



United States Geological Survey Certificate of Analysis

Coal, Lower Bakerstown, CLB-1

The medium volatile bituminous coal used in the preparation of this USGS reference material was collected in 1982 from the Lower Bakerstown coal bed under the direction of Paul C. Lyons. All values are reported on a whole coal basis.

Recommended Element Concentrations are derived using at least three independent methods of analysis from a minimum of two independent laboratories. Statistical treatment of the data uses the procedures outlined in previous USGS publications (Kane et al. 1990).

Information values are presented when less than three independent methods of analysis were used to determine the final concentration. Standard deviations are provided when at least three independent laboratories reported values in statistical agreement.

Recommended values

Oxide	Wt %	±	Oxide	µg/g	±
Fe ₂ O ₃ T	1.25	0.05	MgO	470	30
CaO	0.22	0.01	Na ₂ O	230	22
			K ₂ O	760	50
Element	µg/g	±	Element	µg/g	±
Ba	34	5	Pb	5.1	0.7
Ce	10	1.6	Rb	5.2	0.9
Co	7.0	0.7	Sc	2.0	0.1
Cr	9.7	1.2	V	12	1
Ni	18	2	Zn	48	4

Information values

Major Component	Wt %	±	Oxide	µg/g	±
Al ₂ O ₃	1.51	0.04	P ₂ O ₅	700	100
SiO ₂	2.51	0.21	TiO ₂	780	30
S _{tot}	1.49	0.09			
Ash	6.3	0.1			
Element	µg/g		Element	µg/g	
As	13		Mo	9	
Cu	10		Nb	1	
Ga	3		Nd	5	
Hg	0.2		Sb	1.5	
La	5		Se	2	
Li	8		Th	1.4	
Mn	8		U	0.55	

Bibliography

Wilson, S.A. 1997, Certificate of Analysis Coal, Lower Bakerstown CLB-1, U.S. Geological Survey Open-File Report 97-299, p 1.

Glossary

$\text{Fe}_2\text{O}_3\text{T}$	Total iron concentration expressed as Fe_2O_3
S_{tot}	Total sulfur concentration
Wt %	Percent of total element concentration
$\mu\text{g/g}$	Total element concentration expressed as micrograms of element per gram of solid sample
\pm	One standard deviation

Notes

Unless otherwise indicated, total element concentrations are reported for material on an as-received basis.

Ordering Information

USGS reference materials (RMs) may be obtained directly from Dr. Stephen A. Wilson at the address or numbers listed below. The price for each bottle of RM is \$ 80.00 (U.S.) **except** DGPM-1 which is \$175.00 (U.S.). This cost includes all shipping and handling charges using normal mail delivery. Urgent requests for RMs should be initiated by FAX or e-mail. If required, overnight delivery is available with these charges added to the final bill.

Dr. Stephen A. Wilson
U.S. Geological Survey
Box 25046, MS 964
Denver, CO 80225

Tel: 303-236-2454
FAX: 303-236-3200 or 303-236-1425
e-mail: swilson@usgs.gov

Payment Options

Domestic customers: Payment options include purchase order, check, money order, or credit card (Visa, Mastercard).

International customers: Payment on foreign orders may be made by any of the following:

- Banker's draft against an international bank,
- International money order,
- Credit card (Visa, Mastercard)

Payments for domestic or international orders using a credit card receive a 10% discount on the per bottle price.
