

Table S3. Results of the physicochemical analysis of Olkiluoto fracture zones.

Sample ID	OL-KR13	OL-KR13	OL-KR3	OL-KR20	OL-KR6	OL-KR6	OL-KR25	OL-KR3	OL-KR23	OL-KR46	OL-KR46	OL-KR5	OL-KR49	OL-KR9	OL-KR9	OL-KR2	OL-KR1	OL-KR44	OL-KR29
Sampling date chemistry	1.3.2010	23.8.2012	6.8.2012	26.8.2013	10.5.2010	22.7.2013	9.11.2011	23.8.2011	7.12.2009	27.12.2012	25.2.2013	10.10.2012	1.12.2009	9.11.2011	5.9.2011	18.1.2010	18.1.2010	13.12.2012	3.5.2010
Sampling date microbiology	3.9.2010	21.8.2012	21.8.2012	21.8.2013	18.5.2010	20.8.2013	31.10.2011	29.8.2011	15.12.2009	15.1.2013	12.3.2013	16.10.2012	14.12.2009	31.10.2011	29.08.2011	27.01.2010	26.01.2010	15.1.2013	18.05.2010
SamplingSection (m)	360-365	360-365	339-343	410-434	422-425	422-425	357-386	380.8-398.2	425-460.3	470.5-473.5	493-495	457.2-476.2	532-537	468.2-482.2	564.8-568.8	596.5-609.5	609.4-626.8	766-800	801-867
VertDepth (m)	296	296	303	323	328	330	330	340	347	372	390	405	415	423	510	559	572	693	798
Disturbance	T/mixed	T/mixed	B	B/recovery	T/mixed, pumping test	T/mixed, pumping test	T/mixed, packer failure	B/mixed slightly	T/mixed slightly	T/drawndown in drillhole	T/drawndown in drillhole	T/recovery	B1	T/like B	T/like B	T/like B	T/like B	T/mixed, slight drawdown	T/like B
WaterType	Brackish_SO ₄	Brackish_SO ₄	Brackish_SO ₄	Brackish Cl	Brackish_SO ₄	Brackish_SO ₄	Brackish_SO ₄	Brackish Cl	Saline	Brackish_SO ₄	Brackish_SO ₄	Saline	Saline	Saline	Saline	Saline	Saline	Saline	Saline
Transmittance	5.86x10 ⁻⁸	5.86x10 ⁻⁸	6.3x10 ⁻⁸	3.0x10 ⁻⁷ (420.3 m) 4.5x10 ⁻⁸ (422.9 m)	1.1x10 ⁻⁷	1.1x10 ⁻⁷	1.69x10 ⁻⁵	5.1x10 ⁻⁸	6.48x10 ⁻⁷	2.0x10 ⁻⁹	3.1x10 ⁻⁹	3.3x10 ⁻⁸ (460.6 m) 1.9x10 ⁻⁸ (472.7 m)	4.37x10 ⁻⁷	2.14x10 ⁻⁶	1.95x10 ⁻⁸	4.33x10 ⁻⁷	5.50x10 ⁻⁷	1.2x10 ⁻⁷	4x10 ⁻⁸ *
Hydrogeological zone	HZ001	HZ001	-	HZ099	-	-	-	-	HZ20A	-	-	HZ21	-	HZ20B	-	HZ21	HZ21	-	HZ21
pH	7.9	7.8	8	7.7	7.9	8	7.9	8.3	7.5	7.7	7.7	8.1	8.1	7.5	8.1	8.6	7.8	7.3	7.3
EC lab (mS/m)	897	807	987	1116	1832	1800	642	1012	2190	1778	1701	2170	2670	2300	2960	4110	3770	5520	7820
DIC (mgC/L)	27	28	4.3	13	4.1	4.6	33	4.1	3.9	5.9	18	<3	<3	3	<3	<3.75	<3.75	6.5	<12
NPOC (mgC/L)	10	38	7.8	11	<2.40	<2.40	13	12	5.1	18	4.7	19	<3	5.1	6.6	11	5	110	<12
HCO₃ (mg/L)	134	116	26	67	22.6	27	171	25	17.1	32	98	16	9.8	11.6	7.3	17.7	14	30	7.9
TDS (mg/L)	4994	4481	5378	6242	10670	10590	3502	5656	12710	10460	10370	12880	15900	13430	18580	25500	23260	37410	53210
Alk (mmol/L)	2.19	1.9	0.42	1.1	0.37	0.45	2.8	0.41	0.28	0.53	1.6	0.27	0.16	0.19	0.12	0.29	0.23	0.49	0.13
SO₄ (mg/L)	79.5	110	1.8	1.7	379	360	82.4	32	2.9	498	736	3	1.4	13.7	0.9	0.5	0.5	9.6	<2
S tot (mg/L)	31	37	0.96	1.8	130	120	27	12	1.7	160	240	1.7	<1.25	4.8	<0.30	<1.25	<1.25	4	<1.25
Sulphide (mg/L)	5.1	0.04	<0.02	1.2	na	4.8	1.3	0.38	0.62	<0.02	<0.02	2	0.02	0.36	<0.02	<0.02	0.13	0.02	0.02
NH₄ (mg/L)	0.07	0.08	<0.02	0.03	0.03	<0.02	0.06	0.03	<0.02	0.15	0.35	<0.02	<0.02	0.05	<0.02	<0.02	0.04	0.08	0.08
NO₃ (mg/L)	<0.02	<0.02	<0.02	<0.40	<0.02	<0.40	<0.02	<0.02	<0.02	<0.02	<0.40	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
NO₂ (mg/L)	<0.01	<0.01	<0.01	<0.20	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
N tot (mg/L)	0.71	4.4	0.6	0.91	<0.05	0.051	0.96	1.1	0.42	1.5	0.86	1.2	0.16	0.38	0.66	1.1	0.41	10	3.1
FeII (mg/L)	<0.02	0.11	0.05	0.06	na	<0.02	0.08	0.02	0.08	0.61	0.31	0.21	0.53	0.06	0.02	<0.02	0.04	1.2	0.46
Fe tot (mg/L)	0.0042	0.034	0.051	0.056	0.0037	<0.02	0.028	0.022	0.062	0.68	0.31	0.2	0.71	0.036	0.02	<2.50	0.49	1.2	0.56
Na (mg/L)	1320	1260	1650	1750	2800	2800	884	1850	2530	2650	2740	2990	3110	2790	3970	4980	4720	6570	9150
K (mg/L)	8.2	9.8	7.6	10	9.3	12	5.4	8	8.3	14	27	18	9.6	12	17	19	20	24	27
Ca (mg/L)	460	380	350	530	1100	1090	355	290	2100	900	710	1750	2700	2260	2930	4600	3700	7680	10000
Mg (mg/L)	35	35	28	52	77	89	29	17	55	173	317	68	19	32	41	18	52	33	136
Mn (mg/L)	na	na	na	0.27	na	0.27	na	na	na	0.5	0.56	na	280	na	0.17	na	na	na	na
Cl (mg/L)	2920	2540	3280	3790	6230	6160	1940	3400	7930	6140	5700	7950	9940	8220	11500	15700	14600	22800	33500
SiO₂ (mg/L)	12	12	6.7	8.1	8	8.8	18	6.6	11	9.5	12	6.2	6.3	9.6	6.4	0.27	6.9	11	5
Sr (mg/L)	4.9	3.9	3.2	5.6	12	10	3.4	2.94	20.3	8.5	7.9	17	25	19	21	42.7	37	76	110

* calculated from the sampling yield

T=monitoring sample

B=baseline sample, corresponding to natural situation in that depth at Olkiluoto

na= not analysed