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HARD ROCK COAL MINING

Testing and Analysing of Standard Project No: VR003

For Free Moisture, Proximate, Total Sulfur, Calorific Value
And Relative Density Analysis

Report No: 21010821

Report To: Mr Craig Astill
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Report CC: Mr Ken Morrison
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31 Gray Street
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Sampled By: Client

Samples Received: April 2012

Order No: HRCMEX 55

Date Reported: 19 April 2012

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Date: 19/04/12 Page 2 of 5

ANALYSIS AND TESTING REPORT

HARD ROCK COAL COMPANY

| Sample Details | Project - VR003 Sample:HCV077 Mass:2.52 kg | Project - VR003 Sample:HCV078 Mass:1.21 kg | Project - VR003 Sample:HCV079 Mass:4.78 kg |
|---------------------------|--|--|--|
| PROXIMATE ANALYSIS | | | |
| Moisture % | 6.1 | 10.5 | 5.9 |
| Ash % | 46.7 | 79.9 | 53.4 |
| Volatile Matter % | 18.8 | 9.2 | 16.3 |
| Fixed Carbon % | 28.4 | 0.4 | 24.4 |
| Free Moisture % (a.r.) | 0.2 | 0.3 | 0.2 |
| Total Sulfur % | 0.25 | <0.01 | 0.19 |
| CALORIFIC VALUE | | | |
| Calorific Value MJ/kg | 14.32 | 0.06 | 11.83 |
| Calorific Value kcal/kg | 3420 | 14 | 2826 |
| Relative Density | 1.75 | 2.26 | 1.84 |

All results reported to air dried basis unless noted
a.r. = as received basis

| Sample Details | Project - VR003 Sample:HCV080 Mass:5.83 kg | Project - VR003 Sample:HCV081 Mass:2.58 kg | Project - VR003 Sample:HCV082 Mass:1.28 kg |
|---------------------------|--|--|--|
| PROXIMATE ANALYSIS | | | |
| Moisture % | 5.8 | 6.9 | 5.7 |
| Ash % | 33.7 | 26.3 | 34.2 |
| Volatile Matter % | 22.3 | 26.4 | 23.1 |
| Fixed Carbon % | 38.2 | 40.4 | 37.0 |
| Free Moisture % (a.r.) | 0.2 | 0.3 | 0.2 |
| Total Sulfur % | 0.40 | 0.52 | 0.44 |
| CALORIFIC VALUE | | | |
| Calorific Value MJ/kg | 18.91 | 22.08 | 19.90 |
| Calorific Value kcal/kg | 4516 | 5274 | 4752 |
| Relative Density | 1.61 | 1.50 | 1.56 |

All results reported to air dried basis unless noted
a.r. = as received basis



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ANALYSIS AND TESTING REPORT

HARD ROCK COAL COMPANY

| Sample Details | Project - VR003 Sample:HCV083 Mass:2.99 kg | Project - VR003 Sample:HCV084 Mass:3.35 kg | Project - VR003 Sample:HCV085 Mass:1.55 kg |
|---------------------------|---|---|---|
| PROXIMATE ANALYSIS | | | |
| Moisture % | 4.2 | 4.6 | 5.2 |
| Ash % | 39.1 | 28.7 | 31.5 |
| Volatile Matter % | 20.0 | 22.7 | 22.2 |
| Fixed Carbon % | 36.7 | 44.0 | 41.1 |
| Free Moisture % (a.r.) | 0.2 | 0.3 | 0.3 |
| Total Sulfur % | 0.60 | 0.36 | 0.44 |
| CALORIFIC VALUE | | | |
| Calorific Value MJ/kg | 17.68 | 21.58 | 20.68 |
| Calorific Value kcal/kg | 4224 | 5154 | 4940 |
| Relative Density | 1.68 | 1.55 | 1.58 |

All results reported to air dried basis unless noted
a.r. = as received basis



ACCREDITED TESTS

| HARD COAL TEST | ABBREVIATION | STANDARD /REFERENCE |
|-------------------------------|---|----------------------------|
| Abrasion Index | AI | AS1038.19 |
| Adiabatic Self Heating | | AL035 (In-House) |
| Ash | A | AS1038.3 |
| Ash Fusibility | | AS1038.15 |
| Carbon | | AS1038.6.4 |
| Carbonate Carbon | C _m | AS1038.23 |
| Chlorine | Cl | AS1038.8 |
| Crucible Swelling Number | CSN | AS1038.12.1 |
| Dilatometer | | AS 1038.12.3 |
| Fixed Carbon | FC | AS1038.3 |
| Float/Sink Analysis | F/S | AS4156.1 |
| Forms of Sulfur | FOS [S _o , S _p , S _s] | AS1038.11 |
| Gieseler | | AS1038.12.4.1 |
| Gray King Coke Type | GKCT | AS1038.12.2 |
| Hardgrove Grindability Index | HGI | AS1038.20 |
| Hydrogen | H | AS1038.6.4 |
| Moisture (residual) | M _r | AS1038.3 |
| Moisture Holding Capacity | MHC | AS1038.17 |
| Nitrogen | N | AS1038.6.4 |
| Oxygen | O | AS1038.16 |
| Phosphorus | P | BS1016.14 |
| Relative Density | RD | AS1038.21.1.1 |
| Relative Ignition Temperature | RIT | AL030 (In-House) |
| Size Analysis | | AS3881 |
| Gross Calorific Value | q | AS1038.5 |
| Total Moisture | M | AS1038.1 |
| Total Sulfur | S | AS1038.6.3.3 |
| Volatile Matter | VM | AS1038.3 |
| Ash Analysis | | AL044 (In-House) * |

| COKE TEST | ABBREVIATION | STANDARD /REFERENCE |
|--------------------|---------------------|----------------------------|
| Proximate Analysis | | AS 1038.4 |

Note(s):

1. Acceptance and reporting of results is in accordance with AS1038.16
2. Sampling by ACIRL is in accordance with the following AS2617 (seams, insitu);
AS4264.1 Sampling Procedures ;
AS4264.4 Determination of Precision and Bias
3. All analyses reported to Air-Dried Basis unless otherwise indicated.
- *4. Ash Analysis performed at ACIRL Maitland laboratory (accreditation held).
Based on AS1038.14.2, variation ICP instead of flame for species excitation.



NON ACCREDITED TEST

The following tests are not covered in by the scope of accreditation relating to the laboratories technical accreditation.

| <u>TEST</u> | <u>STANDARD/REFERENCE</u> |
|--------------------|--|
| Drop Shatter | AS2519 |
| Durham Cone | AS1038.25 |
| Froth Flotation | AS4156.2 and Client Specific Procedures |
| Mineral Matter | AS1038.22 |
| Pre- Treatment | AS2519 |
| Roadway Dusts | QLD Department of Mines and Energy - Quality of incompatible dust, sampling and analysis of roadway dust in underground coal mine - Coal Mining Safety and Health Act 1999 Recognised Standard - No. 05, July 2003 |
| Roga Index | ISO335 |
| Caking Index | ISO15585 |
| Sapozhnikov | Journal of Mine Metals and Fuels India Oct 1978 |
| Size Adjustment | AS2519 |

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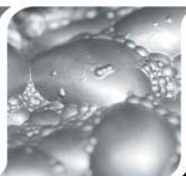
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