

Table SE1 Source parameters for analysed events

Nr	Date	M _W	M ₀ [Nm]	E _R [J]	σ _a [Pa]	Δσ [Pa]	R [m]	MT decomposition [%]		
								ISO	CLVD	DC
Group IA: post-blasting events recorded up to 30 s after detonation										
1	Feb 2011	1.9	7.7E+11	2E+05	5.5E+03	5.3E+05	86	29	41	30
2	Feb 2011	2.3	2.9E+12	3E+05	9.6E+03	9.0E+06	52	28	67	5
3	Mar 2011	2.9	1.9E+13	4E+05	1.5E+02	1.9E+06	163	19	69	12
4	May 2011	2.0	1.2E+12	2E+05	1.8E+04	7.8E+06	40	38	39	23
5	Aug 2011	2.3	2.4E+12	2E+05	8.5E+03	1.1E+07	46	28	64	8
6	Oct 2011	2.5	6.1E+12	1E+05	2.8E+02	7.2E+05	155	17	63	20
7	Nov 2011	2.3	3.0E+12	2E+05	6.0E+03	1.4E+07	46	26	52	22
8	Jan 2012	1.5	3.0E+11	3E+05	1.8E+04	3.9E+05	70	37	45	19
9	Mar 2012	1.6	3.9E+11	2E+05	2.6E+04	5.4E+05	68	33	49	19
10	Jun 2012	1.5	3.5E+11	1E+05	1.5E+04	4.8E+05	68	31	62	7
11	Sep 2012	1.5	2.8E+11	1E+05	1.4E+04	4.0E+05	67	30	58	12
12	Dec 2012	1.5	3.7E+11	2E+05	1.4E+04	4.8E+05	69	35	57	8
13	Mar 2013	1.5	4.0E+11	2E+05	1.5E+04	4.7E+05	72	43	42	15
14	May 2013	1.2	1.4E+11	1E+05	3.4E+04	2.5E+05	63	15	70	15
15	Jun 2013	1.6	4.6E+11	2E+05	1.4E+04	5.4E+05	72	33	60	7
16	Sep 2013	1.6	4.1E+11	1E+05	9.1E+03	2.7E+05	87	25	64	11
17	Sep 2013	1.6	6.1E+11	5E+05	9.6E+03	2.0E+05	110	17	76	7
18	Oct 2014	2.3	8.7E+12	3E+06	3.4E+03	2.2E+05	260	18	77	6
19	Nov 2014	2.5	1.5E+13	4E+06	3.6E+03	2.4E+05	299	30	57	13
Group IB: post-blasting events recorded in the waiting time										
20	Jan 2011	3.0	2.8E+13	7E+06	4.0E+03	1.2E+06	219	10	21	69
21	Feb 2011	2.3	3.2E+12	3E+05	4.7E+02	2.9E+06	78	25	66	9
22	Feb 2011	2.1	1.6E+12	2E+05	9.7E+02	1.5E+06	77	26	53	21
23	Mar 2011	3.5	1.7E+14	1E+07	9.5E+02	4.6E+06	255	16	79	4
24	Mar 2011	2.0	8.7E+11	2E+05	1.2E+03	3.3E+05	105	7	64	29
25	May 2011	3.5	1.8E+14	9E+06	4.9E+02	3.9E+06	271	18	70	12
26	Aug 2011	2.9	2.4E+13	1E+07	5.1E+03	5.0E+05	275	8	26	66
27	Sep 2011	2.4	3.5E+12	3E+05	4.9E+02	1.5E+06	101	19	62	20
28	Jan 2012	1.4	2.0E+11	1E+05	1.6E+04	4.1E+05	60	18	70	12
29	Feb 2012	1.2	1.1E+11	1E+05	2.0E+04	6.0E+05	43	20	63	17
30	May 2012	1.4	2.1E+11	1E+05	4.6E+03	1.9E+05	79	21	55	23
31	Jun 2012	1.5	3.6E+11	3E+05	1.1E+04	3.0E+05	81	19	52	29
32	Jun 2012	2.4	8.9E+12	2E+07	1.3E+04	4.1E+05	211	16	62	23
33	Jun 2012	1.3	1.7E+11	2E+05	1.3E+04	2.4E+05	67	17	64	19
34	Jul 2012	1.2	1.4E+11	1E+05	2.6E+04	5.3E+05	48	18	57	24
35	Aug 2012	1.3	2.1E+11	2E+05	1.5E+04	5.2E+05	56	18	70	12
36	Sep 2012	1.7	8.9E+11	1E+06	1.1E+04	4.1E+05	99	20	43	38
37	Oct 2012	1.3	1.7E+11	2E+05	2.8E+04	5.6E+05	51	18	66	17
38	Oct 2012	1.3	1.5E+11	2E+05	4.1E+04	6.8E+05	46	16	70	14
39	Oct 2012	1.4	2.2E+11	2E+05	1.5E+04	3.5E+05	65	9	79	12
40	Dec 2012	2.6	3.0E+13	2E+07	1.3E+04	7.3E+05	263	7	59	34
41	Feb 2013	2.6	2.0E+13	2E+07	1.5E+04	5.4E+05	253	16	72	12
42	Apr 2013	2.1	2.5E+12	2E+06	1.8E+04	4.3E+05	137	23	54	23
43	May 2013	1.4	3.4E+11	2E+05	6.5E+03	3.7E+05	74	17	72	11
44	Jun 2013	1.6	4.8E+11	6E+05	2.3E+04	5.0E+05	75	11	50	39
45	Jun 2013	1.5	4.3E+11	2E+05	4.3E+03	1.4E+05	111	25	65	10
46	Oct 2013	1.5	3.3E+11	3E+05	1.6E+04	3.5E+05	75	15	79	7
47	Nov 2013	1.3	1.5E+11	2E+05	4.0E+03	1.8E+05	72	18	68	14
48	Jan 2014	1.3	1.8E+11	1E+05	1.2E+04	2.3E+05	70	16	61	23
49	Jan 2014	1.6	4.9E+11	5E+05	8.6E+03	1.6E+05	110	6	71	24

50	Feb 2014	1.3	1.6E+11	1E+05	4.2E+03	1.9E+05	72	18	72	10
51	Apr 2014	1.4	2.0E+11	2E+05	4.8E+03	1.5E+05	83	15	73	12

Group II: Non-provoked mining events

52	Jan 2011	2.2	1.9E+12	3E+05	1.1E+03	9.4E+05	95	-24	-60	16
53	Jan 2011	2.0	1.1E+12	5E+05	2.9E+03	3.6E+05	110	-30	-48	22
54	Jan 2011	1.9	7.8E+11	2E+05	3.4E+03	1.1E+06	67	-26	-62	13
55	Feb 2011	1.6	2.9E+11	1E+05	5.2E+03	6.7E+05	57	-30	-53	18
56	Mar 2011	2.2	2.2E+12	2E+05	8.5E+02	1.3E+06	91	-24	-64	12
57	Apr 2011	3.3	1.6E+14	3E+07	1.4E+03	7.8E+06	206	15	74	12
58	May 2011	2.2	2.2E+12	2E+05	4.8E+02	2.0E+06	78	-24	-57	19
59	May 2011	2.1	1.5E+12	1E+05	5.6E+02	1.6E+06	74	-25	-61	14
60	Jun 2011	3.4	1.3E+14	2E+07	2.2E+03	2.6E+06	282	15	32	53
61	Jul 2011	2.7	1.1E+13	2E+05	7.9E+02	2.0E+07	62	19	61	20
62	Jul 2011	2.3	3.2E+12	3E+05	6.4E+02	1.4E+07	46	20	67	13
63	Aug 2011	2.4	3.5E+12	2E+05	2.9E+02	1.6E+06	99	-27	-58	15
64	Sep 2011	2.0	9.6E+11	1E+05	1.6E+03	4.4E+06	46	-27	-18	55
65	Oct 2011	2.9	2.5E+13	2E+07	1.1E+04	4.3E+05	292	4	-3	93
66	Oct 2011	2.3	3.3E+12	4E+05	1.7E+03	5.6E+06	63	14	55	31
67	Nov 2011	3.5	1.9E+14	2E+07	2.0E+03	2.6E+06	316	-16	-34	50
68	Dec 2011	2.2	1.7E+12	4E+05	3.3E+03	3.0E+06	63	7	24	69
69	Jan 2012	1.6	3.9E+11	9E+05	2.6E+04	3.8E+05	76	-25	-67	8
70	Jan 2012	1.6	4.8E+11	9E+05	2.1E+04	4.4E+05	78	15	43	42
71	Jan 2012	2.0	1.9E+12	9E+05	8.8E+03	2.5E+05	148	17	55	28
72	Mar 2012	1.7	4.1E+11	2E+05	8.9E+03	1.0E+06	56	9	-7	84
73	May 2012	1.8	9.7E+11	5E+05	9.0E+03	3.8E+05	104	14	60	26
74	Jun 2012	1.9	1.1E+12	4E+05	1.0E+04	2.2E+05	131	-3	38	59
75	Aug 2012	1.6	4.6E+11	3E+05	1.1E+04	3.2E+05	86	14	68	18
76	Oct 2012	2.4	4.1E+12	3E+05	1.6E+03	4.2E+06	75	-14	-48	38
77	Nov 2012	1.6	5.9E+11	2E+05	1.5E+04	4.6E+05	83	18	76	7
78	Nov 2012	1.7	5.0E+11	2E+05	1.6E+04	2.8E+05	93	14	65	21
79	Nov 2012	1.6	5.6E+11	2E+05	1.2E+04	2.2E+05	104	9	71	20
80	Nov 2012	1.8	8.7E+11	2E+05	9.1E+03	2.9E+05	110	13	27	60
81	Jan 2013	1.7	6.2E+11	2E+05	1.1E+04	1.8E+05	114	17	26	57
82	Jan 2013	1.9	1.4E+12	2E+05	5.8E+03	2.3E+05	136	8	67	25
83	Mar 2013	1.6	4.4E+11	2E+05	1.1E+04	2.1E+05	97	-15	-42	43
84	Apr 2013	1.7	8.4E+11	2E+05	8.3E+03	1.7E+05	130	12	67	21
85	May 2013	1.4	2.3E+11	2E+07	4.9E+03	2.1E+05	79	-26	-56	18
86	Jul 2013	1.8	8.6E+11	2E+05	1.0E+04	2.8E+05	111	-10	41	49
87	Jul 2013	2.5	1.4E+13	2E+05	6.8E+03	3.7E+05	257	17	71	12
88	Aug 2013	1.6	4.3E+11	2E+05	1.4E+04	5.6E+05	70	22	50	28
89	Sep 2013	1.7	6.8E+11	2E+05	8.4E+03	2.4E+05	108	9	35	56
90	Oct 2013	1.6	5.7E+11	1E+05	1.0E+04	1.5E+05	118	12	73	15
91	Oct 2013	2.1	2.1E+12	1E+05	2.9E+03	1.2E+05	196	13	33	54
92	Nov 2013	1.7	5.2E+11	1E+05	6.4E+03	2.1E+05	103	17	73	10
93	Nov 2013	2.1	1.6E+12	2E+05	3.1E+03	1.2E+06	82	16	22	62
94	Dec 2013	1.6	4.4E+11	1E+05	1.3E+04	2.0E+05	98	11	74	15
95	Dec 2013	2.0	1.1E+12	5E+05	4.8E+03	9.5E+05	79	-4	43	53
96	Jan 2014	2.0	1.1E+12	2E+05	8.7E+02	8.3E+05	82	-22	-34	44
97	Apr 2014	2.0	2.1E+12	1E+06	2.5E+03	1.4E+05	188	6	21	73
98	May 2014	2.0	2.1E+12	1E+05	4.4E+03	2.1E+05	162	6	40	54
99	Jun 2014	1.8	5.2E+11	1E+05	1.1E+03	5.8E+05	73	15	74	11
100	Jun 2014	1.6	4.4E+11	1E+06	3.9E+03	1.4E+05	110	-27	-68	5
101	Sep 2014	2.1	1.7E+12	2E+05	7.9E+02	1.6E+06	77	-33	-65	2