

Date	Sample ID	voltage (mV)	$\delta^{13}\text{C}$ (VPDB)	$\delta^{13}\text{C}$ stdev	$\delta^{18}\text{O}$ gas	$\delta^{18}\text{O}$ stdev	$\delta 47$ (v. Oz)	$\delta 47$ stdev	$\Delta 47$ (v. Oz)	$\Delta 47$ stdev	$\Delta 47$ sterror	$\delta 48$ (v. Oz)	$\Delta 48$ (v. Oz)	$\Delta 48$ stdev
session 1														
11/9/09	enriched BOC	15972	-9.954	0.003	57.604	0.003	26.126	0.071	0.002	0.026	0.009	133.496	64.722	2.607
11/9/09	102-GC-AZ01	15948	0.474	0.004	24.377	0.004	3.215	0.050	-0.130	0.023	0.008	-2.464	-1.327	0.684
11/9/09	ES09-03T1-S1	15966	1.125	0.003	16.555	0.003	-4.286	0.074	-0.452	0.047	0.017	-33.193	-17.159	0.703
11/10/09	ES09-03T1-S2	15940	1.144	0.003	16.463	0.003	-4.369	0.061	-0.461	0.023	0.008	-33.698	-17.494	0.552
11/10/09	ES09-04T1-S1	15946	0.303	0.002	16.511	0.002	-5.199	0.059	-0.534	0.032	0.011	-33.074	-16.949	0.561
11/10/09	ES09-04T1-S2	15962	0.295	0.004	16.683	0.004	-5.010	0.065	-0.508	0.042	0.015	-32.241	-16.434	0.399
11/10/09	Carrera Hagit 1	15977	2.370	0.004	37.484	0.004	18.306	0.066	0.021	0.028	0.010	49.943	24.767	0.698
11/10/09	heated BOC	11340	-8.951	0.004	27.937	0.004	-2.991	0.077	-0.756	0.041	0.015	5.688	-0.079	0.628
11/11/09	ES09-04T3-S1	15961	0.370	0.019	16.841	0.019	-4.780	0.056	-0.507	0.022	0.008	-35.057	-19.601	0.912
11/11/09	ES09-04T3-S2	15963	0.405	0.008	16.674	0.008	-4.913	0.074	-0.507	0.014	0.005	-34.940	-19.161	0.522
11/12/09	enriched BOC	15932	-9.216	0.004	56.887	0.004	26.189	0.072	0.038	0.030	0.011	133.258	65.939	2.545
11/13/09	ES09-05T1-S1	15946	-7.219	0.001	26.844	0.001	-1.936	0.079	-0.295	0.033	0.012	8.046	4.391	0.449
11/13/09	Carrera Hagit 1	15966	2.369	0.003	37.481	0.003	18.304	0.060	0.023	0.027	0.010	52.586	27.353	0.904
11/13/09	ES09-02T1-S1	8572	-0.282	0.004	29.633	0.004	7.739	0.093	-0.119	0.027	0.009	22.127	12.885	1.189
11/14/09	ES09-02T3-S1	15934	-0.188	0.005	29.755	0.005	7.928	0.055	-0.141	0.012	0.004	19.127	9.674	0.326
11/14/09	enriched BOC	15945	-9.922	0.002	57.070	0.002	25.609	0.073	-0.018	0.051	0.018	131.824	64.226	3.063
11/15/09	ES09-03C1	15995	0.286	0.002	17.529	0.002	-4.155	0.066	-0.487	0.033	0.012	-30.288	-16.086	0.642
11/15/09	ES09-03M1	15951	0.305	0.002	17.660	0.002	-4.020	0.065	-0.502	0.015	0.005	-29.983	-16.030	0.639
11/15/09	BW-83-XT5	15934	0.958	0.006	29.325	0.006	8.615	0.066	-0.137	0.027	0.010	17.081	8.482	0.734
11/15/09	ES09-05T3	15928	-6.655	0.003	26.552	0.003	-1.663	0.066	-0.278	0.030	0.011	5.685	2.605	0.616
11/15/09	BW-83-XT6	15899	-0.785	0.004	34.484	0.004	12.140	0.068	-0.065	0.021	0.007	36.870	17.893	0.719
11/16/09	102-GC-AZ01	15933	0.541	0.003	24.332	0.003	3.211	0.067	-0.155	0.026	0.009	-3.613	-2.392	0.658

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session 2														
1/24/2006	enriched BOC	15951	-10.738	0.006	56.353	0.006	23.972	0.070	-0.141	0.043	0.015	121.691	56.094	3.030
1/25/2010	102-GC-AZ01	15971	0.464	0.004	24.416	0.004	3.246	0.068	-0.139	0.027	0.009	-1.541	-0.518	0.183
1/26/2010	ES09-04 M1	15992	-0.062	0.004	18.006	0.004	-4.030	0.061	-0.515	0.016	0.006	-25.760	-12.454	0.561
1/26/2010	ES09-04 T4	15941	0.714	0.002	18.202	0.002	-3.044	0.066	-0.470	0.028	0.010	-25.226	-12.296	0.409
1/26/2010	ES09-01 T1	15917	0.053	0.008	26.938	0.008	5.227	0.060	-0.276	0.016	0.006	8.002	4.092	0.226
1/26/2010	Carrera Hagit 1	15978	2.362	0.003	37.577	0.003	18.319	0.050	-0.060	0.027	0.010	46.855	21.532	0.582
1/26/2010	ES09-01 T2	15904	-1.034	0.003	33.459	0.003	10.796	0.070	-0.154	0.037	0.013	30.967	14.067	0.641
1/26/2010	BOC	16002	-10.714	0.001	29.755	0.001	-2.968	0.070	-0.830	0.024	0.008	17.717	8.284	0.405
1/26/2010	ES09-01 T4	15989	0.559	0.008	24.736	0.008	3.452	0.066	-0.343	0.047	0.017	5.189	5.591	1.198
1/27/2010	ES09-04 C2	15926	-0.295	0.003	18.076	0.003	-4.172	0.079	-0.504	0.018	0.006	-26.153	-12.987	0.270
1/27/2010	ES09-02 T5	15944	-0.288	0.004	28.812	0.004	6.829	0.065	-0.214	0.043	0.015	14.366	6.758	0.259
1/27/2010	heated BOC	15988	-10.725	0.004	29.713	0.004	-3.016	0.056	-0.827	0.032	0.011	17.535	8.185	0.415
1/27/2010	Carrera Hagit I	15968	2.361	0.005	37.579	0.005	18.350	0.061	-0.031	0.034	0.012	47.789	22.438	0.804
1/28/2010	enriched BOC	15922	-10.758	0.018	56.301	0.018	23.885	0.077	-0.157	0.040	0.014	120.974	55.523	2.869
1/28/2010	ES09-05 T5	15917	-5.105	0.002	27.847	0.002	1.193	0.081	-0.220	0.024	0.008	10.615	4.939	0.265
1/28/2010	ES09-01 T5	15906	-0.077	0.004	27.738	0.004	5.889	0.077	-0.286	0.020	0.007	10.840	5.355	0.254
1/28/2010	102-GC-AZ01	15969	0.575	0.003	24.268	0.003	3.177	0.080	-0.167	0.027	0.010	-2.110	-0.800	0.413
session 3														
05/24/10	BOC	15941	-10.557	0.017	27.885	0.017	-4.684	0.070	-0.853	0.036	0.013	9.795	4.073	0.310
05/24/10	102-GC-AZ01	15978	0.495	0.002	24.613	0.002	3.439	0.071	-0.172	0.030	0.011	-1.592	-0.954	0.174
05/25/10	ES10-03	15952	-2.723	0.005	24.473	0.005	-0.100	0.058	-0.463	0.031	0.011	-2.360	-1.435	0.207
05/25/10	ES10-08 T1	15944	-0.782	0.004	31.830	0.004	9.339	0.059	-0.233	0.024	0.008	23.814	10.208	0.360
05/26/10	eBOC	15987	-10.679	0.011	59.557	0.011	27.228	0.066	-0.112	0.025	0.009	124.682	52.521	1.037
05/26/10	Carrera	15973	2.336	0.022	37.703	0.022	18.356	0.080	-0.123	0.039	0.014	46.285	20.727	0.498
05/26/10	ES10-05	15949	0.989	0.007	20.179	0.007	-0.716	0.063	-0.378	0.022	0.008	-16.776	-7.588	0.416
05/26/10	ES10-15	15978	0.384	0.006	32.377	0.006	11.084	0.060	-0.168	0.024	0.008	26.072	11.361	0.440
05/26/10	ES10-13	15971	-0.565	0.006	31.887	0.006	9.620	0.069	-0.220	0.033	0.012	24.278	10.555	0.443
05/26/10	102-GC-AZ01	15947	0.448	0.008	24.409	0.008	3.211	0.066	-0.153	0.023	0.008	-1.849	-0.817	0.207
05/26/10	ES10-06	15947	-0.917	0.007	32.880	0.007	10.294	0.063	-0.194	0.029	0.010	27.736	12.020	0.442

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session 4														
5/25/2011	heated BOC	15917	-10.626	0.004	30.189	0.008	-2.550	0.021	-0.906	0.016	0.006	13.656	3.434	0.358
5/25/2011	TV01	15872	2.607	0.004	30.465	0.006	11.351	0.018	-0.134	0.033	0.012	14.676	3.848	0.398
5/25/2011	ES10-32 T1	15955	1.795	0.005	33.204	0.006	13.149	0.014	-0.281	0.034	0.012	22.358	6.103	0.585
5/25/2011	ES10-32 T2	15908	-8.022	0.005	28.416	0.009	-1.221	0.018	-0.350	0.034	0.012	9.621	2.874	0.476
5/26/2011	Carrera	15912	2.371	0.002	37.429	0.006	17.832	0.011	-0.381	0.021	0.007	33.898	9.194	0.318
5/26/2011	heated eBOC	15945	-10.957	0.003	51.287	0.006	18.199	0.015	-0.661	0.040	0.014	72.165	19.225	0.237
5/27/2011	ES10-35 T1	15879	-7.568	0.004	26.946	0.006	-2.211	0.028	-0.324	0.024	0.008	5.424	1.560	0.454
5/27/2011	ES10-35 T2 *	15934	-7.052	0.005	27.541	0.004	-1.134	0.017	-0.336	0.052	0.018	7.309	2.275	0.573
5/27/2011	TV01	15912	2.609	0.007	30.451	0.013	11.311	0.014	-0.160	0.032	0.011	15.806	4.993	0.738
5/27/2011	ES10-27 T1	16025	-4.085	0.008	28.684	0.011	2.918	0.018	-0.295	0.042	0.015	11.199	3.901	0.706
5/27/2011	ES10-27 T2	15886	-4.926	0.006	27.322	0.017	0.758	0.019	-0.286	0.060	0.021	6.717	2.105	0.772
5/27/2011	ES10-21 T4	15918	-5.068	0.005	28.626	0.008	1.987	0.011	-0.215	0.030	0.011	10.083	2.911	0.659
5/28/2011	Carrera *	15888	2.350	0.046	37.464	0.069	17.920	0.020	-0.348	0.033	0.012	34.738	9.900	0.576
5/28/2011	heated BOC	15918	-10.841	0.004	29.330	0.007	-3.598	0.014	-0.899	0.026	0.009	11.700	3.168	0.340
5/29/2011	heated eBOC *	15949	-10.540	0.034	51.562	0.054	18.942	0.011	-0.634	0.019	0.007	75.347	21.677	0.412
5/30/2011	ES10-25 T3	15936	-5.345	0.003	27.531	0.007	0.542	0.023	-0.303	0.024	0.009	7.248	2.226	0.389
5/30/2011	ES10-25 T5	15942	-5.213	0.003	27.308	0.003	0.421	0.025	-0.331	0.035	0.012	8.121	3.531	0.267
5/30/2011	TV01	15869	2.569	0.003	30.454	0.007	11.298	0.020	-0.138	0.016	0.006	16.381	5.558	0.406
5/30/2011	heated BOC	15914	-10.651	0.003	28.800	0.009	-4.006	0.018	-0.968	0.039	0.014	10.748	3.255	0.732
5/30/2011	ES10-23 T5	15856	-1.447	0.006	30.153	0.010	6.779	0.015	-0.453	0.034	0.012	14.961	4.755	0.586
5/30/2011	ES10-22 T2	15880	-5.752	0.003	27.365	0.006	-0.010	0.019	-0.297	0.024	0.008	6.314	1.622	0.451
5/31/2011	ES10-33 T1	15943	-7.798	0.005	26.698	0.009	-2.697	0.019	-0.341	0.025	0.009	4.802	1.426	0.314

All oxygen isotopes with respect to VSMOW, all carbon isotopes with respect to VPDB.

\* sample shows repaired value after an errant cycle was excluded from the  $\delta 47$ ,  $\Delta 47$ ,  $\delta 48$ , and  $\Delta 48$  analyses

Table S1: This table shows the uncorrected measurements, including heated gasses and standards, from 4 different sessions on the mass spectrometer. Corrections were done separately for each session, based on heated gas lines for that session, as per Huntington et al. (2009).