

Cliente

Compañía : CARBOING S.A.S
 Dirección : Calle 20 No 82 - 52 OF 3 -17
 Centro Empresarial Hayuelos
 Ciudad : Bogotá D.C
 País : Colombia

Contacto : Milena Grijalba Wittingham
 Teléfono : +57 (1) 3187115294
 E-mail : mpgrjalbaw@yahoo.com

Sampling

Fecha :
 Método : N. A.
 Tonelaje : 0,00
 Lugar : NA
 Tipo de Muestreo : N. A.
 Condiciones Ambientales : NA

Muestra

ID del Cliente : Muestra # 1 - Carboing
 ID Interno Cotecna : CM-2017-0000210
 Cotecna ID : Q-CO1700881
 Producto : Carbón
 Descripción : Muestra de Carbón en Bruto
 Fecha de Recepción : 11 mayo 2017
 Fecha de Análisis : 11 mayo 2017
 Lugar de Análisis : Lab.Cotecna Minerals - Zipaquirá
 Embalaje : Bolsas de Polietileno
 Condición de la muestra : NA
 Condiciones de Ensayo : NA
 Cantidad recibida :
 Sello N° : NA

Análisis	Método	Resultado	Unidad
Humedad Total	ASTM D3302/D3302M-15(*)	6.96	% m/m
Materia volátil	ASTM D3175-11		
Materia Volátil (BS)		21.56	% m/m
Materia Volátil (CR)		20.06	% m/m
Cenizas	ASTM D3174-12		
Cenizas (CR)		8.40	% m/m
Cenizas (BS)		9.03	% m/m
Carbono Fijo	ASTM D3172-13		
Carbono Fijo (CR)		64.58	% m/m
Carbono Fijo (BS)		69.41	% m/m
Contenido total de azufre por XRF	S - XRF		
Contenido total de azufre CR		0.52	% m/m
Contenido total de azufre BS		0.56	% m/m
Índice de hinchamiento libre	ASTM D720/D720M-15(*)	9.0	--
Poder calorífico bruto	ASTM D5865-13(*)		
Poder calorífico bruto CR		30.73	MJ/kg
Poder calorífico bruto BS		33.02	MJ/kg
Poder Calorífico bruto CR (kcal/kg)		7338.0	cal/g
Poder Calorífico bruto BS (kcal/kg)		7886.0	cal/g
Poder Calorífico bruto CR (BTU/lb)		13211.0	BTU/lb
Poder Calorífico bruto BS (BTU/lb)		14197.0	BTU/lb

COTECNA MINERAL S.A.S.

Laboratorio: Carrera 36 # 8-554 • Int. 3 ZIQAQUIRÁ (Cund.) • Sector La Paz
Sede Administrativa: Carrera 7ª N° 32-33 • Piso 2 • Edificio Fenix Telesentinel • Bogotá D.C. • Colombia
Tel./Fax : (571) 7427655, e-mail: cotecna.minerals@cotecna.com.co
Website: www.cotecna.com.co

13 May 2017



Observaciones

(*) COTECNA MINERALS SAS está acreditado por el ORGANISMO NACIONAL DE ACREDITACIÓN DE COLOMBIA (ONAC) y conforme a los requerimientos de NTC-ISO/IEC- 17025:2005 para los análisis especificados en el alcance de la acreditación código 14-LAB-009 en la página web (<http://www.onac.org.co>)

Notas

Nota 1. No se debe reproducir total o parcialmente este informe de ensayo sin aprobación por escrito por parte del laboratorio.

Nota 2. Los resultados contenidos en este informe de ensayo, se refieren al momento y condiciones en que se realizaron los análisis. El laboratorio no se responsabiliza de los prejuicios que pueden derivarse del uso inadecuado de estos análisis.

Los resultados de los análisis tienen validez con referencia única y exclusiva de la muestra que fue recibida en el laboratorio.



Ruth Rodríguez
Jefe Laboratorio
13 mayo 2017

Fin del Informe

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COTECNA MINERAL S.A.S.**Laboratorio:** Carrera 36 # 8-554 • Int. 3 ZIPAQUIRÁ (Cund.) • Sector La Paz**Sede Administrativa:** Carrera 7ª N° 32-33 • Piso 2 • Edificio Fenix Telesentinel • Bogotá D.C. • Colombia**Tel./Fax :** (571) 7427655, e-mail: cotecna.minerals@cotecna.com.co**Website:** www.cotecna.com.co

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13 May 2017

COTECNA™ TERMS AND CONDITIONS OF BUSINESS FOR LABORATORY TESTING (2010)

1. General terms and conditions

COTECNA the regulations or contractual conditions, governments, government agencies or any public or private entity, or (ii) the imperative provisions of the local law, COTECNA SA and any affiliated company or one of their agents (hereinafter «the Company») provides laboratory testing services in accordance with the present General Terms and Conditions (hereinafter «General Terms and Conditions»). COTECNA SA reserves the right to amend the Terms and Conditions for Laboratory Testing at any time.

2. The Company

The Company provides the laboratory testing services which are listed in article 5 below, consultancy and special services which are quoted under article 6 below and it issues reports and/or certificates as indicated under article 7 below.

3. The Principal

The Company acts for individuals or entities which give it a mandate (hereinafter «the Principal»).

4. Execution of services

4.1 The Company provides its services in accordance with the Principal's explicit instructions as accepted by the Company, with sufficient information, specifications and instructions which the Principal must provide to enable the Company to evaluate and/or to carry out the services required. The services provided by the Company can consist of one or more concomitant or successive services. Unless expressly specified, services provided do not encompass verification of origin nor IP rights attached to goods.

4.2 Documents reflecting the undertakings entered into between the Principal and third parties or documents from third parties such as copies of sales contracts, letters of credit, bills of lading, are, if the Principal communicates them to the Company, only considered for information purposes and are not regarded as instructions. They do not extend the mission or the obligations of the Company.

5. Usual services

The Company's usual laboratory testing services consist of physical, Chemical and other testing

6. Special services and consultancy services

Special services which go beyond the framework of the usual services indicated under article 5 above may be provided by the Company. These special services are only provided by the Company on the basis of a particular agreement with the Principal.

Such special services can include for example services on the following non-exhaustive list:

- 6.1 Consultancy services;
- 6.2 Training and certification.

7. Reports and certificates

7.1 Subject to the Principal's instructions, as accepted by the Company, the latter issues reports and certificates which reflect the observations within the limits of the instructions received. The Company does not have the obligation to refer to, give an opinion upon, or announce facts or circumstances which go beyond the framework of the explicit instructions received.

7.2 The reports delivered by the Company only reflect the facts such as have been raised by the Company at the time of its intervention. The Company does not have any obligation to make reference to or to report facts or circumstances beyond the instructions received.

7.3 Reports or certificates established following tests or analysis of samples contain the observations of the Company on these samples only, but do not express any opinion as to the overall quantity of goods from which the samples have been taken.

8. Obligations of the Company

8.1 The company undertakes to exercise its activities with the care required by the nature of the task.

Its liability will only arise in the event of serious or intentional misconduct.

8.2 The Company will maintain unused portions of laboratory samples for 15 days after the corresponding tests report or certificate has been issued. After 15 days, the Company will return or dispose of unused portions of samples at the Principal's expense.

9. Obligations of the Principal

The Principal undertakes:

9.1 To provide the Company with samples for testing (at the Principal's expense) as well as with the necessary instructions and sufficient information in good time to enable the Company to render the services requested;

9.2 To provide the necessary access to buildings, warehouses or any other appropriate places, if necessary to enable the Company to render its services in a diligent way, and to provide Cotecna's staff and/or representatives with a safe workplace;

9.3 To provide, on request, special equipment and assistance, in particular in personnel, necessary for the execution of the required services;

9.4 When sending samples to Cotecna for the purpose of performing the services, to disclose any potentially dangerous properties of the items concerned in a clearly identifiable manner and in writing.

9.5 To abide by all applicable regulations when shipping samples to the Company, specifically to ensure and guarantee that samples do not create a life hazard due to radioactivity, toxic substances or explosive components. The Company has the right to refuse receipt and/or testing of any samples that, in the Company's sole discretion, is hazardous, unsafe, unlawful or has been shipped improperly. The Principal shall bear associated costs including, but not limited to, identification of sample content and be responsible for any damage incurred by the Company as a result of improper packaging, labelling or omission of documents, return or disposal of samples;

9.6 To take all necessary measures to avoid, eliminate or remedy any obstruction preventing the Company from carrying out the necessary services;

9.7 To exercise all its rights fully and to fulfill all its obligations under the terms of any contract with third parties to which the services rendered by the Company relate, whether a report or certificate has been issued by the Company or not, failing which the Company will not incur any liability towards the Principal.

10. Delegation

The Company will have the right, at its entire discretion, to delegate all or part of the execution of the services which are the subject of a contract with the Principal to any representative or subcontractor.

11. Laboratory analyses by third parties

If the demands of the Principal require an analysis of samples by a third party laboratory, the Company will inform it of the result of the analyses, without incurring liability for its accuracy. In the same way, when the Company relies on an analysis by a laboratory of the Principal or by a third party laboratory, the Company will provide a confirmation that the desired sample was analyzed but will be responsible for the accuracy of this analysis or the results but not its consequence(s).

When the Principal asks the Company to attest to the intervention of a third party, it acknowledges that the only responsibility for the Company consists in being present at the time of the intervention of the third party and sending the results of the intervention, or confirming that it took place. The Principal acknowledges that the Company may be answerable for the sampling, the calibration of the apparatuses, instruments and means of measurement used, the methods of analysis used the professional qualifications, acts or omissions of the personnel of the third party, or of the results of the analyses carried out by the aforesaid third party.

12. Liability and compensation

12.1 The Company's liability for any claim for loss, damage or expenses of whatever kind or origin they may be is limited to the lesser of the amounts between

- (a) an amount equivalent to ten (10) times the amount of the fees paid for the service alone or of the commission due for the service requested under the terms of the contract at the origin of the aforesaid claim and
- (b) USD 25,000 (twenty-five thousand US Dollars).
- (c) Any lower amount specified in the contract, agreement or other convention concluded between the Company and the Principal.

12.2 However, the Company will not incur any liability for consequential or derivative damages including loss and profits, losses of future businesses, losses of production and/or cancellation of contracts concluded by the Principal.

12.3 When fees or a commission due refer to two or more services and the Principal puts forward a claim for one of its services, the fees or the commission will be due for the totality of the services rendered.

12.4 The Principal will release, guarantee and indemnify the Company and its managers, employees, representatives or subcontractors against any claim raised by a third party for loss, damage or expenses of whatever kind they may be, relating to the execution or the alleged non-performance of services provided in accordance with the explicit instructions of the Principal.

12.5 In the event that the Company is prevented for any reason whatsoever outside its control from carrying out or from bringing to a successful conclusion services for which an order was placed or an agreement concluded, the Company will be released from any liability for the partial or total non-performance of the services requested. Moreover, the Principal will pay the Company:

- (a) All the expenses actually incurred;
- (b) A proportional share of the fees or commission agreed upon for the service actually rendered.

13. Price and invoicing

13.1 The Principal will pay at the latest within thirty (30) days from the date of the invoice, or within any other time limit which may have been agreed in writing with the Company, all the fees and expenses incurred by the Company, failing which interest on arrears will be due at the LIBOR rates + 1.5% per month as from the date when the payment was due until the actual date of payment.

13.2 The Principal will not have the right to retain or defer the payment due to the Company by invoking a dispute, a counterclaim or compensation against the Company.

13.3 The Principal will also have to pay the Company all the expenses incurred in recovering the amounts owed by it to the latter including lawyer's fees and legal expenses.

13.4 If unforeseen problems arise or if the Company incurs extraordinary expenses for the execution of the services, the Company will have the right to invoice the amounts necessary to cover the time and the additional expenses of bringing the contract to a conclusion.

13.5 The Company reserves the right to suspend its services if the obligations relating to clause 13.1 are not fulfilled by the Principal.

13.6 The Company reserves the right to modify the terms of payment provided for in clause 13.1 if it considers the financial standing of the Principal materially altered.

14. Claim

The Principal must notify any claim for loss, damage or costs to the Company at 58, rue de la Terrassière, P.O.Box. 6155, CH 1211 Geneva 6, Switzerland, in writing immediately, but at the latest within thirty (30) working days from the discovery of the facts which it intends to make use of, and initiate legal action within two (2) months from the discovery of the aforesaid facts, but at the maximum three (3) months after:

- (a) the date of execution of the only service giving rise to the Principal's claim or
- (b) the date on which the aforesaid service should have been carried out in the case of an alleged non-performance, failing which the Company will be released from any liability towards the Principal.

15. Amendments and modifications

15.1 No modification or amendment of one of the clauses of these Terms and Conditions for Laboratory Testing will have effect unless made in writing and signed by a person duly qualified for this purpose by Cotecna SA.

15.2 If one or more provisions of these General Terms and Conditions should prove to be illegal or inapplicable for whatever reason, the validity and application of the other provisions will not in any case be affected by it.

16. Extent of the services

The Company acts neither as an insurer nor as a guarantor and declines any liability under this heading. The Principal seeking to guarantee itself against losses or damage will have to obtain adequate insurance cover at its own expense.

17. Applicable law, jurisdiction and settlement of disputes

In the absence of any contrary provision between the parties, the contracts, agreements or other conventions concluded between the Company and the Principal the General Terms and Conditions are governed and interpreted according to the Swiss law and any disagreement will be judged in a definitive way:

- (a) when the service is carried out in the United States of America, in accordance with the rules of commercial arbitration of the American Arbitration Association, the place of arbitration shall be New York (NY).
- (b) in all other cases in accordance with the Swiss Rules of International Arbitration of the Swiss Chambers of Commerce in force on the date on which the notification of arbitration is lodged in accordance with this Regulation. The place of this arbitration shall be Geneva, Switzerland.

In all the cases described under (a) and (b), the proceedings will be conducted in English, unless the parties together decide differently. The arbitration court will be composed of three (3) arbitrators, unless the litigious value is below 1 Mio CHF.

18. Languages

These general terms and conditions have been drawn up in English and are available in different languages on the Company web site "www.cotecna.com/COM/EN/terms_conditions.aspx". In the event of inconsistency, the English text shall prevail.