

El Dorado Hydroelectric Project FERC Project No. 184

Target Lake Level Monitoring and Adjustment Report

February 2017

Introduction

Target lake levels for Echo Lake, Silver Lake, Caples Lake, and Lake Aloha are specified in the Project No. 184 Federal Energy Regulatory Commission (Commission) license conditions including United States Forest Service (FS) Section 4(e) Condition 52, State Water Resources Control Board (SWRCB) Water Quality Certification Condition 8, and Section 22 of Appendix A to the El Dorado Relicensing Settlement Agreement. These conditions also require the El Dorado Irrigation District (District) to prepare a report every five years describing whether the target lake levels have been achieved, and if not, the reasons and time periods when the target lake levels were not achieved.

The purpose of this document is to describe the implementation of target lake levels during the second five-year period (2012 – 2016) of license implementation for Project No. 184.¹ Additionally, this report describes the District's general recommendations for proposed changes to target lake levels based on operational experience gained during license implementation.

Water Year Types

Target lake levels for Caples Lake vary from year to year based on water year types. Water year types are defined in the Project No. 184 license conditions (FS Section 4(e) Condition 31, SWRCB Water Quality Certification Condition 1), and Section 1 of Appendix A to the El Dorado Relicensing Settlement Agreement as follows:

- Wet = greater than 125 percent of average
- Above Normal (AN) = less than 125 percent but greater than or equal to 100 percent of average
- Below Normal (BN) = less than 100 percent but greater than or equal to 75 percent of average
- Dry = less than 75 percent but greater than or equal to 50 percent of average
- Critically Dry (CD) = less than 50 percent of average

Table 1 describes the water year types, as defined by the Project No. 184 license, for water years 2007 – 2016. For reference, Table 1 includes water year types for 2007 – 2011; implementation of target lake levels for 2007 – 2011 is described in the Target Lake Level

¹ FERC Project No. 184 Order Issuing License issued on October 18, 2006

Monitoring and Adjustment Report (October 2011). This report describes target lake level compliance for water years 2012 – 2016.

Table 1. Water Year Types for Project No. 184; Water Years 2007 – 2016

Water Year	April through July Forecast of Unimpaired Inflow to Folsom Reservoir	Final Water Year Designation
2007	43 %	CRITICALLY DRY
2008	61 %	DRY
2009	74 %	DRY
2010	110 %	ABOVE NORMAL
2011	172 %	WET
2012	74 %	DRY
2013	41 %	CRITICALLY DRY
2014	32 %	CRITICALLY DRY
2015	14 %	CRITICALLY DRY
2016	93 %	BELOW NORMAL

*Target lake-levels for water years shaded in grey are discussed in this report

Target Lake Level Implementation by Reservoir

The following section describes the implementation of target lake levels at each reservoir, including a discussion of the reasons and time periods when the target lake levels were not achieved.

Each Project No. 184 reservoir has unique lake level targets as defined in the Project No. 184 license conditions. The language from these license conditions is included in Appendix A to this report.

Each Project No. 184 reservoir has a lake level gage to measure the stage and/or storage of the reservoir. Annual gage data for each reservoir (October 1 to September 30) for water years 2012 to 2016 is included in Appendix B.

Echo Lake

All monthly target lake levels, as specified in the Project No. 184 license, were consistently achieved at Echo Lake during water years 2012 – 2016.

Caples Lake

Caples Lake target monthly lake levels were not achieved on four occasions, all of which occurred during water year 2016. These events are summarized in Table 2 and discussed in the subsequent paragraphs.

Table 2. Target Lake levels for Caples Lake; Water Years 2012 – 2016

Date	End of the month lake level (AF)	Target lake level for designated water year type (AF)	Difference (AF)
June 2016	22,246	22,338 (BN)	-92
July 2016	18,628	22,089 (BN)	-3,461
August 2016	16,574	18,006 (BN)	-1,432
September 2016	14,564	18,006 (BN)	-3,442

June 2016

On July 21, 2016, the District notified the Commission and SWRCB by letter (Accession Nos. 20160721-5116; 20160722-5004) that the Caples Lake June end of the month lake level target was not achieved and noted that July end of the month lake level targets at Caples Lake was not anticipated to be achieved. The following excerpt of the letter describes the circumstances associated with the June end of the month lake level targets at Caples Lake and Lake Aloha (Lake Aloha discussed in subsequent section).

"On June 30, 2016, Caples Lake was 99.6% full with water storage of 22,246 acre feet (61.85 feet). Per the license, the target lake level for a Below Normal water year is 22,338 acre feet (full reservoir at 62.00 feet).

The District forecasted the reservoir(s) would meet the target lake levels, as provided in the June operational forecast. The lake level target at Caples Lake was not achieved due to the challenge of trying to meet a full reservoir lake level target while managing snowmelt runoff during the onset of high summer temperatures and simultaneously preventing releases from the spillway. The District experienced a similar challenge at Caples Lake in 2011 when trying to meet the same full reservoir end of month June lake level target in a wet water year type. That year, the District managed more aggressively for the lake level target and had to initiate substantial releases from the spillway for dam safety purposes to manage inflow in response to an end-of-June rain-on-snow storm event.

Please note that both reservoir(s) have license conditions limiting spillway releases. These conditions require the District to attempt to operate Lake Aloha to prevent water from the reservoir spilling over the auxiliary dams and limit the use of the spillway channel at Caples Lake. Balancing these conditions with meeting lake level targets has proved to be especially challenging in a Below Normal water year when license-specified minimum streamflows and target lake levels are similar to those required in wetter water year types."

On December 12, 2016, the Commission issued a letter (Accession No. 20161212-3004) acknowledging that the filing fulfills the notification requirements of the Project No. 184 license.

July 2016

On July 21, 2016, the District notified the Commission and SWRCB by letter (Accession Nos. 20160721-5116; 20160722-5004) that the Caples Lake July end of the month lake level targets was not anticipated to be achieved.

"On July 18, 2016, Caples Lake was 95% full with water storage of 21,112 acre feet (60.0 feet). Per the license, the end-of-July target lake level for a Below Normal water year is 22,089 acre feet (61.6 feet). The forecasted end-of-July lake level is 19,409 acre feet (57.2 feet). The July operational forecast is enclosed.

As described in the District's July 6, 2016 email notification regarding end-of-June lake level targets, meeting both the license-specified minimum streamflows and the target lake levels required during a Below Normal water year is proving to be an ongoing challenge. The California Department of Water Resources May 1 Bulletin 120 estimated forecast of April through July unimpaired runoff into Folsom Reservoir was 93% of normal; however, weekly updated projections continued to decrease and the June 9, 2016 update to the B-120 estimated the unimpaired runoff at 76% of normal. These dry conditions have required the District to make releases from Caples Lake well above the minimum streamflow requirements in order to provide sufficient water at the South Fork American River below Kyburz to meet Below Normal July minimum streamflow requirements of 125 cfs."

On December 12, 2016, the Commission issued a letter (Accession No. 20161212-3004) acknowledging that the filing fulfills the notification requirements of the Project No. 184 license.

August - September 2016

On August 9, 2016, the District notified the Commission and SWRCB by letter (Accession Nos. 20160809-5158; 20160809-5175) that the Caples Lake August and September end of the month lake level targets were not anticipated to be achieved.

"The August operational forecast (enclosed) indicates that Caples Lake level is anticipated to be 16,357 (51.9 feet) on August 31, 2016. Per the license, the August end-of-the-month lake-level target for a Below Normal water year is 18,006 acre feet (54.8 feet). The August end-of-the-month lake level target is not anticipated to be achieved because releases from Caples Lake above the minimum streamflow requirements are required in order to supplement natural flows to meet South Fork American River below Kyburz Below Normal August minimum streamflow requirements of 65 cfs.

The El Dorado powerhouse has essentially been shut down since the beginning of July 2016. Per the license, the September end-of-the-month lake-level target for a Below Normal water year is 18,006 acre feet (54.8 feet), the

same as the August target. Therefore, the September end-of-the-month lake-level target at Caples Lake is also not anticipated to be achieved. The forecasted lake level at the beginning of the month will already be below the target. Additionally, because there is typically no inflow to Caples Lake during September, no additional storage is anticipated to be gained during the month. Even making minimum releases to meet only Caples Creek minimum streamflow requirements is anticipated to result in a forecasted end-of-the-month storage of approximately 15,567 af (50.5 feet). A September operational forecast will be prepared and posted to the District's website at the beginning of September."

On December 12, 2016, the Commission issued a letter (Accession No. 20161212-3004) acknowledging that the filing fulfills the notification requirements of the Project No. 184 license.

Silver Lake

All monthly target lake levels, as specified in the Project No. 184 license, were consistently achieved at Silver Lake during water years 2012 – 2016.

Lake Aloha

Lake Aloha target monthly lake levels were not achieved on one occasion during water years 2012 – 2016. On July 21, 2016, the District notified the Commission and SWRCB by letter (Accession Nos. 20160721-5116; 20160722-5004) that the Lake Aloha June end of the month lake level target was not achieved. The following excerpt describes the circumstances associated with the June end of the month lake level target at Lake Aloha.

"On June 30, 2016, Lake Aloha was 64% full with water storage of 3,199 acre feet (16.4 feet). Per the license, the target lake level for a Below Normal water year is 4,150 acre feet (18.2 feet)..."

The District forecasted the reservoir(s) would meet the target lake levels, as provided in the June operational forecast. The lake level targets at Lake Aloha were not achieved due to a misjudgment of the amount of snowpack and timing of runoff conditions in the local watershed.

Please note that both reservoir(s) have license conditions limiting spillway releases. These conditions require the District to attempt to operate Lake Aloha to prevent water from the reservoir spilling over the auxiliary dams and limit the use of the spillway channel at Caples Lake. Balancing these conditions with meeting lake level targets has proved to be especially challenging in a Below Normal water year when license-specified minimum streamflows and target lake levels are similar to those required in wetter water year types."

Recommended Changes to Lake Level Targets

Based on operational experience gained during water years 2007 to 2016, the District has identified several potential changes to current lake level targets. The District expects to achieve the following objectives with implementation of these changes:

- Improve ability to manage unpredictable environmental conditions affecting reservoir inflows
- Reduce the need for unnecessary reporting when targets are not achieved by modest amounts

Recommendations may include, but are not limited to:

- Develop an acceptable range or margin of error for target lake levels at Caples Lake that allows the District to consider snowpack and runoff conditions while attempting to meet target lake levels
- Eliminate June end of month lake level targets at Caples Lake due to the fact that the District is required by FERC license conditions to manage reservoir stage to avoid spill and annual operations are more governed by the July end of month lake level target
- Reduce end of month lake level targets at Caples Lake for certain months and water year types

These recommended changes are conceptual and require additional analysis and definition to be able to determine if they are feasible options. The District plans to develop these recommendations, in consultation with the FS, SWRCB and ERC, into a subsequent detailed proposal for review and consideration by the FS, SWRCB, ERC, and the Commission. The timeline for developing such a proposal is not yet established.

APPENDIX A

TARGET LAKE LEVEL LICENSE CONDITIONS

Target Lake Levels and Minimum Pool²

1. Echo Lakes

The licensee shall operate Echo Lakes such that the channel between the Upper and Lower Echo Lakes is navigable by motorized watercraft, between July 1 and Labor Day of each year, while still complying with minimum streamflow or other conditions and requirements. If the licensee anticipates that the reservoir will not meet this target level for reasons other than non-discretionary releases by the licensee, FS, *ERC*, *SWRCB*, and *FERC* shall be notified in writing, within 10 days of this determination, and provided an explanation of why the target reservoir level will not be attained.

2. Caples Lake

The licensee shall operate Caples Lake as follows:

Caples Lake		End of Month Lake Levels by Water Year				
Month		In Acre-Feet				
		CD	DRY	BN	AN	WET
JUNE		18704	18704	22338	22338	22338
JULY		18413	18646	22089	22338	22338
AUGUST		14376	14376	18006	18006	18006
SEPT		14376	14376	18006	18006	18006

The lake levels described above are target values. If the licensee cannot achieve the target level for any month from June through September, the licensee shall not make, or shall cease making as soon as it is able to determine this, discretionary releases from Caples Lake in that month.

Using the forecasting method described in Condition No. 31, subsection Water Year Types, the licensee shall annually, by March 15, provide a preliminary evaluation of the water year type and consult with the FS, *ERC*, and *SWRCB* to determine the anticipated June through September lake levels for the year based on that water year type and the table above. As described in Condition No. 31, subsection Water Year Types, the licensee shall, between May 1 and May 5 of each year, make the final water year type determination, and shall, within 10 days, so inform the FS, *ERC*, and *SWRCB*. The final water year type selected for operations during the year will be subject to approval by FS and *SWRCB*.

The licensee shall report to the FS, *ERC*, and *SWRCB* any changes in its operations or factors beyond its control that render it unable to meet the target lake levels. The

² United States Forest Service Section 4(e) Condition 52, State Water Resources Control Board Water Quality Certification Condition 8, and Section 22 of Appendix A to the El Dorado Relicensing Settlement Agreement

licensee shall make this report within 5 days of discovering its inability to meet a target. The licensee shall also, within 30 days, inform FERC.

Members of the ERC or the FS may request a meeting of the ERC to review proposed or implemented operational changes, or other factors, that make it impossible to meet a June through September lake level target.

During the fall and early winter of each year, the licensee shall attempt to operate Caples Lake so that target lake levels are likely to be met in the following summer. Such operation may include, but is not limited to, maintaining adequate storage in Caples Lake in early winter (model results to date indicate that necessary storage may be as high as 13,000 acre-feet on November 30). The licensee shall maintain a target minimum pool in Caples Lake of 10,000 acre-feet. If the licensee anticipates reducing the level of Caples Lake below the 10,000 acre-foot target level, such as during a water year when spill is a concern, the licensee shall notify the FS, *ERC*, and *SWRCB* within 5 days and shall provide them a detailed explanation as to why the target lake level is anticipated to be reduced.

As described in Condition No. 31, subsection Water Year Types, the licensee shall, within 1 year of license issuance, develop a forecasting method and associated operating plan that will be used to re-assess the water year type and to adjust minimum streamflows at Caples Lake Dam and Kyburz Diversion Dam during the months of January and February, in order to address lake levels at Caples Lake. The forecasting method shall be used to evaluate the water year type designations governing operations for January and February. The method and plan shall be approved by the FS, *ERC*, and *SWRCB* prior to filing the method and plan with FERC. Once approved by FERC, the licensee shall operate Caples Lake Dam and Kyburz Diversion Dam for the months of January and February, beginning on the 5th day of each of these months, based on the approved forecasting method and operating plan. The licensee shall provide notice to the FS, *ERC*, and *SWRCB* of the water year type designation governing operations for January and for February within 5 days of making each determination. After February, the forecasting method shall be consistent with the method described in Condition No. 31, subsection Water Year Types (using Bulletin 120 or duly approved alternate forecasting tool).

3. Silver Lake

Notwithstanding any other provision of this section, the licensee shall not release prior to Labor Day of each year water from Silver Lake for consumptive use, power production, rediversion, maintenance, or other purposes, excluding any non-discretionary releases required by FERC or the State Division of Safety of Dams.

Between Labor Day and September 15, the licensee shall not make discretionary releases from Silver Lake unless a Stage 1, 2, or 3 Emergency Notice is issued during this time period by the Independent System Operator (ISO) or a similar equivalent alert

is issued by the ISO or its institutional successor. In cases where such an Emergency Notice is issued in this time period, the licensee shall, once the Project is no longer subject to Emergency status and the Forebay has been replenished to pre-Notice levels, discontinue discretionary releases until after September 15. Releases from Silver Lake in situations where a Stage 1, 2, or 3 Emergency Notice is issued between Labor Day and September 15 shall not draw Silver Lake down to a stage lower than 12.0 feet as measured on the gage at the outlet works on September 15.

After September 15 of each year, discretionary releases from Silver Lake may be made, with the limitation that stage height on September 30 shall be no less than 12.0 feet as measured on the gage at the outlet works. If Silver Lake reaches a stage height of 12.0 feet prior to September 30 because of pre-September 15 discretionary releases under the preceding paragraph, the licensee shall make no further discretionary releases in September.

The annual, as opposed to emergency, maintenance period for the El Dorado Canal and Akin Powerhouse shall be scheduled by the licensee to begin no later than October 3rd of each year. From the time maintenance begins until the time that maintenance that requires the non-operation of the El Dorado Canal and/or Akin Powerhouse is completed, release from Silver Lake shall meet the minimum flow requirements in the Silver Fork American River, and, where applicable, may also be used to meet that portion of the minimum flow at Kyburz Diversion Dam not being met from other sources. Further, release from Silver Lake may also be increased after October 15 in cases where this is necessary to reach the 12.0-foot stage by October 25.

Silver Lake stage shall be no less than 7.4 as of November 1 of each year.

If the licensee is unable to operate the El Dorado Canal at any time between September 15 and September 30 of any year, the licensee shall make no discretionary releases from Silver Lake during canal downtime between September 15 and September 30 of that year. In years where the licensee is able to operate the El Dorado Canal, but is unable to operate the Akin Powerhouse at any time between September 15 and September 30, the licensee shall limit discretionary releases from Silver Lake during that powerhouse downtime between September 15 and September 30 according to the following system of priorities:

Water required to meet consumptive needs at Forebay, plus the required minimum flow at Kyburz Diversion Dam, shall first be drawn from accretion between the high lakes and Kyburz Diversion Dam, shall second be drawn from the required minimum flow from Caples Lake Dam, Lake Aloha Dam, and Silver Lake Dam and from leakage from Silver Lake, and shall third be drawn from the maximum available release from Echo Lakes. Any additional water required to meet consumptive needs at Forebay plus required minimum flow past Kyburz Diversion Dam may be met using discretionary

releases from Silver Lake, without, however, dropping the level of Silver Lake below the 12.0 stage at the end of September.

Notwithstanding any or all of the above, the licensee shall meet the minimum streamflow release requirement from Silver Lake Dam.

The licensee shall attempt to inform the FS, *ERC*, and *SWRCB* of the estimated duration of the annual maintenance period by the date described in Condition No. 45 for completion of the operations and maintenance plan but shall notify those Parties no later than July 1. The licensee shall post and update this information on its website.

4. *Lake Aloha*

The licensee shall operate Lake Aloha in such a manner as to comply with the End-of-Month Lake Level Operational Requirements established in California State Water Resources Control Board Decision 1635 as modified by Order WR 2001-22. If the licensee anticipates that the reservoir will not meet this target level, FS, ERC, SWRCB, and FERC shall be notified in writing, within 10 days of this determination, and provided an explanation of why the target reservoir level will not be attained.

5. *Target Lake Level Monitoring and Adjustment*

Within 5 years of license issuance, and every 5 years thereafter, the licensee shall prepare a report describing whether the target lake levels have been achieved, and if not, the reasons and time periods when the target lake levels were not achieved. The licensee shall provide a copy of the report to the FS, ERC, SWRCB, and FERC.

APPENDIX B
LAKE LEVEL GAGE DATA

Summary Report

Site: A1 Lake Al oha
 USGS #: 11434900
 Beginning Date: 10/01/2011
 Ending Date: 09/30/2012

Daily Midnight Storage Volume in Acre feet Water Year Oct 2011 to Sep 2012

09/30/2011	0											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	215	0	0	0	0	0	998	4430	4251	1204	208
2	0	204	0	0	0	0	0	1196	4514	4212	1075	203
3	0	197	0	0	0	0	0	1403	4615	4151	954	197
4	0	227	0	0	0	0	0	1610	4330	4302	1331	214
5	0	179	0	0	0	0	0	1829	4702	4029	731	187
6	0	168	0	0	0	0	0	2048	4702	3965	631	181
7	0	158	0	0	0	0	0	2280	4696	3901	641	170
8	0	173	0	0	0	0	0	2510	4713	3837	625	164
9	0	127	0	0	0	0	0	2754	4702	3965	641	161
10	109	127	0	0	0	0	0	2996	4702	3965	641	154
11	223	117	0	0	0	0	0	3251	4759	3629	574	149
12	391	108	0	0	0	0	0	3302	4794	3528	878	142
13	508	98.3	0	0	0	0	0	3352	4841	3429	555	135
14	561	89.3	0	0	0	0	0	3347	4865	3322	546	126
15	571	79.9	0	0	0	0	0	3560	4894	3215	528	119
16	571	70.4	0	0	0	0	0	3672	4928	3107	514	113
17	564	61.4	0	0	0	0	0	3720	4975	2996	496	106
18	549	59.2	0	0	0	0	0	3763	4957	2908	478	100
19	534	51.0	0	0	0	0	24.1	3827	4917	2783	461	93.3
20	514	43.5	0	0	0	0	48.3	3917	4876	2665	439	87.1
21	499	35.7	0	0	0	0	76.0	4002	4829	2548	417	81.5
22	478	28.0	0	0	0	0	104	4046	4771	2440	399	71.5
23	453	19.8	0	0	0	0	135	4068	4707	2330	379	64.8
24	434	12.5	0	0	0	0	167	4112	4638	2204	352	59.2
25	402	4.34	0	0	0	0	202	4123	4575	2080	319	52.6
26	376	0	0	0	0	0	237	4128	4519	1955	294	45.9
27	340	0	0	0	0	0	374	4123	4469	1833	261	40.6
28	308	0	0	0	0	0	511	4134	4407	1709	236	35.2
29	273	0	0	0	0	0	668	4178	4358	1584	229	29.9
30	239	0	0	0	-----	0	824	4240	4302	1459	221	24.6
31	227	-----	0	0	-----	0	-----	4330	-----	1331	214	-----
Max	571	227	0	0	0	0	824	4330	4975	4302	1331	214
Min	0	0	0	0	0	0	0	998	4302	1331	214	24.6
Change	227	-227	0	0	0	0	824	3506	-28.0	-2971	-1117	-189
Wtr Year 2012	Mean	1013	Max	4975	Min	0	Inst Max	4975				
Cal Year 2011	Mean	372	Max	5179	Min	0	Inst Max	5179				

Summary Report

Site: A1 Lake Al oha
 USGS #: 11434900
 Beginning Date: 10/01/2012
 Ending Date: 09/30/2013

Daily Midnight Storage Volume in Acre feet Water Year Oct 2012 to Sep 2013

09/30/2012	24.6											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.3	0	564	1829	1593	1277	1472	2927	4604	4463	1546	0
2	13.5	0	884	1815	1584	1268	1472	2991	4615	4385	1459	0
3	7.23	0	940	1802	1572	1293	1492	3133	4627	4291	1377	0
4	.48	0	980	1788	1563	1281	1572	3204	4632	4201	1281	0
5	0	0	1244	1780	1555	1285	1576	3266	4667	4106	1196	0
6	0	0	1377	1784	1534	1310	1606	3363	4713	4002	1106	0
7	0	0	1407	1762	1542	1305	1627	3393	4754	3885	1021	0
8	0	0	1439	1748	1525	1297	1661	3445	4800	3784	940	0
9	0	0	1439	1748	1521	1289	1644	3512	4859	3666	861	0
10	0	0	1451	1762	1500	1277	1653	3613	4888	3554	782	0
11	0	0	1455	1757	1492	1268	1713	3725	4847	3445	698	0
12	0	0	1455	1744	1480	1268	1766	3858	4759	3332	602	0
13	0	0	1500	1735	1459	1277	1838	3992	4696	3220	508	0
14	0	0	1496	1735	1451	1305	1880	4079	4673	3107	399	0
15	0	0	1492	1696	1439	1326	1880	4162	4684	3036	273	0
16	0	0	1492	1691	1431	1339	1880	4268	4696	3021	210	0
17	0	0	1576	1678	1419	1343	1880	4313	4707	2996	171	0
18	0	29.9	1589	1670	1407	1343	1955	4347	4713	2942	133	0
19	0	46.4	1584	1661	1411	1347	1963	4385	4707	2845	96.1	0
20	0	59.8	1580	1644	1399	1419	1999	4435	4678	2744	61.4	0
21	0	97.2	1597	1636	1381	1423	2066	4525	4598	2640	28.5	0
22	0	125	1674	1627	1360	1419	2149	4553	4525	2539	0	0
23	0	151	1757	1610	1356	1411	2218	4570	4452	2440	0	0
24	0	167	1775	1610	1343	1411	2218	4581	4627	2339	0	0
25	0	184	1775	1640	1326	1407	2303	4587	4928	2252	0	0
26	0	197	1859	1648	1310	1403	2417	4598	4829	2149	0	0
27	0	207	1868	1644	1297	1407	2491	4632	4765	2048	0	0
28	0	221	1859	1631	1281	1419	2606	4835	4696	1941	0	0
29	0	233	1855	1627	-----	1423	2729	4777	4627	1833	0	0
30	0	302	1850	1610	-----	1435	2859	4684	4542	1722	0	0
31	0	-----	1838	1606	-----	1464	-----	4609	-----	1640	0	-----
Max	19.3	302	1868	1829	1593	1464	2859	4835	4928	4463	1546	0
Min	0	0	564	1606	1281	1268	1472	2927	4452	1640	0	0
Change	-24.6	302	1536	-232	-325	183	1395	1750	-67.0	-2902	-1640	0
Wtr Year 2013	Mean	1693	Max	4928	Min	0	Inst Max	4928				
Cal Year 2012	Mean	1114	Max	4975	Min	0	Inst Max	4975				

Summary Report

Site: A1 Lake Al oha
 USGS #: 11434900
 Beginning Date: 10/01/2013
 Ending Date: 09/30/2014

Daily Midnight Storage Volume in Acre feet Water Year Oct 2013 to Sep 2014

09/30/2013	0											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	65.3	625	1063	2527	4508	4237	2348	932
2	0	0	0	0	81.0	634	1063	2607	4525	4182	2286	908
3	0	0	0	0	92.7	641	1063	2688	4525	4122	2225	875
4	0	0	0	0	101	658	1063	2793	4536	4062	2180	845
5	0	0	0	0	108	665	1063	2854	4551	3993	2125	822
6	0	0	0	0	119	725	1055	2891	4589	3935	2062	797
7	0	0	0	0	133	734	1083	2913	4599	3877	2004	762
8	0	0	0	0	168	734	1130	2945	4603	3815	1947	734
9	0	0	0	0	233	734	1192	3022	4619	3747	1879	710
10	0	0	0	0	389	769	1248	3060	4617	3683	1819	681
11	0	0	0	0	453	769	1314	3088	4610	3625	1757	660
12	0	0	0	0	458	769	1394	3117	4597	3562	1688	627
13	0	0	0	0	473	769	1459	3191	4573	3495	1624	508
14	0	0	0	0	473	769	1517	3282	4577	3429	1578	485
15	0	0	0	0	502	772	1589	3391	4564	3373	1537	456
16	0	0	0	0	520	782	1661	3498	4568	3303	1492	424
17	0	0	0	0	520	791	1766	3580	4567	3248	1447	398
18	0	0	0	0	523	811	1885	3652	4571	3187	1408	364
19	0	0	0	0	525	821	1994	3698	4581	3116	1366	325
20	0	0	0	0	523	827	2080	3766	4579	3071	1329	298
21	0	0	0	0	523	837	2149	3806	4572	3017	1284	269
22	0	0	0	0	525	847	2237	3867	4588	2943	1244	236
23	0	0	0	0	528	854	2266	3929	4621	2871	1192	228
24	0	0	0	0	531	867	2284	4045	4634	2805	1156	220
25	0	0	0	0	531	888	2394	4181	4589	2743	1116	219
26	0	0	0	0	531	930	2408	4285	4584	2670	1073	217
27	0	0	0	0	555	958	2412	4372	4440	2607	1035	223
28	0	0	0	0	615	954	2417	4431	4391	2536	1002	221
29	0	0	0	0	-----	998	2449	4473	4331	2480	1025	219
30	0	0	0	15.9	-----	1013	2482	4508	4281	2467	992	214
31	0	-----	0	45.4	-----	1036	-----	4508	-----	2412	960	-----
Max	0	0	0	45.4	615	1036	2482	4508	4634	4237	2348	932
Min	0	0	0	0	65.3	625	1055	2527	4281	2412	960	214
Change	0	0	0	45.4	570	421	1446	2026	-227	-1869	-1452	-746
Wtr Year 2014	Mean	1365	Max	4634	Min	0	Inst Max	4635				
Cal Year 2013	Mean	1559	Max	4928	Min	0	Inst Max	4928				

Summary Report

Site: A1 Lake Al oha
 USGS #: 11434900
 Beginning Date: 10/01/2014
 Ending Date: 09/30/2015

Daily Midnight Storage Volume in Acre feet Water Year Oct 2014 to Sep 2015

09/30/2014	214											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	210	23.6	349	775	478	1196	1744	2534	2812	2036	1250	607
2	205	21.2	423	762	473	1184	1748	2597	2807	1996	1230	592
3	199	17.8	537	750	470	1175	1748	2650	2783	1934	1202	573
4	193	14.9	589	740	473	1159	1762	2699	2774	1886	1182	548
5	186	12.1	608	728	458	1147	1784	2739	2760	1839	1153	531
6	179	9.16	625	719	478	1138	1788	2768	2760	1786	1129	516
7	173	5.30	631	716	621	1130	1833	2830	2760	1754	1108	501
8	167	2.89	631	704	621	1122	1833	2864	2764	1746	1081	484
9	160	0	631	695	1047	1118	1838	2893	2764	1741	1061	466
10	152	0	631	683	1047	1114	1838	2913	2894	1728	1034	449
11	145	0	634	674	1047	1130	1850	2922	2889	1706	1008	433
12	138	0	686	661	1142	1130	1859	2884	2875	1685	986	417
13	130	11.1	686	654	1171	1142	1868	2845	2856	1663	960	401
14	123	18.3	683	644	1179	1179	1885	2821	2831	1642	939	386
15	117	25.1	680	625	1179	1240	1885	2821	2788	1624	921	358
16	111	27.5	695	615	1204	1281	1885	2787	2750	1595	900	345
17	103	28.9	695	608	1212	1314	1898	2768	2710	1578	883	327
18	96.7	29.4	689	605	1220	1356	1919	2734	2661	1557	866	308
19	89.3	32.8	716	602	1220	1381	1946	2714	2608	1536	849	291
20	83.8	35.7	734	596	1232	1407	1972	2715	2554	1515	829	273
21	77.1	36.7	778	580	1232	1419	1990	2715	2502	1511	810	253
22	70.9	126	798	574	1224	1451	2012	2715	2455	1482	797	237
23	62.0	171	804	561	1220	1488	2044	2725	2413	1465	774	231
24	54.8	196	831	546	1208	1500	2116	2769	2367	1437	755	227
25	52.6	212	827	534	1196	1513	2233	2788	2322	1413	736	221
26	47.3	226	824	531	1184	1542	2266	2797	2281	1388	718	214
27	42.5	233	821	534	1196	1576	2307	2807	2229	1362	703	210
28	38.1	236	811	525	1208	1610	2366	2802	2182	1337	685	204
29	33.3	286	798	517	-----	1648	2426	2821	2136	1312	667	198
30	28.0	328	795	487	-----	1691	2482	2821	2086	1287	650	191
31	22.7	-----	778	493	-----	1722	-----	2826	-----	1266	630	-----
Max	210	328	831	775	1232	1722	2482	2922	2894	2036	1250	607
Min	22.7	0	349	487	458	1114	1744	2534	2086	1266	630	191
Change	-191	305	450	-285	715	514	760	344	-740	-820	-636	-439
Wtr Year 2015	Mean	1174	Max	2922	Min	0	Inst Max	2932				
Cal Year 2014	Mean	1440	Max	4634	Min	0	Inst Max	4635				

Summary Report

Site: A1 Lake Al oha
 USGS #: 11434900
 Beginning Date: 10/01/2015
 Ending Date: 09/30/2016

Daily Midnight Storage Volume in Acre feet Water Year Oct 2015 to Sep 2016

09/30/2015	191											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196	92.8	434	1084	2147	2246	3041	2588	2702	3274	2966	410
2	191	128	432	1077	2175	2251	3087	2483	2746	3325	2859	407
3	186	151	448	1069	2175	2260	3138	2413	2794	3371	2763	397
4	184	170	459	1065	2189	2347	3189	2340	2871	3402	2694	391
5	177	184	454	1104	2189	2467	3246	2295	2993	3438	2577	381
6	172	199	445	1116	2189	2567	3307	2258	3028	3453	2486	371
7	167	207	451	1108	2180	2572	3368	2187	3115	3464	2388	358
8	162	216	457	1104	2180	2586	3440	2206	3181	3495	2302	346
9	159	234	454	1108	2180	2620	3539	2290	3191	3526	2204	334
10	151	256	597	1096	2180	2650	3581	2340	3228	3542	2125	319
11	147	281	652	1093	2175	2660	3645	2354	3217	3548	2021	300
12	142	300	666	1093	2175	2704	3710	2409	3192	3537	1937	286
13	136	314	729	1121	2171	2744	3769	2555	3181	3516	1841	281
14	131	323	739	1149	2171	2787	3822	2667	3130	3500	1748	268
15	125	379	745	1182	2175	2830	3833	2696	3130	3485	1661	258
16	120	395	748	1210	2189	2869	3843	2706	2989	3464	1567	244
17	134	400	745	1222	2203	2864	3870	2746	2920	3433	1471	237
18	131	405	745	1238	2284	2864	3907	2799	2881	3413	1403	233
19	127	413	773	1295	2288	2869	3923	2818	2848	3372	1297	229
20	124	415	799	1296	2270	2888	3891	2856	2852	3351	1208	225
21	121	421	882	1304	2270	2976	3822	2761	2852	3326	1118	224
22	118	423	1026	1342	2270	2991	3817	2628	2945	3295	1036	221
23	114	418	1045	1371	2265	3001	3699	2526	2964	3265	951	217
24	110	453	1096	1371	2251	3001	3577	2432	2989	3234	850	214
25	103	459	1096	1371	2265	3006	3436	2368	3004	3203	762	208
26	99.5	456	1100	1363	2265	3011	3282	2341	3029	3172	668	206
27	96.1	454	1096	1359	2256	3021	3164	2345	3054	3147	552	202
28	95.0	454	1096	1350	2256	3041	3032	2377	3095	3116	442	196
29	93.3	445	1092	1707	2251	3041	2865	2428	3166	3091	371	186
30	88.3	440	1088	1949	-----	3041	2730	2479	3213	3060	394	177
31	81.6	-----	1088	2092	-----	3036	-----	2565	-----	3020	407	-----
Max	196	459	1100	2092	2288	3041	3923	2856	3228	3548	2966	410
Min	81.6	92.8	432	1065	2147	2246	2730	2187	2702	3020	371	177
Change	-109	358	648	1004	159	785	-306	-165	648	-193	-2613	-230
Wtr Year 2016	Mean	1805	Max	3923	Min	81.6	Inst Max	3939				
Cal Year 2015	Mean	1202	Max	2922	Min	81.6	Inst Max	2932				

Summary Report

Site: A3 EID Echo Lake Near Phillips
 USGS #: 10336608
 Beginning Date: 10/01/2011
 Ending Date: 09/30/2012

Daily Midnight Storage Volume in Acre feet Water Year Oct 2011 to Sep 2012

09/30/2011	809											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	744	94.2	31.6	31.7	31.8	31.8	31.9	574	1853	1946	1760	1558
2	679	97.4	31.6	31.7	31.8	31.8	31.9	631	1886	1930	1767	1551
3	663	53.4	31.6	31.7	31.8	31.8	31.9	696	1913	1936	1757	1564
4	555	31.6	31.7	31.7	31.8	31.8	31.9	735	1866	1943	1764	1528
5	650	31.6	31.7	31.7	31.8	31.8	31.9	812	1893	1930	1757	1488
6	589	31.6	31.7	31.7	31.8	31.8	31.9	842	1890	1933	1750	1451
7	536	31.6	31.7	31.7	31.8	31.8	31.9	890	1853	1923	1744	1418
8	488	31.6	31.7	31.7	31.8	31.8	31.9	984	1883	1933	1724	1378
9	438	31.6	31.7	31.7	31.8	31.9	31.9	1039	1810	1886	1730	1335
10	457	31.6	31.7	31.7	31.8	31.9	31.9	1165	1803	1933	1717	1276
11	523	31.6	31.7	31.7	31.8	31.9	31.9	1198	1873	1903	1724	1227
12	555	31.6	31.7	31.7	31.8	31.9	31.9	1322	1870	1876	1720	1178
13	539	31.6	31.7	31.7	31.8	31.9	31.9	1342	1890	1857	1714	1123
14	510	31.6	31.7	31.7	31.8	31.9	31.9	1488	1903	1900	1727	1075
15	498	31.6	31.7	31.7	31.8	31.9	31.9	1528	1843	1870	1710	1013
16	473	31.6	31.7	31.7	31.8	31.9	31.9	1611	1876	1863	1704	945
17	438	31.6	31.7	31.7	31.8	31.9	31.9	1604	1840	1857	1707	897
18	406	31.6	31.7	31.7	31.8	31.9	31.9	1624	1900	1843	1700	848
19	337	31.6	31.7	31.7	31.8	31.9	287	1574	1950	1820	1687	812
20	258	31.6	31.7	31.7	31.8	31.9	340	1574	1959	1847	1661	751
21	305	31.6	31.7	31.8	31.8	31.9	391	1641	1950	1837	1677	692
22	230	31.6	31.7	31.8	31.8	31.9	448	1720	1943	1827	1654	625
23	170	31.6	31.7	31.8	31.8	31.9	473	1730	1943	1847	1674	571
24	145	31.6	31.7	31.8	31.8	31.9	473	1724	1936	1840	1654	511
25	135	31.6	31.7	31.8	31.8	31.9	479	1787	1936	1800	1651	451
26	123	31.6	31.7	31.8	31.8	31.9	584	1800	1936	1803	1661	391
27	110	31.6	31.7	31.8	31.8	31.9	539	1790	1910	1820	1608	350
28	104	31.6	31.7	31.8	31.8	31.9	463	1737	1916	1820	1588	284
29	104	31.6	31.7	31.8	31.8	31.9	479	1783	1946	1793	1588	243
30	97.4	31.6	31.7	31.8	-----	31.9	524	1800	1940	1787	1584	205
31	101	-----	31.7	31.8	-----	31.9	-----	1823	-----	1773	1571	-----
Max	744	97.4	31.7	31.8	31.8	31.9	584	1823	1959	1946	1767	1564
Min	97.4	31.6	31.6	31.7	31.8	31.8	31.9	574	1803	1773	1571	205
Change	-708	-69.4	.10	.10	0	.10	492	1299	117	-167	-202	-1366
Wtr Year 2012	Mean	715	Max	1959	Min	31.6	Inst Max	1979				
Cal Year 2011	Mean	643	Max	2041	Min	31.6	Inst Max	2074				

Summary Report

Site: A3 EID Echo Lake Near Phillips
 USGS #: 10336608
 Beginning Date: 10/01/2012
 Ending Date: 09/30/2013

Daily Midnight Storage Volume in Acre feet Water Year Oct 2012 to Sep 2013

09/30/2012	205											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	167	59.9	284		41.4	0	183	1016	1896	1920	1588	1421
2	114	59.9	448		35.1	3.20	177	1091	1923	1916	1598	1421
3	69.3	59.9	403		32.0	22.4	171	1169	1910	1910	1581	1392
4	0	53.7	378		32.0	28.8	199	1250	1890	1893	1588	1368
5	215	56.8	416		28.8	78.8	218	1325	1903	1850	1574	1405
6	196	56.8			6.40	94.6	221	1438	1936	1860	1538	1322
7	180	110			22.4	101	208	1491	1956	1883	1534	1335
8	171	91.5			28.8	91.5	211	1554	1979	1850	1534	1352
9	133	75.6		47.6	32.0	82.0	199	1621	1976	1843	1538	1332
10	114	78.8		50.7	32.0	59.9	180	1720	1973	1830	1491	1289
11	88.3	75.6		47.6	0	47.6	183	1830	1870	1813	1514	1312
12	91.5	72.5		19.2	0	38.2	199	1940	1910	1800	1495	1296
13	78.8	69.3		12.8	0	75.6	221	1983	1913	1800	1478	1224
14	63.0	66.2		6.40	0	107	246	1940	1920	1783	1501	1208
15	59.9	66.2		0	0	126	255	1886	1913	1757	1475	1127
16	47.6	63.0		0	0	142	262	1896	1926	1757	1461	1065
17	50.7	123		3.20	0	142	240	1903	1903	1740	1468	1062
18	53.7	139		3.20	0	142	233	1866	1913	1727	1461	1026
19	41.4	155		0	0	152	227	1840	1936	1710	1465	991
20	0	123		0	3.20	193	233	1827	1933	1677	1485	919
21	32.0	158		0	0	177	246	1803	1923	1664	1471	913
22	101	171		0	3.20	164	287	1876	1920	1661	1451	851
23	78.8	139		9.60	9.60	148	340	1910	1900	1651	1431	790
24	88.3	117		25.6	0	133	397	1933	1950	1631	1465	754
25	72.5	139		63.0	0	139	460	1943	1976	1641	1431	670
26	69.3	123		88.3	0	123	524	1940	1999	1641	1445	593
27	63.0	148		94.6	0	123	603	1966	1930	1641	1438	527
28	63.0	221		88.3	0	139	735	1973	1916	1631	1428	479
29	53.7	180		78.8	-----	142	864	1890	1923	1608	1415	539
30	66.2	252		66.2	-----	155	942	1837	1923	1618	1418	388
31	59.9	-----		56.8	-----	174	-----	1847	-----	1591	1421	-----
Max	215	252	448	94.6	41.4	193	942	1983	1999	1920	1598	1421
Min	0	53.7	284	0	0	0	171	1016	1870	1591	1415	388
Change	-145	192			-56.8	174	768	905	76.0	-332	-170	-1033
Wtr Year 2013	Mean	801	Max	1999	Min	0	Inst Max	2039				
Cal Year 2012	Mean	751	Max	1959	Min	0	Inst Max	1979				

Summary Report

Site: A3 EID Echo Lake Near Phillips
 USGS #: 10336608
 Beginning Date: 10/01/2013
 Ending Date: 09/30/2014

Daily Midnight Storage Volume in Acre feet Water Year Oct 2013 to Sep 2014

09/30/2013	388											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	429	69.3	0	59.9	230	486	511	1146	1963	1946	1837	1674
2	413	82.0	56.8	66.2	218	479	498	1227	1933	1950	1833	1661
3	290	50.7	35.1	72.5	205	482	486	1339	1992	1933	1823	1628
4	328	47.6	35.1	66.2	186	482	473	1428	2002	1933	1840	1578
5	293	47.6	35.1	69.3	183	460	473	1461	2035	1920	1837	1528
6	243	35.1	59.9	66.2	180	520	464	1491	2022	1913	1833	1478
7	296	50.7	59.9	63.0	196	530	476	1514	2019	1923	1830	1421
8	271	25.6	56.8	63.0	340	517	508	1501	1996	1906	1827	1375
9	255	3.20	59.9	56.8	520	539	549	1571	1979	1906	1813	1319
10	243	0	53.7	72.5	546	514	609	1644	2009	1903	1817	1269
11	221	32.0	50.7	66.2	530	508	654	1641	2019	1896	1823	1214
12	189	0	56.8	82.0	511	489	676	1664	1989	1903	1803	1162
13	202	0	47.6	85.1	501	489	680	1700	2006	1893	1803	1123
14	193	9.60	53.7	78.8	486	486	699	1740	2022	1883	1780	1039
15	196	0	56.8	78.8	473	479	686	1787	1999	1890	1783	1036
16	174	6.40	50.7	75.6	479	476	702	1813	1983	1893	1777	994
17	161	0	53.7	82.0	479	492	725	1807	1963	1876	1787	952
18	161	63.0	56.8	78.8	467	498	796	1820	1969	1883	1764	890
19	155	38.2	50.7	78.8	457	501	910	1800	1953	1876	1757	874
20	148	44.5	59.9	78.8	451	505	952	1807	1963	1880	1754	819
21	142	44.5	56.8	82.0	448	508	961	1757	1950	1890	1734	780
22	139	63.0	69.3	75.6	438	511	955	1793	1953	1880	1734	744
23	133	28.8	66.2	75.6	438	498	949	1840	1963	1886	1727	702
24	126	32.0	69.3	78.8	438	505	809	1913	1943	1876	1724	686
25	123	28.8	69.3	75.6	438	524	997	1973	1966	1873	1717	660
26	120	25.6	72.5	75.6	454	539	1033	1893	1956	1860	1714	660
27	120	16.0	66.2	75.6	476	539	1026	1989	1940	1857	1707	660
28	114	0	59.9	75.6	482	543	1059	1969	1946	1850	1704	631
29	97.8	0	63.0	180	-----	549	1078	1913	1943	1850	1694	609
30	85.1	0	72.5	243	-----	514	1117	1963	1946	1850	1704	584
31	78.8	-----	75.6	243	-----	536	-----	1973	-----	1843	1681	-----
Max	429	82.0	75.6	243	546	549	1117	1989	2035	1950	1840	1674
Min	78.8	0	0	56.8	180	460	464	1146	1933	1843	1681	584
Change	-309	-78.8	75.6	167	239	54.0	581	856	-27.0	-103	-162	-1097
Wtr Year 2014	Mean	872	Max	2035	Min	0	Inst Max	2065				
Cal Year 2013	Mean	745	Max	1999	Min	0	Inst Max	2039				

Summary Report

Site: A3 EID Echo Lake Near Phillips
 USGS #: 10336608
 Beginning Date: 10/01/2014
 Ending Date: 09/30/2015

Daily Midnight Storage Volume in Acre feet Water Year Oct 2014 to Sep 2015

09/30/2014	584											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	552	186	114	97.8	82.0	208	634	1269	2025	1910	1800	1578
2	549	186	114	94.6	85.1	199	637	1315	2019	1900	1797	1564
3	520	186	145	91.5	85.1	196	644	1355	2012	1896	1793	1554
4	489	183	199	88.3	75.6	189	657	1388	2016	1893	1783	1548
5	457	196	189	88.3	152	183	657	1421	2012	1886	1773	1541
6	410	164	218	85.1	139	180	650	1451	2019	1886	1770	1538
7	381	148	193	85.1	268	183	657	1504	2022	1880	1767	1534
8	372	126	177	85.1	514	186	702	1531	2022	1880	1757	1528
9	350	104	167	85.1	514	189	705	1581	2032	1876	1750	1485
10	328	104	205	85.1	410	199	712	1628	2025	1880	1744	1445
11	306	117	161	85.1	328	211	709	1644	2009	1876	1740	1382
12	277	133	161	85.1	277	218	715	1661	2006	1876	1734	1349
13	265	120	152	85.1	252	221	728	1671	2006	1870	1727	1319
14	265	129	139	88.3	237	271	741	1700	2006	1863	1720	1247
15	299	97.8	155	85.1	221	262	738	1727	2009	1863	1710	1198
16	280	110	133	82.0	215	252	751	1744	1999	1860	1700	1152
17	265	97.8	110	85.1	205	290	754	1764	1983	1853	1691	1084
18	246	85.1	110	85.1	196	309	764	1787	1979	1850	1684	1039
19	230	94.6	152	88.3	196	337	783	1807	1969	1847	1677	987
20	284	88.3	145	91.5	205	369	796	1827	1963	1840	1674	939
21	274	75.6	158	91.5	202	369	832	1863	1956	1833	1671	874
22	265	183	139	97.8	208	375	854	1900	1950	1827	1667	812
23	243	199	133	91.5	202	407	861	1930	1936	1823	1661	774
24	237	189	155	88.3	196	460	903	1969	1930	1820	1657	715
25	233	171	148	88.3	189	482	1007	2002	1926	1820	1651	670
26	230	148	133	88.3	180	495	1026	2032	1926	1817	1644	599
27	211	139	133	94.6	167	514	1075	2042	1923	1817	1637	565
28	202	133	123	94.6	208	533	1140	2042	1920	1813	1628	543
29	189	133	126	88.3	-----	561	1182	2032	1913	1810	1618	511
30	186	107	101	82.0	-----	599	1237	2032	1913	1807	1604	460
31	186	-----	107	85.1	-----	612	-----	2025	-----	1803	1594	-----
Max	552	199	218	97.8	514	612	1237	2042	2032	1910	1800	1578
Min	186	75.6	101	82.0	75.6	180	634	1269	1913	1803	1594	460
Change	-398	-79.0	0	-21.9	123	404	625	788	-112	-110	-209	-1134
Wtr Year 2015	Mean	873	Max	2042	Min	75.6	Inst Max	2075				
Cal Year 2014	Mean	899	Max	2035	Min	56.8	Inst Max	2065				

Summary Report

Site: A3 EID Echo Lake Near Phillips
 USGS #: 10336608
 Beginning Date: 10/01/2015
 Ending Date: 09/30/2016

Daily Midnight Storage Volume in Acre feet Water Year Oct 2015 to Sep 2016

09/30/2015	460											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	416	117	25.6	66.2	337	145	189	211	1661	1915*	1860	1637
2	384	123	32.0	66.2	230	167	215	180	1730	1911*	1853	1647
3	347	72.5	59.9	56.8	227	133	193	199	1837	1908*	1853	1564
4	299	75.6	38.2	53.7	177	208	208	249	1896	1905*	1833	1591
5	277	56.8	101	72.5	139	296	233	290	1969	1890	1803	1594
6	265	47.6	50.7	94.6	152	312	252	318	2016	1893	1805	1584
7	252	38.2	63.0	66.2	145	284	259	315	2035	1896	1800	1574
8	243	47.6	56.8	72.5	110	237	287	309	1979	1886	1795	1514
9	233	66.2	75.6	59.9	110	224	306	369	2029	1860	1790	1465
10	221	41.4	114	59.9	104	196	309	407	1936	1900	1786	1435
11	218	38.2	101	82.0	114	233	293	505	1920	1890	1781	1395
12	218	32.0	104	72.5	104	227	328	593	1936	1913	1776	1349
13	215	38.2	136	85.1	152	237	306	728	1903	1910	1771	1282
14	202	69.3	148	85.1	114	215	287	893	1999	1906	1767	1234
15	193	47.6	126	97.8	129	174	262	984	1833	1906	1762	1188
16	189	28.8	123	117	142	174	230	1046	1853	1936	1757	1136
17	186	35.1	101	104	180	148	208	1084	1833	1827	1752	1104
18	183	38.2	101	101	180	155	215	1110	1833	1817	1748	1042
19	174	28.8	85.1	145	183	152	243	1169	1843	1873	1743	1013
20	167	22.4	120	129	148	164	268	1165	1876	1870	1738	926
21	164	25.6	227	120	133	268	293	1185	1873	1876	1733	897
22	158	56.8	268	167	126	218	343	1149	1883	1860	1720	838
23	155	56.8	202	133	104	205	302	1123	1946	1896	1730	790
24	152	59.9	193	142	120	199	271	1133	1973	1873	1727	715
25	142	66.2	167	101	139	186	240	1165	1896	1863	1714	644
26	136	50.7	158	94.6	123	177	211	1195	1906	1860	1697	558
27	129	35.1	126	123	136	189	243	1208	1880	1866	1710	473
28	123	32.0	136	94.6	145	161	189	1253	1906	1857	1684	416
29	120	47.6	91.5	233	148	199	199	1329	1910	1860	1664	397
30	117	59.9	82.0	454	-----	171	227	1405	1926	1853	1661	359
31	114	-----	94.6	400	-----	205	-----	1498	-----	1843	1664	-----
Max	416	123	268	454	337	312	343	1498	2035	1936	1860	1647
Min	114	22.4	25.6	53.7	104	133	189	180	1661	1817	1661	359
Change	-346	-54.1	34.7	305	-252	57.0	22.0	1271	428	-83.0	-179	-1305
Wtr Year 2016	Mean	717	Max	2035	Min	22.4	Inst Max	2045				
Cal Year 2015	Mean	854	Max	2042	Min	22.4	Inst Max	2075				

Summary Report

Site: A5 EID Caples Lake Near Kirkwood
 USGS #: 11436950
 Beginning Date: 10/01/2011
 Ending Date: 09/30/2012

Daily Midnight Storage Volume in Acre feet Water Year Oct 2011 to Sep 2012

09/30/2011	19166											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19043	18926	18326	11945	10845	10667	11204	15073	18558	19043	18703	15637
2	18955	18902	18256	11752	10812	10667	11209	15309	18692	19049	18686	15583
3	18902	18902	18198	11652	10784	10657	11223	15497	18814	19049	18663	15540
4	18896	18890	18095	11594	10760	10657	11261	15637	18990	19037	18668	15497
5	18990	18861	18049	11547	10737	10653	11271	15729	19060	19049	18645	15475
6	18984	18861	17951	11551	10690	10676	11266	15843	19102	19043	18587	15454
7	18967	18826	17836	11599	10657	10695	11261	15947	19137	19037	18482	15438
8	18949	18814	17698	11590	10625	10671	11257	16079	19160	19031	18378	15421
9	18931	18791	17533	11561	10606	10671	11257	16279	19184	19014	18285	15394
10	19014	18762	17385	11542	10601	10685	11261	16507	19190	19014	18181	15362
11	19119	18756	17215	11504	10601	10667	11295	16714	19202	19002	18060	15298
12	19143	18733	17040	11461	10592	10676	11342	16927	19219	19002	17939	15239
13	19160	18715	16837	11399	10620	10685	11366	17158	19249	18996	17830	15175
14	19160	18698	16635	11328	10601	10695	11356	17408	19278	18984	17750	15111
15	19160	18680	16407	11247	10639	10709	11356	17647	19314	18978	17636	15079
16	19172	18657	16140	11190	10634	10859	11375	17784	19332	18967	17522	15057
17	19166	18634	15881	11090	10634	10906	11404	17727	19349	18931	17413	15036
18	19160	18610	15626	10967	10629	10925	11437	17607	19367	18914	17294	15015
19	19155	18593	15389	10939	10615	10934	11475	17504	19367	18920	17181	14988
20	19143	18587	15073	10972	10620	10944	11518	17425	19355	18885	17062	14961
21	19137	18558	14807	11081	10620	10944	11834	17493	19326	18873	16938	14929
22	19119	18540	14527	11067	10606	10977	12167	17670	19302	18867	16815	14898
23	19102	18511	14254	11081	10611	10996	12529	17807	19266	18861	16686	14866
24	19084	18482	13975	11043	10587	10996	12930	17905	19249	18844	16557	14818
25	19078	18471	13702	11000	10606	11015	13330	17979	19190	18832	16423	14770
26	19043	18442	13441	10991	10606	11024	13887	18037	19149	18803	16290	14728
27	19025	18424	13157	10967	10625	11052	14109	18077	19107	18797	16162	14686
28	19014	18395	12890	10939	10611	11090	14307	18118	19078	18779	16019	14638
29	18996	18366	12651	10906	10662	11090	14527	18187	19055	18762	15898	14585
30	18978	18384	12440	10882	-----	11119	14781	18279	19037	18744	15772	14543
31	18961	-----	12177	10859	-----	11176	-----	18407	-----	18727	15680	-----
Max	19172	18926	18326	11945	10845	11176	14781	18407	19367	19049	18703	15637
Min	18896	18366	12177	10859	10587	10653	11204	15073	18558	18727	15680	14543
Change	-205	-577	-6207	-1318	-197	514	3605	3626	630	-310	-3047	-1137
Wtr Year 2012	Mean	15519	Max	19367	Min	10587	Inst Max	19385				
Cal Year 2011	Mean	17946	Max	22466	Min	12177	Inst Max	22466				

Summary Report

Site: A5 EID Caples Lake Near Kirkwood
 USGS #: 11436950
 Beginning Date: 10/01/2012
 Ending Date: 09/30/2013

Daily Midnight Storage Volume in Acre feet Water Year Oct 2012 to Sep 2013

09/30/2012 14543

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14522	14130	14244	15073	15036	14559	14983	18855	22084	21897	18803	16035
2	14506	14114	14506	15068	15036	14522	15020	19031	22177	21903	18703	15986
3	14485	14099	14559	15068	15031	14511	15068	19266	22196	21916	18604	15920
4	14464	14088	14575	15057	15031	14475	15175	19480	22159	21909	18511	15865
5	14448	14068	14823	15052	15031	14422	15260	19677	22115	21878	18413	15794
6	14427	14057	14929	15073	15025	14459	15330	19911	22096	21822	18308	15740
7	14406	14032	14961	15057	15031	14433	15384	20073	22071	21748	18216	15686
8	14391	14073	14983	15052	15031	14406	15464	20236	22053	21686	18118	15626
9	14370	14078	15004	15073	15025	14370	15502	20411	22028	21599	18020	15572
10	14349	14063	15009	15073	15020	14322	15540	20630	22028	21513	17922	15518
11	14338	14021	15004	15079	15004	14333	15632	20916	22090	21408	17824	15464
12	14328	14006	15068	15068	14993	14333	15740	21247	22159	21315	17721	15411
13	14317	13990	15063	15073	14988	14354	15881	21611	22252	21217	17630	15357
14	14291	13980	15020	15052	14972	14380	16024	21717	22227	21125	17527	15303
15	14280	13970	14967	15052	14961	14412	16162	21661	22165	21033	17425	15234
16	14270	13964	14940	15047	14951	14443	16257	21593	22090	20959	17334	15180
17	14244	14006	14929	15031	14940	14469	16312	21568	22028	20886	17243	15116
18	14223	14052	14919	15025	14919	14490	16362	21587	21940	20770	17147	15063
19	14213	14032	14919	15020	14940	14522	16423	21618	21847	20660	17057	15004
20	14187	14011	14913	15015	14935	14575	16512	21636	21760	20545	16978	14929
21	14166	14047	14898	15009	14924	14590	16658	21748	21686	20442	16882	14935
22	14213	14052	15004	14993	14866	14606	16854	21872	21642	20302	16781	14887
23	14234	14047	15089	15004	14818	14622	17034	21947	21599	20151	16686	14829
24	14218	14042	15100	15009	14776	14643	17198	21996	21599	19989	16591	14776
25	14197	14037	15111	15020	14728	14675	17362	22046	21661	19839	16479	14717
26	14197	14026	15116	15025	14691	14691	17561	22102	21735	19677	16395	14659
27	14187	14011	15084	15041	14643	14717	17807	22196	21791	19522	16323	14601
28	14171	14052	15084	15041	14596	14760	18060	22221	21835	19355	16268	14533
29	14161	14037	15089	15047	-----	14791	18355	22227	21866	19196	16201	14490
30	14145	14213	15084	15036	-----	14844	18645	22090	21884	19031	16140	14480
31	14130	-----	15084	15036	-----	14924	-----	22034	-----	18896	16085	-----
Max	14522	14213	15116	15079	15036	14924	18645	22227	22252	21916	18803	16035
Min	14130	13964	14244	14993	14596	14322	14983	18855	21599	18896	16085	14480
Change	-413	83.0	871	-48.0	-440	328	3721	3389	-150	-2988	-2811	-1605
Wtr Year 2013	Mean	16727	Max	22252	Min	13964	Inst Max	22271				
Cal Year 2012	Mean	14665	Max	19367	Min	10587	Inst Max	19385				

Summary Report

Site: A5 EID Caples Lake Near Kirkwood
 USGS #: 11436950
 Beginning Date: 10/01/2013
 Ending Date: 09/30/2014

Daily Midnight Storage Volume in Acre feet Water Year Oct 2013 to Sep 2014

09/30/2013 14480

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14454	13815	13253	12785	12335	12696	13137	15615	20357	21291	20339	17170
2	14427	13800	13233	12768	12306	12691	13142	15772	20460	21272	20266	17068
3	14406	13779	13243	12748	12296	12715	13132	15964	20575	21260	20200	16966
4	14364	13753	13228	12723	12281	12720	13132	16179	20678	21235	20133	16865
5	14333	13728	13203	12699	12274	12730	13117	16334	20788	21211	20031	16758
6	14301	13707	13188	12679	12284	12775	13122	16457	20916	21186	19935	16658
7	14286	13682	13193	12655	12309	12780	13132	16697	21020	21168	19833	16557
8	14265	13671	13198	12635	12421	12785	13167	16742	21125	21143	19725	16462
9	14260	13646	13183	12611	12563	12775	13223	16871	21229	21112	19611	16362
10	14228	13630	13167	12596	12578	12805	13289	16978	21321	21088	19504	16262
11	14208	13610	13147	12581	12587	12800	13380	17051	21395	21063	19403	16162
12	14187	13595	13132	12572	12587	12795	13487	17153	21445	21033	19302	16079
13	14171	13569	13117	12547	12587	12795	13589	17277	21494	21008	19184	15975
14	14151	13554	13097	12528	12583	12795	13682	17459	21519	20984	19072	15898
15	14119	13528	13082	12503	12592	12800	13805	17693	21537	20959	18961	15859
16	14099	13513	13061	12484	12602	12810	13933	17922	21556	20941	18849	15821
17	14078	13492	13046	12469	12602	12825	14099	18118	21556	20929	18744	15778
18	14057	13477	13031	12445	12592	12835	14286	18279	21550	20898	18634	15724
19	14037	13472	13011	12431	12587	12850	14469	18413	21550	20861	18523	15642
20	14021	13497	13001	12411	12583	12860	14638	18569	21513	20904	18424	15588
21	13995	13472	12981	12387	12578	12875	14749	18686	21475	20874	18308	15540
22	13975	13431	12966	12363	12573	12885	14882	18803	21432	20843	18193	15497
23	13959	13406	12946	12333	12568	12905	14956	18937	21395	20800	18100	15475
24	13939	13385	12930	12299	12568	12925	15036	19125	21371	20770	17991	15438
25	13918	13365	12910	12275	12563	12961	15180	19361	21352	20733	17888	15432
26	13897	13340	12890	12246	12612	12991	15228	19576	21340	20697	17784	15438
27	13877	13330	12875	12227	12637	13011	15266	19773	21346	20660	17681	15432
28	13897	13309	12860	12217	12686	13021	15319	19923	21327	20593	17584	15421
29	13877	13289	12835	12281	-----	13071	15378	20043	21321	20527	17482	15400
30	13856	13274	12815	12339	-----	13087	15481	20139	21309	20472	17379	15384
31	13841	-----	12805	12335	-----	13127	-----	20248	-----	20411	17271	-----
Max	14454	13815	13253	12785	12686	13127	15481	20248	21556	21291	20339	17170
Min	13841	13274	12805	12217	12274	12691	13117	15615	20357	20411	17271	15384
Change	-639	-567	-469	-470	351	441	2354	4767	1061	-898	-3140	-1887
Wtr Year 2014	Mean	15653	Max	21556	Min	12217	Inst Max	21562				
Cal Year 2013	Mean	16510	Max	22252	Min	12805	Inst Max	22271				

Summary Report

Site: A5 EID Caples Lake Near Kirkwood
 USGS #: 11436950
 Beginning Date: 10/01/2014
 Ending Date: 09/30/2015

Daily Midnight Storage Volume in Acre feet Water Year Oct 2014 to Sep 2015

09/30/2014 15384

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15349	14762	14437	14597	14452	15908	17300	18628	21131	21327	20266	17000
2	15319	14741	14469	14587	14447	15931	17345	18750	21198	21284	20230	16854
3	15294	14721	14554	14588	14443	15937	17379	18867	21254	21229	20194	16714
4	15265	14705	14575	14578	14454	15948	17408	18967	21309	21223	20145	16563
5	15235	14690	14576	14567	14433	15960	17453	19066	21358	21180	20103	16407
6	15210	14680	14576	14563	14502	15966	17465	19160	21414	21143	20067	16257
7	15181	14664	14566	14563	14629	15977	17544	19261	21488	21125	20037	16102
8	15151	14649	14556	14563	14931	15989	17561	19332	21550	21118	20001	15953
9	15127	14633	14551	14553	15139	16006	17573	19421	21599	21106	19953	15805
10	15097	14623	14546	14554	15199	16017	17590	19504	21698	21088	19839	15664
11	15073	14608	14552	14549	15237	16056	17613	19570	21742	21063	19731	15518
12	15038	14587	14594	14544	15291	16073	17641	19623	21773	21039	19617	15378
13	15013	14609	14584	14534	15355	16096	17670	19665	21779	21014	19474	15239
14	14993	14593	14574	14529	15415	16135	17721	19707	21773	20990	19332	15095
15	14983	14583	14564	14519	15469	16213	17704	19773	21773	20947	19207	14913
16	14968	14552	14575	14514	15513	16285	17727	19803	21748	20916	19084	14797
17	14947	14536	14570	14504	15556	16363	17739	19845	21748	20861	18955	14786
18	14931	14521	14560	14510	15600	16436	17773	19893	21735	20831	18826	14765
19	14916	14506	14587	14505	15649	16492	17813	19935	21729	20788	18703	14749
20	14890	14496	14613	14500	15687	16543	17853	19965	21711	20752	18575	14728
21	14890	14480	14614	14495	15725	16594	17882	20043	21686	20739	18447	14712
22	14869	14523	14625	14485	15742	16656	17933	20115	21667	20709	18326	14691
23	14848	14502	14631	14475	15775	16729	17968	20200	21649	20672	18193	14664
24	14812	14487	14652	14475	15786	16769	18002	20296	21630	20642	18072	14627
25	14828	14477	14652	14465	15803	16808	18123	20405	21599	20612	17945	14596
26	14818	14451	14642	14466	15820	16854	18175	20508	21562	20575	17819	14548
27	14802	14441	14637	14477	15853	16921	18233	20624	21513	20533	17693	14522
28	14787	14425	14622	14472	15897	16995	18326	20721	21475	20466	17550	14496
29	14771	14441	14622	14472	-----	17074	18430	20831	21426	20405	17402	14469
30	14751	14431	14597	14467	-----	17164	18523	20935	21371	20339	17271	14454
31	14751	-----	14602	14462	-----	17243	-----	21033	-----	20296	17136	-----
Max	15349	14762	14652	14597	15897	17243	18523	21033	21779	21327	20266	17000
Min	14751	14425	14437	14462	14433	15908	17300	18628	21131	20296	17136	14454
Change	-633	-320	171	-140	1435	1346	1280	2510	338	-1075	-3160	-2682
Wtr Year 2015	Mean	17067	Max	21779	Min	14425	Inst Max	21791				
Cal Year 2014	Mean	15943	Max	21556	Min	12217	Inst Max	21562				

Summary Report

Site: A5 EID Caples Lake Near Kirkwood
 USGS #: 11436950
 Beginning Date: 10/01/2015
 Ending Date: 09/30/2016

Daily Midnight Storage Volume in Acre feet Water Year Oct 2015 to Sep 2016

09/30/2015 14454

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14469	13933	13861	14218	14823	14701	13784	14870	19923	22259	18482	16440
2	14448	14021	13851	14197	14823	14649	13784	14853	20164	22246	18418	16334
3	14438	13995	13872	14197	14839	14633	13810	14879	20290	22227	18366	16223
4	14417	14094	13856	14202	14844	14696	13866	14952	20454	22190	18331	16107
5	14396	14083	13825	14223	14855	14829	13918	15052	20618	22171	18291	15997
6	14375	14057	13830	14239	14850	14913	13990	15147	20819	22159	18256	15886
7	14359	14037	13815	14244	14860	14924	14094	15221	21069	22121	18227	15783
8	14343	14057	13810	14239	14844	14945	14223	15290	21217	22059	18193	15669
9	14328	14068	13810	14234	14860	14797	14401	15498	21241	21959	18147	15561
10	14301	14057	13882	14228	14813	14802	14485	15773	21272	21897	18106	15475
11	14286	14037	13908	14223	14797	14791	14554	16068	21235	21810	18072	15384
12	14265	14021	13897	14218	14776	14765	14638	16455	21161	21723	18025	15293
13	14249	14006	13959	14244	14765	14813	14733	16941	21161	21624	17985	15244
14	14234	13990	13949	14291	14749	14712	14786	17409	21229	21506	17945	15180
15	14218	14026	13949	14312	14738	14543	14754	17768	21297	21383	17893	15105
16	14197	14006	13939	14349	14738	14469	14723	18072	21334	21247	17830	15052
17	14228	13990	13928	14354	14781	14469	14696	18395	21377	21112	17756	15020
18	14213	13975	13923	14359	14829	14438	14733	18756	21426	20978	17698	14983
19	14197	13970	13975	14401	14807	14412	14818	18972	21494	20819	17618	14945
20	14177	13959	13980	14396	14791	14380	14935	18896	21611	20685	17544	14935
21	14151	13944	14114	14385	14760	14391	15057	18668	21723	20520	17476	14919
22	14135	13933	14151	14443	14754	14349	15217	18389	21816	20363	17419	14898
23	14114	13918	14171	14469	14744	14275	15228	18106	21866	20206	17351	14876
24	14094	13970	14234	14469	14728	14213	15223	17939	21909	20043	17266	14855
25	14073	13954	14244	14475	14717	14151	15185	18014	21959	19863	17192	14834
26	14057	13939	14228	14469	14717	14088	15127	18100	22015	19647	17113	14813
27	14037	13923	14228	14459	14717	14047	15100	18274	22071	19433	17045	14791
28	14042	13908	14234	14459	14712	14021	15031	18488	22134	19213	16966	14749
29	14016	13892	14254	14569	14701	13975	14961	18768	22199	19014	16859	14664
30	13995	13882	14228	14717	-----	13908	14913	19078	22249	18826	16714	14564
31	13964	-----	14228	14786	-----	13846	-----	19456	-----	18628	16574	-----
Max	14469	14094	14254	14786	14860	14945	15228	19456	22249	22259	18482	16440
Min	13964	13882	13810	14197	14701	13846	13784	14853	19923	18628	16574	14564
Change	-490	-82.0	346	558	-85.0	-855	1067	4543	2793	-3621	-2054	-2010
Wtr Year 2016	Mean	16084	Max	22259	Min	13784	Inst Max	22259				
Cal Year 2015	Mean	16904	Max	21779	Min	13810	Inst Max	21791				

Summary Report

Site: A8 ELD Silver Lake Near Kirkwood
 USGS #: 11435900
 Beginning Date: 10/01/2011
 Ending Date: 09/30/2012

Daily Midnight Storage Volume in Acre feet Water Year Oct 2011 to Sep 2012

09/30/2011	4019											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3867	2138	1459	804	900	735	2063	5763	8565	7858	6659	5694
2	3792	2083	1444	787	894	741	2112	5974	8600	7818	6631	5662
3	3764	2047	1396	763	877	741	2177	6201	8615	7784	6594	5631
4	3764	2012	1384	743	866	760	2258	6392	8675	7745	6575	5603
5	3811	1977	1357	716	852	782	2304	6575	8645	7701	6542	5576
6	3788	1939	1334	699	827	787	2337	6735	8610	7662	6509	5558
7	3788	1901	1319	691	801	824	2364	6887	8605	7623	6481	5531
8	3776	1867	1304	658	779	830	2405	7092	8610	7584	6443	5513
9	3764	1851	1281	631	754	855	2462	7366	8610	7550	6411	5481
10	3823	1820	1266	609	735	886	2527	7633	8590	7506	6373	5450
11	3903	1808	1248	590	721	917	2608	7862	8580	7463	6345	5432
12	3895	1786	1231	579	710	917	2674	8054	8560	7429	6317	5396
13	3875	1770	1207	560	708	957	2730	8227	8550	7385	6317	5369
14	3863	1755	1190	543	697	982	2762	8371	8525	7342	6285	5343
15	3811	1739	1175	524	683	1047	2797	8386	8505	7303	6252	5272
16	3737	1714	1158	506	661	1225	2872	8371	8466	7260	6224	5161
17	3670	1699	1140	484	644	1310	3015	8312	8441	7217	6191	5056
18	3593	1686	1120	466	631	1363	3195	8272	8396	7183	6154	4951
19	3500	1671	1117	460	617	1387	3458	8262	8366	7135	6122	4855
20	3385	1653	1085	620	606	1417	3923	8267	8327	7097	6089	4764
21	3273	1631	1070	877	620	1480	4433	8342	8282	7063	6052	4674
22	3169	1619	1053	903	623	1544	4816	8446	8232	7025	6020	4580
23	3062	1592	1013	937	631	1607	5056	8500	8193	6996	5992	4487
24	2950	1577	993	931	642	1662	5294	8500	8138	6953	5955	4400
25	2840	1556	968	934	658	1699	5365	8495	8089	6920	5923	4309
26	2720	1528	945	937	669	1730	5744	8485	8049	6882	5886	4218
27	2615	1516	914	937	686	1770	5558	8466	8010	6849	5850	4140
28	2506	1507	897	937	691	1808	5441	8461	7971	6811	5822	4055
29	2405	1483	866	928	719	1833	5405	8456	7931	6778	5795	3971
30	2300	1468	855	925	-----	1870	5513	8476	7892	6735	5758	3911
31	2199	-----	827	923	-----	2002	-----	8505	-----	6702	5722	-----
Max	3903	2138	1459	937	900	2002	5744	8505	8675	7858	6659	5694
Min	2199	1468	827	460	606	735	2063	5763	7892	6702	5722	3911
Change	-1820	-731	-641	96.0	-204	1283	3511	2992	-613	-1190	-980	-1811
Wtr Year 2012	Mean	3941	Max	8675	Min	460	Inst Max	8680				
Cal Year 2011	Mean	4642	Max	8585	Min	827	Inst Max	8605				

Summary Report

Site: A8 ELD Silver Lake Near Kirkwood
 USGS #: 11435900
 Beginning Date: 10/01/2012
 Ending Date: 09/30/2013

Daily Midnight Storage Volume in Acre feet Water Year Oct 2012 to Sep 2013

09/30/2012	3911											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3891	3470	4140	3725	2850	2337	4035	7236	8620	7961	6674	5667
2	3871	3458	4704	3655	2865	2331	4039	7419	8635	7916	6636	5640
3	3851	3443	4458	3604	2879	2344	4055	7643	8640	7882	6594	5608
4	3827	3427	4284	3589	2879	2337	4197	7843	8635	7843	6565	5590
5	3811	3412	4479	3539	2889	2337	4251	7990	8640	7794	6528	5558
6	3796	3401	4400	3489	2893	2347	4251	8133	8655	7745	6490	5531
7	3768	3389	4255	3439	2904	2337	4259	8153	8635	7696	6453	5504
8	3756	3397	4156	3378	2904	2334	4234	8237	8620	7652	6420	5472
9	3733	3393	4087	3351	2904	2310	4168	8312	8595	7608	6383	5450
10	3713	3389	4035	3318	2900	2291	4164	8421	8565	7565	6345	5427
11	3698	3378	3999	3277	2879	2297	4247	8555	8535	7516	6313	5400
12	3690	3366	3999	3232	2847	2344	4338	8686	8500	7472	6275	5378
13	3670	3355	3971	3180	2804	2418	4416	8716	8466	7429	6238	5356
14	3651	3344	3955	3143	2769	2520	4454	8600	8426	7385	6205	5334
15	3639	3336	3939	3088	2741	2622	4479	8505	8386	7347	6173	5312
16	3620	3329	3931	3051	2716	2713	4441	8451	8342	7303	6136	5258
17	3601	3412	3955	3000	2688	2790	4391	8421	8297	7260	6103	5197
18	3581	3462	3955	2964	2660	2850	4325	8446	8252	7221	6085	5131
19	3562	3470	3943	2929	2646	2925	4350	8466	8213	7178	6052	5065
20	3547	3481	3931	2889	2615	3037	4500	8500	8168	7140	6034	5003
21	3516	3562	3895	2858	2585	3103	4721	8575	8123	7097	6001	4986
22	3550	3581	3919	2826	2550	3154	4990	8590	8084	7063	5965	4929
23	3574	3593	3943	2794	2520	3199	5241	8545	8040	7025	5932	4873
24	3566	3601	3967	2776	2486	3243	5450	8510	8049	6987	5900	4803
25	3547	3608	3955	2804	2455	3318	5635	8505	8133	6949	5868	4721
26	3535	3601	3939	2840	2422	3366	5873	8505	8123	6915	5831	4644
27	3523	3601	3943	2833	2388	3435	6173	8515	8099	6873	5808	4571
28	3508	3639	3927	2822	2357	3539	6453	8565	8069	6835	5776	4508
29	3500	3686	3883	2840	-----	3647	6768	8575	8035	6797	5749	4441
30	3485	3967	3839	2826	-----	3831	7068	8575	8000	6754	5722	4379
31	3473	-----	3792	2840	-----	3999	-----	8595	-----	6716	5694	-----
Max	3891	3967	4704	3725	2904	3999	7068	8716	8655	7961	6674	5667
Min	3473	3329	3792	2776	2357	2291	4035	7236	8000	6716	5694	4379
Change	-438	494	-175	-952	-483	1642	3069	1527	-595	-1284	-1022	-1315
Wtr Year 2013	Mean	5013	Max	8716	Min	2291	Inst Max	8736				
Cal Year 2012	Mean	4350	Max	8675	Min	460	Inst Max	8680				

Summary Report

Site: A8 ELD Silver Lake Near Kirkwood
 USGS #: 11435900
 Beginning Date: 10/01/2013
 Ending Date: 09/30/2014

Daily Midnight Storage Volume in Acre feet Water Year Oct 2013 to Sep 2014

09/30/2013	4379											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4317	3500	2950	1550	1269	1641	3217	7818	8711	7779	6669	5676
2	4255	3481	2936	1534	1260	1650	3240	8020	8726	7735	6626	5644
3	4189	3462	2929	1519	1251	1665	3254	8223	8736	7686	6594	5617
4	4132	3439	2914	1504	1239	1674	3273	8426	8731	7643	6575	5585
5	4112	3416	2889	1489	1234	1702	3292	8480	8731	7599	6542	5558
6	4087	3397	2858	1474	1234	1817	3344	8421	8736	7555	6509	5535
7	4059	3374	2826	1462	1248	1886	3443	8351	8721	7516	6486	5495
8	4035	3355	2769	1447	1313	1926	3604	8337	8701	7477	6453	5477
9	4015	3336	2702	1432	1402	1967	3788	8431	8680	7434	6415	5450
10	3979	3318	2643	1420	1432	2015	3983	8510	8660	7395	6383	5423
11	3955	3299	2585	1414	1438	2047	4222	8515	8625	7356	6345	5396
12	3931	3277	2527	1399	1450	2070	4483	8570	8590	7313	6308	5369
13	3907	3258	2469	1387	1453	2093	4708	8670	8555	7274	6275	5343
14	3879	3240	2415	1372	1462	2115	4916	8772	8520	7250	6238	5320
15	3851	3221	2361	1354	1477	2160	5157	8660	8476	7221	6205	5289
16	3823	3203	2310	1337	1486	2235	5405	8640	8431	7193	6173	5267
17	3800	3184	2261	1325	1486	2310	5703	8701	8386	7159	6136	5241
18	3776	3173	2216	1313	1486	2378	6001	8736	8342	7121	6103	5161
19	3752	3154	2173	1301	1486	2432	6289	8721	8297	7087	6071	5052
20	3725	3166	2122	1289	1483	2496	6518	8691	8252	7097	6038	4955
21	3701	3140	2073	1278	1483	2564	6693	8625	8208	7058	6006	4855
22	3678	3110	2025	1263	1486	2632	6844	8595	8163	7025	5974	4769
23	3655	3088	1970	1254	1492	2702	6925	8645	8109	6982	5942	4708
24	3632	3073	1908	1239	1498	2787	7006	8762	8069	6944	5909	4648
25	3612	3051	1845	1225	1510	2872	7178	8886	8025	6906	5882	4601
26	3585	3033	1786	1216	1547	2954	7246	8956	7985	6873	5845	4550
27	3566	3018	1727	1204	1583	3000	7303	8901	7946	6839	5818	4508
28	3574	3000	1671	1193	1631	3029	7371	8787	7897	6806	5790	4466
29	3558	2986	1610	1222	-----	3099	7487	8701	7858	6768	5763	4408
30	3535	2968	1577	1272	-----	3132	7633	8675	7813	6744	5731	4354
31	3523	-----	1565	1272	-----	3191	-----	8696	-----	6707	5703	-----
Max	4317	3500	2950	1550	1631	3191	7633	8956	8736	7779	6669	5676
Min	3523	2968	1565	1193	1234	1641	3217	7818	7813	6707	5703	4354
Change	-856	-555	-1403	-293	359	1560	4442	1063	-883	-1106	-1004	-1349
Wtr Year 2014	Mean	4623	Max	8956	Min	1193	Inst Max	8981				
Cal Year 2013	Mean	4860	Max	8716	Min	1565	Inst Max	8736				

Summary Report

Site: A8 ELD Silver Lake Near Kirkwood
 USGS #: 11435900
 Beginning Date: 10/01/2014
 Ending Date: 09/30/2015

Daily Midnight Storage Volume in Acre feet Water Year Oct 2014 to Sep 2015

09/30/2014	4354											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4300	3363	3007	3717	3835	5978	6925	8114	8741	7956	7030	6001
2	4251	3340	3073	3713	3835	5974	6934	8183	8716	7946	7001	5969
3	4193	3325	3247	3709	3839	5960	6949	8242	8696	7907	6968	5937
4	4144	3307	3333	3701	3835	5951	6949	8282	8680	7892	6934	5905
5	4091	3299	3359	3698	3839	5942	6968	8312	8655	7858	6896	5873
6	4039	3277	3378	3701	3895	5937	6972	8342	8650	7823	6858	5840
7	3991	3266	3385	3709	4342	5937	7015	8381	8635	7789	6825	5813
8	3939	3247	3385	3717	5338	5937	7025	8411	8610	7760	6792	5781
9	3887	3232	3381	3721	5804	5937	7030	8451	8585	7750	6759	5754
10	3839	3217	3374	3729	5909	5942	7054	8480	8680	7721	6726	5726
11	3788	3203	3389	3737	5974	5951	7082	8495	8701	7686	6693	5703
12	3729	3184	3424	3744	6043	5969	7111	8495	8686	7652	6655	5676
13	3686	3188	3424	3744	6099	5983	7145	8490	8655	7613	6617	5653
14	3651	3177	3420	3744	6117	6025	7178	8505	8625	7574	6579	5640
15	3628	3162	3420	3744	6061	6089	7188	8525	8585	7540	6547	5608
16	3612	3136	3431	3744	5969	6173	7178	8545	8545	7502	6514	5472
17	3593	3121	3431	3744	5937	6247	7183	8580	8505	7468	6476	5250
18	3574	3106	3427	3756	5978	6299	7202	8615	8466	7429	6453	5030
19	3554	3095	3439	3764	6025	6350	7241	8645	8421	7400	6420	4812
20	3535	3081	3466	3772	6043	6392	7265	8675	8376	7366	6387	4605
21	3516	3066	3547	3772	6034	6425	7279	8767	8327	7410	6355	4396
22	3504	3099	3620	3776	6011	6457	7332	8861	8302	7390	6322	4189
23	3481	3095	3663	3768	5974	6528	7361	8995	8267	7352	6289	4023
24	3466	3077	3709	3768	5960	6556	7395	8931	8223	7313	6257	3959
25	3462	3066	3733	3776	5955	6565	7497	8851	8183	7279	6219	3943
26	3439	3048	3725	3796	5951	6603	7574	8807	8148	7236	6187	3923
27	3424	3040	3729	3823	5974	6655	7716	8797	8109	7197	6154	3911
28	3404	3026	3729	3827	5983	6702	7848	8792	8074	7159	6122	3891
29	3389	3026	3729	3839	-----	6768	7951	8787	8035	7121	6089	3875
30	3370	3029	3729	3839	-----	6820	8040	8782	7995	7087	6061	3859
31	3366	-----	3729	3839	-----	6887	-----	8767	-----	7054	6029	-----
Max	4300	3363	3733	3839	6117	6887	8040	8995	8741	7956	7030	6001
Min	3366	3026	3007	3698	3835	5937	6925	8114	7995	7054	6029	3859
Change	-988	-337	700	110	2144	904	1153	727	-772	-941	-1025	-2170
Wtr Year 2015	Mean	5768	Max	8995	Min	3007	Inst Max	8995				
Cal Year 2014	Mean	4705	Max	8956	Min	1193	Inst Max	8981				

Summary Report

Site: A8 ELD Silver Lake Near Kirkwood
 USGS #: 11435900
 Beginning Date: 10/01/2015
 Ending Date: 09/30/2016

Daily Midnight Storage Volume in Acre feet Water Year Oct 2015 to Sep 2016

09/30/2015	3859											
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3871	3366	3424	3839	4104	3991	4128	4462	8119	8565*	7255	6108
2	3847	3470	3416	3823	4051	4015	4205	4533	8282	8530*	7207	6071
3	3831	3473	3435	3823	4007	4035	4267	4644	8371	8495*	7169	6038
4	3808	3462	3431	3823	3979	4160	4321	4825	8431	8461*	7125	6001
5	3792	3450	3431	3847	3947	4383	4358	5065	8426	8436	7082	5974
6	3772	3443	3420	3859	3931	4354	4412	5263	8456	8396	7039	5946
7	3756	3431	3416	3851	3927	4238	4483	5445	8505	8361	6996	5914
8	3740	3450	3424	3839	3927	4144	4529	5594	8535	8312	6953	5882
9	3721	3466	3427	3835	3943	4116	4601	5882	8525	8272	6915	5854
10	3705	3458	3520	3827	3947	4136	4537	6163	8525	8232	6873	5822
11	3686	3454	3554	3823	3955	4152	4571	6383	8505	8178	6839	5795
12	3666	3447	3566	3815	3959	4116	4631	6655	8560	8143	6801	5763
13	3651	3439	3608	3843	3959	4120	4700	6920	8555	8094	6759	5740
14	3632	3450	3616	3859	3963	4071	4691	7035	8560	8054	6721	5712
15	3616	3466	3616	3871	3987	4031	4614	6996	8580	8015	6683	5681
16	3604	3450	3620	3879	4011	4011	4563	6944	8605	7961	6645	5617
17	3624	3447	3620	3879	4055	4015	4575	6920	8650	7912	6612	5517
18	3608	3447	3616	3879	4059	4035	4665	6949	8691	7862	6579	5427
19	3597	3431	3647	3895	4019	4055	4799	7020	8741	7818	6547	5312
20	3570	3443	3655	3879	3983	4095	4921	6953	8746	7774	6509	5183
21	3543	3447	3764	3863	3963	4193	4982	6825	8706	7725	6476	5056
22	3523	3447	3808	3895	3947	4144	4973	6711	8686	7682	6448	4916
23	3508	3443	3823	3895	3935	4091	4834	6650	8680	7643	6415	4786
24	3489	3473	3883	3879	3939	4063	4726	6608	8680	7599	6383	4665
25	3470	3473	3891	3863	3955	4059	4618	6598	8670	7560	6345	4529
26	3450	3477	3883	3859	3971	4071	4504	6664	8670	7516	6313	4412
27	3439	3458	3875	3847	3983	4108	4475	6825	8660	7472	6280	4329
28	3439	3450	3863	3847	3983	4136	4433	7030	8645	7429	6243	4251
29	3416	3439	3855	3923	3983	4128	4412	7260	8630	7390	6210	4209
30	3397	3431	3847	4144	-----	4132	4433	7487	8600	7342	6177	4189
31	3378	-----	3843	4168	-----	4116	-----	7779	-----	7294	6140	-----
Max	3871	3477	3891	4168	4104	4383	4982	7779	8746	8565	7255	6108
Min	3378	3366	3416	3815	3927	3991	4128	4462	8119	7294	6140	4189
Change	-481	53.0	412	325	-185	133	317	3346	821	-1306	-1154	-1951
Wtr Year 2016	Mean	5182	Max	8746	Min	3366	Inst Max	8762				
Cal Year 2015	Mean	5798	Max	8995	Min	3366	Inst Max	8995				