	83,577	84,681	86,080	86,866	87,223	87,342	86,628	82,619	79,853	79,519	84,208
1992	80,020	81,329	82,780	84,366	85,770	86,747	86,235	84,681	82,780	79,019	75,775	76,988	82,459
1993	77,669	79,186	80,674	83,261	85,304	87,827	88,198	89,964	89,581	87,827	86,235	85,459	85,459
1994	86,235	87,104	88,074	89,070	90,224	90,885	91,149	90,620	88,692	86,080	83,577	81,977	87,951
1995	83,419	84,839	86,080	87,704	88,815	89,964	90,356	93,619	93,338	91,822	90,092	88,943	89,070
1996	89,581	90,356	91,549	91,958	93,619	93,900	94,181	94,181	94,181	92,095	90,356	89,709	92,095
1997	89,964	91,549	92,776	94,181	94,181	94,181	94,760	96,224	95,927	93,198	92,231	91,958	93,338
1998	92,776	94,181	94,181	94,181	94,181	94,181	94,181	95,778	96,075	94,181	92,367	92,367	94,041
1999	92,640	94,041	94,181	94,181	94,181	94,181	94,181	95,050	94,181	92,367	90,885	89,964	93,338
Average	85,540	86,596	87,692	88,845	89,910	90,721	91,200	91,487	90,537	88,173	86,143	85,226	88,593
Maximum	94,760	95,050	95,339	95,195	95,050	97,465	98,999	100,722	100,978	98,759	97,233	95,339	97,117
Minimum	69,887	71,794	73,473	75,252	76,817	78,181	79,519	78,351	76,988	73,652	70,334	69,887	75,252

Central Utah Project Completion Program

Attachment C

October 2004

Attachment C



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



**Utah Lake Drainage Basin Water Delivery System Bonneville Unit, Central Utah Project
2004 Supplement to the 1988 Definite Plan Report**

**Water Supply Appendix
Volume 6 Attachment C: Utah Lake Salinity Analysis**

October 2004

UTAH LAKE SPREADSHEET MODEL – BONNEVILLE UNIT CONDITIONS

Notes on the Utah Lake Spreadsheet Model

The Utah Lake Spreadsheet Model is a set of linked worksheets tracking the inflow, storage, and release of water from Utah Lake. The following print-out of the model shows the most important columns of the main worksheet of the model. The main functionality of the model, other than the adding of inflows and subtracting of outflows, is in computing spills, in Column 13. Spills are computed based upon the most recent stage-discharge curve for the Utah Lake outlet structure, assuming that the gates are fully raised.

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo	Spanish	Local Surface and Sub-surface	Hobble Creek (includes ULS water)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
				Inflow (acre-ft)	Fork Inflow (acre-ft)	(acre-ft)	(acre-ft)	(192)	(192)	(192)	(192)	(192)
Oct-49	1949	10	31	4,611	5,613	-	-	(192)	10032	16,968	10,032	27,000
Nov-49	1949	11	30	4,580	7,036	(3,043)	1,204	(192)	9585	2,677	9,585	12,262
Dec-49	1949	12	31	6,641	7,034	29,645	1,355	(192)	44483	11,587	44,483	56,069
Jan-50	1950	1	31	4,611	7,952	30,473	1,337	(192)	44181	13,817	44,181	57,998
Feb-50	1950	2	28	3,353	8,162	36,406	1,224	(192)	48952	6,197	48,952	55,150
Mar-50	1950	3	31	2,943	9,911	23,891	2,059	(192)	38612	6,508	38,612	45,119
Apr-50	1950	4	30	10,542	13,325	17,722	6,248	(192)	47645	4,096	47,645	51,741
May-50	1950	5	31	39,571	9,040	31,245	6,119	(192)	85783	9,732	85,783	95,515
Jun-50	1950	6	30	42,536	80	24,222	2,380	(192)	69026	1,286	69,026	70,311
Jul-50	1950	7	31	8,840	35	30,720	472	(192)	39875	3,909	39,875	43,784
Aug-50	1950	8	31	3,254	136	29,220	555	(192)	32973	442	32,973	33,416
Sep-50	1950	9	30	4,112	404	21,740	248	(192)	26311	5,638	26,311	31,949
Oct-50	1950	10		1,149	4,029	33,160	136	(192)	38282	3,915	38,282	42,197
Nov-50	1950	11		2,623	6,791	27,905	1,525	(192)	38651	14,174	38,651	52,825
Dec-50	1950	12		5,631	8,030	34,629	1,621	(192)	49719	9,813	49,719	59,532
Jan-51	1951	1		4,376	8,179	30,846	1,384	(192)	44592	8,483	44,592	53,075
Feb-51	1951	2		4,081	8,269	26,718	1,412	(192)	40288	4,456	40,288	44,744
Mar-51	1951	3		4,950	9,167	16,195	2,035	(192)	32154	5,637	32,154	37,791
Apr-51	1951	4		7,257	8,255	27,300	6,700	(192)	49320	17,174	49,320	66,493
May-51	1951	5		52,617	3,983	37,465	6,149	(192)	100021	11,458	100,021	111,480
Jun-51	1951	6		42,932	(0)	29,080	2,380	(192)	74199	3,410	74,199	77,609
Jul-51	1951	7		7,579	110	32,340	524	(192)	40360	3,931	40,360	44,291
Aug-51	1951	8		620	713	26,960	468	(192)	28569	7,160	28,569	35,730
Sep-51	1951	9		593	290	17,690	316	(192)	18696	445	18,696	19,141
Oct-51	1951	10		2,573	3,243	32,830	151	(192)	38604	12,962	38,604	51,566
Nov-51	1951	11		2,542	6,377	37,798	1,472	(192)	47996	10,378	47,996	58,374
Dec-51	1951	12		4,632	6,654	30,844	1,426	(192)	43364	27,762	43,364	71,126
Jan-52	1952	1		4,148	7,307	47,561	1,589	(192)	60412	8,674	60,412	69,086
Feb-52	1952	2		2,542	7,502	59,361	1,379	(192)	70591	5,231	70,591	75,822
Mar-52	1952	3		17,260	9,881	66,327	1,613	(192)	94888	19,271	94,888	114,159
Apr-52	1952	4		49,347	64,994	35,418	20,492	(192)	170059	8,566	170,059	178,625
May-52	1952	5		86,955	95,582	66,649	29,431	(192)	278425	10,842	278,425	289,267
Jun-52	1952	6		62,418	13,607	39,880	5,094	(192)	120806	6,968	120,806	127,774
Jul-52	1952	7		8,445	(0)	49,539	1,350	(192)	59142	4,190	59,142	63,332
Aug-52	1952	8		614	0	38,360	907	(192)	39688	8,807	39,688	48,495
Sep-52	1952	9		561	1,428	31,770	857	(192)	34424	314	34,424	34,738
Oct-52	1952	10		1,178	2,577	38,450	849	(192)	42862	-	42,862	42,862
Nov-52	1952	11		2,663	8,836	55,534	1,716	(192)	68556	4,477	68,556	73,033
Dec-52	1952	12		5,168	10,931	14,489	1,831	(192)	32227	4,627	32,227	36,853
Jan-53	1953	1		4,370	10,321	36,690	1,940	(192)	53129	12,257	53,129	65,386
Feb-53	1953	2		3,040	8,134	19,716	1,474	(192)	32172	1,886	32,172	34,058
Mar-53	1953	3		6,978	10,720	29,945	1,755	(192)	49206	8,881	49,206	58,087
Apr-53	1953	4		6,455	8,498	23,184	4,726	(192)	42671	9,902	42,671	52,574
May-53	1953	5		17,605	2,530	29,332	1,038	(192)	50312	3,458	50,312	53,770
Jun-53	1953	6		47,871	30	28,602	562	(192)	76873	468	76,873	77,341
Jul-53	1953	7		1,997	180	40,930	383	(192)	43298	3,489	43,298	46,787
Aug-53	1953	8		637	430	20,730	314	(192)	21919	9,311	21,919	31,230
Sep-53	1953	9		596	594	29,260	133	(192)	30391	815	30,391	31,206
Oct-53	1953	10		1,205	1,761	29,360	-	(192)	32134	5,779	32,134	37,913
Nov-53	1953	11		4,838	7,020	31,039	1,361	(192)	44066	6,284	44,066	50,350
Dec-53	1953	12		2,988	7,979	28,651	1,279	(192)	40705	5,383	40,705	46,088
Jan-54	1954	1		2,279	8,350	32,199	1,351	(192)	43986	7,454	43,986	51,441
Feb-54	1954	2		2,249	8,083	27,319	1,271	(192)	38729	2,567	38,729	41,297
Mar-54	1954	3		1,626	9,571	30,866	1,444	(192)	43315	9,760	43,315	53,075
Apr-54	1954	4		5,928	6,130	14,182	3,728	(192)	29776	5,784	29,776	35,559
May-54	1954	5		6,850	10	13,460	213	(192)	20341	3,081	20,341	23,422
Jun-54	1954	6		1,085	223	31,290	387	(192)	32793	6,800	32,793	39,593
Jul-54	1954	7		1,282	215	22,270	333	(192)	23907	5,058	23,907	28,964
Aug-54	1954	8		539	83	16,380	281	(192)	17090	1,234	17,090	18,324
Sep-54	1954	9		482	180	20,390	-	(192)	20860	10,787	20,860	31,646
Oct-54	1954	10		1,160	1,610	26,030	-	(192)	28607	4,435	28,607	33,042
Nov-54	1954	11		2,477	6,050	29,548	962	(192)	38845	5,601	38,845	44,446
Dec-54	1954	12		1,701	6,439	28,521	1,029	(192)	37497	2,940	37,497	40,438
Jan-55	1955	1		1,650	6,169	33,976	974	(192)	42576	7,947	42,576	50,523
Feb-55	1955	2		1,461	6,252	21,398	822	(192)	29740	13,086	29,740	42,826
Mar-55	1955	3		1,594	10,359	44,981	1,109	(192)	57850	805	57,850	58,656
Apr-55	1955	4		4,927	10,563	28,641	4,760	(192)	48698	3,862	48,698	52,560
May-55	1955	5		10,131	2,100	11,689	6,126	(192)	29854	7,645	29,854	37,499
Jun-55	1955	6		3,121	(0)	31,170	2,380	(192)	36479	10,714	36,479	47,192

10	11	12	13 0.95	14 K factor	15 45,000	16 Evap Factor 0.955	17	18 800000	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjust- ment (acre-ft)	Jordan River Spill Calcula- tion (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-mont UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
8,744	628	-	-	-	25,657	35,028	544,504	548,518	84,538	84,688
4,860	1,098	-	-	-	13,523	19,480	537,286	540,895	84,267	84,402
2,099	1,098	-	-	-	8,047	11,244	582,111	559,698	85,911	85,089
663	1,098	-	-	-	2,803	4,564	635,545	608,828	87,490	86,700
4,087	1,098	-	-	-	5,292	10,476	680,218	657,882	88,739	88,115
7,622	1,647	-	-	-	13,912	23,181	702,156	691,187	89,364	89,052
10,163	2,776	-	-	-	22,474	35,412	718,485	710,321	89,830	89,597
17,895	7,810	-	-	-	38,319	64,024	749,976	734,230	90,742	90,286
28,058	8,940	-	-	-	51,851	88,849	731,439	740,707	90,202	90,472
31,813	10,586	-	-	-	61,879	104,279	670,944	701,191	88,479	89,341
32,034	9,541	-	-	-	54,712	96,288	608,072	639,508	86,738	87,609
24,081	7,199	-	-	-	39,968	71,247	568,773	588,423	85,427	86,083
10,494	2,776	-	-	-	27,738	41,008	569,963	569,368	85,471	85,449
3,977	1,098	-	-	-	15,237	20,311	602,476	586,219	86,585	86,028
3,756	1,098	-	-	-	12,059	16,912	645,096	623,786	87,755	87,170
663	1,098	-	-	-	2,724	4,484	693,687	669,391	89,122	88,439
1,546	1,098	-	-	-	4,894	7,538	730,893	712,290	90,186	89,654
3,535	1,647	-	-	-	11,986	17,168	751,516	741,205	90,787	90,487
9,721	2,776	-	-	623	23,987	36,484	781,525	766,521	91,665	91,226
19,662	7,810	-	21,000	739	39,028	66,500	826,504	804,015	92,999	92,332
27,726	18,106	-	332	-	48,552	94,384	809,730	818,117	92,499	92,749
30,930	21,440	-	-	-	61,836	114,206	739,815	774,773	90,446	91,473
24,854	9,541	-	-	-	54,993	89,388	686,157	712,986	88,907	89,677
27,284	7,199	-	-	-	39,128	73,610	631,687	658,922	87,385	88,146
9,168	2,776	-	-	-	28,096	40,040	643,214	637,451	87,703	87,544
3,598	1,098	-	-	-	13,192	17,887	683,701	663,458	88,837	88,270
3,598	1,098	-	-	-	8,060	12,755	742,072	712,886	90,512	89,674
3,598	1,098	-	-	-	2,809	7,505	803,653	772,862	92,320	91,416
3,598	2,223	21,000	739	21,000	5,290	32,111	847,364	825,508	93,626	92,973
5,451	3,335	-	1,322	70,667	12,071	91,523	870,000	858,682	94,309	93,968
9,049	5,622	-	1,496	74,342	22,366	111,379	937,246	903,623	96,370	95,339
25,401	15,818	-	1,988	81,029	42,028	164,277	1,062,237	999,742	99,542	97,956
28,999	18,106	-	1,827	61,607	58,305	167,018	1,022,993	1,042,615	98,587	99,064
34,450	21,440	-	1,494	35,940	66,847	158,676	927,649	975,321	96,073	97,330
31,070	19,324	-	1,285	-	59,943	110,337	865,806	896,727	94,181	95,127
23,548	14,579	-	498	-	43,922	82,049	818,494	842,150	92,759	93,470
9,049	5,622	390	-	390	32,481	47,542	813,814	816,154	92,620	92,690
3,598	2,223	780	837	780	16,880	23,480	863,367	838,590	94,108	93,364
3,598	2,223	780	1,016	15,817	9,362	31,000	869,220	866,293	94,285	94,196
3,598	2,223	780	1,289	53,937	5,628	65,386	869,220	869,220	94,285	94,285
3,598	2,223	-	1,057	21,679	5,778	33,278	870,000	869,610	94,309	94,297
5,451	3,335	-	1,276	35,040	14,260	58,087	870,000	870,000	94,309	94,309
9,049	5,622	-	1,196	15,011	22,892	52,574	870,000	870,000	94,309	94,309
25,401	15,818	-	858	-	34,975	76,194	847,576	858,788	93,633	93,971
28,999	18,106	-	794	-	50,149	97,254	827,663	837,619	93,034	93,334
34,450	21,440	-	-	-	65,229	121,119	753,330	790,497	90,840	91,937
31,070	9,541	-	-	-	56,389	97,000	687,560	720,445	88,947	89,893
23,548	7,199	-	-	-	41,977	72,723	646,043	666,802	87,782	88,365
9,049	2,776	-	-	-	29,411	41,236	642,720	644,381	87,689	87,735
3,598	1,098	-	-	-	17,098	21,793	671,277	656,998	88,489	88,089
3,598	1,098	-	-	-	7,394	12,090	705,275	688,276	89,453	88,971
3,598	1,098	-	-	-	6,336	11,032	745,684	725,479	90,617	90,035
3,598	1,098	-	-	-	6,202	10,898	776,083	760,884	91,503	91,060
5,451	1,647	-	-	-	11,069	18,167	810,992	793,537	92,537	92,020
9,049	5,622	-	-	-	24,302	38,973	807,578	809,285	92,436	92,486
25,401	15,818	-	-	-	42,225	83,444	747,555	777,566	90,671	91,554
28,999	8,940	-	-	-	50,944	88,884	698,265	722,910	89,253	89,962
34,450	10,586	-	-	-	60,802	105,838	621,391	659,828	87,103	88,178
31,070	9,541	-	-	-	52,891	93,502	546,213	583,802	84,602	85,852
23,548	7,199	-	-	-	39,387	70,134	507,726	526,970	83,153	83,877
7,953	2,776	-	-	-	26,735	37,464	503,304	505,515	82,981	83,067
994	422	-	-	-	15,915	17,332	530,419	516,861	84,009	83,495
994	317	-	-	-	8,625	9,935	560,921	545,670	85,143	84,576
221	106	-	-	-	2,439	2,766	608,678	584,800	86,755	85,949
221	106	-	-	-	3,521	3,848	647,656	628,167	87,827	87,291
331	106	-	-	-	12,162	12,599	693,713	670,685	89,123	88,475
884	317	-	-	-	22,555	23,755	722,518	708,116	89,945	89,534
18,116	6,649	-	-	-	36,006	60,771	699,246	710,882	89,281	89,613
22,424	8,233	-	-	-	48,600	79,257	667,182	683,214	88,374	88,827

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (Includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Jul-55	1955	7		1,502	42	14,880	429	(192)	16661	1,473	16,661	18,134
Aug-55	1955	8		610	170	23,660	266	(192)	24514	2,368	24,514	26,882
Sep-55	1955	9		549	605	9,940	84	(192)	10986	12,487	10,986	23,473
Oct-55	1955	10		1,746	2,231	26,890	-	(192)	30675	3,531	30,675	34,206
Nov-55	1955	11		3,320	6,310	25,643	857	(192)	35937	10,236	35,937	46,173
Dec-55	1955	12		4,147	8,199	23,553	1,127	(192)	36834	7,916	36,834	44,750
Jan-56	1956	1		1,689	8,809	28,674	1,186	(192)	40166	14,216	40,166	54,381
Feb-56	1956	2		1,535	7,972	28,633	877	(192)	38824	7,871	38,824	46,695
Mar-56	1956	3		1,634	10,779	21,257	2,093	(192)	35571	145	35,571	35,716
Apr-56	1956	4		6,038	5,879	12,650	4,760	(192)	29134	3,437	29,134	32,571
May-56	1956	5		10,529	190	23,991	6,149	(192)	40667	2,250	40,667	42,917
Jun-56	1956	6		5,215	-	11,180	2,380	(192)	18582	-	18,582	18,582
Jul-56	1956	7		3,756	30	19,750	352	(192)	23695	4,082	23,695	27,777
Aug-56	1956	8		1,530	0	25,600	372	(192)	27310	-	27,310	27,310
Sep-56	1956	9		542	70	15,910	91	(192)	16421	198	16,421	16,619
Oct-56	1956	10		991	3,196	14,830	-	(192)	18824	6,745	18,824	25,569
Nov-56	1956	11		3,234	5,960	33,824	746	(192)	43572	447	43,572	44,019
Dec-56	1956	12		2,098	7,449	33,376	904	(192)	43635	3,253	43,635	46,888
Jan-57	1957	1		1,835	7,499	18,448	922	(192)	28512	12,689	28,512	41,201
Feb-57	1957	2		1,854	9,123	26,936	954	(192)	38674	4,465	38,674	43,139
Mar-57	1957	3		1,611	9,169	16,994	1,256	(192)	28838	11,157	28,838	39,995
Apr-57	1957	4		5,592	10,521	42,798	4,760	(192)	63478	12,278	63,478	75,756
May-57	1957	5		9,540	19,037	20,637	6,863	(192)	55884	23,536	55,884	79,421
Jun-57	1957	6		19,901	7,550	38,528	3,299	(192)	69087	8,401	69,087	77,488
Jul-57	1957	7		4,250	133	27,350	420	(192)	31960	1,522	31,960	33,483
Aug-57	1957	8		3,241	223	21,880	359	(192)	25511	4,997	25,511	30,508
Sep-57	1957	9		3,044	595	23,050	208	(192)	26704	1,299	26,704	28,003
Oct-57	1957	10		1,246	2,532	26,620	31	(192)	30236	5,899	30,236	36,135
Nov-57	1957	11		4,974	7,550	37,588	1,142	(192)	51062	6,034	51,062	57,096
Dec-57	1957	12		2,119	8,429	26,245	1,125	(192)	37726	9,858	37,726	47,584
Jan-58	1958	1		1,690	8,229	26,950	1,010	(192)	37687	6,136	37,687	43,823
Feb-58	1958	2		1,702	8,743	35,188	1,192	(192)	46632	10,072	46,632	56,704
Mar-58	1958	3		1,659	11,599	30,316	1,494	(192)	44876	13,512	44,876	58,388
Apr-58	1958	4		6,494	17,320	20,780	4,760	(192)	49162	6,299	49,162	55,461
May-58	1958	5		31,504	15,989	38,995	9,535	(192)	95831	3,252	95,831	99,083
Jun-58	1958	6		13,307	110	21,634	2,380	(192)	37239	2,309	37,239	39,547
Jul-58	1958	7		3,882	124	20,990	612	(192)	25415	439	25,415	25,854
Aug-58	1958	8		3,205	20	43,180	553	(192)	46765	3,700	46,765	50,465
Sep-58	1958	9		2,590	391	21,930	289	(192)	25008	6,949	25,008	31,957
Oct-58	1958	10		931	2,571	28,880	247	(192)	32436	-	32,436	32,436
Nov-58	1958	11		2,954	6,459	35,926	1,154	(192)	46301	7,531	46,301	53,832
Dec-58	1958	12		1,983	8,679	34,195	1,105	(192)	45770	3,720	45,770	49,489
Jan-59	1959	1		1,657	8,529	26,159	1,031	(192)	37184	8,764	37,184	45,948
Feb-59	1959	2		1,463	8,253	30,005	1,045	(192)	40573	14,482	40,573	55,055
Mar-59	1959	3		1,606	9,049	25,778	1,212	(192)	37452	2,831	37,452	40,284
Apr-59	1959	4		5,415	3,694	13,460	4,760	(192)	27137	9,814	27,137	36,951
May-59	1959	5		10,049	352	18,060	6,149	(192)	34417	7,046	34,417	41,464
Jun-59	1959	6		4,768	138	16,550	2,380	(192)	23644	6,401	23,644	30,045
Jul-59	1959	7		2,773	50	21,230	296	(192)	24157	855	24,157	25,012
Aug-59	1959	8		536	87	22,510	203	(192)	23144	10,706	23,144	33,850
Sep-59	1959	9		507	447	20,100	-	(192)	20861	11,908	20,861	32,769
Oct-59	1959	10		1,027	3,221	28,730	-	(192)	32786	1,325	32,786	34,111
Nov-59	1959	11		2,611	4,859	21,744	736	(192)	29758	398	29,758	30,155
Dec-59	1959	12		1,743	6,339	37,605	695	(192)	46190	5,472	46,190	51,662
Jan-60	1960	1		1,671	7,229	30,352	738	(192)	39798	6,748	39,798	46,546
Feb-60	1960	2		1,524	6,601	29,568	652	(192)	38153	16,134	38,153	54,286
Mar-60	1960	3		1,622	9,190	26,623	1,107	(192)	38350	10,377	38,350	48,727
Apr-60	1960	4		5,914	5,655	9,561	4,760	(192)	25698	4,328	25,698	30,026
May-60	1960	5		10,055	40	22,610	6,149	(192)	38661	2,455	38,661	41,115
Jun-60	1960	6		2,325	0	16,760	2,380	(192)	21273	1,284	21,273	22,556
Jul-60	1960	7		25,580	0	(29,060)	375	(192)	-3298	-	(3,298)	(3,298)
Aug-60	1960	8		336	519	8,200	248	(192)	9111	2,702	9,111	11,813
Sep-60	1960	9		413	1,206	16,950	-	(192)	18376	5,328	18,376	23,704
Oct-60	1960	10		1,099	3,225	23,850	-	(192)	27981	10,620	27,981	38,601
Nov-60	1960	11		1,758	5,810	49,792	688	(192)	57856	5,250	57,856	63,106
Dec-60	1960	12		1,690	6,569	24,877	633	(192)	33576	4,312	33,576	37,888
Jan-61	1961	1		1,567	6,599	22,500	670	(192)	31144	-	31,144	31,144
Feb-61	1961	2		1,647	6,272	24,851	579	(192)	33157	3,918	33,157	37,075
Mar-61	1961	3		1,550	7,069	3,538	1,353	(192)	13318	16,447	13,318	29,764

10	11	12	13 0.95	14 K factor 1	15 45,000	16 Evap Factor 0.955	17 2	18 800000	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	pus Evap (acre-ft)	End-of-month UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
31,151	11,399	-	-	-	55,421	97,971	587,345	627,263	86,100	87,237
29,052	21,590	-	-	-	53,378	104,020	510,206	548,776	83,249	84,675
23,860	8,760	-	-	-	35,843	68,463	465,217	487,712	81,492	82,371
7,180	5,344	-	-	-	25,293	37,817	461,606	463,411	81,346	81,419
442	-	-	-	-	13,660	14,102	493,678	477,642	82,606	81,976
331	-	-	-	-	7,034	7,365	531,063	512,370	84,033	83,319
221	-	-	-	-	4,347	4,568	580,876	555,969	85,866	84,949
110	-	-	-	-	4,510	4,620	622,951	601,914	87,145	86,506
110	-	-	-	-	13,455	13,565	645,103	634,027	87,756	87,451
32,255	-	-	-	-	24,583	56,838	620,836	632,969	87,088	87,422
21,319	5,341	-	-	-	34,723	61,383	602,369	611,602	86,582	86,835
26,511	6,471	-	-	-	45,615	78,597	542,354	572,361	84,457	85,520
31,813	8,117	-	-	-	58,341	98,272	471,859	507,106	81,757	83,107
30,709	7,073	-	-	-	50,881	88,662	410,507	441,183	79,247	80,502
25,075	4,730	-	-	-	36,957	66,762	360,364	385,435	77,080	78,163
7,732	2,776	-	-	-	24,721	35,229	350,703	355,533	76,655	76,868
331	106	-	-	-	11,530	11,967	382,755	366,729	78,065	77,360
331	106	-	-	-	7,455	7,892	421,751	402,253	79,721	78,893
-	-	-	-	-	5,393	5,393	457,559	439,655	81,182	80,451
-	-	-	-	-	6,008	6,008	494,690	476,125	82,645	81,914
-	-	-	-	-	12,168	12,168	522,517	508,604	83,712	83,179
-	-	-	-	-	17,921	17,921	580,352	551,435	85,847	84,779
10,604	3,905	-	-	-	30,949	45,458	614,315	597,334	86,909	86,378
20,436	7,494	-	-	-	46,341	74,270	617,532	615,924	86,997	86,953
36,011	13,193	-	-	-	59,612	108,816	542,199	579,866	84,451	85,724
29,383	10,766	-	-	-	53,566	93,714	478,992	510,596	82,034	83,243
23,860	8,760	-	-	-	35,189	67,809	439,186	459,089	80,438	81,236
7,401	2,744	-	-	-	25,734	35,879	439,442	439,314	80,449	80,443
773	1,098	-	-	-	12,677	14,547	481,991	460,716	82,151	81,300
773	1,098	-	-	-	6,276	8,147	521,428	501,709	83,671	82,911
1,105	-	-	-	-	3,995	5,100	560,150	540,789	85,115	84,393
2,762	-	-	-	-	7,112	9,874	606,980	583,565	86,708	85,912
2,541	-	-	-	-	12,835	15,376	649,992	628,486	87,893	87,301
2,209	-	-	-	-	24,342	26,551	678,902	664,447	88,702	88,297
23,308	7,810	-	-	-	44,544	75,662	702,324	690,613	89,369	89,036
28,389	8,940	-	-	-	57,111	94,441	647,430	674,877	87,821	88,595
33,360	10,586	-	-	-	61,714	105,660	567,625	607,528	85,386	86,603
36,342	9,541	-	-	-	58,236	104,119	513,971	540,798	83,391	84,388
26,290	7,199	-	-	-	39,687	73,175	472,753	493,362	81,791	82,591
10,936	2,776	-	-	-	28,055	41,767	463,423	468,088	81,419	81,605
5,744	1,098	-	-	-	15,357	22,198	495,057	479,240	82,660	82,039
1,988	1,098	-	-	-	7,697	10,782	533,764	514,410	84,134	83,397
663	-	-	-	-	5,290	5,953	573,759	553,762	85,608	84,871
663	-	-	-	-	6,336	6,999	621,816	597,788	87,114	86,361
221	-	-	-	-	12,202	12,423	649,676	635,746	87,884	87,499
5,634	-	-	-	-	24,339	29,973	656,653	653,165	88,079	87,981
24,191	7,810	-	-	-	37,852	69,853	628,264	642,459	87,291	87,685
28,058	8,940	-	-	-	49,531	86,529	571,780	600,022	85,536	86,414
31,703	10,586	-	-	-	53,573	95,862	500,929	536,354	82,888	84,212
28,831	9,541	-	-	-	50,002	88,374	446,406	473,667	80,730	81,809
19,994	7,199	-	-	-	35,658	62,850	416,324	431,365	79,492	80,111
5,855	2,776	-	-	-	24,040	32,671	417,765	417,044	79,553	79,522
3,093	1,161	-	-	-	13,485	17,739	430,181	423,973	80,074	79,813
884	317	-	-	-	7,902	9,102	472,740	451,461	81,791	80,932
221	-	-	-	-	3,515	3,736	515,550	494,145	83,450	82,621
110	-	-	-	-	4,715	4,825	565,011	540,281	85,291	84,371
221	-	-	-	-	12,286	12,507	601,231	583,121	86,551	85,921
3,093	-	-	-	-	24,039	27,132	604,124	602,678	86,630	86,591
24,191	7,810	-	-	-	40,125	72,126	573,113	588,619	85,585	86,108
26,953	6,471	-	-	-	52,786	86,210	509,459	541,286	83,220	84,402
31,040	8,117	-	-	-	60,335	99,492	406,669	458,064	79,085	81,153
22,976	7,073	-	-	-	49,595	79,644	338,838	372,754	76,110	77,597
16,017	4,730	-	-	-	36,948	57,695	304,847	321,843	74,528	75,319
3,756	1,372	-	-	-	23,606	28,734	314,714	309,781	74,999	74,763
663	211	-	-	-	13,191	14,065	363,755	339,234	77,229	76,114
663	211	-	-	-	5,716	6,590	395,053	379,404	78,595	77,912
-	-	-	-	-	5,254	5,254	420,942	407,998	79,686	79,141
-	-	-	-	-	7,800	7,800	450,217	435,580	80,885	80,286
-	-	-	-	-	11,072	11,072	468,910	459,563	81,641	81,263

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Apr-61	1961	4		5,065	3,368	7,480	4,760	(192)	20480	5,103	20,480	25,583
May-61	1961	5		8,949	20	4,950	5,498	(192)	19224	887	19,224	20,111
Jun-61	1961	6		4,193	344	(5,250)	2,380	(192)	1475	-	1,475	1,475
Jul-61	1961	7		350	141	8,620	233	(192)	9151	5,078	9,151	14,230
Aug-61	1961	8		359	133	7,540	114	(192)	7953	6,506	7,953	14,459
Sep-61	1961	9		426	1,546	9,750	0	(192)	11530	13,450	11,530	24,980
Oct-61	1961	10		1,023	4,509	19,090	-	(192)	24429	12,951	24,429	37,380
Nov-61	1961	11		1,550	5,730	16,448	532	(192)	24068	6,710	24,068	30,778
Dec-61	1961	12		1,550	5,749	17,858	582	(192)	25547	10,912	25,547	36,458
Jan-62	1962	1		1,550	6,389	18,680	580	(192)	27007	2,439	27,007	29,446
Feb-62	1962	2		1,469	9,872	29,436	684	(192)	41269	15,906	41,269	57,174
Mar-62	1962	3		1,550	10,169	22,539	851	(192)	34917	11,012	34,917	45,928
Apr-62	1962	4		4,879	22,566	18,385	9,785	(192)	55423	9,228	55,423	64,651
May-62	1962	5		12,519	5,497	25,079	6,149	(192)	49051	13,654	49,051	62,705
Jun-62	1962	6		5,049	1,250	10,102	2,380	(192)	18589	4,657	18,589	23,246
Jul-62	1962	7		4,029	50	3,490	311	(192)	7688	3,475	7,688	11,162
Aug-62	1962	8		3,219	40	15,440	424	(192)	18930	-	18,930	18,930
Sep-62	1962	9		2,903	27	21,530	165	(192)	24432	3,322	24,432	27,754
Oct-62	1962	10		1,154	3,621	32,620	0	(192)	37202	4,925	37,202	42,127
Nov-62	1962	11		2,358	5,659	28,467	813	(192)	37105	1,998	37,105	39,102
Dec-62	1962	12		1,757	6,409	11,647	803	(192)	20424	61	20,424	20,485
Jan-63	1963	1		1,935	6,719	18,102	758	(192)	27322	8,122	27,322	35,444
Feb-63	1963	2		2,122	6,542	20,356	1,384	(192)	30211	2,468	30,211	32,679
Mar-63	1963	3		1,638	3,479	16,198	952	(192)	22074	13,254	22,074	35,329
Apr-63	1963	4		4,963	2,621	18,302	4,760	(192)	30453	20,213	30,453	50,666
May-63	1963	5		10,534	540	7,007	6,149	(192)	24037	3,781	24,037	27,818
Jun-63	1963	6		4,768	-	19,770	2,380	(192)	26726	7,588	26,726	34,314
Jul-63	1963	7		3,930	717	18,550	410	(192)	23414	64	23,414	23,479
Aug-63	1963	8		3,155	31	15,740	314	(192)	19047	3,935	19,047	22,982
Sep-63	1963	9		3,623	-	35,930	-	(192)	39361	6,977	39,361	46,338
Oct-63	1963	10		4,611	1,781	21,610	1,486	(192)	29296	3,439	29,296	32,734
Nov-63	1963	11		6,441	5,740	23,013	2,257	(192)	37259	8,682	37,259	45,941
Dec-63	1963	12		4,611	6,599	22,409	2,329	(192)	35756	3,236	35,756	38,992
Jan-64	1964	1		4,611	6,499	19,301	2,444	(192)	32664	7,114	32,664	39,777
Feb-64	1964	2		2,117	5,801	26,151	2,170	(192)	36047	440	36,047	36,487
Mar-64	1964	3		1,627	6,891	38,816	2,380	(192)	49521	7,879	49,521	57,400
Apr-64	1964	4		4,901	9,656	20,540	4,760	(192)	39664	18,275	39,664	57,939
May-64	1964	5		9,647	12,919	40,730	6,149	(192)	69253	19,641	69,253	88,894
Jun-64	1964	6		4,981	1,177	48,960	2,380	(192)	57305	17,863	57,305	75,168
Jul-64	1964	7		4,235	0	14,300	638	(192)	18981	1,173	18,981	20,154
Aug-64	1964	8		3,234	41	13,160	1,323	(192)	17565	1,530	17,565	19,096
Sep-64	1964	9		4,115	111	25,530	1,377	(192)	30939	-	30,939	30,939
Oct-64	1964	10		5,957	4,288	22,660	-	(192)	32713	250	32,713	32,962
Nov-64	1964	11		7,120	4,959	26,953	887	(192)	39727	7,474	39,727	47,201
Dec-64	1964	12		4,611	6,319	32,066	1,144	(192)	43948	19,506	43,948	63,454
Jan-65	1965	1		4,611	6,649	32,195	1,125	(192)	44388	7,149	44,388	51,537
Feb-65	1965	2		4,165	7,232	12,730	1,170	(192)	25105	470	25,105	25,575
Mar-65	1965	3		4,611	8,439	27,106	1,244	(192)	41208	1,357	41,208	42,566
Apr-65	1965	4		6,061	13,084	27,084	6,046	(192)	52083	6,743	52,083	58,826
May-65	1965	5		10,978	6,907	28,304	7,996	(192)	53993	4,812	53,993	58,805
Jun-65	1965	6		40,195	1,180	34,263	2,392	(192)	77838	7,598	77,838	85,436
Jul-65	1965	7		7,396	62	34,570	983	(192)	42819	4,475	42,819	47,294
Aug-65	1965	8		3,253	428	38,850	965	(192)	43304	5,879	43,304	49,184
Sep-65	1965	9		4,113	2,018	33,330	808	(192)	40077	12,804	40,077	52,880
Oct-65	1965	10		5,931	4,053	33,970	756	(192)	44518	1,074	44,518	45,592
Nov-65	1965	11		10,638	6,720	26,316	1,234	(192)	44716	8,366	44,716	53,082
Dec-65	1965	12		11,777	8,149	41,040	1,240	(192)	62014	11,873	62,014	73,887
Jan-66	1966	1		9,322	8,349	23,327	1,033	(192)	41838	1,272	41,838	43,111
Feb-66	1966	2		7,215	7,412	33,623	1,067	(192)	49125	7,109	49,125	56,234
Mar-66	1966	3		14,343	11,739	38,175	1,545	(192)	65610	4,078	65,610	69,688
Apr-66	1966	4		6,577	3,880	5,601	4,760	(192)	20626	3,104	20,626	23,729
May-66	1966	5		24,318	1,633	28,940	6,149	(192)	60848	7,507	60,848	68,355
Jun-66	1966	6		4,687	0	22,280	2,380	(192)	29154	220	29,154	29,374
Jul-66	1966	7		3,392	-	18,360	274	(192)	21833	1,006	21,833	22,839
Aug-66	1966	8		3,141	545	28,240	251	(192)	31985	3,258	31,985	35,243
Sep-66	1966	9		4,042	140	31,210	57	(192)	35257	5,802	35,257	41,059
Oct-66	1966	10		4,611	3,439	31,590	346	(192)	39793	6,317	39,793	46,111
Nov-66	1966	11		4,463	6,410	24,764	1,271	(192)	36715	3,475	36,715	40,190
Dec-66	1966	12		4,611	7,249	35,565	1,411	(192)	48644	13,249	48,644	61,893

10	11	12	13 0.95	14 K factor 1	15 45,000	16 Evap Factor 0.955	17 2	18 800000	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjust- ment (acre-ft)	Jordan River Spill Calcula- tion (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-mont UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
-	-	-	-	-	18,647	18,647	475,845	472,377	81,912	81,776
26,069	4,011	-	-	-	31,355	61,435	434,521	455,183	80,249	81,081
25,738	4,011	-	-	-	44,514	74,263	361,733	398,127	77,141	78,695
20,657	1,372	-	-	-	52,735	74,764	301,199	331,466	74,351	75,746
13,697	422	-	-	-	46,213	60,332	255,326	278,263	72,055	73,203
5,413	-	-	-	-	27,926	33,339	246,967	251,146	71,618	71,836
663	-	-	-	-	18,980	19,643	264,704	255,835	72,545	72,082
331	106	-	-	-	10,219	10,656	284,827	274,765	73,561	73,053
110	-	-	-	-	5,327	5,437	315,848	300,337	75,052	74,306
110	-	-	-	-	1,195	1,305	343,989	329,918	76,347	75,699
331	106	-	-	-	4,253	4,690	396,473	370,231	78,655	77,501
221	106	-	-	-	7,699	8,026	434,376	415,425	80,243	79,449
442	211	-	-	-	22,287	22,941	476,086	455,231	81,921	81,082
16,459	4,011	-	-	-	35,532	56,001	482,790	479,438	82,182	82,052
22,093	6,471	-	-	-	44,474	73,038	432,998	457,894	80,188	81,185
27,616	8,117	-	-	-	53,605	89,339	354,821	393,909	76,837	78,512
28,279	7,073	-	-	-	48,063	83,415	290,336	322,579	73,827	75,332
21,651	4,730	-	-	-	36,075	62,456	255,635	272,986	72,071	72,949
4,087	1,478	-	-	-	25,696	31,261	266,502	261,068	72,639	72,355
2,541	950	-	-	-	13,643	17,134	288,470	277,486	73,737	73,188
773	317	-	-	-	5,633	6,723	302,232	295,351	74,401	74,069
221	106	-	-	-	2,250	2,577	335,099	318,666	75,938	75,169
110	-	-	-	-	4,351	4,461	363,317	349,208	77,210	76,574
-	-	-	-	-	11,859	11,859	386,787	375,052	78,242	77,726
-	-	-	-	-	18,805	18,805	418,648	402,717	79,590	78,916
23,197	3,589	-	-	-	26,920	53,705	392,760	405,704	78,499	79,044
21,872	3,377	-	-	-	40,169	65,419	361,656	377,208	77,137	77,818
41,755	2,850	-	-	-	51,075	95,680	289,454	325,555	73,784	75,461
37,778	1,266	-	-	-	47,504	86,549	225,887	257,671	70,359	72,072
20,104	-	-	-	-	32,757	52,861	219,364	222,626	69,944	70,152
10,715	-	-	-	-	22,377	33,092	219,007	219,186	69,921	69,932
552	211	-	-	-	11,463	12,226	252,721	235,864	71,919	70,920
773	317	-	-	-	5,151	6,241	285,473	269,097	73,592	72,755
773	317	-	-	-	1,347	2,437	322,814	304,143	75,372	74,482
221	106	-	-	-	3,419	3,746	355,555	339,184	76,869	76,121
110	-	-	-	-	10,950	11,060	401,895	378,725	78,884	77,876
-	-	-	-	-	20,528	20,528	439,305	420,600	80,443	79,663
14,139	2,216	-	-	-	30,409	46,765	481,435	460,370	82,129	81,286
16,017	2,428	-	-	-	39,609	58,054	498,549	489,992	82,796	82,462
41,534	2,850	-	-	-	49,616	94,000	424,703	461,626	79,845	81,320
41,092	1,372	-	-	-	49,055	91,520	352,279	388,491	76,725	78,285
32,918	-	-	-	-	36,941	69,859	313,359	332,819	74,937	75,831
10,052	-	-	-	-	27,016	37,068	309,253	311,306	74,740	74,839
331	106	-	-	-	14,275	14,712	341,742	325,498	76,243	75,492
331	106	-	-	-	7,160	7,597	397,599	369,670	78,702	77,473
884	317	-	-	-	4,635	5,835	443,301	420,450	80,605	79,654
773	317	-	-	-	3,849	4,938	463,937	453,619	81,440	81,022
442	211	-	-	-	13,027	13,681	492,822	478,380	82,573	82,006
3,535	1,266	-	-	-	24,840	29,641	522,007	507,415	83,693	83,133
23,308	3,589	-	-	-	32,970	59,866	520,946	521,477	83,653	83,673
29,715	4,539	-	-	-	44,471	78,725	527,657	524,302	83,905	83,779
37,557	2,533	-	-	-	55,757	95,847	479,104	503,381	82,039	82,972
38,331	1,266	-	-	-	49,424	89,021	439,267	459,186	80,441	81,240
16,901	-	-	-	-	33,865	50,766	441,381	440,324	80,527	80,484
9,058	-	-	-	-	25,699	34,757	452,216	446,798	80,966	80,746
773	1,098	-	-	-	16,238	18,108	487,190	469,703	82,353	81,659
773	1,098	-	-	-	7,406	9,277	551,800	519,495	84,812	83,582
2,099	1,098	-	-	-	2,295	5,491	589,419	570,609	86,175	85,493
7,180	1,098	-	-	-	5,967	14,244	631,409	610,414	87,377	86,776
5,413	1,647	-	-	-	15,994	23,053	678,043	654,726	88,678	88,028
5,192	2,776	-	-	-	28,582	36,550	665,223	671,633	88,319	88,499
25,406	7,810	-	-	-	46,600	79,817	653,761	659,492	87,998	88,159
28,499	8,940	-	-	-	55,465	92,904	590,231	621,996	86,205	87,101
29,935	10,586	-	-	-	63,802	104,324	508,746	549,489	83,193	84,699
29,715	9,541	-	-	-	52,767	92,024	451,966	480,356	80,955	82,074
22,314	7,199	-	-	-	40,009	69,522	423,503	437,735	79,794	80,375
8,395	2,776	-	-	-	25,147	36,318	433,296	428,399	80,200	79,997
1,878	739	-	-	-	14,935	17,552	455,934	444,615	81,116	80,658
773	317	-	-	-	9,877	10,966	506,861	481,397	83,119	82,118

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Jan-67	1967	1		3,177	7,659	14,090	1,276	(192)	26010	16,070	26,010	42,080
Feb-67	1967	2		1,771	7,166	42,521	1,191	(192)	52456	422	52,456	52,879
Mar-67	1967	3		2,845	10,239	34,885	1,911	(192)	49687	5,603	49,687	55,290
Apr-67	1967	4		5,692	8,399	(1,340)	4,760	(192)	17318	3,781	17,318	21,099
May-67	1967	5		11,314	3,331	38,583	6,149	(192)	59184	14,222	59,184	73,405
Jun-67	1967	6		24,172	6,783	58,948	2,380	(192)	92090	8,719	92,090	100,808
Jul-67	1967	7		4,288	390	28,040	435	(192)	32961	3,302	32,961	36,263
Aug-67	1967	8		3,247	380	24,960	357	(192)	28752	3,959	28,752	32,711
Sep-67	1967	9		4,113	457	31,790	178	(192)	36346	3,850	36,346	40,195
Oct-67	1967	10		5,830	6,331	24,980	-	(192)	36948	2,966	36,948	39,914
Nov-67	1967	11		5,877	6,700	29,756	974	(192)	43115	6,776	43,115	49,891
Dec-67	1967	12		4,611	6,659	22,279	1,061	(192)	34418	11,721	34,418	46,139
Jan-68	1968	1		4,611	6,048	35,208	952	(192)	46626	2,568	46,626	49,195
Feb-68	1968	2		4,165	8,352	35,559	1,081	(192)	48964	11,526	48,964	60,490
Mar-68	1968	3		4,611	9,839	33,130	1,400	(192)	48788	11,492	48,788	60,281
Apr-68	1968	4		4,887	12,139	24,618	4,760	(192)	46211	25,199	46,211	71,410
May-68	1968	5		15,189	14,483	26,862	6,149	(192)	62491	10,311	62,491	72,802
Jun-68	1968	6		47,667	3,460	27,971	2,380	(192)	81285	11,615	81,285	92,901
Jul-68	1968	7		4,241	1,568	40,680	390	(192)	46686	3,634	46,686	50,321
Aug-68	1968	8		3,250	1,256	33,030	153	(192)	37497	17,565	37,497	55,061
Sep-68	1968	9		4,129	2,583	17,860	115	(192)	24494	1,473	24,494	25,967
Oct-68	1968	10		5,961	4,723	34,120	-	(192)	44611	9,081	44,611	53,692
Nov-68	1968	11		10,820	7,603	36,164	1,156	(192)	55551	9,843	55,551	65,394
Dec-68	1968	12		7,925	8,255	27,904	1,186	(192)	45078	16,096	45,078	61,174
Jan-69	1969	1		4,743	9,020	33,157	1,273	(192)	48000	11,235	48,000	59,235
Feb-69	1969	2		4,165	7,954	35,633	1,137	(192)	48697	12,774	48,697	61,470
Mar-69	1969	3		5,882	11,643	25,263	1,747	(192)	44342	387	44,342	44,729
Apr-69	1969	4		28,401	35,206	31,031	12,819	(192)	107264	12,072	107,264	119,336
May-69	1969	5		66,277	14,980	16,554	12,046	(192)	109665	236	109,665	109,900
Jun-69	1969	6		46,566	3,637	48,845	2,380	(192)	101236	26,232	101,236	127,469
Jul-69	1969	7		7,606	1,560	41,700	668	(192)	51342	4,401	51,342	55,743
Aug-69	1969	8		3,256	1,312	49,430	682	(192)	54487	1,923	54,487	56,410
Sep-69	1969	9		4,114	1,714	34,140	513	(192)	40288	1,511	40,288	41,799
Oct-69	1969	10		5,782	5,324	31,070	345	(192)	42329	24,886	42,329	67,215
Nov-69	1969	11		9,194	8,043	31,936	1,434	(192)	50415	5,952	50,415	56,367
Dec-69	1969	12		4,611	8,714	26,064	1,486	(192)	40683	9,744	40,683	50,427
Jan-70	1970	1		4,611	9,579	32,127	1,513	(192)	47638	13,307	47,638	60,944
Feb-70	1970	2		4,165	8,716	30,869	1,351	(192)	44909	5,229	44,909	50,138
Mar-70	1970	3		4,611	9,918	14,962	1,488	(192)	30787	7,938	30,787	38,724
Apr-70	1970	4		5,666	7,341	18,510	4,760	(192)	36084	17,211	36,084	53,296
May-70	1970	5		32,374	5,558	35,305	6,149	(192)	79193	4,951	79,193	84,144
Jun-70	1970	6		19,015	2,720	34,730	2,380	(192)	58653	13,518	58,653	72,170
Jul-70	1970	7		5,282	93	32,840	392	(192)	38414	6,157	38,414	44,571
Aug-70	1970	8		3,238	680	20,060	343	(192)	24129	8,687	24,129	32,816
Sep-70	1970	9		4,091	2,168	25,360	73	(192)	31500	17,404	31,500	48,904
Oct-70	1970	10		5,546	5,398	32,800	-	(192)	43551	10,169	43,551	53,720
Nov-70	1970	11		5,574	7,516	51,421	1,289	(192)	65608	23,097	65,608	88,705
Dec-70	1970	12		4,611	8,315	12,812	1,248	(192)	26794	11,631	26,794	38,425
Jan-71	1971	1		4,611	9,117	42,870	1,230	(192)	57636	4,519	57,636	62,155
Feb-71	1971	2		4,165	8,593	15,189	1,351	(192)	29105	15,397	29,105	44,502
Mar-71	1971	3		4,611	11,399	44,110	2,370	(192)	62298	706	62,298	63,004
Apr-71	1971	4		5,788	14,876	32,022	5,258	(192)	57752	16,347	57,752	74,099
May-71	1971	5		32,637	11,049	20,618	6,149	(192)	70260	8,488	70,260	78,748
Jun-71	1971	6		56,629	1,890	22,470	2,380	(192)	83177	2,750	83,177	85,927
Jul-71	1971	7		4,128	85	26,930	406	(192)	31357	3,364	31,357	34,721
Aug-71	1971	8		3,261	837	30,590	377	(192)	34873	5,097	34,873	39,970
Sep-71	1971	9		4,092	3,518	34,610	-	(192)	42027	9,099	42,027	51,127
Oct-71	1971	10		5,255	7,617	72,770	-	(192)	85450	14,530	85,450	99,980
Nov-71	1971	11		4,995	8,469	24,197	1,133	(192)	38601	4,229	38,601	42,830
Dec-71	1971	12		4,611	8,930	37,545	1,335	(192)	52229	6,759	52,229	58,988
Jan-72	1972	1		4,611	9,710	34,987	1,103	(192)	50219	1,231	50,219	51,451
Feb-72	1972	2		4,165	9,118	33,023	1,027	(192)	47141	700	47,141	47,842
Mar-72	1972	3		12,060	11,775	23,405	4,821	(192)	51869	4,163	51,869	56,032
Apr-72	1972	4		9,183	8,103	23,821	4,760	(192)	45674	9,117	45,674	54,790
May-72	1972	5		41,382	844	18,674	5,483	(192)	66189	78	66,189	66,268
Jun-72	1972	6		22,448	556	34,580	2,380	(192)	59772	5,309	59,772	65,081
Jul-72	1972	7		7,583	0	19,970	374	(192)	27734	1,465	27,734	29,199
Aug-72	1972	8		3,258	148	29,890	200	(192)	33304	5,395	33,304	38,699
Sep-72	1972	9		4,125	513	27,250	-	(192)	31695	4,411	31,695	36,106

10	11	12	13 0.95	14 K factor 1	15 45,000	16 Evap Factor 0.955	17 2	18 800000	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-month UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
884	317	-	-	-	4,432	5,632	543,308	525,084	84,493	83,806
1,326	422	-	-	-	4,371	6,119	590,068	566,688	86,199	85,346
2,983	1,056	-	-	-	14,475	18,513	626,845	608,456	87,252	86,725
2,320	844	-	-	-	24,512	27,676	620,268	623,556	87,072	87,162
23,418	8,549	-	-	-	37,281	69,248	624,425	622,347	87,186	87,129
16,459	6,016	-	-	-	46,974	69,449	655,785	640,105	88,055	87,620
28,941	10,660	-	-	-	57,463	97,064	594,984	625,385	86,377	87,216
31,371	11,610	-	-	-	54,650	97,631	530,064	562,524	83,995	85,186
23,418	8,655	-	-	-	40,241	72,315	497,944	514,004	82,772	83,384
6,407	2,322	-	-	-	26,217	34,946	502,912	500,428	82,965	82,869
663	1,098	-	-	-	14,988	16,749	536,054	519,483	84,220	83,593
663	1,098	-	-	-	6,568	8,329	573,864	554,959	85,612	84,916
773	1,098	-	-	-	3,952	5,822	617,236	595,550	86,989	86,300
884	1,098	-	-	-	7,546	9,528	668,199	642,718	88,402	87,696
5,744	1,647	-	-	-	15,407	22,798	705,681	686,940	89,465	88,934
13,697	2,776	-	-	-	25,347	41,820	735,272	720,477	90,314	89,889
20,878	7,810	-	-	-	37,375	66,063	742,011	738,641	90,510	90,412
23,308	8,940	-	-	-	48,837	81,085	753,826	747,918	90,854	90,682
31,040	10,586	-	-	-	62,182	103,808	700,339	727,083	89,312	90,083
25,738	9,541	-	-	-	53,592	88,872	666,528	683,434	88,356	88,834
23,860	7,199	-	-	-	37,479	68,537	623,958	645,243	87,173	87,764
9,168	2,776	1,671	-	1,671	28,374	41,990	635,660	629,809	87,493	87,333
3,598	2,223	3,343	-	3,343	16,502	25,666	675,387	655,524	88,604	88,049
3,598	2,223	3,343	-	3,343	7,263	16,427	720,135	697,761	89,877	89,241
3,598	1,098	3,343	-	3,343	4,220	12,258	767,112	743,623	91,241	90,559
3,598	1,098	-	-	-	4,357	9,052	819,530	793,321	92,790	92,015
5,451	3,335	-	220	-	13,735	22,521	841,737	830,633	93,457	93,124
9,049	5,622	-	1,314	46,503	29,899	91,073	870,000	855,869	94,309	93,883
25,401	15,818	2,000	1,303	20,770	49,911	111,900	868,000	869,000	94,248	94,278
28,999	18,106	-	1,316	19,334	59,029	125,469	870,000	869,000	94,309	94,278
34,450	21,440	-	688	-	66,423	122,313	803,430	836,715	92,313	93,311
31,070	19,324	-	-	-	61,785	112,179	747,661	775,545	90,674	91,494
23,548	7,199	-	-	-	45,462	76,208	713,252	730,457	89,681	90,178
9,049	2,776	2,413	-	2,413	27,621	41,858	738,609	725,931	90,411	90,046
3,598	1,098	4,826	-	4,826	14,534	24,056	770,920	754,765	91,352	90,881
3,598	1,098	4,826	-	4,826	8,797	18,318	803,029	786,975	92,301	91,826
3,598	2,223	4,826	327	4,826	4,848	15,495	848,479	825,754	93,660	92,981
3,598	2,223	-	995	16,162	6,634	28,617	870,000	859,239	94,309	93,984
5,451	3,335	-	1,090	14,627	15,311	38,724	870,000	870,000	94,309	94,309
9,049	5,622	-	1,206	13,482	25,143	53,296	870,000	870,000	94,309	94,309
25,401	15,818	-	1,263	2,771	40,154	84,144	870,000	870,000	94,309	94,309
28,999	18,106	-	1,025	-	51,262	98,367	843,804	856,902	93,519	93,914
34,450	21,440	-	-	-	58,424	114,314	774,060	808,932	91,444	92,481
31,070	9,541	-	-	-	54,653	95,265	711,612	742,836	89,634	90,539
23,548	7,199	-	-	-	37,807	68,553	691,963	701,787	89,073	89,353
9,049	2,776	2,453	-	2,453	27,717	41,995	703,688	697,826	89,408	89,240
3,598	1,098	4,906	-	4,906	16,152	25,753	766,640	735,164	91,227	90,317
3,598	1,098	4,906	-	4,906	5,881	15,482	789,583	778,112	91,903	91,565
3,598	1,098	4,906	-	4,906	5,193	14,794	836,944	813,264	93,313	92,608
3,598	2,223	4,906	765	4,906	6,312	17,039	864,407	850,676	94,139	93,726
5,451	3,335	-	1,275	33,716	14,909	57,411	870,000	867,204	94,309	94,224
9,049	5,622	-	1,290	33,009	26,419	74,099	870,000	870,000	94,309	94,309
25,401	15,818	-	1,191	-	38,803	80,022	868,726	869,363	94,270	94,289
28,999	18,106	-	1,192	-	51,841	98,946	855,706	862,216	93,877	94,074
34,450	21,440	-	-	-	65,671	121,561	768,867	812,287	91,292	92,585
31,070	9,541	-	-	-	61,247	101,858	706,979	737,923	89,502	90,397
23,548	7,199	-	-	-	39,389	70,136	687,969	697,474	88,959	89,230
9,049	2,776	2,960	-	2,960	27,327	42,112	745,837	716,903	90,621	89,790
3,598	2,223	5,919	-	5,919	13,631	25,371	763,297	754,567	91,130	90,876
3,598	1,098	5,919	-	5,919	6,745	17,359	804,926	784,111	92,357	91,743
3,598	2,223	5,919	22	5,919	4,851	16,591	839,785	822,355	93,399	92,878
3,598	2,223	1,750	848	5,602	7,953	19,377	868,250	854,017	94,255	93,827
5,451	3,335	-	1,271	27,043	18,453	54,282	870,000	869,125	94,309	94,282
9,049	5,622	4,000	1,226	16,574	27,545	58,790	866,000	868,000	94,187	94,248
25,401	15,818	-	971	-	41,676	82,895	849,373	857,686	93,687	93,937
28,999	18,106	-	655	-	56,889	103,994	810,460	829,916	92,521	93,104
34,450	21,440	-	-	-	62,145	118,035	721,624	766,042	89,920	91,220
31,070	9,541	-	-	-	57,965	98,576	661,747	691,685	88,222	89,071
23,548	7,199	-	-	-	41,283	72,030	625,823	643,785	87,224	87,723

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo	Spanish	Local	Hobble	Change in	Total	Total	
				Inflow (acre-ft)	Fork Inflow (acre-ft)	surface and Sub- surface (acre-ft)	Creek (includes ULS water) (acre-ft)				
Oct-72	1972	10		5,701	6,979	34,900	-	(192)	47,387	26,894	47,387
Nov-72	1972	11		7,856	7,551	33,322	1,018	(192)	49,555	10,863	49,555
Dec-72	1972	12		4,611	7,615	33,126	944	(192)	46104	5,864	46,104
Jan-73	1973	1		4,611	7,541	30,340	910	(192)	43210	9,767	43,210
Feb-73	1973	2		4,165	6,916	45,033	897	(192)	56819	3,197	56,819
Mar-73	1973	3		4,611	8,663	47,209	1,511	(192)	61802	4,945	61,802
Apr-73	1973	4		18,533	17,706	38,932	4,768	(192)	79746	4,852	79,746
May-73	1973	5		38,180	39,139	45,729	14,551	(192)	137406	8,959	137,406
Jun-73	1973	6		49,511	1,299	45,733	2,380	(192)	98731	3,245	98,731
Jul-73	1973	7		7,623	-	32,200	679	(192)	40309	6,130	40,309
Aug-73	1973	8		3,176	(0)	37,150	633	(192)	40766	7,903	40,766
Sep-73	1973	9		4,156	664	25,790	323	(192)	30740	11,477	30,740
Oct-73	1973	10		5,657	6,028	48,170	301	(192)	59964	2,469	59,964
Nov-73	1973	11		9,450	8,162	51,097	1,343	(192)	69860	6,772	69,860
Dec-73	1973	12		4,736	8,980	20,143	1,277	(192)	34944	13,761	34,944
Jan-74	1974	1		4,611	9,422	35,808	1,182	(192)	50831	9,260	50,831
Feb-74	1974	2		4,165	8,498	38,623	1,097	(192)	52191	4,538	52,191
Mar-74	1974	3		4,611	12,835	38,492	2,348	(192)	58094	550	58,094
Apr-74	1974	4		10,210	17,936	50,422	4,760	(192)	83137	14,382	83,137
May-74	1974	5		43,418	9,500	11,721	7,947	(192)	72393	864	72,393
Jun-74	1974	6		51,429	660	30,740	2,380	(192)	85017	1,488	85,017
Jul-74	1974	7		7,727	0	38,880	318	(192)	46733	1,945	46,733
Aug-74	1974	8		3,238	1,656	23,290	234	(192)	28225	-	28,225
Sep-74	1974	9		4,129	480	23,160	80	(192)	27656	-	27,656
Oct-74	1974	10		5,658	5,350	45,010	-	(192)	55825	10,747	55,825
Nov-74	1974	11		8,935	7,664	35,612	1,478	(192)	53496	4,567	53,496
Dec-74	1974	12		4,611	7,534	16,667	1,243	(192)	29863	9,543	29,863
Jan-75	1975	1		4,611	8,030	33,494	1,276	(192)	47219	9,247	47,219
Feb-75	1975	2		4,165	7,451	42,104	1,176	(192)	54703	2,671	54,703
Mar-75	1975	3		4,611	9,316	28,830	1,780	(192)	44345	8,905	44,345
Apr-75	1975	4		4,879	10,031	42,053	4,760	(192)	61531	13,059	61,531
May-75	1975	5		17,506	34,987	42,888	8,582	(192)	103770	15,482	103,770
Jun-75	1975	6		75,650	27,814	60,060	12,780	(192)	176111	8,571	176,111
Jul-75	1975	7		17,146	399	47,440	298	(192)	65091	9,022	65,091
Aug-75	1975	8		3,261	184	12,290	328	(192)	15871	3,131	15,871
Sep-75	1975	9		4,167	897	35,010	111	(192)	39992	837	39,992
Oct-75	1975	10		5,195	5,620	46,040	-	(192)	56663	9,560	56,663
Nov-75	1975	11		7,763	8,955	31,050	1,620	(192)	49195	15,246	49,195
Dec-75	1975	12		4,613	9,037	41,279	1,601	(192)	56337	6,465	56,337
Jan-76	1976	1		4,611	9,248	42,002	1,718	(192)	57387	4,848	57,387
Feb-76	1976	2		4,165	9,916	49,178	2,202	(192)	65268	11,304	65,268
Mar-76	1976	3		4,611	13,306	25,037	3,613	(192)	46375	6,680	46,375
Apr-76	1976	4		12,211	11,613	13,761	4,760	(192)	42153	9,117	42,153
May-76	1976	5		24,568	3,780	44,197	6,149	(192)	78500	1,808	78,500
Jun-76	1976	6		8,335	492	15,660	2,380	(192)	26674	4,237	26,674
Jul-76	1976	7		3,457	192	42,500	361	(192)	46318	2,455	46,318
Aug-76	1976	8		3,158	460	19,490	334	(192)	23249	2,256	23,249
Sep-76	1976	9		4,049	1,207	36,950	80	(192)	42095	2,131	42,095
Oct-76	1976	10		4,611	5,925	23,810	-	(192)	34154	2,111	34,154
Nov-76	1976	11		4,463	6,727	24,055	955	(192)	36007	1,455	36,007
Dec-76	1976	12		4,611	7,538	37,452	858	(192)	50267	439	50,267
Jan-77	1977	1		4,246	7,578	16,902	858	(192)	29391	5,339	29,391
Feb-77	1977	2		1,850	7,127	31,953	837	(192)	41575	2,992	41,575
Mar-77	1977	3		1,608	7,527	29,480	1,110	(192)	39533	8,698	39,533
Apr-77	1977	4		5,861	491	26,010	4,760	(192)	36930	611	36,930
May-77	1977	5		8,716	443	27,860	6,149	(192)	42975	28,139	42,975
Jun-77	1977	6		3,471	2,723	3,370	2,353	(192)	11724	-	11,724
Jul-77	1977	7		2,846	1,825	10,380	329	(192)	15187	10,814	15,187
Aug-77	1977	8		3,038	416	20,270	288	(192)	23820	8,370	23,820
Sep-77	1977	9		4,006	495	11,460	86	(192)	15855	5,046	15,855
Oct-77	1977	10		5,658	4,595	33,910	3,621	(192)	47592	6,296	47,592
Nov-77	1977	11		6,411	5,815	20,094	4,199	(192)	36326	143	36,326
Dec-77	1977	12		5,199	6,169	23,987	4,294	(192)	39457	2,884	39,457
Jan-78	1978	1		4,611	6,295	27,357	4,294	(192)	42365	17,778	42,365
Feb-78	1978	2		4,165	6,138	24,736	3,495	(192)	38342	13,793	38,342
Mar-78	1978	3		5,730	11,748	32,326	5,884	(192)	55495	24,005	55,495
Apr-78	1978	4		8,782	19,433	52,509	5,950	(192)	86481	10,754	86,481
May-78	1978	5		15,045	18,722	27,456	6,224	(192)	67255	5,418	67,255
Jun-78	1978	6		5,052	1,812	19,863	5,950	(192)	32485	1,022	32,485

10	11	12	13	14	15	16	17	18	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-month UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
0.95	K factor 1	45,000	0.955	2	800000					
9,049	2,776	2,807	-	2,807	28,738	43,370	656,735	641,279	88,081	87,653
3,598	1,098	5,615	-	5,615	14,721	25,031	692,122	674,428	89,078	88,579
3,598	1,098	5,615	-	5,615	3,970	14,280	729,810	710,966	90,155	89,616
3,598	1,098	5,615	-	5,615	1,435	11,745	771,041	750,426	91,355	90,755
3,598	1,098	5,200	-	5,200	4,144	14,040	817,018	794,030	92,715	92,035
5,451	3,335	5,615	757	5,615	12,839	27,239	856,525	836,772	93,902	93,309
9,049	5,622	-	1,286	34,332	22,120	71,123	870,000	863,263	94,309	94,105
25,401	15,818	-	1,376	43,358	39,929	124,506	891,860	880,930	94,976	94,642
28,999	18,106	-	1,314	20,420	56,311	123,836	870,000	880,930	94,309	94,642
34,450	21,440	-	423	-	65,297	121,187	795,252	832,626	92,071	93,190
31,070	9,541	-	-	-	57,886	98,497	745,424	770,338	90,609	91,340
23,548	7,199	-	-	-	40,670	71,417	716,225	730,825	89,766	90,188
9,049	2,776	3,600	-	3,600	28,647	44,072	734,586	725,405	90,294	90,030
3,598	1,098	7,200	-	7,200	15,306	27,202	784,016	759,301	91,738	91,016
3,598	1,098	7,200	-	7,200	7,593	19,488	813,233	798,624	92,603	92,171
3,598	2,223	7,200	657	7,200	4,274	17,295	856,029	834,631	93,887	93,245
3,598	2,223	-	1,184	30,959	5,977	42,757	870,000	863,014	94,309	94,098
5,451	3,335	-	1,277	31,845	18,013	58,644	870,000	870,000	94,309	94,309
9,049	5,622	-	1,322	56,429	26,419	97,519	870,000	870,000	94,309	94,309
25,401	15,818	-	1,118	-	42,255	83,474	859,783	864,892	94,000	94,154
28,999	18,106	-	1,080	-	60,071	107,176	839,113	849,448	93,378	93,689
34,450	21,440	-	-	69,037	124,927	762,863	800,988	91,117	92,248	
31,070	9,541	-	-	58,519	99,130	691,958	727,411	89,073	90,095	
23,548	7,199	-	-	44,730	75,476	644,138	668,048	87,729	88,401	
9,049	2,776	-	-	31,348	43,173	667,537	655,837	88,384	88,056	
3,598	1,098	-	-	15,334	20,030	705,570	686,553	89,461	88,923	
3,598	1,098	-	-	8,330	13,026	731,950	718,760	90,217	89,839	
3,598	1,098	-	-	4,882	9,578	778,838	755,394	91,585	90,901	
3,598	1,098	-	-	7,580	12,276	823,937	801,388	92,922	92,254	
5,451	3,335	-	669	-	14,125	22,911	854,276	839,107	93,834	93,378
9,049	5,622	-	1,269	21,493	22,702	58,866	870,000	862,138	94,309	94,072
25,401	15,818	-	1,316	39,684	36,551	117,454	871,799	870,899	94,364	94,336
28,999	18,106	-	1,463	39,973	50,240	137,319	919,163	895,481	95,811	95,087
34,450	21,440	13,000	1,301	14,354	66,032	136,276	857,000	888,081	93,916	94,864
31,070	19,324	-	-	-	56,729	107,123	768,879	812,939	91,292	92,604
23,548	7,199	-	-	-	43,229	73,975	735,732	752,306	90,327	90,810
9,049	2,776	-	-	30,551	42,376	759,578	747,655	91,021	90,674	
3,598	1,098	-	-	14,415	19,111	804,909	782,243	92,357	91,689	
3,598	2,223	-	477	-	7,424	13,245	854,466	829,688	93,840	93,098
3,598	2,223	3,500	1,236	39,227	5,153	50,201	866,500	860,483	94,202	94,021
3,598	2,223	-	1,301	59,680	7,572	73,073	870,000	868,250	94,309	94,255
5,451	3,335	-	1,269	29,333	14,936	53,055	870,000	870,000	94,309	94,309
9,049	5,622	-	1,179	9,804	26,794	51,269	870,000	870,000	94,309	94,309
25,401	15,818	-	1,212	-	43,757	84,976	865,332	867,666	94,167	94,238
28,999	18,106	-	-	54,482	101,587	794,657	829,995	92,053	93,110	
34,450	10,586	-	-	65,860	110,896	732,534	763,595	90,234	91,144	
31,070	9,541	-	-	56,875	97,486	660,553	696,543	88,188	89,211	
23,548	7,199	-	-	42,812	73,558	631,220	645,886	87,372	87,780	
9,049	2,776	-	-	28,022	39,847	627,639	629,430	87,274	87,323	
663	165	-	-	16,600	17,428	647,673	637,656	87,828	87,551	
663	165	-	-	8,877	9,705	688,674	668,173	88,979	88,403	
552	165	-	-	7,081	7,798	715,606	702,140	89,748	89,364	
663	165	-	-	8,785	9,613	750,559	733,082	90,759	90,253	
663	248	-	-	15,963	16,873	781,916	766,237	91,676	91,217	
6,186	418	-	-	28,162	34,766	784,691	783,304	91,758	91,717	
18,337	1,175	-	-	40,163	59,676	796,130	790,411	92,097	91,928	
26,732	1,345	-	-	51,379	79,456	728,398	762,264	90,114	91,105	
33,802	1,593	-	-	61,388	96,783	657,615	693,006	88,106	89,110	
33,249	1,435	-	-	55,603	90,288	599,518	628,566	86,504	87,305	
27,063	1,083	-	-	38,483	66,629	553,789	576,653	84,885	85,694	
663	418	-	-	27,022	28,102	579,574	566,682	85,819	85,352	
331	165	-	-	15,640	16,136	599,907	589,740	86,515	86,167	
331	165	-	-	8,331	8,827	633,421	616,664	87,432	86,973	
442	165	-	-	4,105	4,712	688,851	661,136	88,984	88,208	
552	165	-	-	5,382	6,099	734,887	711,869	90,303	89,643	
1,215	248	-	-	14,158	15,620	798,768	766,828	92,175	91,239	
4,750	418	968	-	23,547	28,715	867,288	833,028	94,226	93,201	
16,901	2,380	1,278	13,636	37,044	69,961	870,000	868,644	94,309	94,267	
16,569	2,724	880	-	53,964	73,257	830,250	850,125	93,112	93,710	

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Jul-78	1978	7		4,121	-	15,530	2,141	(192)	21599	155	21,599	21,754
Aug-78	1978	8		3,243	0	20,550	2,016	(192)	25616	6,874	25,616	32,490
Sep-78	1978	9		4,089	2,951	48,100	2,149	(192)	57097	16,723	57,097	73,821
Oct-78	1978	10		5,639	5,373	28,340	3,423	(192)	42582	148	42,582	42,730
Nov-78	1978	11		6,306	7,540	36,576	4,680	(192)	54910	18,613	54,910	73,523
Dec-78	1978	12		4,611	8,999	28,876	5,220	(192)	47514	3,921	47,514	51,435
Jan-79	1979	1		4,611	10,569	20,706	6,070	(192)	41764	9,393	41,764	51,157
Feb-79	1979	2		4,165	8,663	37,353	5,056	(192)	55044	10,226	55,044	65,270
Mar-79	1979	3		4,611	10,939	42,597	5,959	(192)	63914	11,553	63,914	75,467
Apr-79	1979	4		14,863	17,077	52,773	5,263	(192)	89784	2,908	89,784	92,692
May-79	1979	5		16,930	11,820	21,695	6,149	(192)	56401	4,637	56,401	61,038
Jun-79	1979	6		4,768	2,653	15,858	2,380	(192)	25466	78	25,466	25,544
Jul-79	1979	7		3,667	2,070	26,782	2,128	(192)	34455	1,676	34,455	36,131
Aug-79	1979	8		3,162	844	34,976	2,132	(192)	40922	5,580	40,922	46,503
Sep-79	1979	9		4,066	624	22,476	2,118	(192)	29092	-	29,092	29,092
Oct-79	1979	10		5,670	6,060	34,354	6,034	(192)	51925	14,649	51,925	66,575
Nov-79	1979	11		9,969	7,448	24,083	5,804	(192)	47111	6,475	47,111	53,586
Dec-79	1979	12		5,218	7,986	30,863	5,936	(192)	49810	1,326	49,810	51,136
Jan-80	1980	1		4,611	9,043	27,606	6,149	(192)	47217	24,267	47,217	71,484
Feb-80	1980	2		4,165	10,956	55,227	5,712	(192)	75868	23,951	75,868	99,819
Mar-80	1980	3		4,611	12,232	37,714	6,307	(192)	60672	8,461	60,672	69,133
Apr-80	1980	4		5,193	23,629	34,356	6,272	(192)	69257	2,586	69,257	71,843
May-80	1980	5		34,843	37,869	62,889	14,361	(192)	149769	15,944	149,769	165,712
Jun-80	1980	6		29,426	6,561	33,359	5,950	(192)	75103	556	75,103	75,659
Jul-80	1980	7		4,611	1,531	20,920	2,142	(192)	29012	1,493	29,012	30,505
Aug-80	1980	8		3,252	-	94,792	1,769	(192)	99621	4,758	99,621	104,379
Sep-80	1980	9		16,902	1,802	(19,452)	2,087	(192)	1146	8,100	1,146	9,247
Oct-80	1980	10		5,597	4,690	29,118	2,368	(192)	41581	17,955	41,581	59,536
Nov-80	1980	11		7,372	9,180	29,281	3,310	(192)	48952	9,913	48,952	58,864
Dec-80	1980	12		4,890	9,619	31,760	3,412	(192)	49488	5,635	49,488	55,123
Jan-81	1981	1		4,611	9,369	32,182	2,608	(192)	48578	8,599	48,578	57,177
Feb-81	1981	2		4,165	8,353	18,614	2,351	(192)	33291	4,629	33,291	37,920
Mar-81	1981	3		4,611	9,359	20,011	2,553	(192)	36342	25,542	36,342	61,884
Apr-81	1981	4		5,651	5,676	22,820	4,760	(192)	38715	7,859	38,715	46,574
May-81	1981	5		12,002	6,785	37,486	6,149	(192)	62229	30,022	62,229	92,251
Jun-81	1981	6		4,768	20	11,294	2,380	(192)	18270	3,537	18,270	21,806
Jul-81	1981	7		3,699	3	24,954	365	(192)	28829	4,225	28,829	33,054
Aug-81	1981	8		3,177	256	13,938	349	(192)	17528	3,831	17,528	21,359
Sep-81	1981	9		4,044	4,255	20,496	-	(192)	28603	12,100	28,603	40,702
Oct-81	1981	10		7,221	7,084	47,040	615	(192)	61768	33,337	61,768	95,105
Nov-81	1981	11		4,667	7,769	32,060	1,650	(192)	45954	5,549	45,954	51,503
Dec-81	1981	12		4,611	7,955	30,054	1,699	(192)	44128	16,750	44,128	60,878
Jan-82	1982	1		4,611	8,530	25,122	1,965	(192)	40036	15,492	40,036	55,528
Feb-82	1982	2		4,165	8,528	41,884	2,015	(192)	56401	9,792	56,401	66,192
Mar-82	1982	3		5,045	14,988	34,867	4,515	(192)	59222	21,433	59,222	80,655
Apr-82	1982	4		11,701	33,288	28,148	8,296	(192)	81240	8,550	81,240	89,789
May-82	1982	5		51,043	48,712	42,927	17,599	(192)	160088	13,753	160,088	173,842
Jun-82	1982	6		42,519	5,190	55,863	5,797	(192)	109177	4,543	109,177	113,720
Jul-82	1982	7		16,028	978	40,136	976	(192)	57925	5,300	57,925	63,225
Aug-82	1982	8		3,245	-	35,472	1,110	(192)	39635	1,632	39,635	41,267
Sep-82	1982	9		4,030	5,128	49,652	732	(192)	59349	45,514	59,349	104,863
Oct-82	1982	10		6,353	13,129	46,078	2,130	(192)	67498	19,706	67,498	87,205
Nov-82	1982	11		5,329	10,730	34,897	2,229	(192)	52992	12,907	52,992	65,899
Dec-82	1982	12		5,670	11,309	37,580	2,362	(192)	56729	16,425	56,729	73,155
Jan-83	1983	1		4,880	11,059	34,902	2,202	(192)	52851	15,797	52,851	68,648
Feb-83	1983	2		17,526	10,853	36,461	2,345	(192)	66992	28,135	66,992	95,127
Mar-83	1983	3		85,541	20,479	51,269	5,855	(192)	162952	24,406	162,952	187,358
Apr-83	1983	4		24,358	23,456	57,366	4,822	(192)	109810	14,427	109,810	124,237
May-83	1983	5		53,132	69,819	71,505	20,456	(192)	214720	29,658	214,720	244,378
Jun-83	1983	6		86,953	65,423	61,757	24,254	(192)	238194	7,384	238,194	245,578
Jul-83	1983	7		19,564	5,430	53,674	5,822	(192)	84297	16,160	84,297	100,456
Aug-83	1983	8		617	4,106	56,822	3,104	(192)	64456	32,703	64,456	97,159
Sep-83	1983	9		554	5,225	39,416	2,518	(192)	47521	17,439	47,521	64,960
Oct-83	1983	10		3,065	40,463	31,350	16,220	(192)	90906	10,019	90,906	100,924
Nov-83	1983	11		8,411	30,903	29,455	12,011	(192)	80587	30,129	80,587	110,716
Dec-83	1983	12		6,554	14,918	32,955	4,521	(192)	58755	43,290	58,755	102,045
Jan-84	1984	1		12,962	11,977	51,467	3,019	(192)	79232	7,548	79,232	86,780
Feb-84	1984	2		19,490	11,451	27,148	3,236	(192)	61132	11,040	61,132	72,172
Mar-84	1984	3		37,237	18,065	56,735	5,687	(192)	117532	14,113	117,532	131,645

10	11	12	13 0.95	14 K factor 1	15 45,000	16 Evap Factor 0.955	17 2	18 800000	19	20
Jordan River Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjust- ment (acre-ft)	Jordan River Spill Calcula- tion (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-mont UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
36,674	3,226	-	-	65,432	105,332	746,673	788,461	90,646	91,879	
37,999	1,435	-	-	57,495	96,929	682,234	714,453	88,796	89,721	
24,081	1,083	-	-	40,987	66,150	689,904	686,069	89,014	88,905	
14,139	418	-	-	29,115	43,672	688,962	689,433	88,987	89,001	
3,645	1,098	-	-	16,855	21,598	740,888	714,925	90,477	89,732	
3,645	1,098	-	-	6,768	11,511	780,811	760,849	91,643	91,060	
3,645	1,098	-	-	1,969	6,712	825,257	803,034	92,962	92,303	
3,645	2,223	886	10,737	3,921	20,527	870,000	847,628	94,309	93,635	
5,413	3,335	1,300	55,686	11,033	75,467	870,000	870,000	94,309	94,309	
9,058	5,622	1,316	53,244	24,768	92,692	870,000	870,000	94,309	94,309	
25,296	15,818	956	-	41,280	82,394	848,644	859,322	93,665	93,987	
29,052	18,106	-	-	53,894	101,052	773,137	810,890	91,416	92,541	
34,464	10,586	-	-	64,822	109,872	699,395	736,266	89,285	90,351	
31,151	9,541	-	-	58,479	99,172	646,726	673,061	87,801	88,543	
23,529	7,199	-	-	42,205	72,932	602,886	624,806	86,596	87,199	
8,727	2,776	-	-	29,221	40,723	628,738	615,812	87,304	86,950	
552	106	-	-	14,174	14,831	667,492	648,115	88,383	87,843	
442	106	-	-	7,667	8,214	710,414	688,953	89,600	88,991	
773	211	-	-	3,851	4,835	777,063	743,738	91,532	90,566	
8,064	2,428	642	-	6,046	16,538	860,344	818,703	94,017	92,775	
15,907	9,619	9,000	1,144	28,510	14,441	68,477	861,000	860,672	94,036	94,027
17,232	10,261	2,000	1,162	9,361	27,989	64,843	868,000	864,500	94,248	94,142
25,186	15,177	-	1,428	47,444	42,828	130,635	903,077	885,538	95,318	94,783
25,738	15,605	-	1,301	15,279	52,114	108,736	870,000	886,538	94,309	94,814
23,197	14,108	-	530	-	67,023	104,328	796,177	833,088	92,098	93,204
23,087	6,861	-	698	-	58,269	88,217	812,339	804,258	92,577	92,337
14,802	8,978	-	-	41,921	65,701	755,884	784,112	90,914	91,745	
8,948	2,639	-	-	27,856	39,442	775,978	765,931	91,500	91,207	
3,598	1,098	-	-	15,802	20,497	814,345	795,162	92,636	92,068	
3,598	2,223	-	548	-	10,321	16,142	853,326	833,835	93,806	93,221
3,598	2,223	5,000	1,153	33,859	5,823	45,503	865,000	859,163	94,157	93,981
3,598	2,223	-	1,052	23,203	3,897	32,920	870,000	867,500	94,309	94,233
5,451	3,335	-	1,282	38,687	14,410	61,884	870,000	870,000	94,309	94,309
9,049	5,622	-	1,116	5,409	26,494	46,574	870,000	870,000	94,309	94,309
25,401	15,818	-	1,279	12,304	38,728	92,251	870,000	870,000	94,309	94,309
28,999	18,106	-	-	45,333	92,438	799,368	834,684	92,193	93,251	
34,450	10,586	-	-	58,036	103,072	729,351	764,360	90,141	91,167	
31,070	9,541	-	-	56,386	96,997	653,712	691,532	87,997	89,069	
23,548	7,199	-	-	40,338	71,084	623,330	638,521	87,156	87,576	
9,049	2,776	-	-	24,762	36,587	681,849	652,589	88,785	87,970	
3,598	1,098	-	-	13,566	18,262	715,089	698,469	89,733	89,259	
3,598	1,098	-	-	8,070	12,765	763,202	739,146	91,127	90,430	
3,598	1,098	-	-	3,626	8,322	810,408	786,805	92,520	91,823	
3,598	1,098	-	716	-	5,080	9,776	866,824	838,616	94,212	93,366
5,451	1,647	6,000	1,305	61,611	14,770	83,479	864,000	865,412	94,127	94,169
9,049	2,776	-	1,307	48,518	23,447	83,789	870,000	867,000	94,309	94,218
25,401	15,818	-	1,449	47,846	40,980	130,044	913,797	891,899	95,646	94,977
28,999	18,106	-	1,392	35,711	54,424	137,240	890,278	902,037	94,928	95,287
34,450	21,440	-	1,059	-	61,646	117,536	835,967	863,122	93,284	94,106
31,070	19,324	-	-	-	56,570	106,964	770,270	803,118	91,333	92,308
23,548	7,199	-	-	-	38,887	69,633	805,500	787,885	92,374	91,853
9,049	5,622	-	797	-	22,569	37,240	855,465	830,482	93,870	93,122
3,598	2,223	-	1,271	33,515	12,027	51,364	870,000	862,732	94,309	94,089
3,598	2,223	-	1,301	60,203	7,130	73,155	870,000	870,000	94,309	94,309
3,598	2,223	-	1,295	57,723	5,104	68,648	870,000	870,000	94,309	94,309
3,598	1,098	-	1,333	69,324	5,629	79,649	885,479	877,739	94,781	94,545
5,451	1,647	-	1,518	86,238	12,144	105,480	967,356	926,417	97,257	96,019
9,049	2,776	-	1,562	81,107	20,898	113,830	977,763	972,560	97,505	97,381
25,401	15,818	-	1,979	80,435	37,712	159,366	1,062,775	1,020,269	99,556	98,530
28,999	18,106	-	2,226	85,361	55,223	187,689	1,120,664	1,091,720	100,997	100,276
34,450	21,440	-	1,936	63,172	68,240	187,302	1,033,818	1,077,241	98,850	99,924
31,070	19,324	-	1,565	45,823	64,193	160,410	970,567	1,002,192	97,334	98,092
23,548	14,579	-	1,437	47,379	43,766	129,272	906,254	938,410	95,415	96,374
9,049	5,622	-	1,426	73,022	30,298	117,991	889,187	897,721	94,894	95,155
3,598	2,223	-	1,430	79,250	17,521	102,592	897,312	893,250	95,142	95,018
3,598	2,223	-	1,429	82,012	7,723	95,556	903,801	900,556	95,340	95,241
3,598	2,223	-	1,405	80,580	1,442	87,843	902,739	903,270	95,308	95,324
3,598	1,098	-	1,360	70,852	2,048	77,595	897,316	900,027	95,142	95,225
5,451	1,647	-	1,488	84,366	7,799	99,263	929,698	913,507	96,137	95,639

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total Inflows PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Apr-84	1984	4		60,510	53,849	42,519	14,010	(192)	170,696	27,239	170,696	197,934
May-84	1984	5		76,040	114,047	52,881	32,727	(192)	275,503	6,790	275,503	282,293
Jun-84	1984	6		59,995	36,666	52,040	14,646	(192)	163,154	30,663	163,154	193,817
Jul-84	1984	7		20,398	3,102	55,201	5,543	(192)	84,053	21,280	84,053	105,333
Aug-84	1984	8		610	3,840	62,220	3,587	(192)	70,065	19,028	70,065	89,093
Sep-84	1984	9		549	2,800	51,198	2,157	(192)	56,511	12,640	56,511	69,151
Oct-84	1984	10		1,077	16,984	47,063	3,501	(192)	68,433	23,458	68,433	91,890
Nov-84	1984	11		8,548	15,861	37,324	4,406	(192)	65,946	13,580	65,946	79,526
Dec-84	1984	12		5,252	13,872	51,424	3,558	(192)	73,914	10,453	73,914	84,366
Jan-85	1985	1		5,125	12,757	37,787	3,051	(192)	58,527	14,775	58,527	73,302
Feb-85	1985	2		8,572	8,075	37,924	1,250	(192)	55,629	11,317	55,629	66,946
Mar-85	1985	3		19,964	14,156	57,095	3,355	(192)	94,378	21,298	94,378	115,676
Apr-85	1985	4		50,783	33,492	73,383	6,031	(192)	163,496	3,164	163,496	166,661
May-85	1985	5		66,626	29,974	58,699	11,619	(192)	166,726	18,824	166,726	185,550
Jun-85	1985	6		15,726	10,290	22,200	3,166	(192)	51,189	14,487	51,189	65,675
Jul-85	1985	7		1,838	3,855	55,628	929	(192)	62,057	11,446	62,057	73,504
Aug-85	1985	8		569	3,090	35,898	1,089	(192)	40,454	469	40,454	40,923
Sep-85	1985	9		466	4,289	25,110	812	(192)	30,485	12,854	30,485	43,339
Oct-85	1985	10		6,012	10,815	43,065	1,797	(192)	61,497	16,517	61,497	78,014
Nov-85	1985	11		7,356	11,059	25,065	2,717	(192)	46,004	24,380	46,004	70,385
Dec-85	1985	12		7,215	10,240	46,043	2,253	(192)	65,558	17,139	65,558	82,697
Jan-86	1986	1		5,842	10,133	39,117	2,203	(192)	57,102	9,902	57,102	67,005
Feb-86	1986	2		15,376	18,104	33,478	5,928	(192)	72,694	23,577	72,694	96,271
Mar-86	1986	3		96,870	22,613	49,703	6,883	(192)	175,876	24,101	175,876	199,977
Apr-86	1986	4		54,215	46,811	61,501	10,680	(192)	173,014	30,391	173,014	203,406
May-86	1986	5		70,115	46,692	72,348	14,005	(192)	20,2968	15,675	20,2968	218,643
Jun-86	1986	6		76,919	2,822	49,449	3,802	(192)	132,799	2,423	132,799	135,223
Jul-86	1986	7		19,875	2,148	39,135	1,105	(192)	62,071	15,384	62,071	77,455
Aug-86	1986	8		608	1,077	52,418	1,125	(192)	55,035	12,567	55,035	67,602
Sep-86	1986	9		551	2,268	1,498	732	(192)	4,857	20,490	4,857	25,347
Oct-86	1986	10		11,867	11,232	45,451	1,479	(192)	69,837	7,080	69,837	76,917
Nov-86	1986	11		7,201	10,562	38,521	2,823	(192)	58,915	11,317	58,915	70,232
Dec-86	1986	12		4,658	9,789	37,276	2,406	(192)	53,936	2,829	53,936	56,765
Jan-87	1987	1		5,331	9,991	32,148	2,421	(192)	49,699	12,889	49,699	62,588
Feb-87	1987	2		18,226	9,546	23,375	2,643	(192)	53,597	15,797	53,597	69,394
Mar-87	1987	3		15,180	11,479	37,566	3,167	(192)	67,200	12,496	67,200	79,696
Apr-87	1987	4		20,782	3,961	23,166	4,738	(192)	52,454	3,144	52,454	55,598
May-87	1987	5		31,760	1,426	25,058	6,149	(192)	64,200	14,775	64,200	78,975
Jun-87	1987	6		5,434	20	24,496	2,380	(192)	32,137	1,726	32,137	33,863
Jul-87	1987	7		5,078	310	19,564	344	(192)	25,104	11,913	25,104	37,017
Aug-87	1987	8		3,246	833	25,832	290	(192)	30,009	12,078	30,009	42,086
Sep-87	1987	9		4,111	1,600	26,518	195	(192)	32,231	739	32,231	32,970
Oct-87	1987	10		4,611	5,696	45,380	0	(192)	55,495	9,719	55,495	65,213
Nov-87	1987	11		4,260	8,190	36,145	1,407	(192)	49,810	12,882	49,810	62,692
Dec-87	1987	12		2,167	7,136	20,868	1,372	(192)	31,351	12,315	31,351	43,665
Jan-88	1988	1		1,692	7,391	35,234	1,426	(192)	45,550	10,181	45,550	55,731
Feb-88	1988	2		1,546	8,026	32,326	1,496	(192)	43,202	1,378	43,202	44,580
Mar-88	1988	3		1,629	9,216	18,274	2,024	(192)	30,951	5,807	30,951	36,758
Apr-88	1988	4		5,008	6,454	52,572	4,760	(192)	68,602	12,056	68,602	80,658
May-88	1988	5		10,153	3,780	18,492	6,149	(192)	38,381	9,780	38,381	48,161
Jun-88	1988	6		4,410	555	10,390	2,380	(192)	17,543	2,409	17,543	19,952
Jul-88	1988	7		3,292	1,459	4,122	379	(192)	9,060	2,961	9,060	12,021
Aug-88	1988	8		3,239	1,223	8,260	302	(192)	12,832	4,285	12,832	17,117
Sep-88	1988	9		4,116	280	59,508	129	(192)	63,841	4,551	63,841	68,392
Oct-88	1988	10		11,139	2,916	(11,776)	-	(192)	2087	4,559	2,087	6,645
Nov-88	1988	11		4,463	7,009	18,246	988	(192)	30,514	17,374	30,514	47,887
Dec-88	1988	12		4,611	7,640	17,169	1,105	(192)	30,333	10,043	30,333	40,376
Jan-89	1989	1		2,401	7,809	13,591	1,337	(192)	24,946	5,397	24,946	30,343
Feb-89	1989	2		1,495	8,534	25,166	1,792	(192)	36,795	17,352	36,795	54,146
Mar-89	1989	3		1,641	11,323	48,221	2,311	(192)	63,304	14,402	63,304	77,706
Apr-89	1989	4		5,903	9,543	14,623	4,760	(192)	34,636	10,113	34,636	44,749
May-89	1989	5		14,053	5,055	(9,209)	6,149	(192)	15,855	5,108	15,855	20,964
Jun-89	1989	6		4,768	1,009	9,630	2,380	(192)	17,595	7,278	17,595	24,873
Jul-89	1989	7		11,674	1,092	(13,070)	328	(192)	-169	3,606	(169)	3,437
Aug-89	1989	8		3,245	1,319	4,270	271	(192)	8912	10,605	8,912	19,517
Sep-89	1989	9		4,043	2,529	101,532	0	(192)	107,911	11,944	107,911	119,855
Oct-89	1989	10		3,905	5,827	38,512	1,858	(192)	49,910	7,735	49,910	57,645
Nov-89	1989	11		4,123	7,202	20,433	2,779	(192)	34,345	8,106	34,345	42,451
Dec-89	1989	12		3,791	8,118	20,019	3,077	(192)	34,813	1,013	34,813	35,826

10	11	12	13	14	15	16	17	18	19	20
Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-month UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
			0.95	K factor 1	45,000	0.955	2	800000		
9,049	2,776		1,697	89,137	21,193	122,155	1,005,477	967,587	98,164	97,150
25,401	15,818		2,169	92,130	41,170	174,519	1,113,250	1,059,364	100,810	99,487
28,999	18,106		2,221	85,062	56,721	188,888	1,118,179	1,115,715	100,934	100,872
34,450	21,440		1,948	63,893	69,965	189,748	1,033,765	1,075,972	98,849	99,892
31,070	19,324		1,534	43,954	62,304	156,652	966,206	999,986	97,230	98,039
23,548	14,579		1,437	47,357	43,410	128,894	906,464	936,335	95,422	96,326
9,049	5,622		1,402	71,526	27,946	114,142	884,212	895,338	94,743	95,082
3,598	2,223		1,329	72,686	15,231	93,738	870,000	877,106	94,309	94,526
3,598	2,223		1,317	72,391	6,154	84,366	870,000	870,000	94,309	94,309
3,598	2,223		1,301	65,080	2,402	73,302	870,000	870,000	94,309	94,309
3,598	1,098		1,294	58,423	3,828	66,946	870,000	870,000	94,309	94,309
5,451	1,647		1,386	78,130	9,982	95,210	890,465	880,233	94,933	94,621
9,049	2,776		1,504	77,656	25,083	114,564	942,562	916,514	96,534	95,734
25,401	15,818		1,589	56,451	46,018	143,688	984,424	963,493	97,663	97,098
28,999	18,106		1,449	39,136	58,604	144,844	905,255	944,839	95,385	96,524
34,450	21,440		1,281	-	68,243	124,133	854,625	879,940	93,845	94,615
31,070	19,324		-	-	58,553	108,947	786,602	820,613	91,815	92,830
23,548	7,199		-	-	43,111	73,857	756,083	771,343	90,920	91,367
9,049	2,776		-	-	29,377	41,202	792,896	774,490	92,001	91,460
3,598	1,098		344	-	15,888	20,584	842,697	817,796	93,486	92,744
3,598	2,223		1,277	42,505	7,068	55,394	870,000	856,348	94,309	93,897
3,598	2,223		1,293	58,857	2,327	67,005	870,000	870,000	94,309	94,309
3,598	1,098		1,334	69,411	5,254	79,361	886,910	878,455	94,825	94,567
5,451	1,647		1,562	88,937	12,754	108,788	978,100	932,505	97,513	96,169
9,049	2,776		1,954	104,425	25,144	141,394	1,040,112	1,009,106	99,003	98,258
25,401	15,818		2,060	85,413	40,262	166,894	1,091,861	1,065,987	100,277	99,640
28,999	18,106		1,976	70,500	59,215	176,820	1,050,264	1,071,063	99,250	99,764
34,450	21,440		1,532	38,311	64,690	158,891	968,828	1,009,546	97,292	98,271
31,070	19,324		1,409	36,249	59,310	145,953	890,476	929,652	94,934	96,113
23,548	14,579		793	-	38,985	77,112	838,711	864,594	93,366	94,150
9,049	5,622		1,104	4,505	26,452	45,628	870,000	854,356	94,309	93,838
3,598	2,223		1,297	48,424	15,987	70,232	870,000	870,000	94,309	94,309
3,598	2,223		1,279	41,937	9,006	56,765	870,000	870,000	94,309	94,309
3,598	2,223		1,287	53,315	3,452	62,588	870,000	870,000	94,309	94,309
3,598	1,098		1,297	59,144	5,554	69,394	870,000	870,000	94,309	94,309
5,451	1,647		1,308	59,614	12,984	79,696	870,000	870,000	94,309	94,309
9,049	2,776		1,269	17,429	26,344	55,598	870,000	870,000	94,309	94,309
25,401	15,818		1,194	-	43,081	84,300	864,675	867,337	94,147	94,228
28,999	18,106		57	-	50,724	97,829	800,708	832,691	92,232	93,190
34,450	21,440		-	-	56,739	112,629	725,096	762,902	90,019	91,126
31,070	9,541		-	-	48,500	89,112	678,070	701,583	88,679	89,349
23,548	7,199		-	-	37,686	68,433	642,608	660,339	87,686	88,182
9,049	2,776		-	-	30,216	42,041	665,780	654,194	88,335	88,010
3,598	428		-	-	15,396	19,422	709,051	687,415	89,561	88,948
3,598	211		-	-	7,413	11,222	741,494	725,272	90,495	90,028
3,598	211		-	-	4,465	8,275	788,950	765,222	91,884	91,190
3,598	211		-	-	6,216	10,025	823,506	806,228	92,909	92,397
5,451	428		176	-	16,711	22,590	837,674	830,590	93,335	93,122
5,634	2,565	14,000	1,226	24,792	29,340	62,332	856,000	846,837	93,886	93,611
18,668	8,551		783	-	42,141	69,360	834,801	845,401	93,249	93,567
23,970	11,116		-	-	57,216	92,302	762,451	798,626	91,105	92,177
26,180	6,016		-	-	65,254	97,450	677,022	719,736	88,650	88,877
25,075	5,699		-	-	57,005	87,779	606,359	641,690	86,691	87,671
19,331	4,433		-	-	39,463	63,227	611,524	608,942	86,833	86,762
7,291	1,689		-	-	30,268	39,247	578,922	595,223	85,795	86,314
3,598	211		-	-	16,319	20,128	606,681	592,802	86,700	86,248
3,598	106		-	-	6,555	10,259	636,799	621,740	87,524	87,112
3,598	106		-	-	1,463	5,166	661,975	649,387	88,228	87,876
3,598	106		-	-	3,862	7,565	708,556	685,265	89,547	88,887
5,451	211		-	-	13,398	19,060	767,202	737,879	91,243	90,395
7,843	1,794		-	-	26,722	36,359	775,591	771,396	91,489	91,366
22,314	5,277		-	-	43,395	70,986	725,569	750,580	90,032	90,761
24,081	5,699		-	-	55,458	85,238	665,203	695,386	88,319	89,176
29,273	6,861		-	-	64,242	100,376	568,264	616,734	85,409	86,864
27,174	6,439		-	-	54,309	87,922	499,860	534,062	82,847	84,128
15,796	3,694		-	-	39,032	58,522	561,193	530,526	85,153	84,000
3,203	739		-	-	28,056	31,997	586,840	574,016	86,082	85,617
1,176	514		-	-	15,209	16,899	612,392	599,616	86,857	86,469
1,176	386		-	-	7,880	9,442	638,777	625,585	87,579	87,218

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Jan-90	1990	1		3,648	8,114	36,951	3,141	(192)	51661	10,145	51,661	61,806
Feb-90	1990	2		1,892	7,955	29,702	3,302	(192)	42659	13,082	42,659	55,741
Mar-90	1990	3		3,260	10,320	20,304	3,996	(192)	37688	13,367	37,688	51,055
Apr-90	1990	4		4,879	7,422	(13,834)	4,760	(192)	3035	10,598	3,035	13,633
May-90	1990	5		15,321	2,773	29,243	6,149	(192)	53292	9,287	53,292	62,580
Jun-90	1990	6		4,768	-	19,752	2,380	(192)	26708	14,016	26,708	40,724
Jul-90	1990	7		4,090	2,584	9,398	1,693	(192)	17573	2,865	17,573	20,438
Aug-90	1990	8		3,237	1,379	7,146	1,717	(192)	13286	3,851	13,286	17,138
Sep-90	1990	9		4,115	861	23,755	1,761	(192)	30300	5,920	30,300	36,220
Oct-90	1990	10		4,611	5,563	27,385	621	(192)	37988	11,032	37,988	49,020
Nov-90	1990	11		4,463	6,382	16,795	1,582	(192)	29029	8,891	29,029	37,919
Dec-90	1990	12		4,611	6,562	10,533	1,342	(192)	22855	10,010	22,855	32,866
Jan-91	1991	1		4,611	6,964	13,304	1,540	(192)	26227	8,512	26,227	34,739
Feb-91	1991	2		2,404	8,431	32,578	2,165	(192)	45385	5,861	45,385	51,245
Mar-91	1991	3		1,620	8,680	25,008	2,057	(192)	37172	11,987	37,172	49,159
Apr-91	1991	4		5,002	4,460	9,388	4,760	(192)	23417	16,152	23,417	39,569
May-91	1991	5		9,221	5,754	27,995	6,149	(192)	48927	16,297	48,927	65,223
Jun-91	1991	6		5,009	2,680	27,371	2,083	(192)	36951	7,140	36,951	44,091
Jul-91	1991	7		4,611	376	(3,136)	429	(192)	2088	2,022	2,088	4,110
Aug-91	1991	8		3,033	1,096	13,669	373	(192)	17979	12,554	17,979	30,533
Sep-91	1991	9		4,018	2,018	28,593	477	(192)	34913	14,929	34,913	49,841
Oct-91	1991	10		4,611	5,295	31,513	1,231	(192)	42458	11,136	42,458	53,594
Nov-91	1991	11		4,463	6,430	17,152	1,983	(192)	29836	16,165	29,836	46,001
Dec-91	1991	12		4,611	7,059	25,347	2,198	(192)	39023	4,277	39,023	43,300
Jan-92	1992	1		4,611	7,399	21,847	2,284	(192)	35949	5,528	35,949	41,477
Feb-92	1992	2		4,165	7,702	16,667	2,486	(192)	30828	15,197	30,828	46,025
Mar-92	1992	3		4,029	7,199	19,157	2,354	(192)	32547	9,164	32,547	41,711
Apr-92	1992	4		5,043	7,641	4,792	4,754	(192)	22038	2,603	22,038	24,641
May-92	1992	5		8,839	1,698	11,834	5,805	(192)	27983	10,708	27,983	38,691
Jun-92	1992	6		4,063	746	29,180	2,380	(192)	36177	5,795	36,177	41,972
Jul-92	1992	7		3,952	0	(1,894)	1,086	(192)	2951	7,188	2,951	10,139
Aug-92	1992	8		9,476	847	(11,729)	1,090	(192)	-508	7,778	(508)	7,270
Sep-92	1992	9		3,884	958	57,567	1,191	(192)	63408	5,186	63,408	68,594
Oct-92	1992	10		4,611	5,073	7,646	4,405	(192)	21543	17,998	21,543	39,541
Nov-92	1992	11		3,949	5,579	23,372	4,764	(192)	37472	12,306	37,472	49,778
Dec-92	1992	12		2,155	6,338	14,205	4,926	(192)	27432	11,963	27,432	39,394
Jan-93	1993	1		3,138	6,841	24,912	5,136	(192)	39834	28,375	39,834	68,209
Feb-93	1993	2		2,364	7,561	28,890	4,489	(192)	43111	20,472	43,111	63,583
Mar-93	1993	3		5,706	13,260	48,542	6,149	(192)	73465	18,800	73,465	92,265
Apr-93	1993	4		9,741	14,841	13,908	5,072	(192)	43370	5,789	43,370	49,159
May-93	1993	5		16,391	30,431	46,728	10,668	(192)	104026	21,108	104,026	125,133
Jun-93	1993	6		4,954	2,448	41,669	4,954	(192)	53833	11,631	53,833	65,465
Jul-93	1993	7		4,152	1,078	22,006	2,141	(192)	29185	7,393	29,185	36,578
Aug-93	1993	8		3,251	0	29,178	2,121	(192)	34358	6,884	34,358	41,242
Sep-93	1993	9		4,066	490	33,370	2,065	(192)	39799	6,259	39,799	46,058
Oct-93	1993	10		4,611	6,150	32,113	572	(192)	43254	16,613	43,254	59,867
Nov-93	1993	11		4,463	6,709	31,906	1,535	(192)	44420	4,458	44,420	48,879
Dec-93	1993	12		4,611	7,382	21,087	1,514	(192)	34403	7,991	34,403	42,394
Jan-94	1994	1		4,611	7,642	22,827	1,583	(192)	36470	6,167	36,470	42,637
Feb-94	1994	2		3,838	7,662	21,620	1,729	(192)	34656	14,187	34,656	48,842
Mar-94	1994	3		2,710	9,680	19,034	2,397	(192)	33628	8,349	33,628	41,978
Apr-94	1994	4		5,755	5,270	21,540	4,760	(192)	37134	17,885	37,134	55,019
May-94	1994	5		10,059	1,082	25,311	6,149	(192)	42408	8,360	42,408	50,768
Jun-94	1994	6		4,491	885	17,812	2,380	(192)	25375	529	25,375	25,904
Jul-94	1994	7		3,369	1,122	20,246	366	(192)	24910	592	24,910	25,502
Aug-94	1994	8		3,051	1,586	29,344	462	(192)	34250	8,395	34,250	42,645
Sep-94	1994	9		3,913	1,857	18,121	509	(192)	24208	4,738	24,208	28,947
Oct-94	1994	10		5,179	7,124	27,514	2,544	(192)	42168	24,348	42,168	66,516
Nov-94	1994	11		4,406	5,745	22,259	3,480	(192)	35698	17,106	35,698	52,804
Dec-94	1994	12		4,071	5,757	16,925	3,576	(192)	30137	10,328	30,137	40,465
Jan-95	1995	1		3,812	5,848	34,966	3,629	(192)	48063	19,370	48,063	67,434
Feb-95	1995	2		3,699	6,101	30,435	3,361	(192)	43404	6,657	43,404	50,060
Mar-95	1995	3		5,058	10,964	17,881	5,529	(192)	39239	17,119	39,239	56,359
Apr-95	1995	4		4,904	14,799	32,302	4,760	(192)	56573	12,829	56,573	69,402
May-95	1995	5		14,563	54,181	54,021	14,156	(192)	136728	35,356	136,728	172,085
Jun-95	1995	6		4,697	40,115	40,382	12,943	(192)	97945	17,476	97,945	115,421
Jul-95	1995	7		8,075	3,701	61,601	3,227	(192)	76413	7,083	76,413	83,496
Aug-95	1995	8		3,215	2,078	31,799	2,100	(192)	38999	4,134	38,999	43,133
Sep-95	1995	9		934	389	23,799	2,096	(192)	27026	3,909	27,026	30,935

10	11	12	13	14	15	16	17	18	19	20
Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Evap Factor 0.955		800000		
				1	45,000	0.955	2			
261	128	-	-	-	3,833	4,223	696,360	667,569	89,199	88,389
261	128	-	-	-	5,679	6,068	746,033	721,197	90,627	89,913
392	128	6,000	-	6,000	14,713	21,234	775,855	760,944	91,497	91,062
9,589	4,917	-	-	-	29,563	44,069	745,419	760,637	90,609	91,053
30,759	13,044	-	-	-	41,824	85,626	722,372	733,895	89,941	90,275
35,059	14,550	-	-	-	53,684	103,292	659,803	691,088	88,167	89,054
36,851	9,074	-	-	-	61,115	107,040	573,201	616,502	85,588	86,878
34,368	8,828	-	-	-	53,333	96,529	493,810	533,506	82,611	84,099
28,226	3,969	-	-	-	39,447	71,642	458,389	476,099	81,215	81,913
3,288	-	-	-	-	24,302	27,590	479,818	469,104	82,066	81,641
860	3,245	-	-	-	13,846	17,951	499,786	489,802	82,844	82,455
860	3,245	-	-	-	5,670	9,775	522,876	511,331	83,725	83,285
1,229	3,245	-	-	-	3,465	7,939	549,676	536,276	84,732	84,229
3,073	3,245	-	-	-	6,339	12,657	588,264	568,970	86,134	85,433
2,827	4,868	-	-	-	15,081	22,776	614,648	601,456	86,918	86,526
1,493	-	-	-	-	24,003	25,496	628,721	621,685	87,303	87,111
24,202	-	-	-	-	36,268	60,470	633,474	631,098	87,433	87,368
28,253	-	-	-	-	43,976	72,229	605,337	619,406	86,664	87,048
37,116	17,499	-	-	-	56,831	111,446	498,000	551,668	82,774	84,719
40,434	9,598	-	-	-	50,723	100,756	427,777	462,889	79,975	81,374
28,893	-	-	-	-	31,187	60,080	417,539	422,658	79,543	79,759
12,167	4,216	-	-	-	22,473	38,855	432,277	424,908	80,159	79,851
838	-	-	-	-	12,759	13,597	464,682	448,479	81,470	80,814
838	-	-	-	-	5,317	6,155	501,827	483,254	82,923	82,197
-	-	-	-	-	1,782	1,782	541,523	521,675	84,426	83,674
-	-	-	-	-	5,375	5,375	582,172	561,848	85,913	85,169
-	-	-	-	-	14,700	14,700	609,183	595,678	86,769	86,341
14,998	-	-	-	-	27,621	42,619	591,205	600,194	86,240	86,504
32,962	-	-	-	-	45,504	78,466	551,430	571,318	84,798	85,519
37,571	-	-	-	-	53,718	91,289	502,113	526,772	82,934	83,866
48,734	-	-	-	-	56,432	105,166	407,086	454,600	79,102	81,018
30,467	-	-	-	-	49,858	80,325	334,031	370,559	75,888	77,495
6,058	-	-	-	-	34,968	41,026	361,599	347,815	77,135	76,512
1,939	-	-	-	-	24,248	26,187	374,953	368,276	77,722	77,428
437	157	-	-	-	12,123	12,717	412,014	393,484	79,310	78,516
146	-	-	-	-	5,933	6,079	445,329	428,672	80,687	79,998
146	-	-	-	-	2,504	2,650	510,888	478,109	83,275	81,981
437	157	-	-	-	4,308	4,902	569,570	540,229	85,456	84,366
291	157	-	-	-	9,725	10,173	651,662	610,616	87,939	86,698
18,068	314	-	-	-	19,526	37,908	662,913	657,287	88,254	88,097
21,711	1,045	-	-	-	39,121	61,878	726,169	694,541	90,050	89,152
29,142	621	-	-	-	51,025	80,788	710,846	718,507	89,612	89,831
36,428	2,923	-	-	-	58,408	97,759	649,664	680,255	87,883	88,748
37,302	5,572	-	-	-	54,204	97,077	593,828	621,746	86,335	87,109
28,441	-	-	-	-	39,026	67,467	572,419	583,124	85,560	85,947
8,858	4,210	-	-	-	26,624	39,691	592,594	582,507	86,290	85,925
2,813	2,510	-	-	-	11,949	17,272	624,201	608,398	87,180	86,735
856	837	-	-	-	7,493	9,186	657,409	640,805	88,100	87,640
245	279	-	-	-	5,539	6,063	693,983	675,696	89,131	88,615
122	2,900	-	-	-	6,242	9,264	733,561	713,772	90,264	89,697
-	4,352	-	-	-	14,367	18,719	756,820	745,191	90,941	90,603
9,949	-	9,000	-	9,000	27,068	46,017	765,822	761,321	91,203	91,072
25,680	643	-	-	-	44,348	70,671	745,920	755,871	90,624	90,914
28,812	5,219	-	-	-	57,986	92,017	679,807	712,863	88,728	89,676
46,225	5,750	-	-	-	65,811	117,786	587,522	633,665	86,107	87,417
41,161	8,872	-	-	-	60,166	110,200	519,968	553,745	83,616	84,862
22,256	5,871	-	-	-	40,858	68,986	479,929	499,948	82,071	82,843
3,289	2,610	-	-	-	25,211	31,110	515,335	497,632	83,442	82,756
366	227	-	-	-	13,746	14,339	553,800	534,567	84,885	84,164
366	227	-	-	-	6,620	7,213	587,052	570,426	86,090	85,487
975	679	-	-	-	6,920	8,574	645,911	616,481	87,778	86,934
853	679	-	-	-	7,405	8,937	687,034	666,472	88,932	88,355
487	453	-	-	-	17,057	17,997	725,396	706,215	90,028	89,480
13,143	11,983	-	-	-	29,232	54,358	740,440	732,918	90,464	90,246
21,139	-	2,000	976	2,000	42,189	65,328	847,197	793,818	93,621	92,043
32,774	38,848	-	971	-	51,112	122,734	839,884	843,540	93,402	93,512
46,054	25,804	-	61	-	63,257	135,115	788,265	814,074	91,864	92,633
37,521	-	-	-	-	62,069	99,590	731,808	760,036	90,213	91,038
18,641	9,495	-	-	-	45,087	73,223	689,520	710,664	89,003	89,608

MONTHLY SUMMARY OF UTAH LAKE WATER BALANCE ELEMENTS

Column No.: 1 2 3 4 5 6 7 8 9

Date	Water Year	Month	days	Provo Inflow (acre-ft)	Spanish Fork Inflow (acre-ft)	Local Surface and Sub-surface (acre-ft)	Hobble Creek (includes ULS water) (acre-ft)	Change in Return Flows (acre-ft)	Total Inflow (acre-ft)	Precip Vol (acre-ft)	Total PROSIM (acre-ft)	Total Inflows plus Precip (acre-ft)
Oct-95	1995	10		8,713	7,927	41,031	186	(192)	57664	4,005	57,664	61,669
Nov-95	1995	11		7,143	8,498	24,682	1,917	(192)	42047	5,081	42,047	47,128
Dec-95	1995	12		5,855	9,098	18,001	1,867	(192)	34628	17,108	34,628	51,736
Jan-96	1996	1		9,806	9,464	(17,366)	2,024	(192)	3736	21,449	3,736	25,185
Feb-96	1996	2		4,165	10,286	32,241	2,516	(192)	49016	18,093	49,016	67,108
Mar-96	1996	3		8,818	14,115	24,242	3,949	(192)	50932	18,354	50,932	69,286
Apr-96	1996	4		16,338	21,827	26,642	4,760	(192)	69374	13,392	69,374	82,766
May-96	1996	5		35,174	21,791	35,885	9,443	(192)	102101	12,166	102,101	114,266
Jun-96	1996	6		53,405	270	57,087	2,380	(192)	112950	3,930	112,950	116,879
Jul-96	1996	7		10,005	-	19,380	560	(192)	29752	3,927	29,752	33,679
Aug-96	1996	8		3,160	336	31,273	584	(192)	35160	461	35,160	35,621
Sep-96	1996	9		3,996	591	28,855	369	(192)	33619	11,826	33,619	45,445
Oct-96	1996	10		5,587	7,527	20,485	313	(192)	33720	16,012	33,720	49,732
Nov-96	1996	11		7,587	8,912	47,777	1,785	(192)	65869	17,401	65,869	83,270
Dec-96	1996	12		8,801	9,912	27,005	1,911	(192)	47437	14,659	47,437	62,095
Jan-97	1997	1		4,611	11,432	31,620	2,376	(192)	49847	30,318	49,847	80,165
Feb-97	1997	2		4,165	10,105	25,481	2,127	(192)	41685	11,867	41,685	53,553
Mar-97	1997	3		15,181	18,961	25,030	5,384	(192)	64363	3,772	64,363	68,135
Apr-97	1997	4		52,596	26,251	29,197	5,746	(192)	113597	13,125	113,597	126,722
May-97	1997	5		70,456	33,951	55,325	12,276	(192)	171816	14,769	171,816	186,584
Jun-97	1997	6		49,555	2,978	71,093	2,748	(192)	126181	6,179	126,181	132,361
Jul-97	1997	7		8,599	417	24,015	1,013	(192)	33851	3,920	33,851	37,771
Aug-97	1997	8		3,117	233	45,716	949	(192)	49821	5,751	49,821	55,572
Sep-97	1997	9		3,954	-	32,767	786	(192)	37315	18,293	37,315	55,608
Oct-97	1997	10		5,717	8,264	43,506	4,287	(192)	61582	11,884	61,582	73,466
Nov-97	1997	11		6,320	9,013	32,658	5,190	(192)	52989	11,999	52,989	64,988
Dec-97	1997	12		4,611	14,219	21,455	6,149	(192)	46241	11,228	46,241	57,469
Jan-98	1998	1		4,611	10,191	23,271	5,526	(192)	43406	21,745	43,406	65,151
Feb-98	1998	2		4,165	9,731	27,943	5,270	(192)	46917	22,634	46,917	69,551
Mar-98	1998	3		4,611	15,931	21,456	6,149	(192)	47954	14,225	47,954	62,179
Apr-98	1998	4		13,105	23,763	28,644	5,950	(192)	71269	16,268	71,269	87,537
May-98	1998	5		64,278	36,061	50,293	12,828	(192)	163267	13,832	163,267	177,099
Jun-98	1998	6		50,697	8,084	53,157	5,950	(192)	117696	29,931	117,696	147,627
Jul-98	1998	7		11,175	3,227	45,626	2,771	(192)	62607	4,567	62,607	67,174
Aug-98	1998	8		3,171	2,570	40,302	2,110	(192)	47960	5,973	47,960	53,933
Sep-98	1998	9		3,977	1,242	56,082	2,096	(192)	63205	8,318	63,205	71,523
Oct-98	1998	10		7,714	9,319	25,041	1,399	(192)	43281	10,316	43,281	53,597
Nov-98	1998	11		6,205	10,291	37,311	2,323	(192)	55937	9,587	55,937	65,524
Dec-98	1998	12		4,611	8,937	26,620	1,921	(192)	41897	5,488	41,897	47,385
Jan-99	1999	1		4,611	8,801	21,594	1,881	(192)	36695	17,683	36,695	54,378
Feb-99	1999	2		8,720	8,238	32,240	1,776	(192)	50782	9,431	50,782	60,213
Mar-99	1999	3		16,660	9,101	20,176	2,130	(192)	47875	4,165	47,875	52,040
Apr-99	1999	4		31,282	9,325	17,459	4,760	(192)	62634	33,008	62,634	95,642
May-99	1999	5		54,137	28,334	23,762	7,335	(192)	113375	26,485	113,375	139,860
Jun-99	1999	6		37,156	7,899	26,011	3,065	(192)	73939	12,136	73,939	86,075
Jul-99	1999	7		14,064	3,511	30,421	261	(192)	48065	5,737	48,065	53,803
Aug-99	1999	8		3,147	2,924	29,939	299	(192)	36117	8,091	36,117	44,209
Sep-99	1999	9		4,030	2,899	22,148	108	(192)	28993	1,213	28,993	30,206
Annual Average		113,705	93,012	352,115	33,405	(2,309)	589,928	109,197	589,928	699,125		
Monthly Max		96,870	114,047				278,425	45,514	278,425	289,267		
Monthly Min		336	(0)				(3,298)	-	(3,298)	(3,298)		
				31,469	(68,114)	-	12,027	(2,866)	(27,485)	(722)	(27,485)	(28,207)

10	11	12	13 0.95	14 K factor 1	15 45,000	16 Evap Factor 0.955	17 2	18 800000	19	20
Primary Demands (acre-ft)	Jordan River Secondary Demands (acre-ft)	Outflow Adjustment (acre-ft)	Jordan River Spill Calculation (cfs)	Jordan River Outflows (acre-ft)	Evap Vol (acre-ft)	Jordan River Outflows plus Evap (acre-ft)	End-of-month UL Storage (acre-ft)	Monthly Average Storage (acre-ft)	End-of-month UL Surface Area (acre)	Monthly Average Surface Area (acre)
9,090	-	-	-	-	29,324	38,414	712,775	701,147	89,667	89,335
704	2,037	-	-	-	17,626	20,367	739,536	726,155	90,438	90,053
704	2,037	-	-	-	9,213	11,953	779,318	759,427	91,599	91,019
3,819	2,037	-	-	-	5,905	11,760	792,743	786,031	91,997	91,798
3,819	2,037	160	-	-	3,368	9,224	850,628	821,685	93,725	92,861
6,098	3,055	11,000	1,235	37,216	14,545	60,914	859,000	854,814	93,976	93,850
14,542	5,151	4,000	1,280	27,054	29,018	75,766	866,000	862,500	94,187	94,082
27,677	29,353	-	1,282	10,886	42,351	110,266	870,000	868,000	94,309	94,248
31,547	33,597	-	1,280	-	53,739	118,883	867,997	868,998	94,248	94,278
32,954	2,242	-	643	-	67,955	103,151	798,525	833,261	92,168	93,208
27,325	7,093	-	-	-	61,834	96,252	737,894	768,210	90,390	91,279
22,484	-	-	-	-	43,881	66,365	716,974	727,434	89,787	90,089
9,734	30	3,600	-	3,600	28,725	42,089	724,617	720,796	90,005	89,896
3,643	1,449	7,200	-	7,200	15,687	27,979	779,909	752,263	91,617	90,811
3,643	1,449	7,200	-	7,200	9,479	21,771	820,233	800,071	92,811	92,214
3,643	2,935	-	1,008	19,463	4,358	30,399	870,000	845,117	94,309	93,560
3,643	1,449	-	1,275	44,032	4,428	53,553	870,000	870,000	94,309	94,309
5,816	2,174	-	1,291	45,960	14,185	68,135	870,000	870,000	94,309	94,309
13,870	3,665	-	1,388	65,055	28,971	111,561	885,160	877,580	94,771	94,540
26,397	20,887	-	1,489	44,291	45,253	136,828	934,917	910,038	96,298	95,535
30,088	23,907	-	1,472	33,596	54,182	141,773	925,504	930,210	96,007	96,152
35,960	29,775	-	1,058	-	62,653	128,388	834,887	880,196	93,251	94,629
24,258	4,225	-	481	-	61,225	89,708	800,751	817,819	92,234	92,743
19,406	396	-	-	-	43,528	63,330	793,029	796,890	92,005	92,119
11,040	4,927	-	21	-	27,458	43,425	823,069	808,049	92,896	92,451
3,262	2,311	-	857	-	15,451	21,024	867,033	845,051	94,218	93,557
3,262	2,311	3,500	1,276	46,281	6,149	58,002	866,500	866,767	94,202	94,210
3,262	2,311	-	1,286	49,556	6,522	61,651	870,000	868,250	94,309	94,255
3,262	1,141	-	1,298	58,544	6,605	69,551	870,000	870,000	94,309	94,309
5,209	1,712	-	1,284	43,850	11,408	62,179	870,000	870,000	94,309	94,309
12,421	2,886	-	1,308	48,138	24,092	87,537	870,000	870,000	94,309	94,309
23,641	16,446	-	1,458	49,573	39,328	128,988	918,110	894,055	95,779	95,044
26,947	18,824	-	1,486	42,664	47,411	135,846	929,891	924,001	96,143	95,961
37,865	22,290	-	1,301	1,261	65,649	127,065	870,000	899,945	94,309	95,226
31,002	23,472	-	683	-	62,445	116,919	807,014	838,507	92,419	93,364
21,354	7,305	-	-	-	44,130	72,789	805,748	806,381	92,382	92,400
9,917	5,845	-	-	-	24,556	40,318	819,027	812,388	92,775	92,578
3,476	3,731	-	788	-	14,619	21,826	862,725	840,876	94,088	93,431
3,476	3,731	-	1,130	26,539	6,365	40,110	870,000	866,363	94,309	94,199
3,476	3,731	-	1,273	41,017	6,154	54,378	870,000	870,000	94,309	94,309
3,476	1,842	-	1,284	46,563	8,331	60,213	870,000	870,000	94,309	94,309
5,551	2,763	-	1,269	25,113	18,613	52,040	870,000	870,000	94,309	94,309
13,236	4,658	-	1,315	53,205	24,543	95,642	870,000	870,000	94,309	94,309
25,191	26,544	-	1,330	30,021	29,421	111,177	898,683	884,342	95,184	94,746
28,713	30,382	-	1,285	6,501	49,162	114,758	870,000	884,342	94,309	94,746
33,289	17,703	-	728	-	63,946	114,938	808,864	839,432	92,474	93,391
30,023	6,002	-	-	-	58,875	94,900	758,173	783,519	90,981	91,727
22,755	436	-	-	-	39,461	62,652	725,726	741,950	90,037	90,509
168,065	64,676		4,269	118,087	344,833	695,661	687,205		88,583	
48,734	38,848	-	2,226	104,425	69,965	189,748	1,120,664		100,997	
-	-	-	-	-	1,195	1,305	219,007		69,921	
-	(26,146)		(60)	(2,299)			-2.2%		173,194	
									3,463.89	

Central Utah Project Completion Program

Attachment D

October 2004

Attachment D



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



**Utah Lake Drainage Basin Water Delivery System Bonneville Unit, Central Utah Project
2004 Supplement to the 1988 Definite Plan Report**

**Water Supply Appendix
Volume 6 Attachment D: Utah Lake Salinity Analysis**

October 2004

FLOW OF JORDAN RIVER – BONNEVILLE UNIT CONDITIONS

Table J-1: Jordan River from Outlet of Utah Lake to Jordan Narrows(in acre-feet and cfs)

Table J-2: Jordan River below Jordan Narrows(in acre-feet and cfs)

Table J-3: Total Utah Lake Deliveries (in cfs and acre-feet)

Table J-4: Primary Utah Lake Deliveries (in cfs and acre-feet)

Table J-5: Secondary Utah Lake Deliveries (in cfs and acre-feet)

J-1
Bonneville Unit Operations (acre-feet)
Jordan River from Outlet of Utah Lake to Jordan Narrows

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1950	9,372	5,958	3,197	1,761	5,185	9,269	12,939	25,705	36,998	42,399	41,575	31,280	225,636
1951	13,270	5,075	4,854	1,761	2,644	5,182	12,497	27,472	45,832	52,370	34,395	34,483	239,833
1952	11,944	4,696	4,696	4,696	26,821	79,453	89,013	122,248	108,712	91,830	50,394	38,127	632,628
1953	15,061	6,601	21,638	59,758	27,500	43,826	29,682	41,219	47,105	55,890	40,611	30,747	419,638
1954	11,825	4,696	4,696	4,696	4,696	7,098	14,671	41,219	37,939	45,036	40,611	30,747	247,928
1955	10,729	1,416	1,311	327	327	437	1,201	24,765	30,657	42,550	50,642	32,620	196,981
1956	12,524	442	331	221	110	110	32,255	26,660	32,982	39,930	37,782	29,805	213,152
1957	10,508	437	437	0	0	0	0	14,509	27,930	49,204	40,149	32,620	175,794
1958	10,145	1,871	1,871	1,105	2,762	2,541	2,209	31,118	37,329	43,946	45,883	33,489	214,269
1959	13,712	6,842	3,086	663	663	221	5,634	32,001	36,998	42,289	38,372	27,193	207,674
1960	8,631	4,254	1,201	221	110	221	3,093	32,001	33,424	39,157	30,049	20,747	173,109
1961	5,128	874	874	0	0	0	0	30,080	29,749	22,029	14,119	5,413	108,267
1962	663	437	110	110	437	327	653	20,470	28,564	35,733	35,352	26,381	149,236
1963	5,565	3,491	1,090	327	110	0	0	26,786	25,249	44,605	39,044	20,104	166,370
1964	10,715	763	1,090	1,090	327	110	0	16,355	18,445	44,384	42,464	32,918	168,660
1965	10,052	437	437	1,201	1,090	653	4,801	26,897	34,254	40,090	39,597	16,901	176,409
1966	9,058	1,871	1,871	3,197	8,278	7,060	7,968	33,216	37,439	40,521	39,256	29,513	219,247
1967	11,171	2,617	1,090	1,201	1,748	4,039	3,164	31,967	22,475	39,601	42,981	32,073	194,127
1968	8,729	1,761	1,761	1,871	1,982	7,391	16,473	28,688	32,248	41,626	35,279	31,059	208,867
1969	13,615	9,164	9,164	8,038	4,696	8,786	61,174	61,989	66,439	55,890	50,394	30,747	380,095
1970	14,238	9,521	9,521	10,647	21,983	23,413	28,153	43,990	47,105	55,890	40,611	30,747	335,819
1971	14,278	9,601	9,601	9,601	10,727	42,502	47,680	41,219	47,105	55,890	40,611	30,747	359,563
1972	14,784	11,740	10,615	11,740	11,423	35,829	31,245	41,219	47,105	55,890	40,611	30,747	342,948
1973	14,632	10,310	10,310	10,310	9,896	14,401	49,003	84,577	67,525	55,890	40,611	30,747	398,213
1974	15,425	11,896	11,896	13,021	36,780	40,631	71,100	41,219	47,105	55,890	40,611	30,747	416,320
1975	11,825	4,696	4,696	4,696	4,696	8,786	36,164	80,903	87,078	70,244	50,394	30,747	394,922
1976	11,825	4,696	5,821	45,048	65,501	38,119	24,475	41,219	47,105	45,036	40,611	30,747	400,203
1977	11,825	828	828	717	828	911	6,604	19,512	28,077	35,395	34,684	28,146	168,354
1978	1,081	496	496	607	717	1,463	5,168	32,917	19,293	39,900	39,434	25,164	166,735
1979	14,557	4,743	4,743	4,743	16,605	64,434	67,924	41,114	47,158	45,050	40,692	30,728	382,490
1980	11,503	658	548	984	10,492	54,036	36,854	87,807	56,622	37,305	29,948	23,780	350,537
1981	11,587	4,696	5,821	39,680	29,024	47,473	20,080	53,523	47,105	45,036	40,611	30,747	375,382
1982	11,825	4,696	4,696	4,696	4,696	68,709	60,343	89,065	82,816	55,890	50,394	30,747	468,570
1983	14,671	39,336	66,024	63,544	74,020	93,336	92,932	121,654	132,466	119,062	96,217	85,506	998,768
1984	87,693	85,071	87,833	86,401	75,547	91,464	100,962	133,349	132,167	119,783	94,348	85,484	1,180,101
1985	86,197	78,507	78,212	70,901	63,118	85,228	89,481	97,670	86,241	55,890	50,394	30,747	872,585
1986	11,825	4,696	48,326	64,678	74,107	96,034	116,250	126,632	117,605	94,201	86,643	38,127	879,125
1987	19,176	54,245	47,758	59,136	63,840	66,712	29,254	41,219	47,105	55,890	40,611	30,747	555,693
1988	11,825	4,026	3,809	3,809	3,809	5,879	32,991	27,219	35,086	32,196	30,774	23,764	215,189
1989	8,980	3,809	3,704	3,704	3,704	5,662	9,637	27,591	29,780	36,134	33,613	19,490	185,808
1990	3,942	1,690	1,562	389	389	6,520	14,506	43,803	49,609	45,925	43,196	32,195	243,726
1991	3,288	4,105	4,105	4,474	6,318	7,695	1,493	24,202	28,253	54,615	50,032	28,893	217,475
1992	16,383	838	838	0	0	0	14,998	32,962	37,571	48,734	30,467	6,058	188,849
1993	1,939	594	146	146	594	448	18,382	22,756	29,763	39,351	42,874	28,441	185,434
1994	13,068	5,323	1,693	524	3,022	4,352	18,949	26,323	34,031	51,975	50,033	28,127	237,421
1995	5,899	593	593	1,654	1,532	940	25,126	23,139	71,622	71,858	37,521	28,136	268,613
1996	9,090	2,741	2,741	5,856	5,856	46,369	46,747	67,916	65,144	35,196	34,418	22,484	344,557
1997	13,364	12,292	12,292	26,041	49,124	53,950	82,591	91,575	87,591	65,735	28,483	19,802	542,840
1998	15,967	5,573	51,854	55,129	62,947	50,771	63,445	89,660	88,435	61,416	54,474	28,659	628,329
1999	15,762	7,207	33,746	48,224	51,882	33,427	71,099	81,756	65,596	50,992	36,025	23,191	518,905
Average	14,017	9,058	11,792	14,867	17,053	25,324	32,221	49,462	51,601	52,027	43,178	30,227	350,828
Maximum	87,693	85,071	87,833	86,401	75,547	96,034	116,250	133,349	132,466	119,783	96,217	85,506	1,180,101
Minimum	663	437	110	0	0	0	0	14,509	18,445	22,029	14,119	5,413	108,267

J-1
Bonneville Unit Operations (cfs)
Jordan River from Outlet of Utah Lake to Jordan Narrows

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	152	100	52	29	93	151	217	418	622	690	676	526	312
1951	216	85	79	29	48	84	210	447	770	852	559	580	331
1952	194	79	76	76	466	1,292	1,496	1,988	1,827	1,494	820	641	871
1953	245	111	352	972	495	713	499	670	792	909	661	517	580
1954	192	79	76	76	85	115	247	670	638	732	661	517	342
1955	174	24	21	5	6	7	20	403	515	692	824	548	272
1956	204	7	5	4	2	2	542	434	554	649	614	501	294
1957	171	7	7	0	0	0	0	236	469	800	653	548	243
1958	165	31	30	18	50	41	37	506	627	715	746	563	296
1959	223	115	50	11	12	4	95	520	622	688	624	457	287
1960	140	71	20	4	2	4	52	520	562	637	489	349	238
1961	83	15	14	0	0	0	0	489	500	358	230	91	150
1962	11	7	2	2	8	5	11	333	480	581	575	443	206
1963	91	59	18	5	2	0	0	436	424	725	635	338	230
1964	174	13	18	18	6	2	0	266	310	722	691	553	232
1965	163	7	7	20	20	11	81	437	576	652	644	284	244
1966	147	31	30	52	149	115	134	540	629	659	638	496	303
1967	182	44	18	20	31	66	53	520	378	644	699	539	268
1968	142	30	29	30	34	120	277	467	542	677	574	522	288
1969	221	154	149	131	85	143	1,028	1,008	1,117	909	820	517	525
1970	232	160	155	173	396	381	473	715	792	909	661	517	464
1971	232	161	156	156	193	691	801	670	792	909	661	517	497
1972	240	197	173	191	199	583	525	670	792	909	661	517	472
1973	238	173	168	168	178	234	824	1,376	1,135	909	661	517	550
1974	251	200	193	212	662	661	1,195	670	792	909	661	517	575
1975	192	79	76	76	85	143	608	1,316	1,463	1,142	820	517	546
1976	192	79	95	733	1,139	620	411	670	792	732	661	517	551
1977	192	14	13	12	15	15	111	317	472	576	564	473	233
1978	18	8	8	10	13	24	87	535	324	649	641	423	230
1979	237	80	77	77	299	1,048	1,142	669	793	733	662	516	528
1980	187	11	9	16	182	879	619	1,428	952	607	487	400	483
1981	188	79	95	645	523	772	337	871	792	732	661	517	519
1982	192	79	76	76	85	1,117	1,014	1,449	1,392	909	820	517	647
1983	239	661	1,074	1,033	1,333	1,518	1,562	1,979	2,226	1,936	1,565	1,437	1,380
1984	1,426	1,430	1,429	1,405	1,313	1,488	1,697	2,169	2,221	1,948	1,534	1,437	1,626
1985	1,402	1,319	1,272	1,153	1,137	1,386	1,504	1,589	1,449	909	820	517	1,205
1986	192	79	786	1,052	1,334	1,562	1,954	2,060	1,976	1,532	1,409	641	1,214
1987	312	912	777	962	1,150	1,085	492	670	792	909	661	517	768
1988	192	68	62	62	66	96	554	443	590	524	501	399	296
1989	146	64	60	60	67	92	162	449	500	588	547	328	257
1990	64	28	25	6	7	106	244	712	834	747	703	541	337
1991	53	69	67	73	114	125	25	394	475	888	814	486	300
1992	266	14	14	0	0	0	252	536	631	793	496	102	260
1993	32	10	2	2	11	7	309	370	500	640	697	478	256
1994	213	89	28	9	54	71	318	428	572	845	814	473	328
1995	96	10	10	27	28	15	422	376	1,204	1,169	610	473	371
1996	148	46	45	95	102	754	786	1,105	1,095	572	560	378	475
1997	217	207	200	424	885	877	1,388	1,489	1,472	1,069	463	333	750
1998	260	94	843	897	1,133	826	1,066	1,458	1,486	999	886	482	868
1999	256	121	549	784	934	544	1,195	1,330	1,102	829	586	390	717
Average	228	152	192	242	305	412	542	804	867	846	702	508	484
Maximum	1,426	1,430	1,429	1,405	1,334	1,562	1,954	2,169	2,226	1,948	1,565	1,437	1,626
Minimum	11	7	2	0	0	0	0	236	310	358	230	91	150

J-3
Bonneville Unit Operations (acre-feet)
Total Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1950	9,372	5,958	3,197	1,761	5,185	9,269	12,939	25,705	36,998	42,399	41,575	31,280	225,636
1951	13,270	5,075	4,854	1,761	2,644	5,182	12,497	27,472	45,832	52,370	34,395	34,483	239,833
1952	11,944	4,696	4,696	4,696	5,821	8,786	14,671	41,219	47,105	55,890	50,394	38,127	288,044
1953	14,671	5,821	5,821	5,821	5,821	8,786	14,671	41,219	47,105	55,890	40,611	30,747	276,984
1954	11,825	4,696	4,696	4,696	4,696	7,098	14,671	41,219	37,939	45,036	40,611	30,747	247,928
1955	10,729	1,416	1,311	327	327	437	1,201	24,765	30,657	42,550	50,642	32,620	196,981
1956	12,524	442	331	221	110	110	32,255	26,660	32,982	39,930	37,782	29,805	213,152
1957	10,508	437	437	0	0	0	0	14,509	27,930	49,204	40,149	32,620	175,794
1958	10,145	1,871	1,871	1,105	2,762	2,541	2,209	31,118	37,329	43,946	45,883	33,489	214,269
1959	13,712	6,842	3,086	663	663	221	5,634	32,001	36,998	42,289	38,372	27,193	207,674
1960	8,631	4,254	1,201	221	110	221	3,093	32,001	33,424	39,157	30,049	20,747	173,109
1961	5,128	874	874	0	0	0	0	30,080	29,749	22,029	14,119	5,413	108,267
1962	663	437	110	110	437	327	653	20,470	28,564	35,733	35,352	26,381	149,236
1963	5,565	3,491	1,090	327	110	0	0	26,786	25,249	44,605	39,044	20,104	166,370
1964	10,715	763	1,090	1,090	327	110	0	16,355	18,445	44,384	42,464	32,918	168,660
1965	10,052	437	437	1,201	1,090	653	4,801	26,897	34,254	40,090	39,597	16,901	176,409
1966	9,058	1,871	1,871	3,197	8,278	7,060	7,968	33,216	37,439	40,521	39,256	29,513	219,247
1967	11,171	2,617	1,090	1,201	1,748	4,039	3,164	31,967	22,475	39,601	42,981	32,073	194,127
1968	8,729	1,761	1,761	1,871	1,982	7,391	16,473	28,688	32,248	41,626	35,279	31,059	208,867
1969	11,944	5,821	5,821	4,696	4,696	8,786	14,671	41,219	47,105	55,890	50,394	30,747	281,789
1970	11,825	4,696	4,696	5,821	5,821	8,786	14,671	41,219	47,105	55,890	40,611	30,747	271,887
1971	11,825	4,696	4,696	4,696	5,821	8,786	14,671	41,219	47,105	55,890	40,611	30,747	270,762
1972	11,825	5,821	4,696	5,821	5,821	8,786	14,671	41,219	47,105	55,890	40,611	30,747	273,012
1973	11,825	4,696	4,696	4,696	4,696	8,786	14,671	41,219	47,105	55,890	40,611	30,747	269,636
1974	11,825	4,696	4,696	5,821	5,821	8,786	14,671	41,219	47,105	55,890	40,611	30,747	271,887
1975	11,825	4,696	4,696	4,696	4,696	8,786	14,671	41,219	47,105	55,890	50,394	30,747	279,419
1976	11,825	4,696	5,821	5,821	5,821	8,786	14,671	41,219	47,105	45,036	40,611	30,747	262,159
1977	11,825	828	828	717	828	911	6,604	19,512	28,077	35,395	34,684	28,146	168,354
1978	1,081	496	496	607	717	1,463	5,168	19,281	19,293	39,900	39,434	25,164	153,099
1979	14,557	4,743	4,743	4,743	5,868	8,748	14,680	41,114	47,158	45,050	40,692	30,728	262,823
1980	11,503	658	548	984	10,492	25,526	27,493	40,363	41,343	37,305	29,948	23,780	249,942
1981	11,587	4,696	5,821	5,821	5,821	8,786	14,671	41,219	47,105	45,036	40,611	30,747	261,920
1982	11,825	4,696	4,696	4,696	4,696	7,098	11,825	41,219	47,105	55,890	50,394	30,747	274,885
1983	14,671	5,821	5,821	5,821	4,696	7,098	11,825	41,219	47,105	55,890	50,394	38,127	288,487
1984	14,671	5,821	5,821	5,821	4,696	7,098	11,825	41,219	47,105	55,890	50,394	38,127	288,487
1985	14,671	5,821	5,821	5,821	4,696	7,098	11,825	41,219	47,105	55,890	50,394	30,747	281,107
1986	11,825	4,696	5,821	5,821	4,696	7,098	11,825	41,219	47,105	55,890	50,394	38,127	284,516
1987	14,671	5,821	5,821	5,821	4,696	7,098	11,825	41,219	47,105	55,890	40,611	30,747	271,324
1988	11,825	4,026	3,809	3,809	3,809	5,879	8,199	27,219	35,086	32,196	30,774	23,764	190,396
1989	8,980	3,809	3,704	3,704	3,704	5,662	9,637	27,591	29,780	36,134	33,613	19,490	185,808
1990	3,942	1,690	1,562	389	389	520	14,506	43,803	49,609	45,925	43,196	32,195	237,726
1991	3,288	4,105	4,105	4,474	6,318	7,695	1,493	24,202	28,253	54,615	50,032	28,893	217,475
1992	16,383	838	838	0	0	0	14,998	32,962	37,571	48,734	30,467	6,058	188,849
1993	1,939	594	146	146	594	448	18,382	22,756	29,763	39,351	42,874	28,441	185,434
1994	13,068	5,323	1,693	524	3,022	4,352	9,949	26,323	34,031	51,975	50,033	28,127	228,421
1995	5,899	593	593	1,654	1,532	940	25,126	21,139	71,622	71,858	37,521	28,136	266,613
1996	9,090	2,741	2,741	5,856	5,856	9,153	19,693	57,030	65,144	35,196	34,418	22,484	269,401
1997	9,764	5,092	5,092	6,578	5,092	7,990	17,535	47,284	53,995	65,735	28,483	19,802	272,442
1998	15,967	5,573	5,573	5,573	4,403	6,921	15,307	40,087	45,771	60,155	54,474	28,659	288,463
1999	15,762	7,207	7,207	7,207	5,318	8,314	17,894	51,735	59,095	50,992	36,025	23,191	289,948
Average	10,638	3,585	3,259	3,178	3,545	5,568	11,531	34,261	40,498	47,688	40,658	28,332	232,741
Maximum	16,383	7,207	7,207	7,207	10,492	25,526	32,255	57,030	71,622	71,858	54,474	38,127	289,948
Minimum	663	437	110	0	0	0	14,509	18,445	22,029	14,119	5,413	108,267	

J-4
Bonneville Unit Operations (acre-feet)
Primary Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1950	8,744	4,860	2,099	663	4,087	7,622	10,163	17,895	28,058	31,813	32,034	24,081	172,119
1951	10,494	3,977	3,756	663	1,546	3,535	9,721	19,662	27,726	30,930	24,854	27,284	164,148
1952	9,168	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,528
1953	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1954	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1955	7,953	994	994	221	221	331	884	18,116	22,424	31,151	29,052	23,860	136,201
1956	7,180	442	331	221	110	110	32,255	21,319	26,511	31,813	30,709	25,075	176,076
1957	7,732	331	331	0	0	0	0	10,604	20,436	36,011	29,383	23,860	128,688
1958	7,401	773	773	1,105	2,762	2,541	2,209	23,308	28,389	33,360	36,342	26,290	165,253
1959	10,936	5,744	1,988	663	663	221	5,634	24,191	28,058	31,703	28,831	19,994	158,626
1960	5,855	3,093	884	221	110	221	3,093	24,191	26,953	31,040	22,976	16,017	134,654
1961	3,756	663	663	0	0	0	0	26,069	25,738	20,657	13,697	5,413	96,656
1962	663	331	110	110	331	221	442	16,459	22,093	27,616	28,279	21,651	118,306
1963	4,087	2,541	773	221	110	0	0	23,197	21,872	41,755	37,778	20,104	152,438
1964	10,715	552	773	773	221	110	0	14,139	16,017	41,534	41,092	32,918	158,844
1965	10,052	331	331	884	773	442	3,535	23,308	29,715	37,557	38,331	16,901	162,160
1966	9,058	773	773	2,099	7,180	5,413	5,192	25,406	28,499	29,935	29,715	22,314	166,357
1967	8,395	1,878	773	884	1,326	2,983	2,320	23,418	16,459	28,941	31,371	23,418	142,166
1968	6,407	663	663	773	884	5,744	13,697	20,878	23,308	31,040	25,738	23,860	153,655
1969	9,168	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,528
1970	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1971	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1972	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1973	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1974	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1975	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1976	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1977	9,049	663	663	552	663	663	6,186	18,337	26,732	33,802	33,249	27,063	157,622
1978	663	331	331	442	552	1,215	4,750	16,901	16,569	36,674	37,999	24,081	140,508
1979	14,139	3,645	3,645	3,645	3,645	5,413	9,058	25,296	29,052	34,464	31,151	23,529	186,682
1980	8,727	552	442	773	8,064	15,907	17,232	25,186	25,738	23,197	23,087	14,802	163,707
1981	8,948	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,308
1982	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1983	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1984	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1985	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1986	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1987	9,049	3,598	3,598	3,598	3,598	5,451	9,049	25,401	28,999	34,450	31,070	23,548	181,409
1988	9,049	3,598	3,598	3,598	3,598	5,451	5,634	18,668	23,970	26,180	25,075	19,331	147,750
1989	7,291	3,598	3,598	3,598	3,598	5,451	7,843	22,314	24,081	29,273	27,174	15,796	153,615
1990	3,203	1,176	1,176	261	261	392	9,589	30,759	35,059	36,851	34,368	28,226	181,321
1991	3,288	860	860	1,229	3,073	2,827	1,493	24,202	28,253	37,116	40,434	28,893	172,528
1992	12,167	838	838	0	0	0	14,998	32,962	37,571	48,734	30,467	6,058	184,633
1993	1,939	437	146	146	437	291	18,068	21,711	29,142	36,428	37,302	28,441	174,488
1994	8,858	2,813	856	245	122	0	9,949	25,680	28,812	46,225	41,161	22,256	186,977
1995	3,289	366	366	975	853	487	13,143	21,139	32,774	46,054	37,521	18,641	175,608
1996	9,090	704	704	3,819	3,819	6,098	14,542	27,677	31,547	32,954	27,325	22,484	180,763
1997	9,734	3,643	3,643	3,643	3,643	5,816	13,870	26,397	30,088	35,960	24,258	19,406	180,101
1998	11,040	3,262	3,262	3,262	3,262	5,209	12,421	23,641	26,947	37,865	31,002	21,354	182,527
1999	9,917	3,476	3,476	3,476	3,476	5,551	13,236	25,191	28,713	33,289	30,023	22,755	182,579
Average	8,078	2,453	2,168	2,079	2,483	3,768	8,481	23,509	27,386	34,240	31,021	22,400	168,065
Maximum	14,139	5,744	3,756	3,819	8,064	15,907	32,255	32,962	37,571	48,734	41,161	32,918	186,977
Minimum	663	331	110	0	0	0	0	10,604	16,017	20,657	13,697	5,413	96,656

J-5
Bonneville Unit Operations (acre-feet)
Secondary Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1950	628	1,098	1,098	1,098	1,098	1,647	2,776	7,810	8,940	10,586	9,541	7,199	53,517
1951	2,776	1,098	1,098	1,098	1,098	1,647	2,776	7,810	18,106	21,440	9,541	7,199	75,685
1952	2,776	1,098	1,098	1,098	2,223	3,335	5,622	15,818	18,106	21,440	19,324	14,579	106,516
1953	5,622	2,223	2,223	2,223	2,223	3,335	5,622	15,818	18,106	21,440	9,541	7,199	95,575
1954	2,776	1,098	1,098	1,098	1,098	1,647	5,622	15,818	8,940	10,586	9,541	7,199	66,519
1955	2,776	422	317	106	106	106	317	6,649	8,233	11,399	21,590	8,760	60,780
1956	5,344	0	0	0	0	0	0	5,341	6,471	8,117	7,073	4,730	37,076
1957	2,776	106	106	0	0	0	0	3,905	7,494	13,193	10,766	8,760	47,106
1958	2,744	1,098	1,098	0	0	0	0	7,810	8,940	10,586	9,541	7,199	49,016
1959	2,776	1,098	1,098	0	0	0	0	7,810	8,940	10,586	9,541	7,199	49,048
1960	2,776	1,161	317	0	0	0	0	7,810	6,471	8,117	7,073	4,730	38,455
1961	1,372	211	211	0	0	0	0	4,011	4,011	1,372	422	0	11,611
1962	0	106	0	0	106	106	211	4,011	6,471	8,117	7,073	4,730	30,930
1963	1,478	950	317	106	0	0	0	3,589	3,377	2,850	1,266	0	13,932
1964	0	211	317	317	106	0	0	2,216	2,428	2,850	1,372	0	9,816
1965	0	106	106	317	317	211	1,266	3,589	4,539	2,533	1,266	0	14,249
1966	0	1,098	1,098	1,098	1,098	1,647	2,776	7,810	8,940	10,586	9,541	7,199	52,890
1967	2,776	739	317	317	422	1,056	844	8,549	6,016	10,660	11,610	8,655	51,961
1968	2,322	1,098	1,098	1,098	1,098	1,647	2,776	7,810	8,940	10,586	9,541	7,199	55,212
1969	2,776	2,223	2,223	1,098	1,098	3,335	5,622	15,818	18,106	21,440	19,324	7,199	100,261
1970	2,776	1,098	1,098	2,223	2,223	3,335	5,622	15,818	18,106	21,440	9,541	7,199	90,478
1971	2,776	1,098	1,098	1,098	2,223	3,335	5,622	15,818	18,106	21,440	9,541	7,199	89,353
1972	2,776	2,223	1,098	2,223	2,223	3,335	5,622	15,818	18,106	21,440	9,541	7,199	91,603
1973	2,776	1,098	1,098	1,098	1,098	3,335	5,622	15,818	18,106	21,440	9,541	7,199	88,227
1974	2,776	1,098	1,098	2,223	2,223	3,335	5,622	15,818	18,106	21,440	9,541	7,199	90,478
1975	2,776	1,098	1,098	1,098	1,098	3,335	5,622	15,818	18,106	21,440	19,324	7,199	98,010
1976	2,776	1,098	2,223	2,223	2,223	3,335	5,622	15,818	18,106	10,586	9,541	7,199	80,750
1977	2,776	165	165	165	165	248	418	1,175	1,345	1,593	1,435	1,083	10,732
1978	418	165	165	165	165	248	418	2,380	2,724	3,226	1,435	1,083	12,591
1979	418	1,098	1,098	1,098	2,223	3,335	5,622	15,818	18,106	10,586	9,541	7,199	76,141
1980	2,776	106	106	211	2,428	9,619	10,261	15,177	15,605	14,108	6,861	8,978	86,235
1981	2,639	1,098	2,223	2,223	2,223	3,335	5,622	15,818	18,106	10,586	9,541	7,199	80,612
1982	2,776	1,098	1,098	1,098	1,098	1,647	2,776	15,818	18,106	21,440	19,324	7,199	93,476
1983	5,622	2,223	2,223	2,223	1,098	1,647	2,776	15,818	18,106	21,440	19,324	14,579	107,078
1984	5,622	2,223	2,223	2,223	1,098	1,647	2,776	15,818	18,106	21,440	19,324	14,579	107,078
1985	5,622	2,223	2,223	2,223	1,098	1,647	2,776	15,818	18,106	21,440	19,324	7,199	99,698
1986	2,776	1,098	2,223	2,223	1,098	1,647	2,776	15,818	18,106	21,440	19,324	14,579	103,107
1987	5,622	2,223	2,223	2,223	1,098	1,647	2,776	15,818	18,106	21,440	9,541	7,199	89,915
1988	2,776	428	211	211	211	428	2,565	8,551	11,116	6,016	5,699	4,433	42,646
1989	1,689	211	106	106	106	211	1,794	5,277	5,699	6,861	6,439	3,694	32,193
1990	739	514	386	128	128	128	4,917	13,044	14,550	9,074	8,828	3,969	56,405
1991	0	3,245	3,245	3,245	3,245	4,868	0	0	0	17,499	9,598	0	44,947
1992	4,216	0	0	0	0	0	0	0	0	0	0	0	4,216
1993	0	157	0	0	157	157	314	1,045	621	2,923	5,572	0	10,946
1994	4,210	2,510	837	279	2,900	4,352	0	643	5,219	5,750	8,872	5,871	41,444
1995	2,610	227	227	679	679	453	11,983	0	38,848	25,804	0	9,495	91,005
1996	0	2,037	2,037	2,037	2,037	3,055	5,151	29,353	33,597	2,242	7,093	0	88,638
1997	30	1,449	1,449	2,935	1,449	2,174	3,665	20,887	23,907	29,775	4,225	396	92,341
1998	4,927	2,311	2,311	2,311	1,141	1,712	2,886	16,446	18,824	22,290	23,472	7,305	105,936
1999	5,845	3,731	3,731	3,731	1,842	2,763	4,658	26,544	30,382	17,703	6,002	436	107,369
Average	2,561	1,132	1,091	1,100	1,062	1,801	3,050	10,752	13,112	13,448	9,637	5,932	64,676
Maximum	5,845	3,731	3,731	3,731	3,245	9,619	11,983	29,353	38,848	29,775	23,472	14,579	107,369
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	4,216

J-5
Bonneville Unit Operations (cfs)
Secondary Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	10	18	18	18	20	27	47	127	150	172	155	121	74
1951	45	18	18	18	20	27	47	127	304	349	155	121	105
1952	45	18	18	18	39	54	94	257	304	349	314	245	147
1953	91	37	36	36	40	54	94	257	304	349	155	121	132
1954	45	18	18	18	20	27	94	257	150	172	155	121	92
1955	45	7	5	2	2	2	5	108	138	185	351	147	84
1956	87	0	0	0	0	0	0	87	109	132	115	79	51
1957	45	2	2	0	0	0	0	64	126	215	175	147	65
1958	45	18	18	0	0	0	0	127	150	172	155	121	68
1959	45	18	18	0	0	0	0	127	150	172	155	121	68
1960	45	20	5	0	0	0	0	127	109	132	115	79	53
1961	22	4	3	0	0	0	0	65	67	22	7	0	16
1962	0	2	0	0	2	2	4	65	109	132	115	79	43
1963	24	16	5	2	0	0	0	58	57	46	21	0	19
1964	0	4	5	5	2	0	0	36	41	46	22	0	14
1965	0	2	2	5	6	3	21	58	76	41	21	0	20
1966	0	18	18	18	20	27	47	127	150	172	155	121	73
1967	45	12	5	5	8	17	14	139	101	173	189	145	72
1968	38	18	18	18	19	27	47	127	150	172	155	121	76
1969	45	37	36	18	20	54	94	257	304	349	314	121	138
1970	45	18	18	36	40	54	94	257	304	349	155	121	125
1971	45	18	18	18	40	54	94	257	304	349	155	121	123
1972	45	37	18	36	39	54	94	257	304	349	155	121	126
1973	45	18	18	18	20	54	94	257	304	349	155	121	122
1974	45	18	18	36	40	54	94	257	304	349	155	121	125
1975	45	18	18	18	20	54	94	257	304	349	314	121	135
1976	45	18	36	36	39	54	94	257	304	172	155	121	111
1977	45	3	3	3	3	4	7	19	23	26	23	18	15
1978	7	3	3	3	3	4	7	39	46	52	23	18	17
1979	7	18	18	18	40	54	94	257	304	172	155	121	105
1980	45	2	2	3	42	156	172	247	262	229	112	151	119
1981	43	18	36	36	40	54	94	257	304	172	155	121	111
1982	45	18	18	18	20	27	47	257	304	349	314	121	129
1983	91	37	36	36	20	27	47	257	304	349	314	245	148
1984	91	37	36	36	19	27	47	257	304	349	314	245	148
1985	91	37	36	36	20	27	47	257	304	349	314	121	138
1986	45	18	36	36	20	27	47	257	304	349	314	245	142
1987	91	37	36	36	20	27	47	257	304	349	155	121	124
1988	45	7	3	3	4	7	43	139	187	98	93	75	59
1989	27	4	2	2	2	3	30	86	96	112	105	62	44
1990	12	9	6	2	2	2	83	212	245	148	144	67	78
1991	0	55	53	53	58	79	0	0	0	285	156	0	62
1992	69	0	0	0	0	0	0	0	0	0	0	0	6
1993	0	3	0	0	3	3	5	17	10	48	91	0	15
1994	68	42	14	5	52	71	0	10	88	94	144	99	57
1995	42	4	4	11	12	7	201	0	653	420	0	160	126
1996	0	34	33	33	35	50	87	477	565	36	115	0	122
1997	0	24	24	48	26	35	62	340	402	484	69	7	128
1998	80	39	38	38	21	28	49	267	316	363	382	123	146
1999	95	63	61	61	33	45	78	432	511	288	98	7	148
Average	42	19	18	18	19	29	51	175	220	219	157	100	89
Maximum	95	63	61	61	58	156	201	477	653	484	382	245	148
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	6

J-3
Bonneville Unit Operations (cfs)
Total Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	152	100	52	29	93	151	217	418	622	690	676	526	312
1951	216	85	79	29	48	84	210	447	770	852	559	580	331
1952	194	79	76	76	101	143	247	670	792	909	820	641	397
1953	239	98	95	95	105	143	247	670	792	909	661	517	383
1954	192	79	76	76	85	115	247	670	638	732	661	517	342
1955	174	24	21	5	6	7	20	403	515	692	824	548	272
1956	204	7	5	4	2	2	542	434	554	649	614	501	294
1957	171	7	7	0	0	0	0	236	469	800	653	548	243
1958	165	31	30	18	50	41	37	506	627	715	746	563	296
1959	223	115	50	11	12	4	95	520	622	688	624	457	287
1960	140	71	20	4	2	4	52	520	562	637	489	349	238
1961	83	15	14	0	0	0	0	489	500	358	230	91	150
1962	11	7	2	2	8	5	11	333	480	581	575	443	206
1963	91	59	18	5	2	0	0	436	424	725	635	338	230
1964	174	13	18	18	6	2	0	266	310	722	691	553	232
1965	163	7	7	20	20	11	81	437	576	652	644	284	244
1966	147	31	30	52	149	115	134	540	629	659	638	496	303
1967	182	44	18	20	31	66	53	520	378	644	699	539	268
1968	142	30	29	30	34	120	277	467	542	677	574	522	288
1969	194	98	95	76	85	143	247	670	792	909	820	517	389
1970	192	79	76	95	105	143	247	670	792	909	661	517	376
1971	192	79	76	76	105	143	247	670	792	909	661	517	374
1972	192	98	76	95	101	143	247	670	792	909	661	517	376
1973	192	79	76	76	85	143	247	670	792	909	661	517	372
1974	192	79	76	95	105	143	247	670	792	909	661	517	376
1975	192	79	76	76	85	143	247	670	792	909	820	517	386
1976	192	79	95	95	101	143	247	670	792	732	661	517	361
1977	192	14	13	12	15	15	111	317	472	576	564	473	233
1978	18	8	8	10	13	24	87	314	324	649	641	423	211
1979	237	80	77	77	106	142	247	669	793	733	662	516	363
1980	187	11	9	16	182	415	462	656	695	607	487	400	344
1981	188	79	95	95	105	143	247	670	792	732	661	517	362
1982	192	79	76	76	85	115	199	670	792	909	820	517	380
1983	239	98	95	95	85	115	199	670	792	909	820	641	398
1984	239	98	95	95	82	115	199	670	792	909	820	641	397
1985	239	98	95	95	85	115	199	670	792	909	820	517	388
1986	192	79	95	95	85	115	199	670	792	909	820	641	393
1987	239	98	95	95	85	115	199	670	792	909	661	517	375
1988	192	68	62	62	66	96	138	443	590	524	501	399	262
1989	146	64	60	60	67	92	162	449	500	588	547	328	257
1990	64	28	25	6	7	8	244	712	834	747	703	541	328
1991	53	69	67	73	114	125	25	394	475	888	814	486	300
1992	266	14	14	0	0	0	252	536	631	793	496	102	260
1993	32	10	2	2	11	7	309	370	500	640	697	478	256
1994	213	89	28	9	54	71	167	428	572	845	814	473	316
1995	96	10	10	27	28	15	422	344	1,204	1,169	610	473	368
1996	148	46	45	95	102	149	331	928	1,095	572	560	378	371
1997	159	86	83	107	92	130	295	769	907	1,069	463	333	376
1998	260	94	91	91	79	113	257	652	769	978	886	482	398
1999	256	121	117	117	96	135	301	841	993	829	586	390	401
Average	173	60	53	52	63	91	194	557	681	776	661	476	321
Maximum	266	121	117	117	182	415	542	928	1,204	1,169	886	641	401
Minimum	11	7	2	0	0	0	0	236	310	358	230	91	150

J-4
Bonneville Unit Operations (cfs)
Primary Utah Lake Deliveries

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	142	82	34	11	74	124	171	291	472	517	521	405	238
1951	171	67	61	11	28	57	163	320	466	503	404	459	227
1952	149	60	59	59	63	89	152	413	487	560	505	396	250
1953	147	60	59	59	65	89	152	413	487	560	505	396	251
1954	147	60	59	59	65	89	152	413	487	560	505	396	251
1955	129	17	16	4	4	5	15	295	377	507	473	401	188
1956	117	7	5	4	2	2	542	347	446	517	499	421	243
1957	126	6	5	0	0	0	0	172	343	586	478	401	178
1958	120	13	13	18	50	41	37	379	477	543	591	442	228
1959	178	97	32	11	12	4	95	393	472	516	469	336	219
1960	95	52	14	4	2	4	52	393	453	505	374	269	185
1961	61	11	11	0	0	0	0	424	433	336	223	91	134
1962	11	6	2	2	6	4	7	268	371	449	460	364	163
1963	66	43	13	4	2	0	0	377	368	679	614	338	211
1964	174	9	13	13	4	2	0	230	269	676	668	553	219
1965	163	6	5	14	14	7	59	379	499	611	623	284	224
1966	147	13	13	34	129	88	87	413	479	487	483	375	230
1967	137	32	13	14	24	49	39	381	277	471	510	394	196
1968	104	11	11	13	15	93	230	340	392	505	419	401	212
1969	149	60	59	59	65	89	152	413	487	560	505	396	251
1970	147	60	59	59	65	89	152	413	487	560	505	396	251
1971	147	60	59	59	65	89	152	413	487	560	505	396	251
1972	147	60	59	59	63	89	152	413	487	560	505	396	250
1973	147	60	59	59	65	89	152	413	487	560	505	396	251
1974	147	60	59	59	65	89	152	413	487	560	505	396	251
1975	147	60	59	59	65	89	152	413	487	560	505	396	251
1976	147	60	59	59	63	89	152	413	487	560	505	396	250
1977	147	11	11	9	12	11	104	298	449	550	541	455	218
1978	11	6	5	7	10	20	80	275	278	596	618	405	194
1979	230	61	59	59	66	88	152	411	488	561	507	395	258
1980	142	9	7	13	140	259	290	410	433	377	375	249	226
1981	146	60	59	59	65	89	152	413	487	560	505	396	250
1982	147	60	59	59	65	89	152	413	487	560	505	396	251
1983	147	60	59	59	65	89	152	413	487	560	505	396	251
1984	147	60	59	59	63	89	152	413	487	560	505	396	250
1985	147	60	59	59	65	89	152	413	487	560	505	396	251
1986	147	60	59	59	65	89	152	413	487	560	505	396	251
1987	147	60	59	59	65	89	152	413	487	560	505	396	251
1988	147	60	59	59	63	89	95	304	403	426	408	325	204
1989	119	60	59	59	65	89	132	363	405	476	442	265	212
1990	52	20	19	4	5	6	161	500	589	599	559	474	250
1991	53	14	14	20	55	46	25	394	475	604	658	486	238
1992	198	14	14	0	0	0	252	536	631	793	496	102	254
1993	32	7	2	2	8	5	304	353	490	592	607	478	241
1994	144	47	14	4	2	0	167	418	484	752	669	374	258
1995	53	6	6	16	15	8	221	344	551	749	610	313	243
1996	148	12	11	62	66	99	244	450	530	536	444	378	249
1997	158	61	59	59	66	95	233	429	506	585	395	326	249
1998	180	55	53	53	59	85	209	384	453	616	504	359	252
1999	161	58	57	57	63	90	222	410	483	541	488	382	252
Average	131	41	35	34	44	61	143	382	460	557	505	376	232
Maximum	230	97	61	62	140	259	542	536	631	793	669	553	258
Minimum	11	6	2	0	0	0	172	269	336	223	91	134	

J-2
Bonneville Unit Operations (acre-feet)
Jordan River below Jordan Narrows*

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	21,000	70,667	74,342	81,029	61,607	35,940	0	0	344,584
1953	390	780	15,817	53,937	21,679	35,040	15,011	0	0	0	0	0	142,654
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	1,671	3,343	3,343	3,343	0	0	46,503	20,770	19,334	0	0	0	98,306
1970	2,413	4,826	4,826	4,826	16,162	14,627	13,482	2,771	0	0	0	0	63,931
1971	2,453	4,906	4,906	4,906	4,906	33,716	33,009	0	0	0	0	0	88,801
1972	2,960	5,919	5,919	5,919	5,602	27,043	16,574	0	0	0	0	0	69,936
1973	2,807	5,615	5,615	5,615	5,200	5,615	34,332	43,358	20,420	0	0	0	128,576
1974	3,600	7,200	7,200	7,200	30,959	31,845	56,429	0	0	0	0	0	144,433
1975	0	0	0	0	0	21,493	39,684	39,973	14,354	0	0	0	115,503
1976	0	0	0	39,227	59,680	29,333	9,804	0	0	0	0	0	138,044
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	13,636	0	0	0	0	13,636
1979	0	0	0	0	10,737	55,686	53,244	0	0	0	0	0	119,667
1980	0	0	0	0	0	28,510	9,361	47,444	15,279	0	0	0	100,595
1981	0	0	0	33,859	23,203	38,687	5,409	12,304	0	0	0	0	113,462
1982	0	0	0	0	0	61,611	48,518	47,846	35,711	0	0	0	193,686
1983	0	33,515	60,203	57,723	69,324	86,238	81,107	80,435	85,361	63,172	45,823	47,379	710,280
1984	73,022	79,250	82,012	80,580	70,852	84,366	89,137	92,130	85,062	63,893	43,954	47,357	891,614
1985	71,526	72,686	72,391	65,080	58,423	78,130	77,656	56,451	39,136	0	0	0	591,478
1986	0	0	42,505	58,857	69,411	88,937	104,425	85,413	70,500	38,311	36,249	0	594,609
1987	4,505	48,424	41,937	53,315	59,144	59,614	17,429	0	0	0	0	0	284,368
1988	0	0	0	0	0	0	24,792	0	0	0	0	0	24,792
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	6,000	0	0	0	0	0	0	6,000
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	9,000	0	0	0	0	0	9,000
1995	0	0	0	0	0	0	0	2,000	0	0	0	0	2,000
1996	0	0	0	0	0	37,216	27,054	10,886	0	0	0	0	75,156
1997	3,600	7,200	7,200	19,463	44,032	45,960	65,055	44,291	33,596	0	0	0	270,397
1998	0	0	46,281	49,556	58,544	43,850	48,138	49,573	42,664	1,261	0	0	339,866
1999	0	0	26,539	41,017	46,563	25,113	53,205	30,021	6,501	0	0	0	228,957
Average	3,379	5,473	8,534	11,688	13,508	19,756	20,690	15,201	11,103	4,339	2,521	1,895	118,087
Maximum	73,022	79,250	82,012	80,580	70,852	88,937	104,425	92,130	85,361	63,893	45,823	47,379	891,614
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0

* Reported flows at this location assume that all Primary and Secondary Utah Lake water deliveries are diverted at the Jordan Narrows, and that no flow is contributed by runoff and groundwater accretion between the Utah Lake outlet and this location. Actual Jordan River streamflow below Jordan Narrows will be higher than indicated.

J-2
Bonneville Unit Operations (cfs)
Jordan River below Jordan Narrows*

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	365	1,149	1,249	1,318	1,035	585	0	0	475
1953	6	13	257	877	390	570	252	0	0	0	0	0	197
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	27	56	54	54	0	0	782	338	325	0	0	0	136
1970	39	81	78	78	291	238	227	45	0	0	0	0	88
1971	40	82	80	80	88	548	555	0	0	0	0	0	123
1972	48	99	96	96	97	440	279	0	0	0	0	0	96
1973	46	94	91	91	94	91	577	705	343	0	0	0	178
1974	59	121	117	117	557	518	948	0	0	0	0	0	200
1975	0	0	0	0	0	361	645	672	233	0	0	0	160
1976	0	0	0	638	1,038	477	165	0	0	0	0	0	190
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	222	0	0	0	0	19
1979	0	0	0	0	193	906	895	0	0	0	0	0	165
1980	0	0	0	0	0	464	157	772	257	0	0	0	139
1981	0	0	0	551	418	629	91	200	0	0	0	0	157
1982	0	0	0	0	0	1,002	815	778	600	0	0	0	268
1983	0	563	979	939	1,248	1,403	1,363	1,308	1,435	1,027	745	796	981
1984	1,188	1,332	1,334	1,311	1,232	1,372	1,498	1,498	1,430	1,039	715	796	1,228
1985	1,163	1,222	1,177	1,058	1,052	1,271	1,305	918	658	0	0	0	817
1986	0	0	691	957	1,250	1,446	1,755	1,389	1,185	623	590	0	821
1987	73	814	682	867	1,065	970	293	0	0	0	0	0	393
1988	0	0	0	0	0	0	417	0	0	0	0	0	34
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	98	0	0	0	0	0	0	8
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	151	0	0	0	0	0	12
1995	0	0	0	0	0	0	0	33	0	0	0	0	3
1996	0	0	0	0	0	605	455	177	0	0	0	0	104
1997	59	121	117	317	793	747	1,093	720	565	0	0	0	374
1998	0	0	753	806	1,054	713	809	806	717	21	0	0	469
1999	0	0	432	667	838	408	894	488	109	0	0	0	316
Average	55	92	139	190	241	321	348	247	187	71	41	32	163
Maximum	1,188	1,332	1,334	1,311	1,250	1,446	1,755	1,498	1,435	1,039	745	796	1,228
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0

* Reported flows at this location assume that all Primary and Secondary Utah Lake water deliveries are diverted at the Jordan Narrows, and that no flow is contributed by runoff and groundwater accretion between the Utah Lake outlet and this location. Actual Jordan River streamflow below Jordan Narrows will be higher than indicated.

Central Utah Project Completion Program

Attachment E

October 2004

Attachment E



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



**Utah Lake Drainage Basin Water Delivery System Bonneville Unit, Central Utah Project
2004 Supplement to the 1988 Definite Plan Report**

**Water Supply Appendix
Volume 6 Attachment E: Utah Lake Salinity Analysis (LKSIM 2000)**

October 2004

UTAH LAKE SALINITY ANALYSIS – BONNEVILLE UNIT CONDITIONS

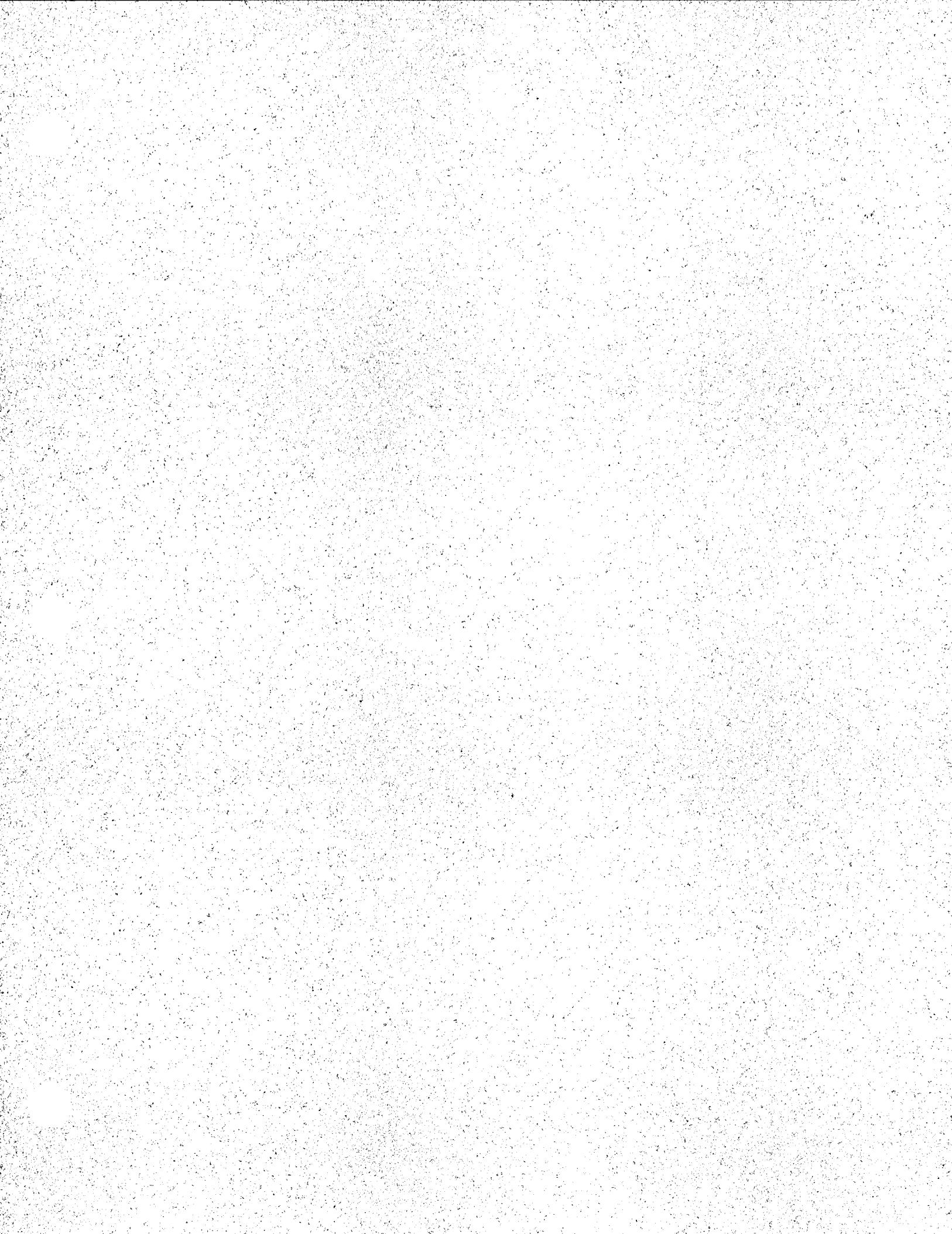
Attachment E1: Summary Table of LKSIM TDS Results

Attachment E2: TABL.025: LKSIM print-out of monthly results

Attachment E3: QUAL.025: LKSIM print-out of monthly TDS results

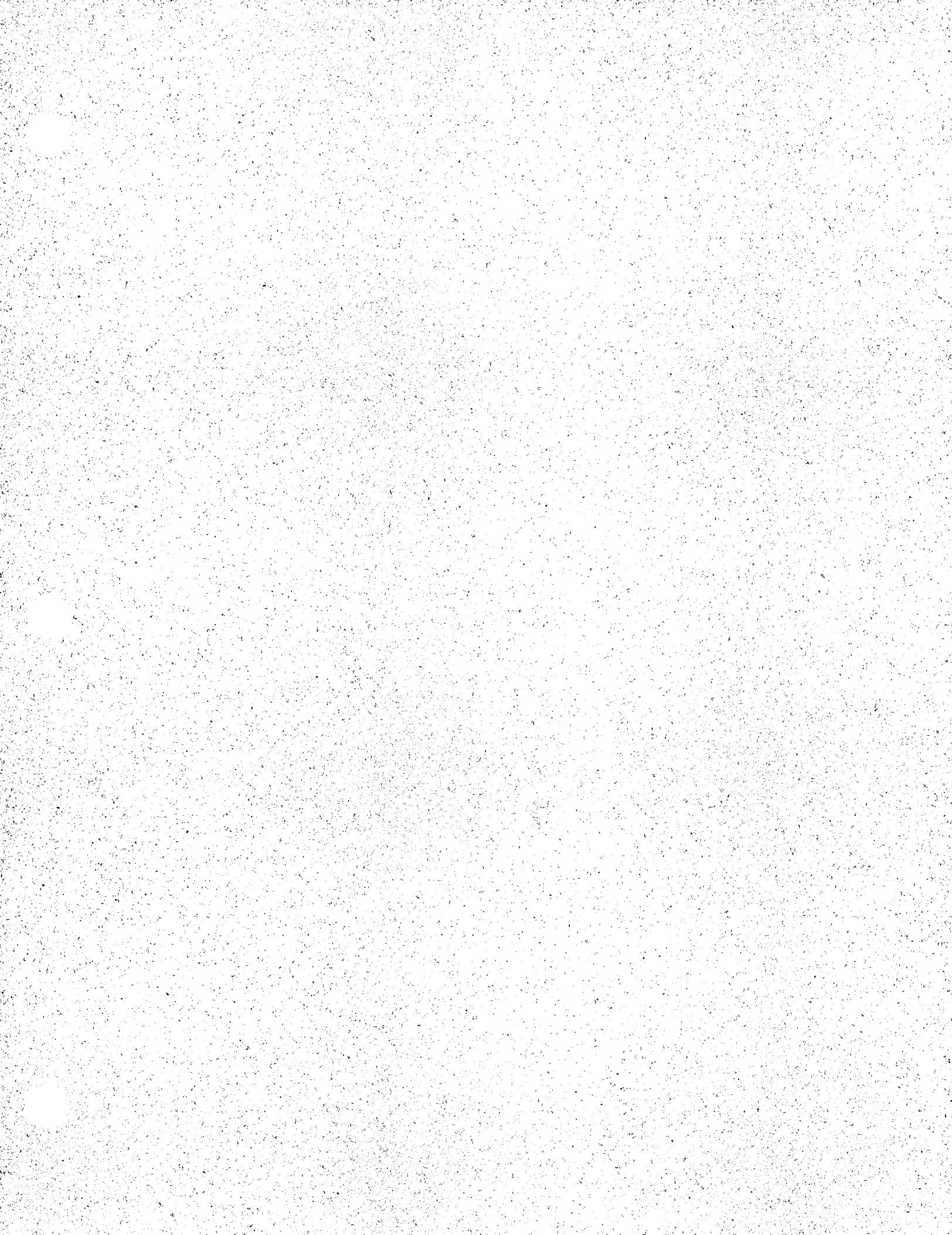
Attachment E4: FLOW.025: LKSIM Tributary Inflows

Attachment E5: LKSIM Documentation



Bonneville Unit Operations
Simulated Utah Lake TDS (mg/L)

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1950	999	986	947	905	875	864	869	841	843	892	942	977	912
1951	993	974	936	904	884	875	868	831	824	865	907	947	901
1952	952	934	893	858	822	766	695	595	597	633	662	690	758
1953	711	704	708	692	694	690	696	706	708	748	791	828	723
1954	845	839	826	809	800	792	803	832	861	917	987	1,025	861
1955	1,036	1,021	992	954	922	895	890	903	926	993	1,053	1,098	974
1956	1,112	1,077	1,034	984	949	941	958	963	1,021	1,100	1,180	1,262	1048
1957	1,291	1,238	1,167	1,106	1,061	1,036	989	952	935	1,002	1,065	1,103	1079
1958	1,122	1,077	1,029	993	952	923	919	886	923	1,002	1,052	1,092	998
1959	1,114	1,077	1,034	994	953	943	955	968	1,011	1,089	1,146	1,181	1039
1960	1,200	1,187	1,126	1,072	1,022	995	1,013	1,036	1,108	1,266	1,405	1,485	1160
1961	1,461	1,329	1,259	1,211	1,171	1,145	1,160	1,204	1,348	1,525	1,700	1,700	1351
1962	1,647	1,576	1,468	1,385	1,252	1,191	1,141	1,120	1,198	1,359	1,521	1,591	1371
1963	1,571	1,506	1,468	1,369	1,318	1,282	1,244	1,275	1,332	1,497	1,693	1,659	1435
1964	1,651	1,515	1,406	1,285	1,227	1,152	1,123	1,058	1,038	1,138	1,260	1,329	1265
1965	1,359	1,298	1,187	1,120	1,106	1,087	1,071	1,072	1,037	1,102	1,158	1,158	1146
1966	1,158	1,128	1,046	1,008	968	937	975	970	1,032	1,134	1,211	1,245	1068
1967	1,237	1,213	1,142	1,096	1,045	1,014	1,047	1,025	985	1,042	1,097	1,126	1089
1968	1,131	1,105	1,059	1,016	974	945	928	915	890	935	960	990	987
1969	990	967	929	896	868	863	818	794	769	809	845	871	868
1970	869	864	851	830	819	822	825	817	822	863	907	923	851
1971	929	892	893	870	860	848	841	831	823	879	926	945	878
1972	910	915	892	877	868	860	866	864	880	940	992	1,028	908
1973	1,004	981	956	926	898	878	859	803	791	837	872	897	892
1974	893	868	850	823	804	795	772	771	768	810	860	897	826
1975	892	876	861	833	814	800	789	749	688	711	752	774	795
1976	777	766	749	729	704	700	707	707	736	775	819	845	751
1977	861	864	843	832	820	814	826	818	863	917	963	1,004	869
1978	996	987	962	917	887	851	823	820	847	904	949	939	907
1979	948	919	894	868	838	809	787	795	831	879	919	953	870
1980	943	925	901	857	801	786	785	727	733	782	781	831	821
1981	833	824	812	796	789	778	788	773	808	851	907	933	824
1982	895	887	863	838	815	789	770	711	704	736	774	761	795
1983	752	745	726	710	679	615	607	551	503	537	554	572	629
1984	579	574	556	552	547	530	505	454	445	474	495	516	519
1985	526	532	532	532	533	523	505	491	515	545	581	610	535
1986	619	619	609	604	588	539	509	488	496	522	549	579	560
1987	588	592	595	593	585	583	594	600	630	667	699	732	622
1988	741	737	736	727	725	735	730	747	796	872	941	945	786
1989	1,009	995	979	975	944	906	918	962	1,018	1,135	1,230	1,121	1016
1990	1,108	1,092	1,073	1,024	993	975	1,007	1,004	1,040	1,124	1,215	1,245	1075
1991	1,225	1,214	1,177	1,142	1,095	1,071	1,079	1,059	1,081	1,205	1,283	1,265	1158
1992	1,233	1,201	1,155	1,114	1,072	1,066	1,100	1,140	1,193	1,355	1,535	1,417	1215
1993	1,411	1,340	1,287	1,166	1,093	1,014	1,016	950	962	1,020	1,074	1,096	1119
1994	1,082	1,067	1,047	1,025	1,003	1,000	1,000	1,016	1,077	1,167	1,231	1,289	1084
1995	1,239	1,203	1,174	1,109	1,081	1,060	1,045	924	868	888	930	973	1041
1996	974	975	956	958	928	903	882	849	825	885	940	965	920
1997	975	945	920	877	860	839	797	732	714	763	799	815	836
1998	814	808	794	772	753	742	730	678	646	680	711	724	738
1999	737	732	731	723	717	719	704	658	659	693	729	762	714
Average	1,019	994	961	925	896	874	867	849	863	929	991	1,014	932
Maximum	1,651	1,576	1,468	1,385	1,318	1,282	1,244	1,275	1,348	1,525	1,700	1,700	1,435
Minimum	526	532	532	532	533	523	505	454	445	474	495	516	519



LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

No	Mon	Year	Water EOM Stage	Total Lake				Quality - all in mg/l														
				Precip	Evap	Inflow	Outflow	Tot. Dis. Solids			Sodium			Potassium			Chloride			Sulfate		
Ft	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	
1	Oct	1949	4485.40	15888	24696	51791	-9372	999	465	1111	188	52	215	23	8	26	263	53	302	279	138	318
2	Nov	1949	4485.30	2640	13136	8040	-5958	986	463	1083	185	54	209	22	8	25	258	54	292	276	136	308
3	Dec	1949	4485.80	10633	7910	42970	-3197	947	442	1065	176	49	205	21	7	24	245	50	287	263	125	300
4	Jan	1950	4486.45	13641	2760	47178	-1761	905	428	1037	166	46	199	20	7	23	230	47	279	248	117	290
5	Feb	1950	4486.95	5871	5210	48560	-5185	875	428	1028	159	47	198	19	7	23	220	48	278	238	117	284
6	Mar	1950	4487.20	6014	13637	39191	-9269	864	429	1026	157	48	198	19	7	23	217	48	278	235	118	282
7	Apr	1950	4487.35	4050	21962	44259	-12939	869	430	1001	159	47	192	19	7	22	219	48	268	236	120	275
8	May	1950	4487.70	9470	37466	85277	-25705	841	444	980	152	49	187	18	7	22	208	51	260	227	130	269
9	Jun	1950	4487.50	1205	50258	67883	-36998	843	479	991	152	55	189	18	8	22	209	59	263	229	149	275
10	Jul	1950	4486.85	4365	59754	39843	-42399	892	526	999	165	64	191	19	10	22	225	72	264	247	170	280
11	Aug	1950	4486.10	419	52931	28426	-41575	942	552	1030	177	69	198	21	11	23	241	78	273	265	184	292
12	Sep	1950	4485.65	5487	38667	25778	-31280	977	544	1061	185	66	205	22	10	24	252	74	282	277	180	303
Water yr tot				Year average:				912	469	1034	168	54	199	20	8	23	232	57	277	252	140	290
Tot. Sys. Av.				Stage 79689 328393 529203 -225638																		
Main Lake				4486.52 56094 220003 402822 -225637																		
Provo Bay				4486.52 4522 18235 89602 0																		
Goshen Bay				4486.52 19073 90155 36778 0																		
13	Oct	1950	4485.70	3738	27027	40864	-13270	993	519	1063	189	63	205	22	10	24	256	68	281	283	166	304
14	Nov	1950	4486.05	13333	14965	36707	-5075	974	484	1038	184	57	199	21	9	23	249	59	272	275	146	295
15	Dec	1950	4486.55	9022	11861	51243	-4854	936	463	1023	175	53	196	20	8	23	236	55	267	262	135	288
16	Jan	1951	4487.10	8295	2681	44805	-1761	904	447	1011	167	50	194	19	7	22	225	51	264	251	127	283
17	Feb	1951	4487.50	4159	4797	39053	-2644	884	444	1014	162	50	196	19	7	22	219	51	267	244	125	282
18	Mar	1951	4487.75	5865	11698	33702	-5182	875	442	1011	160	50	196	19	7	22	216	51	268	241	124	280
19	Apr	1951	4488.05	15926	23443	47288	-12497	868	435	979	159	48	188	19	7	21	214	49	256	238	121	270
20	May	1951	4488.55	11399	38226	100412	-27472	831	448	952	149	50	181	17	7	21	200	52	245	225	130	262
21	Jun	1951	4488.35	3610	47080	70842	-45832	824	476	955	148	55	181	17	8	21	198	59	246	224	145	265
22	Jul	1951	4487.60	4555	59452	38736	-52370	865	520	957	158	64	181	18	10	21	212	71	245	239	165	268
23	Aug	1951	4487.00	7204	53151	26533	-34395	907	542	980	169	67	187	20	10	22	225	76	252	255	176	277
24	Sep	1951	4486.40	422	37911	19169	-34483	947	552	1012	178	69	194	21	11	22	238	77	261	269	182	289
Water yr tot				Year average:				901	481	1000	166	56	191	19	8	22	224	60	260	250	145	280
Tot. Sys. Av.				Stage 87534 332298 549358 -239836																		
Main Lake				4487.22 60159 220213 423881 -239835																		
Provo Bay				4487.22 5825 20393 86711 0																		
Goshen Bay				4487.22 21550 91692 38766 0																		
25	Oct	1951	4486.50	12431	27498	35717	-11944	952	502	1008	179	59	193	21	9	22	239	64	259	270	155	288
26	Nov	1951	4487.00	10734	12975	51033	-4696	934	458	984	175	52	187	20	8	21	233	54	250	264	132	278
27	Dec	1951	4487.65	28162	7936	42798	-4696	893	414	952	165	43	181	19	6	21	219	44	242	249	110	268
28	Jan	1952	4488.30	8548	2760	58287	-4696	858	397	936	157	39	177	18	6	20	208	41	238	236	102	261
29	Feb	1952	4488.80	5274	5183	73190	-26821	822	391	915	148	39	174	17	6	20	197	40	234	224	100	253
30	Mar	1952	4489.00	17860	11784	92090	-79453	766	380	882	136	36	168	16	5	19	179	38	226	205	94	242
31	Apr	1952	4489.70	8523	21978	169211	-89013	695	372	825	117	34	152	14	5	17	155	36	204	181	91	222
32	May	1952	4491.00	10016	41541	280949	-122248	595	384	747	93	36	133	11	5	15	124	39	178	148	99	197
33	Jun	1952	4490.60	6738	56446	118880	-108712	597	405	744	93	40	130	11	6	15	122	44	174	148	110	195
34	Jul	1952	4489.60	4292	64170	54425	-91830	633	439	722	101	47	124	12	7	14	134	53	165	161	126	189
35	Aug	1952	4488.95	8783	57689	37547	-50394	662	465	724	109	52	125	13	8	14	144	59	166	172	139	191
36	Sep	1952	4488.45	267	42373	33564	-38127	690	486	739	116	56	128	13	9	15	153	62	170	183	149	198
Water yr tot				Year average:				758	425	848	132	45	156	15	7	18	176	48	209	203	117	232
Tot. Sys. Av.				Stage 121635 3523381047697 -632631																		
Main Lake				4488.80 81628 227872 838586 -632630																		
Provo Bay				4488.80 9065 25476 128381 0																		
Goshen Bay				4488.																		

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN 025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL- 9Dec2003 (Thurin)--13De (CONT.)

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN 025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water Stage	Total Lake					Quality - all in mg/l															
				Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium			Potassium			Chloride			Sulfate				
Ft	af	af	af	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB		
73	Oct	1955	4484.40	3494	24571	33601	-12524	1112	483	1170	220	56	234	24	8	26	285	60	306	326	148	344		
74	Nov	1955	4484.75	10382	13386	32153	-442	1077	461	1139	211	52	226	23	8	25	273	55	295	313	135	332		
75	Dec	1955	4485.20	8048	6894	36618	-331	1034	443	1123	201	48	223	22	7	25	259	51	290	298	126	325		
76	Jan	1956	4485.80	14572	4277	40793	-221	984	428	1090	188	45	216	21	6	24	243	48	282	281	118	313		
77	Feb	1956	4486.30	7273	4434	40488	-110	949	427	1081	180	45	214	20	6	23	232	48	281	268	117	307		
78	Mar	1956	4486.55	206	13195	34904	-110	941	434	1088	178	47	216	20	7	23	230	50	284	266	122	309		
79	Apr	1956	4486.25	4309	23925	25734	-32255	958	438	1077	183	48	214	20	7	23	236	51	280	271	125	306		
80	May	1956	4486.05	2657	33813	40403	-26660	963	459	1087	184	50	216	21	7	24	237	55	282	273	138	311		
81	Jun	1956	4485.35	0	43909	17151	-32982	1021	493	1135	198	57	227	22	9	25	256	63	297	294	157	329		
82	Jul	1956	4484.50	3454	55819	21638	-39930	1100	532	1199	218	65	243	24	10	27	281	76	316	323	172	354		
83	Aug	1956	4483.75	419	48719	25864	-37782	1180	512	1277	237	60	261	26	9	29	306	70	339	352	164	383		
84	Sep	1956	4483.10	300	35448	14163	-29805	1262	481	1367	257	53	282	28	8	31	331	60	366	381	149	415		
Water yr tot				Year average:					1048	466	1153	205	52	231	23	8	25	264	57	301	304	139	335	
Tot. Sys. Av.Stage				55118	308397	363516	-213152																	
Main Lake				4485.17	37223	213375	-213151																	
Provo Bay				4485.17	2302	10910	76429																	
Goshen Bay				4485.17	15593	84113	25350																	
85	Oct	1956	4483.00	6501	23982	20231	-10508	1291	448	1395	263	50	289	29	8	32	339	54	374	391	127	424		
86	Nov	1956	4483.40	572	11322	42179	-437	1238	440	1341	250	50	275	27	7	30	321	51	356	371	122	404		
87	Dec	1956	4483.90	3590	7329	43601	-437	1167	423	1300	232	46	265	26	7	29	298	48	343	346	114	388		
88	Jan	1957	4484.35	12475	5295	29049	0	1106	413	1273	218	44	260	24	6	28	279	45	337	325	109	376		
89	Feb	1957	4484.80	4197	5900	38543	0	1061	416	1266	207	45	259	23	6	28	265	46	337	309	110	371		
90	Mar	1957	4485.10	11474	11909	25356	0	1036	409	1244	201	43	254	22	6	27	257	45	332	299	107	362		
91	Apr	1957	4485.80	13362	17667	63586	0	989	398	1144	190	40	229	21	6	25	243	42	298	283	103	329		
92	May	1957	4486.20	22658	30396	56800	-14509	952	407	1106	181	40	220	20	6	24	232	44	285	270	109	318		
93	Jun	1957	4486.25	8136	45316	69441	-27930	935	446	1086	177	49	215	20	8	23	226	54	278	265	130	313		
94	Jul	1957	4485.35	1313	57274	28011	-49204	1002	505	1116	194	61	222	21	10	24	248	71	287	290	156	326		
95	Aug	1957	4484.60	5559	51352	23540	-40149	1065	512	1165	209	62	234	23	10	26	267	72	301	313	160	345		
96	Sep	1957	4484.10	1103	33890	24823	-32620	1103	490	1209	218	57	244	24	9	27	278	65	313	327	150	361		
Water yr tot				Year average:					1079	442	1220	212	49	247	23	7	27	271	53	320	316	125	360	
Tot. Sys. Av.Stage				90946	301637	465165	-175794																	
Main Lake				4484.74	63048	208296	341846																	
Provo Bay				4484.74	3626	11092	84742																	
Goshen Bay				4484.74	24272	82249	38577																	
97	Oct	1957	4484.10	5992	25022	29174	-10145	1122	465	1215	223	54	245	24	8	27	284	57	315	333	136	363		
98	Nov	1957	4484.65	6455	12461	52566	-1871	1077	450	1160	211	52	232	23	8	25	269	53	297	316	128	342		
99	Dec	1957	4485.10	9210	6162	36104	-1871	1029	430	1140	199	47	227	22	7	25	254	49	292	299	118	334		
100	Jan	1958	4485.55	6394	3918	36505	-1105	993	423	1130	191	46	225	21	7	24	243	47	290	286	114	328		
101	Feb	1958	4486.10	9960	6996	47049	-2762	952	420	1112	181	46	222	20	6	24	230	47	287	271	112	319		
102	Mar	1958	4486.60	13830	12625	44947	-2541	923	415	1090	174	45	217	19	6	23	222	46	281	261	110	311		
103	Apr	1958	4486.95	6103	23908	50889	-2209	919	415	1058	174	44	209	19	6	22	221	46	271	259	112	301		
104	May	1958	4487.20	3047	43680	94050	-31118	886	440	1036	165	48	204	18	7	22	210	52	263	248	128	295		
105	Jun	1958	4486.55	2226	55271	32762	-37329	923	479	1070	175	55	212	19	8	23	223	61	273	262	148	309		
106	Jul	1958	4485.65	377	59349	25060	-43946	1002	529	1112	194	66	222	21	10	24	248	75	285	291	170	326		
107	Aug	1958	4485.00	6494	55991	40520	-45883	1052	534	1135	206	66	227	23	10	25	263	76	291	309	173	335		
108	Sep	1958	4484.50	5892	38200	24566	-33489	1092	505	1187	216	59	239	24	9	26	275	67	307	323	158	354		
Water yr tot				Year average:					997	459	1120	192	52	223	21	8	24	245	56	288	288	134	326	
Tot. Sys. Av.Stage				75986	343588	514200	-214269																	
Main Lake				4485.66	51213	233829	383250																	
Provo Bay				4485.66	3416	15761	94864																	
Goshen Bay				4485.66	21357	93998	360																	

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Stage	Water EOM Total Lake				Quality - all in mg/l															
				Precip	Evap	Inflow	Outflow	Tot. Dis. Solids			Sodium			Potassium			Chloride			Sulfate			
				Ft	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	
109	Oct	1958	4484.40	0	27209	32829	-13712	1114	485	1202	221	57	242	24	9	26	281	62	310	331	147	359	
110	Nov	1958	4484.80	7450	15050	47256	-6842	1077	465	1158	211	55	231	23	8	25	269	57	296	317	135	342	
111	Dec	1958	4485.25	3437	7553	44722	-3086	1034	451	1141	200	52	227	22	8	25	255	53	291	301	128	335	
112	Jan	1959	4485.70	7859	5191	36148	-663	994	440	1133	191	49	226	21	7	24	242	51	290	287	122	330	
113	Feb	1959	4486.30	13891	6235	44752	-663	953	432	1112	181	48	222	20	7	24	230	49	287	272	117	320	
114	Mar	1959	4486.60	3626	11979	34815	-221	943	438	1107	179	50	221	20	7	24	227	51	286	268	121	317	
115	Apr	1959	4486.70	9128	23822	29156	-5634	955	438	1085	182	49	215	20	7	23	232	51	278	272	123	311	
116	May	1959	4486.35	6953	36835	31188	-32001	968	456	1099	185	51	219	21	8	24	237	55	283	276	134	317	
117	Jun	1959	4485.70	6121	47839	22596	-36998	1011	485	1137	196	56	228	22	9	25	251	62	294	292	150	331	
118	Jul	1959	4484.85	959	51330	21132	-42289	1089	522	1188	216	64	240	24	10	26	275	74	309	320	164	351	
119	Aug	1959	4484.20	10690	47991	22567	-38372	1146	499	1239	229	58	252	25	10	28	293	67	324	340	154	370	
120	Sep	1959	4483.80	11800	34402	17757	-27193	1181	473	1277	238	53	261	26	9	29	303	59	335	353	142	383	
Water yr tot				Year average:				1039	465	1156	202	54	232	22	8	25	258	58	299	302	137	339	
Tot. Sys. Av.Stage				81917	315442	384925	-207674																
Main Lake				4485.39	57696	216864	272260																
Provo Bay				4485.39	3728	12406	85550																
Goshen Bay				4485.39	20493	86172	27115																
121	Oct	1959	4483.85	1379	23384	34618	-8631	1200	470	1290	242	53	264	26	8	29	309	57	339	359	141	388	
122	Nov	1959	4484.00	344	13162	28942	-4254	1187	463	1279	239	52	261	26	8	28	305	55	335	353	137	383	
123	Dec	1959	4484.50	6194	7765	43193	-1201	1126	446	1232	224	48	250	24	7	27	285	52	321	331	128	365	
124	Jan	1960	4485.05	6318	3452	42771	-221	1072	437	1208	210	47	244	23	7	26	269	50	315	312	123	354	
125	Feb	1960	4485.60	15543	4637	35614	-110	1022	427	1178	198	45	239	22	6	26	254	48	309	294	117	342	
126	Mar	1960	4486.05	9960	12065	40897	-221	995	429	1162	192	46	235	21	7	25	246	48	304	284	119	334	
127	Apr	1960	4486.10	4047	23504	26925	-3093	1013	437	1147	197	47	231	22	7	25	252	51	299	289	125	330	
128	May	1960	4485.70	2670	38910	33866	-32001	1036	465	1177	203	51	239	22	8	26	261	56	309	297	142	342	
129	Jun	1960	4484.95	1308	50644	19486	-33424	1108	501	1243	221	58	255	24	9	28	284	65	330	323	161	366	
130	Jul	1960	4483.70	367	57207	-5288	-39157	1266	535	1347	260	66	280	28	10	30	334	77	362	377	172	403	
131	Aug	1960	4482.80	2753	47300	4821	-30049	1405	486	1480	295	54	313	32	9	34	379	64	404	425	149	450	
132	Sep	1960	4482.35	4797	35516	17653	-20747	1485	461	1604	314	49	342	34	8	37	404	55	442	452	138	492	
Water yr tot				Year average:				1159	463	1279	233	51	263	25	8	28	298	57	339	341	138	379	
Tot. Sys. Av.Stage				55686	317554	323501	-173109																
Main Lake				4484.55	39335	222269	219733																
Provo Bay				4484.55	2146	9110	76962																
Goshen Bay				4484.55	14205	86174	26806																
133	Oct	1960	4482.50	10602	23012	28632	-5128	1461	455	1588	307	51	338	33	8	37	395	54	436	443	132	485	
134	Nov	1960	4483.15	6370	13016	57027	-874	1329	455	1409	275	52	296	30	8	32	353	54	382	397	131	424	
135	Dec	1960	4483.55	3597	5607	33961	-874	1259	443	1392	257	49	291	28	7	31	330	52	376	372	125	415	
136	Jan	1961	4483.90	0	5147	32870	0	1211	443	1396	245	49	292	27	7	31	315	51	378	356	125	413	
137	Feb	1961	4484.25	3842	7647	31942	0	1171	442	1396	236	50	293	26	7	31	303	52	382	342	124	410	
138	Mar	1961	4484.45	15260	10815	11738	0	1145	432	1372	230	47	288	25	7	31	295	49	375	331	118	400	
139	Apr	1961	4484.55	5149	18154	21138	0	1160	431	1339	234	46	280	26	7	30	301	49	364	335	120	390	
140	May	1961	4484.05	1467	30182	18293	-30080	1204	450	1375	246	48	289	27	7	31	316	53	376	350	134	403	
141	Jun	1961	4483.10	212	42432	-2643	-29749	1348	469	1481	282	52	315	31	8	34	364	58	410	399	142	441	
142	Jul	1961	4482.30	4810	50300	7055	-22029	1525	489	1642	327	57	355	35	9	38	422	68	461	459	142	497	
143	Aug	1961	4481.70	7384	44219	7119	-14119	1700	456	1819	370	49	399	40	8	43	479	57	517	519	131	558	
144	Sep	1961	4481.60	12654	27086	12618	-5413	1700	453	1899	371	49	417	40	8	45	479	54	541	518	132	584	
Water yr tot				Year average:				1351	451	1509	282	50	321	31	8	34	363	54	417	402	130	452	
Tot. Sys. Av.Stage				71352	277624	259754	-108266																
Main Lake				4483.26	51647	200659	161847																
Provo Bay				4483.26	936	3172	73308																
Goshen Bay				4483.26	18769	73793	24599																

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water EOM	Total Lake				Quality - all in mg/l																
				Stage	Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium			Potassium			Chloride			Sulfate			
			Ft	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB		
145	Oct	1961	4481.80	12768	18569	20882	-663	1647	445	1838	357	48	403	38	8	43	460	52	522	498	126	561		
146	Nov	1961	4482.10	6695	9998	25601	-437	1576	439	1758	339	48	383	36	8	41	437	50	497	473	123	532		
147	Dec	1961	4482.50	9964	5230	24974	-110	1468	424	1702	312	44	369	34	7	39	402	47	480	436	116	510		
148	Jan	1962	4482.90	2691	1171	28893	-110	1385	420	1660	292	44	360	31	7	38	376	47	468	408	114	494		
149	Feb	1962	4483.55	15911	4197	39002	-437	1252	416	1546	259	43	334	28	6	35	333	46	436	363	111	454		
150	Mar	1962	4484.05	10297	7561	37266	-327	1191	411	1489	244	42	320	26	6	34	314	45	418	341	109	433		
151	Apr	1962	4484.55	9552	21899	53501	-653	1141	404	1390	232	40	295	25	6	31	299	43	385	325	108	402		
152	May	1962	4484.65	13728	34610	49606	-20470	1120	424	1359	227	42	287	25	7	31	292	47	374	319	120	393		
153	Jun	1962	4484.05	4496	42754	18065	-28564	1198	458	1414	247	49	301	27	8	32	318	56	392	346	137	414		
154	Jul	1962	4483.05	3704	51082	4599	-35733	1359	493	1506	288	58	324	31	10	35	371	69	421	401	146	447		
155	Aug	1962	4482.15	49	45810	13451	-35352	1521	460	1673	328	50	366	35	8	39	423	58	474	457	133	505		
156	Sep	1962	4481.70	2978	34636	25299	-26381	1591	449	1811	345	47	399	37	8	43	444	54	517	481	130	552		
Water yr tot								Year average:	1371		437	1595	289	46	345	31	7	37	372	51	448	404	123	475
Tot.	Sys.	Av.	Stage	92840	277523	341147	-149237																	
Main Lake				4483.09	68183	199398	237398	-149236																
Provo Bay				4483.09	1372	3996	85707	0																
Goshen Bay				4483.09	23286	74129	18041	0																
157	Oct	1962	4481.85	4674	25081	36793	-5565	1571	457	1780	339	49	391	36	8	42	437	54	506	474	135	541		
158	Nov	1962	4482.15	2025	13364	36747	-3491	1506	456	1699	323	50	370	34	8	39	415	53	480	451	133	512		
159	Dec	1962	4482.35	401	5504	21010	-1090	1468	446	1693	313	48	369	33	7	39	404	52	479	436	129	507		
160	Jan	1963	4482.75	7881	2209	24695	-327	1369	441	1638	288	47	356	31	7	38	372	50	464	402	126	486		
161	Feb	1963	4483.15	3286	4265	31650	-110	1318	442	1608	276	48	350	30	7	36	357	51	457	384	126	471		
162	Mar	1963	4483.45	12262	11612	22623	0	1282	436	1573	267	47	342	29	7	36	346	50	448	370	123	458		
163	Apr	1963	4483.85	19199	18447	30831	0	1244	426	1474	258	43	317	28	6	33	335	47	415	356	119	426		
164	May	1963	4483.50	3397	25988	21654	-26786	1275	446	1500	267	45	324	29	7	34	347	51	424	366	133	436		
165	Jun	1963	4483.10	9169	38689	23775	-25249	1332	462	1542	281	49	335	30	8	35	367	56	438	386	139	451		
166	Jul	1963	4482.15	179	48546	21413	-44605	1497	490	1685	323	57	371	34	9	39	421	68	485	442	144	502		
167	Aug	1963	4481.30	3792	45119	19135	-39044	1693	459	1895	373	48	423	39	8	45	486	57	553	509	134	573		
168	Sep	1963	4481.20	7753	31773	37136	-20104	1659	457	1877	363	48	417	38	8	44	473	54	545	498	135	567		
Water yr tot								Year average:	1434		452	1664	306	48	364	33	7	38	397	54	474	423	131	494
Tot.	Sys.	Av.	Stage	74022	270603	327470	-166371																	
Main Lake				4482.57	53254	198000	226323	-166370																
Provo Bay				4482.57	813	1834	77250	0																
Goshen Bay				4482.57	19956	70769	23897	0																
169	Oct	1963	4481.20	3805	21764	28674	-10715	1651	449	1893	361	50	421	38	8	44	470	54	550	494	128	572		
170	Nov	1963	4481.65	9630	11305	34289	-763	1515	444	1737	326	50	382	35	8	40	425	52	499	447	125	517		
171	Dec	1963	4482.10	3298	5064	35539	-1090	1406	432	1681	299	46	368	32	7	39	390	50	483	410	119	496		
172	Jan	1964	4482.60	6780	1324	32818	-1090	1285	427	1608	269	45	351	29	7	37	351	48	461	368	117	469		
173	Feb	1964	4483.05	511	3357	37336	-327	1227	428	1578	255	46	345	28	7	36	333	49	455	349	117	455		
174	Mar	1964	4483.65	7564	10793	50099	-110	1152	421	1487	236	45	322	26	7	34	309	47	426	323	114	425		
175	Apr	1964	4484.10	17563	20164	38416	0	1123	408	1378	229	41	295	25	6	31	300	44	389	312	108	390		
176	May	1964	4484.60	19373	29865	67430	-16355	1058	423	1281	213	42	270	23	7	29	279	47	356	291	119	360		
177	Jun	1964	4484.85	16851	38673	60882	-18445	1038	447	1222	208	47	255	23	7	27	273	54	337	285	130	342		
178	Jul	1964	4483.90	912	47386	13641	-44384	1138	492	1271	234	58	268	25	9	29	308	69	353	320	147	361		
179	Aug	1964	4483.00	1798	46748	16995	-42464	1260	475	1371	265	54	293	29	9	31	349	63	386	362	141	396		
180	Sep	1964	4482.50	453	35514	30090	-32918	1329	457	1474	282	50	318	30	8	34	371	56	419	385	134	430		
Water yr tot								Year average:	1265		442	1498	265	48	324	28	7	34	346	53	426	362	125	434
Tot.	Sys.	Av.	Stage	88544	271964	446216	-168661																	
Main Lake				4483.10	64229	194443	332382	-168660																
Provo Bay				4483.10	1753	4724	81540	0																
Goshen Bay				4483.10	22562	72797	32294	0																

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water Stage	Total Lake				Quality - all in mg/l															
				Main	PB	GB	Main	Sodium	Potassium	Chloride	Sulfate	Main	PB	GB	Main	PB	GB	Main	PB	GB			
181	Oct	1964	4482.45	315	26254	32305	-10052	1359	454	1518	290	52	329	31	8	35	380	55	434	394	129	445	
182	Nov	1964	4482.85	7226	14023	37449	-437	1298	450	1454	273	53	313	29	8	33	359	54	412	372	126	421	
183	Dec	1964	4483.60	19729	7075	45820	-437	1187	432	1352	245	48	288	27	7	31	322	50	381	334	118	387	
184	Jan	1965	4484.15	7006	4563	42543	-1201	1120	431	1324	228	48	281	25	7	30	300	50	372	312	117	374	
185	Feb	1965	4484.40	638	3761	24422	-1090	1106	435	1328	226	50	283	25	7	30	297	51	376	306	119	372	
186	Mar	1965	4484.75	1685	12751	40426	-653	1087	433	1320	221	49	282	24	7	30	292	51	375	299	119	368	
187	Apr	1965	4485.10	7003	24310	51135	-4801	1071	426	1265	218	46	268	24	7	28	287	49	356	293	117	351	
188	May	1965	4485.10	4971	32049	53975	-26897	1072	442	1263	218	47	267	24	7	28	288	52	356	294	128	352	
189	Jun	1965	4485.20	7205	43332	78794	-34254	1037	467	1255	208	53	265	23	8	28	275	59	352	283	140	351	
190	Jul	1965	4484.60	6004	53647	37930	-40090	1102	504	1260	225	61	265	25	10	29	298	72	352	306	153	355	
191	Aug	1965	4484.10	6896	47596	39714	-39597	1158	489	1291	239	57	273	26	9	30	316	67	362	325	148	367	
192	Sep	1965	4484.15	12347	32960	41540	-16901	1158	468	1291	239	53	272	26	9	30	316	59	361	325	138	367	
Water yr tot				Year average:				1146	452	1327	236	51	282	26	8	30	311	56	374	320	129	376	
Tot. Sys. Av.Stage				81031	302328	526060	-176410																
Main Lake				4484.20	55724	211896	400429																
Provo Bay				4484.20	1902	8173	90898																
Goshen Bay				4484.20	23404	82259	34733																
193	Oct	1965	4484.25	1003	25061	41208	-9058	1158	472	1277	239	56	268	26	8	29	315	59	356	326	140	363	
194	Nov	1965	4484.70	7759	15923	46754	-1871	1128	463	1240	231	55	259	25	8	28	304	57	343	315	133	350	
195	Dec	1965	4485.45	11955	7308	59786	-1871	1046	443	1176	209	50	243	23	7	26	276	52	323	288	123	328	
196	Jan	1966	4485.90	1327	2252	42546	-3197	1008	441	1170	200	50	242	22	7	26	264	52	322	276	122	324	
197	Feb	1966	4486.40	7192	5867	50306	-8278	968	438	1155	190	50	239	21	7	25	251	51	318	263	120	317	
198	Mar	1966	4486.90	3700	15745	63080	-7060	937	442	1139	182	51	235	20	7	25	240	53	314	252	123	312	
199	Apr	1966	4486.75	3043	27863	19568	-7968	975	448	1126	192	52	232	21	7	25	254	54	309	264	127	308	
200	May	1966	4486.65	7253	45451	62585	-33216	970	468	1133	191	54	233	21	8	25	252	59	311	263	140	312	
201	Jun	1966	4485.90	377	53604	25385	-37439	1032	506	1182	207	62	246	23	9	27	274	68	327	285	160	330	
202	Jul	1966	4484.95	952	61048	20245	-40521	1134	550	1248	233	71	262	25	11	28	308	83	348	319	177	354	
203	Aug	1966	4484.25	3832	50610	28699	-39256	1211	524	1321	252	64	280	27	10	30	333	75	371	345	165	379	
204	Sep	1966	4483.90	5960	38612	34028	-29513	1245	490	1367	260	57	290	28	9	32	343	65	385	357	150	395	
Water yr tot				Year average:				1068	474	1211	215	56	252	23	8	27	284	61	336	296	140	339	
Tot. Sys. Av.Stage				54358	349350	494195	-219248																
Main Lake				4485.50	37685	239536	373127																
Provo Bay				4485.50	2415	14385	87047																
Goshen Bay				4485.50	14259	95428	34021																
205	Oct	1966	4484.05	7024	24522	40621	-11171	1237	466	1346	257	55	284	28	8	31	339	59	377	354	135	388	
206	Nov	1966	4484.30	3590	14609	33846	-2617	1213	458	1321	251	55	278	27	8	30	330	56	368	346	130	379	
207	Dec	1966	4484.95	15074	9725	49048	-1090	1142	436	1259	232	49	263	25	7	28	306	51	348	322	119	358	
208	Jan	1967	4485.35	16252	4346	22827	-1201	1096	424	1226	221	47	256	24	7	28	290	48	339	306	113	346	
209	Feb	1967	4485.90	660	4298	52225	-1748	1045	431	1201	208	49	250	23	7	27	274	50	332	290	116	335	
210	Mar	1967	4486.35	6232	14219	51048	-4039	1014	432	1187	201	49	246	22	7	26	263	51	327	279	117	329	
211	Apr	1967	4486.25	4262	23926	14120	-3164	1047	434	1176	210	49	243	23	7	26	276	51	323	289	119	327	
212	May	1967	4486.30	15890	36439	56847	-31967	1025	445	1150	204	50	236	22	7	25	268	54	314	282	127	319	
213	Jun	1967	4486.65	10910	46115	88313	-22475	985	476	1108	194	56	225	21	8	24	254	62	299	269	143	306	
214	Jul	1967	4485.95	5423	55560	28763	-39601	1042	527	1130	209	67	231	23	10	25	274	78	305	290	164	316	
215	Aug	1967	4485.20	3512	52489	28214	-42981	1097	539	1182	222	69	244	24	11	27	291	80	322	310	170	336	
216	Sep	1967	4484.80	4623	38827	32941	-32073	1126	521	1215	229	65	252	25	10	27	300	73	331	320	163	347	
Water yr tot				Year average:				1089	466	1209	220	55	251	24	8	27	289	59	332	305	135	340	
Tot. Sys. Av.Stage				93458	325079	498819	-194127																
Main Lake				4485.50	57141	221817	366865																
Provo Bay				4485.50	3712	14466	85559																
Goshen Bay				4485.50	32605	88797	46395																

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water EOM Stage	Total Lake				Quality - all in mg/l																
				Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium			Potassium			Chloride			Sulfate				
Ft	af	af	af	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB		
217	Oct	1967	4484.90	3087	25522	39418	-8729	1131	486	1222	230	59	253	25	9	28	300	63	332	322	145	350		
218	Nov	1967	4485.30	6997	14696	42913	-1761	1105	463	1190	223	55	245	24	8	27	291	57	321	313	133	339		
219	Dec	1967	4485.70	11604	6446	30569	-1761	1059	439	1170	211	49	240	23	7	26	275	51	315	298	120	331		
220	Jan	1968	4486.25	2820	3886	50350	-1871	1016	432	1153	200	48	236	22	7	25	260	50	310	284	118	324		
221	Feb	1968	4486.80	12861	7435	44742	-1982	974	427	1128	190	47	230	21	7	25	246	49	304	269	114	314		
222	Mar	1968	4487.25	11266	15134	51277	-7391	945	424	1113	183	47	227	20	7	24	237	48	299	260	114	308		
223	Apr	1968	4487.55	24365	24806	43796	-16473	928	415	1065	179	44	215	20	6	23	232	46	282	253	109	294		
224	May	1968	4487.65	11283	36398	62887	-28688	915	430	1050	176	46	211	19	7	23	228	50	277	250	120	290		
225	Jun	1968	4487.75	11479	47597	77450	-32248	890	457	1041	169	52	208	19	8	23	219	57	273	243	133	289		
226	Jul	1968	4487.15	4739	60046	42929	-41626	935	506	1040	180	63	207	20	10	23	234	71	271	259	155	291		
227	Aug	1968	4486.80	17628	52058	38645	-35279	960	515	1046	187	64	208	20	10	23	241	73	271	268	158	294		
228	Sep	1968	4486.30	1436	36384	22153	-31059	990	523	1074	194	65	215	21	10	24	250	73	280	280	163	305		
Water yr tot				Year average:				987	460	1108	193	53	224	21	8	24	251	57	295	275	132	311		
Tot. Sys. Av.Stage119570				330415				547134 -208868																
Main Lake				4486.62				78493				220807				417737 -208867								
Provo Bay				4486.62				7162				18798				97638								
Goshen Bay				4486.62				33915				90811				31759								
229 Oct 1968 4486.45				9192				27780				45283 -13615				990				501 1061 194 61 211 21 9 23 250 67 274 279 152 301				
230	Nov	1968	4486.90	9248	16235	55751	-9164	967	477	1035	187	57	205	20	9	22	242	60	266	271	139	292		
231	Dec	1968	4487.40	14202	7138	46699	-9164	929	446	1022	178	50	202	20	8	22	229	53	262	258	124	286		
232	Jan	1969	4487.90	13041	4138	44379	-8038	896	430	1001	170	47	197	19	7	21	219	49	257	246	116	278		
233	Feb	1969	4488.50	14031	4274	50067	-4696	868	420	982	163	45	194	18	7	21	210	47	254	237	111	271		
234	Mar	1969	4488.70	1144	13408	39764	-8786	863	420	989	162	46	195	18	7	21	209	48	255	235	112	271		
235	Apr	1969	4489.00	10998	29199	107399	-61174	818	417	949	150	45	185	17	6	20	194	47	241	219	112	259		
236	May	1969	4489.00	433	48519	110075	-61989	794	437	946	144	48	184	16	7	20	185	52	239	212	124	259		
237	Jun	1969	4489.00	25003	57420	98856	-66439	769	454	926	137	51	178	15	8	19	177	56	232	205	132	254		
238	Jul	1969	4488.30	5458	63901	49159	-55890	809	495	915	148	60	175	16	9	19	190	68	227	220	150	253		
239	Aug	1969	4487.70	3708	59565	51434	-50394	845	526	923	157	66	177	17	10	19	202	75	229	233	165	257		
240	Sep	1969	4487.30	2216	44016	36472	-30747	871	540	940	163	68	181	18	11	20	210	77	234	242	172	264		
Water yr tot				Year average:				868	464	974	163	53	190	18	8	21	210	58	247	238	134	270		
Tot. Sys. Av.Stage108679				375598				735344 -380097																
Main Lake				4488.01				69860				246135				579778 -380096								
Provo Bay				4488.01				7500				25087				108897								
Goshen Bay				4488.01				31318				104376				46669								
241 Oct 1969 4487.60				23813				26999				44415 -14238				869 508 922 163 62 176 18 10 19 209 68 227 240 154 257								
242	Nov	1969	4487.95	6219	14212	49284	-9521	864	493	912	161	60	173	18	9	19	208	65	224	238	146	253		
243	Dec	1969	4488.30	9881	8600	40368	-9521	851	473	909	158	56	173	17	9	19	204	60	224	232	136	250		
244	Jan	1970	4488.80	12198	4751	49660	-10647	830	456	905	153	53	172	17	8	19	198	56	224	225	127	248		
245	Feb	1970	4489.00	5624	6474	41546	-21983	819	450	912	151	52	175	17	8	19	195	55	229	220	124	248		
246	Mar	1970	4489.00	8787	14884	29509	-23413	822	446	915	152	52	176	17	8	19	197	54	231	220	123	248		
247	Apr	1970	4489.00	16694	24441	35900	-28153	825	438	902	153	50	173	17	7	19	199	52	227	220	119	243		
248	May	1970	4489.00	5498	39034	77526	-43990	817	451	904	151	52	174	17	8	19	196	55	228	217	128	244		
249	Jun	1970	4488.75	12520	49646	60861	-47105	822	469	912	153	55	176	17	8	19	199	60	230	219	137	248		
250	Jul	1970	4488.00	7063	56219	35632	-55890	863	503	924	163	63	179	18	10	19	213	71	233	234	151	253		
251	Aug	1970	4487.30	7504	52701	22525	-40611	907	519	958	175	65	187	19	10	20	227	75	244	249	158	265		
252	Sep	1970	4487.10	17560	36783	32106	-30747	923	510	969	178	63	189	19	10	21	232	71	247	254	154	269		
Water yr tot				Year average:				851	476	920	159	57	177	17	9	19	206	62	231	231	138	252		
Tot. Sys. Av.Stage133366				334748				519338 -335820																

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Stage	Water EOM				Total Lake			Quality - all in mg/l															
				Ft	af	af	af	Precep	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium	Potassium	Chloride	Sulfate	Main	PB	GB	Main	PB	GB		
253	Oct	1970	4487.20	11106	27111	39236	-14278	929	499	969	180	61	189	19	10	21	234	67	247	255	149	268				
254	Nov	1970	4487.90	22612	15891	65988	-9601	892	473	925	171	56	179	18	9	19	223	60	235	242	136	253				
255	Dec	1970	4488.15	12929	5740	25300	-9601	893	455	917	171	52	178	19	8	19	223	55	233	241	127	249				
256	Jan	1971	4488.65	5323	5088	55618	-9601	870	446	913	165	50	177	18	8	19	216	53	233	233	123	246				
257	Feb	1971	4488.95	14488	6164	30473	-10727	860	435	916	163	48	179	18	7	19	214	51	236	229	118	245				
258	Mar	1971	4489.00	1742	14508	59923	-42502	848	436	926	160	49	181	17	7	19	210	51	239	225	119	247				
259	Apr	1971	4489.00	17364	25682	55998	-47680	841	430	911	159	47	177	17	7	19	208	50	234	222	117	242				
260	May	1971	4489.00	7930	37720	71009	-41219	831	441	916	156	49	178	17	7	19	205	53	236	218	124	244				
261	Jun	1971	4488.85	2931	50303	80464	-47105	823	468	927	154	54	181	17	8	19	202	60	239	216	139	249				
262	Jul	1971	4487.95	3335	63002	32266	-55890	879	511	950	169	64	187	18	10	20	222	73	247	235	157	258				
263	Aug	1971	4487.25	6138	59087	30341	-40611	926	537	984	181	68	195	20	11	21	238	78	257	252	169	270				
264	Sep	1971	4487.05	9902	38343	41281	-30747	945	533	999	185	66	198	20	10	21	243	76	262	258	168	275				
Water yr tot				Year average:				878	472	938	168	55	183	18	8	20	220	61	241	235	137	254				
Tot. Sys. Av.Stage				115805	348645	587903	-359563																			
Main Lake				4488.25	72762	228555	441831																			
Provo Bay				4488.25	7999	23272	107196																			
Goshen Bay				4488.25	35044	96817	38877																			
265	Oct	1971	4487.70	16419	26906	83708	-14784	910	513	940	176	63	185	19	10	20	232	70	244	245	157	256				
266	Nov	1971	4487.85	5118	13297	33522	-11740	915	500	945	177	61	185	19	9	20	234	67	244	246	150	255				
267	Dec	1971	4488.30	8230	6601	50198	-10615	892	479	930	171	57	181	18	8	19	226	62	240	238	140	249				
268	Jan	1972	4488.70	2533	4744	51099	-11740	877	467	932	168	55	182	18	8	19	222	59	242	233	134	248				
269	Feb	1972	4489.00	1057	7771	46161	-11423	868	462	943	166	54	186	18	8	20	219	58	247	229	132	250				
270	Mar	1972	4489.00	3988	17948	49789	-35829	860	458	955	164	53	189	18	8	20	217	57	252	226	130	253				
271	Apr	1972	4489.00	9706	26776	48315	-31245	866	454	945	166	52	187	18	8	20	220	56	249	228	128	250				
272	May	1972	4488.80	187	40445	62763	-41219	864	469	959	165	55	190	18	8	20	219	60	253	226	138	255				
273	Jun	1972	4488.40	6146	55007	58723	-47105	880	495	978	169	60	195	18	9	21	225	67	259	233	151	263				
274	Jul	1972	4487.40	1474	59638	22898	-55890	940	538	1008	185	69	202	20	10	22	245	80	269	253	168	274				
275	Aug	1972	4486.75	6217	56017	32591	-40611	992	556	1048	198	72	212	21	11	23	263	84	282	271	177	288				
276	Sep	1972	4486.35	4845	40138	30953	-30747	1028	552	1084	207	71	220	22	11	24	275	82	294	282	176	299				
Water yr tot				Year average:				908	495	972	176	60	193	19	9	21	233	67	256	242	148	262				
Tot. Sys. Av.Stage				65926	355293	570725	-342949																			
Main Lake				4488.10	37812	233699	430033																			
Provo Bay				4488.10	4066	23143	98355																			
Goshen Bay				4488.10	24048	98452	42337																			
277	Oct	1972	4486.70	26826	28240	46740	-14632	1004	497	1057	200	60	213	21	9	23	265	68	284	274	147	290				
278	Nov	1972	4487.10	11590	14471	48585	-10310	981	470	1033	194	56	207	21	9	22	257	61	275	266	133	281				
279	Dec	1972	4487.50	6802	3893	43172	-10310	956	446	1023	188	51	205	20	8	22	249	55	273	258	122	277				
280	Jan	1973	4487.95	9623	1405	42947	-10310	926	427	1014	180	48	203	19	7	22	239	50	271	248	113	273				
281	Feb	1973	4488.45	3961	4060	55973	-9896	898	422	1003	173	47	201	19	7	21	229	49	269	238	110	268				
282	Mar	1973	4488.90	7325	12572	61616	-14401	878	417	987	168	46	197	18	7	21	222	48	264	231	109	262				
283	Apr	1973	4489.00	8876	21564	71048	-49003	859	413	957	163	45	189	18	7	20	216	47	253	225	108	253				
284	May	1973	4489.25	9432	38964	137834	-84577	803	423	927	149	46	182	16	7	19	197	50	243	207	114	244				
285	Jun	1973	4489.00	4246	54564	94118	-67525	791	451	923	146	52	180	16	8	19	192	58	241	205	128	245				
286	Jul	1973	4488.20	6538	62727	37731	-55890	837	492	928	158	61	181	17	9	20	209	70	242	221	144	249				
287	Aug	1973	4487.65	8461	55829	37771	-40611	872	513	942	166	65	184	18	10	20	220	75	245	233	154	254				
288	Sep	1973	4487.35	10897	39394	32232	-30747	897	514	960	172	65	188	19	10	21	228	74	250	241	154	260				
Water yr tot				Year average:				892	457	980	171	53	194	19	8	21	227	59	259	237	128	263				
Tot. Sys. Av.Stage				114581	337690	709773	-398213																			
Main Lake				4488.09	68997	221184	550575																			
Provo Bay				4488.09	7126	22623	111301																			
Goshen Bay				4488.09	38458	93882	47897																			

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water Stage	Total Lake					Quality - all in mg/l														
				Ft	Precip af	Evap af	Inflow af	Outflow af	Tot. Dis.	Solids Main	Sodium Main	Potassium Main	Chloride Main	Sulfate Main	PB Main	GB Main	PB Main	GB Main	PB Main	GB Main			
289	Oct	1973	4487.55	3088	27968	58233	-15425		893	513	943	171	64	184	19	10	20	226	72	244	240	155	255
290	Nov	1973	4488.10	9164	15008	67812	-11896		868	497	906	164	60	175	18	9	19	217	67	232	231	147	243
291	Dec	1973	4488.40	13145	7419	33779	-11896		850	472	902	160	55	174	17	8	19	211	60	231	226	135	241
292	Jan	1974	4488.85	9320	4184	49829	-13021		823	454	893	153	51	172	17	8	19	201	56	229	217	127	237
293	Feb	1974	4489.00	4283	5823	52332	-36780		804	446	898	148	50	174	16	7	19	195	54	232	211	123	237
294	Mar	1974	4489.00	1983	17510	56158	-40631		795	444	904	146	50	175	16	7	19	192	54	234	209	124	238
295	Apr	1974	4489.00	15391	25682	81390	-71100		772	435	862	140	48	165	16	7	18	184	52	219	200	120	225
296	May	1974	4488.90	735	41015	72142	-41219		771	450	870	140	50	166	16	7	18	183	55	221	201	130	229
297	Jun	1974	4488.70	1645	58238	85030	-47105		768	482	881	138	56	169	15	8	18	182	63	224	201	146	235
298	Jul	1974	4487.85	2228	66339	41638	-55890		810	526	891	149	66	171	17	10	19	196	76	226	217	165	241
299	Aug	1974	4487.10	331	56402	29139	-40611		860	552	926	162	70	179	18	11	20	212	82	236	235	178	254
300	Sep	1974	4486.55	0	43391	25480	-30747		897	560	962	170	71	187	19	11	21	223	83	247	248	182	267
Water yr tot				Year average:					826	486	903	153	58	174	17	9	19	202	64	231	220	144	242
Tot. Sys. Av.				Stage 61318 368985 652968 -416322																			
Main Lake				4488.25 36623 242024 498997 -416321																			
Provo Bay				4488.25 4201 24524 101923 0																			
Goshen Bay				4488.25 20494 102438 52049 0																			
301	Oct	1974	4486.80	10136	30758	54495	-11825		892	523	949	169	65	183	19	10	20	220	73	241	246	162	263
302	Nov	1974	4487.25	5484	15065	54295	-4696		876	492	927	164	60	177	18	9	20	214	65	233	240	146	255
303	Dec	1974	4487.50	8768	8146	26436	-4696		861	459	928	160	53	178	18	8	20	209	57	234	235	129	254
304	Jan	1975	4488.05	9359	4784	50082	-4696		833	435	919	153	48	176	17	7	19	199	52	232	226	117	250
305	Feb	1975	4488.55	2875	7430	55365	-4696		814	427	919	149	47	177	17	7	19	193	50	233	220	114	249
306	Mar	1975	4488.85	10124	13810	40542	-8786		800	417	914	145	45	175	16	7	19	189	48	232	215	109	246
307	Apr	1975	4489.00	12755	22130	59550	-36164		789	407	886	143	43	168	16	6	18	185	46	222	211	105	238
308	May	1975	4489.05	17872	35559	103316	-80903		749	413	853	133	43	160	15	7	17	172	47	210	197	109	228
309	Jun	1975	4489.55	10313	49261	173550	-87078		688	435	813	117	48	149	13	7	16	151	54	196	177	121	215
310	Jul	1975	4488.90	8340	63625	63921	-70244		711	470	797	123	56	145	14	9	16	158	64	189	186	136	212
311	Aug	1975	4487.95	2698	54442	14192	-50394		752	497	815	133	61	149	15	10	17	172	70	195	202	148	220
312	Sep	1975	4487.55	1066	41831	35176	-30747		774	514	830	139	64	153	16	10	17	179	74	199	210	156	227
Water yr tot				Year average:					795	457	879	144	53	166	16	8	18	187	58	218	214	129	238
Tot. Sys. Av.				Stage 99797 346848 730926 -394926																			
Main Lake				4488.25 62811 226556 562956 -394925																			
Provo Bay				4488.25 7024 23644 106941 0																			
Goshen Bay				4488.25 29962 96648 61029 0																			
313	Oct	1975	4487.85	10391	29836	58521	-11825		777	508	819	139	63	150	16	10	17	179	71	194	211	153	223
314	Nov	1975	4488.30	15109	14125	44924	-4696		766	488	804	136	59	146	15	9	16	175	65	189	206	142	217
315	Dec	1975	4488.85	6523	7276	57736	-5821		749	472	797	132	56	144	15	8	16	170	61	187	200	134	214
316	Jan	1976	4489.00	4683	5023	59399	-45048		729	460	794	127	53	144	14	8	16	163	58	188	193	129	212
317	Feb	1976	4489.00	10683	7369	62186	-65501		704	449	785	121	52	144	14	8	16	156	55	188	185	124	208
318	Mar	1976	4489.00	7432	14519	45205	-38119		700	444	793	120	51	145	14	7	16	154	54	190	183	122	208
319	Apr	1976	4489.00	8739	26047	41783	-24475		707	439	784	122	50	143	14	7	16	157	53	187	185	120	207
320	May	1976	4488.95	2011	42504	77056	-41219		707	453	787	122	52	143	14	8	16	157	56	187	186	130	209
321	Jun	1976	4488.20	3756	52377	26034	-47105		736	477	808	129	56	148	15	8	16	166	63	193	197	142	218
322	Jul	1976	4487.55	2926	63440	46258	-45036		775	516	827	139	65	153	16	10	17	179	74	198	211	159	226
323	Aug	1976	4486.70	2062	54825	17688	-40611		819	536	864	150	68	161	17	11	18	193	79	209	227	169	240
324	Sep	1976	4486.40	2096	41639	43927	-30747		845	538	893	156	68	168	18	11	19	200	78	217	236	170	251
Water yr tot				Year average:					751	482	813	133	58	149	15	9	17	171	64	194	202	141	219
Tot. Sys. Av.				Stage 76416 358984 580723 -400204																			
Main Lake				4488.23 49740 235940 424973 -400203																			
Provo Bay				4488.23 5634 23500 103591 0																			
Goshen Bay				4488.23 21043 99543 52159 0																			

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water	EOM	Total Lake				Quality - all in mg/l																
					Stage	Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium			Potassium			Chloride			Sulfate			
			Ft	af	af	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	
325	Oct	1976	4486.35	1766	27372	33098	-11825			861	529	907	159	66	171	18	10	19	204	74	221	242	166	256	
326	Nov	1976	4486.60	1812	16279	37161	-828			864	513	908	160	63	171	18	10	19	205	70	221	242	157	255	
327	Dec	1976	4487.05	528	8735	48758	-828			843	493	903	154	59	169	17	9	19	198	65	219	234	148	252	
328	Jan	1977	4487.35	5133	6940	29384	-717			832	475	909	151	55	171	17	8	19	194	60	222	230	139	253	
329	Feb	1977	4487.75	3749	8604	41778	-828			820	467	914	148	54	173	17	8	19	190	59	226	226	135	252	
330	Mar	1977	4488.05	8613	15605	35177	-911			814	459	916	147	53	174	17	8	19	189	57	227	223	131	252	
331	Apr	1977	4488.10	1229	27396	37402	-6604			826	464	911	151	54	173	17	8	19	193	59	225	227	135	252	
332	May	1977	4488.25	27567	39152	44901	-19512			818	463	900	148	52	170	17	8	19	191	58	221	224	134	249	
333	Jun	1977	4487.50	231	49468	8917	-28077			863	493	931	160	58	177	18	9	20	206	66	230	240	151	261	
334	Jul	1977	4486.70	9967	59212	13474	-35395			917	532	967	173	67	186	19	10	21	223	78	241	260	167	275	
335	Aug	1977	4486.00	8877	53828	18488	-34684			963	548	1010	184	69	196	21	11	22	237	82	253	276	175	291	
336	Sep	1977	4485.50	5139	37153	17351	-28146			1004	539	1050	194	67	205	22	11	23	249	78	265	291	172	305	
Water yr tot				Year average:						869	498	935	161	60	178	18	9	20	207	67	231	243	151	263	
Tot. Sys. Av.Stage				74618	349751	365896	-168355																		
Main Lake				4487.10	49015	232938	256802																		
Provo Bay				4487.10	4935	20606	82906																		
Goshen Bay				4487.10	20668	96206	26188																		
337	Oct	1977	4485.80	5637	26467	47579	-1081			996	500	1050	192	60	205	21	10	23	246	68	264	287	152	305	
338	Nov	1977	4486.05	655	15333	36646	-496			987	477	1046	189	56	204	21	9	23	243	62	263	284	140	303	
339	Dec	1977	4486.40	4095	8183	35035	-496			962	449	1042	183	50	203	21	8	23	235	56	262	275	126	300	
340	Jan	1978	4487.05	17780	4046	44132	-607			917	421	1017	172	44	198	19	7	22	221	49	256	259	111	291	
341	Feb	1978	4487.55	13736	5285	37056	-717			887	410	1006	165	42	196	19	7	21	212	46	254	248	106	285	
342	Mar	1978	4488.25	24845	13912	54406	-1463			851	399	973	156	40	189	18	6	21	200	44	245	235	101	273	
343	Apr	1978	4489.00	12333	23161	85756	-5168			823	399	916	150	40	175	17	6	19	192	44	226	225	102	254	
344	May	1978	4489.00	6106	36042	62853	-32917			820	414	919	149	43	174	17	7	19	191	48	225	224	111	255	
345	Jun	1978	4488.60	888	52146	33169	-19293			847	448	940	156	50	180	18	8	20	200	57	232	235	128	264	
346	Jul	1978	4487.70	259	62822	19854	-39900			904	502	971	170	62	187	19	10	21	218	73	241	255	151	277	
347	Aug	1978	4486.95	7673	55490	19966	-39434			949	529	1006	181	67	195	20	11	22	232	79	251	272	163	289	
348	Sep	1978	4487.05	16193	40093	57911	-25164			939	523	997	178	65	192	20	11	22	228	77	247	267	159	286	
Water yr tot				Year average:						907	456	990	170	51	191	19	8	21	218	59	247	255	129	282	
Tot. Sys. Av.Stage				110205	342985	534368	-166736																		
Main Lake				4487.45	70680	226460	408081																		
Provo Bay				4487.45	7085	21629	93471																		
Goshen Bay				4487.45	32439	94896	32816																		
349	Oct	1978	4487.05	169	28444	42832	-14557			948	520	1004	180	64	194	20	10	22	230	75	249	271	158	288	
350	Nov	1978	4487.60	18906	16565	51755	-4743			919	490	970	173	58	185	19	9	21	221	66	238	260	143	276	
351	Dec	1978	4488.05	4693	6623	47550	-4743			894	471	961	167	55	183	19	9	20	213	62	236	250	134	271	
352	Jan	1979	4488.55	9720	1929	43065	-4743			868	452	950	161	51	182	18	8	20	205	57	234	241	125	267	
353	Feb	1979	4489.00	9998	3840	52530	-16605			838	441	940	153	49	180	17	7	20	196	54	233	230	120	262	
354	Mar	1979	4489.00	12264	10725	62894	-64434			809	433	922	147	47	176	17	7	19	187	53	228	220	116	255	
355	Apr	1979	4489.00	4018	24077	87982	-67924			787	434	885	141	48	167	16	7	18	181	53	216	212	118	242	
356	May	1979	4488.80	5846	40008	56563	-41114			795	448	889	144	50	168	16	8	19	184	57	217	215	127	244	
357	Jun	1979	4488.00	77	51818	24829	-47158			831	478	915	153	56	174	17	9	19	196	65	225	229	141	255	
358	Jul	1979	4487.15	1729	62438	29068	-45050			879	524	945	165	66	181	18	10	20	211	78	234	246	161	267	
359	Aug	1979	4486.55	6890	56620	37309	-40692			919	543	976	174	70	189	20	11	21	224	83	243	260	170	278	
360	Sep	1979	4486.05	99	40939	28017	-30728			953	545	1017	183	70	198	20	11	22	234	82	255	272	172	293	
Water yr tot				Year average:						870	482	948	162	57	181	18	9	20	207	65	234	242	140	266	
Tot. Sys. Av.Stage				74414	344031	564399	-382492																		
Main Lake				4487.90	45242	227222	422586																		

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Stage	Water EOM				Total Lake				Quality - all in mg/l											
				Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids		Sodium			Potassium			Chloride			Sulfate		
			Ft	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	
361	Oct	1979	4486.35	14900	28657	51379	-11503	943	501	1004	180	61	194	20	10	22	230	70	250	268	149	288	
362	Nov	1979	4486.80	6891	13935	47182	-658	925	471	985	175	56	190	20	9	21	224	62	244	261	134	280	
363	Dec	1979	4487.30	2060	7536	50497	-548	901	447	980	169	51	189	19	8	21	217	56	243	252	123	277	
364	Jan	1980	4488.00	24907	3789	43148	-984	857	417	949	159	44	183	18	7	20	204	49	236	237	108	266	
365	Feb	1980	4488.90	21820	5957	78055	-10492	801	402	908	147	41	175	17	6	19	188	45	227	218	100	252	
366	Mar	1980	4488.90	11167	14039	56907	-54036	786	400	898	142	41	173	16	6	19	182	45	224	211	100	248	
367	Apr	1980	4489.00	3106	27246	70351	-36854	785	400	887	141	41	168	16	6	18	182	45	218	210	102	242	
368	May	1980	4489.35	16978	41885	145939	-87807	727	410	841	127	43	157	14	7	17	163	48	203	190	108	227	
369	Jun	1980	4489.00	513	50394	73277	-56622	733	438	848	128	49	158	15	8	18	165	55	204	194	122	230	
370	Jul	1980	4488.25	1441	64432	30535	-37305	782	484	862	141	59	161	16	9	18	181	69	209	212	141	237	
371	Aug	1980	4488.40	4536	56844	96061	-29948	781	512	837	141	64	154	16	10	17	181	76	199	210	154	228	
372	Sep	1980	4487.80	7938	40418	1265	-23780	831	521	858	153	65	160	17	10	18	197	77	206	229	157	236	
Water yr tot				Year average:				821	450	905	150	51	172	17	8	19	193	58	222	224	125	251	
Tot. Sys. Av.Stage				116263	355138	744600	-350538																
Main Lake				4488.17	74474	232273	569798																
Provo Bay				4488.17	8014	24000	109324																
Goshen Bay				4488.17	33774	98864	65478																
373	Oct	1980	4488.00	18813	27185	38126	-11587	833	505	858	154	62	159	17	10	18	197	71	206	229	149	236	
374	Nov	1980	4488.40	10759	15458	46222	-4696	824	492	851	151	60	158	17	9	18	195	67	204	224	143	232	
375	Dec	1980	4488.85	6150	10100	51715	-5821	812	479	851	148	57	158	17	9	18	191	63	205	220	137	232	
376	Jan	1981	4488.95	7652	5674	47057	-39680	796	465	856	144	54	160	16	8	18	186	60	207	214	130	232	
377	Feb	1981	4489.00	4192	3791	33278	-29024	789	455	865	143	53	163	16	8	18	185	57	212	211	126	233	
378	Mar	1981	4489.00	24489	14008	36992	-47473	778	440	858	141	50	162	16	7	18	182	54	212	206	118	230	
379	Apr	1981	4489.00	8445	25755	37390	-20080	788	439	854	144	50	161	16	7	17	186	54	210	208	119	228	
380	May	1981	4489.00	29824	37647	61346	-53523	773	438	840	140	49	157	16	7	17	182	54	205	203	119	223	
381	Jun	1981	4488.25	3512	43580	17412	-47105	808	460	860	149	53	162	17	8	18	194	60	212	215	131	231	
382	Jul	1981	4487.50	4912	55820	27546	-45036	851	499	888	160	62	169	18	10	19	209	72	221	230	147	242	
383	Aug	1981	4486.65	3930	54331	15410	-40611	907	522	933	175	66	181	19	10	20	227	78	236	249	159	258	
384	Sep	1981	4486.30	11800	39235	27548	-30747	933	516	963	181	64	188	20	10	21	235	75	245	257	156	267	
Water yr tot				Year average:				824	476	873	153	57	165	17	9	18	198	64	214	222	136	237	
Tot. Sys. Av.Stage				1344484	332590	440047	-375384																
Main Lake				4488.24	87354	218608	313267																
Provo Bay				4488.24	9896	21753	98641																
Goshen Bay				4488.24	37235	92228	28139																
385	Oct	1981	4486.95	36703	24423	56662	-11825	895	465	915	171	54	176	19	9	19	222	61	230	243	130	251	
386	Nov	1981	4487.35	5821	13309	47892	-4696	887	450	918	169	51	176	18	8	19	220	57	230	240	124	250	
387	Dec	1981	4487.85	16635	7916	41156	-4696	863	424	908	163	46	174	18	7	19	213	50	228	232	112	246	
388	Jan	1982	4488.40	15663	3554	43017	-4696	838	407	896	157	42	173	17	7	19	205	46	227	223	103	241	
389	Feb	1982	4488.95	9363	4985	52743	-5821	815	399	894	151	41	173	17	6	19	198	44	227	215	100	238	
390	Mar	1982	4488.95	20949	14351	60983	-67581	789	391	887	145	39	171	16	6	18	189	42	226	205	96	235	
391	Apr	1982	4489.00	9232	22819	78586	-60343	770	386	868	140	38	166	16	6	18	184	42	219	199	95	228	
392	May	1982	4489.50	14609	40142	162049	-89065	711	396	832	125	39	156	14	6	17	163	44	206	180	102	217	
393	Jun	1982	4489.25	4418	52768	107441	-82816	704	424	826	123	45	155	14	7	17	160	52	204	179	116	217	
394	Jul	1982	4488.65	7169	59454	51723	-55890	736	462	819	131	54	153	15	9	17	172	63	201	191	131	216	
395	Aug	1982	4487.95	2136	54450	38130	-50394	774	491	836	141	60	157	16	10	17	185	70	206	204	145	223	
396	Sep	1982	4488.35	50082	38057	55481	-30747	761	471	794	137	54	147	15	9	16	179	64	193	199	133	210	
Water yr tot				Year average:				795	431	866	146	47	165	16	7	18	191	53	216	209	116	231	
Tot. Sys. Av.Stage				192786	336234	795869	-468571																
Main Lake				4488.43119897	219295	627386	-468570																
Provo Bay				4488.43	13071	23149	119743																
Goshen Bay				4488.																			

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Stage	Water EOM						Total Lake						Quality - all in mg/l																	
				Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Main	PB	GB	Main	PB	GB	Potassium	Main	PB	GB	Chloride	Main	PB	GB	Sulfate	Main	PB	GB					
397	Oct	1982	4488.85	20396	22133	62938	-14671	752	455	782	135	52	143	15	8	16	177	59	188	195	125	205											
398	Nov	1982	4489.00	12358	11720	52710	-39336	745	440	777	134	50	141	15	8	16	175	55	186	192	118	202											
399	Dec	1982	4489.00	14278	6931	58677	-66024	726	419	776	129	45	142	14	7	16	169	49	187	186	108	201											
400	Jan	1983	4489.00	15496	4961	53009	-63544	710	402	774	125	42	142	14	6	15	164	45	188	180	101	199											
401	Feb	1983	4489.20	27509	5488	70912	-73934	679	388	766	118	39	142	13	6	15	155	42	188	170	94	195											
402	Mar	1983	4490.05	24463	11973	162280	-93267	615	377	742	101	37	136	11	6	15	132	39	181	148	89	187											
403	Apr	1983	4490.15	14181	20362	108291	-92332	607	370	713	99	35	128	11	5	14	129	38	170	145	87	177											
404	May	1983	4491.00	27558	37074	214913-121757		551	372	662	85	35	115	10	5	13	112	38	153	128	89	162											
405	Jun	1983	4491.60	7675	54119	239256-132617		503	392	617	74	39	104	9	6	12	96	44	138	114	100	149											
406	Jul	1983	4490.70	14288	65685	80768-119210		537	416	608	81	44	100	9	7	11	106	51	132	124	110	145											
407	Aug	1983	4490.05	28987	61947	65480	-96295	554	429	599	86	47	97	10	8	11	112	54	129	129	115	143											
408	Sep	1983	4489.40	17131	42144	48003	-85540	572	440	603	91	49	98	10	8	11	119	56	130	136	120	145											
Water yr tot				Year average:						629	408	701	105	43	124	12	7	14	137	47	164	154	104	176									
				Tot. Sys. Av.Stage224324						3445421217241	-998529																						
				Main Lake 4489.83151224						220259	967168	-998528																					
				Provo Bay 4489.83 19156						26653	157157	0																					
				Goshen Bay 4489.83 53945						97631	92917	0																					
409	Oct	1983	4489.20	9304	29380	88845	-87723	579	441	605	91	49	99	10	8	11	121	55	131	138	120	146											
410	Nov	1983	4489.30	29776	17057	81829	-85096	574	422	598	90	45	97	10	7	11	119	50	129	136	111	143											
411	Dec	1983	4489.40	39931	7522	64945	-87855	556	393	588	86	39	96	10	6	11	114	42	128	131	97	140											
412	Jan	1984	4489.35	6915	1402	76188	-86428	552	382	596	85	37	98	10	6	11	112	40	131	129	92	141											
413	Feb	1984	4489.30	10503	1989	62087	-75374	547	374	606	84	35	102	10	5	11	111	38	137	126	89	143											
414	Mar	1984	4489.65	13269	7625	119204	-91404	530	365	609	79	33	102	9	5	11	105	36	138	120	85	142											
415	Apr	1984	4490.45	25971	20840	172996-100407		505	352	582	73	30	94	8	5	10	96	33	127	112	80	134											
416	May	1984	4491.50	6615	40598	271901-133567		454	361	544	60	32	85	7	5	9	80	35	115	97	87	123											
417	Jun	1984	4491.55	28451	55201	164123-132326		445	375	524	59	34	80	7	5	9	78	39	108	95	93	118											
418	Jul	1984	4490.70	18178	67343	84341-119916		474	397	521	65	39	77	7	6	9	86	45	104	103	103	116											
419	Aug	1984	4490.05	18148	60125	72637	-94435	495	416	522	71	43	78	8	7	9	94	50	104	111	112	118											
420	Sep	1984	4489.40	11960	41845	52857	-85522	516	431	531	77	46	80	9	8	9	101	53	107	118	119	122											
Water yr tot				Year average:						519	392	569	76	38	91	9	6	10	101	43	122	118	99	132									
				Tot. Sys. Av.Stage219028						3509321311959-1180056																							
				Main Lake 4489.99149760						2240481033709-1180055																							
				Provo Bay 4489.99 19300						27369	184940	0																					
				Goshen Bay 4489.99 49968						99514	93310	0																					
421	Oct	1984	4489.15	23778	27076	65817	-86244	526	433	536	79	47	81	9	8	9	104	53	109	121	118	123											
422	Nov	1984	4489.00	11779	14772	67472	-78706	532	431	544	80	47	84	9	7	9	106	52	112	123	116	125											
423	Dec	1984	4489.00	9886	5982	74308	-78212	532	420	552	80	45	85	9	7	10	107	49	115	122	111	127											
424	Jan	1985	4489.00	14355	2334	58880	-70901	532	408	558	80	42	88	9	6	10	107	46	119	122	105	128											
425	Feb	1985	4489.00	10925	3721	55914	-63118	533	401	571	81	41	92	9	6	10	108	44	125	121	101	130											
426	Mar	1985	4489.25	19644	9741	98730	-84908	523	391	576	78	39	94	9	6	10	104	42	128	117	97	130											
427	Apr	1985	4489.80	3476	24617	163135	-89377	505	387	558	73	38	89	8	6	10	97	41	121	111	97	125											
428	May	1985	4490.20	17595	45035	164059	-97768	491	394	552	70	39	87	8	6	10	92	43	117	106	101	123											
429	Jun	1985	4489.40	13074	56344	52310	-86283	515	413	561	77	43	89	9	7	10	101	48	120	116	111	128											
430	Jul	1985	4488.85	11945	65848	57829	-55890	545	442	572	85	49	92	10	8	10	112	56	123	127	124	133											
431	Aug	1985	4488.15	705	56357	41079	-50394	581	469	597	94																						

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL-9Dec2003 (Thurin)--13De (CONT.)

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin) --13De (CONT.)

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water EOM	Total Lake				Quality - all in mg/l															
				Stage	Precip	Evap	Inflow	Outflow	Tot.	Dis.	Solids	Sodium			Potassium			Chloride					
Ft	af	af	af	af	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB	Main	PB	GB				
505	Oct	1991	4484.00	11129	21937	39062	-16383	1233	464	1333	263	54	288	27	8	30	353	60	388	334	132	364	
506	Nov	1991	4484.40	15874	12499	29791	-838	1201	458	1286	255	54	276	27	8	29	343	57	372	322	128	347	
507	Dec	1991	4484.85	4148	5212	38863	-838	1155	454	1272	243	53	273	25	8	28	327	56	369	307	127	342	
508	Jan	1992	4485.35	4900	1748	38634	0	1114	448	1260	233	52	270	24	8	28	313	55	366	294	124	337	
509	Feb	1992	4485.80	14024	5278	29522	0	1072	440	1244	222	50	267	23	7	27	300	53	363	280	119	329	
510	Mar	1992	4486.15	8598	14416	35996	0	1066	446	1238	221	52	266	23	7	27	298	55	362	277	123	326	
511	Apr	1992	4485.95	2200	26910	22405	-14998	1100	459	1241	231	54	268	24	8	27	312	59	363	287	131	328	
512	May	1992	4485.45	10571	43976	23636	-32962	1140	476	1275	242	56	277	25	9	28	327	62	376	299	141	339	
513	Jun	1992	4484.85	5508	51632	33494	-37571	1193	497	1339	256	60	293	27	9	30	346	69	398	316	151	360	
514	Jul	1992	4483.70	6840	53584	2447	-48734	1355	517	1431	298	66	317	31	10	33	404	80	430	366	152	389	
515	Aug	1992	4482.75	6004	47487	-1598	-30467	1535	474	1586	345	55	357	35	9	37	469	67	485	419	135	437	
516	Sep	1992	4483.10	5187	34260	18133	-6058	1417	459	1476	313	52	328	32	8	34	425	60	445	383	131	402	
Water yr tot				Year average:				1215	466	1332	260	55	290	27	8	30	351	61	393	324	133	358	
Tot. Sys. Av.Stage				94988	318946	354090	-188849																
Main Lake				4484.70	70023	222865	227498	-188848															
Provo Bay				4484.70	3478	9396	88922	0															
Goshen Bay				4484.70	21487	86684	37670	0															
517 Oct 1992 4483.30				17066	23662	24012	-1939	1411	439	1480	312	49	328	32	8	34	422	54	446	382	120	402	
518 Nov 1992 4483.75				11934	11908	35880	-594	1340	434	1433	293	49	317	30	8	33	396	52	430	360	117	387	
519 Dec 1992 4484.20				11874	5820	30073	-146	1287	420	1399	280	45	308	29	7	32	378	49	418	343	111	375	
520 Jan 1993 4485.00				26350	2476	41738	-146	1166	405	1325	249	41	291	26	7	30	336	45	396	307	103	353	
521 Feb 1993 4485.65				18758	4246	40942	-594	1093	403	1286	230	42	282	24	6	29	310	45	384	284	102	339	
522 Mar 1993 4486.60				18702	9618	73656	-448	1014	401	1205	209	41	262	22	6	27	282	45	356	260	101	315	
523 Apr 1993 4486.75				6210	19112	44504	-18382	1016	405	1171	210	42	251	22	6	26	282	46	341	259	104	303	
524 May 1993 4487.45				22157	38538	101455	-22756	950	418	1101	192	44	232	20	7	24	259	49	315	240	112	283	
525 Jun 1993 4487.30				11690	49577	51497	-29763	962	448	1103	196	50	233	20	8	24	263	58	315	245	126	285	
526 Jul 1993 4486.60				6524	56466	27206	-39351	1020	494	1125	211	62	239	22	10	25	284	74	323	265	143	294	
527 Aug 1993 4485.95				6038	52473	32726	-42874	1074	509	1170	225	64	250	23	11	26	303	77	338	282	151	310	
528 Sep 1993 4485.70				6775	37878	38139	-28441	1096	502	1192	230	62	255	24	10	26	309	73	344	290	149	317	
Water yr tot				Year average:				1119	440	1249	236	49	271	24	8	28	319	56	367	293	120	330	
Tot. Sys. Av.Stage				164084	311781	544535	-185434																
Main Lake				4485.69	117171	210945	402567	-185433															
Provo Bay				4485.69	7259	15573	105251	0															
Goshen Bay				4485.69	39655	85263	36717	0															
529 Oct 1993 4485.95				15933	26074	44614	-13068	1082	486	1164	226	59	247	23	9	26	303	66	333	285	141	309	
530 Nov 1993 4486.30				4532	11730	42862	-5323	1067	480	1140	222	59	241	23	9	25	298	63	325	280	138	301	
531 Dec 1993 4486.70				7121	7361	37002	-1693	1047	465	1136	217	56	240	22	8	25	291	59	324	273	132	298	
532 Jan 1994 4487.10				5503	5444	35859	-524	1025	457	1136	211	54	240	22	8	25	284	57	325	266	128	297	
533 Feb 1994 4487.55				14615	6123	34820	-3022	1003	448	1123	206	52	238	21	7	24	276	55	322	258	123	292	
534 Mar 1994 4487.80				7753	14030	33315	-4352	1000	449	1126	205	53	239	21	7	24	276	55	324	257	123	291	
535 Apr 1994 4487.90				18704	26370	35698	-18949	1000	447	1100	205	52	232	21	7	24	276	55	315	256	123	284	
536 May 1994 4487.70				8628	43018	42590	-26323	1016	466	1117	210	55	237	22	8	24	283	60	321	261	135	290	
537 Jun 1994 4486.95				405	55977	22318	-34031	1077	504	1170	226	63	251	23	9	26	305	71	339	281	154	307	
538 Jul 1994 4485.90				728	63354	22836	-51975	1167	556	1238	250	75	268	26	11	27	337	88	363	310	174	330	
539 Aug 1994 4485.10				8776	57796	31202	-50033	1231	548	1308	266	71	286	27	11	29	358	85	386	331	171	352	
540 Sep 1994 4484.60				5192	39373	20918	-28127	1289	516	1366	281	64	300	29	10	31	378	74	405	349	158	371	
Water yr tot				Year average:				1084	485	1177	227	59	251	23	9	26	305	66	340	284	142	310	
Tot. Sys. Av.Stage				97897	356658	404039	-237421																
Main Lake				4486.63	65896	239889	276968																

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin) --13De (CONT.)

No	Mon	Year	Water EOM Stage	Total Lake				Quality			- all in mg/l			Sulfate		
				Precip	Evap	Inflow	Outflow	Tot. Main	Dis. PB	Solids GB	Sodium Main	Potassium PB	Chloride GB	Main	PB	GB
541	Oct	1994	4485.05	24536	24729	43254	-5899	1239	457	1321	267	52	288	27	8	30
542	Nov	1994	4485.50	16279	13490	35644	-593	1203	438	1281	257	49	277	26	8	28
543	Dec	1994	4485.90	9789	6499	31541	-593	1174	426	1267	250	46	274	26	7	28
544	Jan	1995	4486.55	18064	6825	46868	-1654	1109	413	1236	233	43	266	24	7	27
545	Feb	1995	4487.00	6574	7282	41944	-1532	1081	415	1232	226	44	266	23	7	27
546	Mar	1995	4487.45	16352	16733	41591	-940	1060	412	1216	221	43	262	23	7	26
547	Apr	1995	4487.60	14139	28504	53029	-25126	1045	414	1180	218	44	253	22	7	26
548	May	1995	4488.80	37510	41759	137748	-23139	924	417	1052	187	43	222	19	7	23
549	Jun	1995	4488.70	16023	49677	95965	-71622	868	439	992	172	49	206	18	8	21
550	Jul	1995	4488.15	6544	61034	75393	-71858	888	482	977	176	59	199	18	9	21
551	Aug	1995	4487.50	3591	59823	34573	-37521	930	512	1006	188	65	207	19	10	21
552	Sep	1995	4487.05	4360	43646	27151	-28136	973	523	1036	199	66	215	20	11	22
Water yr tot				Year average:				1041	446	1150	216	50	244	22	8	25
Tot. Sys. Av.Stage				173768	360007	664706	-268614									
Main Lake				4487.10	118410	238227	489473	-268613								
Provo Bay				4487.10	10657	22192	100963	0								
Goshen Bay				4487.10	44700	99589	74270	0								
Water yr tot				Year average:												
553	Oct	1995	4487.30	3497	28719	56674	-9090	974	520	1033	199	66	214	20	10	22
554	Nov	1995	4487.60	5129	17232	41835	-2741	975	509	1027	199	64	212	20	10	22
555	Dec	1995	4488.05	15157	9018	37479	-2741	956	484	1022	193	59	211	20	9	22
556	Jan	1996	4488.20	21451	5757	4011	-5856	958	462	1008	194	54	208	20	8	21
557	Feb	1996	4488.80	19623	3306	45172	-5856	928	449	988	187	52	204	19	8	21
558	Mar	1996	4488.90	19141	14163	50748	-46369	903	444	981	180	51	203	19	8	21
559	Apr	1996	4489.00	12974	28266	71395	-46747	882	447	972	175	52	199	18	8	20
560	May	1996	4489.00	11793	41223	97345	-67916	849	460	963	166	54	196	17	8	20
561	Jun	1996	4489.00	3175	52240	114208	-65144	825	486	951	159	59	193	17	9	20
562	Jul	1996	4488.25	3229	65370	27576	-35196	885	527	970	175	69	198	18	10	20
563	Aug	1996	4487.60	503	59576	34177	-34418	940	554	1010	189	74	208	20	11	22
564	Sep	1996	4487.35	11828	42576	30740	-22484	965	549	1030	195	72	212	20	11	22
Water yr tot				Year average:				920	491	996	184	60	205	19	9	21
Tot. Sys. Av.Stage				127506	367451	611366	-344559									
Main Lake				4488.25	85034	240461	466477	-344558								
Provo Bay				4488.25	9569	24804	100259	0								
Goshen Bay				4488.25	32903	102186	44630	0								
Water yr tot				Year average:												
565	Oct	1996	4487.45	15808	28004	34513	-13364	975	518	1025	198	65	210	21	10	22
566	Nov	1996	4488.05	16971	15401	65138	-12292	945	487	992	189	59	201	20	9	21
567	Dec	1996	4488.50	13911	9281	49121	-12292	920	463	984	183	54	199	19	8	21
568	Jan	1997	4489.00	29100	4272	47951	-26041	877	437	959	172	49	194	18	8	20
569	Feb	1997	4489.00	12051	4304	41377	-49124	860	428	955	167	47	194	18	7	20
570	Mar	1997	4489.00	3502	13789	64237	-53950	839	427	964	162	47	195	17	7	20
571	Apr	1997	4489.20	14463	28249	114686	-81901	797	425	926	150	47	185	16	7	19
572	May	1997	4489.70	14766	44386	168968	-91604	732	435	879	133	48	172	14	8	18
573	Jun	1997	4489.60	6181	52621	124470	-87677	714	457	848	128	53	164	14	8	17
574	Jul	1997	4488.65	4811	60070	31170	-65735	763	490	846	142	61	164	15	9	17
575	Aug	1997	4488.30	5918	59255	49370	-28483	799	513	862	151	65	168	16	10	18
576	Sep	1997	4488.20	17194	42307	35741	-19802	815	511	870	155	64	169	16	10	18
Water yr tot				Year average:				836	466	926	161	55	185	17	9	19
Tot. Sys. Av.Stage				154682	361945	826749	-542266									
Main Lake				4488.72	72102048	235277	657357	-542265								
Provo Bay				4488.72	11721	25424	110300	0								
Goshen Bay				4488.72	40912	101243	59092	0								
Water yr tot				Year average:												
577	Oct	1997	4489.45	15808	28004	34513	-13364	975	518	1025	198	65	210	21	10	22
578	Nov	1997	4489.05	16971	15401	65138	-12292	945	487	992	189	59	201	20	9	21
579	Dec	1997	4489.50	13911	9281	49121	-12292	920	463	984	183	54	199	19	8	21
580	Jan	1998	4489.00	29100	4272	47951	-26041	877	437	959	172	49	194	18	8	20
581	Feb	1998	4489.00	12051	4304	41377	-49124	860	428	955	167	47	194	18	7	20
582	Mar	1998	4489.00	3502	13789	64237	-53950	839	427	964	162	47	195	17	7	20
583	Apr	1998	4489.20	14463	28249	114686	-81901	797	425	926	150	47	185	16	7	19
584	May	1998	4489.70	14766	44386	168968	-91604	732	435	879	133	48	172	14	8	18
585	Jun	1998	4489.60	6181	52621	124470	-87677	714	457	848	128	53	164	14	8	17
586	Jul	1998	4488.65	4811	60070	31170	-65735	763	490	846	142	61	164	15	9	17
587	Aug	1998	4488.30	5918	59255	49370	-28483	799	513	862	151	65	168	16	10	18
588	Sep	1998	4488.20	17194	42307	35741	-19802	815	511	870	155	64	169	16	10	18
Water yr tot				Year average:												
589	Oct	1998	4489.45	15808	28004	34513	-13364	975	518	1025	198	65	210	21	10	22
590	Nov	1998	4489.05	16971	15401	65138	-12292	945	487	992	189	59	201	20	9	21
591	Dec	1998	4489.50	13911	9281	49121	-12292	920	463	984	183	54	199	19	8	21
592	Jan	1999	4489.00	29100	4272	47951	-26041	877	437	959	172	49	194	18	7	20
593	Feb	1999	4489.00	12051	4304	41377	-49124	860	428	955	167	47	194	18	7	20
594	Mar	1999	4489.00	3502	13789	64237	-53950	839	427	964	162	47	195	17	7	20
595	Apr	1999	4489.20	14463	28249	114686	-81901	797	425	926	150	47	185	16	7	19
596	May	1999	4489.70	14766	44386	168968	-91604	732	435	879	133	48	172	14	8	18
597	Jun	1999	4489.60	6181	52621	124470	-87677	714	457	848	128	53	164	14	8	17
598	Jul	1999	4488.65	4811	60070	31170	-65735	763	490	846	142	61	164	15	9	17
599	Aug	1999	4488.30	5918	59255	49370	-28483	799	513	862	151	65	168	16	10	18
600	Sep	1999	4488.20	17194	42307	35741	-19802	815	511	870	155	64	169	16	10	18
Water yr tot				Year average:												
601	Oct	1999	4489.45	15808	28004	34513	-13364	975	518	1025	198	65	210	21	10	22
602	Nov	1999	4489.05	16971	15401	65138	-12292</									

LKSIM2000 Output Results TABL.025

TABLE UTAH LAKE SIMULATION-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De (CONT.)

No	Mon	Year	Water EOM Ft	Total Lake				Quality - all in mg/l																		
				Stage ft	Precip af	Evap af	Inflow af	Outflow af	Tot. Dis. Solids	Main	PB	GB	Main	PB	GB	Potassium	Main	PB	GB	Chloride	Main	PB	GB	Sulfate	Main	PB
577	Oct	1997	4488.50	12079	26833	58329	-15967		814	500	859	155	62	166	16	10	18	207	72	223	207	145	220			
578	Nov	1997	4489.00	11950	15135	55495	-5573		808	485	847	153	59	163	16	9	17	204	67	219	204	137	215			
579	Dec	1997	4489.00	10429	5982	47937	-52384		794	467	847	149	55	163	16	9	17	200	62	219	199	129	214			
580	Jan	1998	4489.00	21118	6347	40357	-55129		772	448	840	144	51	162	15	8	17	192	57	218	192	120	212			
581	Feb	1998	4489.00	22712	6420	46654	-62947		753	433	833	140	49	162	15	7	17	186	54	219	185	113	208			
582	Mar	1998	4489.00	15212	11090	46648	-50771		742	427	828	137	47	161	15	7	17	183	52	218	181	111	206			
583	Apr	1998	4489.00	15351	23420	71513	-63445		730	422	816	134	46	157	14	7	16	179	51	212	177	110	201			
584	May	1998	4489.55	13410	38555	167056	-89660		678	431	786	119	48	149	13	7	16	159	54	200	161	115	192			
585	Jun	1998	4489.65	28671	46222	115632	-88435		646	438	753	112	49	140	12	8	15	149	56	188	152	118	183			
586	Jul	1998	4489.00	5749	63230	56999	-61416		680	469	750	121	56	139	13	9	15	160	66	187	164	131	184			
587	Aug	1998	4488.35	5205	60119	48845	-54474		711	491	765	129	61	143	14	10	15	171	72	192	175	142	191			
588	Sep	1998	4488.35	7372	42933	64220	-28659		724	500	769	132	62	143	14	10	15	175	73	192	179	146	192			
Water yr tot				Year average:					738	459	808	135	54	154	14	8	16	180	61	207	181	126	201			
Tot. Sys. Av.Stage1				69265	346291	819692	-628861																			
Main Lake				4488.95	111860	224596	640410	-628860																		
Provo Bay				4488.95	13433	24679	115445	0																		
Goshen Bay				4488.95	43972	97016	63837	0																		
589	Oct	1998	4488.45	10774	23935	38140	-15762		737	493	768	135	61	143	14	10	15	180	70	191	183	142	192			
590	Nov	1998	4488.95	9744	14317	58448	-7207		732	483	759	134	59	141	14	9	15	178	67	188	181	137	189			
591	Dec	1998	4489.00	6311	6197	38287	-33746		731	471	762	133	56	141	14	9	15	177	63	189	180	131	189			
592	Jan	1999	4489.00	16533	5982	37673	-48224		723	454	764	132	53	143	14	8	15	175	59	191	178	123	188			
593	Feb	1999	4489.00	9668	8098	50312	-51882		717	447	775	130	52	146	14	8	15	173	57	196	175	120	190			
594	Mar	1999	4489.00	4076	18094	47445	-33427		719	447	788	131	52	150	14	8	16	174	57	202	176	121	193			
595	Apr	1999	4489.00	33393	23858	61563	-71099		704	432	765	127	49	144	14	7	15	169	53	194	170	114	186			
596	May	1999	4489.30	25553	28732	113387	-81756		658	429	743	114	47	137	12	7	14	152	53	185	156	113	180			
597	Jun	1999	4489.00	12221	47570	72492	-65596		659	445	743	115	51	137	12	8	15	152	58	185	157	122	181			
598	Jul	1999	4488.35	6875	61564	45138	-50992		693	477	751	124	58	139	13	9	15	165	68	187	169	135	186			
599	Aug	1999	4487.80	6958	56785	35443	-36025		729	496	775	133	62	145	14	10	16	177	73	195	182	144	195			
600	Sep	1999	4487.45	1418	38186	28297	-23191		762	505	798	142	63	151	15	10	16	189	74	202	192	149	203			
Water yr tot				Year average:					714	465	766	129	55	143	14	9	15	172	63	192	175	129	189			
Tot. Sys. Av.Stage1				43529	333323	626631	-518908																			
Main Lake				4488.69	92924	217239	473643	-518907																		
Provo Bay				4488.69	11036	23096	113818	0																		
Goshen Bay				4488.69	39570	92988	39170	0																		
50 Yr Avg (1950-1999)					932	460	1027	180	53	205	20	8	22	237	58	271	253	132	282							
(Avgs. based on reducing max monthly TDS to 1700 mg/l in the Main lake, and 2500 mg/l in Goshen bay -- all ions reduced proportionately																										
Tot. Sys. 108863 334276 580493 -350825																										
Main Lake 4486.96 72891 223419 436294 -350825																										
Provo Bay 4486.96 6839 18644 100322 0																										
Goshen Bay 4486.96 29134 92213 43877 0																										
Sum water check: Total lake: 108863 334276 580493 -350825																										

LKSIM2000 Output Results TABL.025

***Months when TDS > 1200 mg/l in the simulation

no.	month	year	TDS
1	Sep	1956	1262.
2	Oct	1956	1291.

3	Nov	1956	1238.
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4	Jul	1960	1266.
5	Aug	1960	1405.
6	Sep	1960	1485.
7	Oct	1960	1461.

8	Nov	1960	1329.
9	Dec	1960	1259.
10	Jan	1961	1211.
11	May	1961	1204.
12	Jun	1961	1348.
13	Jul	1961	1525.
14	Aug	1961	1700.
15	Sep	1961	1700.
16	Oct	1961	1647.

17	Nov	1961	1576.
18	Dec	1961	1468.
19	Jan	1962	1385.
20	Feb	1962	1252.
21	Jul	1962	1359.
22	Aug	1962	1521.
23	Sep	1962	1591.
24	Oct	1962	1571.

25	Nov	1962	1506.
26	Dec	1962	1468.
27	Jan	1963	1369.
28	Feb	1963	1318.
29	Mar	1963	1282.
30	Apr	1963	1244.
31	May	1963	1275.
32	Jun	1963	1332.
33	Jul	1963	1497.
34	Aug	1963	1693.
35	Sep	1963	1659.
36	Oct	1963	1651.

37	Nov	1963	1515.
38	Dec	1963	1406.
39	Jan	1964	1285.
40	Feb	1964	1227.
41	Aug	1964	1260.
42	Sep	1964	1329.
43	Oct	1964	1359.

44	Nov	1964	1298.
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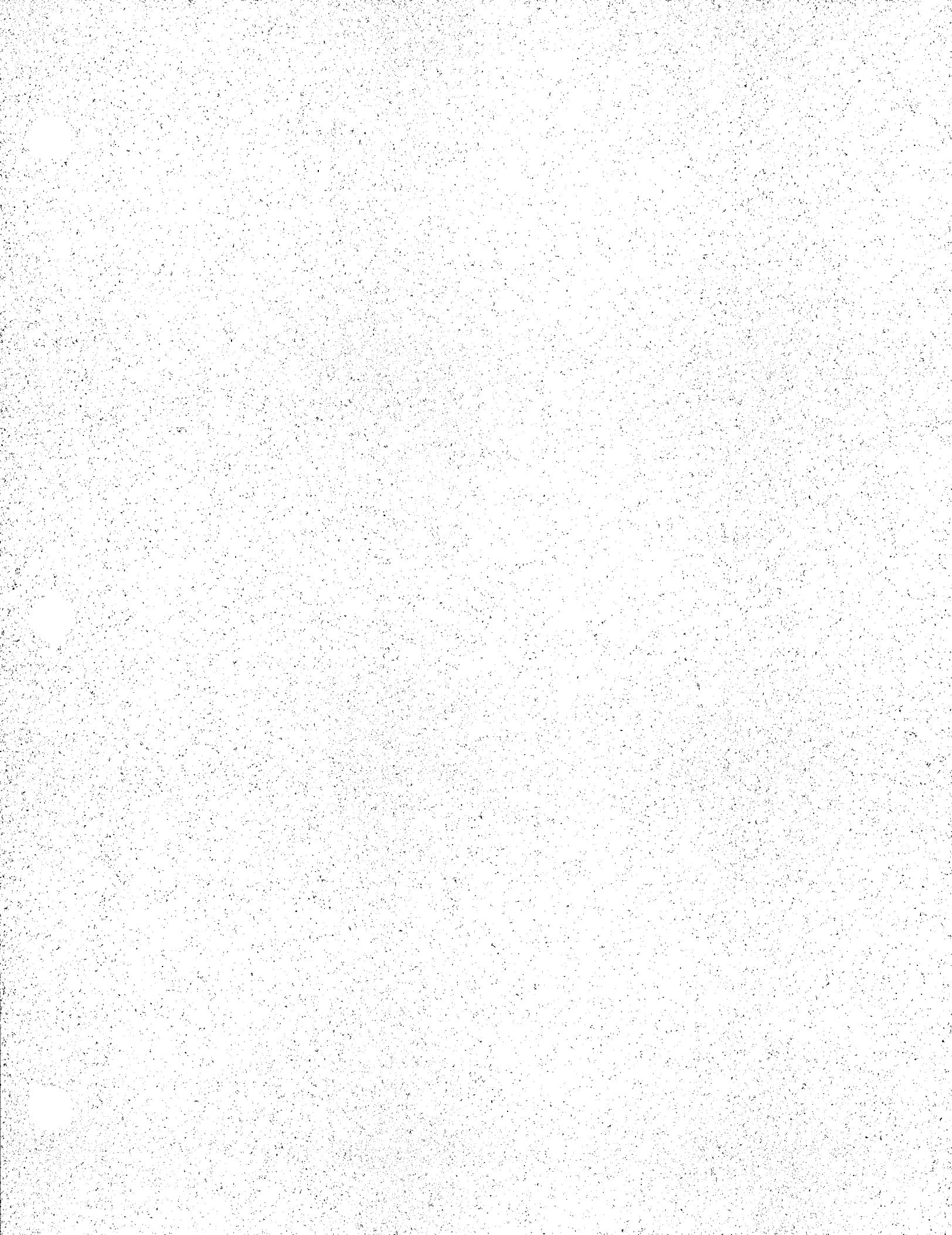
45	Aug	1966	1211.
46	Sep	1966	1245.
47	Oct	1966	1237.

48	Nov	1966	1213.
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49	Aug	1989	1230.
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LKSIM2000 Output Results TABL.025

50	Aug	1990	1215.
51	Sep	1990	1245.
52	Oct	1990	1225.
53	Nov	1990	1214.
54	Jul	1991	1205.
55	Aug	1991	1283.
56	Sep	1991	1265.
57	Oct	1991	1233.
58	Nov	1991	1201.
59	Jul	1992	1355.
60	Aug	1992	1535.
61	Sep	1992	1417.
62	Oct	1992	1411.
63	Nov	1992	1340.
64	Dec	1992	1287.
65	Aug	1994	1231.
66	Sep	1994	1289.
67	Oct	1994	1239.
68	Nov	1994	1203.



LKSIM2000 Quality Results – QUAL.025

Main Lake quality results, Run.025

Mon	stage	TDS	Na	Ca	Mg	K	HCO3	Cl	SO4	Mon
241	4485.40	999.	188.	58.	66.	23.	263.	244.	279.	241
242	4485.30	986.	185.	58.	65.	22.	258.	244.	276.	242
243	4485.80	947.	176.	58.	62.	21.	245.	244.	263.	243
244	4486.45	905.	166.	58.	59.	20.	230.	244.	248.	244
245	4486.95	875.	159.	58.	57.	19.	220.	244.	238.	245
246	4487.20	864.	157.	58.	57.	19.	217.	244.	235.	246
247	4487.35	869.	159.	58.	57.	19.	219.	244.	236.	247
248	4487.70	841.	152.	58.	55.	18.	208.	244.	227.	248
249	4487.50	843.	152.	58.	56.	18.	209.	244.	229.	249
250	4486.85	892.	165.	58.	60.	19.	225.	244.	247.	250
251	4486.10	942.	177.	58.	65.	21.	241.	244.	265.	251
252	4485.65	977.	185.	58.	67.	22.	252.	244.	277.	252
253	4485.70	993.	189.	58.	69.	22.	256.	244.	283.	253
254	4486.05	974.	184.	58.	67.	21.	249.	244.	275.	254
255	4486.55	936.	175.	58.	64.	20.	236.	244.	262.	255
256	4487.10	904.	167.	58.	62.	19.	225.	244.	251.	256
257	4487.50	884.	162.	58.	60.	19.	219.	244.	244.	257
258	4487.75	875.	160.	58.	59.	19.	216.	244.	241.	258
259	4488.05	868.	159.	58.	59.	19.	214.	244.	238.	259
260	4488.55	831.	149.	58.	56.	17.	200.	244.	225.	260
261	4488.35	824.	148.	58.	56.	17.	198.	244.	224.	261
262	4487.60	865.	158.	58.	60.	18.	212.	244.	239.	262
263	4487.00	907.	169.	58.	64.	20.	225.	244.	255.	263
264	4486.40	947.	178.	58.	67.	21.	238.	244.	269.	264
265	4486.50	952.	179.	58.	67.	21.	239.	244.	270.	265
266	4487.00	934.	175.	58.	65.	20.	233.	244.	264.	266
267	4487.65	893.	165.	58.	62.	19.	219.	242.	249.	267
268	4488.30	858.	157.	58.	59.	18.	208.	243.	236.	268
269	4488.80	822.	148.	58.	56.	17.	197.	241.	224.	269
270	4489.00	766.	136.	58.	52.	16.	179.	237.	205.	270
271	4489.70	695.	117.	58.	47.	14.	155.	238.	181.	271
272	4491.00	595.	93.	58.	40.	11.	124.	228.	148.	272
273	4490.60	597.	93.	58.	41.	11.	122.	237.	148.	273
274	4489.60	633.	101.	58.	43.	12.	134.	244.	161.	274
275	4488.95	662.	109.	58.	46.	13.	144.	244.	172.	275
276	4488.45	690.	116.	58.	48.	13.	153.	244.	183.	276
277	4488.40	711.	121.	58.	50.	14.	160.	244.	189.	277
278	4488.95	704.	120.	58.	49.	14.	158.	244.	186.	278
279	4489.00	708.	121.	58.	49.	14.	159.	244.	187.	279
280	4489.00	692.	117.	58.	47.	13.	154.	244.	181.	280
281	4489.00	694.	117.	58.	47.	14.	155.	244.	181.	281
282	4489.00	690.	117.	58.	47.	13.	154.	244.	179.	282
283	4489.00	696.	118.	58.	47.	14.	156.	244.	181.	283
284	4488.80	706.	121.	58.	48.	14.	160.	244.	184.	284
285	4488.55	708.	121.	58.	48.	14.	160.	244.	185.	285
286	4487.75	748.	131.	58.	52.	15.	174.	244.	200.	286
287	4487.05	791.	142.	58.	55.	16.	188.	244.	216.	287
288	4486.55	828.	151.	58.	58.	17.	199.	244.	229.	288
289	4486.50	845.	155.	58.	60.	17.	204.	244.	234.	289
290	4486.85	839.	153.	58.	59.	17.	201.	244.	231.	290
291	4487.20	826.	150.	58.	58.	17.	197.	244.	226.	291
292	4487.65	809.	146.	58.	56.	16.	191.	244.	220.	292
293	4488.00	800.	144.	58.	55.	16.	188.	244.	216.	293
294	4488.40	792.	142.	58.	55.	16.	186.	244.	213.	294
295	4488.35	803.	145.	58.	55.	16.	191.	244.	216.	295

LKSIM2000 Quality Results – QUAL.025

296	4487.70	832.	152.	58.	58.	17.	201.	244.	226.	296
297	4487.15	861.	160.	58.	60.	18.	211.	244.	237.	297
298	4486.25	917.	174.	58.	65.	20.	229.	244.	257.	298
299	4485.40	987.	191.	58.	71.	21.	251.	244.	281.	299
300	4484.95	1025.	200.	58.	73.	22.	263.	244.	294.	300
301	4484.90	1036.	202.	58.	75.	22.	265.	244.	298.	301
302	4485.20	1021.	198.	58.	73.	22.	259.	244.	292.	302
303	4485.55	992.	191.	58.	71.	21.	249.	244.	282.	303
304	4486.15	954.	181.	58.	68.	20.	236.	244.	269.	304
305	4486.60	922.	174.	58.	65.	20.	226.	244.	258.	305
306	4487.10	895.	167.	58.	63.	19.	217.	244.	248.	306
307	4487.40	890.	166.	58.	63.	19.	216.	244.	247.	307
308	4487.15	903.	170.	58.	64.	19.	221.	244.	251.	308
309	4486.80	926.	176.	58.	66.	20.	228.	244.	260.	309
310	4485.90	993.	192.	58.	72.	21.	250.	244.	284.	310
311	4484.95	1053.	206.	58.	77.	23.	268.	244.	306.	311
312	4484.40	1098.	217.	58.	81.	24.	282.	244.	321.	312
313	4484.40	1112.	220.	58.	82.	24.	285.	244.	326.	313
314	4484.75	1077.	211.	58.	79.	23.	273.	244.	313.	314
315	4485.20	1034.	201.	58.	75.	22.	259.	244.	298.	315
316	4485.80	984.	188.	58.	71.	21.	243.	244.	281.	316
317	4486.30	949.	180.	58.	68.	20.	232.	244.	268.	317
318	4486.55	941.	178.	58.	68.	20.	230.	244.	266.	318
319	4486.25	958.	183.	58.	69.	20.	236.	244.	271.	319
320	4486.05	963.	184.	58.	70.	21.	237.	244.	273.	320
321	4485.35	1021.	198.	58.	75.	22.	256.	244.	294.	321
322	4484.50	1100.	218.	58.	82.	24.	281.	244.	323.	322
323	4483.75	1180.	237.	58.	89.	26.	306.	244.	352.	323
324	4483.10	1262.	257.	58.	96.	28.	331.	244.	381.	324
325	4483.00	1291.	263.	58.	98.	29.	339.	244.	391.	325
326	4483.40	1238.	250.	58.	93.	27.	321.	244.	371.	326
327	4483.90	1167.	232.	58.	87.	26.	298.	244.	346.	327
328	4484.35	1106.	218.	58.	82.	24.	279.	244.	325.	328
329	4484.80	1061.	207.	58.	78.	23.	265.	244.	309.	329
330	4485.10	1036.	201.	58.	76.	22.	257.	244.	299.	330
331	4485.80	989.	190.	58.	72.	21.	243.	244.	283.	331
332	4486.20	952.	181.	58.	69.	20.	232.	244.	270.	332
333	4486.25	935.	177.	58.	68.	20.	226.	244.	265.	333
334	4485.35	1002.	194.	58.	74.	21.	248.	244.	290.	334
335	4484.60	1065.	209.	58.	80.	23.	267.	244.	313.	335
336	4484.10	1103.	218.	58.	83.	24.	278.	244.	327.	336
337	4484.10	1122.	223.	58.	85.	24.	284.	244.	333.	337
338	4484.65	1077.	211.	58.	80.	23.	269.	244.	316.	338
339	4485.10	1029.	199.	58.	76.	22.	254.	244.	299.	339
340	4485.55	993.	191.	58.	73.	21.	243.	244.	286.	340
341	4486.10	952.	181.	58.	69.	20.	230.	244.	271.	341
342	4486.60	923.	174.	58.	67.	19.	222.	244.	261.	342
343	4486.95	919.	174.	58.	66.	19.	221.	244.	259.	343
344	4487.20	886.	165.	58.	64.	18.	210.	244.	248.	344
345	4486.55	923.	175.	58.	68.	19.	223.	244.	262.	345
346	4485.65	1002.	194.	58.	75.	21.	248.	244.	291.	346
347	4485.00	1052.	206.	58.	79.	23.	263.	244.	309.	347
348	4484.50	1092.	216.	58.	82.	24.	275.	244.	323.	348
349	4484.40	1114.	221.	58.	84.	24.	281.	244.	331.	349
350	4484.80	1077.	211.	58.	81.	23.	269.	244.	317.	350
351	4485.25	1034.	200.	58.	77.	22.	255.	244.	301.	351
352	4485.70	994.	191.	58.	73.	21.	242.	244.	287.	352

LKSIM2000 Quality Results – QUAL.025

353	4486.30	953.	181.	58.	70.	20.	230.	244.	272.	353
354	4486.60	943.	179.	58.	69.	20.	227.	244.	268.	354
355	4486.70	955.	182.	58.	69.	20.	232.	244.	272.	355
356	4486.35	968.	185.	58.	71.	21.	237.	244.	276.	356
357	4485.70	1011.	196.	58.	75.	22.	251.	244.	292.	357
358	4484.85	1089.	216.	58.	81.	24.	275.	244.	320.	358
359	4484.20	1146.	229.	58.	86.	25.	293.	244.	340.	359
360	4483.80	1181.	238.	58.	89.	26.	303.	244.	353.	360
361	4483.85	1200.	242.	58.	90.	26.	309.	244.	359.	361
362	4484.00	1187.	239.	58.	89.	26.	305.	244.	353.	362
363	4484.50	1126.	224.	58.	83.	24.	285.	244.	331.	363
364	4485.05	1072.	210.	58.	79.	23.	269.	244.	312.	364
365	4485.60	1022.	198.	58.	74.	22.	254.	244.	294.	365
366	4486.05	995.	192.	58.	72.	21.	246.	244.	284.	366
367	4486.10	1013.	197.	58.	73.	22.	252.	244.	289.	367
368	4485.70	1036.	203.	58.	75.	22.	261.	244.	297.	368
369	4484.95	1108.	221.	58.	81.	24.	284.	244.	323.	369
370	4483.70	1266.	260.	58.	94.	28.	334.	244.	377.	370
371	4482.80	1405.	295.	58.	105.	32.	379.	244.	425.	371
372	4482.35	1485.	314.	58.	112.	34.	404.	244.	452.	372
373	4482.50	1461.	307.	58.	110.	33.	395.	244.	443.	373
374	4483.15	1329.	275.	58.	99.	30.	353.	241.	397.	374
375	4483.55	1259.	257.	58.	93.	28.	330.	244.	372.	375
376	4483.90	1211.	245.	58.	89.	27.	315.	244.	356.	376
377	4484.25	1171.	236.	58.	86.	26.	303.	244.	342.	377
378	4484.45	1145.	230.	58.	83.	25.	295.	243.	331.	378
379	4484.55	1160.	234.	58.	84.	26.	301.	244.	335.	379
380	4484.05	1204.	246.	58.	87.	27.	316.	244.	350.	380
381	4483.10	1348.	282.	58.	98.	31.	364.	244.	399.	381
382	4482.30	1525.	327.	58.	113.	35.	422.	244.	459.	382
383	4481.70	1700.	370.	58.	127.	40.	479.	244.	519.	383
384	4481.60	1700.	371.	58.	126.	40.	479.	244.	518.	384
385	4481.80	1647.	357.	58.	121.	38.	460.	244.	498.	385
386	4482.10	1576.	339.	58.	115.	36.	437.	244.	473.	386
387	4482.50	1468.	312.	58.	106.	34.	402.	244.	436.	387
388	4482.90	1385.	292.	58.	100.	31.	376.	244.	408.	388
389	4483.55	1252.	259.	58.	89.	28.	333.	244.	363.	389
390	4484.05	1191.	244.	58.	84.	26.	314.	244.	341.	390
391	4484.55	1141.	232.	58.	80.	25.	299.	244.	325.	391
392	4484.65	1120.	227.	58.	79.	25.	292.	244.	319.	392
393	4484.05	1198.	247.	58.	86.	27.	318.	244.	346.	393
394	4483.05	1359.	288.	58.	98.	31.	371.	244.	401.	394
395	4482.15	1521.	328.	58.	111.	35.	423.	244.	457.	395
396	4481.70	1591.	345.	58.	117.	37.	444.	244.	481.	396
397	4481.85	1571.	339.	58.	115.	36.	437.	244.	474.	397
398	4482.15	1506.	323.	58.	110.	34.	415.	244.	451.	398
399	4482.35	1468.	313.	58.	106.	33.	404.	244.	436.	399
400	4482.75	1369.	288.	58.	98.	31.	372.	244.	402.	400
401	4483.15	1318.	276.	58.	93.	30.	357.	244.	384.	401
402	4483.45	1282.	267.	58.	90.	29.	346.	244.	370.	402
403	4483.85	1244.	258.	58.	86.	28.	335.	244.	356.	403
404	4483.50	1275.	267.	58.	89.	29.	347.	244.	366.	404
405	4483.10	1332.	281.	58.	93.	30.	367.	244.	386.	405
406	4482.15	1497.	323.	58.	106.	34.	421.	244.	442.	406
407	4481.30	1693.	373.	58.	122.	39.	486.	244.	509.	407
408	4481.20	1659.	363.	58.	119.	38.	473.	244.	498.	408
409	4481.20	1651.	361.	58.	118.	38.	470.	244.	494.	409

LKSIM2000 Quality Results – QUAL.025

410	4481.65	1515.	326.	58.	107.	35.	425.	244.	447.	410
411	4482.10	1406.	299.	58.	98.	32.	390.	244.	410.	411
412	4482.60	1285.	269.	58.	88.	29.	351.	244.	368.	412
413	4483.05	1227.	255.	58.	84.	28.	333.	244.	349.	413
414	4483.65	1152.	236.	58.	78.	26.	309.	244.	323.	414
415	4484.10	1123.	229.	58.	75.	25.	300.	244.	312.	415
416	4484.60	1058.	213.	58.	71.	23.	279.	244.	291.	416
417	4484.85	1038.	208.	58.	69.	23.	273.	244.	285.	417
418	4483.90	1138.	234.	58.	77.	25.	308.	244.	320.	418
419	4483.00	1260.	265.	58.	87.	29.	349.	244.	362.	419
420	4482.50	1329.	282.	58.	92.	30.	371.	244.	385.	420
421	4482.45	1359.	290.	58.	94.	31.	380.	244.	394.	421
422	4482.85	1298.	273.	58.	89.	29.	359.	244.	372.	422
423	4483.60	1187.	245.	58.	80.	27.	322.	244.	334.	423
424	4484.15	1120.	228.	58.	75.	25.	300.	244.	312.	424
425	4484.40	1106.	226.	58.	73.	25.	297.	244.	306.	425
426	4484.75	1087.	221.	58.	71.	24.	292.	244.	299.	426
427	4485.10	1071.	218.	58.	70.	24.	287.	244.	293.	427
428	4485.10	1072.	218.	58.	70.	24.	288.	244.	294.	428
429	4485.20	1037.	208.	58.	68.	23.	275.	244.	283.	429
430	4484.60	1102.	225.	58.	74.	25.	298.	244.	306.	430
431	4484.10	1158.	239.	58.	78.	26.	316.	244.	325.	431
432	4484.15	1158.	239.	58.	78.	26.	316.	244.	325.	432
433	4484.25	1158.	239.	58.	78.	26.	315.	244.	326.	433
434	4484.70	1128.	231.	58.	76.	25.	304.	244.	315.	434
435	4485.45	1046.	209.	58.	69.	23.	276.	244.	288.	435
436	4485.90	1008.	200.	58.	67.	22.	264.	244.	276.	436
437	4486.40	968.	190.	58.	64.	21.	251.	244.	263.	437
438	4486.90	937.	182.	58.	62.	20.	240.	244.	252.	438
439	4486.75	975.	192.	58.	64.	21.	254.	244.	264.	439
440	4486.65	970.	191.	58.	64.	21.	252.	244.	263.	440
441	4485.90	1032.	207.	58.	69.	23.	274.	244.	285.	441
442	4484.95	1134.	233.	58.	77.	25.	308.	244.	319.	442
443	4484.25	1211.	252.	58.	83.	27.	333.	244.	345.	443
444	4483.90	1245.	260.	58.	86.	28.	343.	244.	357.	444
445	4484.05	1237.	257.	58.	85.	28.	339.	244.	354.	445
446	4484.30	1213.	251.	58.	84.	27.	330.	244.	346.	446
447	4484.95	1142.	232.	58.	78.	25.	306.	244.	322.	447
448	4485.35	1096.	221.	58.	74.	24.	290.	244.	306.	448
449	4485.90	1045.	208.	58.	71.	23.	274.	244.	290.	449
450	4486.35	1014.	201.	58.	68.	22.	263.	244.	279.	450
451	4486.25	1047.	210.	58.	71.	23.	276.	244.	289.	451
452	4486.30	1025.	204.	58.	69.	22.	268.	244.	282.	452
453	4486.65	985.	194.	58.	66.	21.	254.	244.	269.	453
454	4485.95	1042.	209.	58.	71.	23.	274.	244.	290.	454
455	4485.20	1097.	222.	58.	76.	24.	291.	244.	310.	455
456	4484.80	1126.	229.	58.	79.	25.	300.	244.	320.	456
457	4484.90	1131.	230.	58.	79.	25.	300.	244.	322.	457
458	4485.30	1105.	223.	58.	77.	24.	291.	244.	313.	458
459	4485.70	1059.	211.	58.	73.	23.	275.	244.	298.	459
460	4486.25	1016.	200.	58.	70.	22.	260.	244.	284.	460
461	4486.80	974.	190.	58.	67.	21.	246.	244.	269.	461
462	4487.25	945.	183.	58.	65.	20.	237.	244.	260.	462
463	4487.55	928.	179.	58.	63.	20.	232.	244.	253.	463
464	4487.65	915.	176.	58.	63.	19.	228.	244.	250.	464
465	4487.75	890.	169.	58.	61.	19.	219.	244.	243.	465
466	4487.15	935.	180.	58.	65.	20.	234.	244.	259.	466

LKSIM2000 Quality Results – QUAL.025

467	4486.80	960.	187.	58.	68.	20.	241.	244.	268.	467
468	4486.30	990.	194.	58.	70.	21.	250.	244.	280.	468
469	4486.45	990.	194.	58.	70.	21.	250.	244.	279.	469
470	4486.90	967.	187.	58.	68.	20.	242.	244.	271.	470
471	4487.40	929.	178.	58.	65.	20.	229.	244.	258.	471
472	4487.90	896.	170.	58.	62.	19.	219.	244.	246.	472
473	4488.50	868.	163.	58.	60.	18.	210.	244.	237.	473
474	4488.70	863.	162.	58.	59.	18.	209.	244.	235.	474
475	4489.00	818.	150.	58.	56.	17.	194.	244.	219.	475
476	4489.00	794.	144.	58.	55.	16.	185.	244.	212.	476
477	4489.00	769.	137.	58.	53.	15.	177.	244.	205.	477
478	4488.30	809.	148.	58.	57.	16.	190.	244.	220.	478
479	4487.70	845.	157.	58.	60.	17.	202.	244.	233.	479
480	4487.30	871.	163.	58.	62.	18.	210.	244.	242.	480
481	4487.60	869.	163.	58.	62.	18.	209.	244.	240.	481
482	4487.95	864.	161.	58.	61.	18.	208.	244.	238.	482
483	4488.30	851.	158.	58.	59.	17.	204.	244.	232.	483
484	4488.80	830.	153.	58.	57.	17.	198.	244.	225.	484
485	4489.00	819.	151.	58.	56.	17.	195.	244.	220.	485
486	4489.00	822.	152.	58.	56.	17.	197.	244.	220.	486
487	4489.00	825.	153.	58.	56.	17.	199.	244.	220.	487
488	4489.00	817.	151.	58.	55.	17.	196.	244.	217.	488
489	4488.75	822.	153.	58.	56.	17.	199.	244.	219.	489
490	4488.00	863.	163.	58.	59.	18.	213.	244.	234.	490
491	4487.30	907.	175.	58.	63.	19.	227.	244.	249.	491
492	4487.10	923.	178.	58.	64.	19.	232.	244.	254.	492
493	4487.20	929.	180.	58.	64.	19.	234.	244.	255.	493
494	4487.90	892.	171.	58.	60.	18.	223.	241.	242.	494
495	4488.15	893.	171.	58.	60.	19.	223.	244.	241.	495
496	4488.65	870.	165.	58.	58.	18.	216.	244.	233.	496
497	4488.95	860.	163.	58.	57.	18.	214.	244.	229.	497
498	4489.00	848.	160.	58.	56.	17.	210.	244.	225.	498
499	4489.00	841.	159.	58.	55.	17.	208.	244.	222.	499
500	4489.00	831.	156.	58.	55.	17.	205.	244.	218.	500
501	4488.85	823.	154.	58.	54.	17.	202.	244.	216.	501
502	4487.95	879.	169.	58.	59.	18.	222.	244.	235.	502
503	4487.25	926.	181.	58.	62.	20.	238.	244.	252.	503
504	4487.05	945.	185.	58.	64.	20.	243.	244.	258.	504
505	4487.70	910.	176.	58.	61.	19.	232.	242.	245.	505
506	4487.85	915.	177.	58.	61.	19.	234.	244.	246.	506
507	4488.30	892.	171.	58.	59.	18.	226.	244.	238.	507
508	4488.70	877.	168.	58.	57.	18.	222.	244.	233.	508
509	4489.00	868.	166.	58.	57.	18.	219.	244.	229.	509
510	4489.00	860.	164.	58.	56.	18.	217.	244.	226.	510
511	4489.00	866.	166.	58.	56.	18.	220.	244.	228.	511
512	4488.80	864.	165.	58.	56.	18.	219.	244.	226.	512
513	4488.40	880.	169.	58.	57.	18.	225.	244.	233.	513
514	4487.40	940.	185.	58.	62.	20.	245.	244.	253.	514
515	4486.75	992.	198.	58.	66.	21.	263.	244.	271.	515
516	4486.35	1028.	207.	58.	69.	22.	275.	244.	282.	516
517	4486.70	1004.	200.	58.	67.	21.	265.	244.	274.	517
518	4487.10	981.	194.	58.	65.	21.	257.	244.	266.	518
519	4487.50	956.	188.	58.	63.	20.	249.	244.	258.	519
520	4487.95	926.	180.	58.	61.	19.	239.	244.	248.	520
521	4488.45	898.	173.	58.	58.	19.	229.	244.	238.	521
522	4488.90	878.	168.	58.	57.	18.	222.	244.	231.	522
523	4489.00	859.	163.	58.	56.	18.	216.	244.	225.	523

LKSIM2000 Quality Results – QUAL.025

524	4489.25	803.	149.	58.	52.	16.	197.	244.	207.	524
525	4489.00	791.	146.	58.	52.	16.	192.	244.	205.	525
526	4488.20	837.	158.	58.	56.	17.	209.	244.	221.	526
527	4487.65	872.	166.	58.	58.	18.	220.	244.	233.	527
528	4487.35	897.	172.	58.	60.	19.	228.	244.	241.	528
529	4487.55	893.	171.	58.	60.	19.	226.	244.	240.	529
530	4488.10	868.	164.	58.	58.	18.	217.	244.	231.	530
531	4488.40	850.	160.	58.	56.	17.	211.	244.	226.	531
532	4488.85	823.	153.	58.	54.	17.	201.	244.	217.	532
533	4489.00	804.	148.	58.	53.	16.	195.	244.	211.	533
534	4489.00	795.	146.	58.	53.	16.	192.	244.	209.	534
535	4489.00	772.	140.	58.	51.	16.	184.	244.	200.	535
536	4488.90	771.	140.	58.	51.	16.	183.	244.	201.	536
537	4488.70	768.	138.	58.	52.	15.	182.	244.	201.	537
538	4487.85	810.	149.	58.	55.	17.	196.	244.	217.	538
539	4487.10	860.	162.	58.	60.	18.	212.	244.	235.	539
540	4486.55	897.	170.	58.	63.	19.	223.	244.	248.	540
541	4486.80	892.	169.	58.	62.	19.	220.	244.	246.	541
542	4487.25	876.	164.	58.	61.	18.	214.	244.	240.	542
543	4487.50	861.	160.	58.	60.	18.	209.	244.	235.	543
544	4488.05	833.	153.	58.	58.	17.	199.	244.	226.	544
545	4488.55	814.	149.	58.	56.	17.	193.	244.	220.	545
546	4488.85	800.	145.	58.	55.	16.	189.	244.	215.	546
547	4489.00	789.	143.	58.	54.	16.	185.	244.	211.	547
548	4489.05	749.	133.	58.	52.	15.	172.	244.	197.	548
549	4489.55	688.	117.	58.	47.	13.	151.	241.	177.	549
550	4488.90	711.	123.	58.	49.	14.	158.	244.	186.	550
551	4487.95	752.	133.	58.	53.	15.	172.	244.	202.	551
552	4487.55	774.	139.	58.	55.	16.	179.	244.	210.	552
553	4487.85	777.	139.	58.	55.	16.	179.	244.	211.	553
554	4488.30	766.	136.	58.	54.	15.	175.	244.	206.	554
555	4488.85	749.	132.	58.	53.	15.	170.	244.	200.	555
556	4489.00	729.	127.	58.	51.	14.	163.	244.	193.	556
557	4489.00	704.	121.	58.	49.	14.	156.	242.	185.	557
558	4489.00	700.	120.	58.	48.	14.	154.	244.	183.	558
559	4489.00	707.	122.	58.	49.	14.	157.	244.	185.	559
560	4488.95	707.	122.	58.	49.	14.	157.	244.	186.	560
561	4488.20	736.	129.	58.	52.	15.	166.	244.	197.	561
562	4487.55	775.	139.	58.	55.	16.	179.	244.	211.	562
563	4486.70	819.	150.	58.	59.	17.	193.	244.	227.	563
564	4486.40	845.	156.	58.	62.	18.	200.	244.	236.	564
565	4486.35	861.	159.	58.	63.	18.	204.	244.	242.	565
566	4486.60	864.	160.	58.	63.	18.	205.	244.	242.	566
567	4487.05	843.	154.	58.	61.	17.	198.	244.	234.	567
568	4487.35	832.	151.	58.	60.	17.	194.	244.	230.	568
569	4487.75	820.	148.	58.	59.	17.	190.	244.	226.	569
570	4488.05	814.	147.	58.	58.	17.	189.	244.	223.	570
571	4488.10	826.	151.	58.	59.	17.	193.	244.	227.	571
572	4488.25	818.	148.	58.	59.	17.	191.	244.	224.	572
573	4487.50	863.	160.	58.	63.	18.	206.	244.	240.	573
574	4486.70	917.	173.	58.	67.	19.	223.	244.	260.	574
575	4486.00	963.	184.	58.	71.	21.	237.	244.	276.	575
576	4485.50	1004.	194.	58.	75.	22.	249.	244.	291.	576
577	4485.80	996.	192.	58.	74.	21.	246.	244.	287.	577
578	4486.05	987.	189.	58.	73.	21.	243.	244.	284.	578
579	4486.40	962.	183.	58.	71.	21.	235.	244.	275.	579
580	4487.05	917.	172.	58.	67.	19.	221.	242.	259.	580

LKSIM2000 Quality Results – QUAL.025

581	4487.55	887.	165.	58.	64.	19.	212.	242.	248.	581
582	4488.25	851.	156.	58.	61.	18.	200.	242.	235.	582
583	4489.00	823.	150.	58.	59.	17.	192.	243.	225.	583
584	4489.00	820.	149.	58.	59.	17.	191.	244.	224.	584
585	4488.60	847.	156.	58.	61.	18.	200.	244.	235.	585
586	4487.70	904.	170.	58.	67.	19.	218.	244.	255.	586
587	4486.95	949.	181.	58.	71.	20.	232.	244.	272.	587
588	4487.05	939.	178.	58.	69.	20.	228.	244.	267.	588
589	4487.05	948.	180.	58.	70.	20.	230.	244.	271.	589
590	4487.60	919.	173.	58.	67.	19.	221.	244.	260.	590
591	4488.05	894.	167.	58.	65.	19.	213.	244.	250.	591
592	4488.55	868.	161.	58.	63.	18.	205.	244.	241.	592
593	4489.00	838.	153.	58.	60.	17.	196.	244.	230.	593
594	4489.00	809.	147.	58.	58.	17.	187.	244.	220.	594
595	4489.00	787.	141.	58.	56.	16.	181.	244.	212.	595
596	4488.80	795.	144.	58.	57.	16.	184.	244.	215.	596
597	4488.00	831.	153.	58.	60.	17.	196.	244.	229.	597
598	4487.15	879.	165.	58.	64.	18.	211.	244.	246.	598
599	4486.55	919.	174.	58.	68.	20.	224.	244.	260.	599
600	4486.05	953.	183.	58.	71.	20.	234.	244.	272.	600
601	4486.35	943.	180.	58.	69.	20.	230.	244.	268.	601
602	4486.80	925.	175.	58.	68.	20.	224.	244.	261.	602
603	4487.30	901.	169.	58.	65.	19.	217.	244.	252.	603
604	4488.00	857.	159.	58.	61.	18.	204.	241.	237.	604
605	4488.90	801.	147.	56.	57.	17.	188.	234.	218.	605
606	4488.90	786.	142.	58.	55.	16.	182.	239.	211.	606
607	4489.00	785.	141.	58.	55.	16.	182.	244.	210.	607
608	4489.35	727.	127.	58.	51.	14.	163.	243.	190.	608
609	4489.00	733.	128.	58.	52.	15.	165.	244.	194.	609
610	4488.25	782.	141.	58.	56.	16.	181.	244.	212.	610
611	4488.40	781.	141.	58.	55.	16.	181.	244.	210.	611
612	4487.80	831.	153.	58.	60.	17.	197.	244.	229.	612
613	4488.00	833.	154.	58.	60.	17.	197.	244.	229.	613
614	4488.40	824.	151.	58.	59.	17.	195.	244.	224.	614
615	4488.85	812.	148.	58.	57.	17.	191.	244.	220.	615
616	4488.95	796.	144.	58.	56.	16.	186.	244.	214.	616
617	4489.00	789.	143.	58.	55.	16.	185.	244.	211.	617
618	4489.00	778.	141.	58.	53.	16.	182.	244.	206.	618
619	4489.00	788.	144.	58.	54.	16.	186.	244.	208.	619
620	4489.00	773.	140.	58.	53.	16.	182.	244.	203.	620
621	4488.25	808.	149.	58.	55.	17.	194.	244.	215.	621
622	4487.50	851.	160.	58.	59.	18.	209.	244.	230.	622
623	4486.65	907.	175.	58.	63.	19.	227.	244.	249.	623
624	4486.30	933.	181.	58.	65.	20.	235.	244.	257.	624
625	4486.95	895.	171.	58.	62.	19.	222.	244.	243.	625
626	4487.35	887.	169.	58.	61.	18.	220.	244.	240.	626
627	4487.85	863.	163.	58.	59.	18.	213.	244.	232.	627
628	4488.40	838.	157.	58.	56.	17.	205.	244.	223.	628
629	4488.95	815.	151.	58.	54.	17.	198.	244.	215.	629
630	4488.95	789.	145.	58.	52.	16.	189.	244.	205.	630
631	4489.00	770.	140.	58.	51.	16.	184.	244.	199.	631
632	4489.50	711.	125.	58.	47.	14.	163.	244.	180.	632
633	4489.25	704.	123.	58.	47.	14.	160.	244.	179.	633
634	4488.65	736.	131.	58.	50.	15.	172.	244.	191.	634
635	4487.95	774.	141.	58.	53.	16.	185.	244.	204.	635
636	4488.35	761.	137.	58.	51.	15.	179.	244.	199.	636
637	4488.85	752.	135.	58.	50.	15.	177.	244.	195.	637

LKSIM2000 Quality Results – QUAL.025

638	4489.00	745.	134.	58.	50.	15.	175.	244.	192.	638
639	4489.00	726.	129.	58.	48.	14.	169.	244.	186.	639
640	4489.00	710.	125.	58.	46.	14.	164.	244.	180.	640
641	4489.20	679.	118.	58.	44.	13.	155.	242.	170.	641
642	4490.05	615.	101.	58.	39.	11.	132.	236.	148.	642
643	4490.15	607.	99.	58.	38.	11.	129.	241.	145.	643
644	4491.00	551.	85.	58.	35.	10.	112.	235.	128.	644
645	4491.60	503.	74.	58.	32.	9.	96.	229.	114.	645
646	4490.70	537.	81.	58.	34.	9.	106.	242.	124.	646
647	4490.05	554.	86.	58.	35.	10.	112.	244.	129.	647
648	4489.40	572.	91.	58.	37.	10.	119.	244.	136.	648
649	4489.20	579.	91.	58.	37.	10.	121.	244.	138.	649
650	4489.30	574.	90.	58.	37.	10.	119.	244.	136.	650
651	4489.40	556.	86.	58.	35.	10.	114.	240.	131.	651
652	4489.35	552.	85.	58.	34.	10.	112.	243.	129.	652
653	4489.30	547.	84.	58.	34.	10.	111.	244.	126.	653
654	4489.65	530.	79.	58.	32.	9.	105.	244.	120.	654
655	4490.45	505.	73.	58.	31.	8.	96.	243.	112.	655
656	4491.50	454.	60.	58.	29.	7.	80.	232.	97.	656
657	4491.55	445.	59.	58.	28.	7.	78.	231.	95.	657
658	4490.70	474.	65.	58.	30.	7.	86.	241.	103.	658
659	4490.05	495.	71.	58.	31.	8.	94.	244.	111.	659
660	4489.40	516.	77.	58.	33.	9.	101.	244.	118.	660
661	4489.15	526.	79.	58.	34.	9.	104.	244.	121.	661
662	4489.00	532.	80.	58.	34.	9.	106.	244.	123.	662
663	4489.00	532.	80.	58.	34.	9.	107.	244.	122.	663
664	4489.00	532.	80.	58.	33.	9.	107.	244.	122.	664
665	4489.00	533.	81.	58.	33.	9.	108.	244.	121.	665
666	4489.25	523.	78.	58.	32.	9.	104.	244.	117.	666
667	4489.80	505.	73.	58.	31.	8.	97.	243.	111.	667
668	4490.20	491.	70.	58.	30.	8.	92.	242.	106.	668
669	4489.40	515.	77.	58.	33.	9.	101.	244.	116.	669
670	4488.85	545.	85.	58.	35.	10.	112.	244.	127.	670
671	4488.15	581.	94.	58.	38.	11.	125.	244.	139.	671
672	4487.80	610.	102.	58.	40.	11.	134.	244.	148.	672
673	4488.20	619.	103.	58.	40.	11.	137.	244.	150.	673
674	4488.75	619.	103.	58.	40.	11.	137.	244.	149.	674
675	4489.00	609.	101.	58.	39.	11.	133.	244.	145.	675
676	4489.00	604.	99.	58.	38.	11.	132.	244.	143.	676
677	4489.20	588.	95.	58.	37.	11.	126.	243.	138.	677
678	4490.15	539.	82.	58.	33.	9.	108.	237.	121.	678
679	4490.80	509.	75.	58.	32.	9.	99.	234.	112.	679
680	4491.30	488.	70.	58.	31.	8.	92.	234.	106.	680
681	4490.90	496.	70.	58.	31.	8.	93.	242.	109.	681
682	4490.05	522.	78.	58.	34.	9.	102.	244.	118.	682
683	4489.25	549.	85.	58.	36.	10.	112.	244.	128.	683
684	4488.70	579.	93.	58.	38.	11.	123.	244.	138.	684
685	4489.00	588.	95.	58.	38.	11.	126.	244.	140.	685
686	4489.00	592.	96.	58.	38.	11.	127.	244.	141.	686
687	4489.00	595.	97.	58.	38.	11.	129.	244.	142.	687
688	4489.00	593.	96.	58.	38.	11.	128.	244.	140.	688
689	4489.00	585.	94.	58.	37.	11.	126.	244.	137.	689
690	4489.00	583.	94.	58.	36.	11.	125.	244.	136.	690
691	4489.00	594.	97.	58.	37.	11.	129.	244.	139.	691
692	4488.95	600.	99.	58.	37.	11.	132.	244.	140.	692
693	4488.30	630.	107.	58.	40.	12.	143.	244.	150.	693
694	4487.45	667.	117.	58.	43.	13.	157.	244.	162.	694

LKSIM2000 Quality Results – QUAL.025

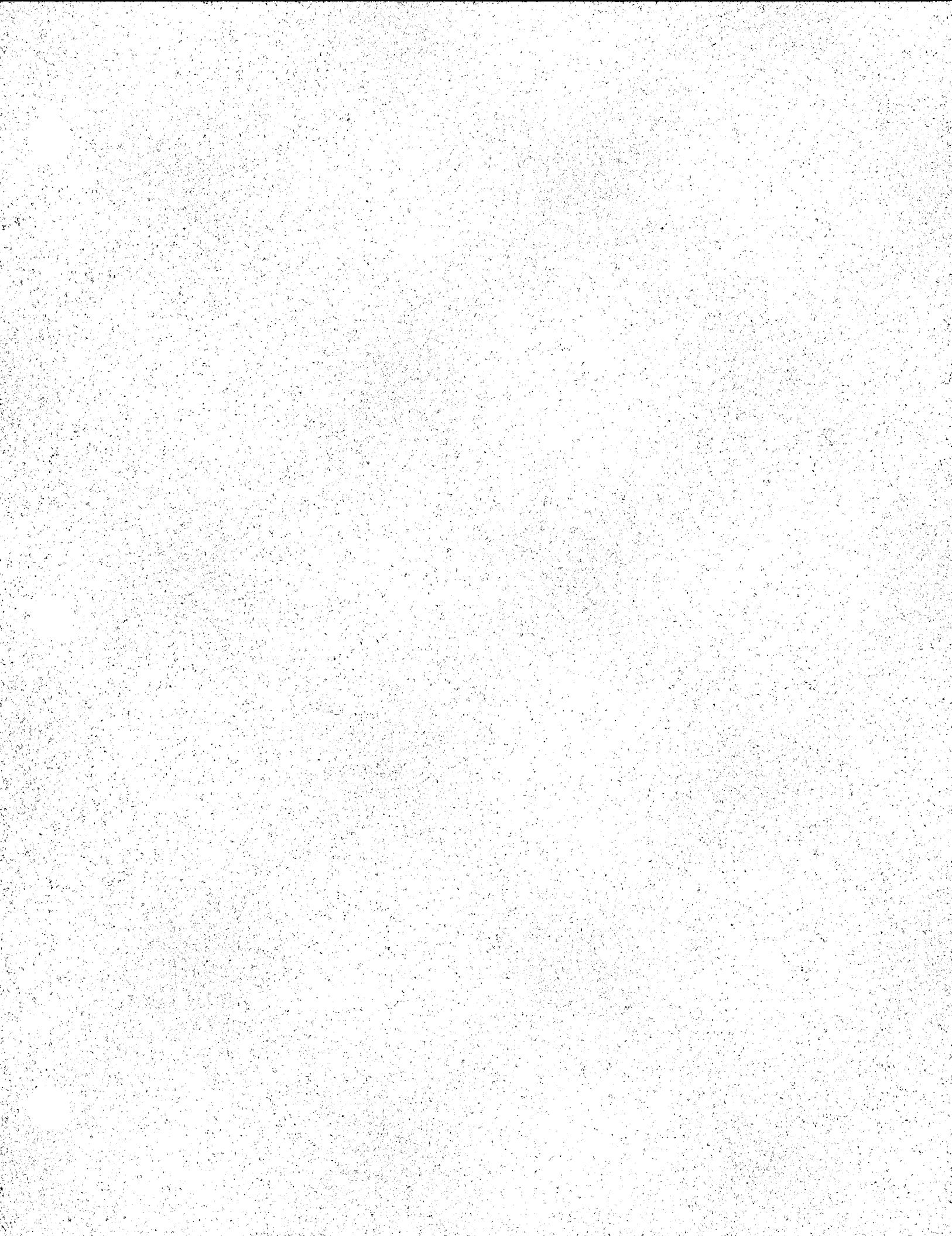
695	4486.90	699.	125.	58.	45.	14.	167.	244.	173.	695
696	4486.50	732.	133.	58.	47.	14.	178.	244.	183.	696
697	4486.80	741.	136.	58.	48.	15.	181.	244.	186.	697
698	4487.25	737.	134.	58.	47.	15.	180.	244.	184.	698
699	4487.65	736.	134.	58.	47.	14.	179.	244.	182.	699
700	4488.15	727.	132.	58.	46.	14.	177.	244.	179.	700
701	4488.50	725.	132.	58.	45.	14.	177.	244.	178.	701
702	4488.65	735.	135.	58.	46.	14.	181.	244.	180.	702
703	4488.85	730.	133.	58.	45.	14.	179.	244.	178.	703
704	4488.65	747.	138.	58.	47.	15.	186.	244.	184.	704
705	4487.85	796.	151.	58.	51.	16.	204.	244.	200.	705
706	4486.90	872.	171.	58.	57.	18.	230.	244.	225.	706
707	4486.10	941.	188.	58.	62.	20.	253.	244.	248.	707
708	4486.15	945.	188.	58.	62.	20.	253.	244.	248.	708
709	4485.80	1009.	205.	58.	67.	22.	275.	244.	269.	709
710	4486.10	995.	200.	58.	65.	21.	270.	244.	263.	710
711	4486.45	979.	196.	58.	63.	21.	264.	244.	257.	711
712	4486.75	975.	196.	58.	63.	21.	264.	244.	255.	712
713	4487.25	944.	188.	58.	60.	20.	253.	244.	244.	713
714	4487.90	906.	178.	58.	57.	19.	240.	243.	231.	714
715	4488.00	918.	182.	58.	58.	19.	245.	244.	235.	715
716	4487.45	962.	193.	58.	62.	21.	261.	244.	250.	716
717	4486.75	1018.	208.	58.	66.	22.	281.	244.	268.	717
718	4485.65	1135.	238.	58.	75.	25.	322.	244.	306.	718
719	4484.85	1230.	262.	58.	82.	28.	354.	244.	336.	719
720	4485.60	1121.	234.	57.	73.	25.	316.	236.	301.	720
721	4485.90	1108.	229.	58.	72.	24.	309.	244.	296.	721
722	4486.15	1092.	225.	58.	71.	24.	303.	244.	290.	722
723	4486.45	1073.	220.	58.	69.	23.	297.	244.	284.	723
724	4487.15	1024.	208.	58.	66.	22.	280.	244.	269.	724
725	4487.70	993.	200.	58.	63.	21.	270.	244.	259.	725
726	4488.00	975.	196.	58.	62.	21.	264.	244.	252.	726
727	4487.65	1007.	205.	58.	63.	22.	276.	244.	261.	727
728	4487.40	1004.	204.	58.	64.	21.	275.	244.	261.	728
729	4486.70	1040.	214.	58.	66.	22.	288.	244.	273.	729
730	4485.70	1124.	236.	58.	73.	25.	318.	244.	300.	730
731	4484.75	1215.	259.	58.	79.	27.	349.	244.	329.	731
732	4484.35	1245.	266.	58.	81.	28.	358.	244.	339.	732
733	4484.60	1225.	260.	58.	80.	27.	350.	244.	333.	733
734	4484.85	1214.	257.	58.	79.	27.	346.	244.	328.	734
735	4485.10	1177.	248.	58.	76.	26.	333.	244.	316.	735
736	4485.45	1142.	239.	58.	73.	25.	322.	244.	304.	736
737	4485.90	1095.	227.	58.	70.	24.	305.	244.	289.	737
738	4486.20	1071.	221.	58.	68.	23.	297.	244.	281.	738
739	4486.35	1079.	224.	58.	68.	23.	301.	244.	283.	739
740	4486.40	1059.	219.	58.	67.	23.	294.	244.	277.	740
741	4486.10	1081.	225.	58.	69.	24.	302.	244.	285.	741
742	4484.80	1205.	257.	58.	78.	27.	346.	244.	325.	742
743	4483.95	1283.	277.	58.	84.	29.	373.	244.	349.	743
744	4483.85	1265.	272.	58.	82.	28.	365.	244.	344.	744
745	4484.00	1233.	263.	58.	80.	27.	353.	244.	334.	745
746	4484.40	1201.	255.	58.	77.	27.	343.	244.	322.	746
747	4484.85	1155.	243.	58.	73.	25.	327.	244.	307.	747
748	4485.35	1114.	233.	58.	70.	24.	313.	244.	294.	748
749	4485.80	1072.	222.	58.	67.	23.	300.	244.	280.	749
750	4486.15	1066.	221.	58.	66.	23.	298.	244.	277.	750
751	4485.95	1100.	231.	58.	68.	24.	312.	244.	287.	751

LKSIM2000 Quality Results – QUAL.025

752	4485.45	1140.	242.	58.	71.	25.	327.	244.	299.	752
753	4484.85	1193.	256.	58.	75.	27.	346.	244.	316.	753
754	4483.70	1355.	298.	58.	85.	31.	404.	244.	366.	754
755	4482.75	1535.	345.	58.	97.	35.	469.	244.	419.	755
756	4483.10	1417.	313.	58.	89.	32.	425.	244.	383.	756
757	4483.30	1411.	312.	58.	89.	32.	422.	244.	382.	757
758	4483.75	1340.	293.	58.	84.	30.	396.	244.	360.	758
759	4484.20	1287.	280.	58.	80.	29.	378.	244.	343.	759
760	4485.00	1166.	249.	58.	72.	26.	336.	239.	307.	760
761	4485.65	1093.	230.	58.	67.	24.	310.	238.	284.	761
762	4486.60	1014.	209.	58.	62.	22.	282.	238.	260.	762
763	4486.75	1016.	210.	58.	62.	22.	282.	244.	259.	763
764	4487.45	950.	192.	58.	58.	20.	259.	244.	240.	764
765	4487.30	962.	196.	58.	59.	20.	263.	244.	245.	765
766	4486.60	1020.	211.	58.	63.	22.	284.	244.	265.	766
767	4485.95	1074.	225.	58.	67.	23.	303.	244.	282.	767
768	4485.70	1096.	230.	58.	69.	24.	309.	244.	290.	768
769	4485.95	1082.	226.	58.	68.	23.	303.	244.	285.	769
770	4486.30	1067.	222.	58.	67.	23.	298.	244.	280.	770
771	4486.70	1047.	217.	58.	65.	22.	291.	244.	273.	771
772	4487.10	1025.	211.	58.	64.	22.	284.	244.	266.	772
773	4487.55	1003.	206.	58.	62.	21.	276.	244.	258.	773
774	4487.80	1000.	205.	58.	61.	21.	276.	244.	257.	774
775	4487.90	1000.	205.	58.	61.	21.	276.	244.	256.	775
776	4487.70	1016.	210.	58.	62.	22.	283.	244.	261.	776
777	4486.95	1077.	226.	58.	67.	23.	305.	244.	281.	777
778	4485.90	1167.	250.	58.	73.	26.	337.	244.	310.	778
779	4485.10	1231.	266.	58.	78.	27.	358.	244.	331.	779
780	4484.60	1289.	281.	58.	82.	29.	378.	244.	349.	780
781	4485.05	1239.	267.	58.	78.	27.	359.	244.	332.	781
782	4485.50	1203.	257.	58.	75.	26.	346.	244.	320.	782
783	4485.90	1174.	250.	58.	73.	26.	337.	244.	310.	783
784	4486.55	1109.	233.	58.	68.	24.	313.	244.	290.	784
785	4487.00	1081.	226.	58.	66.	23.	304.	244.	281.	785
786	4487.45	1060.	221.	58.	65.	23.	297.	244.	273.	786
787	4487.60	1045.	218.	58.	64.	22.	293.	244.	269.	787
788	4488.80	924.	187.	58.	57.	19.	251.	238.	233.	788
789	4488.70	868.	172.	58.	53.	18.	231.	239.	217.	789
790	4488.15	888.	176.	58.	54.	18.	236.	244.	223.	790
791	4487.50	930.	188.	58.	58.	19.	252.	244.	237.	791
792	4487.05	973.	199.	58.	61.	20.	267.	244.	251.	792
793	4487.30	974.	199.	58.	61.	20.	266.	244.	252.	793
794	4487.60	975.	199.	58.	61.	20.	266.	244.	252.	794
795	4488.05	956.	193.	58.	59.	20.	259.	244.	245.	795
796	4488.20	958.	194.	58.	59.	20.	261.	244.	245.	796
797	4488.80	928.	187.	58.	57.	19.	251.	244.	235.	797
798	4488.90	903.	180.	58.	55.	19.	242.	244.	227.	798
799	4489.00	882.	175.	58.	54.	18.	234.	244.	221.	799
800	4489.00	849.	166.	58.	52.	17.	222.	244.	211.	800
801	4489.00	825.	159.	58.	51.	17.	213.	244.	205.	801
802	4488.25	885.	175.	58.	56.	18.	235.	244.	225.	802
803	4487.60	940.	189.	58.	60.	20.	254.	244.	244.	803
804	4487.35	965.	195.	58.	62.	20.	262.	244.	251.	804
805	4487.45	975.	198.	58.	62.	21.	265.	244.	254.	805
806	4488.05	945.	189.	58.	60.	20.	254.	244.	244.	806
807	4488.50	920.	183.	58.	58.	19.	245.	244.	236.	807
808	4489.00	877.	172.	58.	55.	18.	230.	242.	223.	808

LKSIM2000 Quality Results – QUAL.025

809 4489.00	860.	167.	58.	53.	18.	224.	244.	217.	809
810 4489.00	839.	162.	58.	52.	17.	217.	244.	210.	810
811 4489.20	797.	150.	58.	49.	16.	201.	244.	197.	811
812 4489.70	732.	133.	58.	45.	14.	178.	243.	177.	812
813 4489.60	714.	128.	58.	44.	14.	171.	244.	172.	813
814 4488.65	763.	142.	58.	48.	15.	190.	244.	190.	814
815 4488.30	799.	151.	58.	51.	16.	202.	244.	202.	815
816 4488.20	815.	155.	58.	52.	16.	207.	244.	207.	816
817 4488.50	814.	155.	58.	52.	16.	207.	244.	207.	817
818 4489.00	808.	153.	58.	52.	16.	204.	244.	204.	818
819 4489.00	794.	149.	58.	50.	16.	200.	244.	199.	819
820 4489.00	772.	144.	58.	48.	15.	192.	244.	192.	820
821 4489.00	753.	140.	58.	47.	15.	186.	243.	185.	821
822 4489.00	742.	137.	58.	46.	15.	183.	244.	181.	822
823 4489.00	730.	134.	58.	45.	14.	179.	244.	177.	823
824 4489.55	678.	119.	58.	42.	13.	159.	244.	161.	824
825 4489.65	646.	112.	58.	40.	12.	149.	240.	152.	825
826 4489.00	680.	121.	58.	43.	13.	160.	244.	164.	826
827 4488.35	711.	129.	58.	45.	14.	171.	244.	175.	827
828 4488.35	724.	132.	58.	46.	14.	175.	244.	179.	828
829 4488.45	737.	135.	58.	47.	14.	180.	244.	183.	829
830 4488.95	732.	134.	58.	46.	14.	178.	244.	181.	830
831 4489.00	731.	133.	58.	46.	14.	177.	244.	180.	831
832 4489.00	723.	132.	58.	45.	14.	175.	244.	178.	832
833 4489.00	717.	130.	58.	45.	14.	173.	244.	175.	833
834 4489.00	719.	131.	58.	45.	14.	174.	244.	176.	834
835 4489.00	704.	127.	58.	43.	14.	169.	244.	170.	835
836 4489.30	658.	114.	58.	41.	12.	152.	243.	156.	836
837 4489.00	659.	115.	58.	41.	12.	152.	244.	157.	837
838 4488.35	693.	124.	58.	44.	13.	165.	244.	169.	838
839 4487.80	729.	133.	58.	47.	14.	177.	244.	182.	839
840 4487.45	762.	142.	58.	49.	15.	189.	244.	192.	840



LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 30 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

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MONTHLY FLOW IN ACRE FEET TRIB: 30 DESC: T30 CUP Inflow from Strawberry Lake--to supply demands from Utah Lake.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total	
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	
1950	2261.0	2407.0	2603.0	2461.0	1992.0	1952.0	1075.0	634.0	2082.0	472.0	555.0	248.0	18742.	
1951	2264.0	2272.0	2359.0	2588.0	2069.0	2236.0	817.0	757.0	2360.0	524.0	468.0	316.0	19030.	
1952	901.0	2396.0	2532.0	2359.0	2117.0	1866.0	1075.0	1500.0	53.0	930.0	907.0	857.0	17493.	
1953	839.0	1452.0	1834.0	1834.0	1854.0	1813.0	3000.0	40.0	304.0	383.0	314.0	133.0	13800.	
1954	182.0	2350.0	2688.0	2262.0	2487.0	2229.0	3000.0	213.0	387.0	333.0	281.0	0.0	16412.	
1955	617.0	2671.0	2888.0	2788.0	2788.0	2565.0	2850.0	6283.0	5735.0	2380.0	429.0	266.0	84.0	29556.
1956	1400.0	2971.0	2888.0	2788.0	2862.0	2350.0	1635.0	4760.0	2380.0	352.0	372.0	91.0	24849.	
1957	2064.0	2771.0	2888.0	2788.0	2355.0	2650.0	4097.0	1500.0	98.0	420.0	359.0	208.0	22198.	
1958	31.0	2471.0	2788.0	2788.0	2333.0	2650.0	1245.0	1069.0	2124.0	612.0	553.0	289.0	18953.	
1959	973.0	2671.0	2788.0	2788.0	2533.0	2688.0	6577.0	6149.0	2380.0	296.0	203.0	0.0	30046.	
1960	1685.0	2871.0	3088.0	2888.0	2888.0	2542.0	2262.0	5756.0	6149.0	2380.0	375.0	248.0	270.0	30514.
1961	2161.0	2771.0	3088.0	2888.0	2733.0	3639.0	7247.0	5498.0	2380.0	233.0	114.0	1545.0	34297.	
1962	2827.0	2871.0	2988.0	2988.0	2533.0	2850.0	1075.0	3158.0	2332.0	311.0	424.0	165.0	24522.	
1963	1096.0	2771.0	2988.0	2788.0	1933.0	2650.0	6642.0	4056.0	2380.0	410.0	314.0	0.0	28028.	
1964	1486.0	4111.0	4376.0	4574.0	4303.0	4115.0	5916.0	828.0	2380.0	638.0	1323.0	1377.0	35427.	
1965	1694.0	2571.0	2588.0	2688.0	2433.0	2550.0	1075.0	1500.0	55.0	983.0	965.0	808.0	19910.	
1966	2092.0	2471.0	2788.0	2888.0	2533.0	2450.0	3911.0	6149.0	2380.0	274.0	251.0	57.0	28244.	
1967	1365.0	3006.0	3234.0	3234.0	2945.0	2896.0	6278.0	2971.0	1740.0	435.0	357.0	178.0	28639.	
1968	2448.0	2671.0	2788.0	2888.0	2542.0	2550.0	4335.0	1561.0	1071.0	390.0	153.0	115.0	23512.	
1969	44.0	2194.0	2374.0	2069.0	1994.0	1404.0	1075.0	0.0	1745.0	668.0	682.0	513.0	14762.	
1970	1053.0	2464.0	2403.0	2318.0	1986.0	2229.0	6500.0	4283.0	2380.0	392.0	343.0	73.0	26424.	
1971	1007.0	2197.0	2504.0	2306.0	1843.0	1490.0	1075.0	2826.0	2380.0	406.0	377.0	1778.0	20189.	
1972	2142.0	2270.0	2439.0	2439.0	2129.0	2182.0	3982.0	5466.0	2380.0	374.0	200.0	0.0	26003.	
1973	2294.0	2315.0	2493.0	2561.0	2206.0	2077.0	1075.0	1500.0	1973.0	679.0	633.0	323.0	20129.	
1974	1844.0	2073.0	2249.0	2271.0	2028.0	1356.0	2158.0	0.0	2380.0	318.0	234.0	80.0	16991.	
1975	783.0	2078.0	2348.0	2325.0	2108.0	2020.0	6173.0	1500.0	705.0	298.0	328.0	111.0	20777.	
1976	0.0	2166.0	2316.0	2357.0	2126.0	2047.0	4973.0	4025.0	2380.0	361.0	334.0	80.0	23165.	
1977	2134.0	2758.0	2907.0	2907.0	2591.0	2866.0	5251.0	6149.0	2353.0	329.0	288.0	86.0	30619.	
1978	5316.0	6199.0	6407.0	6407.0	5391.0	4743.0	3524.0	1500.0	2684.0	2141.0	2016.0	3082.0	49410.	
1979	5718.0	6008.0	6284.0	6234.0	5591.0	5836.0	3321.0	1689.0	2380.0	2128.0	2132.0	2118.0	49439.	

LKSIM2000 Tributary Inflow Results FLOW.025

1980	8341.0	7128.0	7581.0	7295.0	6295.0	6012.0	1075.0	1500.0	467.0	2142.0	1769.0	2087.0	51692.
1981	2368.0	3890.0	4017.0	3662.0	3428.0	3634.0	6126.0	6023.0	2380.0	365.0	349.0	3040.0	39282.
1982	3074.0	3427.0	3554.0	3494.0	2969.0	2236.0	1075.0	1254.0	531.0	976.0	1110.0	732.0	24432.
1983	3027.0	2411.0	2508.0	2678.0	2375.0	1410.0	1075.0	0.0	0.0	1086.0	1036.0	2053.0	19659.
1984	559.0	2021.0	1988.0	2098.0	2012.0	1290.0	1075.0	0.0	0.0	1110.0	1147.0	1033.0	14333.
1985	2457.0	2281.0	2648.0	2828.0	2553.0	1230.0	1075.0	1244.0	283.0	929.0	1089.0	812.0	19429.
1986	2752.0	2191.0	2558.0	2678.0	1553.0	1230.0	1075.0	1500.0	218.0	1067.0	1125.0	732.0	18679.
1987	2318.0	2081.0	2360.0	2491.0	2178.0	2270.0	4187.0	6149.0	2380.0	344.0	290.0	195.0	27243.
1988	1658.0	2641.0	2825.0	2840.0	2636.0	2596.0	6427.0	5137.0	2380.0	379.0	302.0	129.0	29950.
1989	406.0	2940.0	3079.0	3108.0	2744.0	2762.0	4381.0	6149.0	2380.0	328.0	271.0	1885.0	30433.
1990	4888.0	4892.0	5070.0	5069.0	4597.0	4945.0	6882.0	6149.0	2380.0	1693.0	1717.0	1761.0	50043.
1991	3481.0	3519.0	3787.0	3742.0	3224.0	3498.0	7360.0	8916.0	2083.0	429.0	373.0	477.0	40889.
1992	3934.0	3936.0	3968.0	4138.0	3695.0	3985.0	3117.0	5805.0	2380.0	1086.0	1090.0	1191.0	38325.
1993	7036.0	7117.0	7471.0	7334.0	5746.0	4029.0	3708.0	1500.0	3127.0	2141.0	2121.0	2065.0	53395.
1994	2819.0	3229.0	3382.0	3350.0	2911.0	2928.0	6867.0	6149.0	2380.0	366.0	462.0	509.0	35352.
1995	4920.0	5373.0	5555.0	5517.0	4437.0	3774.0	3789.0	1500.0	324.0	2137.0	2100.0	2096.0	41522.
1996	2274.0	2467.0	2635.0	2571.0	2197.0	1581.0	1227.0	1500.0	1804.0	560.0	584.0	369.0	19769.
1997	2650.0	2193.0	2281.0	2471.0	2175.0	1230.0	1075.0	1500.0	139.0	1013.0	949.0	786.0	18462.
1998	6048.0	5270.0	4171.0	5476.0	4949.0	2918.0	1825.0	1500.0	1383.0	2047.0	2110.0	2096.0	39793.
1999	2210.0	2502.0	2601.0	2541.0	2192.0	2123.0	5344.0	1500.0	132.0	261.0	299.0	108.0	21813.

LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 29 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

MONTHLY FLOW IN ACRE FEET TRIB: 29 DESC: T29 Provo River													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1950	4611.0	4580.0	6641.0	4611.0	3353.0	2943.0	10542.0	39571.1	42536.1	8840.0	3254.0	4112.0	135594.
1951	1149.0	2623.0	5631.0	4376.0	4081.0	4950.0	7257.0	52617.1	42932.1	7579.0	620.0	593.0	134408.
1952	2573.0	2542.0	4632.0	4148.0	2542.0	17260.0	49347.1	86955.2	62418.1	8445.0	614.0	561.0	242037.
1953	1178.0	2663.0	5168.0	4370.0	3040.0	6978.0	6455.0	17605.0	47871.1	1997.0	637.0	596.0	98558.
1954	1205.0	4838.0	2988.0	2279.0	2249.0	1626.0	5928.0	6850.0	1085.0	1282.0	539.0	482.0	31351.
1955	1160.0	2477.0	1701.0	1650.0	1461.0	1594.0	4927.0	10131.0	3121.0	1502.0	610.0	549.0	30883.
1956	1746.0	3320.0	4147.0	1689.0	1535.0	1634.0	6038.0	10529.0	5215.0	3756.0	1530.0	542.0	41681.
1957	991.0	3234.0	2098.0	1835.0	1854.0	1611.0	5592.0	9540.0	19901.0	4250.0	3241.0	3044.0	57191.
1958	1246.0	4974.0	2119.0	1690.0	1702.0	1659.0	6494.0	31504.1	13307.0	3882.0	3205.0	2590.0	74372.
1959	931.0	2954.0	1983.0	1657.0	1463.0	1606.0	5415.0	10049.0	4768.0	2773.0	536.0	507.0	34642.
1960	1027.0	2611.0	1743.0	1671.0	1524.0	1622.0	5914.0	10055.0	2325.0	25580.1	336.0	413.0	54821.
1961	1099.0	1758.0	1690.0	1567.0	1647.0	1550.0	5065.0	8949.0	4193.0	350.0	359.0	426.0	28653.
1962	1023.0	1550.0	1550.0	1550.0	1469.0	1550.0	4879.0	12519.0	5049.0	4029.0	3219.0	2903.0	41290.
1963	1154.0	2358.0	1757.0	1935.0	2122.0	1638.0	4963.0	10534.0	4768.0	3930.0	3155.0	3623.0	41937.
1964	4611.0	6441.0	4611.0	4611.0	2117.0	1627.0	4901.0	9647.0	4981.0	4235.0	3234.0	4115.0	55131.
1965	5957.0	7120.0	4611.0	4611.0	4165.0	4611.0	6061.0	10978.0	40195.1	7396.0	3253.0	4113.0	103071.
1966	5931.0	10638.0	11777.0	9322.0	7215.0	14343.0	6577.0	24318.1	4687.0	3392.0	3141.0	4042.0	105383.
1967	4611.0	4463.0	4611.0	3177.0	1771.0	2845.0	5692.0	11314.0	24172.1	4288.0	3247.0	4113.0	74304.
1968	5830.0	5877.0	4611.0	4611.0	4165.0	4611.0	4887.0	15189.0	47667.1	4241.0	3250.0	4129.0	109068.
1969	5961.0	10820.0	7925.0	4743.0	4165.0	5882.0	28401.1	66277.1	46566.1	7606.0	3256.0	4114.0	195716.
1970	5782.0	9194.0	4611.0	4611.0	4165.0	4611.0	5666.0	32374.1	19015.0	5282.0	3238.0	4091.0	102640.
1971	5546.0	5574.0	4611.0	4611.0	4165.0	4611.0	5788.0	32637.1	56629.1	4128.0	3261.0	4092.0	135653.
1972	5255.0	4995.0	4611.0	4611.0	4165.0	12060.0	9183.0	41382.1	22448.0	7583.0	3258.0	4125.0	123676.
1973	5701.0	7856.0	4611.0	4611.0	4165.0	4611.0	18533.0	38180.1	49511.1	7623.0	3176.0	4156.0	152734.
1974	5657.0	9450.0	4736.0	4611.0	4165.0	4611.0	10210.0	43418.1	51429.1	7727.0	3238.0	4129.0	153381.
1975	5658.0	8935.0	4611.0	4611.0	4165.0	4611.0	4879.0	17506.0	75650.2	17146.0	3261.0	4167.0	155200.
1976	5195.0	7763.0	4613.0	4611.0	4165.0	4611.0	12211.0	24568.1	8335.0	3457.0	3158.0	4049.0	86736.
1977	4611.0	4463.0	4611.0	4246.0	1850.0	1608.0	5861.0	8716.0	3471.0	2846.0	3038.0	4006.0	49327.
1978	5658.0	6411.0	5199.0	4611.0	4165.0	5730.0	8782.0	15045.0	5052.0	4121.0	3243.0	4089.0	72106.
1979	5639.0	6306.0	4611.0	4611.0	4165.0	4611.0	14863.0	16930.0	4768.0	3667.0	3162.0	4066.0	77399.

LKSIM2000 Tributary Inflow Results FLOW.025

1980	5670.0	9969.0	5218.0	4611.0	4165.0	4611.0	5193.0	34843.1	29426.1	4611.0	3252.0	16902.0	128471.
1981	5597.0	7372.0	4890.0	4611.0	4165.0	4611.0	5651.0	12002.0	4768.0	3699.0	3177.0	4044.0	64587.
1982	7221.0	4667.0	4611.0	4611.0	4165.0	5045.0	11701.0	51043.1	42519.1	16028.0	3245.0	4030.0	158886.
1983	6353.0	5329.0	5670.0	4880.0	17526.0	85541.2	24358.1	53132.1	86953.2	19564.0	617.0	554.0	310478.
1984	3065.0	8411.0	6554.0	12962.0	19490.0	37237.1	60510.1	76040.2	59995.1	20398.0	610.0	549.0	305822.
1985	1077.0	8548.0	5252.0	5125.0	8572.0	19964.0	50783.1	66626.1	15726.0	1838.0	569.0	466.0	184546.
1986	6012.0	7356.0	7215.0	5842.0	15376.0	96870.2	54215.1	70115.1	76919.2	19875.0	608.0	551.0	360955.
1987	11867.0	7201.0	4658.0	5331.0	18226.0	15180.0	20782.0	31760.1	5434.0	5078.0	3246.0	4111.0	132874.
1988	4611.0	4260.0	2167.0	1692.0	1546.0	1629.0	5008.0	10153.0	4410.0	3292.0	3239.0	4116.0	46123.
1989	11139.0	4463.0	4611.0	2401.0	1495.0	1641.0	5903.0	14053.0	4768.0	11674.0	3245.0	4043.0	69436.
1990	3905.0	4123.0	3791.0	3648.0	1892.0	3260.0	4879.0	15321.0	4768.0	4090.0	3237.0	4115.0	57029.
1991	4611.0	4463.0	4611.0	4611.0	2404.0	1620.0	5002.0	9221.0	5009.0	4611.0	3033.0	4018.0	53214.
1992	4611.0	4463.0	4611.0	4611.0	4165.0	4029.0	5043.0	8839.0	4063.0	3952.0	9476.0	3884.0	61747.
1993	4611.0	3949.0	2155.0	3138.0	2364.0	5706.0	9741.0	16391.0	4954.0	4152.0	3251.0	4066.0	64478.
1994	4611.0	4463.0	4611.0	4611.0	3838.0	2710.0	5755.0	10059.0	4491.0	3369.0	3051.0	3913.0	55482.
1995	5179.0	4406.0	4071.0	3812.0	3699.0	5058.0	4904.0	14563.0	4697.0	8075.0	3215.0	934.0	62613.
1996	8713.0	7143.0	5855.0	9806.0	4165.0	8818.0	16338.0	35174.1	53405.1	10005.0	3160.0	3996.0	166578.
1997	5587.0	7587.0	8801.0	4611.0	4165.0	15181.0	52596.1	70456.2	49555.1	8599.0	3117.0	3954.0	234210.
1998	5717.0	6320.0	4611.0	4611.0	4165.0	4611.0	13105.0	64278.1	50697.1	11175.0	3171.0	3977.0	176438.
1999	7714.0	6205.0	4611.0	4611.0	8720.0	16660.0	31282.1	54137.1	37156.1	14064.0	3147.0	4030.0	192337.

LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 53 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

=====***MONTHLY FLOW IN ACRE FEET*** TRIB: 53 DESC: T53 Jordan River=====

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1950	9372.0	5958.0	3197.0	1761.0	5185.0	9269.0	12939.0	25705.1	36998.1	42399.1	41575.1	31280.1	225638.
1951	13270.0	5075.0	4854.0	1761.0	2644.0	5182.0	12497.0	27472.1	45832.1	52370.1	34395.1	34483.1	239836.
1952	11944.0	4696.0	4696.0	4696.0	26821.1	79453.2	89013.2	122248.3	108712.2	91830.2	50394.1	38127.1	632631.
1953	15061.0	6601.0	21638.0	59758.1	27500.1	43826.1	29682.1	41219.1	47105.1	55890.1	40611.1	30747.1	419639.
1954	11825.0	4696.0	4696.0	4696.0	4696.0	7098.0	14671.0	41219.1	37939.1	45036.1	40611.1	30747.1	247931.
1955	10729.0	1416.0	1311.0	327.0	327.0	437.0	1201.0	24765.1	30657.1	42550.1	50642.1	32620.1	196982.
1956	12524.0	442.0	331.0	221.0	110.0	110.0	32255.1	26660.1	32982.1	39930.1	37782.1	29805.1	213152.
1957	10508.0	437.0	437.0	0.0	0.0	0.0	0.0	14509.0	27930.1	49204.1	40149.1	32620.1	175794.
1958	10145.0	1871.0	1871.0	1105.0	2762.0	2541.0	2209.0	31118.1	37329.1	43946.1	45883.1	33489.1	214269.
1959	13712.0	6842.0	3086.0	663.0	663.0	221.0	5634.0	32001.1	36998.1	42289.1	38372.1	27193.1	207674.
1960	8631.0	4254.0	1201.0	221.0	110.0	221.0	3093.0	32001.1	33424.1	39157.1	30049.1	20747.0	173109.
1961	5128.0	874.0	874.0	0.0	0.0	0.0	0.0	30080.1	29749.1	22029.0	14119.0	5413.0	108266.
1962	663.0	437.0	110.0	110.0	437.0	327.0	653.0	20470.0	28564.1	35733.1	35352.1	26381.1	149237.
1963	5565.0	3491.0	1090.0	327.0	110.0	0.0	0.0	26786.1	25249.1	44605.1	39044.1	20104.0	166371.
1964	10715.0	763.0	1090.0	1090.0	327.0	110.0	0.0	16355.0	18445.0	44384.1	42464.1	32918.1	168661.
1965	10052.0	437.0	437.0	1201.0	1090.0	653.0	4801.0	26897.1	34254.1	40909.1	39597.1	16901.0	176410.
1966	9058.0	1871.0	1871.0	3197.0	8278.0	7060.0	7968.0	33216.1	37439.1	40521.1	39256.1	29513.1	219248.
1967	11171.0	2617.0	1090.0	1201.0	1748.0	4039.0	3164.0	31967.1	22475.0	39601.1	42981.1	32073.1	194127.
1968	8729.0	1761.0	1761.0	1871.0	1982.0	7391.0	16473.0	28688.1	32248.1	41626.1	35279.1	31059.1	208868.
1969	13615.0	9164.0	9164.0	8038.0	4696.0	8786.0	61174.1	61989.1	66439.1	55890.1	50394.1	30747.1	380097.
1970	14238.0	9521.0	9521.0	10647.0	21983.0	23413.0	28153.1	43990.1	47105.1	55890.1	40611.1	30747.1	335820.
1971	14278.0	9601.0	9601.0	9601.0	10727.0	42502.1	47680.1	41219.1	47105.1	55890.1	40611.1	30747.1	359563.
1972	14784.0	11740.0	10615.0	11740.0	11423.0	35829.1	31245.1	41219.1	47105.1	55890.1	40611.1	30747.1	342949.
1973	14632.0	10310.0	10310.0	9896.0	14401.0	49003.1	84577.2	67525.1	55890.1	40611.1	30747.1	398213.	
1974	15425.0	11896.0	11896.0	13021.0	36780.1	40631.1	71100.1	41219.1	47105.1	55890.1	40611.1	30747.1	416322.
1975	11825.0	4696.0	4696.0	4696.0	4696.0	8786.0	36164.1	80903.2	87078.2	70244.1	50394.1	30747.1	394926.
1976	11825.0	4696.0	5821.0	45048.1	65501.1	38119.1	24475.1	41219.1	47105.1	45036.1	40611.1	30747.1	400204.
1977	11825.0	828.0	828.0	717.0	828.0	911.0	6604.0	19512.0	28077.1	35395.1	34684.1	28146.1	168355.
1978	1081.0	496.0	607.0	717.0	1463.0	5168.0	32917.1	19293.0	39900.1	39434.1	25164.1	166736.	
1979	14557.0	4743.0	4743.0	4743.0	16605.0	64434.1	67924.1	41114.1	47158.1	45050.1	40692.1	30728.1	382492.

LKSIM2000 Tributary Inflow Results FLOW.025

1980	11503.0	658.0	548.0	984.0	10492.0	54036.1	36854.1	87807.2	56622.1	37305.1	29948.1	23780.1	350538.
1981	11587.0	4696.0	5821.0	39680.1	29024.1	47473.1	20080.0	53523.1	47105.1	45036.1	40611.1	30747.1	375384.
1982	11825.0	4696.0	4696.0	4696.0	5821.0	67581.1	60343.1	89065.2	82816.2	55890.1	50394.1	30747.1	468571.
1983	14671.0	39336.1	66024.1	63544.1	73934.2	93267.2	92332.2	121757.3	132617.3	119210.3	96295.2	85540.2	998529.
1984	87723.2	85096.2	87855.2	86428.2	75374.2	91404.2	100407.2	133567.3	132326.3	119916.3	94435.2	85522.2	1180056.
1985	86244.2	78706.2	78212.2	70901.1	63118.1	84908.2	89377.2	97768.2	86283.2	55890.1	50394.1	30747.1	872550.
1986	11825.0	4696.0	48589.1	64678.1	74021.2	95666.2	115823.3	126753.3	117705.3	94351.2	86736.2	38127.1	878972.
1987	19562.0	54245.1	47758.1	59136.1	63840.1	66712.1	29254.1	41219.1	47105.1	55890.1	40611.1	30747.1	556080.
1988	11825.0	4026.0	3809.0	3809.0	3809.0	5879.0	32991.1	27219.1	35086.1	32196.1	30774.1	23764.1	215187.
1989	8980.0	3809.0	3704.0	3704.0	3704.0	5662.0	9637.0	27591.1	29780.1	36134.1	33613.1	19490.0	185808.
1990	3942.0	1690.0	1562.0	389.0	389.0	6520.0	14506.0	43803.1	49609.1	45925.1	43196.1	32195.1	243727.
1991	3288.0	4105.0	4105.0	4474.0	6318.0	7695.0	1493.0	24202.1	28253.1	54615.1	50032.1	28893.1	217473.
1992	16383.0	838.0	838.0	0.0	0.0	0.0	14998.0	32962.1	37571.1	48734.1	30467.1	6058.0	188849.
1993	1939.0	594.0	146.0	146.0	594.0	448.0	18382.0	22756.0	29763.1	39351.1	42874.1	28441.1	185434.
1994	13068.0	5323.0	1693.0	524.0	3022.0	4352.0	18949.0	26323.1	34031.1	51975.1	50033.1	28127.1	237421.
1995	5899.0	593.0	593.0	1654.0	1532.0	940.0	25126.1	23139.0	71622.2	71858.2	37521.1	28136.1	268614.
1996	9090.0	2741.0	2741.0	5856.0	5856.0	46369.1	46747.1	67916.1	65144.1	35196.1	34418.1	22484.0	344559.
1997	13364.0	12292.0	12292.0	26041.1	49124.1	53950.1	81901.2	91604.2	87677.2	65735.1	28483.1	19802.0	542266.
1998	15967.0	5573.0	52384.1	55129.1	62947.1	50771.1	63445.1	89660.2	88435.2	61416.1	54474.1	28659.1	628861.
1999	15762.0	7207.0	33746.1	48224.1	51882.1	33427.1	71099.1	81756.2	65596.1	50992.1	36025.1	23191.0	518908.

LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 78 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

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MONTHLY FLOW IN ACRE FEET TRIB: 78 DESC: T78 Irrig. Return flow--N and NW side of Utah Lake -- from Provo River proj.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
1930	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1931	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1932	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1933	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1934	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1000.0	1000.0	500.0	6800.
1935	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1936	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1937	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1938	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1939	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1940	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1100.0	900.0	7800.
1941	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1100.0	900.0	7800.
1942	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1943	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1944	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1945	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1946	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1947	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1948	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1949	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1950	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1951	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1952	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1953	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1954	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1955	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1200.0	1100.0	1100.0	7700.
1956	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1957	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1958	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1959	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1960	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1200.0	1300.0	1000.0	7800.
1961	600.0	400.0	200.0	200.0	0.0	0.0	0.0	100.0	200.0	600.0	600.0	600.0	3500.
1962	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1963	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1964	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1965	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1966	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1967	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1968	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1969	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1970	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1971	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1972	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1973	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1974	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1000.0	1000.0	7800.
1975	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1976	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1000.0	1000.0	7800.
1977	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1000.0	1000.0	7800.
1978	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1979	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1000.0	1000.0	7800.

LKSIM2000 Tributary Inflow Results FLOW.025

1980	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1981	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1982	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1983	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1984	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1985	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1986	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1987	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1988	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1989	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1990	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1991	1000.0	800.0	200.0	200.0	0.0	0.0	0.0	100.0	200.0	1000.0	1000.0	1000.0	5500.
1992	1000.0	800.0	200.0	200.0	0.0	0.0	0.0	100.0	200.0	1000.0	1000.0	1000.0	5500.
1993	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1994	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1995	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1996	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1997	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1998	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.
1999	1600.0	1000.0	500.0	500.0	0.0	0.0	0.0	200.0	500.0	1500.0	1600.0	1600.0	9000.

LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 80 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

=====***MONTHLY FLOW IN ACRE FEET*** TRIB: 80 DESC: T80 Return flow from Irrig & M&I Spanish Fork / Peteetneet Area=====

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1950	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1951	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1952	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1953	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1954	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1955	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1956	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1957	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1958	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1959	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1960	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1961	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1962	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1963	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1964	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1965	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1966	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1967	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1968	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1969	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1970	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1971	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1972	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1973	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1974	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1975	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1976	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1977	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1978	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	
1979	-411.0	-257.0	-128.0	-128.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.	

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1980	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1981	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1982	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1983	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1984	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1985	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1986	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1987	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1988	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1989	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1990	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1991	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1992	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1993	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1994	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1995	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1996	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1997	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1998	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.
1999	-411.0	-257.0	-128.0	-128.0	0.0	0.0	0.0	-51.0	-128.0	-383.0	-411.0	-411.0	-2308.

LKSIM2000 Tributary Inflow Results FLOW.025

TABLE TRIB: 81 FLOWRATES-- RUN.025: ULS Alt1 based on DF FS FEIS Interim Op ULS BL--9Dec2003 (Thurin)--13De

=====***MONTHLY FLOW IN ACRE FEET*** TRIB: 81 DESC: T81 Total Lake: Unmeas. Inflow (to get balance during misc. simulation runs.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1950	11529.7	-35647.8	-22.1	3062.7	-1506.0	-932.8	1246.1	-136.3	2594.9	2709.1	-5537.4	454.6	-22185.
1951	6296.1	-2678.7	-1666.8	1286.4	500.5	-1212.6	1213.7	2787.2	203.1	364.9	-46.5	-1304.6	5743.
1952	-2822.3	4139.8	182.6	-1879.2	2461.1	-1777.2	-3199.3	8019.8	2398.2	-2563.2	-385.1	2651.3	7226.
1953	-2114.6	1140.8	-1330.5	-2374.3	-1695.3	3434.8	-3096.4	5722.8	-504.7	1217.3	2117.6	-861.8	1656.
1954	-2990.3	531.8	-3125.9	937.3	585.8	6335.6	-343.3	-1428.0	756.4	-2409.0	3231.6	1382.3	3464.
1955	-3240.3	-560.4	-2904.2	6623.8	-2452.0	-2221.3	-203.2	942.3	5569.8	260.9	-6024.3	714.4	-3494.
1956	5534.1	-6002.8	-265.8	2085.7	851.8	1066.7	-116.8	-1511.7	2320.9	-880.1	209.1	-1609.7	1681.
1957	1287.2	-1286.1	257.7	-1722.2	1428.4	-3401.7	2231.8	3518.4	925.1	-411.8	-1291.5	-2112.9	-578.
1958	1131.1	1958.4	-3371.2	394.8	549.3	1906.4	2728.3	-1030.3	-2548.8	3326.3	-637.9	485.9	4892.
1959	-702.7	209.9	-493.4	-2228.2	3659.6	-223.7	3936.1	-2242.1	-749.6	301.2	-1284.9	-2115.4	-1933.
1960	5280.3	-4007.5	-2362.9	2135.1	-493.1	1390.5	1480.2	788.3	305.4	-1324.7	-4697.5	-641.9	-2148.
1961	1485.7	14.5	-193.5	1762.8	2117.2	-5273.2	1741.6	695.4	-776.9	288.5	762.4	592.9	3217.
1962	-2038.9	-738.8	-407.8	1551.9	-4199.3	4149.0	-1657.8	2085.0	2441.7	-2321.5	-2357.8	-1022.7	-4517.
1963	1969.9	478.3	-1365.0	-4189.9	4561.5	-672.1	1149.1	-1363.6	20.9	696.4	748.2	-2824.3	-791.
1964	612.1	-2962.0	1815.3	-3803.9	4039.5	377.0	-423.5	524.6	6047.1	-5986.7	-672.3	1983.6	1551.
1965	771.0	-4767.1	3104.4	-706.9	-1191.8	1294.8	-2326.4	5656.2	2384.6	-4021.2	1919.0	541.2	2658.
1966	-3596.0	3411.5	-3213.6	-543.9	1445.9	899.3	766.5	1629.6	-73.9	-413.3	1603.9	-589.2	1327.
1967	2739.3	-3348.2	3906.2	-4242.1	-747.9	2911.6	670.3	769.3	2330.3	279.4	-2667.6	-1363.3	1237.
1968	4039.1	1052.8	-5938.9	3655.1	-2358.1	3142.5	154.1	3863.0	-2054.5	1840.9	3566.7	-3166.1	7797.
1969	527.1	2421.3	316.6	-4903.2	2570.2	-146.9	-2636.6	3671.6	1044.6	832.3	5005.3	-4200.1	4502.
1970	1402.3	1118.9	-2924.6	1480.5	-2700.4	504.1	1012.7	3482.9	2327.7	2106.1	-786.5	1948.2	8972.
1971	-3900.3	-212.8	1443.7	-2329.5	-1206.8	1494.0	2043.4	1683.8	-1689.3	4809.3	-3188.1	380.6	-672.
1972	1677.3	-1450.2	-4378.5	3770.2	334.9	-165.8	6022.2	-1952.6	2867.5	-2764.3	2958.0	622.9	7542.
1973	-1069.3	-2916.8	1219.3	-955.0	-1817.9	980.9	-333.3	4955.9	-4116.9	3422.7	-2757.3	2409.8	-978.
1974	-255.4	2348.9	-1898.3	-3186.0	1063.9	1604.8	-787.1	5150.0	659.9	-3180.4	5577.1	-2108.9	4989.
1975	2178.1	100.2	-5099.9	1663.7	4946.6	-5520.0	2045.4	1632.6	5367.7	2441.0	-2369.8	-3971.4	3414.
1976	5448.0	-5319.5	3310.5	-259.8	-1805.8	-413.1	-881.1	4396.3	-1474.2	5895.1	-5900.8	6398.7	9394.
1977	-991.3	1775.8	-2194.3	-2090.5	2311.0	-683.4	1298.2	642.6	459.9	1310.8	-2322.3	2373.5	1890.
1978	1624.2	-2341.6	-2381.4	2082.4	-444.6	268.8	1449.5	-495.1	733.7	187.3	-333.3	4316.9	1667.
1979	340.5	-2005.6	-2059.6	875.1	-2071.0	-586.2	2002.0	6802.2	-900.0	-3119.9	2418.0	-1200.3	495.

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1980	3061.5	-2089.8	1380.6	-4191.7	3766.0	-2042.9	3637.6	399.7	-857.9	3935.6	2194.8	428.7	9622.
1981	-971.6	-5350.5	2904.8	-756.1	-1268.8	2329.9	1544.5	1390.5	1091.4	-380.3	-1888.1	153.4	-1201.
1982	-1441.5	4024.4	-1428.6	-988.8	-2211.6	2152.6	690.4	2901.1	4495.1	-1538.6	324.3	2247.4	9226.
1983	-2606.3	-927.4	-387.8	-1339.3	2367.6	-1274.8	2714.5	213.3	-42706.6	1039.6	-2399.3	4813.2	-40493.
1984	-5309.2	5454.9	-1789.4	-45.0	-3053.3	4264.2	1.0	-33476.1	-22415.3	-2767.5	4694.9	1618.1	-52823.
1985	-2294.6	-3129.5	3742.9	-1498.3	21.2	4107.7	-226.8	-2733.0	3236.9	1853.6	4066.2	-3074.8	4072.
1986	2162.6	-1976.1	-4038.9	2444.9	-1186.5	1749.6	-792.1	3186.0	133.5	-1401.9	-38.0	153.9	397.
1987	-1006.6	-161.2	-143.6	576.8	-2787.5	2324.8	-1558.4	3958.7	3617.2	-1850.3	-5022.3	-24.9	-2077.
1988	6644.9	-4295.9	2361.7	-1428.9	-3864.8	425.7	1680.0	2816.4	-852.8	2260.9	-2556.0	2754.6	5946.
1989	338.2	-3827.1	-1861.6	-2715.0	-8297.6	-5890.8	-3329.9	-2017.3	-1360.1	12.2	130.0	2152.9	-26666.
1990	159.4	-11102.4	-6937.3	-3127.1	-2996.8	-9778.9	-3401.8	2631.8	449.7	425.1	-1135.8	-980.6	-35795.
1991	-113.6	2238.3	-10908.1	-3163.3	-4930.9	-1306.3	-2214.0	29.6	3324.7	-3535.5	1940.7	2015.0	-16623.
1992	-1169.2	-3092.7	-5783.5	-2068.9	-10823.9	-49.8	-7633.8	-2415.2	-456.9	2417.6	-1616.6	-14345.0	-47038.
1993	3270.3	-6092.8	-5853.9	-9497.4	-9295.8	-5299.4	-5428.4	-1744.7	3526.5	-950.1	2322.4	-710.3	-35754.
1994	-1414.8	-2341.0	673.9	-2455.9	-180.2	859.2	-646.2	2556.9	-488.4	-0.5	-807.7	-1648.2	-5893.
1995	3204.6	-1867.3	585.9	-4732.2	-328.8	689.3	668.2	3696.4	-34.8	1572.9	-4563.6	2296.4	1187.
1996	1176.6	321.5	795.7	-1833.3	811.5	1520.4	523.4	-2326.0	3559.9	1578.4	3085.2	-4775.6	4438.
1997	1293.4	1557.3	963.8	-4814.0	-1009.0	489.6	6393.4	-737.6	1534.7	1653.6	3117.4	-7151.4	3291.
1998	440.9	1410.4	1739.9	-7593.4	1902.5	-4052.9	1758.6	6042.1	-3468.3	346.2	-1451.2	1895.7	-1029.
1999	-3294.9	-6732.6	-4227.4	-3613.6	1002.2	-3483.5	-39.5	-2081.1	1.6	-600.3	-1780.1	1115.4	-23734.