

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.--31 years (water years, 1916-25, 1985-2005), 313 ft³/s, 147.6in/yr, 226,800 acre-ft/yr. Mean discharge for water years 1985-2005 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, 91,680 acre-ft, September 18, elevation 398.5 ft; minimum contents observed, 65,250 acre-ft, April 9, elevation 370.0 ft. Maximum daily discharge (not adjusted for storage) 347 ft³/s, April 19; minimum daily discharge, 77.2 ft³/s, September 8.

MONTH END RESERVOIR ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS, IN ACRE FEET WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	ELEVATION	CONTENTS	CHANGE IN CONTENTS
Sep 30	396.4	89,470	
Oct 31	395.8	88,840	-630
Nov 30	395.6	88,630	-210
Dec 31	394.4	87,430	-1200
Jan 31	389.3	82,590	-4840
Feb 28	382.5	76,250	-6340
Mar 31	376.6	70,940	-5310
Apr 30	376.3	70,670	-270
May 31	390.0	83,250	+12580
Jun 30	394.8	87,810	+4560
Jul 31	395.0	88,000	+190
Aug 31	396.5	89,580	+1580
Sep 30	396.9	90,000	+420
		CAL YR 2004	+12260
		WTR YR 2005	+530

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005 MEAN VALUES

MONTH	RELEASE	SPILL	TOTAL	ADJUSTED
OCT	116	280	396	386
NOV	158	372	530	526
DEC	157	398	555	536
JAN	194	0	194	115
FEB	226	0	226	112
MAR	233	0	233	147
APR	215	0	215	210
MAY	147	0	147	352
JUN	170	0	170	247
JUL	220	117	337	340
AUG	219	65	284	310
SEP	131	608	739	746
CAL YR 2004	168	152	320	329
WTR YR 2005	182	153	336	336