

Supplementary Information

Characterization of the Bacterial and Sulphate Reducing Community in the Alkaline and Constantly Cold Water of the Closed Kotalahti Mine. *Minerals* 2015, 5, 452-472

Malin Bomberg *, Mona Arnold and Päivi Kinnunen

VTT Technical Research Centre of Finland, P.O. Box 1000, FIN-02044 VTT, Finland;

E-Mails: mona.arnold@vtt.fi (M.A.); paivi.kinnunen@vtt.fi (P.K.)

* Author to whom correspondence should be addressed; E-Mail: malin.bomberg@vtt.fi;
Tel.: +358-40-186-3869; Fax: +358-20-722-7071.

Table S1. The environmental parameters that have been monitored in Vehkankuilu and Ollinkuilu shafts of Kotalahti mine since 1997. The environmental permit limits for Fe, Ni and pH at present are $2.0 \text{ mg} \cdot \text{L}^{-1}$, $0.7 \text{ mg} \cdot \text{L}^{-1}$ and pH 6–9, respectively.

Vehkankuilu					
Date	Depth	10 m	30 m	70 m	100 m
September 1997	pH	7.00	6.90	6.40	6.30
January 1999		7.00	7.10	6.90	6.80
December 2003		7.40	7.40	7.50	7.50
December 2005		7.50	7.50	7.50	7.50
December 2007		7.50	7.50	7.40	7.50
November 2011		7.50	7.50	7.10	7.00
November 2012		7.40	7.40	7.00	7.00
September 1997	$\text{SO}_4^{2-} \text{ mg/L}$	930.00	1000.00	1100.00	1100.00
January 1999		210.00	600.00	720.00	910.00
December 2003		120.00	130.00	130.00	130.00
December 2005		110.00	110.00	150.00	130.00
December 2007		110.00	110.00	140.00	110.00
November 2011		93.00	87.00	470.00	520.00
November 2012		86.00	85.00	480.00	500.00
September 1997	$\text{Fe mg} \cdot \text{L}^{-1}$	4.5	4.7	23	23
January 1999		1.6	0.15	10	16.00
December 2003		0.041	0.045	<0.04	0.04
December 2005		<0.04	<0.04	<0.04	<0.04
December 2007		0.55	0.57	1.2	0.58
November 2011		0.63	0.59	4.00	5.00
November 2012		1.00	1.00	1.00	1.00

Table S1. *Cont.*

Vehkankuilu					
Date	Depth	10 m	30 m	70 m	100 m
September 1997	Cu µg·L ⁻¹	90	<20	60	<20
January 1999		<30	<30	<30	<30
December 2003		<30	<30	<30	<30
December 2005		<20	<20	<20	<20
December 2007		<30	<30	<30	<30
November 2011		<30	<30	<30	<30
November 2012		1.50	1.80	1.10	1.10
September 1997	Ni mg·L ⁻¹	0.04	0.05	1.5	1.8
January 1999		0.13	0.01	0.08	0.10
December 2003		0.15	0.14	0.11	0.10
December 2005		0.20	0.15	0.31	0.08
December 2007		0.11	0.10	0.09	0.10
November 2011		0.17	0.07	0.55	0.82
November 2012		0.18	0.18	1.70	1.80
Ollinkuilu					
December 2003	pH	9.80	9.70	9.70	9.80
December 2005		9.90	9.90	8.00	9.90
October 2009		9.80	9.80	9.90	9.90
November 2010		9.5	9.5	9.6	9.9
November 2011		9.70	9.70	9.90	9.90
November 2012		9.80	9.80	9.90	9.80
December 2003	SO ₄ ²⁻ mg/L	7.60	7.00	8.50	9.50
December 2005		0.00	0.00	0.00	3.40
October 2009		0.00	0.00	0.00	0.00
November 2010		1.60	1.80	2.10	0
November 2011		0.79	1.30	0.59	0.64
November 2012		1.10	1.20	0.00	0.54
December 2003	Fe mg·L ⁻¹	7.5	9.5	8	10.00
December 2005		5.5	10	11	16
October 2009		17	21	23	29.00
November 2010		8.7	12	14	18
November 2011		14.00	15.00	13.00	14.00
November 2012		45.00	61.00	19.00	25.00
October 2009	Cu µg·L ⁻¹	24	20	13	12
November 2010		10	12	15	9
November 2011		<30	<30	<30	<30
November 2012		17	29	6.6	3.4
December 2003	Ni mg·L ⁻¹	0.03	0.02	0.02	0.02
December 2005		0.03	0.03	0.03	0.03
October 2009		0.14	0.09	0.10	0.13
November 2010		0.11	0.15	0.18	0.19
November 2011		0.15	0.20	0.11	0.13
November 2012		0.29	0.41	0.08	0.14