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Minerals Services
Barranquilla
F490101
Job No. OL 70162
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Report No. 20081926171

PARA:

COMMODITY : F4 FINES
DATE : AUGUST 12, 2020
SERVICES : RECEIVED SAMPLE ANALYSIS

QUALITY REPORT

CHEMICAL COMPOSITION (ONDRYBASIS, PERCENTAGE BY WEIGHT)	PCT
IRON TOTAL (FET)	63.29
METALLIC IRON (Fe ^o)	4.35
IRON OXIDE (FeO)	4.15
HEMATITE (Fe ₂ O ₃)	54.79
MAGNETITE (Fe ₃ O ₄)	58.94
GANGUE	6.91
CARBON (C)	0.09
VANADIUM (V)	0.011
SILICON DIOXIDE (SiO ₂)	4.26
ALUMINUM DIOXIDE (Al ₂ O ₃)	1.85
PHOSPHORUS (P)	0.149
SULPHUR (S)	0.0157
CALCIUM OXIDE (CaO)	0.15
MAGNESIUM OXIDE (MgO)	0.65
MANGANESE (Mn)	0.086
CHROME (Cr)	0.00012
LEAD (Pb)	0.00007
NICKEL (Ni)	TRACES
COBALT (Co)	TRACES
TILIU M OXIDE (TiO ₂)	0.285
ZINC (Zn)	0.0090
ARSENIC (As)	0.00002
SODIUM OXIDE (Na ₂ O)	0.035
POTASIUM OXIDE (K ₂ O)	0.014
MOISTURE	3.40
(FREE MOISTURE LOSS AT 105 DEGREES CENTIGRADE)	

PHYSICAL SPECIFICATION (NATURAL BASIS):	
SIZE DISTRIBUTION	PCT
ABOVE 1/2"	0.74
ABOVE 3/8"	2.33
ABOVE 1/4"	5.25
ABOVE 4 MM	5.57
ABOVE 2.8 MM	4.11
ABOVE 1 MM	12.04
PAN	69.96
ABOVE 1/4"	91.68
BELOW 1/4"	8.32

TOTAL HYDROCARBONS	
ELEMENTS	Mg/Kg
C10 - C40	0.05

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This certificate reflects our findings at the time and place indicated and is issued in pursuance of principal's instructions and in conformity with our Terms and Conditions.

Due to the inaccessibility of part of the cargo, the samples collected have indicative value only and will not necessarily be representative of the entire cargo, but only of that part accessible and sampled at the date, time, and place of inspection.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.


Antonio Vengoechea Cabrera
Technical Advisor

PUERTO ORDAZ, VENEZUELA
AUGUST 18, 2020

SGS COLOMBIA S.A.S.
INTERNATIONAL INDEPENDENT
SURVEYOR

