

Alpha Resources, Inc.

Certificate Of Analysis

AR-1721

PROXIMATE COAL STANDARD

LOT # 721913 LID # 773913

DRIED BASIS VALUE

MEAN WEIGHT % SULFUR	=	0.52
EXPANDED UNCERTAINTY	=	0.03
MEAN WEIGHT % ASH	=	5.03
EXPANDED UNCERTAINTY	=	0.24
MEAN WEIGHT % VOL. MATTER	=	29.48
EXPANDED UNCERTAINTY	=	0.98
BTU/BTU MAF	=	12572 13238
EXPANDED UNCERTAINTY	=	109 92
FIXED CARBON %(calculated)	=	65.49

Standards used: NIST 2693, Benzoic acid

Methods Employed:

SULFUR	ASTM	D 4239
ASH	ASTM	D 3174, D7582
VOL. MATTER	ASTM	D 3175, D7582
BTU	ASTM	D 5865, D3180

Notes:

The material used in production of this standard was sampled in accordance with ARI 031. The precision values represent the expanded standard deviation ($k=2$, 95% confidence) 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 test 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 or corrected for moisture as per the test method(s), or per the SRM certificate. This bottle contains 50g minus 60 mesh coal. Keep sealed and store under normal laboratory conditions. Once opened this certificate is valid for 2 years.

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 (Working Standard). 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 February 11, 2014

