ISSUANCE OF REPORT / CERTIFICATE OF ANALYSIS

I. OBJECTIVE

The Mines and Geosciences Bureau, Geosciences Division shall undertake land and marine scientific surveys and provides geological laboratory and information services over the entire country. This is in pursuant to Chapter II, Section 7.b of DENR Administrative Order No. 2010-21 "Consolidated Implementing Rules and Regulations of Republic Act No. 7942, otherwise known as the Philippine Mining Act of 1995".

Relative hereto and in the interest of the service and to show dynamism in this rapidly changing scientific and technological world, the Laboratory aims:

- To maintain a competent laboratory
- To adopt standard work practices in the laboratory
- To deliver efficient public service

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II. SCOPE

This procedure aims to provide a guide to customers who wants to avail of the laboratory services. This covers from the submission of samples up to the releasing of the Report/Certificate of Analysis.

The following are the capabilities of the laboratory, to wit:

- Grain size and moisture analysis on soil samples
- Determination of silica, alumina, iron, lime, magnesia, moisture, loss on ignition, manganese, chromic oxide, gold, silver, nickel and cobalt on rocks and ores
- Determination of Total Suspended Solids and pH on water samples
- True Specific Gravity

III. RESPONSIBILITY AND RESOURCES

Analysis of minerals/ores gives valuable information that could help geologists in mineral exploration, geological mapping, geohazard assessment, groundwater resource exploration, and other scientific researches. Also, the analysis serves as a guide to investors whether to pursue their mining operations.

Determinations of pH and Total Suspended Solids (TSS) on water samples are for environmental monitoring evaluation.

TSS inhibits light penetration and can restrict the zone of primary production of fishes aside from influencing the temperature patterns while pH value allows one to determine the corrosive action of water, its possible effects on the water body. Thus, treatment practices for industrial processes can decided and acted upon.

The Report/Certificate of Analysis is reviewed, checked and validated. It must be signed by the Head, Laboratory, and other authorized signatories; attested by the Chief, Geosciences Division and approved by the Regional Director or the Officer-In-Charge.

DEFINITION OF TERMS

- Certificate of Analysis - is a document issued by Quality Assurance that confirms that a regulated product meets its product specification. They commonly contain the actual results obtained from testing performed as part of quality control of an individual batch of a product.

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- Grain Size Determination - this test is performed to determine the percentage of different grain sizes contained within a soil
- Loss on ignition - is a test used in inorganic analytical chemistry, particularly in the analysis of minerals. It consists of strongly heating ("igniting") a sample of the material at a specified temperature, allowing volatile substances to escape, until its mass ceases to change.

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- Minerals - are substances that are formed naturally in the Earth. Minerals are usually solid, inorganic, have a crystal structure, and form naturally by geological processes
- Moisture - water or other liquid diffused in a small quantity as vapor, within a solid, or condensed on a surface.
- Ore - a naturally occurring solid material from which a metal or valuable mineral can be profitably extracted.
- pH - It is a term used universally to express the intensity of the acid or alkaline condition of a solution. It is a way of expressing hydrogen-ion concentration or more precisely the hydrogen ion activity
- Sample preparation - refers to the ways in which a sample is treated prior to its analysis
- Total Suspended Solids (TSS) - is the dry-weight of particles trapped by a filter. It is a water quality parameter used for example to assess the quality of wastewater after treatment in a wastewater treatment plan.
- True specific gravity of a material - is the ratio of its true density, determined at a specific temperature, to the true density of water, determined at a specific temperature.

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IV. REFERENCE DOCUMENTS

- American Public Health Association and others, 1965, Standard Methods for the Examination of Water and Wastewater, (12th Ed.): New York, American Public Health Association, Inc.
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- Brown, Eugene, Skougstad, Marvin W and Fishman, M.J. 1970, Methods for Collection and Analysis of Water Samples for Dissolved Minerals and Gases: Tech. Water Resources Inv., Bk. 5, Chap. Al.
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- Metcalfe, H. C., Williams, J. E., and Castka, J. F., "Modern Chemistry", Holt, Rinehart & Winston, Inc., New York, 1970.
- MGB Standard Analytical Procedures

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- Quiambao, Paulina and Bihis, Maria Luz, 1979, Rapid Methods of Water Analysis, Part II, Report of Investigation No. 97, Bureau of Mines, Manila.
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- Welcher, Frank J., Standard Methods of Chemical Analysis (6th ed.); New York, D. Van Nostrand Co. Inc. V. 2. Part B.
- Welcher, F. J., "Standard Methods of Chemical Analysis", Robert E. Krieger Publishing Co., New York, 6th Ed., 1975.
- Willard, Hobart H. Merritt, Lynne L. Jr. and Dean, John A. 1962, Instrumental Methods of Analysis (4th ed.): New Delhi, Affiliated East-West, Pvt. Ltd.

V. RECORDS GENERATED

Report/Certificate of Analysis, Sample Analysis Request and Checklist Form, Checklist for Releasing Report / Certificate of Analysis, Letter Request from Customer, Order of Payment, Official Receipt, and Visitor's Logbook

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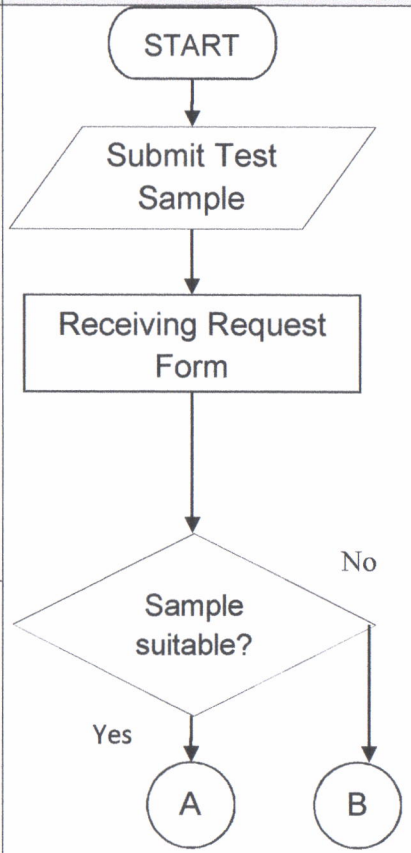
VI. PROCEDURES AND PROCESS FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
01		1.1 Receiving of the samples 1.1.1 For Water Analysis (TSS and pH)- Customer to prepare Letter Request /Fill-up Sample Analysis Request Form 1.1.2 For Nickel Laterite Ore Shipment Samples – Fill- up Sample Analysis Request Form 1.1.3 For Walk-in Customers – Megascopic Determination of Samples.	Guidelines of Receiving Samples: For Water Samples (TSS and pH analysis) –Submit at least one liter water sample For Ore analysis – Submit at least 1 kg of sample For Nickel Laterite Ore Shipment- Submit at least 50grams-100grams of pulp sample	Laboratory Personnel Available Geologist Laboratory Personnel	Visitor's Log Book FM-GSD-08 Sample Analysis Request and Checklist Form FM-GSD-09
02		2.1 Laboratory Personnel issues Bill of Payment to customers for water analysis and nickel laterite ore shipment samples. 2.2 For Walk-in Customers, the sample is sent to the	DAO No. 8 Series of 2005 Standard Fees and Charges	Laboratory Personnel	

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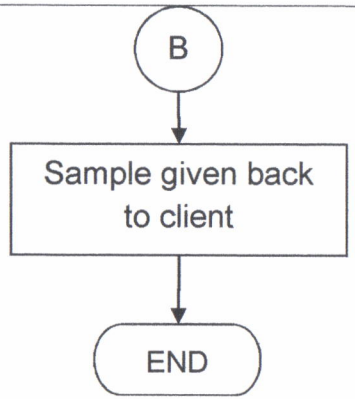
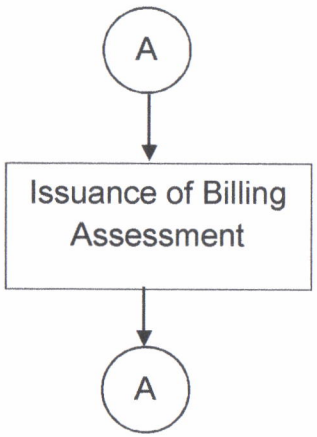
		Geosciences Division for proper sample identification by a geologist. 2.2.1 If it is NO for analysis, the sample is given back to the customer 2.2.2 If it is YES for analysis, the laboratory issues Billing Assessment			
03		3.1 The customer is instructed to go to the cashier for payment and issuance of the official receipt. 3.2 From the cashier, the client goes back to the laboratory and presents the O.R. as well as the copy of the Order of Payment.		Admin Officer III	Official Receipt and Order of Payment

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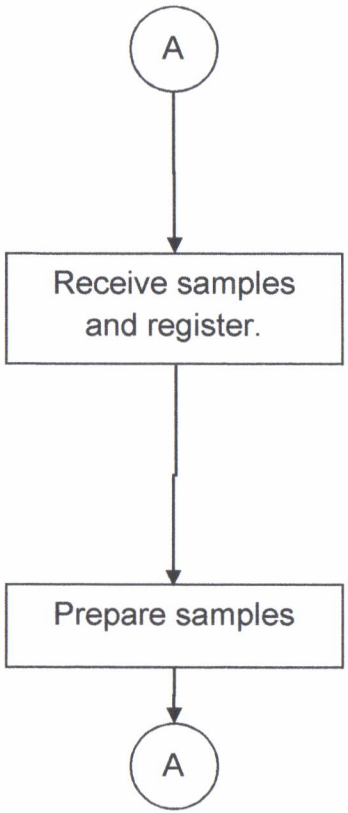
04		4.1 The laboratory personnel who receives the sample, assigns the laboratory control number & records the number of sample received and its indicated markings/labels,, description of the sample, O.R. #, date paid and the amount of payment in the "Sample Analysis Request and Checklist Form", and other information. 4.2 The client is then informed on the date the test result/s is/are available.		Laboratory Personnel	
05		5.1 Preparation of samples		Laboratory Personnel	

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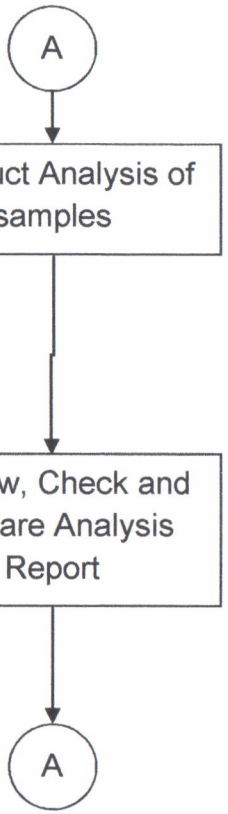
ISSUANCE OF REPORT / CERTIFICATE OF ANALYSIS

06		6.1 Conduct of Analysis of Samples	Manual on Standard Analytical Procedure of MGB Laboratories (Revised Edition) 2001	Laboratory Personnel	Test Worksheets or Logbooks
07		7.1 Review and Check Analysis Results. 7.2 Prepare the Analysis Report duly signed by the Laboratory Chief, attested by the Chief-Geosciences Division and noted by the Regional Director or the OIC. Report/ Certificate of Analysis must bear the official barcode/ MGB seal and release stamp.		Laboratory Chief	Test Report or Certificate

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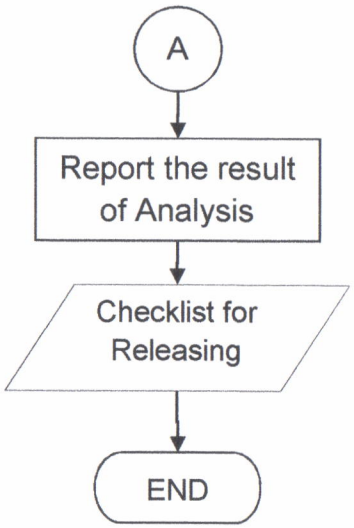
08		8.1 Customer or his representative must present Official Receipt and identification Card, and is requested to sign in the file copy (Laboratory) of the report indicating he had received the report on analysis (affix signature over printed name as well as date received)		Laboratory Personnel	Checklist for Releasing Certificate/ Report on Analysis FM-GSD-06

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