

8 101.42 21.442 2221.8300 -2.3691 -658 44 3280 9 2631 2571

TIME	%FSC	GAUGE PL.		CAPACITY	DELTA		NET	GATES	SPILL	MEAN GROSS INFLOW	
		READING			CAPACITY					1-HR	6-HR
hr	%	m		10^6 m3	10^6 m3		m3/s	no. m3/s	m3/s	m3/s	m3/s
3	101.42	21.442	2221.8300								2571
					-2.0757	-577	44	3266	8	2698	
9	101.33	21.435	2219.7600								2596
					-1.7795	-494	44	3255	7	2767	
10	101.25	21.429	2217.9800								2664
					-2.6606	-739	44	3241	6	2508	
11	101.13	21.420	2215.3200								2582
					-2.3682	-658	44	3226	6	2573	
12	101.02	21.412	2212.9500								2539
					-1.4812	-411	44	3214	5	2808	
13	100.95	21.407	2211.4700								2552
					-3.8379	****	44	3198	4	2136	
14	100.78	21.394	2207.6300								2634
					-2.6609	-739	44	3178	3	2442	
15	100.65	21.385	2204.9700								2621
					-1.1782	-327	44	3167	3	2842	
16	100.60	21.381	2203.7900								2636
					-.5898	-164	44	3162	2	3000	
17	100.57	21.379	2203.2000								2639
					.3555	-654	44	3153	2	2500	
18	100.47	21.371	2200.8500								2559
					-.8894	-247	44	3143	2	2898	
19	100.43	21.368	2199.9500								2587
					-3.5349	-982	44	3130	1	2149	
20	100.26	21.356	2196.4200								2534
					-4.1182	****	44	3107	0	1964	
21	100.08	21.342	2192.3000								2576
					-.2937	-82	44	3094	0	3013	
22	100.06	21.341	2192.0100								2496

TIME	%FSC	GAUGE PL.		CAPACITY	DELTA		NET	GATES	SPILL	MEAN GROSS INFLOW	
		READING			CAPACITY					1-HR	6-HR
hr	%	m		10^6 m3	10^6 m3		m3/s	no. m3/s	m3/s	m3/s	m3/s
22	100.06	21.341	2192.0100								2496
					-1.4722	-409	44	3089	0	2680	
23	100.00	21.336	2190.5400								2580
					-1.1738	-326	44	3081	0	2755	
24	99.94	21.332	2189.3600								2652
	22 / 2 / 75				-2.3486	-652	44	3071	0	2418	
1	99.83	21.324	2187.0100								2547
					-1.4700	-408	44	3059	0	2651	
2	99.77	21.319	2185.5400								2495
					-2.3511	-653	44	3048	0	2395	
3	99.66	21.311	2183.1900								2483
					-2.3464	-652	44	3034	0	2383	
4	99.55	21.303	2180.6500								2431

5 99.45 21.295 2178.5000 -2.3477 -652 44 3021 0 2368 2473

6 99.39 21.291 2177.3300 -1.1716 -325 44 3010 0 2685 2462

7	99.25	21.280	2174.1100	-3.2207	-895	44	2997	0	2103	2492
8	99.23	21.279	2173.8200	-.2905	-81	44	2987	0	2907	2496
9	99.13	21.271	2171.4700	-2.3418	-650	44	2980	0	2329	2417
10	99.06	21.266	2170.0100	-1.4597	-405	44	2969	0	2563	2434
11	98.96	21.259	2167.9700	-2.0481	-569	44	2958	0	2389	2327
12	98.84	21.250	2165.3300	-2.6335	-732	44	2945	0	2213	2315

TIME hr	%FSC %	GAUGEPL.		DELTA CAPACITY 10^6 m3	NET INFLOW m3/s	GATES no. m3/s	SPILL m3/s	MEAN GROSS INFLOW		
		READING m	CAPACITY 10^6 m3					1-HR m3/s	6-HR m3/s	
12	98.84	21.250	2165.3300	-2.6252	-729	44	2930	0	2200	2315
13	98.72	21.241	2162.7100	-2.3330	-648	44	2915	0	2267	2302
14	98.62	21.233	2160.3700	-2.3328	-648	44	2902	0	2254	2317
15	98.51	21.225	2158.0400	-1.4551	-404	44	2891	0	2487	2319
16	98.45	21.220	2156.5900	-1.4561	-404	44	2883	0	2478	2307
17	98.38	21.215	2155.1300	-2.3296	-647	44	2872	0	2225	2377
18	98.27	21.207	2152.8000	-2.6230	-729	44	2858	0	2129	2394
19	98.15	21.198	2150.1800	-.5796	-161	44	2849	0	2688	2317
20	98.13	21.196	2149.6000	-1.7429	-484	44	2842	0	2358	2238
21	98.05	21.170	2147.8500	-2.9080	-808	44	2829	0	2021	2212
22	97.91	21.180	2144.9500	-2.9009	-806	44	2813	0	2007	2200
23	97.78	21.170	2142.0500	-2.6152	-726	44	2797	0	2070	2052
24	97.66	21.161	2139.4300	-2.6060	-724	44	2782	0	2058	1997
23 / 2 / 75										
1	97.54	21.152	2136.8200	-3.4761	-966	44	2765	0	1800	1982
2	97.38	21.140	2133.3500							1980

TIME hr	%FSC %	GAUGEPL.		DELTA CAPACITY 10^6 m3	NET INFLOW m3/s	GATES no. m3/s	SPILL m3/s	MEAN GROSS INFLOW		
		READING m	CAPACITY 10^6 m3					1-HR m3/s	6-HR m3/s	
2	97.38	21.140	2133.3500	-2.6094	-725	44	2748	0	2023	1980
3	97.27	21.131	2130.7400							1965

4	97.13	21.121	2127.8500	-2.8850	-801	44	2733	0	1931	1990
5	97.02	21.112	2125.2500	-2.6016	-723	44	2717	0	1995	1936

6	96.90	21.103	2122.6500	-2.6028	-723	44	2703	0	1980	2001
7	96.82	21.097	2120.9200	-1.7305	-481	44	2691	0	2210	2069
8	96.62	21.082	2116.6000	-4.3230	****	44	2674	0	1473	2057
9	96.58	21.079	2115.7300	-.8699	-242	44	2660	0	2418	2085
10	96.53	21.075	2114.5800	-1.1487	-319	44	2654	0	2335	1954
11	96.41	21.066	2111.9800	-2.5947	-721	44	2644	0	1923	2075
12	96.33	21.060	2110.2600	-1.7273	-480	44	2632	0	2152	2064
13	96.13	21.045	2105.9500	-4.3093	****	44	2616	0	1419	1986
14	96.07	21.040	2104.5100	-1.4390	-400	44	2600	0	2200	1928
15	96.03	21.037	2103.6500	-.8618	-239	44	2594	0	2354	1869
16	95.91	21.028	2101.0700	-2.5801	-717	44	2584	0	1868	2025

TIME hr	%FSC %	GAUGE PL.		DELTA CAPACITY 10^6 m3	NET INFLOW m3/s	GATES no. m3/s	SPILL m3/s	MEAN GROSS INFLOW	
		READING m	CAPACITY 10^6 m3					1-HR m3/s	6-HR m3/s
16	95.91	21.028	2101.0700						2025
17	95.77	21.017	2097.9100	-3.1548	-876	42	2452	0	1576
18	95.66	21.009	2095.6100	-2.2964	-638	42	2438	0	1800
19	95.65	21.008	2095.3200	-.2903	-81	42	2431	0	2350
20	95.54	21.000	2093.0400	-2.2861	-635	42	2424	0	1789
21	95.44	20.992	2090.7500	-2.2886	-636	42	2413	0	1777
22	95.37	20.987	2089.3200	-1.4333	-398	42	2403	0	2005
23	95.30	20.981	2087.6000	-1.7158	-477	42	2395	0	1918
24	95.27	20.979	2087.0300	-.5691	-158	42	2389	0	2231
24 / 2 / 75				-2.8589	-794	42	2380	0	1586
1	95.14	20.969	2084.1700	-1.9971	-555	42	2368	0	1813
2	95.05	20.962	2082.1800	-2.5684	-713	42	2356	0	1643
3	94.93	20.953	2079.6100	-3.4248	-951	42	2341	0	1390
4	94.78	20.941	2076.1800	-.5703	-158	42	2331	0	2172
5	94.75	20.939	2075.6100	-2.5662	-713	42	2323	0	1610
6	94.63	20.930	2073.0500						1695

TIME	X	FSC	GAUGE PL.		DELTA	NET	GATES	SPILL	MEAN GROSS INFLOW	
			READING	CAPACITY	CAPACITY	INFLOW			1-HR	6-HR
hr	%		m	10^6 m3	10^6 m3	m3/s	no. m3/s	m3/s	m3/s	m3/s
6	94.63	20.930	2073.0500							1695
7	94.49	20.919	2069.9200		-3.1289	-569	42 2308	0	1439	1750
8	94.42	20.914	2068.4900		-1.4219	-395	42 2297	0	1902	1648
9	94.32	20.906	2066.2200		-2.2715	-631	42 2287	0	1657	1637
10	94.23	20.899	2064.2300		-1.9934	-554	42 2277	0	1723	1692
11	94.11	20.890	2061.6800		-2.5527	-709	42 2265	0	1556	1685
12	94.00	20.881	2059.1200		-2.5537	-709	42 2252	0	1543	1711
13	93.92	20.875	2057.4200		-1.6997	-472	42 2242	0	1770	1730
14	93.89	20.873	2056.8500		-.5715	-159	38 2023	0	1864	1763
15	93.89	20.873	2056.8500		.0000	00	34 1809	0	1809	1773
16	93.93	20.876	2057.7100		.8562	238	30 1598	0	1836	1732
17	93.96	20.878	2058.2700		.5647	157	30 1600	0	1757	1635
18	93.96	20.878	2058.2700		.0000	00	30 1601	0	1601	1414
19	93.94	20.877	2057.9900		-.2847	-79	30 1601	0	1522	1491
20	93.89	20.873	2056.8500		-1.1362	-316	30 1598	0	1283	1477

TIME	X	FSC	GAUGE PL.		DELTA	NET	GATES	SPILL	MEAN GROSS INFLOW	
			READING	CAPACITY	CAPACITY	INFLOW			1-HR	6-HR
hr	%		m	10^6 m3	10^6 m3	m3/s	no. m3/s	m3/s	m3/s	m3/s
20	93.89	20.873	2056.8500							1477
21	93.71	20.859	2052.8900		-3.9644	****	30 1589	0	488	*****
22	93.83	20.868	2055.4300		2.5469	707	30 1587	0	2294	*****
23	93.84	20.869	2055.7200		.2881	80	30 1592	0	1672	*****

Vaaldam Case Study Analysis
using RESIMO with optimization
option

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

ELEVATION

STORAGE

17	1.16795E+09
18	1.36292E+09
19	1.58055E+09
20	1.82235E+09
21	2.0922E+09
22	2.39028E+09
23	2.71225E+09
23.9	3.02165E+09

MANUALLY CONTROLLED OVERFLOW WEIR

NO	INVERT	FREE COEF	SPILL COEF	WIDTH	HEIGHT	TRAVEL
1	18.3	1.8	2.1	7.78	3	3.2
2	18.3	1.8	2.1	7.78	3	3.2
3	18.3	1.8	2.1	7.78	3	3.2
4	18.3	1.8	2.1	7.78	3	3.2
5	18.3	1.8	2.1	7.78	3	3.2
6	18.3	1.8	2.1	7.78	3	3.2
7	18.3	1.8	2.1	7.78	3	3.2
8	18.3	1.8	2.1	7.78	3	3.2
9	18.3	1.8	2.1	7.78	3	3.2
10	18.3	1.8	2.1	7.78	3	3.2
11	18.3	1.8	2.1	7.78	3	3.2
12	18.3	1.8	2.1	7.78	3	3.2
13	18.3	1.8	2.1	7.78	3	3.2
14	18.3	1.8	2.1	7.78	3	3.2
15	18.3	1.8	2.1	7.78	3	3.2
16	18.3	1.8	2.1	7.78	3	3.2
17	18.3	1.8	2.1	7.78	3	3.2
18	18.3	1.8	2.1	7.78	3	3.2
19	18.3	1.8	2.1	7.78	3	3.2
20	18.3	1.8	2.1	7.78	3	3.2
21	18.3	1.8	2.1	7.78	3	3.2
22	18.3	1.8	2.1	7.78	3	3.2
23	18.3	1.8	2.1	7.78	3	3.2
24	18.3	1.8	2.1	7.78	3	3.2
25	18.3	1.8	2.1	7.78	3	3.2
26	18.3	1.8	2.1	7.78	3	3.2
27	18.3	1.8	2.1	7.78	3	3.2
28	18.3	1.8	2.1	7.78	3	3.2
29	18.3	1.8	2.1	7.78	3	3.2
30	18.3	1.8	2.1	7.78	3	3.2
31	18.3	1.8	2.1	7.78	3	3.2
32	18.3	1.8	2.1	7.78	3	3.2
33	18.3	1.8	2.1	7.78	3	3.2
34	18.3	1.8	2.1	7.78	3	3.2
35	18.3	1.8	2.1	7.78	3	3.2
36	18.3	1.8	2.1	7.78	3	3.2
37	18.3	1.8	2.1	7.78	3	3.2
38	18.3	1.8	2.1	7.78	3	3.2
39	18.3	1.8	2.1	7.78	3	3.2
40	18.3	1.8	2.1	7.78	3	3.2

41	18.3	1.8	2.1	7.78	3	3.2
42	18.3	1.8	2.1	7.78	3	3.2
43	18.3	1.8	2.1	7.78	3	3.2
44	18.3	1.8	2.1	7.78	3	3.2
45	18.3	1.8	2.1	7.78	3	3.2
46	18.3	1.8	2.1	7.78	3	3.2
47	18.3	1.8	2.1	7.78	3	3.2
48	18.3	1.8	2.1	7.78	3	3.2
49	18.3	1.8	2.1	7.78	3	3.2
50	18.3	1.8	2.1	7.78	3	3.2
51	18.3	1.8	2.1	7.78	3	3.2
52	18.3	1.8	2.1	7.78	3	3.2
53	18.3	1.8	2.1	7.78	3	3.2
54	18.3	1.8	2.1	7.78	3	3.2
55	18.3	1.8	2.1	7.78	3	3.2
56	18.3	1.8	2.1	7.78	3	3.2
57	18.3	1.8	2.1	7.78	3	3.2
58	18.3	1.8	2.1	7.78	3	3.2
59	18.3	1.8	2.1	7.78	3	3.2
60	18.3	1.8	2.1	7.78	3	3.2

START TIME	NO OF GATES/OP	MAX FLOW	FLOW ESC
0	2	2000	1000

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

8.00	907.00	21.200	0.00	0.215E+10	0	0	0
9.00	919.88	21.21	139.29	0.216E+10	139.2866	2	0
10.00	932.75	21.222	279.86	0.216E+10	279.8585	4	0
11.00	945.63	21.230	421.51	0.216E+10	421.5108	6	0
12.00	958.50	21.238	564.32	0.216E+10	564.315	8	0
13.00	971.38	21.243	706.97	0.216E+10	706.9748	10	0
14.00	984.25	21.247	850.27	0.217E+10	850.2691	12	0
15.00	997.13	21.248	992.60	0.217E+10	992.5985	14	0
16.00	1010.00	21.247	1133.28	0.217E+10	1133.278	16	0
17.00	915.63	21.245	1274.14	0.217E+10	1274.141	18	0
18.00	821.25	21.241	1412.54	0.216E+10	1412.544	20	0
19.00	726.88	21.232	1546.71	0.216E+10	1546.705	22	0
20.00	632.50	21.222	1678.76	0.216E+10	1678.76	24	0
21.00	538.13	21.209	1806.05	0.215E+10	1806.048	26	0
22.00	443.75	21.195	1931.43	0.215E+10	1931.425	28	0
23.00	349.38	21.175	2048.13	0.214E+10	2048.131	30	0
24.00	255.00	21.155	2162.08	0.214E+10	2162.081	32	0
25.00	303.00	21.132	2268.96	0.213E+10	2268.96	34	0
26.00	351.00	21.106	2370.07	0.212E+10	2370.073	36	0
27.00	399.00	21.083	2340.42	0.212E+10	2340.42	36	0
28.00	447.00	21.059	2375.08	0.211E+10	2375.083	37	0
29.00	495.00	21.036	2344.86	0.210E+10	2344.863	37	0
30.00	543.00	21.013	2377.33	0.210E+10	2377.334	38	0
31.00	591.00	20.987	2343.91	0.209E+10	2343.912	38	0
32.00	639.00	20.962	2371.46	0.208E+10	2371.455	39	0
33.00	657.50	20.942	2344.97	0.208E+10	2344.971	39	0
34.00	676.00	20.918	2373.13	0.207E+10	2373.133	40	0
35.00	694.50	20.895	2341.31	0.206E+10	2341.314	40	0
36.00	713.00	20.875	2372.36	0.206E+10	2372.355	41	0
37.00	731.50	20.855	2344.97	0.205E+10	2344.968	41	0
38.00	750.00	20.832	2369.16	0.205E+10	2369.156	42	0
39.00	768.50	20.812	2341.34	0.204E+10	2341.342	42	0
40.00	787.00	20.792	2368.72	0.204E+10	2368.721	43	0
41.00	853.88	20.768	2335.35	0.203E+10	2335.351	43	0
42.00	920.75	20.749	2360.89	0.202E+10	2360.889	44	0
43.00	987.63	20.729	2332.23	0.202E+10	2332.231	44	0
44.00	1054.50	20.712	2360.69	0.201E+10	2360.693	45	0
45.00	1121.38	20.695	2336.24	0.201E+10	2336.235	45	0
46.00	1188.25	20.682	2367.96	0.201E+10	2367.955	46	0
47.00	1255.13	20.665	2343.11	0.200E+10	2343.11	46	0
48.00	1322.00	20.652	2373.55	0.200E+10	2373.545	47	0
49.00	1330.75	20.635	2348.32	0.199E+10	2348.322	47	0
50.00	1339.50	20.621	2327.95	0.199E+10	2327.951	47	0
51.00	1348.25	20.608	2356.74	0.199E+10	2356.737	48	0
52.00	1357.00	20.594	2336.05	0.198E+10	2336.053	48	0
53.00	1365.75	20.581	2363.67	0.198E+10	2363.668	49	0
54.00	1374.50	20.571	2348.26	0.198E+10	2348.264	49	0

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

55.00	1383.25	20.557	2327.32	0.197E+10	2327.323	49	0
56.00	1392.00	20.544	2353.51	0.197E+10	2353.511	50	0
57.00	1381.88	20.534	2337.92	0.197E+10	2337.922	50	0
58.00	1371.75	20.520	2363.06	0.196E+10	2363.062	51	0
59.00	1361.63	20.507	2341.51	0.196E+10	2341.507	51	0
60.00	1351.50	20.497	2371.34	0.196E+10	2371.34	52	0
61.00	1341.38	20.483	2349.48	0.195E+10	2349.482	52	0
62.00	1331.25	20.470	2372.45	0.195E+10	2372.452	53	0
63.00	1321.13	20.453	2345.14	0.194E+10	2345.135	53	0
64.00	1311.00	20.440	2366.91	0.194E+10	2366.908	54	0
65.00	1382.25	20.426	2344.51	0.194E+10	2344.506	54	0
66.00	1453.50	20.413	2365.18	0.193E+10	2365.177	55	0
67.00	1524.75	20.404	2350.15	0.193E+10	2350.149	55	0
68.00	1596.00	20.390	2369.85	0.193E+10	2369.846	56	0
69.00	1667.25	20.381	2354.63	0.193E+10	2354.627	56	0
70.00	1738.50	20.372	2339.44	0.192E+10	2339.443	56	0
71.00	1809.75	20.364	2367.45	0.192E+10	2367.45	57	0
72.00	1881.00	20.360	2359.90	0.192E+10	2359.898	57	0
73.00	1984.88	20.355	2352.35	0.192E+10	2352.35	57	0
74.00	2088.75	20.351	2344.81	0.192E+10	2344.81	57	0
75.00	2192.63	20.347	2337.28	0.192E+10	2337.279	57	0
76.00	2296.50	20.345	2335.18	0.192E+10	2335.175	57	0
77.00	2400.38	20.347	2338.49	0.192E+10	2338.494	57	0
78.00	2504.25	20.349	2340.59	0.192E+10	2340.593	57	0
79.00	2608.13	20.350	2342.69	0.192E+10	2342.691	57	0
80.00	2712.00	20.354	2350.22	0.192E+10	2350.222	57	0
81.00	2841.38	20.359	2357.76	0.192E+10	2357.761	57	0
82.00	2970.75	20.367	2371.51	0.192E+10	2371.507	57	0
83.00	3100.13	20.376	2345.06	0.192E+10	2345.058	56	0
84.00	3229.50	20.389	2368.00	0.193E+10	2368.004	56	0
85.00	3358.88	20.403	2348.33	0.193E+10	2348.33	55	0
86.00	3488.25	20.416	2371.02	0.193E+10	2371.015	55	0
87.00	3617.63	20.433	2355.49	0.194E+10	2355.493	54	0
88.00	3747.00	20.450	2339.06	0.194E+10	2339.055	55	0
89.00	3694.00	20.469	2371.53	0.195E+10	2371.534	53	0
90.00	3641.00	20.486	2353.68	0.195E+10	2353.683	52	0
91.00	3588.00	20.503	2334.90	0.196E+10	2334.899	51	0
92.00	3535.00	20.519	2361.48	0.196E+10	2361.479	51	0
93.00	3482.00	20.536	2341.33	0.197E+10	2341.333	50	0
94.00	3429.00	20.553	2367.59	0.197E+10	2367.588	50	0
95.00	3376.00	20.566	2341.15	0.198E+10	2341.153	49	0
96.00	3323.00	20.580	2362.13	0.198E+10	2362.132	49	0
97.00	3460.25	20.597	2339.38	0.198E+10	2339.375	48	0
98.00	3597.50	20.613	2364.92	0.199E+10	2364.917	48	0
99.00	3734.75	20.633	2345.52	0.199E+10	2345.52	47	0
100.00	3872.00	20.650	2370.73	0.200E+10	2370.726	47	0

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m ³ /s)	WATER LEVEL (m)	OUTFLOW RATE (m ³ /s)	STORAGE VOLUME (m ³)	GATED FLOW (m ³ /s)	NUMBER OF GATES	SPILL (m ³ /s)
-----------------	---------------------------------------	-----------------------	--	--	--------------------------------------	--------------------	------------------------------

101.00	4009.25	20.670	2349.75	0.200E+10	2349.752	46	0
102.00	4146.50	20.693	2332.88	0.201E+10	2332.883	45	0
103.00	4283.75	20.719	2370.24	0.202E+10	2370.239	45	0
104.00	4421.00	20.744	2354.29	0.202E+10	2354.286	44	0
105.00	4273.00	20.769	2336.85	0.203E+10	2336.851	43	0
106.00	4125.00	20.795	2373.11	0.204E+10	2373.109	43	0
107.00	3977.00	20.818	2350.68	0.204E+10	2350.679	42	0
108.00	3829.00	20.838	2321.89	0.205E+10	2321.894	41	0
109.00	3681.00	20.858	2349.19	0.205E+10	2349.187	41	0
110.00	3533.00	20.875	2372.21	0.206E+10	2372.208	41	0
111.00	3385.00	20.888	2332.60	0.206E+10	2332.601	40	0
112.00	3237.00	20.898	2346.02	0.206E+10	2346.018	40	0
113.00	3243.38	20.912	2364.35	0.207E+10	2364.35	40	0
114.00	3249.75	20.925	2323.16	0.207E+10	2323.163	39	0
115.00	3256.13	20.935	2336.34	0.207E+10	2336.339	39	0
116.00	3262.50	20.949	2354.34	0.208E+10	2354.339	39	0
117.00	3268.88	20.962	2372.39	0.208E+10	2372.386	39	0
118.00	3275.25	20.972	2324.48	0.208E+10	2324.483	38	0
119.00	3281.63	20.986	2342.14	0.209E+10	2342.143	38	0
120.00	3288.00	20.999	2359.85	0.209E+10	2359.851	38	0
121.00	3268.75	21.008	2371.60	0.209E+10	2371.604	38	0
122.00	3249.50	21.018	2321.89	0.210E+10	2321.886	37	0
123.00	3230.25	21.030	2337.56	0.210E+10	2337.562	37	0
124.00	3211.00	21.039	2349.07	0.210E+10	2349.072	37	0
125.00	3191.75	21.048	2360.60	0.211E+10	2360.598	37	0
126.00	3172.50	21.058	2373.38	0.211E+10	2373.384	37	0
127.00	3153.25	21.067	2320.49	0.211E+10	2320.491	36	0
128.00	3134.00	21.076	2331.76	0.211E+10	2331.763	36	0
129.00	3089.00	21.086	2344.27	0.212E+10	2344.266	36	0
130.00	3044.00	21.095	2355.58	0.212E+10	2355.576	36	0
131.00	2999.00	21.104	2366.90	0.212E+10	2366.903	36	0
132.00	2954.00	21.110	2374.11	0.212E+10	2374.107	36	0
133.00	2909.00	21.118	2251.79	0.213E+10	2251.788	34	0
134.00	2864.00	21.126	2261.38	0.213E+10	2261.376	34	0
135.00	2819.00	21.130	2199.98	0.213E+10	2199.981	33	0
136.00	2774.00	21.134	2205.10	0.213E+10	2205.103	33	0
137.00	2755.38	21.143	2215.56	0.213E+10	2215.562	33	0
138.00	2736.75	21.148	2220.69	0.214E+10	2220.693	33	0
139.00	2718.13	21.157	2231.18	0.214E+10	2231.177	33	0
140.00	2699.50	21.161	2236.32	0.214E+10	2236.321	33	0
141.00	2680.88	21.165	2241.47	0.214E+10	2241.471	33	0
142.00	2662.25	21.173	2250.86	0.214E+10	2250.858	33	0
143.00	2643.63	21.178	2256.02	0.215E+10	2256.017	33	0
144.00	2625.00	21.182	2261.18	0.215E+10	2261.182	33	0
145.00	2777.38	21.188	2199.16	0.215E+10	2199.155	32	0
146.00	2929.75	21.197	2209.39	0.215E+10	2209.392	32	0

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
147.00	3082.13	21.206	2219.64	0.215E+10	2219.643	32	0
148.00	3234.50	21.215	2229.91	0.216E+10	2229.909	32	0
149.00	3386.88	21.228	2245.44	0.216E+10	2245.44	32	0
150.00	3539.25	21.242	2261.01	0.216E+10	2261.008	32	0
151.00	3691.63	21.258	2209.01	0.217E+10	2209.014	31	0
152.00	3844.00	21.275	2227.73	0.217E+10	2227.728	31	0
153.00	3665.38	21.292	2246.50	0.218E+10	2246.496	31	0
154.00	3486.75	21.308	2192.62	0.218E+10	2192.622	30	.3809471
155.00	3308.13	21.322	2208.63	0.219E+10	2208.631	30	1.596408
156.00	3129.50	21.332	2220.70	0.219E+10	2220.698	30	2.791135
157.00	2950.88	21.342	2232.98	0.219E+10	2232.984	30	4.189256
158.00	2772.25	21.351	2244.25	0.220E+10	2244.247	30	5.604762
159.00	2593.63	21.355	2249.82	0.220E+10	2249.821	30	6.347204
160.00	2415.00	21.360	2255.43	0.220E+10	2255.432	30	7.120154
161.00	2512.00	21.364	2261.08	0.220E+10	2261.076	30	7.922158
162.00	2609.00	21.365	2262.66	0.220E+10	2262.656	30	8.150871
163.00	2706.00	21.370	2193.33	0.220E+10	2193.328	29	9.288181
164.00	2803.00	21.379	2204.74	0.221E+10	2204.743	29	11.13883
165.00	2900.00	21.387	2216.28	0.221E+10	2216.278	29	13.09786
166.00	2997.00	21.396	2227.93	0.221E+10	2227.93	29	15.13993
167.00	3094.00	21.405	2239.69	0.221E+10	2239.694	29	17.32012
168.00	3191.00	21.415	2252.85	0.222E+10	2252.847	29	19.8216
169.00	3121.00	21.425	2189.48	0.222E+10	2189.482	28	23.15674
170.00	3051.00	21.439	2207.40	0.222E+10	2207.403	28	27.0069
171.00	2981.00	21.448	2219.40	0.223E+10	2219.398	28	29.66414
172.00	2911.00	21.457	2231.49	0.223E+10	2231.485	28	32.40261
173.00	2841.00	21.465	2242.35	0.223E+10	2242.354	28	34.91424
174.00	2771.00	21.469	2248.35	0.223E+10	2248.353	28	36.3199
175.00	2701.00	21.473	2254.38	0.223E+10	2254.377	28	37.74455
176.00	2631.00	21.478	2260.42	0.223E+10	2260.422	28	39.18735
177.00	2657.38	21.482	2188.26	0.224E+10	2188.263	27	41.91833
178.00	2683.75	21.487	2194.23	0.224E+10	2194.232	27	43.44298
179.00	2710.13	21.491	2200.22	0.224E+10	2200.221	27	44.98567
180.00	2736.50	21.499	2211.18	0.224E+10	2211.179	27	47.83995
181.00	2762.88	21.503	2217.23	0.224E+10	2217.225	27	49.43176
182.00	2789.25	21.512	2229.62	0.224E+10	2229.623	27	52.7331
183.00	2815.63	21.517	2235.73	0.225E+10	2235.729	27	54.37684
184.00	2842.00	21.526	2248.25	0.225E+10	2248.25	27	57.78253
185.00	2831.13	21.535	2260.85	0.225E+10	2260.85	27	61.25573
186.00	2820.25	21.539	2267.06	0.225E+10	2267.055	27	62.98282
187.00	2809.38	21.543	2193.45	0.225E+10	2193.445	26	66.68803
188.00	2798.50	21.552	2205.97	0.226E+10	2205.974	26	70.40262
189.00	2787.63	21.557	2212.14	0.226E+10	2212.143	26	72.24748
190.00	2776.75	21.566	2224.79	0.226E+10	2224.788	26	76.06078
191.00	2765.88	21.570	2231.01	0.226E+10	2231.014	26	77.9534
192.00	2755.00	21.579	2243.77	0.226E+10	2243.774	26	81.86287

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME	INFLOW	WATER	OUTFLOW	STORAGE	GATED	NUMBER	SPILL
(hours)	RATE	LEVEL	RATE	VOLUME	FLOW	OF GATES	(m3/s)
	(m3/s)	(m)	(m3/s)	(m3)	(m3/s)		

193.00	2774.00	21.583	2250.06	0.227E+10	2250.055	26	83.80203
194.00	2793.00	21.592	2262.93	0.227E+10	2262.927	26	87.80544
195.00	2812.00	21.597	2188.08	0.227E+10	2188.077	25	92.43097
196.00	2831.00	21.606	2200.84	0.227E+10	2200.837	25	96.64654
197.00	2850.00	21.611	2208.98	0.227E+10	2208.977	25	99.35548
198.00	2869.00	21.619	2220.47	0.228E+10	2220.471	25	103.206
199.00	2888.00	21.628	2233.41	0.228E+10	2233.413	25	107.5761
200.00	2907.00	21.636	2245.03	0.228E+10	2245.026	25	111.5277
201.00	2854.50	21.645	2258.10	0.228E+10	2258.103	25	116.0108
202.00	2802.00	21.651	2266.44	0.229E+10	2266.444	25	118.8882
203.00	2749.50	21.659	2195.52	0.229E+10	2195.522	24	126.4867
204.00	2697.00	21.667	2207.16	0.229E+10	2207.158	24	130.7344
205.00	2644.50	21.671	2213.57	0.229E+10	2213.572	24	133.0869
206.00	2592.00	21.676	2220.01	0.229E+10	2220.005	24	135.4544
207.00	2539.50	21.680	2226.45	0.229E+10	2226.454	24	137.8357
208.00	2487.00	21.681	2228.26	0.230E+10	2228.255	24	138.5023
209.00	2434.88	21.686	2234.73	0.230E+10	2234.727	24	140.9013
210.00	2382.75	21.687	2236.53	0.230E+10	2236.534	24	141.5728
211.00	2330.63	21.688	2238.34	0.230E+10	2238.343	24	142.2453
212.00	2278.50	21.689	2240.15	0.230E+10	2240.153	24	142.9189
213.00	2226.38	21.687	2237.28	0.230E+10	2237.283	24	141.8513
214.00	2174.25	21.689	2240.15	0.230E+10	2240.147	24	142.9168
215.00	2122.13	21.687	2237.28	0.230E+10	2237.278	24	141.8492
216.00	2070.00	21.686	2235.46	0.230E+10	2235.464	24	141.1751
217.00	1995.38	21.685	2233.65	0.230E+10	2233.652	24	140.5022
218.00	1920.75	21.681	2227.18	0.230E+10	2227.178	24	138.1034
219.00	1846.13	21.676	2220.72	0.229E+10	2220.721	24	135.7185
220.00	1771.50	21.672	2214.28	0.229E+10	2214.281	24	133.3474
221.00	1696.88	21.664	2202.60	0.229E+10	2202.602	24	129.0682
222.00	1622.25	21.659	2196.21	0.229E+10	2196.212	24	126.7378
223.00	1547.63	21.651	2184.62	0.229E+10	2184.619	24	122.5313
224.00	1473.00	21.642	2254.01	0.228E+10	2254.005	25	114.6024
225.00	1522.38	21.634	2240.95	0.228E+10	2240.945	25	110.136
226.00	1571.75	21.625	2227.96	0.228E+10	2227.957	25	105.7291
227.00	1621.13	21.619	2219.74	0.228E+10	2219.743	25	102.961
228.00	1670.50	21.611	2208.25	0.227E+10	2208.247	25	99.11182
229.00	1719.88	21.606	2201.96	0.227E+10	2201.958	25	97.01853
230.00	1769.25	21.602	2195.68	0.227E+10	2195.683	25	94.93929
231.00	1818.63	21.598	2189.43	0.227E+10	2189.427	25	92.87513
232.00	1868.00	21.593	2264.29	0.227E+10	2264.288	26	88.23115
233.00	1913.38	21.589	2176.97	0.227E+10	2176.968	25	88.79246
234.00	1958.75	21.585	2251.65	0.227E+10	2251.646	26	84.29493
235.00	2004.13	21.580	2164.58	0.227E+10	2164.582	25	84.77144
236.00	2049.50	21.579	2162.86	0.226E+10	2162.857	25	84.21443
237.00	2094.88	21.578	2080.43	0.226E+10	2080.425	24	86.04889
238.00	2140.25	21.580	2083.10	0.226E+10	2083.096	24	86.95136

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

239.00	2185.63	21.581	2004.00	0.227E+10	2003.998	23	89.95444
240.00	2231.00	21.585	2009.96	0.227E+10	2009.959	23	92.07241
241.00	2189.88	21.586	1930.70	0.227E+10	1930.697	22	95.1705
242.00	2148.75	21.588	1932.33	0.227E+10	1932.334	22	95.78146
243.00	2107.63	21.592	1857.15	0.227E+10	1857.147	21	100.5613
244.00	2066.50	21.596	1862.94	0.227E+10	1862.939	21	102.8377
245.00	2025.38	21.598	1783.35	0.227E+10	1783.35	20	106.1288
246.00	1984.25	21.599	1784.94	0.227E+10	1784.94	20	106.7843
247.00	1943.13	21.600	1705.26	0.227E+10	1705.263	19	110.1273
248.00	1902.00	21.605	1710.87	0.227E+10	1710.872	19	112.5529
249.00	1664.25	21.606	1631.03	0.227E+10	1631.034	18	115.9943
250.00	1426.50	21.607	1632.57	0.227E+10	1632.573	18	116.6919
251.00	1188.75	21.601	1544.32	0.227E+10	1544.315	17	116.2478
252.00	951.00	21.597	1538.93	0.227E+10	1538.933	17	113.7157
253.00	713.25	21.588	1447.05	0.227E+10	1447.053	16	111.1355
254.00	475.50	21.578	1435.32	0.226E+10	1435.323	16	105.4452
255.00	237.75	21.565	1419.51	0.226E+10	1419.508	16	97.85019
256.00	0.00	21.548	1400.28	0.226E+10	1400.276	16	88.74041
257.00	0.00	21.531	1381.37	0.225E+10	1381.372	16	79.93236
258.00	0.00	21.515	1362.81	0.225E+10	1362.807	16	71.43666
259.00	0.00	21.498	1265.95	0.224E+10	1265.947	15	64.7032
260.00	0.00	21.481	1248.54	0.224E+10	1248.544	15	56.69158
261.00	0.00	21.464	1153.78	0.223E+10	1153.784	14	50.13078
262.00	0.00	21.451	1140.66	0.223E+10	1140.663	14	44.07704
263.00	0.00	21.437	1050.83	0.222E+10	1050.831	13	39.1211
264.00	0.00	21.424	1038.67	0.222E+10	1038.667	13	33.49122
265.00	0.00	21.410	950.60	0.221E+10	950.5964	12	28.75995
266.00	0.00	21.400	866.47	0.221E+10	866.4691	11	25.49163
267.00	0.00	21.391	783.12	0.221E+10	783.1159	10	22.25649
268.00	0.00	21.382	625.84	0.221E+10	625.8418	8	19.7985
269.00	0.00	21.373	469.82	0.220E+10	469.8212	6	17.26896
270.00	0.00	21.368	317.36	0.220E+10	317.3635	4	16.30871
271.00	0.00	21.364	165.49	0.220E+10	165.4901	2	15.28602
272.00	0.00	21.363	15.36	0.220E+10	15.35897	0	15.35897
273.00	0.00	21.365	16.08	0.220E+10	16.07747	0	16.07747
274.00	0.00	21.363	15.36	0.220E+10	15.35756	0	15.35756
275.00	0.00	21.365	16.08	0.220E+10	16.07605	0	16.07605
276.00	0.00	21.363	15.36	0.220E+10	15.35616	0	15.35616
277.00	0.00	21.365	16.07	0.220E+10	16.07462	0	16.07462
278.00	0.00	21.363	15.35	0.220E+10	15.35475	0	15.35475
279.00	0.00	21.365	16.07	0.220E+10	16.0732	0	16.0732
280.00	0.00	21.363	15.35	0.220E+10	15.35335	0	15.35335
281.00	0.00	21.365	16.07	0.220E+10	16.07177	0	16.07177
282.00	0.00	21.363	15.35	0.220E+10	15.35194	0	15.35194
283.00	0.00	21.365	16.07	0.220E+10	16.07034	0	16.07034
284.00	0.00	21.363	15.35	0.220E+10	15.35054	0	15.35054

VAALDAM DEMONSTRATION RUN. PROGRAM CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

285.00	0.00	21.365	16.07	0.220E+10	16.06892	0	16.06892
286.00	0.00	21.363	15.35	0.220E+10	15.34914	0	15.34914
287.00	0.00	21.365	16.07	0.220E+10	16.0675	0	16.0675
288.00	0.00	21.363	15.35	0.220E+10	15.34774	0	15.34774
289.00	0.00	21.365	16.07	0.220E+10	16.06607	0	16.06607
290.00	0.00	21.363	15.35	0.220E+10	15.34634	0	15.34634
291.00	0.00	21.365	16.06	0.220E+10	16.06464	0	16.06464
292.00	0.00	21.363	15.34	0.220E+10	15.34493	0	15.34493
293.00	0.00	21.365	16.06	0.220E+10	16.06322	0	16.06322
294.00	0.00	21.363	15.34	0.220E+10	15.34353	0	15.34353
295.00	0.00	21.365	16.06	0.220E+10	16.0618	0	16.0618
296.00	0.00	21.363	15.34	0.220E+10	15.34212	0	15.34212
297.00	0.00	21.365	16.06	0.220E+10	16.06038	0	16.06038
298.00	0.00	21.363	15.34	0.220E+10	15.34072	0	15.34072
299.00	0.00	21.365	16.06	0.220E+10	16.05895	0	16.05895
300.00	0.00	21.363	15.34	0.220E+10	15.33931	0	15.33931
301.00	0.00	21.365	16.06	0.220E+10	16.05752	0	16.05752
302.00	0.00	21.363	15.34	0.220E+10	15.33791	0	15.33791
303.00	0.00	21.365	16.06	0.220E+10	16.0561	0	16.0561
304.00	0.00	21.363	15.34	0.220E+10	15.33651	0	15.33651
305.00	0.00	21.364	16.05	0.220E+10	16.05468	0	16.05468
306.00	0.00	21.363	15.34	0.220E+10	15.3351	0	15.3351
307.00	0.00	21.364	16.05	0.220E+10	16.05326	0	16.05326
308.00	0.00	21.363	15.33	0.220E+10	15.33371	0	15.33371

PEAK INFLOW RATE= 4421.00m3/s
PEAK OUTFLOW RATE= 2377.33m3/s
LAG TIME= -74.00hours
PERCENTAGE ATTENUATION= 46.23%

Vaaldam Case Study, Analysis
using RESIMO with user operated
manual gate option

VAALDAM DEMONSTRATION RUN. USER CONTROLLED GATES.
1975 FLOOD SIMULATION.

ELEVATION

STORAGE

17	1.16795E+09
18	1.36292E+09
19	1.58055E+09
20	1.82235E+07
21	2.0922E+09
22	2.39028E+09
23	2.71225E+09
23.9	3.02165E+09

MANUALLY CONTROLLED OVERFLOW WEIR

NO	INVERT	FREE COEF	SPILL COEF	WIDTH	HEIGHT	TRAVEL
1	18.3	1.78	2.05	7.78	3	3.2
2	18.3	1.78	2.05	7.78	3	3.2
3	18.3	1.78	2.05	7.78	3	3.2
4	18.3	1.78	2.05	7.78	3	3.2
5	18.3	1.78	2.05	7.78	3	3.2
6	18.3	1.78	2.05	7.78	3	3.2
7	18.3	1.78	2.05	7.78	3	3.2
8	18.3	1.78	2.05	7.78	3	3.2
9	18.3	1.78	2.05	7.78	3	3.2
10	18.3	1.78	2.05	7.78	3	3.2
11	18.3	1.78	2.05	7.78	3	3.2
12	18.3	1.78	2.05	7.78	3	3.2
13	18.3	1.78	2.05	7.78	3	3.2
14	18.3	1.78	2.05	7.78	3	3.2
15	18.3	1.78	2.05	7.78	3	3.2
16	18.3	1.78	2.05	7.78	3	3.2
17	18.3	1.78	2.05	7.78	3	3.2
18	18.3	1.78	2.05	7.78	3	3.2
19	18.3	1.78	2.05	7.78	3	3.2
20	18.3	1.78	2.05	7.78	3	3.2
21	18.3	1.78	2.05	7.78	3	3.2
22	18.3	1.78	2.05	7.78	3	3.2
23	18.3	1.78	2.05	7.78	3	3.2
24	18.3	1.78	2.05	7.78	3	3.2
25	18.3	1.78	2.05	7.78	3	3.2
26	18.3	1.78	2.05	7.78	3	3.2
27	18.3	1.78	2.05	7.78	3	3.2
28	18.3	1.78	2.05	7.78	3	3.2
29	18.3	1.78	2.05	7.78	3	3.2
30	18.3	1.78	2.05	7.78	3	3.2
31	18.3	1.78	2.05	7.78	3	3.2
32	18.3	1.78	2.05	7.78	3	3.2
33	18.3	1.78	2.05	7.78	3	3.2
34	18.3	1.78	2.05	7.78	3	3.2
35	18.3	1.78	2.05	7.78	3	3.2
36	18.3	1.78	2.05	7.78	3	3.2
37	18.3	1.78	2.05	7.78	3	3.2
38	18.3	1.78	2.05	7.78	3	3.2
39	18.3	1.78	2.05	7.78	3	3.2
40	18.3	1.78	2.05	F-52 7.78	3	3.2

41	18.3	1.78	2.05	7.78	3	3.2
42	18.3	1.78	2.05	7.78	3	3.2
43	18.3	1.78	2.05	7.78	3	3.2
44	18.3	1.78	2.05	7.78	3	3.2
45	18.3	1.78	2.05	7.78	3	3.2
46	18.3	1.78	2.05	7.78	3	3.2
47	18.3	1.78	2.05	7.78	3	3.2
48	18.3	1.78	2.05	7.78	3	3.2
49	18.3	1.78	2.05	7.78	3	3.2
50	18.3	1.78	2.05	7.78	3	3.2
51	18.3	1.78	2.05	7.78	3	3.2
52	18.3	1.78	2.05	7.78	3	3.2
53	18.3	1.78	2.05	7.78	3	3.2
54	18.3	1.78	2.05	7.78	3	3.2
55	18.3	1.78	2.05	7.78	3	3.2
56	18.3	1.78	2.05	7.78	3	3.2
57	18.3	1.78	2.05	7.78	3	3.2
58	18.3	1.78	2.05	7.78	3	3.2
59	18.3	1.78	2.05	7.78	3	3.2
60	18.3	1.78	2.05	7.78	3	3.2

41	18.3	1.78	2.05	7.78	3	3.2
42	18.3	1.78	2.05	7.78	3	3.2
43	18.3	1.78	2.05	7.78	3	3.2
44	18.3	1.78	2.05	7.78	3	3.2
45	18.3	1.78	2.05	7.78	3	3.2
46	18.3	1.78	2.05	7.78	3	3.2
47	18.3	1.78	2.05	7.78	3	3.2
48	18.3	1.78	2.05	7.78	3	3.2
49	18.3	1.78	2.05	7.78	3	3.2
50	18.3	1.78	2.05	7.78	3	3.2
51	18.3	1.78	2.05	7.78	3	3.2
52	18.3	1.78	2.05	7.78	3	3.2
53	18.3	1.78	2.05	7.78	3	3.2
54	18.3	1.78	2.05	7.78	3	3.2
55	18.3	1.78	2.05	7.78	3	3.2
56	18.3	1.78	2.05	7.78	3	3.2
57	18.3	1.78	2.05	7.78	3	3.2
58	18.3	1.78	2.05	7.78	3	3.2
59	18.3	1.78	2.05	7.78	3	3.2
60	18.3	1.78	2.05	7.78	3	3.2

VAALDAM DEMONSTRATION RUN. USER CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

8.00	907.00	21.200	273.56	0.215E+10	273.5628	4	0
9.00	919.88	21.209	274.83	0.215E+10	274.8309	4	0
10.00	932.75	21.217	275.96	0.216E+10	275.9641	4	0
11.00	945.63	21.226	277.24	0.216E+10	277.2357	4	0
12.00	958.50	21.234	278.37	0.216E+10	278.3723	4	0
13.00	971.38	21.243	349.56	0.216E+10	349.5593	5	0
14.00	984.25	21.252	421.39	0.217E+10	421.3869	6	0
15.00	997.13	21.256	492.72	0.217E+10	492.715	7	0
16.00	1010.00	21.264	565.39	0.217E+10	565.3885	8	0
17.00	915.63	21.269	708.31	0.217E+10	708.3056	10	0
18.00	821.25	21.270	708.74	0.217E+10	708.744	10	0
19.00	726.88	21.271	709.18	0.217E+10	709.1823	10	0
20.00	632.50	21.272	709.62	0.217E+10	709.6208	10	0
21.00	538.13	21.270	708.93	0.217E+10	708.9256	10	0
22.00	443.75	21.266	848.82	0.217E+10	848.8235	12	0
23.00	349.38	21.257	985.81	0.217E+10	985.8104	14	0
24.00	255.00	21.248	981.33	0.217E+10	981.3345	14	0
25.00	303.00	21.240	977.35	0.216E+10	977.345	14	0
26.00	351.00	21.231	972.88	0.216E+10	972.8819	14	0
27.00	399.00	21.223	968.90	0.216E+10	968.904	14	0
28.00	447.00	21.219	966.72	0.216E+10	966.7206	14	0
29.00	495.00	21.214	964.54	0.216E+10	964.5381	14	0
30.00	543.00	21.206	960.57	0.215E+10	960.5704	14	0
31.00	591.00	21.202	958.39	0.215E+10	958.3932	14	0
32.00	639.00	21.197	956.22	0.215E+10	956.2172	14	0
33.00	657.50	21.193	954.04	0.215E+10	954.0428	14	0
34.00	676.00	21.192	953.44	0.215E+10	953.435	14	0
35.00	694.50	21.187	1087.16	0.215E+10	1087.157	16	0
36.00	713.00	21.183	1220.26	0.215E+10	1220.261	18	0
37.00	731.50	21.175	1350.21	0.214E+10	1350.208	20	0
38.00	750.00	21.167	1479.04	0.214E+10	1479.037	22	0
39.00	768.50	21.158	1472.11	0.214E+10	1472.112	22	0
40.00	787.00	21.150	1465.94	0.214E+10	1465.939	22	0
41.00	853.88	21.141	1459.03	0.213E+10	1459.034	22	0
42.00	920.75	21.133	1452.88	0.213E+10	1452.879	22	0
43.00	987.63	21.129	1449.50	0.213E+10	1449.501	22	0
44.00	1054.50	21.124	1446.13	0.213E+10	1446.125	22	0
45.00	1121.38	21.120	1442.75	0.213E+10	1442.751	22	0
46.00	1188.25	21.119	1441.81	0.213E+10	1441.808	22	0
47.00	1255.13	21.114	1438.44	0.213E+10	1438.438	22	0
48.00	1322.00	21.110	1435.07	0.212E+10	1435.071	22	0
49.00	1330.75	21.109	1434.13	0.212E+10	1434.13	22	0
50.00	1339.50	21.108	1433.19	0.212E+10	1433.189	22	0
51.00	1348.25	21.106	1432.25	0.212E+10	1432.248	22	0
52.00	1357.00	21.105	1431.31	0.212E+10	1431.308	22	0
53.00	1365.75	21.104	1430.37	0.212E+10	1430.368	22	0
54.00	1374.50	21.106	1431.85	0.212E+10	1431.851	22	0

VAALDAM DEMONSTRATION RUN. USER CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

55.00	1383.25	21.104	1430.37	0.212E+10	1430.365	22	0
56.00	1392.00	21.106	1431.85	0.212E+10	1431.848	22	0
57.00	1381.88	21.104	1430.36	0.212E+10	1430.362	22	0
58.00	1371.75	21.106	1431.85	0.212E+10	1431.846	22	0
59.00	1361.63	21.104	1430.36	0.212E+10	1430.359	22	0
60.00	1351.50	21.106	1431.84	0.212E+10	1431.843	22	0
61.00	1341.38	21.104	1430.36	0.212E+10	1430.357	22	0
62.00	1331.25	21.103	1429.42	0.212E+10	1429.416	22	0
63.00	1321.13	21.101	1428.48	0.212E+10	1428.477	22	0
64.00	1311.00	21.100	1427.54	0.212E+10	1427.538	22	0
65.00	1382.25	21.096	1553.65	0.212E+10	1553.649	24	0
66.00	1453.50	21.091	1679.15	0.212E+10	1679.153	26	0
67.00	1524.75	21.087	1804.05	0.212E+10	1804.05	28	0
68.00	1596.00	21.083	1799.78	0.212E+10	1799.784	28	0
69.00	1667.25	21.081	1798.59	0.212E+10	1798.593	28	0
70.00	1738.50	21.080	1797.40	0.212E+10	1797.402	28	0
71.00	1799.75	21.079	1796.21	0.212E+10	1796.211	28	0
72.00	1881.00	21.081	1798.09	0.212E+10	1798.09	28	0
73.00	1984.88	21.082	1799.28	0.212E+10	1799.277	28	0
74.00	2088.75	21.083	1800.47	0.212E+10	1800.466	28	0
75.00	2192.63	21.088	1804.73	0.212E+10	1804.728	28	0
76.00	2296.50	21.092	1808.99	0.212E+10	1808.993	28	0
77.00	2400.38	21.101	1817.70	0.212E+10	1817.703	28	0
78.00	2504.25	21.110	1826.43	0.212E+10	1826.425	28	0
79.00	2608.13	21.119	1835.16	0.213E+10	1835.161	28	0
80.00	2712.00	21.129	1844.85	0.213E+10	1844.852	28	0
81.00	2841.38	21.139	1854.56	0.213E+10	1854.559	28	0
82.00	2970.75	21.152	1867.82	0.214E+10	1867.821	28	0
83.00	3100.13	21.166	1881.12	0.214E+10	1881.117	28	0
84.00	3229.50	21.182	1897.57	0.215E+10	1897.57	28	0
85.00	3358.88	21.199	1914.07	0.215E+10	1914.07	28	0
86.00	3488.25	21.216	2068.52	0.216E+10	2068.519	30	0
87.00	3617.63	21.233	2225.39	0.216E+10	2225.387	32	0
88.00	3747.00	21.249	2244.41	0.217E+10	2244.407	32	0
89.00	3694.00	21.266	2263.48	0.217E+10	2263.481	32	0
90.00	3641.00	21.283	2282.61	0.218E+10	2282.609	32	0
91.00	3588.00	21.299	2301.79	0.218E+10	2301.79	32	0
92.00	3535.00	21.316	2321.92	0.219E+10	2321.923	32	.8972439
93.00	3482.00	21.333	2342.94	0.219E+10	2342.943	32	2.629532
94.00	3429.00	21.346	2360.40	0.220E+10	2360.404	32	4.42414
95.00	3376.00	21.360	2378.19	0.220E+10	2378.187	32	6.505342
96.00	3323.00	21.372	2394.51	0.220E+10	2394.511	32	8.604052
97.00	3460.25	21.385	2412.82	0.221E+10	2412.818	32	11.14264
98.00	3597.50	21.399	2431.37	0.221E+10	2431.369	32	13.89106
99.00	3734.75	21.416	2454.58	0.222E+10	2454.579	32	17.55047
100.00	3872.00	21.432	2478.12	0.222E+10	2478.116	32	21.48449

VAALDAM DEMONSTRATION RUN. USER CONTROLLED GATES.
1975 FLOOD SIMULATION.

TIME (hours)	INFLOW RATE (m3/s)	WATER LEVEL (m)	OUTFLOW RATE (m3/s)	STORAGE VOLUME (m3)	GATED FLOW (m3/s)	NUMBER OF GATES	SPILL (m3/s)
-----------------	--------------------------	-----------------------	---------------------------	---------------------------	-------------------------	--------------------	-----------------

101.00	4009.25	21.452	2506.52	0.223E+10	2506.522	32	26.49807
102.00	4146.50	21.469	2530.72	0.223E+10	2530.716	32	30.97494
103.00	4293.75	21.489	2559.87	0.224E+10	2559.865	32	36.59625
104.00	4421.00	21.509	2589.39	0.224E+10	2589.39	32	42.52164
105.00	4273.00	21.528	2619.28	0.225E+10	2619.279	32	48.73624
106.00	4125.00	21.545	2802.71	0.225E+10	2802.706	34	50.30432
107.00	3977.00	21.559	2982.87	0.226E+10	2982.869	36	50.32984
108.00	3829.00	21.568	3156.78	0.226E+10	3156.779	38	48.553
109.00	3681.00	21.572	3164.24	0.226E+10	3164.244	38	49.75263
110.00	3533.00	21.576	3171.72	0.226E+10	3171.724	38	50.96253
111.00	3385.00	21.581	3179.22	0.227E+10	3179.22	38	52.18208
112.00	3237.00	21.582	3181.31	0.227E+10	3181.312	38	52.52389
113.00	3243.38	21.583	3183.41	0.227E+10	3183.406	38	52.86647
114.00	3249.75	21.584	3185.50	0.227E+10	3185.501	38	53.20978
115.00	3256.13	21.586	3187.60	0.227E+10	3187.597	38	53.55385
116.00	3262.50	21.587	3189.69	0.227E+10	3189.694	38	53.89863
117.00	3268.88	21.588	3191.79	0.227E+10	3191.792	38	54.24415
118.00	3275.25	21.589	3193.89	0.227E+10	3193.891	38	54.59042
119.00	3281.63	21.591	3195.99	0.227E+10	3195.991	38	54.93742
120.00	3288.00	21.592	3198.09	0.227E+10	3198.092	38	55.28515
121.00	3268.75	21.593	3200.19	0.227E+10	3200.194	38	55.63361
122.00	3249.50	21.594	3202.30	0.227E+10	3202.298	38	55.98278
123.00	3230.25	21.592	3198.96	0.227E+10	3198.964	38	55.42943
124.00	3211.00	21.594	3202.29	0.227E+10	3202.292	38	55.98171
125.00	3191.75	21.592	3198.96	0.227E+10	3198.957	38	55.42934
126.00	3172.50	21.594	3202.29	0.227E+10	3202.285	38	55.98061
127.00	3153.25	21.592	3198.95	0.227E+10	3198.951	38	55.42726
128.00	3134.00	21.594	3202.28	0.227E+10	3202.278	38	55.97953
129.00	3089.00	21.592	3198.94	0.227E+10	3198.944	38	55.42617
130.00	3044.00	21.591	3196.84	0.227E+10	3196.836	38	55.07708
131.00	2999.00	21.590	3194.73	0.227E+10	3194.728	38	54.72871
132.00	2954.00	21.585	3187.20	0.227E+10	3187.199	38	53.4884
133.00	2909.00	21.584	3185.10	0.227E+10	3185.096	38	53.14342
134.00	2864.00	21.580	3177.58	0.227E+10	3177.584	38	51.91531
135.00	2819.00	21.575	3170.09	0.226E+10	3170.085	38	50.69681
136.00	2774.00	21.571	3162.60	0.226E+10	3162.601	38	49.48798
137.00	2755.38	21.567	3155.13	0.226E+10	3155.13	38	48.28894
138.00	2736.75	21.559	3141.57	0.226E+10	3141.571	38	46.13212
139.00	2718.13	21.554	3134.14	0.226E+10	3134.143	38	44.96154
140.00	2699.50	21.550	3126.73	0.226E+10	3126.727	38	43.80054
141.00	2680.88	21.544	3117.14	0.225E+10	3117.142	38	42.31199
142.00	2662.25	21.536	3103.72	0.225E+10	3103.717	38	40.24956
143.00	2643.63	21.532	3096.36	0.225E+10	3096.364	38	39.13147
144.00	2625.00	21.527	3089.02	0.225E+10	3089.021	38	38.02346
145.00	2777.38	21.523	3081.69	0.225E+10	3081.694	38	36.9261
146.00	2929.75	21.522	3079.65	0.225E+10	3079.649	38	36.6213

Author Furstenburg Leon

Name of thesis Optimum Reservoir Operation During Floods. 1985

PUBLISHER:

University of the Witwatersrand, Johannesburg

©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.