

# Alpha Resources, Inc.

## Certificate Of Analysis

AR-2753

MINERAL ANALYSIS STANDARD

LOT # 753509

LID # 773409

### WEIGHT PERCENT MINERAL ANALYSIS OF ASH

SILICON DIOXIDE	=	27.75	+/- 0.17
ALUMINUM DIOXIDE	=	14.64	+/- 0.70
TITANIUM DIOXIDE	=	1.17	+/- 0.04
FERRIC OXIDE	=	5.63	+/- 0.22
CALCIUM OXIDE	=	24.77	+/- 1.31
MAGNESIUM OXIDE	=	5.99	+/- 0.30
POTASSIUM OXIDE	=	0.26	+/- 0.04
SODIUM OXIDE	=	0.47	+/- 0.06
SULFUR TRIOXIDE	=	16.83	+/- 1.98
PHOSPHORUS PENTOXIDE	=	1.12	+/- 0.36
STRONTIUM OXIDE	=	0.42	+/- 0.02
BARIUM OXIDE	=	0.60	+/- 0.03
MANGANESE OXIDE	=	0.01	
UNDETERMINED	=	0.34	

The ash content of the whole coal is 7.33%

#### Methods

ASTM D 3174

ASTM D 3682

ASTM D 4326

The material used in production of this standard was sampled in accordance with ARI 031. The precision values represent the standard deviation ( $k=1$ ) obtained through analytical testing, and are given for reference only. Normal ASTM procedures should be employed when using this standard, this includes using the *reproducibility* and *repeatability* factors of the method for establishing analytical uncertainty. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer at Alpha Resources.

The samples for round robin testing were selected in accordance with ARI 014. The above values relate only to the material used to produce this standard. The analytical samples were dried under a nitrogen atmosphere for a minimum of 70 minutes at  $107^{\circ}\text{C} \pm 3^{\circ}\text{C}$  until a steady mass is achieved

Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Alpha Resources be liable for incidental or consequential damages. This is a Certified Reference Material (CRM). For good laboratory practice it is recommended that all standards be verified prior to use.

EXPIRATION DATE

THIS CRM IS VALID FOR TWO YEARS FROM THE DATE OF OPENING

CERTIFIED June 11, 2009



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