

Appendix C – SRK Humidity Cell and Barrel Test Static Data

Appendix C1 – SRK Humidity Cell and Barrel Test ABA Dataset

Kinetic Test ID	Sample ID	Paste pH	Total Sulphur Wt.%	Sulphate Sulphur Wt.%	Sulphide Sulphur Wt.%	AP (total S) kg CaCO ₃ /t	Total Carbon Wt.%	CO ₂ Wt.%CO ₂	TIC kg CaCO ₃ /t	Modified Sobek NP kg CaCO ₃ /t	Fizz Rating	NP/AP	TIC/AP
HC-36	08TDD631-SRK-WR-435	8.3	6.03	0.01	6.02	188.44	1.99	10.89	156.40	120.34	Strong	0.64	0.83
HC-42	208828	8.4	0.10	<0.01	0.10	3.13	--	7.82	177.50	165.28	Strong	52.89	56.80
HC-43	208885	8.8	0.52	<0.01	0.52	16.25	--	11.17	253.60	188.13	Strong	11.58	15.61
HC-44	208888	8.7	0.31	<0.01	0.31	9.69	--	9.51	215.90	193.75	Strong	20.00	22.29
HC-45	202734	8.9	2.37	<0.01	2.37	74.06	--	10.25	232.70	160.63	Strong	2.17	3.14
HC-46	202736	8.8	0.29	<0.01	0.29	9.06	--	6.24	141.60	116.41	Strong	12.85	15.62
HC-47	202713	9.5	0.10	<0.01	0.10	3.13	--	0.77	17.50	27.78	Moderate	8.89	5.60
HC-48	202708	9.2	0.12	<0.01	0.12	3.75	--	0.46	10.40	19.44	Slight	5.19	2.77
HC-49	178784	9.2	0.17	<0.01	0.17	5.31	--	14.56	330.50	175.68	Strong	33.07	62.21
HC-50	178823	8.8	1.78	<0.01	1.78	55.63	--	14.78	335.50	201.68	Strong	3.63	6.03
HC-51	178814	9.0	1.19	<0.01	1.19	37.19	--	18.37	417.00	245.65	Strong	6.61	11.21
HC-52	178769	9.0	1.69	<0.01	1.69	52.81	--	13.3	301.90	172.50	Strong	3.27	5.72
HC-53	178719	8.5	0.09	<0.01	0.09	2.81	--	0.15	3.40	2.69	Slight	0.96	1.21
HC-54	178726	8.8	0.61	<0.01	0.61	19.06	--	1.24	28.15	20.30	Moderate	1.06	1.48
HC-65	HB-214522	9.1	0.10	0.01	0.09	3.13	--	--	0.45	9.20	None	2.94	0.15
HC-6 / Barrel W5	08-DOR-WR-05	8.6	0.13	<0.01	0.13	4.06	1.94	6.89	156.40	128.45	Strong	31.62	38.50
HC-7 / Barrel W1	08-DOR-WR-02	8.4	0.11	<0.01	0.11	3.44	3.19	11.4	258.78	160.93	Strong	46.82	75.28
	Wt. Av. Composite	8.3	0.17	0.01	0.16	5.19	2.98	--	243.58	173.26	--	33.39	46.95
Barrel W9	HB DCEN 08TDD628	9.16	2.05	0.01	2.04	64.06	4.17	15.4	350.00	180.41	Strong	2.82	5.46
Barrel W10	HB DCEN 08TDD623	9.79	0.03	<0.01	0.03	0.94	0.06	0.17	3.86	21.21	None	22.63	4.12
Barrel W13	HB DCEN/DCONN TDD067, 131, 383 Comp	8.8	0.06	0.01	0.05	1.88	1	3.51	79.77	76.45	Strong	40.77	42.55

Appendix C2 – SRK Humidity Cell and Barrel Test Solid-Phase Trace Metal
Dataset (ICP Metals by Aqua Regia Digestion)

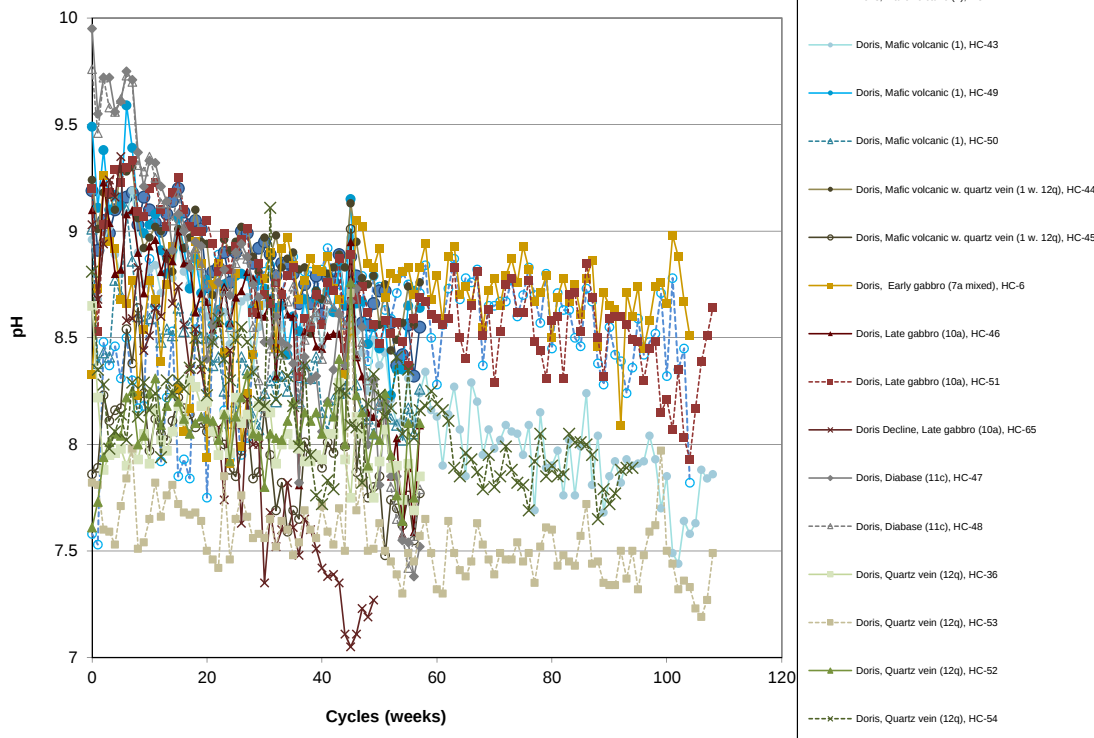
Kinetic Test ID	Sample ID	Al ppm	Sb ppm	As ppm	Ba ppm	Bi ppm	B ppm	Cd ppm	Ca ppm	Cr ppm	Co ppm	Cu ppm	Fe ppm	Pb ppm	Mg ppm	Mn ppm	Hg ppm	Mo ppm	Ni ppm	P ppm	K ppm
HC-36	08TDD631-SRK-WR-435	1,600	0.1	89.5	8.0	0.5	<20	<0.1	33,100	106	26.4	37	72,200	3.0	9,100	1,185	<0.01	0.3	4.2	520	500
HC-42	208828	38,700	0.1	1.7	12.0	<0.1	<20	<0.1	60,500	22	30.0	32	96,200	0.6	13,400	1,692	<0.00001	1.7	3.2	790	600
HC-43	208885	24,900	0.1	20.6	22.0	<0.1	<20	<0.1	48,500	13	28.2	27	89,400	0.9	17,400	2,210	<0.00001	0.7	2.3	810	1,300
HC-44	208888	26,900	0.1	12.4	18.0	<0.1	<20	0.4	61,400	43	31.9	71	68,300	2.3	17,800	1,606	<0.00001	1.5	33.0	570	1,200
HC-45	202734	7,200	0.1	50.9	7.0	0.2	<20	0.2	44,000	42	32.8	84	68,900	2.4	13,100	1,548	<0.00001	2.7	18.2	680	500
HC-46	202736	31,300	0.1	7.6	5.0	<0.1	<20	<0.1	35,600	10	35.8	40	98,300	0.7	15,500	1,706	<0.00001	0.7	2.5	780	400
HC-47	202713	34,000	0.1	1.4	3.0	<0.1	<20	<0.1	12,500	36	46.9	74	92,900	0.5	25,400	1,389	<0.00001	0.3	34.5	550	600
HC-48	202708	28,500	0.1	3.4	6.0	<0.1	<20	<0.1	12,900	22	39.7	97	79,600	2.2	20,800	966	<0.00001	0.5	22.3	540	500
HC-49	178784	7,400	0.1	2.2	17.0	0.03	20	0.33	53,000	26	29.7	38	94,500	1.7	13,500	1,930	0.005	2.3	1.8	880	700
HC-50	178823	2,100	0.1	62.8	7.6	0.1	20	0.16	69,700	47	27.4	30	87,100	10.4	15,800	2,467	0.005	3.8	3.1	780	800
HC-51	178814	11,800	0.1	47.8	3.8	0.08	20	0.2	85,000	63	44.5	90	89,500	4.5	31,800	2,197	0.005	0.9	63.2	270	700
HC-52	178769	600	0.2	41.9	3.1	0.19	20	0.09	12,800	138	12.2	17	23,800	4.2	3,800	351	0.005	10.7	14.7	80	200
HC-53	178719	200	0.0	2.6	0.7	0.02	29	0.03	700	130	1.1	3	2,900	1.2	200	37	0.005	10.7	2.9	20	100
HC-54	178726	400	0.0	7.7	1.6	0.04	34	0.02	5,300	146	6.3	15	10,400	0.5	1,600	200	0.005	12.3	3.8	30	100
HC-65	HB-214522	22,200	0.2	1.2	32.0	0.1	11	0.1	7,400	25	33.1	45	63,200	2.8	20,800	544	<0.01	0.5	39.6	560	2,800
HC-6 / Barrel W5	08-DOR-WR-05	31,100	0.1	3.2	5.0	0.1	20	0.1	45,000	72	33.3	90	74,000	2.7	23,900	1,605	<0.00001	1.7	35.0	520	200
HC-7 / Barrel W1	08-DOR-WR-02	27,600	0.1	1.7	17.0	<0.1	20	0.1	45,300	14	29.5	32	103,200	0.9	15,700	2,377	<0.00001	1.2	4.2	820	800
	Wt. Av. Composite	28,980	0.1	1.8	13.6	0.1	20	0.1	52,355	33.5	28.3	39	104,934	0.5	16,658	2,645	0.00001	0.3	3.6	876	681
Barrel W9	HB DCEN 08TDD628	4,300	<0.1	36.5	13.0	<0.1	<20	0.1	49,700	16	29	37	97,100	4.0	18,200	2,192	<0.01	0.6	2.9	890	800
Barrel W10	HB DCEN 08TDD623	42,900	<0.1	1.1	24.0	<0.1	<20	<0.1	24,600	58	23	140	37,800	4.5	15,000	297	<0.01	0.4	55.8	420	2,200
Barrel W13	HB DCEN/DCONN TDD067, 131, 383 Comp	36,300	<0.1	3.0	4.0	<0.1	<20	<0.1	26,500	130	40	114	58,700	1.0	30,900	973	<0.01	0.3	94.5	210	400
Average Crustal Abundance for Basalt (Price 1997)		78,000	0.2	2	330	0.007	5	0.22	76,000	170	48	87	86,500	6	46,000	1,500	0.09	1.5	130	1,100	8,300

Kinetic Test ID	Sample ID	Se ppm	Ag ppm	Na ppm	Sr ppm	Tl ppm	Th ppm	Ti ppm	U ppm	V ppm	W ppm	Zn ppm
HC-36	08TDD631-SRK-WR-435	3.0	1.2	380	24	<0.1	0.1	<10	<0.1	4	<0.1	27
HC-42	208828	<0.5	<0.1	80	56	<0.1	0.3	130	<0.1	70	<0.1	144
HC-43	208885	<0.5	<0.1	620	36	<0.1	0.2	80	<0.1	45	<0.1	91
HC-44	208888	<0.5	<0.1	670	36	<0.1	0.3	410	<0.1	57	<0.1	212
HC-45	202734	1.2	0.5	500	28	<0.1	0.1	20	<0.1	19	0.2	81
HC-46	202736	<0.5	<0.1	120	32	<0.1	0.4	1090	<0.1	76	<0.1	129
HC-47	202713	<0.5	<0.1	410	14	<0.1	0.4	3760	<0.1	160	<0.1	111
HC-48	202708	<0.5	<0.1	560	25	<0.1	0.4	4500	<0.1	162	<0.1	82
HC-49	178784	0.3	40	930	45.1	0.02	0.4	10	0.1	18	0.1	197
HC-50	178823	0.6	251	300	56.9	0.02	0.2	10	0.1	7	0.1	62
HC-51	178814	0.7	441	260	69.4	0.02	0.1	10	0.1	47	0.1	74
HC-52	178769	0.8	383	180	12.6	0.02	0.1	10	0.1	3	0.1	15
HC-53	178719	0.1	33	60	1.5	0.02	0.1	10	0.1	2	0.1	6
HC-54	178726	0.3	525	90	3.5	0.02	0.1	10	0.1	2	0.1	5
HC-65	HB-214522	0.5	0.1	1,310	28	0.1	0.3	1640	<0.1	174	<0.1	42
HC-6 / Barrel W5	08-DOR-WR-05	<0.5	<0.1	280	32	<0.1	0.3	1060	<0.1	115	0.1	88
HC-7 / Barrel W1	08-DOR-WR-02	<0.5	<0.1	200	44	<0.1	0.2	40	<0.1	53	<0.1	121
	Wt. Av. Composite	0.6	0.1	412	60.02	0.1	0.2	51	0.1	53	0.1	119
Barrel W9	HB DCEN 08TDD628	1.1	0.3	710	32	<0.1	0.2	<10	<0.1	10	<0.1	63
Barrel W10	HB DCEN 08TDD623	<0.5	<0.1	5,750	75	<0.1	2.1	1,960	0.4	179	<0.1	53
Barrel W13	HB DCEN/DCONN TDD067, 131, 383 Comp	<0.5	<0.1	250	31	<0.1	<0.1	1,520	<0.1	132	<0.1	75
Average Crustal Abundance for Basalt (Price 1997)		0.05	0.11	18,000	465	0.21	4	13,800	1	250	0.7	105

Appendix D – Humidity Cell Test Concentration Charts

Appendix D1 – SRK Humidity Cell Test Concentration Charts

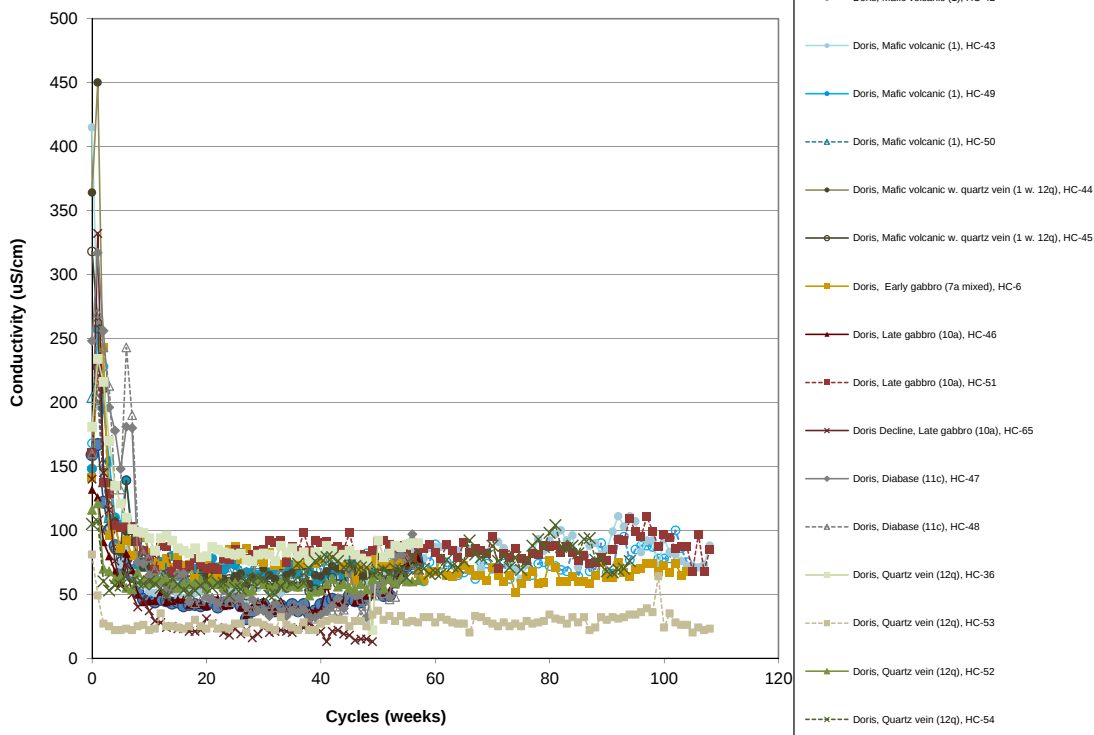
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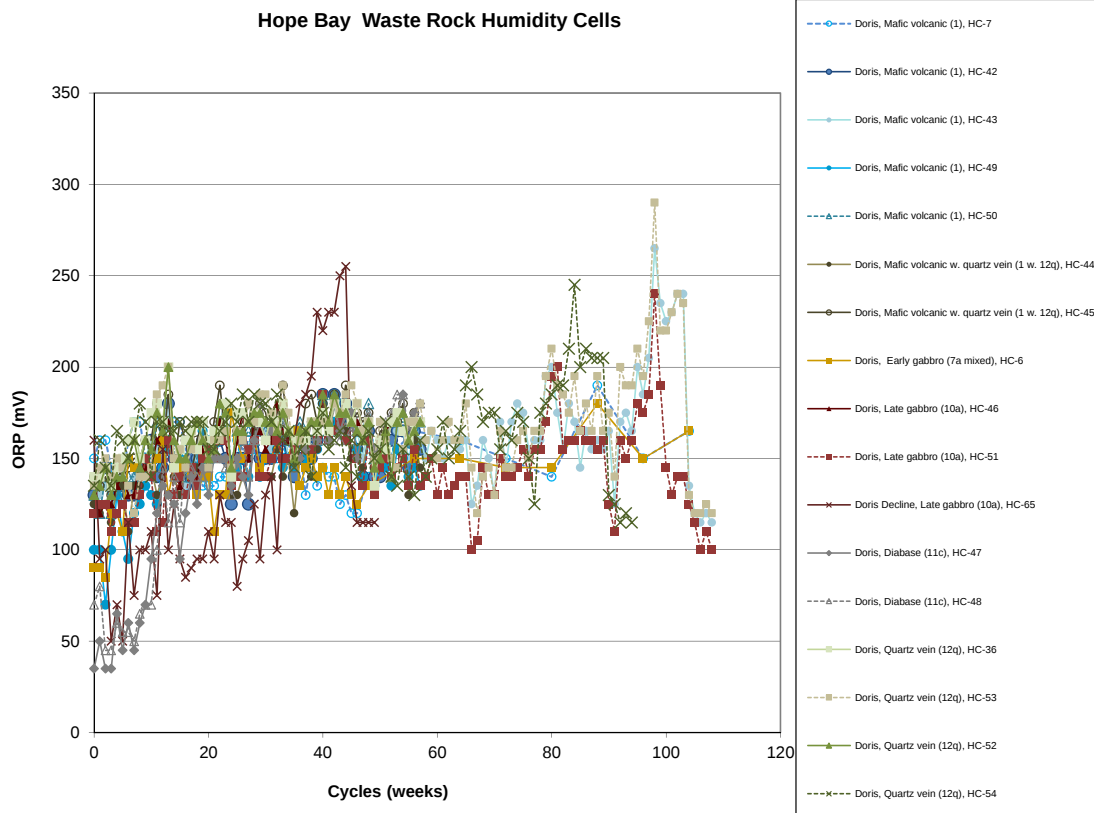
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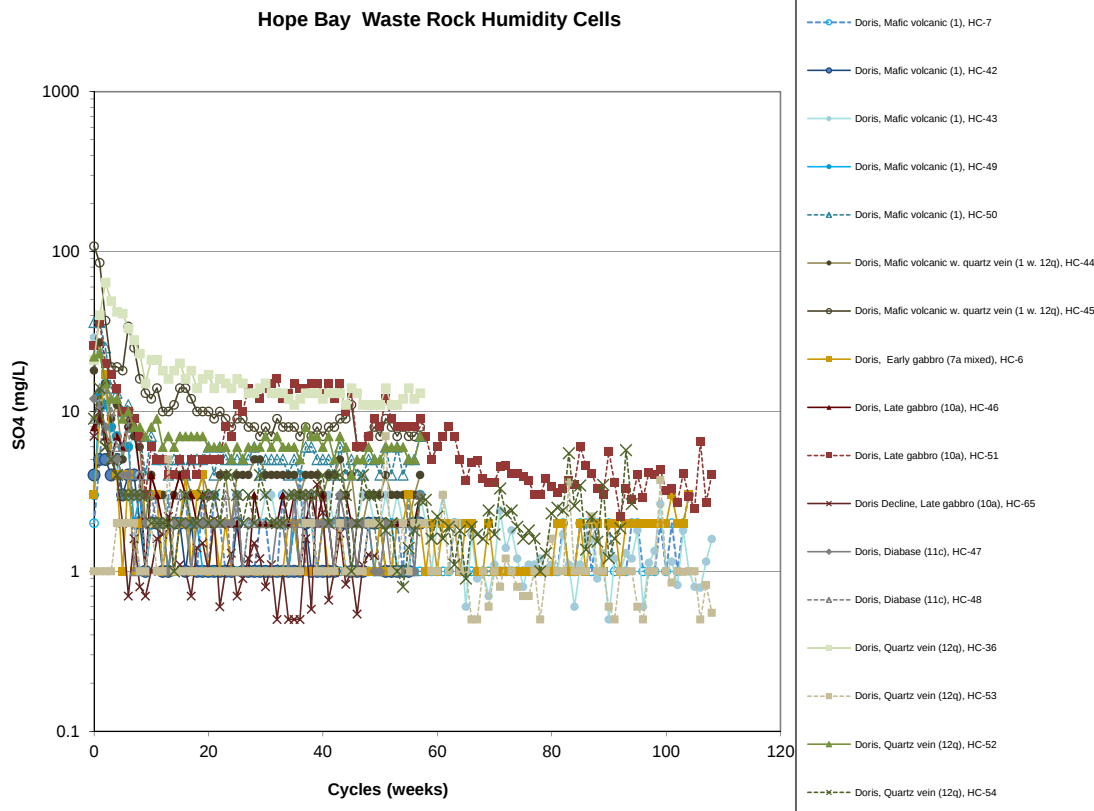
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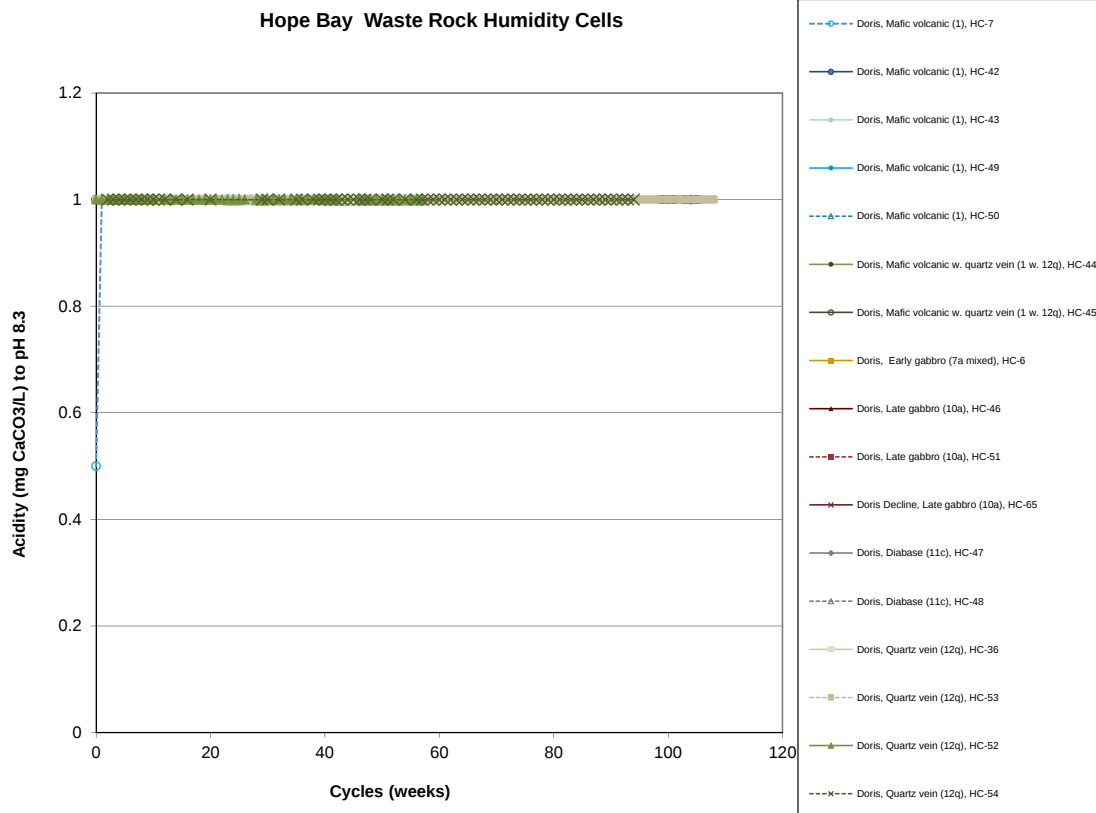
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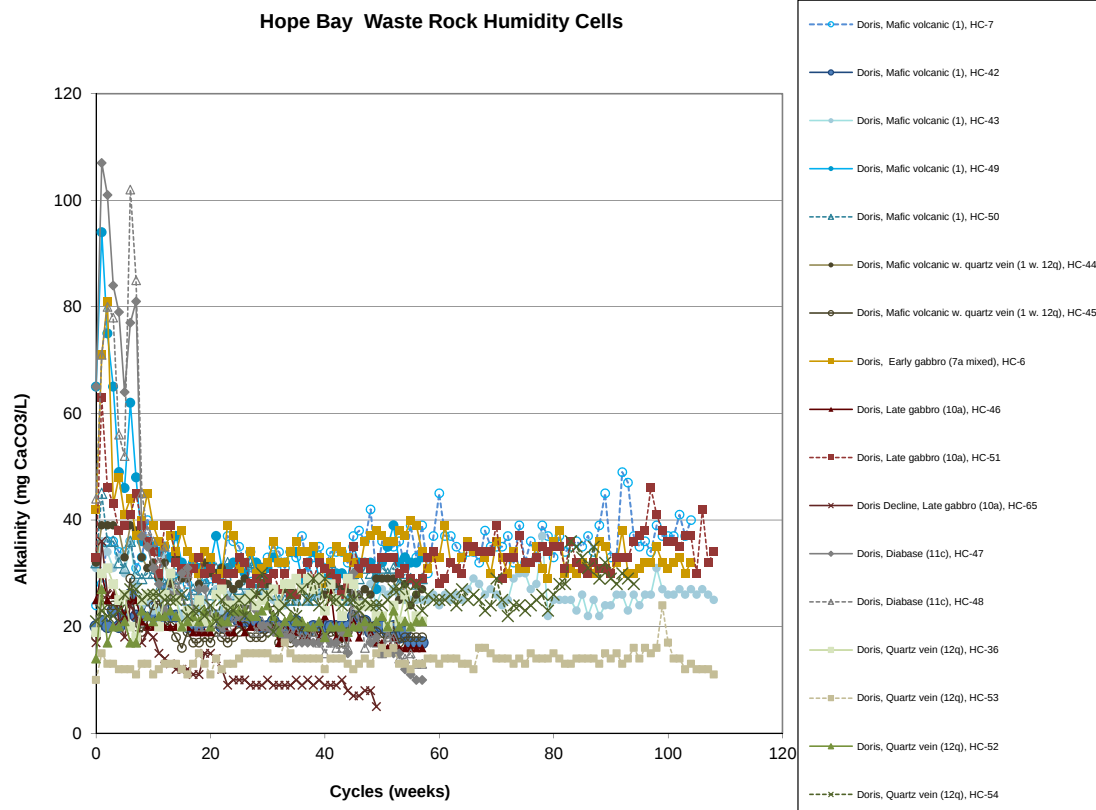
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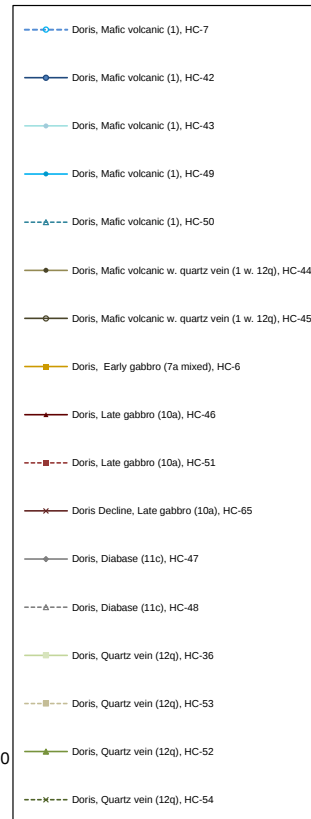
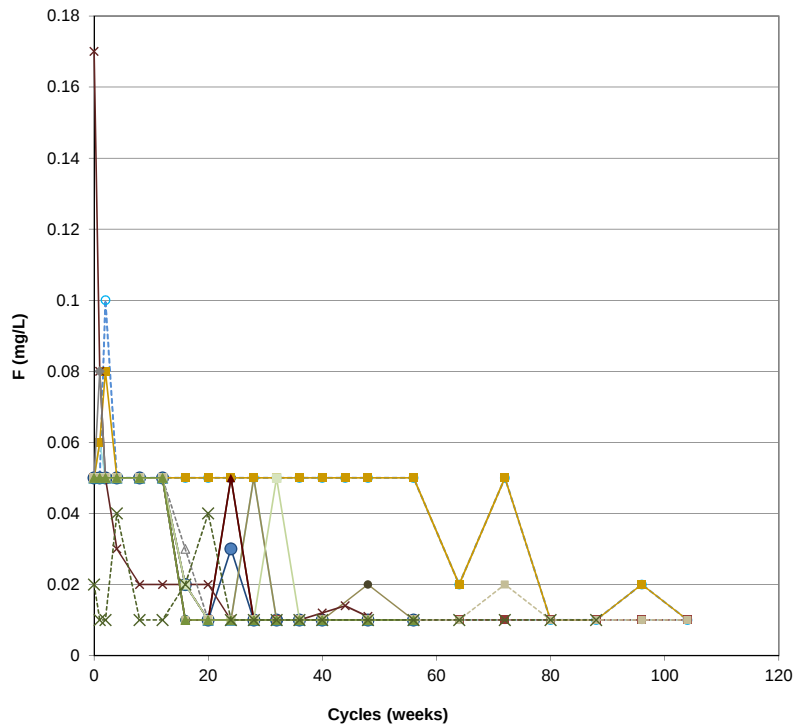
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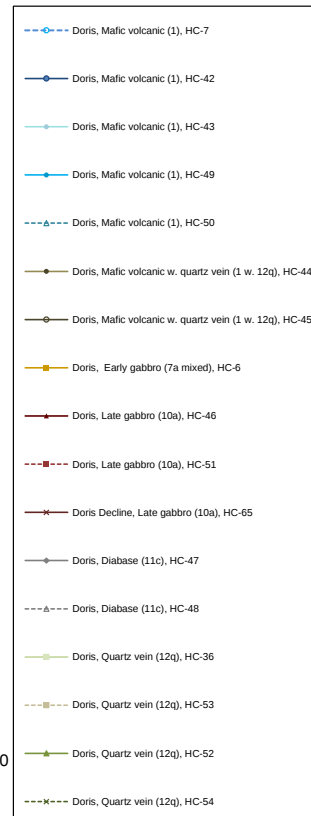
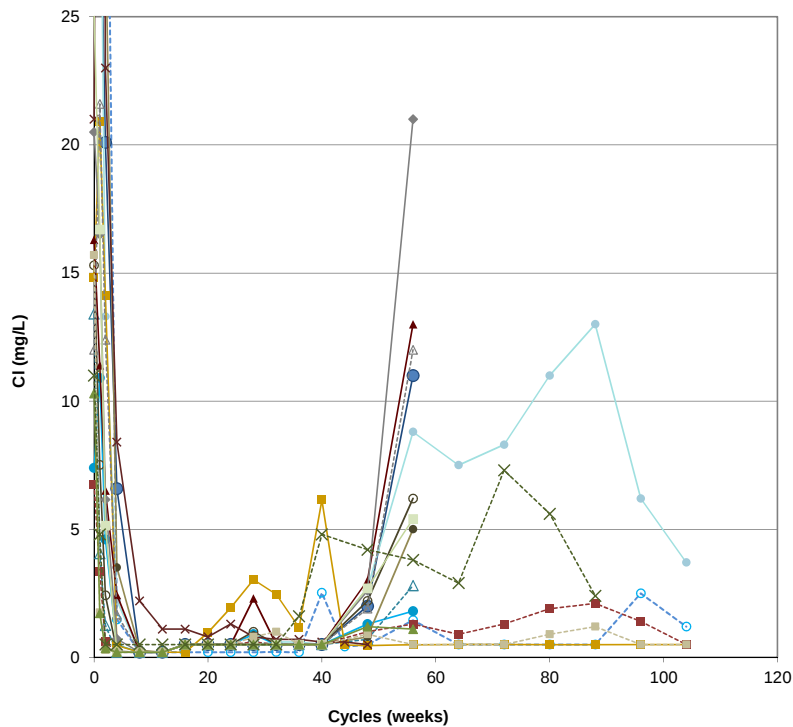
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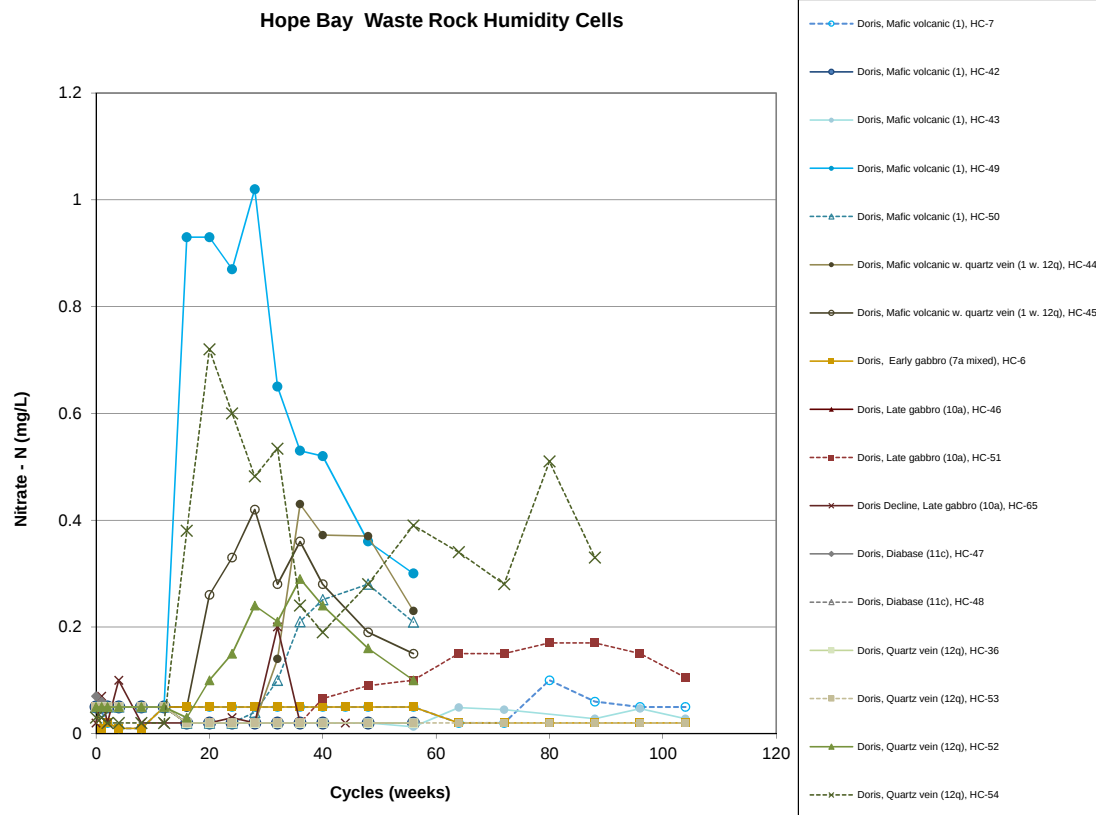
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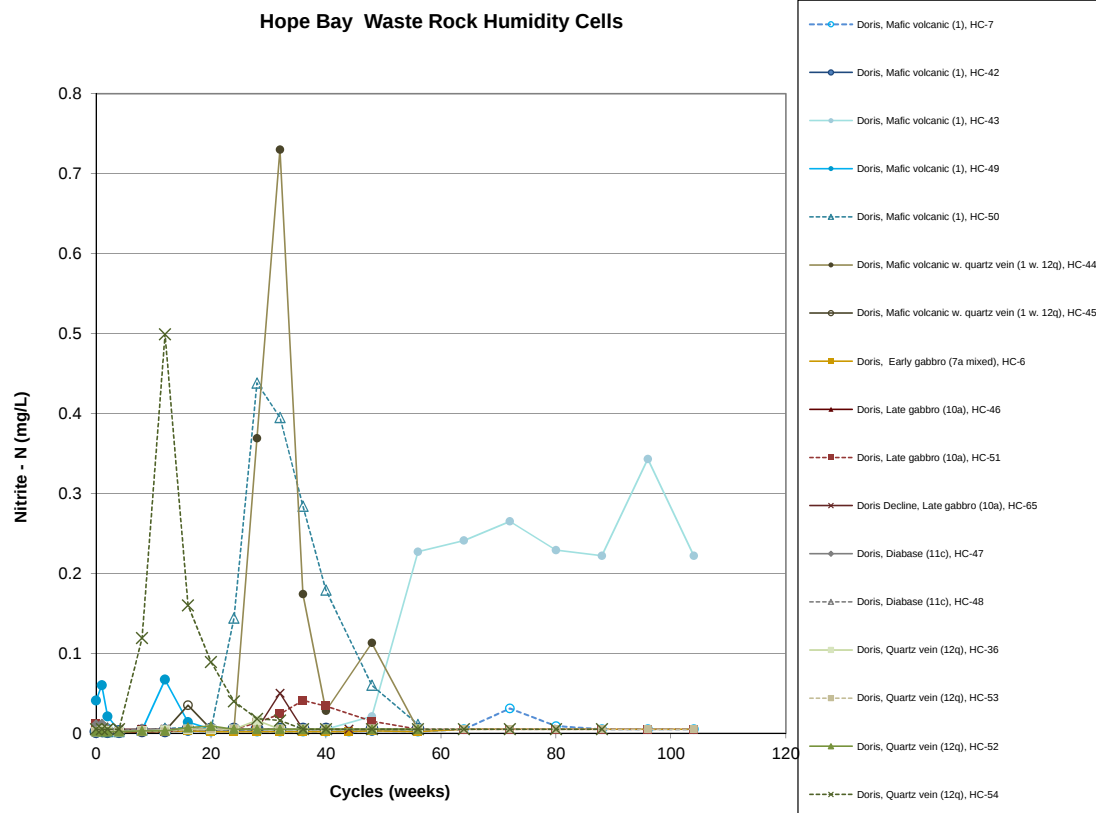
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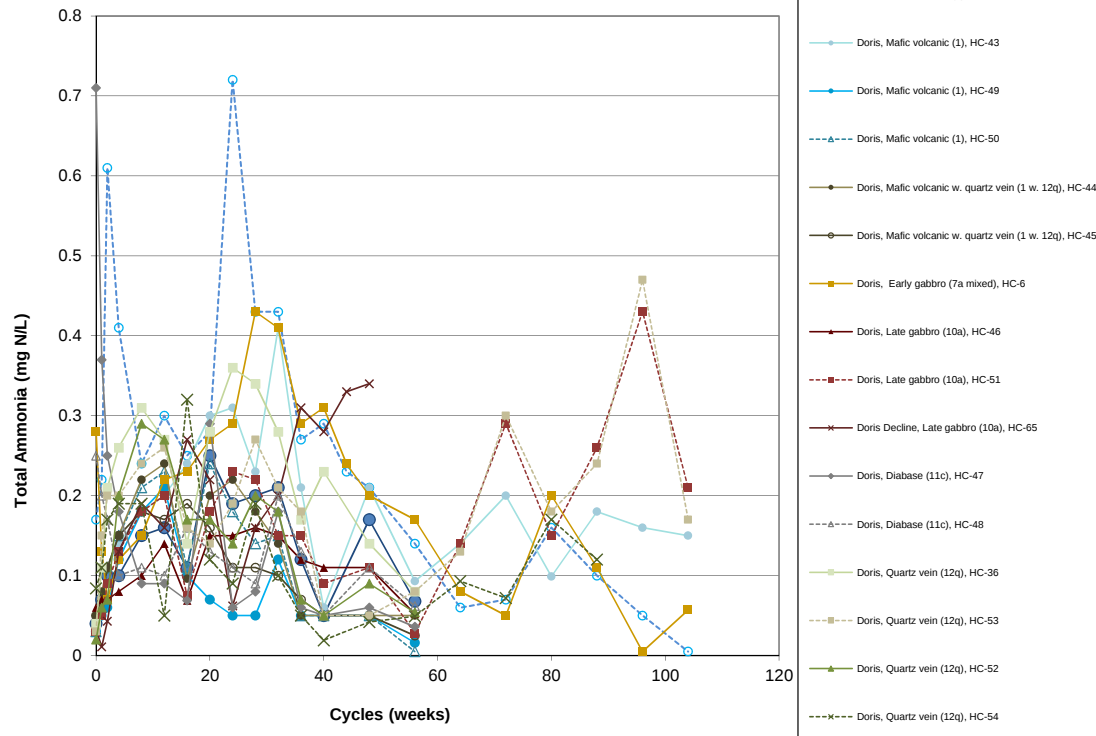
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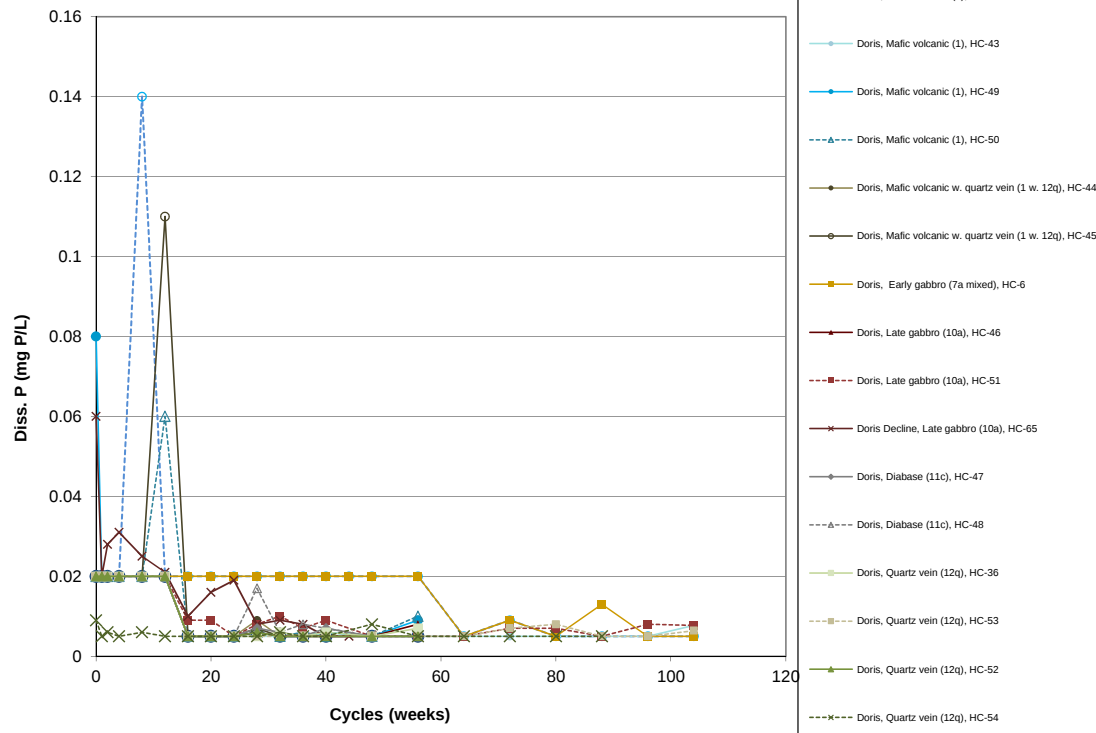
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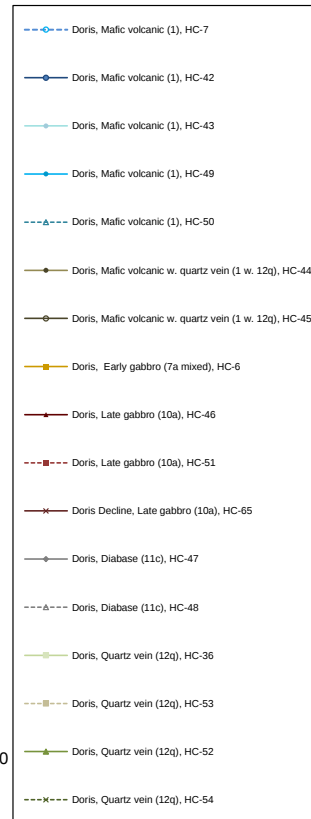
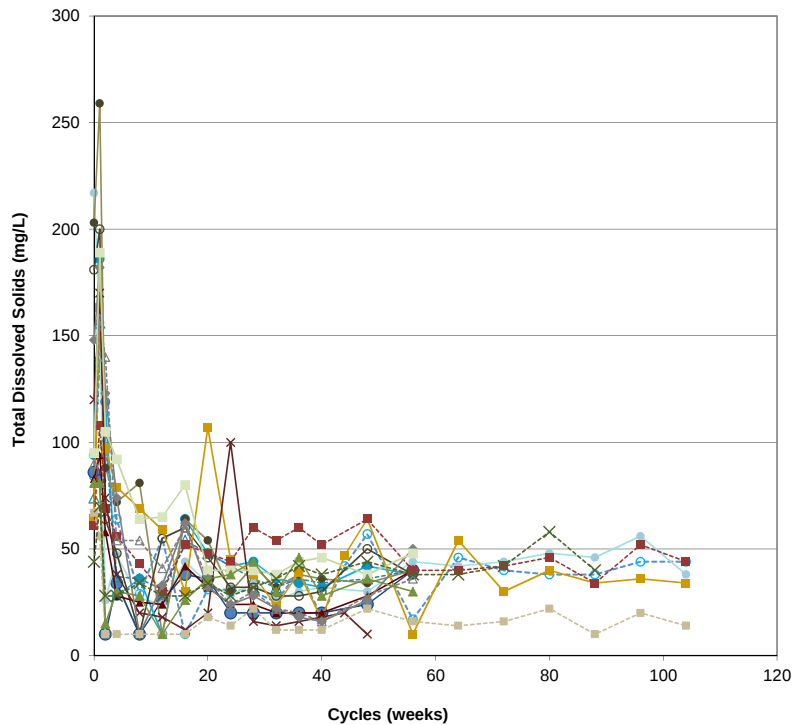
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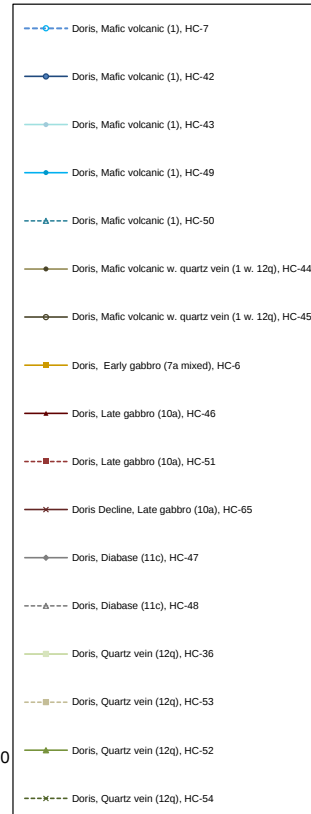
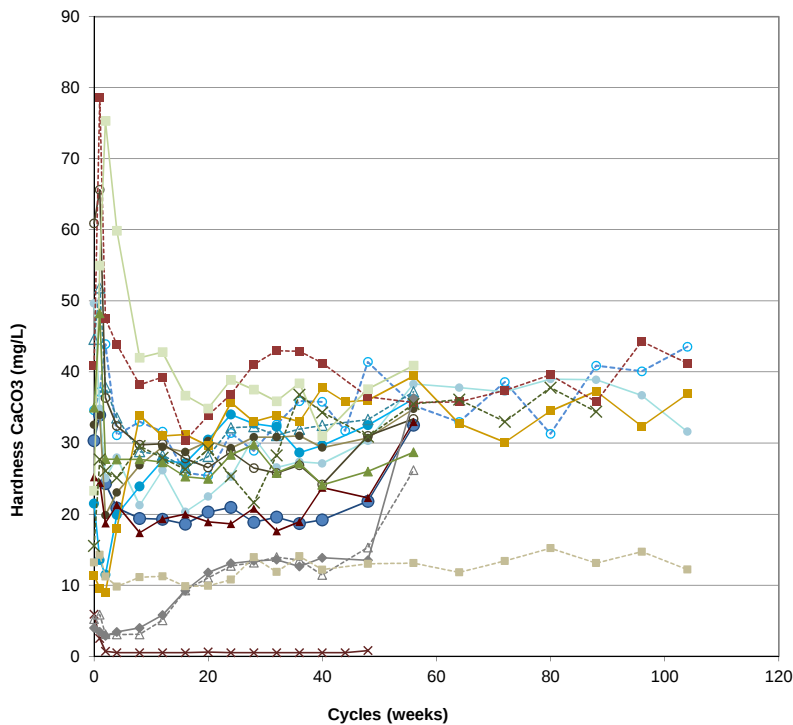
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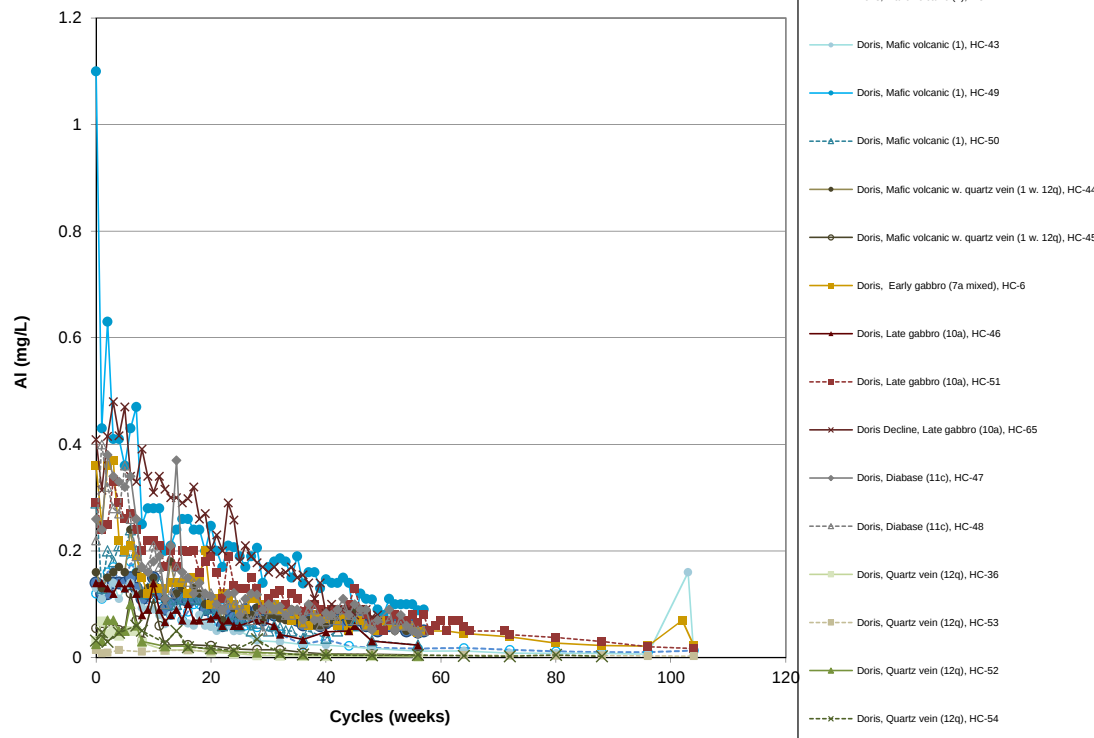
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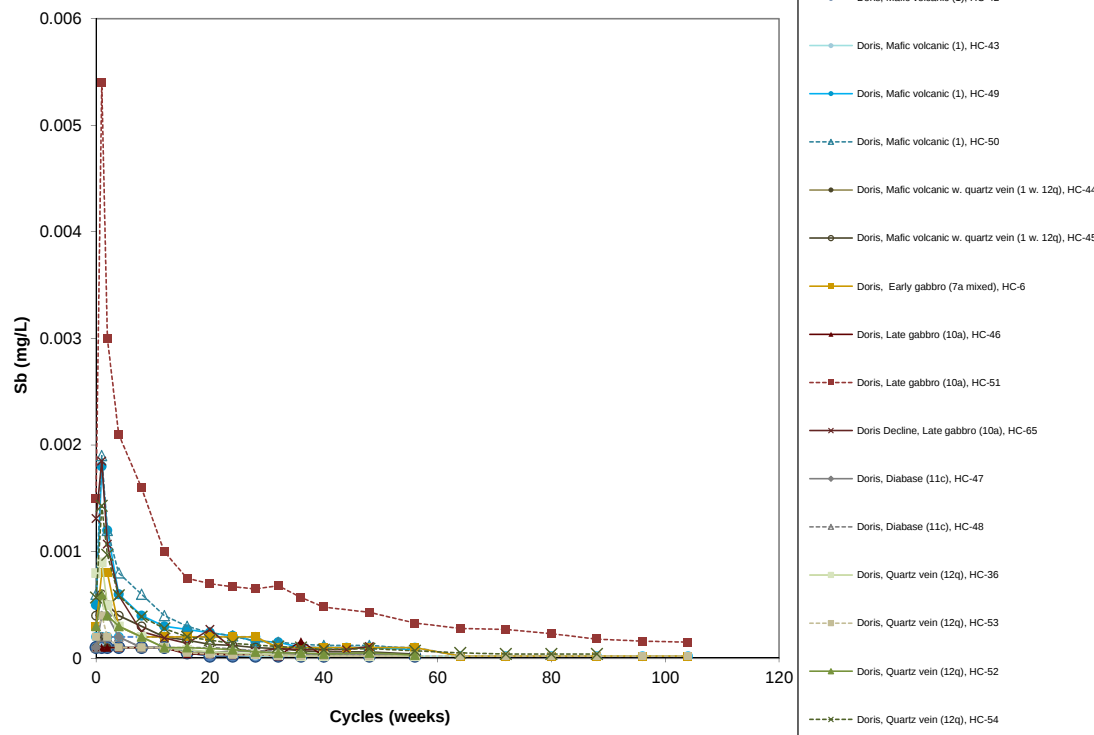
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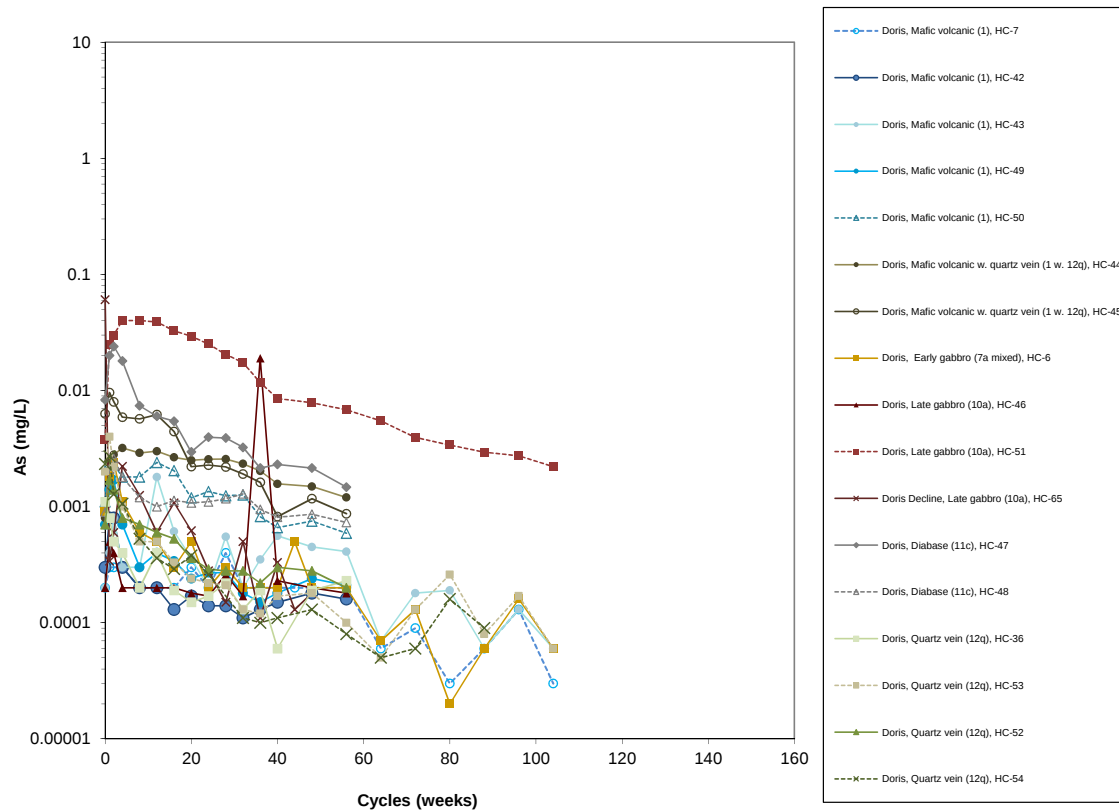
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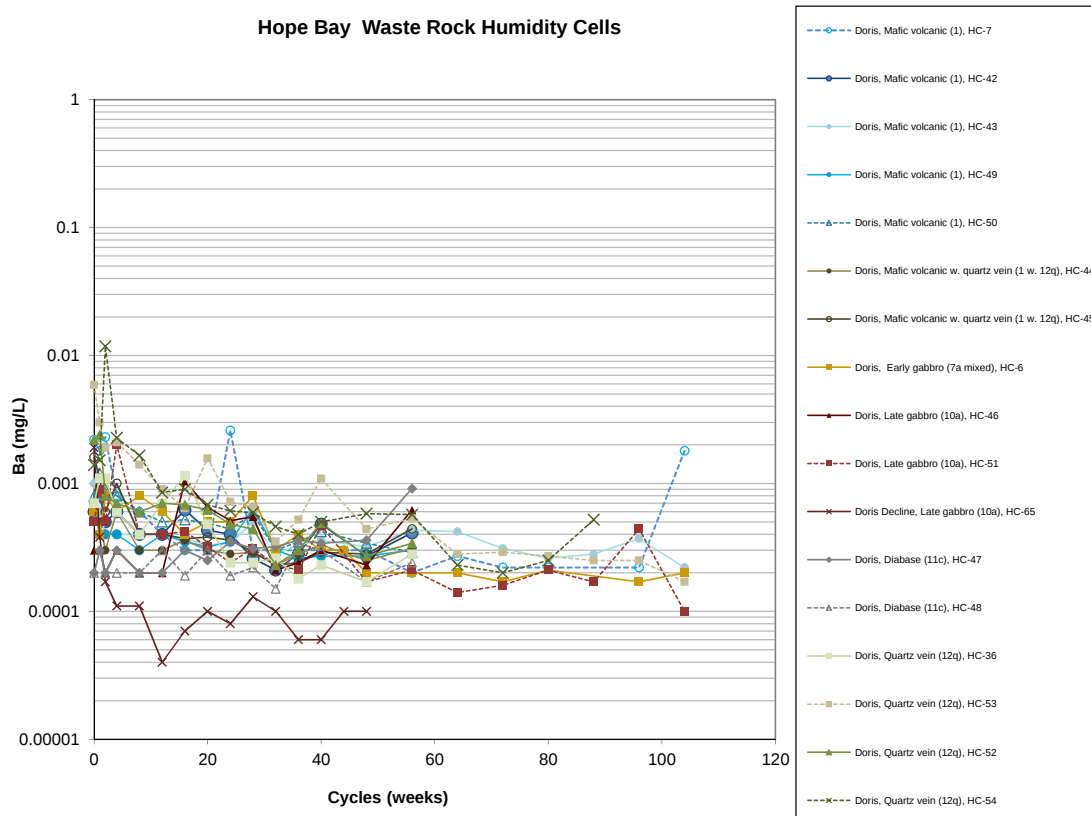
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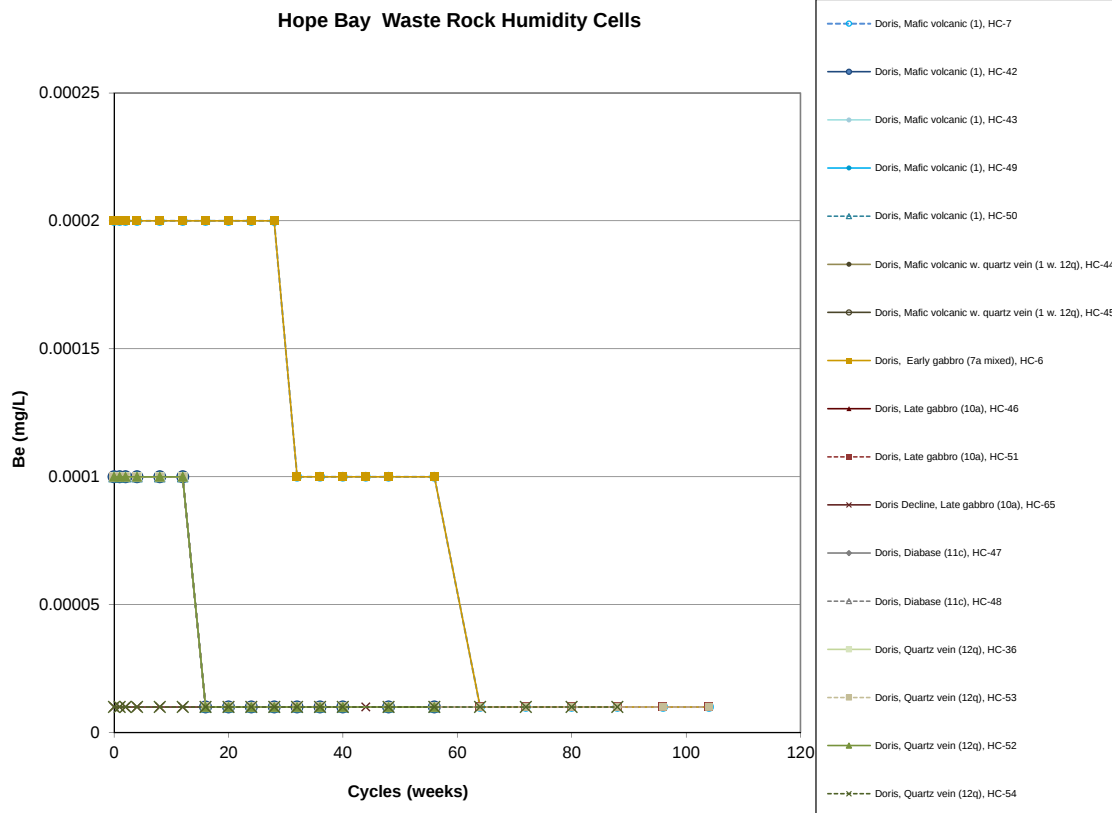
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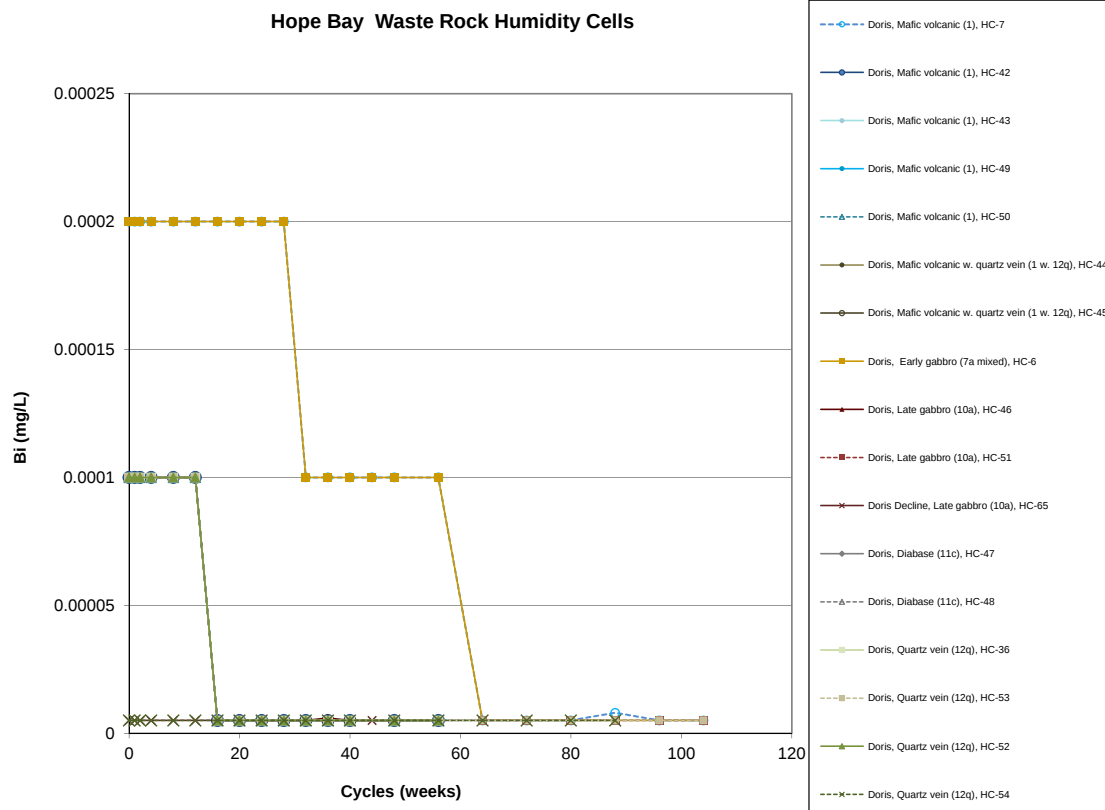
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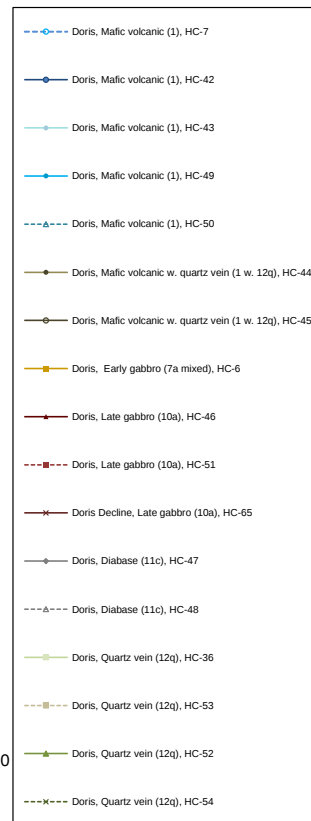
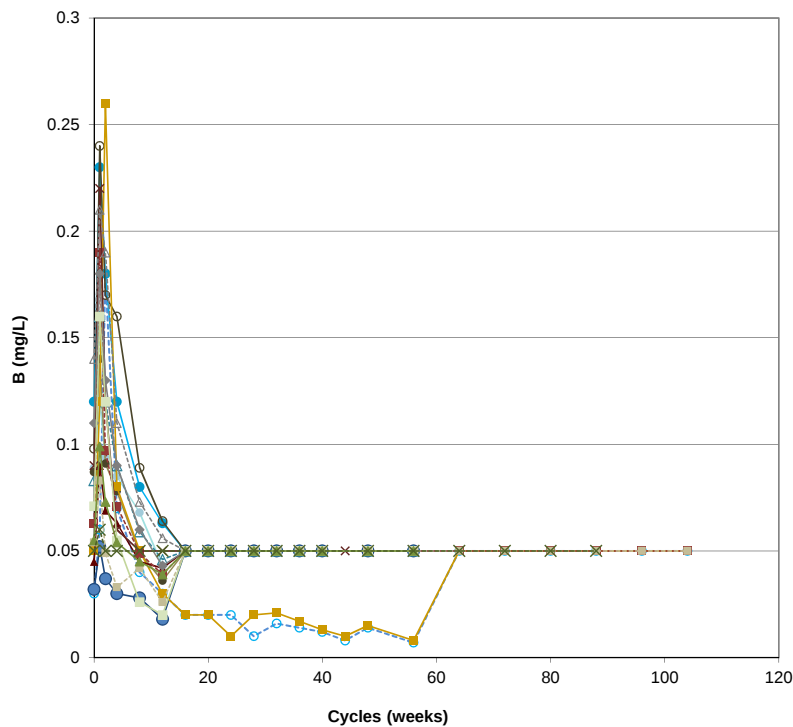
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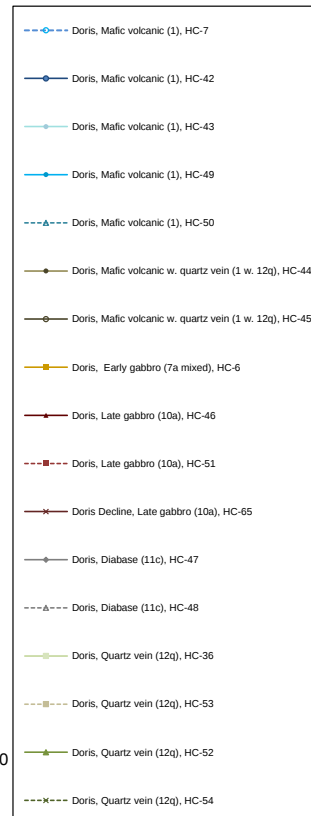
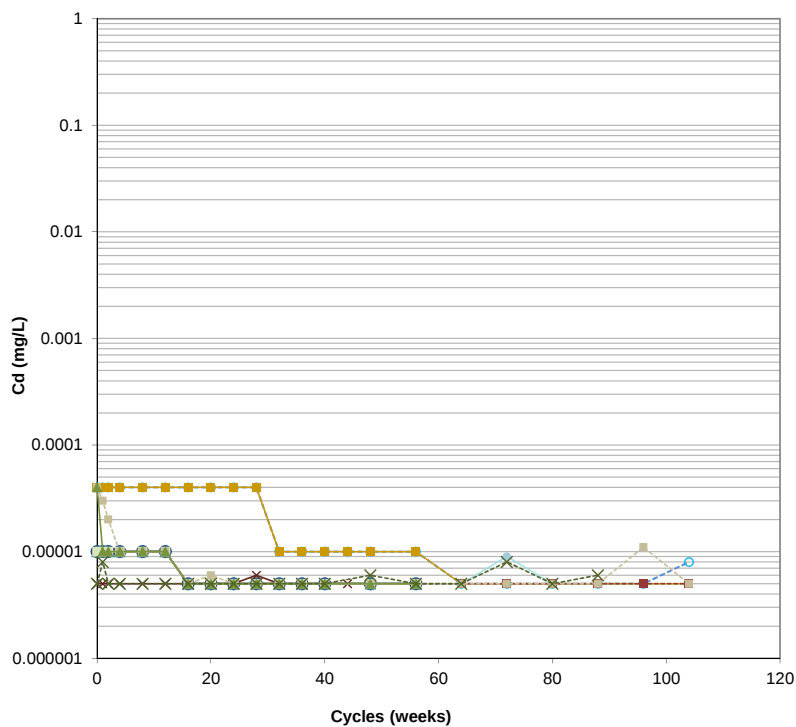
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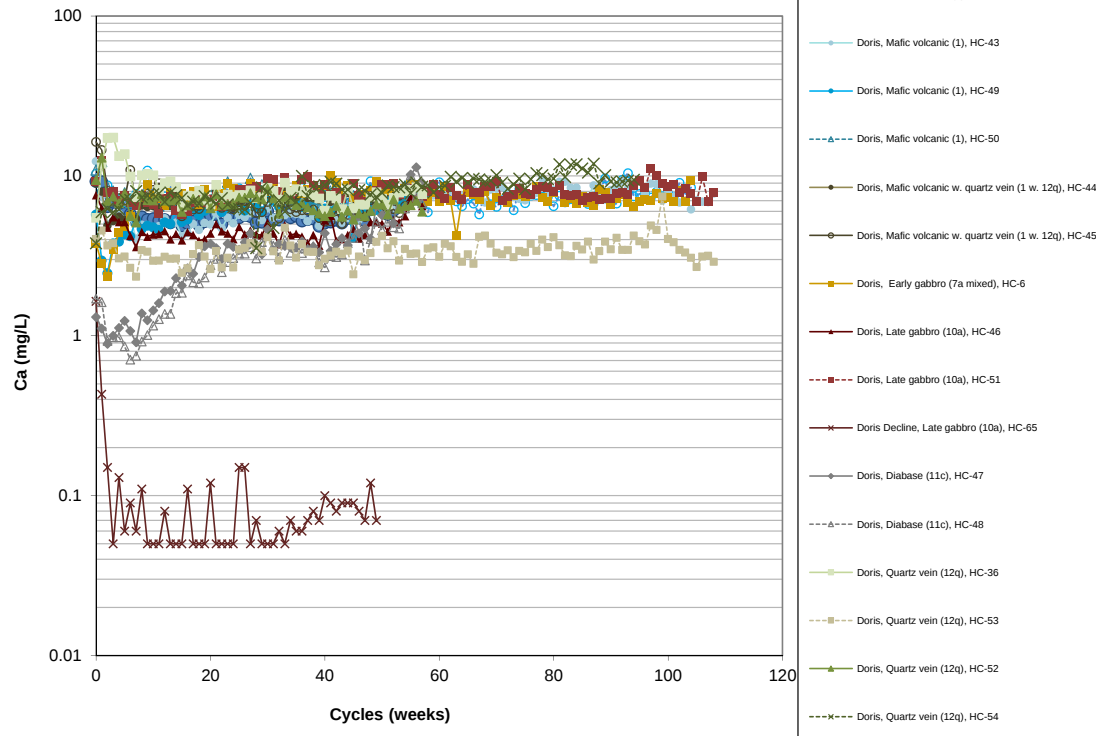
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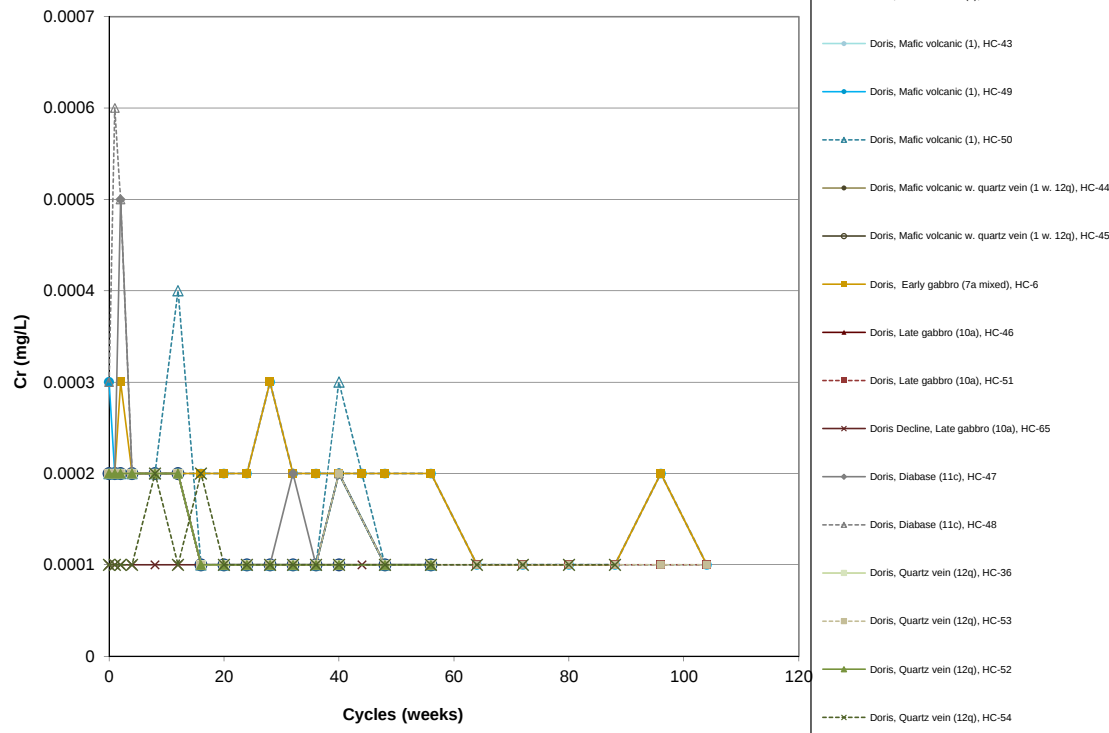
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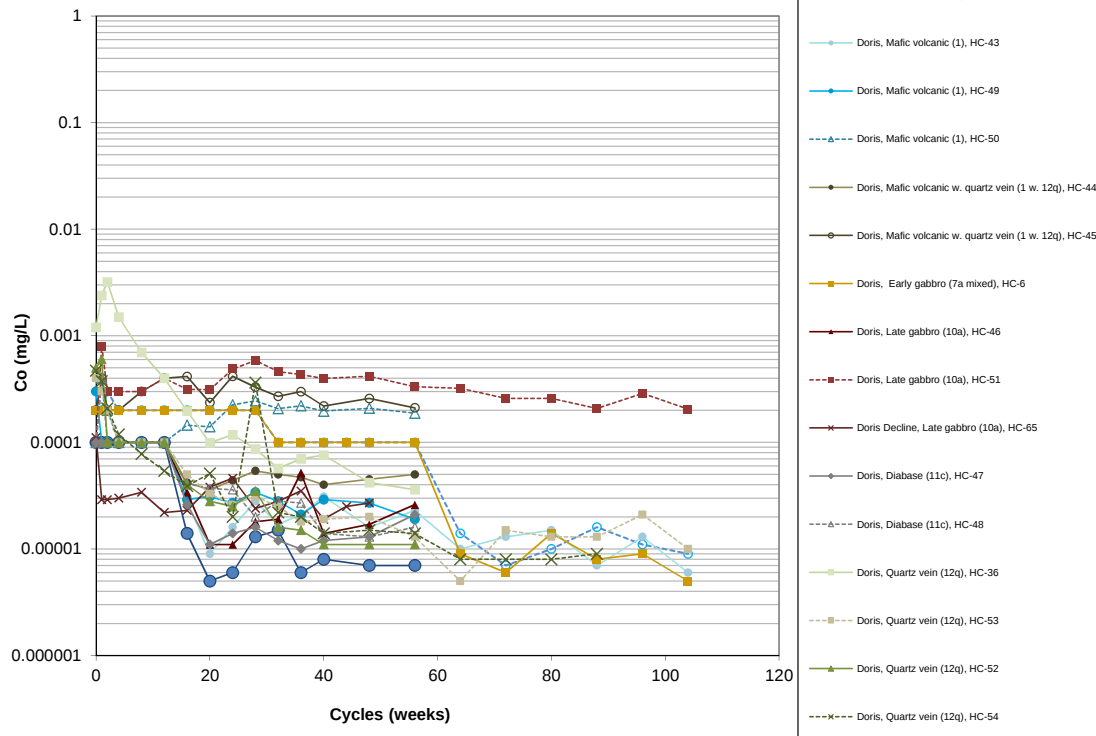
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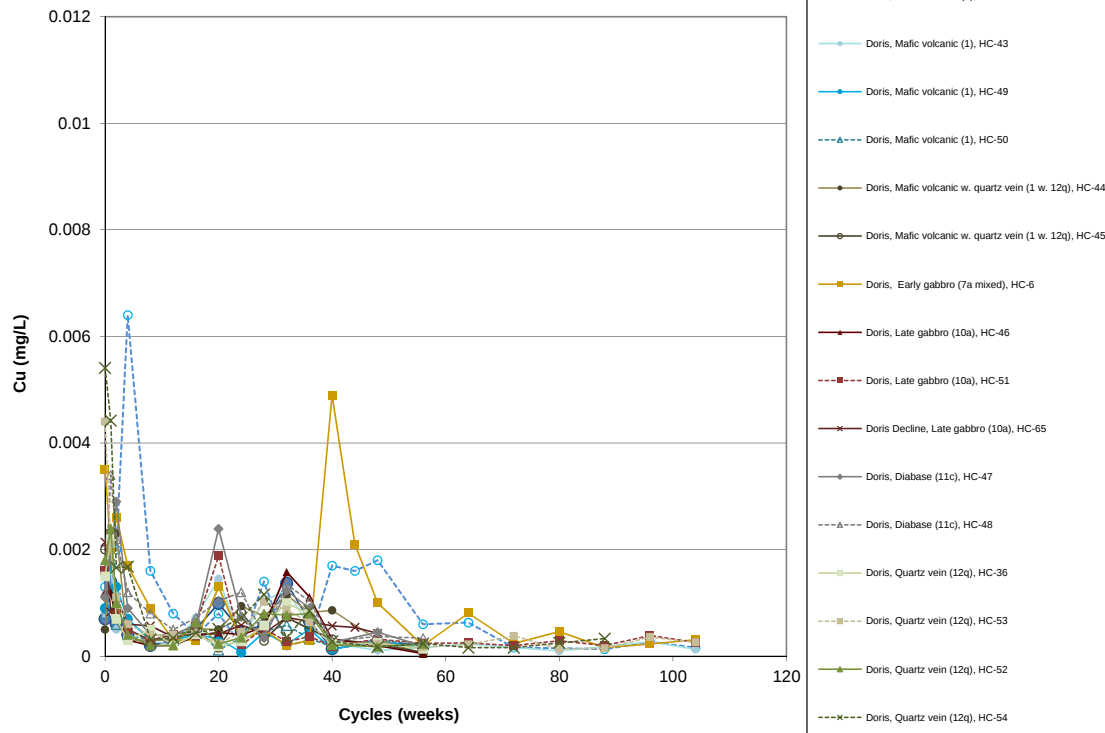
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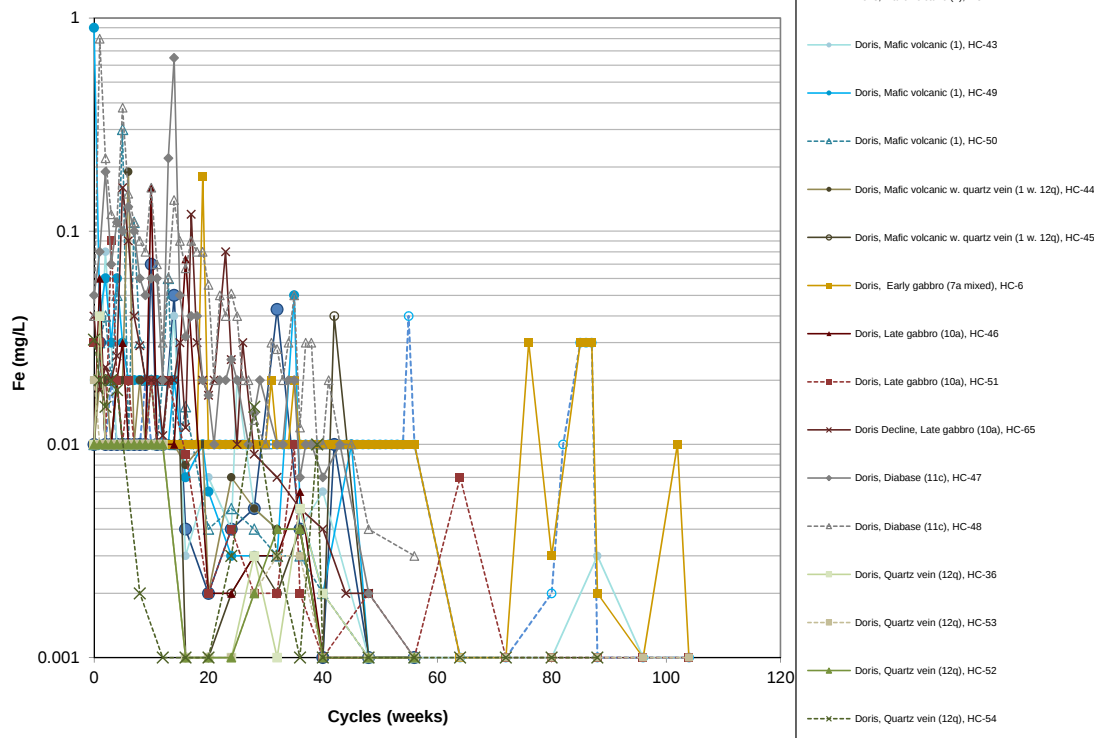
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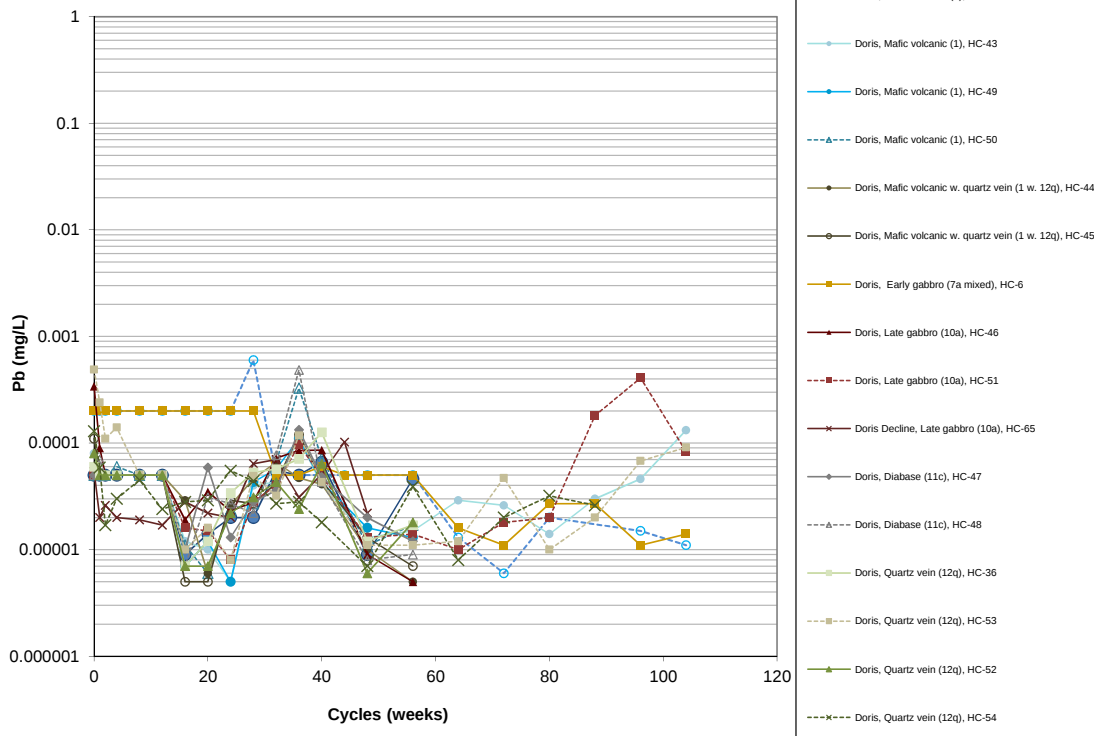
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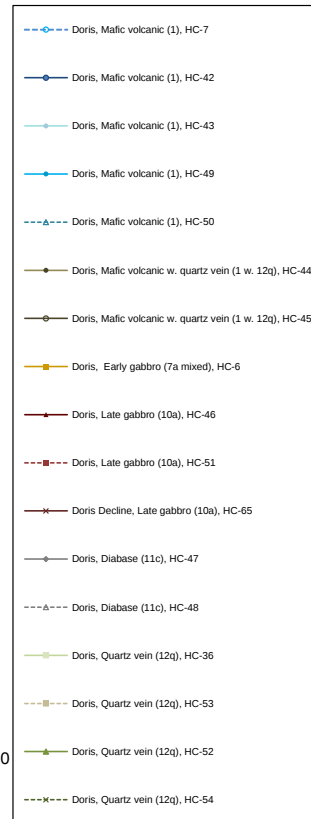
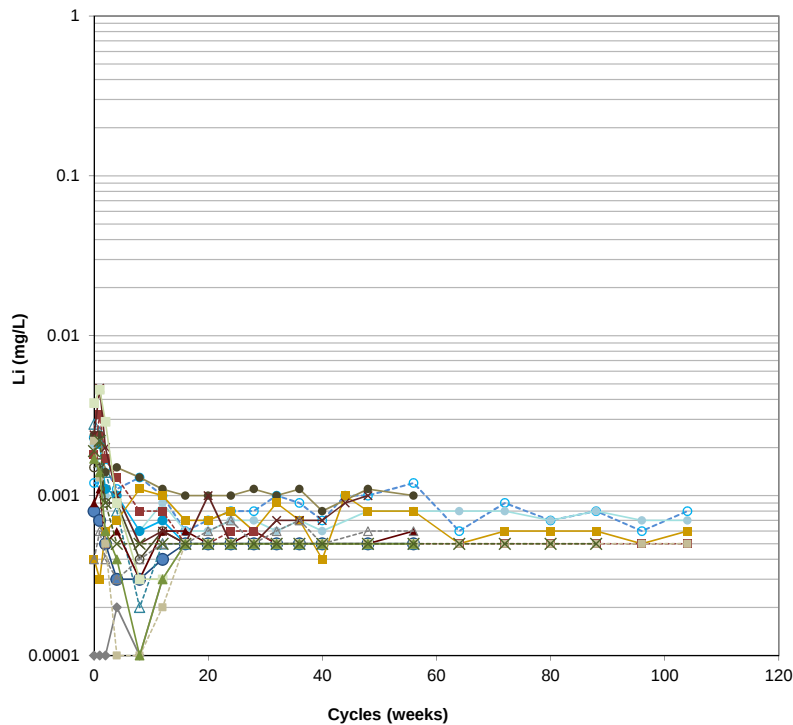
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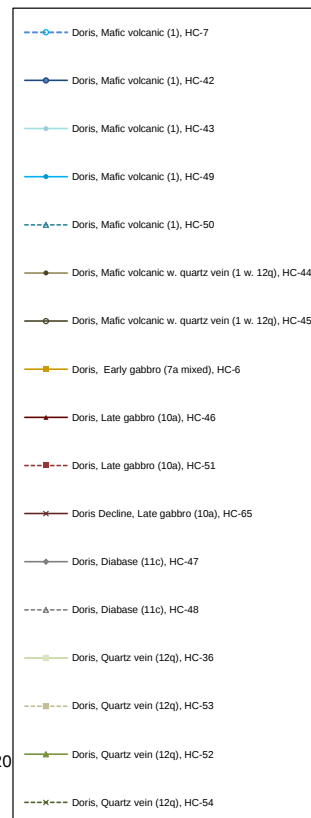
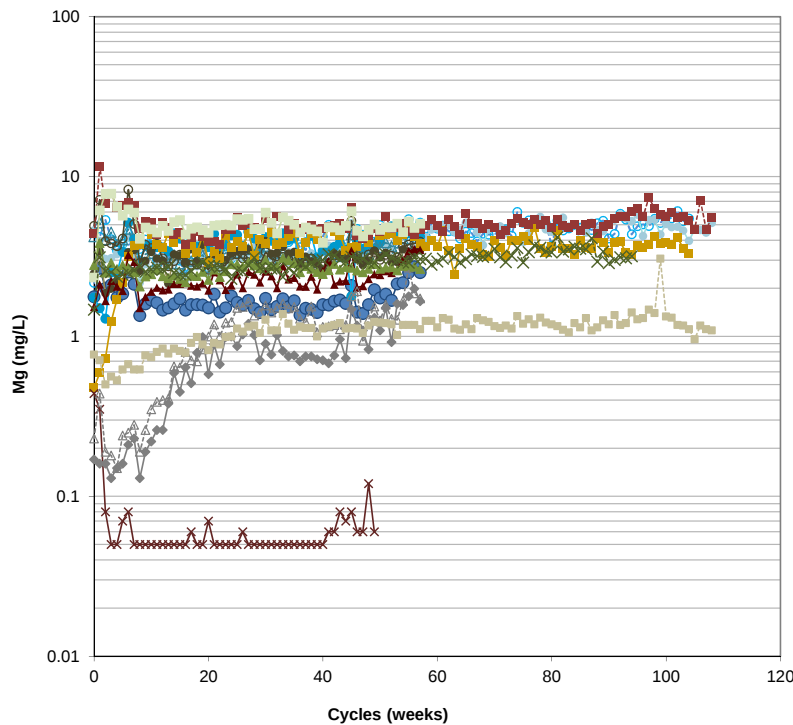
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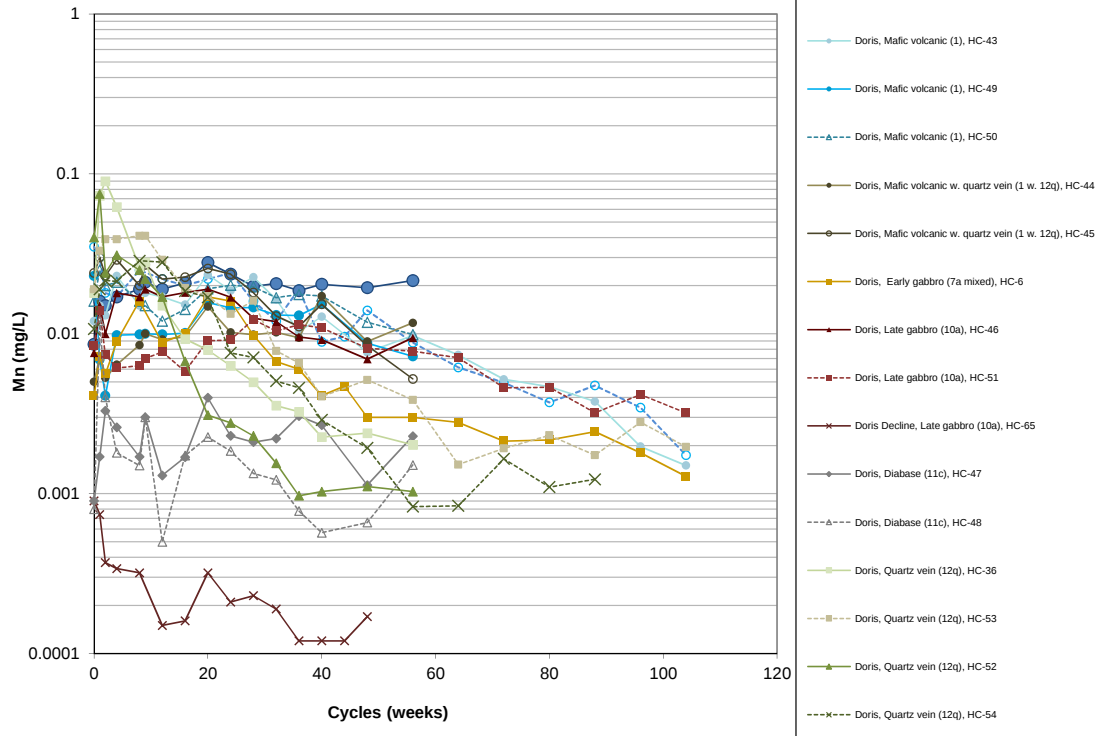
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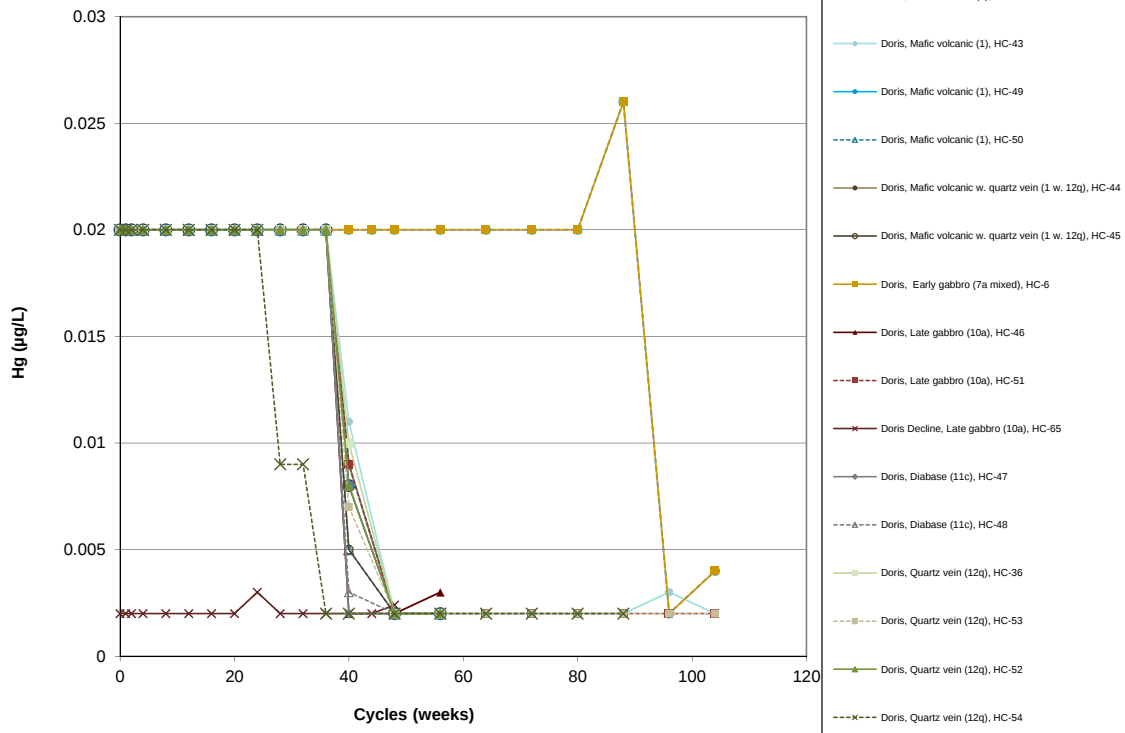
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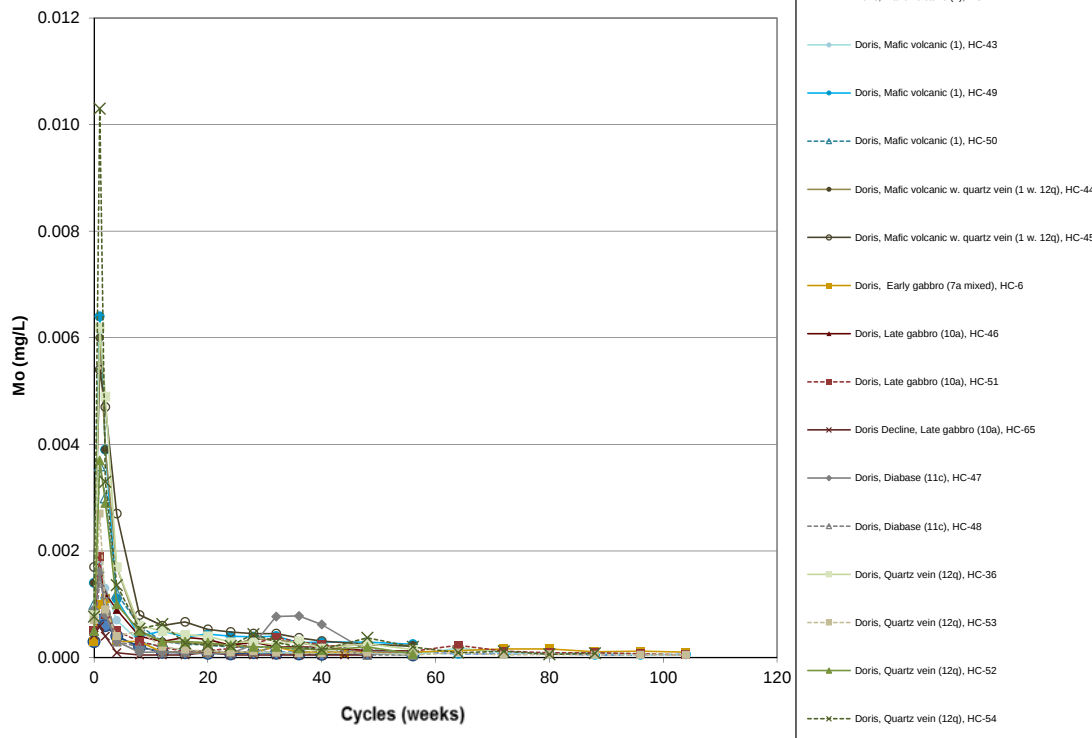
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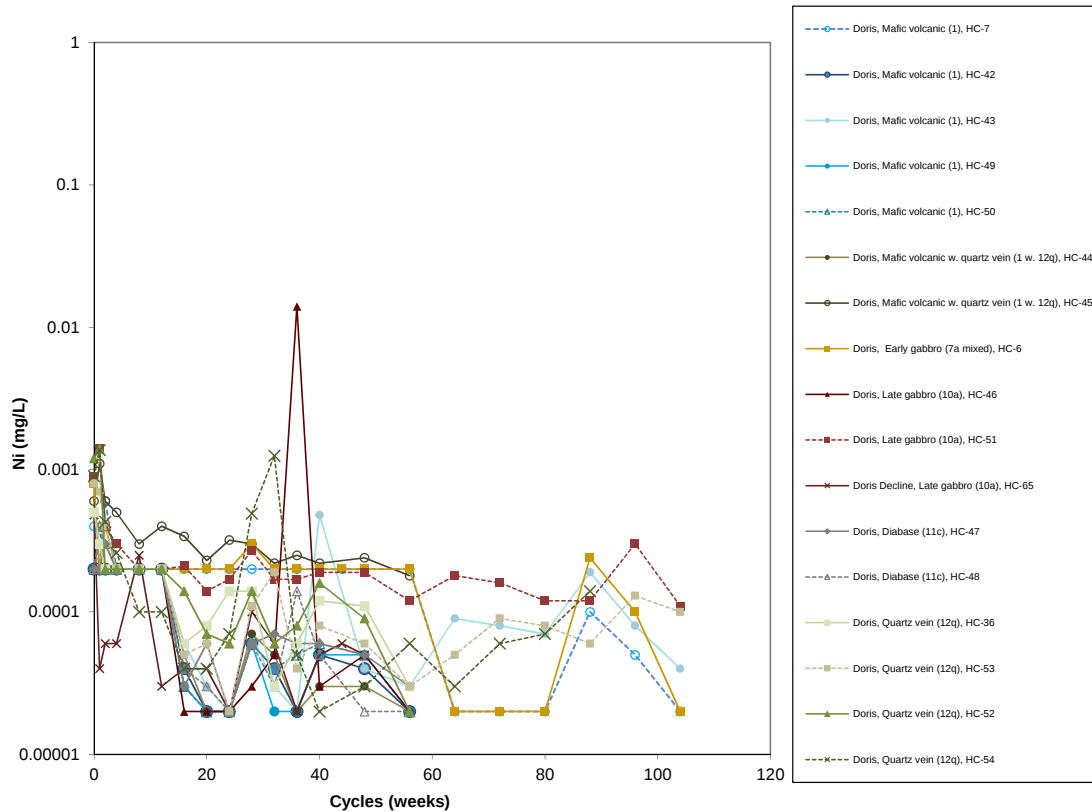
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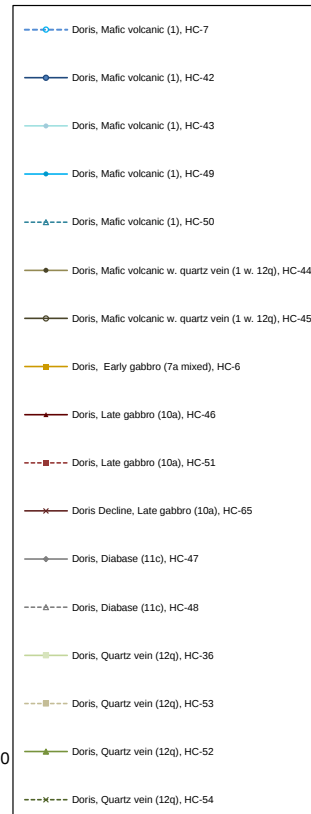
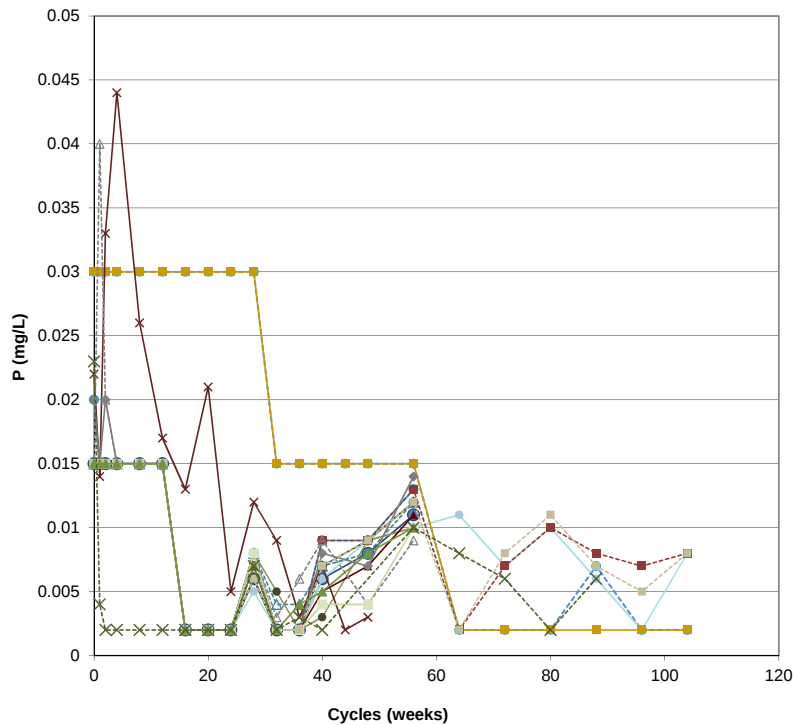
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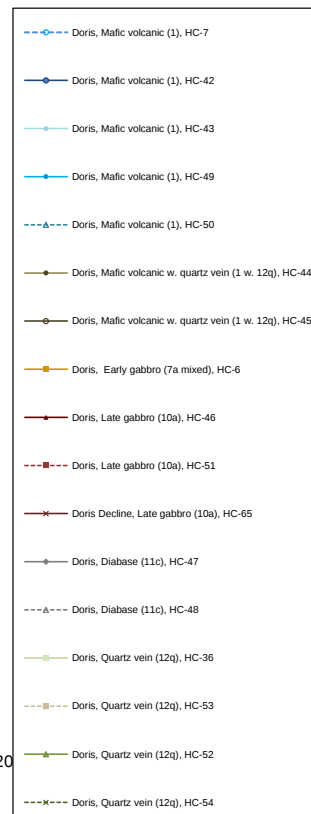
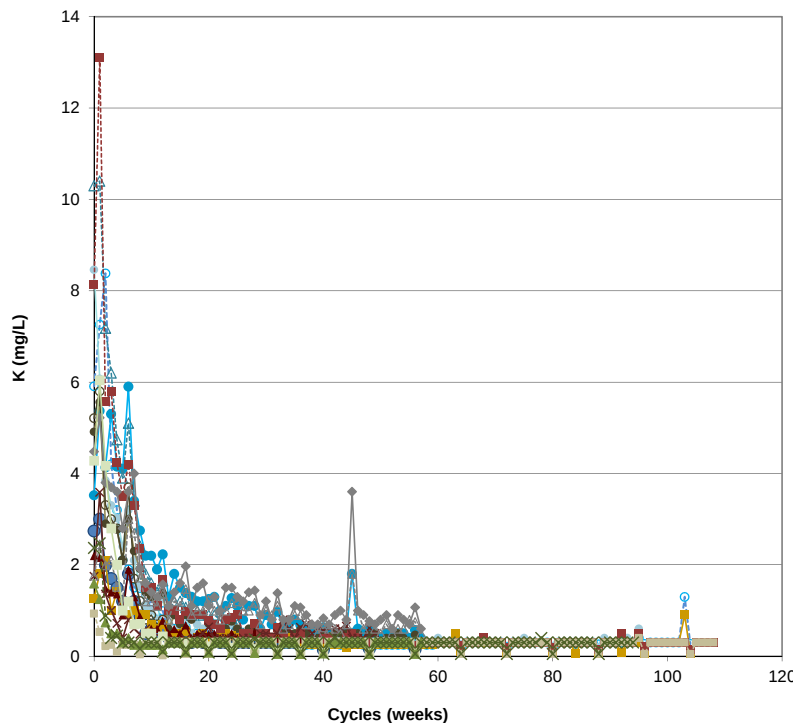
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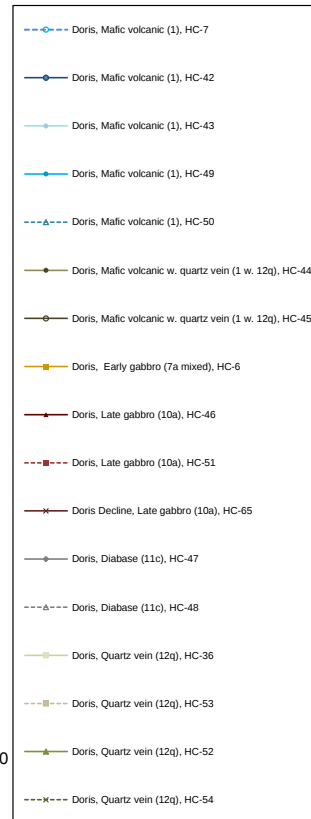
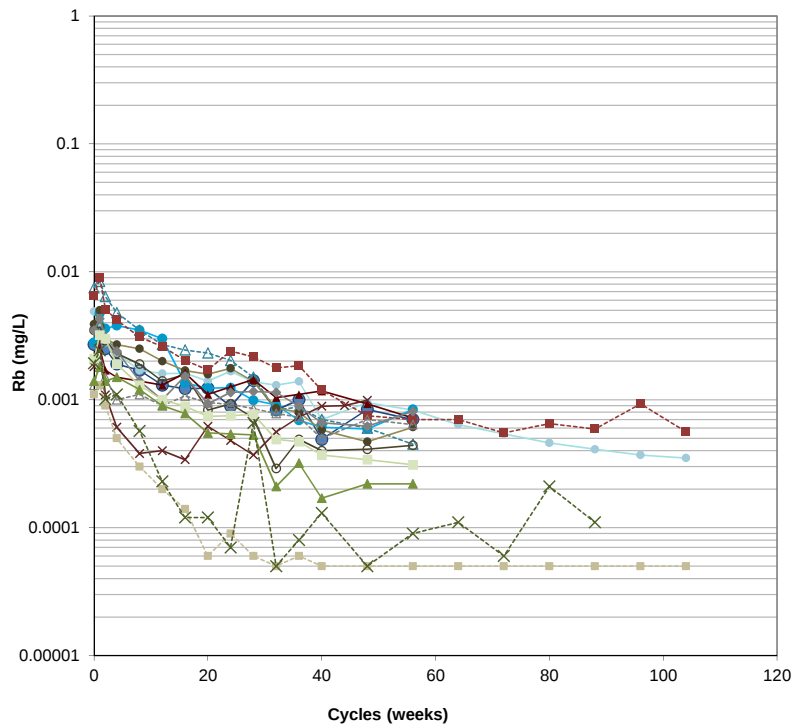
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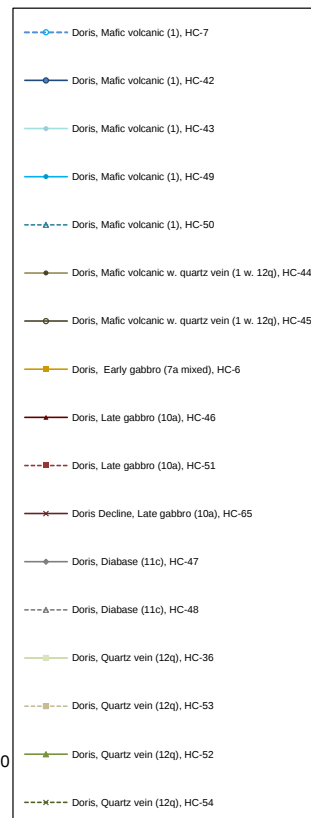
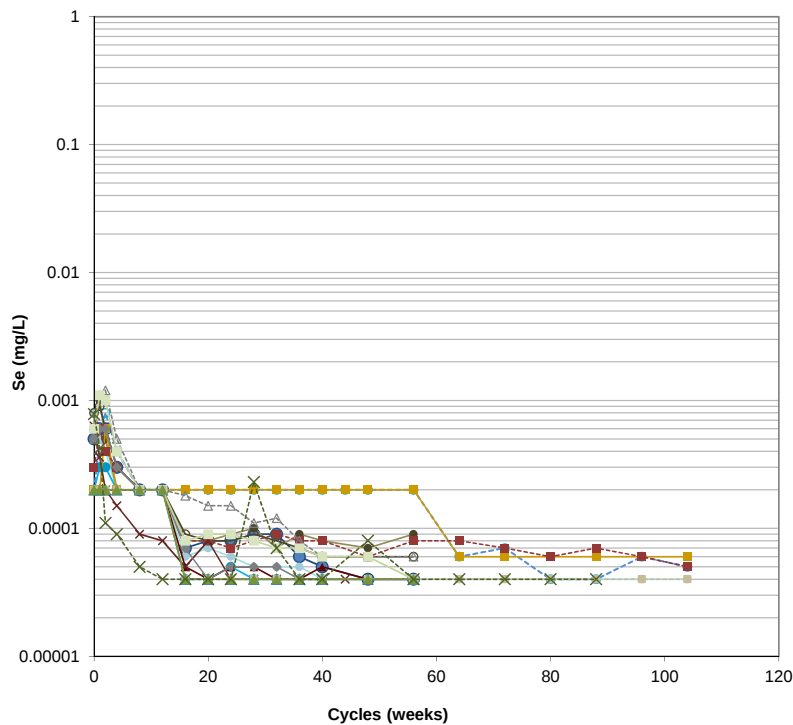
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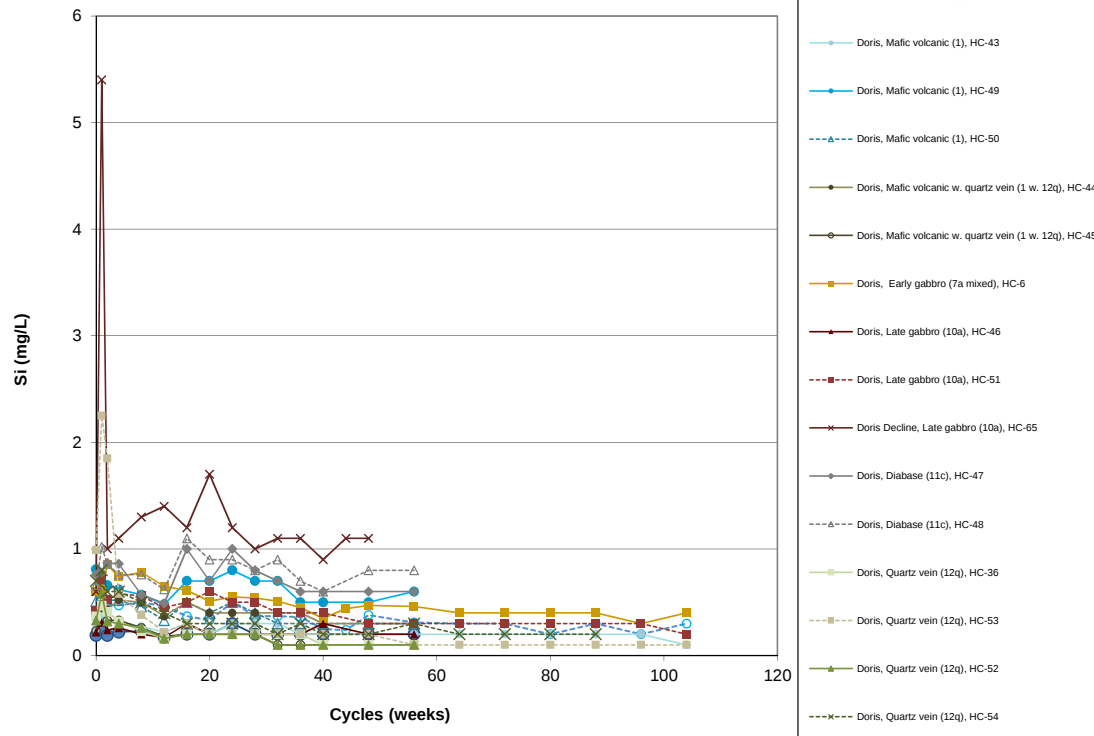
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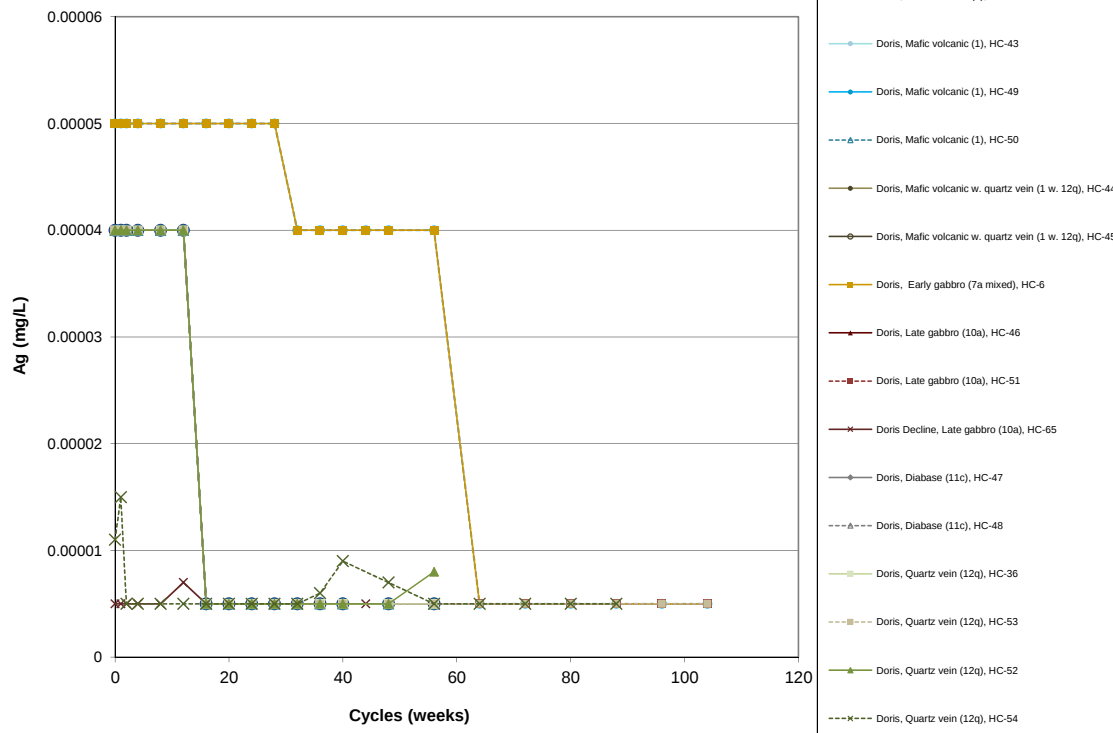
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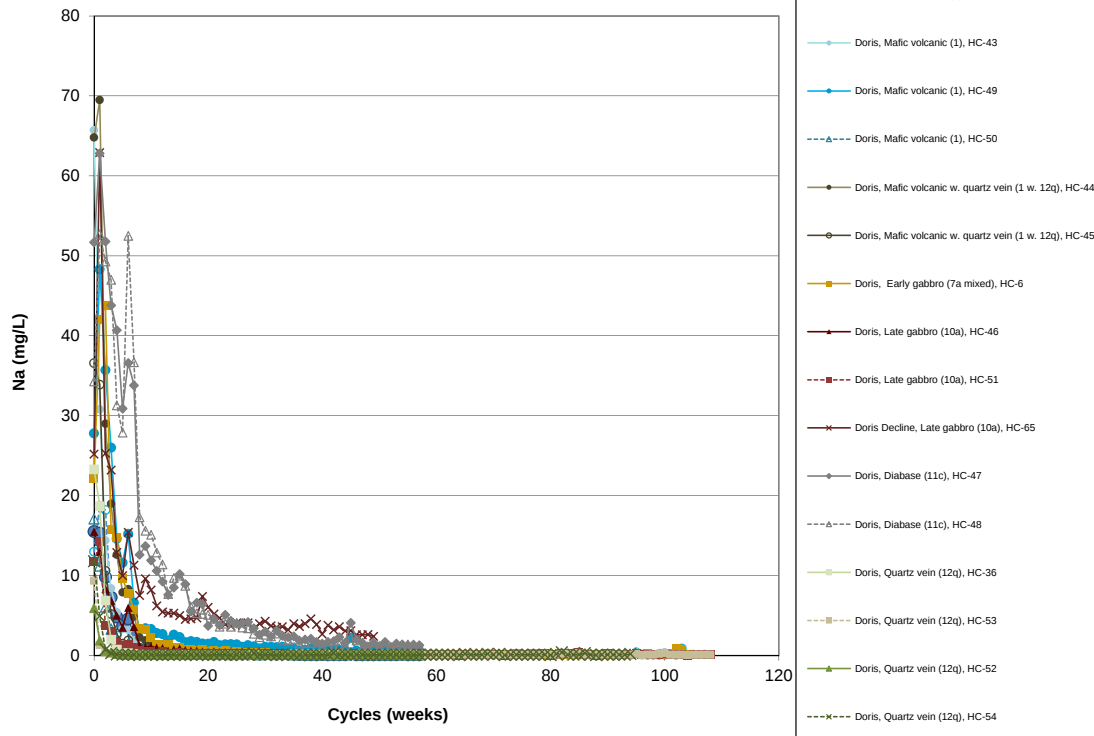
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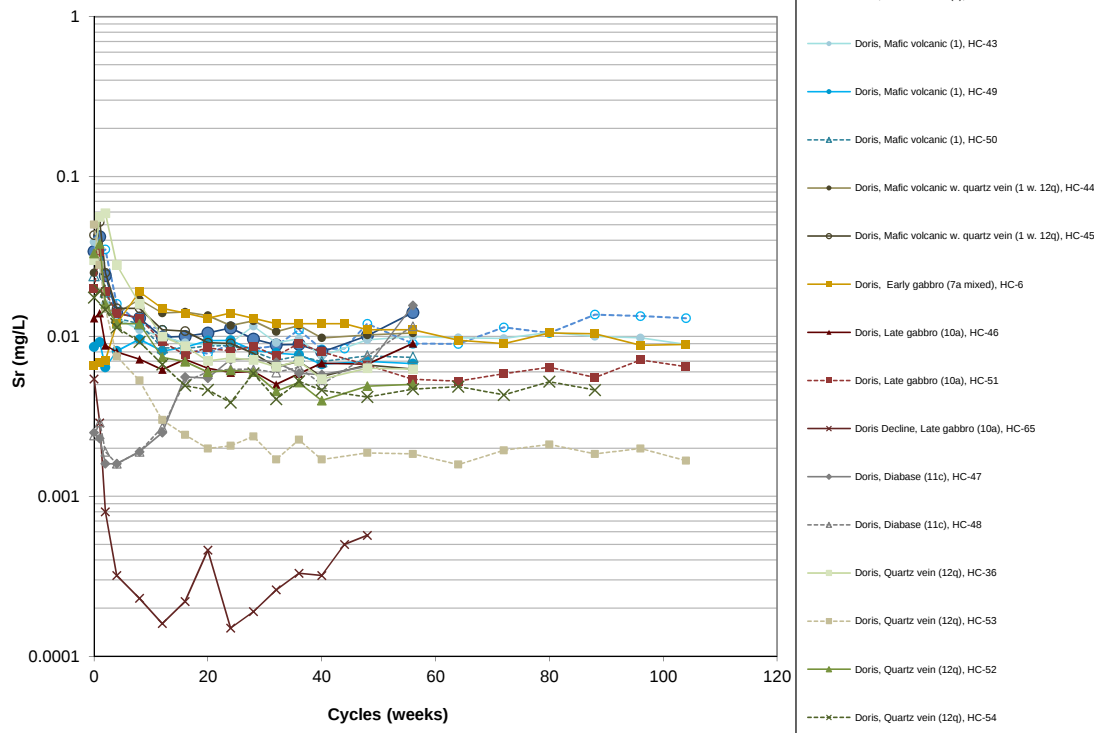
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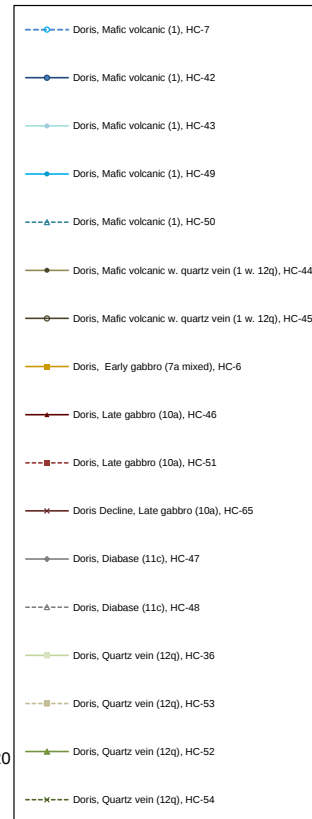
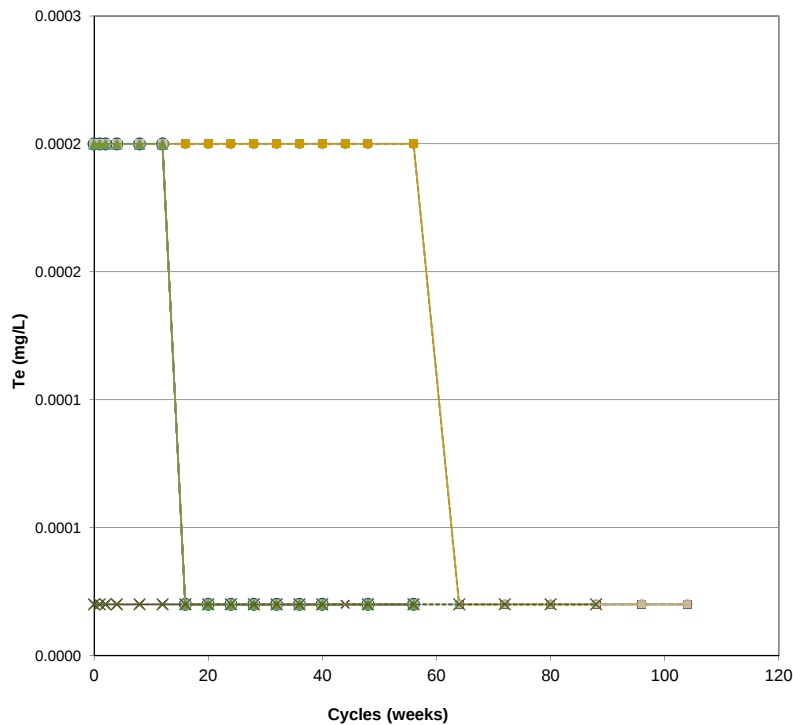
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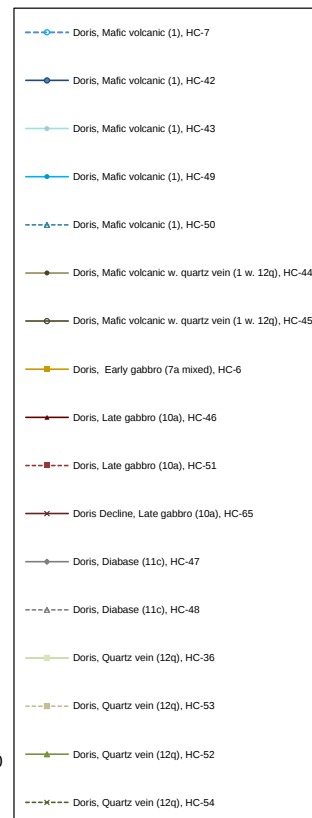
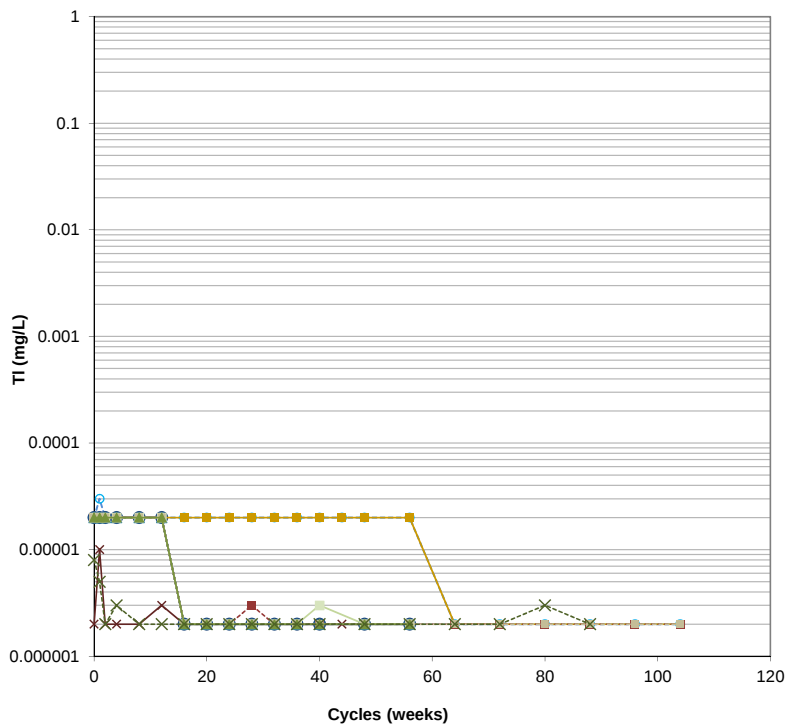
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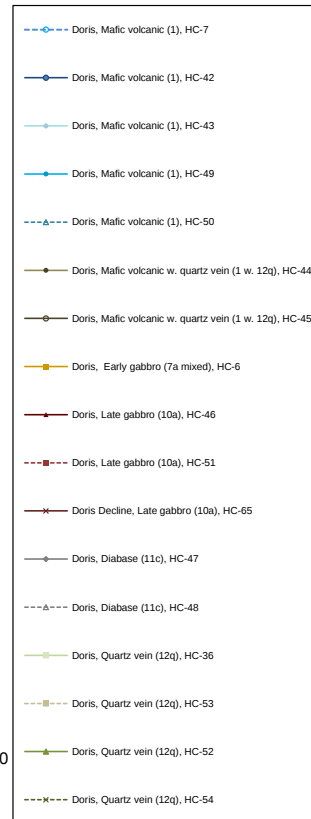
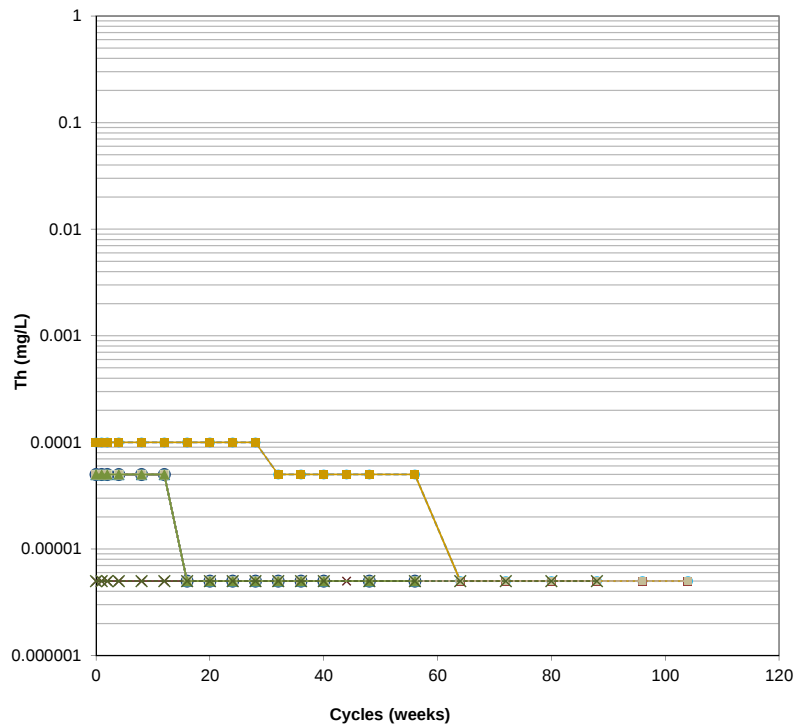
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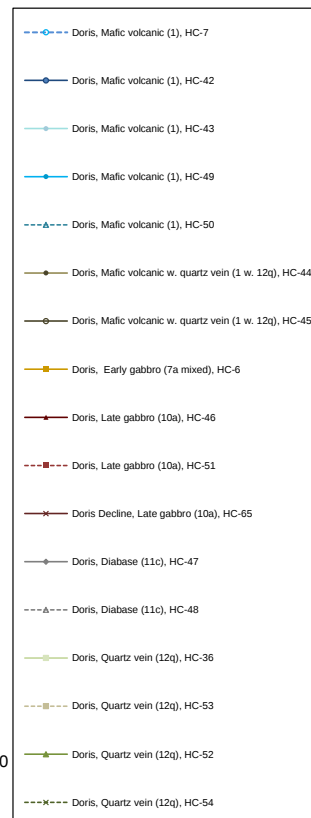
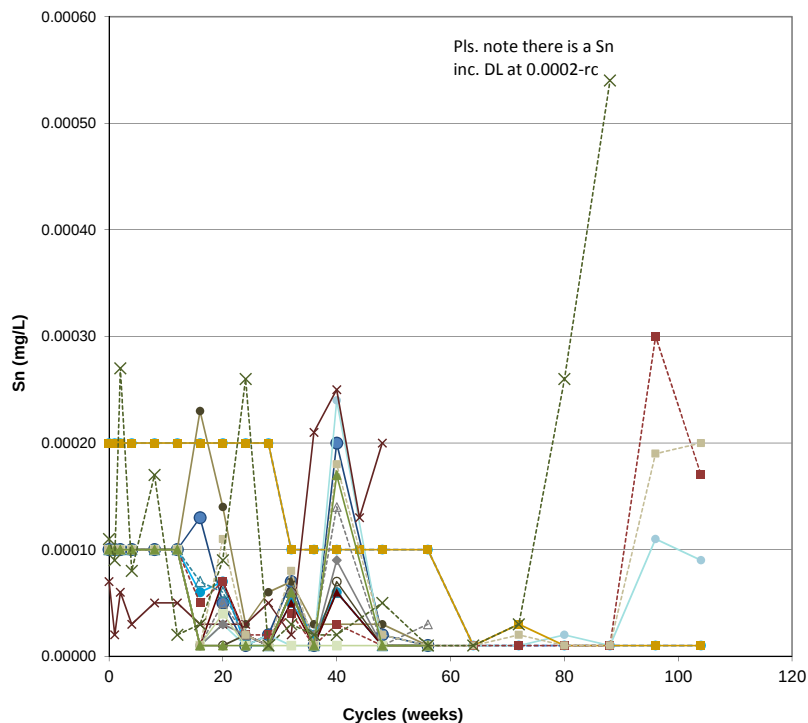
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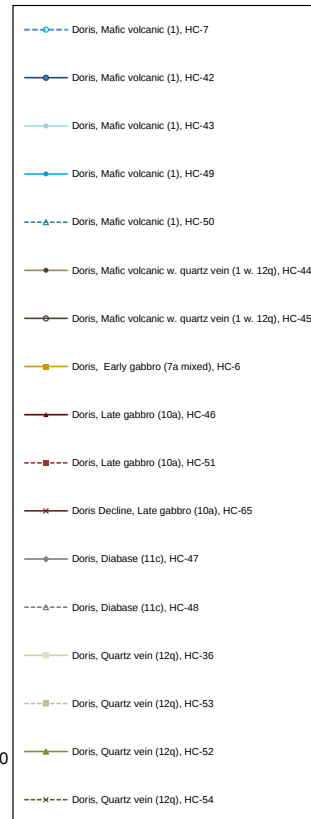
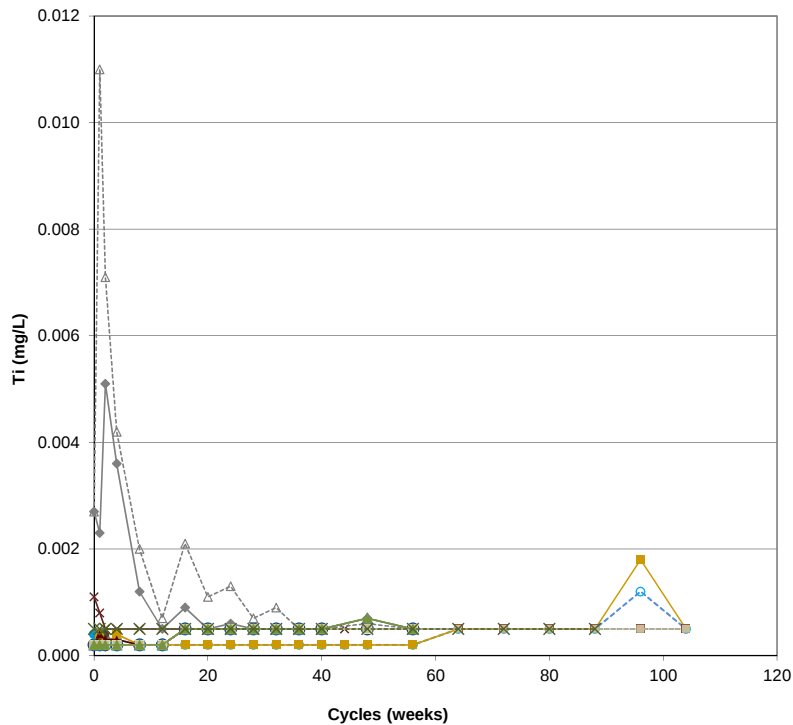
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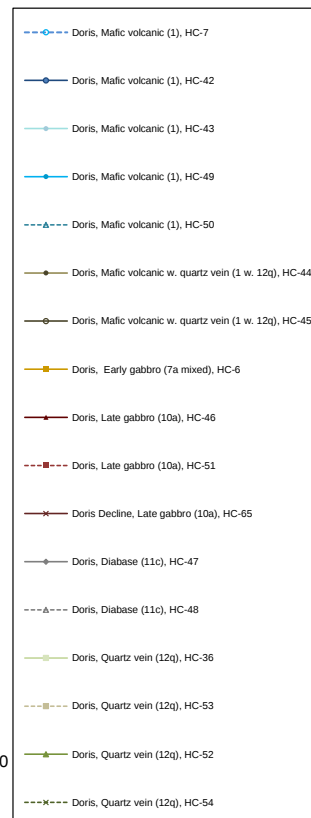
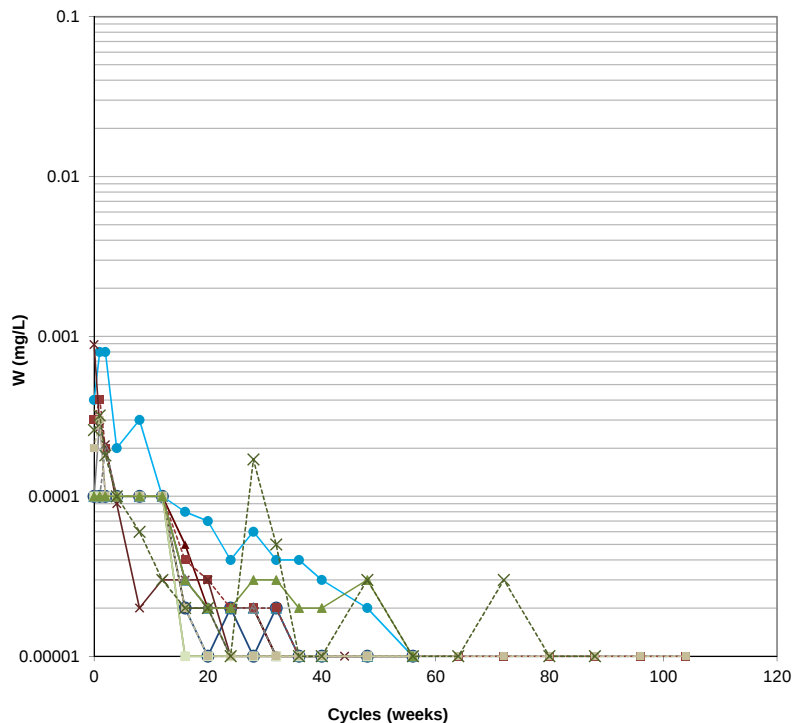
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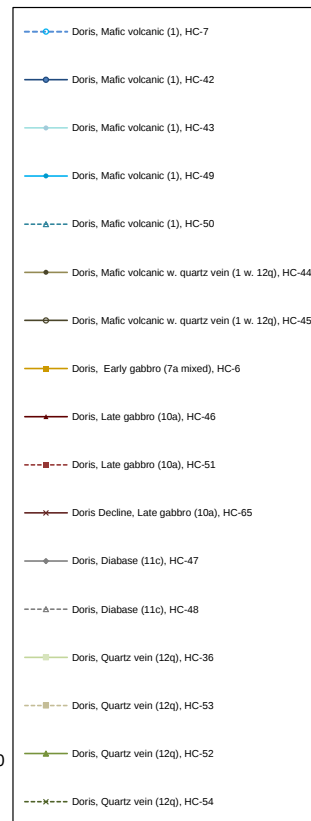
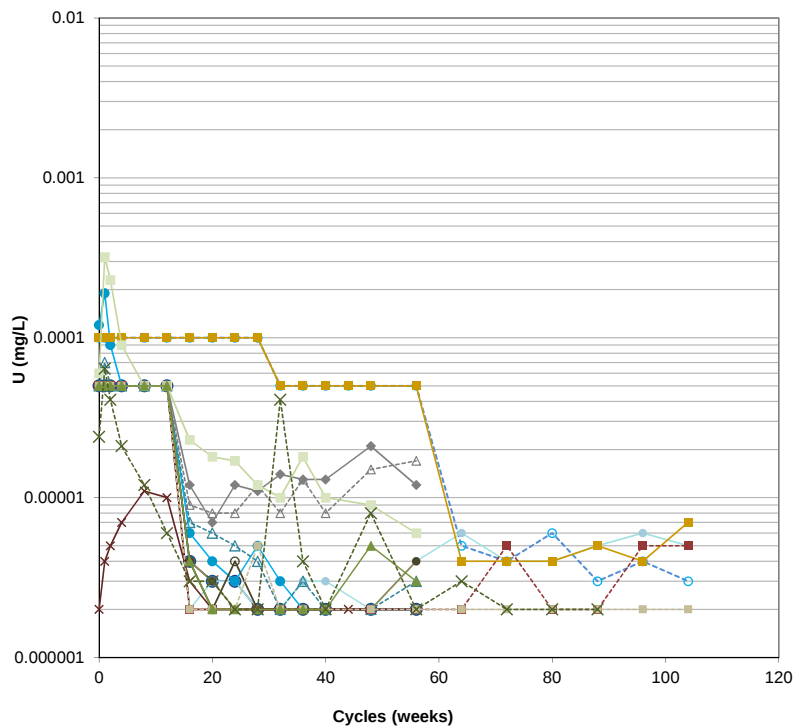
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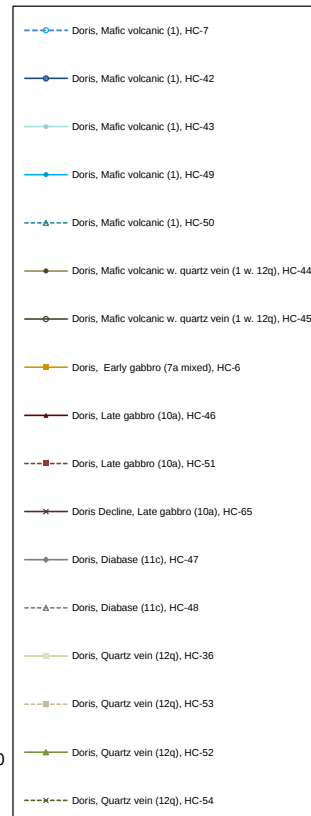
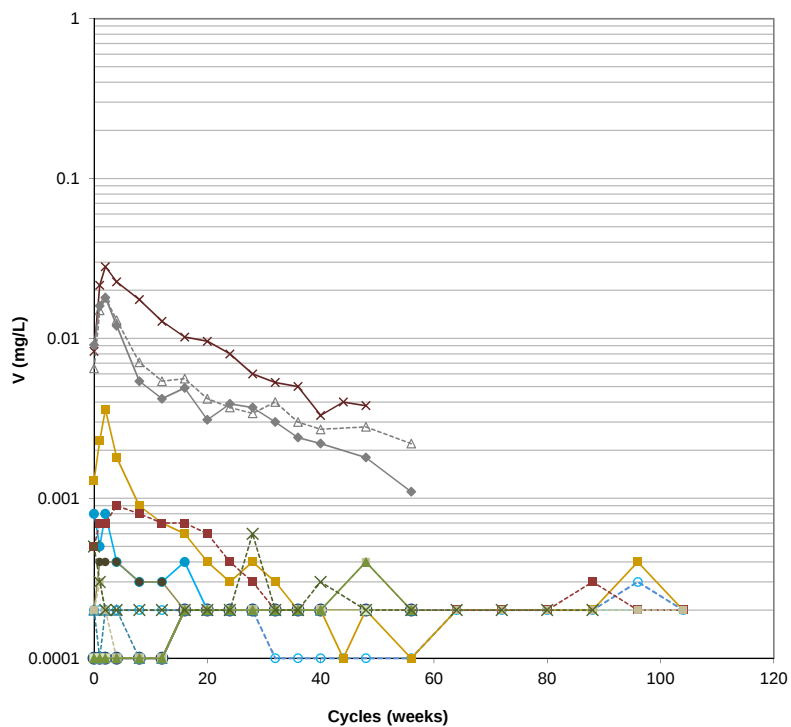
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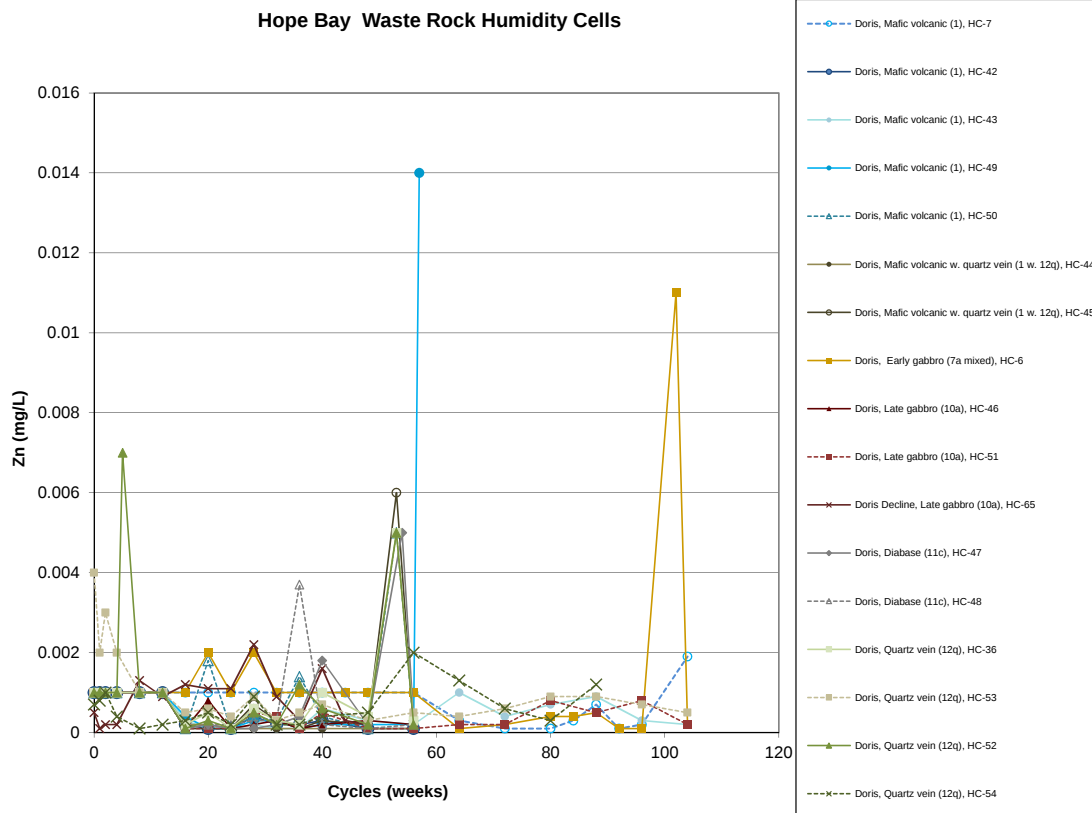
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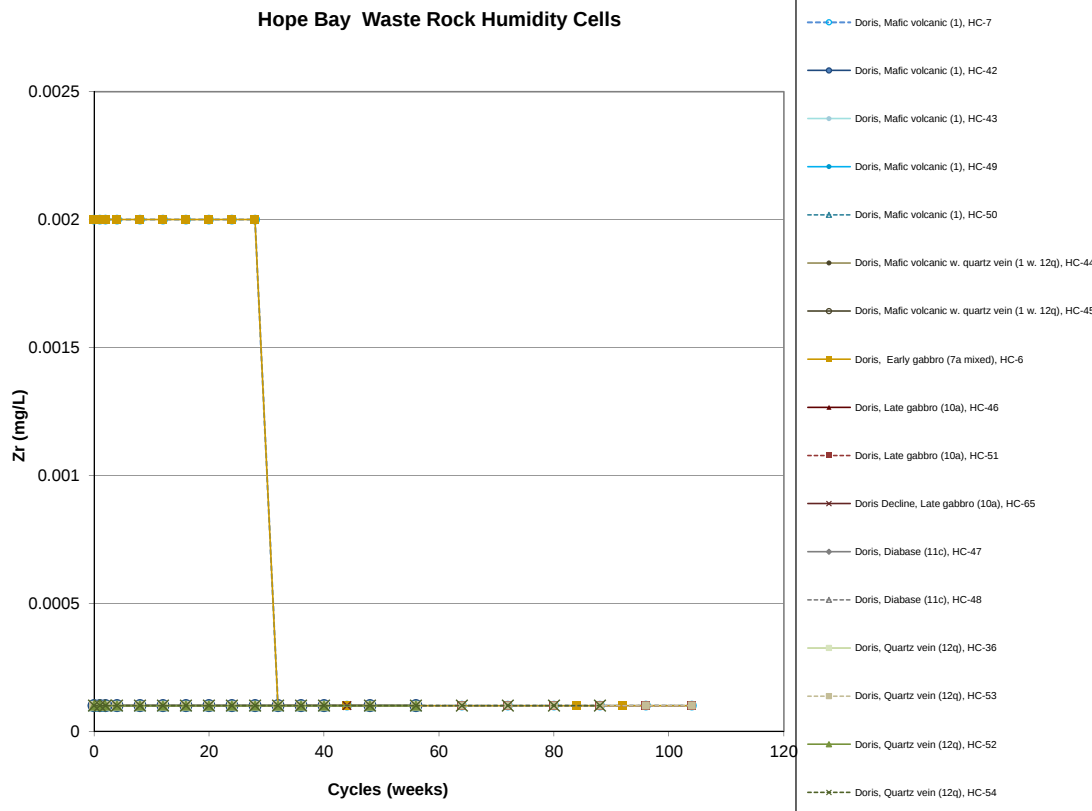
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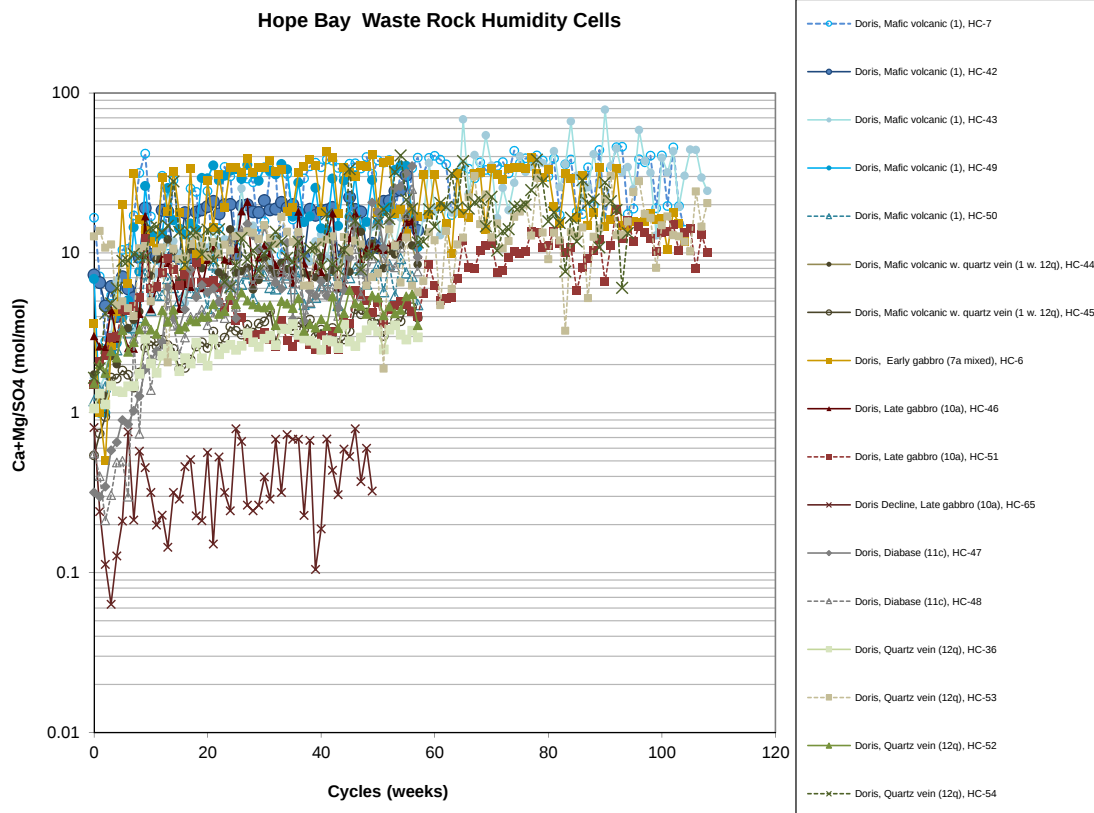
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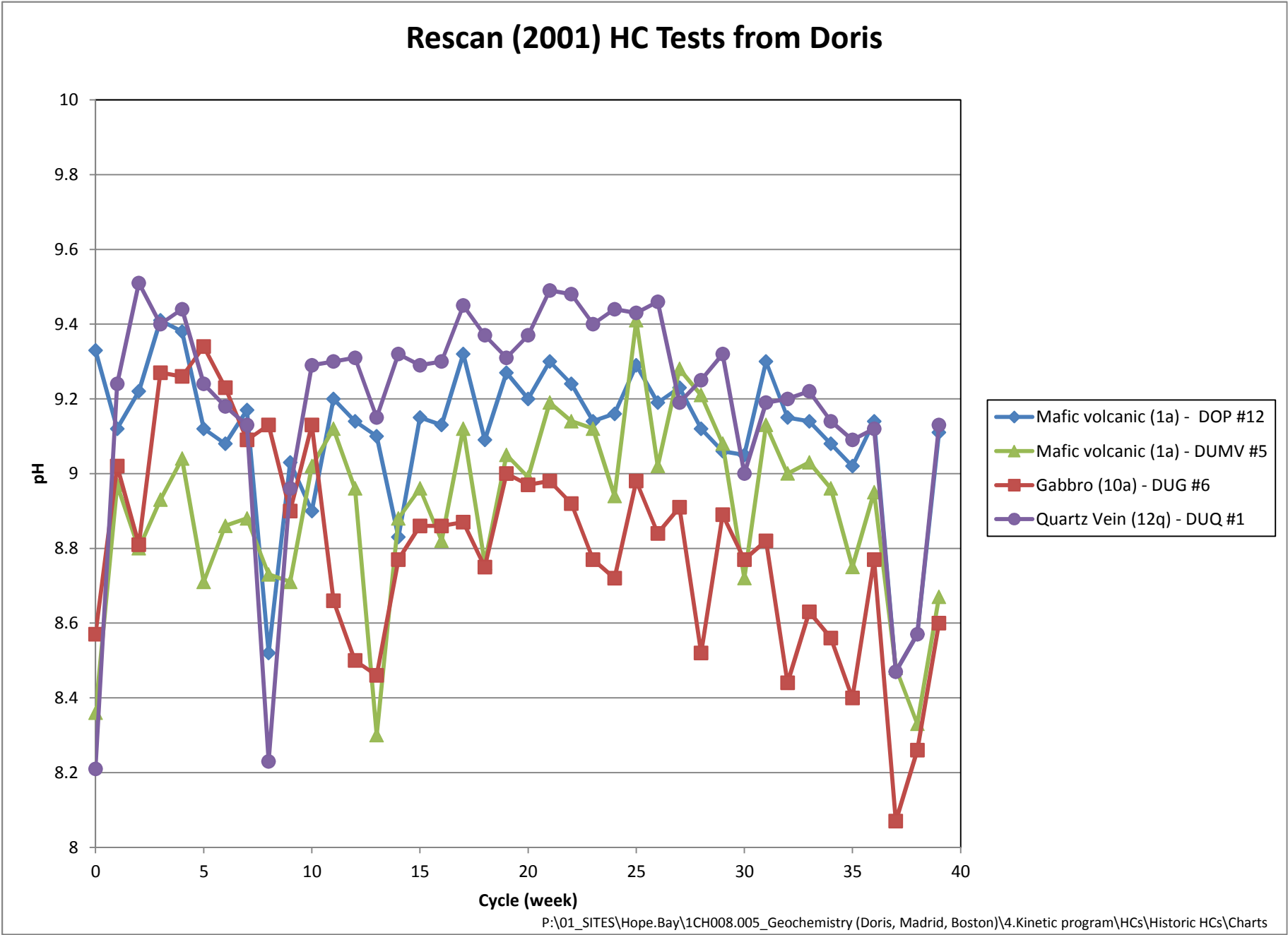
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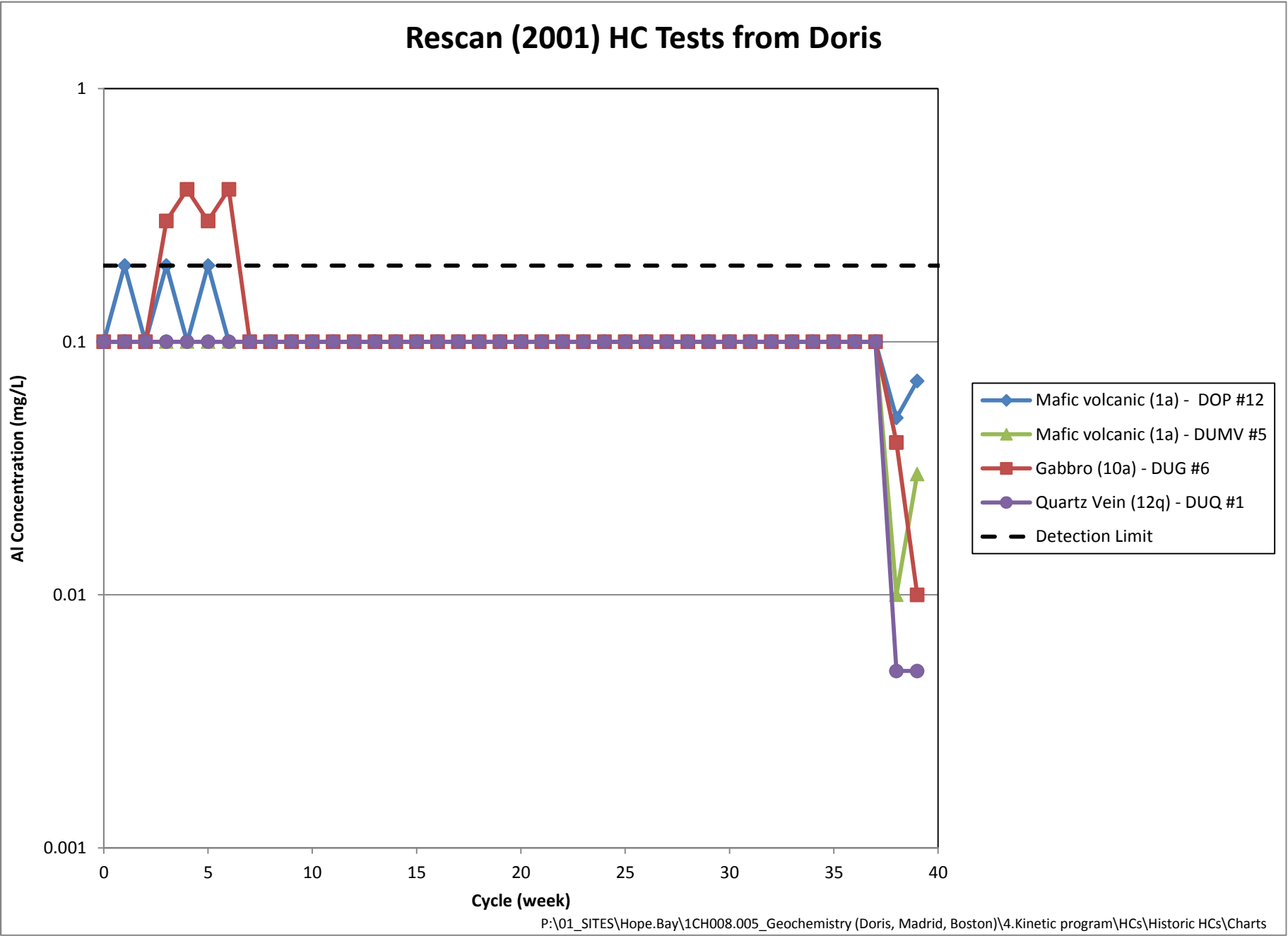


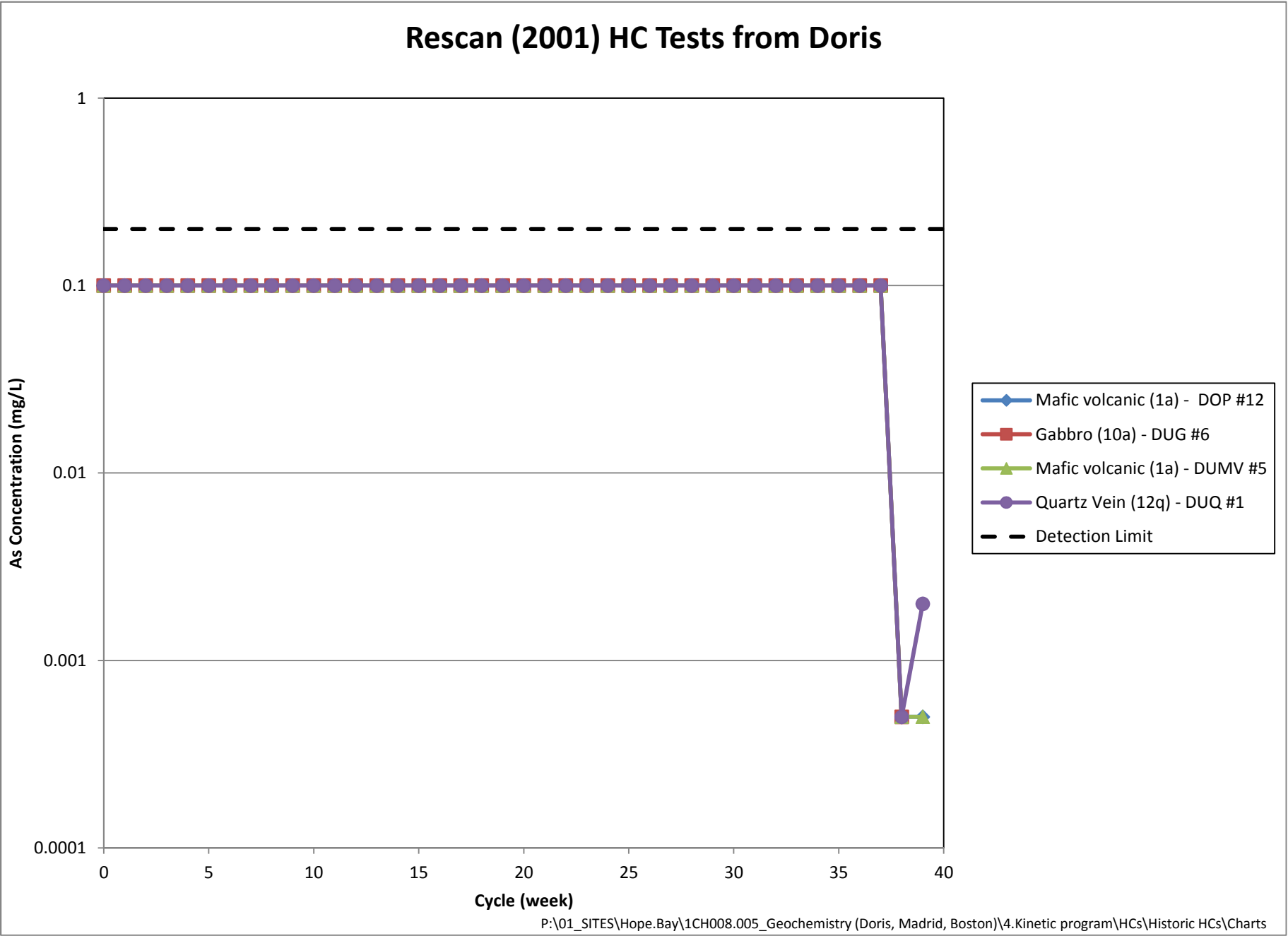
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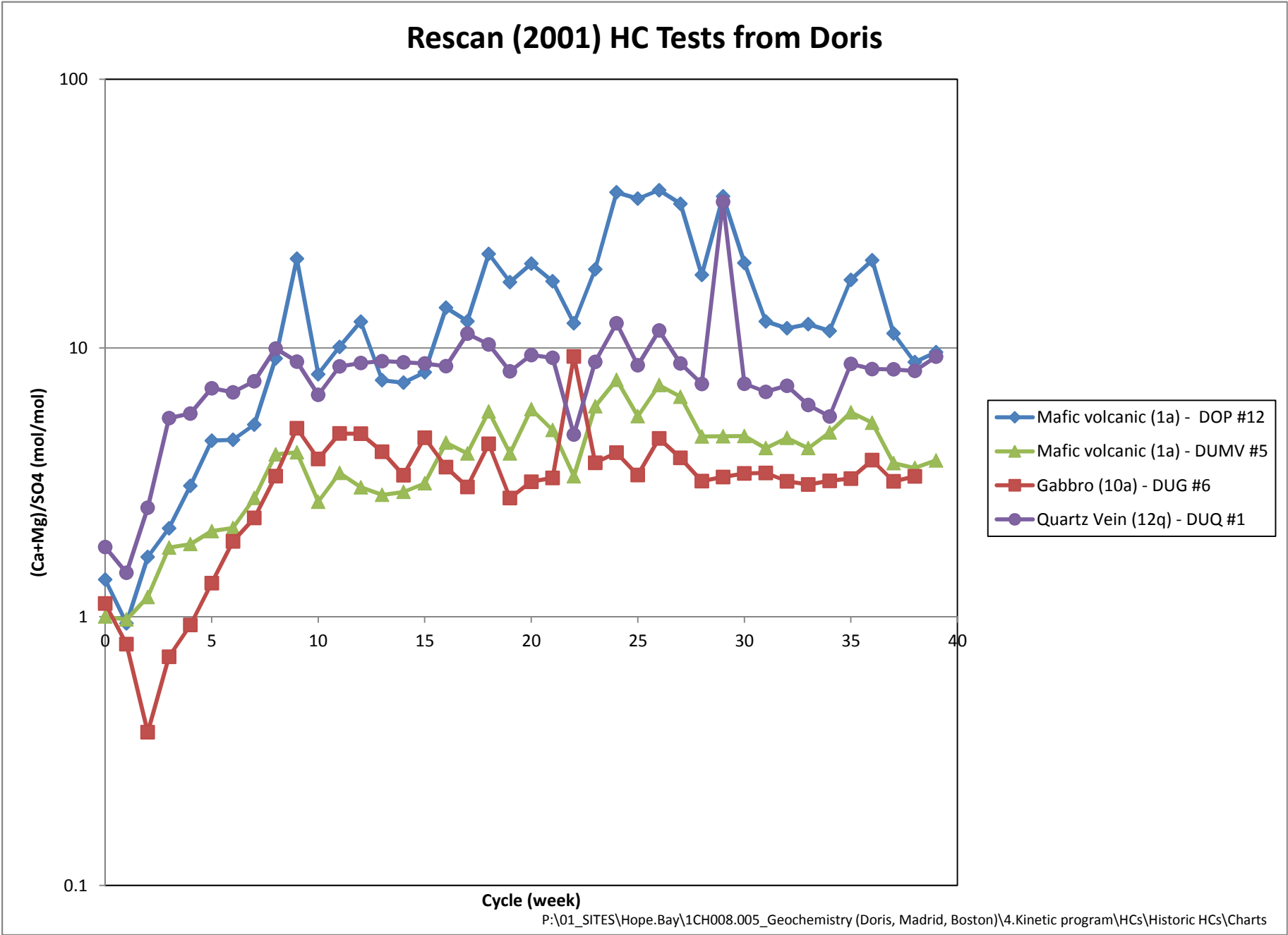
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Appendix D2 – Selected Rescan Humidity Cell Test Concentration Charts









Appendix E – SRK Humidity Cell Test Results

Appendix E1 – SRK Humidity Cell Test Summary of Key ABA and Kinetic Testing Results

HCT ID	Rock Type ¹	Preliminary Economic Classification	Total Sulpur	Static Test Results					Kinetic Test Results					
				Total Sulphur	NP	TIC	NP/AP	TIC/AP	pH		SO ₄ Release Rates (mg/kg/wk)		As Release Rates (mg/kg/wk)	
			% Rank ²	%	mg CaCO ₃ /t	Initial					Stable	Initial	Stable	
HC-7	1	waste	26%	0.11	161	259	46.8	75.3	7.5	8.9	1.2	0.6	0.0001	0.0001
			59%	0.17	173	244	33.4	46.9						
HC-42			21%	0.10	165	178	52.9	56.8	8.3	9.2	2.4	0.7	0.0002	0.0001
HC-43			85%	0.52	188	254	11.6	15.6	7.4	9.2	18	0.8	0.0001	0.0001
HC-49			60%	0.17	176	331	33.1	62.2	8.2	9.6	1.7	0.6	0.0004	0.0001
HC-50			95%	1.78	202	336	3.6	6.0	8.0	9.1	21	2	0.0007	0.0005
HC-44	1 w. 12q	waste	29%	0.31	194	216	20.0	22.3	8.4	9.3	11	1.5	0.0005	0.0009
HC-45		ore	86%	2.37	161	233	2.2	3.1	7.5	9.0	66	3	0.0038	0.0005
HC-53	12q	waste	50%	0.09	3	3	1.0	1.2	7.2	8.7	0.6	0.6	0.0012	0.0001
HC-36		ore	100%	6.03	120	156	0.6	0.8	7.7	8.7	12	5.5	0.0006	0.0001
HC-52			76%	1.69	173	302	3.3	5.7	7.6	8.8	17	2.7	0.0005	0.0001
HC-54			49%	0.61	20	28	1.1	1.5	7.7	9.1	5	1	0.0014	0.0001
HC-47	11c	waste	95%	0.10	28	18	8.9	5.6	7.4	10.0	7	1	0.0050	0.0018
HC-48			98%	0.12	19	10	5.2	2.8	7.4	9.8	5.4	0.9	0.0005	0.0005
HC-46	10a	waste	92%	0.29	116	142	12.8	15.6	7.6	9.2	4.8	1.0	0.0001	0.0008
HC-51			98%	1.19	246	417	6.6	11.2	7.9	9.3	16	2	0.0023	0.0013
HC-65		decline	58%	0.10	9	0.5	2.9	0.1	7.1	9.4	5	1	0.0401	0.0002
HC-6	7a mixed	mixed	--	0.13	128	156	31.6	38.5	7.9	9.3	1.7	0.7	0.0005	0.0001

NP determined using the modified Sobek method (MEND 1991).

¹Rock codes as follows: **1** = mafic volcanic; **7a** = early gabbro; **10a** = late gabbro; **11c** = diabase; **12q** = quartz vein

²Rank relative to Doris (2011) sample set except for HC-6. No rank for HC-6 because 7a is an insignificant rock type for the Doris deposit.

Appendix E2 – SRK Humidity Cell Test Stable Release Rates

HCT ID	Rock Type ¹	Sulphate	Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Al	Sb	As	Ba	Be	Bi	B	Cd
HC-6	7a mixed	0.69	15	0.015	0.43	0.02	0.002	0.08	0.006	17	0.028	0.000035	0.000082	0.00013	0.000033	0.000032	0.014	0.000006
HC-7	1	0.62	15	0.016	0.34	0.02	0.003	0.09	0.008	16	0.015	0.000038	0.000066	0.00022	0.000036	0.000035	0.015	0.0000067
HC-36	12q	5.5	11	0.007	1.10	0.01	0.003	0.09	0.003	21	0.0013	0.000012	0.000088	0.00011	0.0000049	0.0000024	0.024	0.0000024
HC-42	1	0.74	9.2	0.009	1.50	0.01	0.002	0.06	0.004	12	0.039	0.000018	0.000084	0.00018	0.000013	0.000011	0.02	0.0000027
HC-43	1	0.81	11	0.006	2.30	0.01	0.066	0.08	0.003	17	0.015	0.000011	0.00014	0.00015	0.0000061	0.000004	0.022	0.0000024
HC-44	1 w. 12q	1.5	12	0.009	0.58	0.09	0.057	0.05	0.003	17	0.036	0.000016	0.00092	0.00013	0.0000079	0.0000058	0.022	0.0000024
HC-45	1 w. 12q	3.5	8.4	0.005	1.20	0.10	0.002	0.02	0.002	17	0.0035	0.000027	0.00055	0.00014	0.0000046	0.0000023	0.023	0.0000023
HC-46	10a	0.98	8.4	0.007	1.40	0.01	0.002	0.05	0.003	12	0.024	0.000019	0.00078	0.0002	0.0000077	0.0000058	0.022	0.0000024
HC-47	11c	0.83	11	0.008	1.70	0.01	0.002	0.04	0.004	14	0.054	0.000027	0.0018	0.00018	0.000012	0.00001	0.023	0.0000027
HC-48	11c	0.91	9.2	0.008	1.10	0.01	0.002	0.05	0.004	15	0.041	0.00003	0.00046	0.00011	0.000011	0.0000091	0.024	0.0000027
HC-49	1	0.65	14	0.008	0.37	0.24	0.005	0.04	0.004	18	0.075	0.000081	0.00011	0.00015	0.000011	0.0000091	0.025	0.0000027
HC-50	1	2.2	12	0.007	0.41	0.07	0.060	0.05	0.005	18	0.025	0.000081	0.00052	0.00019	0.0000081	0.000006	0.023	0.0000025
HC-51	10a	1.7	15	0.004	0.63	0.07	0.002	0.12	0.003	19	0.014	0.000087	0.0013	0.000095	0.0000044	0.0000022	0.022	0.0000022
HC-52	12q	2.7	9.3	0.004	0.32	0.07	0.002	0.05	0.002	15	0.0037	0.000025	0.00013	0.00018	0.0000044	0.0000022	0.022	0.0000022
HC-53	12q	0.56	6.1	0.007	0.28	0.01	0.002	0.09	0.003	7.1	0.0027	0.000016	0.00011	0.00026	0.000009	0.000007	0.022	0.0000028
HC-54	12q	1.1	11	0.006	1.30	0.15	0.022	0.05	0.002	17	0.0057	0.000053	0.000082	0.00026	0.0000045	0.0000022	0.022	0.0000025
HC-65	10a	0.52	5	0.007	0.43	0.02	0.004	0.10	0.005	11	0.09	0.00006	0.00022	0.000039	0.0000045	0.0000023	0.023	0.0000023

All rates in mg/kg/wk.

¹Rock codes as follows:

- 1 = mafic volcanic
- 7a = early gabbro
- 10a = late gabbro
- 11c = diabase
- 12q = quartz vein

HCT ID	Rock Type ¹	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Hg	Mo	Ni	P	K	Se	Si	Ag	Na	Sr
HC-6	7a mixed	3.3	0.000071	0.000033	0.00029	0.0049	0.000029	0.00029	1.7	0.0021	0.0078	0.000052	0.000061	0.0051	0.14	0.000057	0.19	0.000011	0.15	0.0048
HC-7	1	3.2	0.000073	0.000036	0.00026	0.0034	0.000037	0.00037	1.9	0.0047	0.008	0.000038	0.000055	0.0057	0.18	0.000058	0.14	0.000011	0.084	0.0047
HC-36	12q	3.3	0.000049	0.000027	0.00021	0.00091	0.000022	0.00024	2.1	0.0014	0.0048	0.00011	0.000038	0.0027	0.12	0.000029	0.067	0.0000024	0.04	0.0031
HC-42	1	2.6	0.000055	0.000013	0.00022	0.0045	0.000016	0.00021	0.77	0.0093	0.0063	0.000052	0.000031	0.0034	0.23	0.000049	0.094	0.0000056	0.47	0.0052
HC-43	1	3	0.000048	0.0000084	0.00015	0.0015	0.000017	0.00032	1.8	0.004	0.0034	0.000042	0.000039	0.003	0.17	0.000022	0.092	0.0000029	0.089	0.0043
HC-44	1 w. 12q	3.2	0.000049	0.000023	0.00024	0.0019	0.000013	0.00046	1.4	0.0048	0.0058	0.00012	0.000021	0.0029	0.26	0.000041	0.16	0.0000036	0.15	0.0052
HC-45	1 w. 12q	2.7	0.000052	0.00011	0.00014	0.002	0.000016	0.00023	1.4	0.0043	0.0035	0.00013	0.0001	0.0034	0.12	0.000029	0.046	0.0000023	0.043	0.0029
HC-46	10a	2	0.000047	0.000013	0.0002	0.0042	0.000015	0.00024	1	0.0054	0.0055	0.000096	0.00054	0.0027	0.17	0.000025	0.093	0.0000035	0.17	0.0029
HC-47	11c	1.7	0.000057	0.000014	0.0003	0.017	0.000017	0.0002	0.36	0.00099	0.0059	0.00012	0.000034	0.0035	0.58	0.000035	0.31	0.0000052	2.8	0.0031
HC-48	11c	1.5	0.000057	0.000016	0.00031	0.015	0.000029	0.00026	0.52	0.00059	0.006	0.000053	0.00003	0.0031	0.39	0.000053	0.37	0.0000048	1.8	0.003
HC-49	1	2.8	0.000057	0.000017	0.00013	0.0038	0.000016	0.00024	1.7	0.0053	0.0063	0.00016	0.000027	0.0036	0.43	0.00003	0.28	0.0000048	0.55	0.0037
HC-50	1	3.4	0.000065	0.000087	0.00015	0.0021	0.000024	0.00023	1.5	0.0067	0.0058	0.000084	0.000024	0.0032	0.24	0.000025	0.16	0.0000036	0.079	0.0036
HC-51	10a	3.6	0.000044	0.00011	0.00012	0.00044	0.000062	0.00022	2.4	0.0017	0.00088	0.000037	0.000071	0.0035	0.13	0.000027	0.12	0.0000022	0.054	0.0028
HC-52	12q	2.9	0.000044	0.0000086	0.00018	0.00071	0.0000098	0.00022	1.2	0.00091	0.0054	0.000083	0.000037	0.0024	0.11	0.000018	0.06	0.0000024	0.04	0.0023
HC-53	12q	1.5	0.000051	0.000014	0.00016	0.00098	0.000019	0.00021	0.5	0.004	0.0037	0.00006	0.000043	0.0033	0.11	0.000026	0.089	0.000004	0.052	0.0011
HC-54	12q	3.7	0.000049	0.000018	0.00018	0.0011	0.000012	0.00022	1.3	0.0031	0.0033	0.00011	0.000064	0.0023	0.12	0.000025	0.12	0.0000024	0.048	0.0023
HC-65	10a	0.032	0.000045	0.000013	0.00023	0.0087	0.000018	0.00032	0.025	0.000088	0.00097	0.000025	0.00003	0.0049	0.22	0.000024	0.54	0.0000024	2.2	0.00014

All rates in mg/kg/wk.

¹Rock codes as follows:

- 1 = mafic volcanic
- 7a = early gabbro
- 10a = late gabbro
- 11c = diabase
- 12q = quartz vein

HCT ID	Rock Type ¹	Tl	Sn	Ti	U	V	Zn	Zr
HC-6	7a mixed	0.0000048	0.000034	0.0002	0.000016	0.00012	0.00059	0.00022
HC-7	1	0.000005	0.000036	0.00018	0.000018	0.00008	0.00034	0.00025
HC-36	12q	0.000001	0.0000049	0.00024	0.0000049	0.000097	0.00056	0.000049
HC-42	1	0.0000026	0.000027	0.0002	0.0000056	0.00008	0.00016	0.000045
HC-43	1	0.0000012	0.000018	0.00022	0.0000026	0.000086	0.00019	0.000044
HC-44	1 w. 12q	0.0000016	0.000029	0.00021	0.000003	0.000093	0.000086	0.000045
HC-45	1 w. 12q	0.00000091	0.000012	0.00023	0.00000091	0.000091	0.00063	0.000046
HC-46	10a	0.0000015	0.000014	0.00021	0.0000027	0.000084	0.00014	0.000044
HC-47	11c	0.0000024	0.000017	0.00033	0.0000092	0.0015	0.00045	0.000045
HC-48	11c	0.0000022	0.000021	0.00042	0.0000082	0.0017	0.00027	0.000046
HC-49	1	0.0000022	0.000019	0.00021	0.0000047	0.00011	0.00027	0.000046
HC-50	1	0.0000016	0.000016	0.00023	0.0000034	0.000088	0.00046	0.000046
HC-51	10a	0.00000088	0.000044	0.00022	0.0000017	0.000097	0.00022	0.000044
HC-52	12q	0.00000088	0.000013	0.00024	0.0000013	0.0001	0.00038	0.000044
HC-53	12q	0.0000018	0.000029	0.00021	0.0000034	0.000092	0.0003	0.000045
HC-54	12q	0.00000095	0.000051	0.00022	0.0000026	0.0001	0.00031	0.000045
HC-65	10a	0.00000095	0.000043	0.00023	0.0000017	0.0036	0.00046	0.000045

All rates in mg/kg/wk.

¹Rock codes as follows:

- 1 = mafic volcanic
- 7a = early gabbro
- 10a = late gabbro
- 11c = diabase
- 12q = quartz vein

Appendix E3 – SRK Humidity Cell Test Summary of Depletion Calculations

HCT ID	Rock Type ¹	Preliminary Economic Classification	Total Sulpur	Total Sulphur	NP/AP	TIC/AP	(Ca+Mg)/SO ₄	Stable SO ₄ Release Rate	Time to Depletion			NP Depletion > AP Depletion	TIC Depletion > AP Depletion	Ca+Mg/ SO ₄ < NP/AP	Ca+Mg/ SO ₄ < TIC/AP	Prediction	
			% Rank ²	%S					NP	TIC	Sulphide					Neutral	Acidic
									years								
HC-7	1	waste	26%	0.11	46.8	75.3	24.3	0.62	193	312	99	Yes	Yes	Yes	Yes	likely	
			59%	0.17	33.4	46.9	24.3	0.62	208	294	142	Yes	Yes	Yes	Yes	likely	
HC-42			21%	0.10	52.9	56.8	12.4	0.74	329	353	76	Yes	Yes	Yes	Yes	likely	
HC-43			85%	0.52	11.6	15.6	17.5	0.81	241	325	365	No	No	No	No		theoretically possible
HC-49			60%	0.17	33.1	62.2	20.5	0.65	241	455	149	Yes	Yes	Yes	Yes	likely	
HC-50			95%	1.78	3.6	6.0	6.4	2.16	267	445	471	No	No	No	No		theoretically possible
HC-44	1 w. 12q	waste	29%	0.31	20.0	22.3	8.7	1.53	267	297	115	Yes	Yes	Yes	Yes	likely	
HC-45		ore	86%	2.37	2.2	3.1	3.5	3.45	240	348	393	No	No	No	No		theoretically possible
HC-53	12q	waste	50%	0.09	1.0	1.2	10.0	0.56	7	9	90	No	No	No	No		theoretically possible
HC-36			100%	6.03	0.6	0.8	3.0	5.53	133	173	624	No	No	No	No		theoretically possible
HC-52		ore	76%	1.69	3.3	5.7	4.3	2.68	271	476	360	No	Yes	No	Yes		theoretically possible
HC-54			49%	0.61	1.1	1.5	13.1	1.08	24	35	322	No	No	No	No		theoretically possible
HC-47	11c	waste	95%	0.10	8.9	5.6	6.7	0.83	91	57	68	Yes	No	Yes	No		theoretically possible
HC-48			98%	0.12	5.2	2.8	6.2	0.91	62	32	74	No	No	No	No		theoretically possible
HC-46	10a	waste	92%	0.29	12.8	15.6	9.2	0.98	236	287	168	Yes	Yes	Yes	Yes	likely	
HC-51			98%	1.19	6.6	11.2	10.7	1.67	249	425	406	No	Yes	No	Yes	likely	
HC-65		decline	58%	0.10	2.9	0.1	0.3	0.52	958	46	99	Yes	No	Yes	No		theoretically possible
HC-6	7a mixed	mixed	--	0.13	31.6	38.5	21.1	0.69	160	196	106	Yes	Yes	Yes	Yes	likely	

¹Rock codes as follows: **1** = mafic volcanic; **7a** = early gabbro; **10a** = late gabbro; **11c** = diabase; **12q** = quartz vein

²Rank relative to Doris (2011) sample set except for HC-6. No rank for HC-6 because 7a is an insignificant rock type for the Doris deposit

Appendix E4 – Low Level Sulphate Data for Final Cycles of Selected Humidity
Cell Tests

HCT ID	Cycle	SO ₄ (mg/L)		RPD%
		Maxxam	Lakefield	
HC-43	106	0.79	0.97	20.5
HC-43	108	1.59	0.93	-52.4
HC-51	106	6.47	4.5	-35.9
HC-51	108	4.05	3.2	-23.4
HC-53	106	0.5	0.53	5.8
HC-53	108	0.55	0.47	-15.7
HC-54	92	1.86	2.2	16.7
HC-54	94	2.64	2.1	-22.8
HC-65	47	1.09	1.0	-8.6
HC-65	49	1.25	0.83	-40.4
<i>Detection Limit</i>		0.5	0.06	--