



CERTIFICATE OF ANALYSIS

Vessel: **M/V CAPE KEYSTONE**
 Bill of Lading Date: **23 August 2018**
 Shipper's ID – Cargo Description: **US Steam Coal in Bulk**
 Stowage: **Holds 1 through 9**
 Load Port: **Baltimore, MD USA**
 Place of Inspection: **Baltimore, MD USA**
 Date of Inspection: **21 August 2018 through 23 August 2018**
 B/L Quantity: **35000.000 Metric Tons (as part of total 124022.000 Metric Tons) per B/L's 1 through 4**
 SGS Reference Number: **231-1800172**

THIS IS TO REPORT that in accordance with instructions received from our Principal to perform analysis of the above-mentioned shipment, we hereby report the following.

Sampling: Mechanical Sampling – SGS operated per ASTM D 2234 Condition I-B-1 / D 7430 Part A. Samples were collected throughout loading of the indicated cargo.

Mechanical Sampling System (MSS) was checked by SGS prior to loading and confirmed that the MSS was designed and operated in accordance with ASTM D 2234 Condition I-B-1/D 7430 Part A. Performance Monitoring of the MSS, and collection of extraction ratios, confirmed the MSS continues to perform as designed. Bias Test data was made available to SGS.

Analysis: Fourteen (14) sub-lot samples were analyzed by SGS in accordance with ASTM Standard Methods.

We report the following weighted average.

	Test Method	As Received	Air Dried Basis	Dry Basis	
Total Moisture	ASTM D 3302	6.94	----	----	%
Inherent Moisture	ASTM D 3302	----	1.04	----	%
Ash	ASTM D 3174	8.73	9.29	9.38	%
Volatile Matter	ASTM D 3175	37.1	39.45	39.86	%
Fixed Carbon	by difference	47.23	50.22	50.76	%
Sulphur	ASTM D 4239	3.05	3.24	3.28	%
Gross Calorific Value	ASTM D 5865	12852	13666	13810	Btu/lb
		7140	7592	7672	Kcal/kg
Net Calorific Value (at constant pressure)	ASTM D 5865	12332	13180	13330	Btu/lb
		6851	7322	7406	kcal/kg

We report the following on the composite sample.

Sieve Analysis (round hole)	ASTM D 4749		
Above 50 mm		1.3	%
Below 50 mm		98.7	%

