

Table 4.

Halema'uma'u Overlook vent¹ SO₂ emission rates, stationary scanning measurements.

Note: For 2008-2010 the uncertainty in the radiative transfer of light through the plume may result in minimum constraint emission rates. Simulated Radiative Transfer DOAS (SRT-DOAS), simulates realistic light paths in and around the volcanic plume containing variable amounts of SO₂ and aerosols. These data are presented without SRT-DOAS adjustment. Date and Time are in Hawaiian Standard Time (HST).

Vertical Scans												Traverse measurements ²		
Date HST	Time HST	SO ₂ (t/d)	SD (t/d)	Cycles	WS (m/s)	WD (°)	FLYSPEC azimuth (°)	FLYSPEC location	Distance to plume (m)	SO ₂ (t/d)	SD (t/d)	N	traverse time	
5/9/08	1011-1501	320	135	242	7.2	34	270	a	725	690	170	7	0900-1000	
5/9/08	1107-1455	475	200	103	7.2	45	135	b	535	770	180	7	1310-1400	
5/29/08	1117-1125	960	300	14	6.4	40	130	b	650	920	70	2	1117-1127	
5/29/08	1329-1529 ³	780	420	210	6.4	40	130	b	650	1015	220	5	1058-1137	
6/3/08	0927-1400 ³	680	320	315	5.0	50	140	b	500	806	404	16	915-1115	
5/5/10	1017-1118 ³	475	240	59	7.0	50	140	b	500	880	165	8	1000-1100	
5/6/10	1108-1115	430	140	3	7.6	30	140	b	980	978	216	6	1100-1200	
5/6/10	1116-1142	780	290	19	7.6	30	150	b	1080	978	216	6	1100-1200	
5/6/10	1150-1204	600	240	10	7.6	30	135	b	950	978	216	6	1100-1200	
5/6/10	1204-1312	990	340	47	7.6	30	135	b	950	978	216	6	1100-1200	
5/13/10	1318-1650 ³	470	120	156	5.5	75	155	b	630	615	160	2	930, 1130	
5/14/10	1055-1101	580	190	2	5.5	30	300	a	440	490	190	5	1052-1128	
5/14/10	1105-1316	330	210	134	5.5	30	300	a	440	490	190	5	1052-1128	
5/14/10	1321-1413	270	160	37	5.5	30	295	a	235	490	190	5	1052-1128	
5/14/10	1147-1400 ³	840	610	141	5.5	30	120	b	715	490	190	5	1052-1128	
7/24/10	1307-1330	670	270	42	4.0	30	150	d	1900	650	170	8	7/26/10	
7/24/10	1313-1335	701	430	49	4.0	30	150	d	1900	650	170	8	7/26/10	
8/6/10	1126-1200 ³	480	210	41	3.5	60	150	b	260	630	175	8	0931-1030	
8/6/10	1209-1500 ³	420	160	288	3.5	60	280	a	850	630	175	8	0931-1030	

Horizontal Scans												Traverse measurements ²		
Date HST	Time HST	SO ₂ (t/d)	SD (t/d)	Cycles	Plume rise rate (m/s)	FLYSPEC elevation Ø	FLYSPEC location	Distance to plume (m)	SO ₂ (t/d)	SD (t/d)	N	traverse time		
10/7/08	1051-1230 ³	850	80	116	3	20	c	830	950	230	6	10/6/08		

Data were collected using the automated scanning FLYSPEC mirror and the data reduced using ScanCalc software.

Footnote 1. Location: -155.280102778 W 19.40476111 N

Footnote 2. Average for integrated SO₂, standard deviation, and number of traverses, as measured by vehicle along Crater Rim Drive. Closest day's average to scanning data noted if no contemporaneous data.

Footnote 3. These results represent the most stable plume conditions from a larger dataset

Abbreviations: t/d=metric tonne (1000 kg)/day, SD=standard deviation, WS=wind speed, m/s= mteres per second, WD=wind direction east of true north, cycles=number of complete plume scans, m= meters, N= number of traverses