

SOUTHEAST ALASKA

15090000 GREEN LAKE NEAR SITKA

LOCATION.--Lat 56°59'14", long 135°06'37", in SW¹/₄ NE¹/₄ sec. 29, T. 56 S., R. 65 E. (Port Alexander D-4 quad), Hydrologic Unit 19010203, Greater Sitka Borough, on Baranof Island, in Tongass National Forest, 0.4 mi upstream from mouth at Silver Bay, and 9.4 mi southeast of Sitka.

DRAINAGE AREA.--28.8 mi².

PERIOD OF RECORD.--September 1915 to September 1925 (published as "Green Lake Outlet"); monthly discharges only published in WSP 1372. October 1983 to current year (month end reservoir contents and monthly discharges).

REVISED RECORDS.--WSP 1372: 1916, 1917, 1922 (monthly discharge). WDR AK-84-1: Drainage area. WDR AK-86-1: 1984, 1985 (month-end reservoir contents, change in month-end and yearly contents, adjusted mean monthly discharges, and extremes). WRD AK-00-01: 1998-1999 (M m).

GAGE.--Staff gage on upstream face of dam. Datum of gage is at mean low water, which is about 5 ft below sea level. Totalizing MWH meters are on the two turbines in Green Lake powerhouse. September 1915 to September 1925, recording gage at site of present day dam, elevation of gage was 220 ft above sea level, by barometer; prior to December 27, 1916 at datum 1 ft higher. Water years 1983-88, nonrecording remote lake-level indicator at Blue Lake powerhouse (6 mi northwest of gage).

REMARKS.--Reservoir is formed by concrete arch dam located at the outlet of Green Lake, construction began in 1978 and was completed in 1982. Total and usable capacity below spillway crest elevation of 395 ft is 88,000 and 75,000 acre-ft, respectively. Reservoir is used for power. Discharge released through the turbines is computed from relation between discharge, head, and power generation; release flow empties directly into Silver Bay and is not returned to stream. Spill is computed from a theoretical relation between discharge and stage above the crest of the 100 ft wide spillway. Turbine and spillway ratings and reservoir capacity table furnished by City and Borough of Sitka in 1983. Corrected reservoir capacity table furnished in April 1987.

COOPERATION.--Daily reservoir elevations and MWH power generation provided by City and Borough of Sitka.

AVERAGE DISCHARGE.--30 years (water years, 1916-25, 1985-2004), 310 ft³/s, 146.2in/yr, 224,600 acre-ft/yr. Mean discharge for water years 1985-2004 adjusted for change in contents of Green Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 93,780 acre-ft, September 22-23, 1994, elevation, 400.5 ft; minimum contents observed, 23,170 acre-ft, June 1, 1996, elevation, 307.6 ft; Maximum daily discharge, 5,020 ft³/s, September 22-23, 1994; no flow released, February 5-8, 1987, November 27-29, 1988 and June 19, 2004.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 91,890 acre-ft, September 23, elevation 398.7 ft; minimum contents observed, 65,680 acre-ft, April 1-2, elevation 370.5 ft; Maximum daily discharge (not adjusted for storage) 309 ft³/s, April 1; minimum daily discharge, 0 ft³/s, June 19.

CORRECTIONS.--Monthly and annual discharge for Water Year 2003 have been corrected and are listed in the table below; the previously published values are incorrect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003 MEAN VALUES

| MONTH | RELEASE | SPILL | TOTAL | ADJUSTED |
|-------------|---------|-------|-------|----------|
| OCT | 162 | 485 | 647 | 634 |
| NOV | 198 | 74 | 272 | 274 |
| DEC | 170 | 110 | 280 | 285 |
| JAN | 192 | 22 | 214 | 192 |
| FEB | 207 | 0 | 207 | 52 |
| MAR | 249 | 0 | 249 | 79 |
| APR | 213 | 0 | 213 | 126 |
| MAY | 165 | 0 | 165 | 247 |
| JUN | 148 | 0 | 148 | 327 |
| JUL | 153 | 0 | 153 | 213 |
| AUG | 142 | 0 | 142 | 230 |
| SEP | 141 | 341 | 482 | 534 |
| CAL YR 2002 | 229 | 65.7 | 294 | 310 |
| WTR YR 2003 | 178 | 86.5 | 265 | 267 |

MONTH END RESERVOIR ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS, IN ACRE FEET WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

| DATE | ELEVATION | CONTENTS | CHANGE IN CONTENTS |
|-------------|-----------|----------|--------------------|
| Sep 30 | 395.4 | 88,420 | |
| Oct 31 | 394.8> | 87,810 | -610 |
| Nov 30 | 391.3 | 84,490 | -3320 |
| Dec 31 | 387.8 | 81,160 | -3330 |
| Jan 31 | 381.3 | 75,170 | -5990 |
| Feb 29 | 378.8 | 72,920 | -2250 |
| Mar 31 | 370.9 | 66,020 | -6900 |
| Apr 30 | 371.4 | 66,440 | +420 |
| May 31 | 385.4 | 78,880 | +12,440 |
| Jun 30 | 395.5 | 88,530 | +9650 |
| Jul 31 | 395.5 | 88,530 | 0 |
| Aug 31 | 395.0 | 88,000 | -530 |
| Sep 30 | 396.4 | 89,470 | +1470 |
| CAL YR 2003 | | | -4940 |
| WTR YR 2004 | | | +1050 |

SOUTHEAST ALASKA

15090000 GREEN LAKE NEAR SITKA—Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

| MONTH | RELEASE | SPILL | TOTAL | ADJUSTED |
|-------------|---------|-------|-------|----------|
| OCT | 153 | 129 | 282 | 272 |
| NOV | 195 | 42 | 237 | 181 |
| DEC | 244 | 0 | 244 | 190 |
| JAN | 241 | 0 | 241 | 144 |
| FEB | 219 | 0 | 219 | 180 |
| MAR | 236 | 0 | 236 | 124 |
| APR | 187 | 0 | 187 | 194 |
| MAY | 142 | 0 | 142 | 344 |
| JUN | 136 | 108 | 244 | 406 |
| JUL | 142 | 146 | 288 | 288 |
| AUG | 147 | 45 | 192 | 183 |
| SEP | 131 | 480 | 611 | 636 |
| CAL YR 2003 | 176 | 25 | 201 | 194 |
| WTR YR 2004 | 181 | 79 | 260 | 261 |