

Report on Preparation and Certification  
of Australian Coal Industry Reference Samples

Low Sulfur Content Reference Sample  
(ACIRS – S1A-2011).

Report No: AD – S1A-2011

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Report Date: July 2011

## **ANALYSIS AND TESTING REPORT**

### **Low Sulfur Content Reference Sample (ACIRS – S1A-2011).**

#### **1. Introduction**

This report describes the preparation and analysis of ACIRS – S1A-2011, which comprises a sealed jar of coal with a known low sulfur content used in the determination of coal samples.

The end use of these samples is as a quality control tool and to calibrate analytical elemental instruments.

#### **2. Previous ACIRS- S series Preparation**

This is the first in the series.

#### **3. Sample preparation**

Approximately a 100 kg sample of bulk material from a colliery in the Northern Bowen Basin, Queensland, and of –50 mm size was obtained.

The material was crushed, air-dried and pulverised in a swing hammer mill to a nominal top size of 4 mm. The pulverised coal was repeatedly mixed by rotary sample division (RSD).

The coal was then milled to a nominal top size of 212µm and the product placed in plastic bags in plastic jars each containing approximately 250g.

11% of the jars were randomly selected and contents tested for homogeneity by determining and recording the sulfur and moisture content of each.

#### **4. Test program**

Jars of the product were used in a test program organized by ALS Coal Gladstone with 16 accredited laboratories for total sulfur analysis and moisture in the analysis sample in accordance with relevant Australian Standards. The results of these tests are given in Section 5.

## 5. Statistical analysis of results

Table 1  
Outcome of statistical processing

Lab No.	TS % db	Lab No.	TS % db
1	0.44	9	0.43
2	0.44	10	0.41
3	0.41	11	0.43
4	0.42	12	0.41
5	0.42	13	0.42
6	0.41	14	0.43
7	0.42	15	0.41
8	0.41	16	0.43
Minimum	0.41		
Maximum	0.44		
Mean	0.42		
Standard Deviation ( $\sigma$ )	0.011		

All laboratories referenced one of the AS1038.6.3 series as the analysis method.

## 6. Certified Values

Table 2  
ACIRS – S1A – 2011 Certified Values

Determinations	Mean	( $\sigma$ )
Total sulfur	0.42 percent (dry basis)	0.011