

ENVIRONMENTAL STATEMENT
VOLUME 4 – A15.2 SUMMARY OF FLOW MEASUREMENTS TAKEN IN
SHARKS VALLEY, APRIL 2007
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A15.2 SUMMARY OF FLOW MEASUREMENTS TAKEN IN SHARKS VALLEY, APRIL 2007

15.1 Flow Data

A limited amount of flow data is available for Sharks Valley. The St Helena Government (SHG) Public Works & Services Department (PWSD) currently estimate the daily flow in Sharks Valley on a weekly basis at four locations along the watercourse. The four locations are referred to as; A1, A1+A2, C and D as illustrated in Diagram 1.

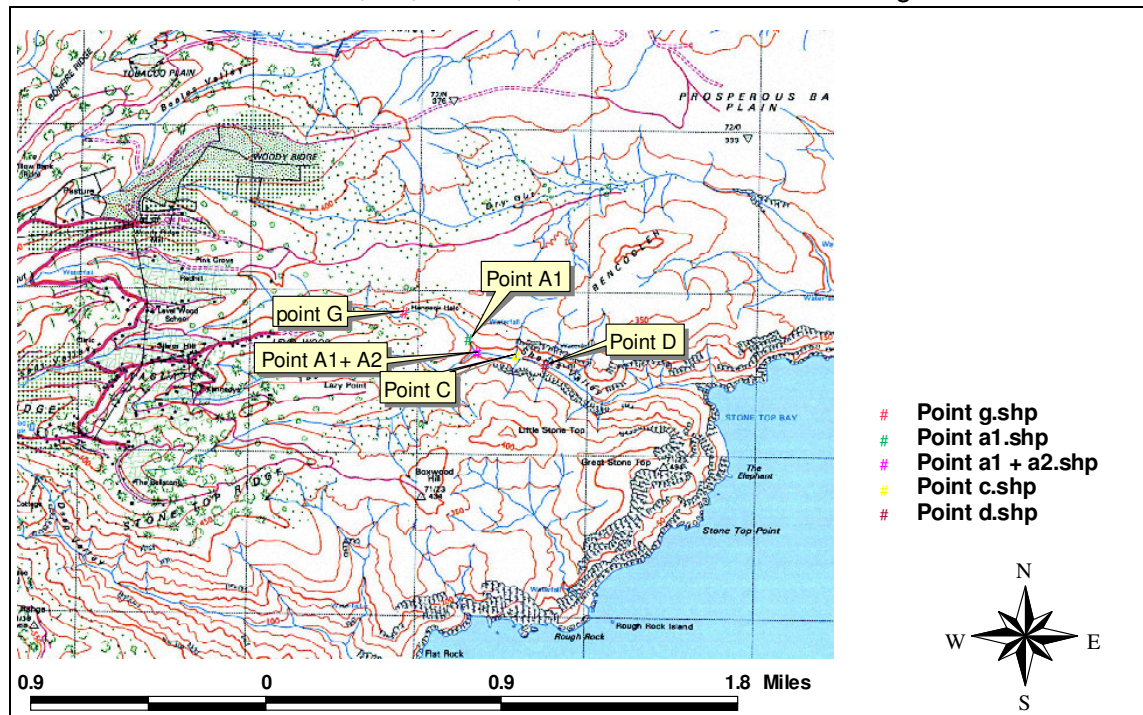


Diagram 1: Locations where PWSD estimate daily flows along Sharks Valley

The record is weekly from July 2006 to date with additional readings recorded intermittently between March 2005 and April 2006. There are estimates of the daily flow at the four main locations along Sharks Valley. Additionally there are readings available at point G in Figure 1 and readings at the waterfall at the end of Sharks Valley which is not illustrated in Figure 1. This data is included as Appendix A. PWSD report that the flow tests are conducted using a stop watch and 30 litre (0.03m³) container, where the length of time to fill the container is used as a means of calculating the daily flow.

In addition to the PWSD data the Royal Engineers estimated daily flows on a weekly basis between January and December 1979. This data-set comprises 46 readings at five locations along Sharks Valley; G, A1, A2, B, and C as illustrated in Figure 2.

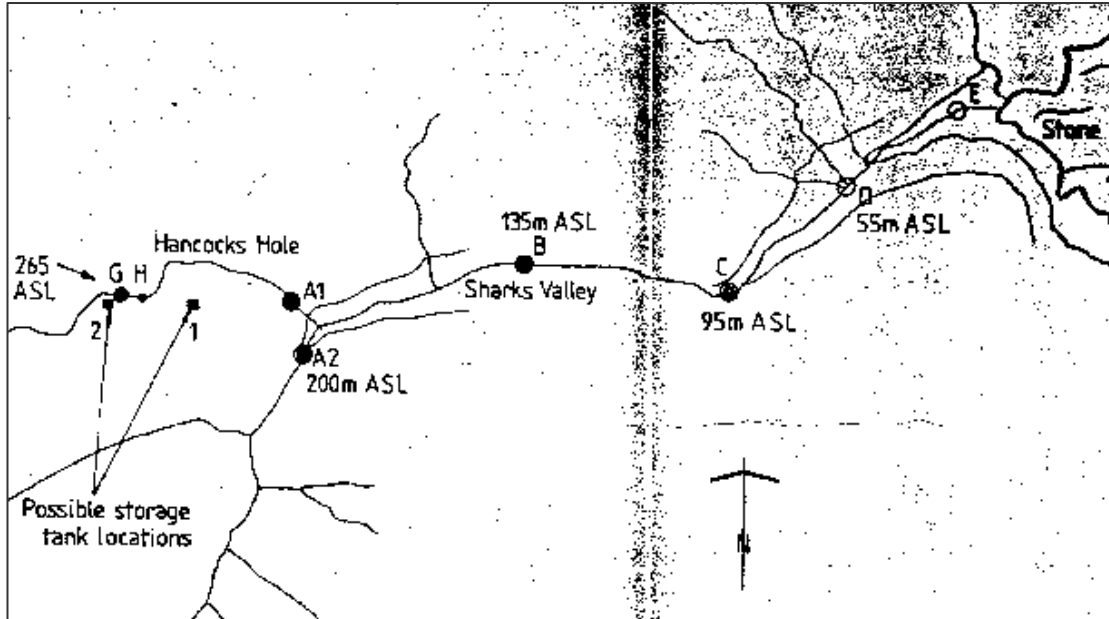


Diagram 2: Locations where the Royal Engineers estimated daily flows along Sharks Valley

The Royal Engineers data made available for this project is provided in Appendix A. The locations where flows are estimated are slightly different between the two data-sets; whereas the Royal Engineers added the flow recorded at A1 to A2, PWSD take a single measurement downstream of the confluence. It should also be noted that the Royal Engineers point B is slightly downstream of the PWSD point C and the Royal Engineers point C is much further downstream than the current point D.

The proposed abstraction point on Sharks Valley is referred to as “A1+A2” for which data from PWSD and the Royal Engineers is comparable.

Appendix A: Flow Data

PWSD Flow Data (m³/day)

Date	Location					
	G	A1	A1+A2	C	D	waterfall
08/03/2005	74.1	216	432	370	370	
07/06/2005		288	370	432	432	
09/07/2005		235.6	324	370.3	370	
06/09/2005		216	346	432	288	
04/03/2006	43.9	216	288	370	370	
25/04/2006		216	324	398.8	432	
24/06/2006		216	324	370.3	370.3	
01/07/2006		199.4	324	324	324	
08/07/2006		199.4	324	345.6	345.6	
15/07/2006		235.6	324	370.3	370.3	
22/07/2006		235.6	324	370.3	370.3	
29/07/2006		235.6	324	370.3	370.3	
08/08/2006		235.6	324	370.3	370.3	
12/08/2006		235.6	324	370.3	370.3	
19/08/2006		235.6	324	370.3	370.3	
23/09/2006		216	370.3	398.8	398.8	
30/09/2006		216	370.3	398.8	398.8	
07/10/2006		199.4	324	370.3	370.3	
14/10/2006		199.4	518.4	370.3	370.3	
22/10/2006		199.4	324	370.3	370.3	
28/10/2006		199.4	324	370.3	370.3	
04/11/2006		199.4	324	370.3	370.3	
11/11/2006		199.4	324	370.3	370.3	
18/11/2006		216	370.3	370.3	370.3	
25/11/2006		216	370.3	370.3	370.3	
28/11/2006		216	370.3	370.3	370.3	648
02/12/2006		216	370.3	370.3	370.3	
09/12/2006		216	370.3	370.3	370.3	
16/12/2006		199	259.0	288.0	288.0	
23/12/2006		185	288.0	288.0	288.0	518.0
30/12/2006		185	288.0	288.0	288.0	
02/01/2007		173	288.0	324.0	324.0	518.0
09/01/2007		173	288.0	324.0	324.0	
16/01/2007		173	288.0	324.0	324.0	518.0
23/01/2007		173	288.0	324.0	324.0	
26/01/2007		173	288.0	324.0	324.0	518.0
03/02/2007		199	288.0	288.0	288.0	518.0
10/02/2007		199	288.0	288.0	288.0	
17/02/2007		216	288.0	288.0	288.0	518.0
24/02/2007		216	288.0	288.0	288.0	
03/03/2007		199	288.0	288.0	288.0	518.0
10/03/2007		199	288.0	288.0	288.0	
17/03/2007		199	370.0	370.0	370.0	648.0
24/03/2007		199	370.0	370.0	370.0	
31/03/2007		199	370.0	370.0	370.0	648.0
07/04/2007		199	324.0	324.0	324.0	518.0
14/04/2007		199	324.0	324.0	324.0	
21/04/2007		216	370.0	370.0	370.0	648.0

Royal Engineers Flow Data (m³/day)

Date	Rainfall (mm)	A1	A2	A1+A2	B	C	G
24/01/1979	NR	460	NR	NR	568	831	309
14/02/1979	NR	477	NR	NR	545	745	216
21/02/1979	23.3	545	114	659	7200	1080	223
28/02/1979	33.4	2160	545	2705	10800	10800	1800
07/03/1979	2.3	545	98	643	720	1080	360
15/03/1979	25.9	939	103	1042	720	1080	477
21/03/1979	5.1	1029	103	1132	1137	1662	720
28/03/1979	0.5	697	94	791	982	1137	441
04/04/1979	6	720	102	822	1080	1662	527
11/04/1979	2.5	675	98	773	939	1029	372
18/04/1979	7.7	720	98	818	982	1080	477
25/04/1979	1	720	98	818	939	1029	408
02/05/1979	7.6	554	95	649	745	1029	288
09/05/1979	15.8	982	102	1084	1137	1800	675
16/05/1979	0	617	103	720	771	1200	309
23/05/1979	1	554	98	652	771	982	270
30/05/1979	11.2	545	102	647	771	1029	277
06/06/1979	10.1	545	98	643	771	1080	300
13/06/1979	2.8	568	102	670	771	1080	309
20/06/1979	3.3	554	101	655	745	1080	288
27/06/1979	8.7	720	99	819	982	1271	408
04/07/1979	0	568	98	666	771	1137	270
11/07/1979	23.3	720	98	818	939	1137	386
18/07/1979	11.2	617	108	725	745	1080	309
25/07/1979	11.6	771	98	869	1080	1543	545
01/08/1979	10.4	720	103	823	982	1080	477
08/08/1979	12.4	720	101	821	939	1200	486
15/08/1979	3.6	697	102	799	1029	1080	360
22/08/1979	15.2	771	108	879	939	1200	470
29/08/1979	0	745	103	848	900	1029	379
05/09/1979	2.5	720	102	822	864	1080	360
12/09/1979	0	617	108	725	771	982	304
19/09/1979	0.5	584	102	686	831	1080	313
26/09/1979	10.6	1080	103	1183	1543	1964	720
03/10/1979	0.8	554	104	658	900	1080	309
09/10/1979	0	554	103	657	800	1080	270
16/10/1979	3.3	600	103	703	900	1029	304
23/10/1979	8.8	554	108	662	864	1080	309
31/10/1979	2.1	554	108	662	831	1080	304
07/11/1979	3.8	545	107	652	864	1080	292
14/11/1979	7	720	103	823	900	1137	360
21/11/1979	3.8	584	103	687	864	1137	348
28/11/1979	3.1	600	104	704	864	1080	379
05/12/1979	5.6	584	103	687	864	1137	348
12/12/1979	0.5	545	102	647	864	1080	281
19/12/1979	0.3	527	103	630	831	1029	273