

# Alpha Resources, Inc.

## Certificate Of Analysis

AR-1707  
COAL STANDARD

LOT # 707812 LID ID # 707812

DRIED BASIS VALUE  
WEIGHT PERCENT SULFUR = 2.37  
EXPANDED UNCERTAINTY = 0.16

METHOD:  
ASTM D 4239-12 AND ARI-035

This CRM is traced to N.I.S.T. SRM 2684b, NCS FC28012c, FC28011d

The analytical values were derived by a number of data points (n=60) by instrumentation meeting ASTM D4239-12, and reported in mass fraction. The precision value represents the expanded degree of uncertainty based on errors from analytical assay at a 95% confidence level (k=2), and may not meet your testing capabilities. Formal testing procedures should be employed when using this standard; this includes using the *reproducibility* and *repeatability* factors of the method for establishing overall 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, Technical Manager, 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 at 107° C +/- 3° C until a steady mass is achieved. This standard was produced in accordance to ISO Guide 34.

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. The above values relate only to the material used to produce this standard. This certificate cannot be reproduced except in full. This bottle contains 50g, minus 60 mesh (250 micron) coal powder.

This is a Certified Reference Material (working standard), and is traceable to the above-mentioned NMI standards. For good laboratory practice it is recommended that all standards be verified prior to use. This calibration standard is accredited and meets the requirements of ISO/IEC17025 as verified by the ANSI-ASQ National Accreditation Board. Contact Alpha Resources for details of our certification and scope of accreditation.

This standard was produced in accordance to Guide 34 at the time of certification. These same methods for producing reference materials have now been reviewed by an accreditation body. As of February 2015 our facility has become accredited under the ISO Guide 34:2009 for RMP issued by ANSI-ASQ National Accreditation Board, certificate AR1920.

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

Certified September 10, 2012



Technical Manager

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