

## 02290710 BLACK CREEK CANAL AT S-21, NEAR GOULDS, FL

LOCATION.--Lat 25°32'34", long 80°19'52", in NE ¼ sec.21, T.56 S., R.40 E., Dade County, Hydrologic Unit 03090202, in control house of salinity-control structure S-21, 0.5 mi upstream from mouth, and 3.5 mi east of Goulds.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--March 1957 to October 1969 (gage heights only), November 1969 to September 1977, October 1978 to September 2004. Discontinued.

REVISED RECORDS.--WDR FL-89-2A, 1988; WDR FL-01-2A, 2000.

GAGE.--Electronic data loggers for upstream and downstream stages and electronic data logger with shaft encoders for gate operation. Datum of gage is National Geodetic Vertical Datum of 1929 (Dade County bench mark). Prior to August 9, 1960, water-stage recorder at site 270 ft upstream in north lateral borrow canal, and April 9, 1960 to July 8, 1968, at site 810 ft upstream in north lateral borrow canal, all at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow is regulated by the operation of salinity-control structure S-21 and by some upstream pumpage for irrigation. Downstream stage is basically tidal, but at times is affected by gate operation. Starting in the 2002 water year, the downstream stage record published is the maximum and minimum stage for each calendar day. Prior to the 2002 water year, the daily mean for the downstream stage was published. Discharge computed from relation between head, discharges and gate-openings at structure S-21. Records of gage heights prior to October 1962, are available in files of the U.S. Geological Survey. Discharge occurring under submerged weir flow conditions is considered estimated.

COOPERATION.--Supplementary gate-opening record and gage-height record provided by the South Florida Water Management District.

ANNUAL MEAN and ANNUAL RUNOFF (AC-FT) SUMMARY STATISTICS.--Figures represent 23 complete water years of discharge (1971-77, 1979-90, 1995, 1998, 2002, 2004).

EXTREME UPSTREAM STAGES FOR PERIOD OF RECORD.--Maximum gage height, 10.17 ft Aug. 24, 1992; minimum, -1.09 ft Aug. 24, 1992.

EXTREME UPSTREAM STAGES FOR CURRENT YEAR.--Maximum gage height, 3.07 ft Nov. 11; minimum, 0.27 ft Aug. 4.

EXTREME DOWNSTREAM STAGES FOR CURRENT YEAR.--Maximum gage height, 2.92 ft Nov. 10, 11; minimum, -0.92 ft Mar. 31.

UPSTREAM  
GAGE HEIGHT, FEET  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.90	2.12	1.92	2.36	1.67	2.10	2.23	2.03	2.04	1.75	2.29	1.73
2	1.93	2.13	1.89	2.08	1.84	2.10	2.21	2.32	2.01	1.72	2.01	1.73
3	2.03	2.07	1.98	2.20	1.73	2.33	2.19	2.05	1.98	1.77	1.81	1.64
4	2.23	2.16	2.04	2.26	1.65	2.03	2.17	1.89	1.96	1.82	1.32	1.78
5	2.19	2.15	2.11	2.29	1.73	2.29	2.16	2.11	1.93	1.82	1.51	1.66
6	2.18	2.14	2.15	2.29	1.72	1.99	2.14	2.13	1.92	1.82	1.53	1.59
7	2.19	1.70	2.15	2.30	1.93	2.21	2.13	2.14	1.91	1.81	1.51	1.63
8	2.10	1.78	2.16	2.29	1.93	2.11	2.13	2.22	1.90	1.78	1.60	1.59
9	2.15	1.77	2.17	2.28	1.79	2.19	2.12	1.98	1.90	1.75	1.94	1.64
10	2.17	1.90	2.24	2.29	1.84	2.10	2.11	2.22	1.96	1.72	2.11	1.67
11	2.14	2.44	2.10	2.28	1.93	2.15	2.10	2.14	1.97	1.70	1.82	1.69
12	2.09	2.24	2.13	2.25	1.87	2.27	2.15	2.14	1.97	1.71	1.62	1.72
13	2.03	1.87	2.23	2.24	1.98	2.31	2.26	2.10	1.96	1.75	1.69	1.75
14	1.99	2.12	2.11	2.24	1.86	2.33	2.09	2.30	1.95	1.83	1.82	1.61
15	2.01	2.11	2.18	2.23	1.85	2.35	2.17	2.22	1.91	1.83	1.80	1.70
16	2.08	2.09	2.23	2.21	2.02	1.95	2.23	1.99	1.89	1.84	1.94	1.76
17	2.06	2.08	2.10	2.20	1.87	2.16	2.24	2.23	1.88	1.92	1.92	1.76
18	2.07	2.07	2.29	2.23	1.99	2.23	2.24	2.30	1.86	1.97	1.94	1.77
19	2.09	2.13	2.08	2.31	1.98	2.26	2.24	2.32	1.84	2.08	1.92	1.67
20	2.02	2.08	2.22	2.31	2.12	2.27	2.23	2.33	1.84	2.25	1.92	1.97
21	2.00	2.10	2.30	2.31	2.13	2.27	2.21	2.32	1.84	2.30	1.88	2.14
22	1.99	2.11	2.30	2.03	2.14	2.28	2.19	2.30	1.83	2.31	1.81	2.11
23	2.09	2.16	2.01	2.09	2.14	2.27	2.17	2.28	1.81	2.30	1.77	2.03
24	2.12	2.10	2.27	2.15	2.13	2.26	2.16	2.26	1.78	2.29	1.80	1.76
25	2.10	2.06	2.30	2.17	2.19	2.26	2.15	2.23	1.76	2.05	1.98	1.73
26	2.14	1.99	1.97	2.18	2.05	2.27	2.12	2.20	1.74	2.14	2.05	1.78
27	2.07	1.98	2.24	2.20	2.09	2.27	2.11	2.17	1.72	2.05	2.10	1.75
28	2.04	1.94	2.31	2.21	1.97	2.26	2.16	2.14	1.70	2.10	2.14	1.72
29	1.93	1.89	2.34	2.19	2.18	2.25	2.26	2.12	1.75	2.09	2.12	1.69
30	2.01	1.91	2.34	1.78	---	2.24	2.29	2.10	1.76	2.28	2.13	1.68
31	2.15	---	2.35	1.79	---	2.24	---	2.07	---	2.04	1.95	---
TOTAL	64.29	61.39	67.21	68.24	56.32	68.60	65.36	67.35	56.27	60.59	57.75	52.45
MEAN	2.07	2.05	2.17	2.20	1.94	2.21	2.18	2.17	1.88	1.95	1.86	1.75
MAX	2.23	2.44	2.35	2.36	2.19	2.35	2.29	2.33	2.04	2.31	2.29	2.14
MIN	1.90	1.70	1.89	1.78	1.65	1.95	2.09	1.89	1.70	1.70	1.32	1.59



02290710 BLACK CREEK CANAL AT S-21, NEAR GOULDS, FL-Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	935	429	464	0.00	490	168	0.00	103	0.00	0.00	0.00	745
2	851	413	481	101	570	0.00	0.00	0.00	0.00	2.4	307	561
3	598	396	290	0.00	582	0.00	0.00	145	0.00	0.00	400	591
4	282	402	0.00	0.00	546	123	0.00	204	0.00	0.00	580	554
5	421	433	0.00	0.00	486	0.00	0.00	110	0.00	0.00	1,080	741
6	385	769	0.00	0.00	523	144	0.00	100	0.00	0.00	1,090	660
7	392	954	0.00	0.00	368	0.00	0.00	103	0.00	0.00	1,010	752
8	487	718	0.00	0.00	482	110	0.00	7.9	0.00	0.00	888	926
9	496	687	0.00	0.00	412	0.00	0.00	139	0.00	0.00	752	841
10	533	523	0.00	0.00	435	108	0.00	92	0.00	0.00	756	761
11	536	342	97	0.00	468	0.00	0.00	0.00	0.00	0.00	852	701
12	541	493	0.00	11	360	0.00	0.00	143	0.00	0.00	755	637
13	539	626	0.00	0.00	392	0.00	0.00	0.00	0.00	0.00	612	599
14	532	607	108	0.00	408	0.00	102	0.00	0.00	0.00	629	480
15	482	649	0.00	0.00	415	0.00	0.00	122	4.7	0.00	584	495
16	454	662	102	0.00	316	145	0.00	16	0.00	0.00	544	487
17	456	626	3.3	0.00	441	0.00	0.00	0.00	0.00	0.00	584	512
18	432	578	0.00	0.00	289	0.00	0.00	0.00	0.00	0.00	579	508
19	434	610	92	0.00	243	0.00	0.00	0.00	0.00	0.00	581	572
20	458	602	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	580	387
21	444	513	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	594	441
22	430	479	62	128	0.00	0.00	0.00	0.00	0.00	0.00	606	423
23	384	438	47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	608	625
24	204	491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	641	e884
25	91	523	74	0.00	65	0.00	0.00	0.00	0.00	162	778	e925
26	187	545	63	0.00	176	0.00	0.00	0.00	0.00	0.00	959	862
27	428	507	0.00	0.00	125	0.00	0.00	0.00	0.00	174	878	763
28	434	537	0.00	0.00	184	0.00	0.00	0.00	0.00	0.00	806	898
29	481	529	0.00	0.00	0.00	0.00	0.00	0.00	0.00	124	781	1,080
30	393	489	0.30	226	---	0.00	23	0.00	0.00	0.00	762	1,010
31	350	---	0.00	156	---	0.00	---	0.00	---	120	800	---
TOTAL	14,070	16,570	1,883.60	622.00	8,776.00	798.00	125.00	1,284.90	4.70	582.40	21,376.00	20,421
MEAN	454	552	60.8	20.1	303	25.7	4.17	41.4	0.16	18.8	690	681
MAX	935	954	481	226	582	168	102	204	4.7	174	1,090	1,080
MIN	91	342	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	387
AC-FT	27,910	32,870	3,740	1,230	17,410	1,580	248	2,550	9.3	1,160	42,400	40,510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2004, BY WATER YEAR (WY)

MEAN	291	174	110	101	98.9	70.9	47.1	93.2	262	218	311	361
MAX	1,059	682	643	1,180	833	508	236	519	1,151	880	717	791
(WY)	(1995)	(1995)	(1995)	(1995)	(1995)	(1998)	(1982)	(2003)	(1983)	(2002)	(1995)	(1981)
MIN	46.0	26.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.65	40.3
(WY)	(1990)	(1985)	(1985)	(1971)	(1971)	(1971)	(1971)	(1971)	(1974)	(1981)	(1987)	(1989)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1970 - 2004

ANNUAL TOTAL	137,172.20	86,513.60	
ANNUAL MEAN	376	236	174
HIGHEST ANNUAL MEAN			600
LOWEST ANNUAL MEAN			33.0
HIGHEST DAILY MEAN	1,530	1,090	2,340
LOWEST DAILY MEAN	0.00	0.00	-384
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	-94
ANNUAL RUNOFF (AC-FT)	272,100	171,600	126,300
10 PERCENT EXCEEDS	719	661	512
50 PERCENT EXCEEDS	406	9.4	81
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

The period of record statistics were computed from complete water year's of record. See the annual mean and annual runoff (ac-ft) summary statistics section of the manuscript.