



## BARGE SAMPLING AND ANALYSIS REPORT

SGS Reference: 904676/07

Vessel or Sample ID: S GRAVENWEZEL  
Cargo: Washed coal 10x25 mm

Date Issued: 19 November 2018

Date(s) Tested 16 November 2018

Principal: Enerco B.V.

Address: P.O. B

Tonnage: Metric Tons 1510.101

Sampling Commenced: 12 November 2018

Sampling Completed: 12 November 2018

Address: Abbenflether, Hafenstraße 25

City, State, Postal: 21683, Stade

Bill of Lading Date:

Country: Deutsche

Attention: Mr. J. Herben

METHODS: Analysis performed on a composite sample representing fully loaded consignment transported by Barge. Analysis performed in accordance with ISO Standards or other International Standards stipulated on the Methods Page

MANUAL SAMPLING FROM STATIC SURFACE OF FULLY LOADED or PARTIALLY LOADED Vessel, barges, trucks, rail wagons ect. - SGS performed as per ISO 18283 Annex B.3. Fixed-mass increments were randomly collected from the freshly exposed material using a pre-defined sampling grid.

Manual Sampling method was agreed to with the SGS Principal, as sampling by more reliable methods that provide probability samples was not possible or was not selected by the SGS Principal. The Holder of this document is cautioned that collected MANUAL samples of this type do not satisfy the minimum requirements for probability sampling, and as such cannot be used to draw statistical inferences such as precision, standard error, or bias. The suitability of this sampling method is defined by the sampling standard.

Analysis marked with: \* denotes SGS accredited test; with # denotes SGS non-accredited test, with \*\* performed by a Third Party Laboratory - accredited test; with ## performed by Third Party Laboratory - non-accredited test. See METHODS PAGE for more details.

Values are reported to relevant number of significant decimal places. This can result in small rounding differences between Moisture Conversions.

			As-Received Basis (ar)	As-Determined Basis (ad)	Dry Basis (db)	Dry Ash-Free Basis (daf)
Proximate Analysis	Moisture (Total) *	Moisture %	11.99	4.52	-----	-----
	Moisture (as-determined) *	Ash * %	1.00	1.08	1.13	-----
		ISO Volatile Matter * %	35.64	38.66	40.49	40.95
		Fixed Carbon (calculation by difference) %	51.37	55.74	58.38	59.05
		Total Sulfur * %	0.45	0.49	0.51	0.52

Gross Calorific Value *		kcal/kg	7027	7623	7984	8075
		Btu/lb	12649	13721	14371	14535
		J/g (kJ/kg)	29421	31916	33427	33808
		MJ/kg (GJ/t)	29.42	31.92	33.43	33.81
	(WARTOŚĆ OPAŁOWA)					
ISO 1928	Net CV, constant pressure	kcal/kg	6715	7335	7709	-----
		Btu/lb	12087	13202	13877	-----
		J/g (kJ/kg)	28115	30708	32278	-----
		MJ/kg (GJ/t)	28.11	30.71	32.28	-----
ISO 1928	Net CV, constant volume	kcal/kg	6728	7346	7719	-----
		Btu/lb	12110	13222	13895	-----
		J/g (kJ/kg)	28168	30755	32320	-----
		MJ/kg (GJ/t)	28.17	30.75	32.32	-----

NCV(v) requires H analysis, NCV(p) requires CH analysis

Ultimate Analysis			As-Received Basis (ar)	As-Determined Basis (ad)	Dry Basis (db)	Dry Ash-Free Basis (daf)
Moisture (Total) * Moisture (as-determined) *						
	Total Carbon	%	72.36	78.50	82.22	83.16
	Total Hydrogen (includes H in moisture)	%	6.07	5.64	5.38	5.44
	Total Nitrogen	%	1.49	1.62	1.70	1.72
	(SIARKA) Total Sulfur *	%	0.45	0.49	0.51	0.52
	(POPIÓŁ) Ash *	%	1.00	1.08	1.13	-----
	Oxygen by diff.(includes O in moisture)	%	18.62	12.67	9.07	9.17
	Total	%	100.00	100.00	100.00	100.00
	Moisture	%	(11.99)	(4.52)	-----	-----

Hydrogen (excludes H in moisture) % 4.73  
Oxygen (excludes O in moisture) % 7.97

5.13  
8.66

DB & DAF H & O values exclude H & O in moisture

CO2 Emission Factor (Directive 2003/87/EC, Directive 2007/589/EC)	tCO2/TJ	94.30
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Standard Uncertainty of CO2 Emission Factor, attributed to laboratory analysis, expressed as a standard deviation.	tCO2/TJ 1 of 3	0.51
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Fe (on Fixed Carbon) % 0.128

Size Distribution A. (air-dried basis) #

Square holed Sieves used.

Size Fraction		Fractional Mass %	Cumulative Mass % Retained	Cumulative Mass % Passed
-mm	+mm			
	25	0.0	0.0	100.0
25	10	95.6	95.6	4.4
10	0	4.4	100.0	0.0
	Total	100.0		

Major and Minor Elements, in Ash (Dry Basis) \*

Fe2O3 % 9.47

Signed and dated

Amsterdam

19 November 2018

For and on behalf of

SGS Nederland B.V.

SGS Nederland B.V.  
Jarnvliden 65  
NL-1046 AE Amsterdam  
L.W. Groen 

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ANALYTICAL REPORT

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Address: Abbenflether,
Hafenstraße 25

City, State, Postal: 21683, Stade
Country: Deutsche
Attention: Mr. J. Herben

Bill of Lading Date:

METHODS

ACCREDITATION STATUS: SGS Laboratory: SELECT \* if analysis is included in the SGS Accreditation; Select # if analysis is NOT included in the SGS Accreditation.
Third Party Laboratory (internal or external): SELECT \*\*, if analysis is performed by an Accredited - Third Party Laboratory\*, SELECT ## if analysis is performed a NON-Accredited Third Party Laboratory.

Table with 7 columns: Method, Standard, Executing Laboratory, Name of Accreditation Body, Type, & Registration No., ACCREDITATION TEST STATUS, Accreditation Test Status, Measurement Uncertainty (MU). Rows include Moisture, Ash, ISO Volatile Matter, Fixed Carbon, Total Sulfur, Gross Calorific Value, Size Distribution A, and Major and Minor Elements.

Additional information required by the Accreditation Body:-
NOTE: ALL Tests subcontracted to a Third Party Laboratory (internal or external), or marked as \* #, ## Not Accredited \*, are not included in the SGS ISO 17025 Laboratory Accreditation.

Signed and dated
Amsterdam
19 November 2018

For and on behalf of
SGS Nederland B.V.

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SGS logo

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