



PT. GEOSERVICES

MARINE CARGO SURVEYING

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CERTIFICATE OF SAMPLING AND ANALYSIS

THIS IS TO CERTIFY : that we have performed the inspection, sampling and analysis of coal shipment nominated below. Samples were taken during loading and prepared in accordance with ISO standards.

The analysis were performed at PT. Geoservices Asam-asam Laboratory in accordance with the appropriate ISO standards. This certificate is issued at loading port.

Vessel : **MV. MSXT ARTEMIS**
Quantity : **51,200 MT**
Shipper : **PT. INTAN NUSANTARA INDONESIA**
Port of Loading : **MUARA ASAM ASAM ANCHORAGE, SOUTH KALIMANTAN, INDONESIA**
Port of Discharge : **PORT QASIM, PAKISTAN**
Description of Goods : **STEAM COAL IN BULK OF INDONESIA ORIGIN**
Bill of Lading Date : **DECEMBER 22, 2019**

The figure reported below are the weighted average results were obtained:

THE SPECIFICATIONS OF THE COAL IN ACCORDANCE WITH ISO STANDARDS :

SPECIFICATIONS	BASIS	Actual Results	Unit
GROSS CALORIFIC VALUE	(ARB)	4610	KCAL/KG
NET CALORIFIC VALUE	(ARB)	4259	KCAL/KG
TOTAL MOISTURE	(ARB)	30.0	PCT
INHERENT MOISTURE	(ADB)	26.1	PCT
ASH CONTENT	(ADB)	3.1	PCT
VOLATILE MATTER	(ADB)	36.9	PCT
TOTAL SULPHUR	(ADB)	0.11	PCT
FIXED CARBON	(ADB)	33.9	BY DIFFERENCE
HARDGROVE GRINDABILITY INDEX (HGI)		56	POINTS
SIZE (0-50 MM)		91.1	PCT
SIZE (0-0.5 MM)		7.6	PCT
SIZE (MORE THAN 100 MM)		0	PCT
ASH FUSION TEMPERATURE-ST		1250	DEG C
ASH FUSION TEMPERATURE-INITIAL DEFORMATION		1250	DEG C

ISSUED BY
GEOSERVICES
AT LOADING PORT


(Muh. Ridwan)
Authorized Signatory

ORIGINAL

Date : December 27, 2019
Job No : 00519.02599

REF NO. : **493553**

This Certificate is the true expression of our inspection findings and the relevant method of calculations following standards as generally accepted in trade. We are responsible only up to the limit as it is possible over a reasonable care and due diligence of exercise. However, this certificate is issued on the understanding that it may not relieve parties from their contractual obligations.