

PT. IOL Indonesia  
Menara Bidakara 2, 11<sup>th</sup> Floor  
Jl. Jend. Gatot Subroto Kav 71-73  
Jakarta 12870, Indonesia  
Tel. : +62 21 2906 9411 (Hunting)  
Fax. : +62 21 2906 9412  
www.inspectorale.com



### CERTIFICATE OF SAMPLING AND ANALYSIS

VESSEL : MV  
QUANTITY : 55,000 MTS  
DESCRIPTION OF GOODS : INDONESIAN COAL  
PORT OF LOADING : MUARA SATUI PORT / ANCHORAGE,  
SOUTH KALIMANTAN, INDONESIA  
PORT OF DISCHARGE : SANGHI PORT, INDIA  
DATE OF INTERVENTION : MARCH 23RD - MARCH 29TH, 2012

THIS IS TO CERTIFY THAT WE HAVE PERFORMED THE INSPECTION, SAMPLING AND ANALYSIS OF THE INDONESIAN COAL CONSIGNMENT NOMINATED ABOVE. SAMPLES WERE TAKEN DURING LOADING OF VESSEL AND ANALYSED PER ASTM STANDARDS.

THE FOLLOWING ACTUAL ANALYSIS RESULTS WERE OBTAINED:

| PARAMETER             |       | RESULT        | UNIT    |
|-----------------------|-------|---------------|---------|
| GROSS CALORIFIC VALUE | (ARB) | 4408          | KCAL/KG |
| TOTAL MOISTURE        | (ARB) | 30.51         | PCT     |
| INHERENT MOISTURE     | (ADB) | 14.74         | PCT     |
| TOTAL SULPHUR         | (ADB) | 0.46          | PCT     |
| ASH CONTENT           | (ADB) | 5.41          | PCT     |
| VOLATILE MATTER       | (ADB) | 40.91         | PCT     |
| FIXED CARBON          | (ADB) | BY DIFFERENCE |         |
| HGI                   |       | 57            |         |
| SIZE 0-50 MM          |       | 90.82         | PCT     |

NOTE: ARB=AS RECEIVED BASIS; ADB=AIR DRIED BASIS

Date:

Issued and Signed by PT. IOL Indonesia  
(ISSUED BY INDEPENDENT INSPECTION AGENCY AT LOAD PORT)

  
Saggit Sugiarto  
Senior Operation Manager



JKT 020412

PT. IOL Indonesia  
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### ADDITIONAL CERTIFICATE OF ANALYSIS

VESSEL : MV  
 QUANTITY : 55,000 MTS  
 DESCRIPTION OF GOODS : INDONESIAN COAL  
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THE FOLLOWING ACTUAL ANALYSIS RESULTS WERE OBTAINED:

| PARAMETER                           | RESULT | UNIT |
|-------------------------------------|--------|------|
| <b>ULTIMATE ANALYSIS</b>            |        |      |
| CARBON (DAF)                        | 72.61  | PCT  |
| HYDROGEN (DAF)                      | 4.97   | PCT  |
| NITROGEN (DAF)                      | 1.23   | PCT  |
| SULPHUR (DAF)                       | 0.58   | PCT  |
| OXYGEN (DAF)                        | 20.61  | PCT  |
| <b>ASH ANALYSIS</b>                 |        |      |
| SiO <sub>2</sub> (DB)               | 38.79  | PCT  |
| Al <sub>2</sub> O <sub>3</sub> (DB) | 13.81  | PCT  |
| Fe <sub>2</sub> O <sub>3</sub> (DB) | 9.90   | PCT  |
| CaO (DB)                            | 18.27  | PCT  |
| MgO (DB)                            | 8.39   | PCT  |
| TiO <sub>2</sub> (DB)               | 0.56   | PCT  |
| Na <sub>2</sub> O (DB)              | 0.08   | PCT  |
| K <sub>2</sub> O (DB)               | 0.16   | PCT  |
| P <sub>2</sub> O <sub>5</sub> (DB)  | 0.54   | PCT  |
| SO <sub>3</sub> (DB)                | 11.02  | PCT  |

**ASH FUSION TEMPERATURE**  
 REDUCING ATMOSPHERE  
 INTIAL DEFORMATION : 1200 °C  
 SPHERERICAL : 1210 °C  
 HEMISPHERE : 1220 °C  
 FLOW : 1240 °C

JKT 120412



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**OXIDIZING ATMOSPHERE  
INITIAL DEFORMATION  
SPHERICAL  
HEMISPHERE  
FLOW**

: 1220 °C  
: 1240 °C  
: 1260 °C  
: 1280 °C

NOTE : ARB=AS RECEIVED BASIS; ADB=AIR DRIED BASIS

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**Fajar Sidig**  
Technical Support Manager

PT. Nature Earth Resources  
Jakarta Indonesia  
Mobile : +62 8159559415  
www.natureearthresources.com

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