ANNEX "A"

SECRETARY'S CERTIFICATE

SECRETARY'S CERTIFICATE

I. **RODERICK R.C. SALAZAR III**, of legal age, Filipino, with office address at 4th Floor Cityland 10, Tower I, 6815 Ayala Avenue, Makati City, being the duly elected and qualified Corporate Secretary **RAPU-RAPU MINERALS, INC.** (the "Corporation"), a corporation duly organized and existing under the laws of the Philippines with office address at 4th Floor Cityland 10, Tower I, 6815 Ayala Avenue, Makati City, after having been sworn in accordance with law, do hereby certify that at the special meeting of the Board of Directors held on August 11, 2000, the following resolution was unanimously approved:

> "RESOLVED, that the Board of Directors of Rapu-Rapu Minerals, Inc. (the 'Corporation') authorize, as it hereby does, the Corporation to enter into a Mineral Production Sharing Agreement (MPSA) with the Republic of the Philippines and Ungay Malobago Mines, Inc. in respect of APSA-V-026 over certain mining claims situated in Rapu-Rapu, Albay;
>
> "RESOLVED FURTHER, that any one (1) of the Chairman of the Board, Ian Culbert, the President, Mr. Jose P. de Guzman, or the Corporate Secretary and Director, Mr. Roderick R.C. Salazar III, be, as each of them hereby is, authorized to sign, execute and deliver for and on behalf of the Corporation said MPSA under such terms and conditions as each of them may deem to be in the best interest of the Corporation."

IN WITNESS WHEREOF, I have hereunto set my hand this 14th day of August 2000 at Makati City.

RODERICK R.C. SALAZAR III

REPUBLIC OF THE PHILIPPINES)
MAKATI CITY) SS

SUBSCIBED AND SWORN, to before me this 14th day of August 2000, affiant exhibiting to me his Community Tax Certificate No. 14398841 issued on January 3, 2000 at Makati City.

Doc. No. 324;
Page No. 66;
Book No. I;
Series of 2000.

RRMI8'11'00-SC/NAG-NS1

FLORINDA R. ANDRES
NOTARY PUBLIC
UNTIL DECEMBER 31, 2000
IBP # 504742 /3-3-00/QC CHAPTER
PTR # 8878509 /3-2-00/MKTI CITY

ANNEX "A-1"

SECRETARY'S CERTIFICATE

UNGAY-MALOBAGO MINES, INC.

CERTIFICATION
****

TO WHOM IT MAY CONCERN:

I, CRISPIN S. SABIDO, Secretary of the Ungay-Malobago Mines, Inc., hereby certify that the following Resolution is a correct copy of a Resolution adopted at a Special Meeting of the Board of Directors of the Corporation, held at its Office, Pasig, Metro-Manila, to wit:

" RESOLUTION

RESOLVED, as hereby it is resolved, to authorize the General Manager, Exsen. Dominador Aytona, as hereby he is authorized, to enter and execute on behalf of the Company such contract and /or agreement relative to its mining propertes in Lapu-Lapu, Albay consistent with its By-laws and Company policy.

This authorization shall be valid and in full force and effect until such time it is finally revoke by a similar Board Resolution."

and that said Resolution is in full force and effect.

IN WITNESS WHEREOF, I have hereunto affixed my signature and attached the seal of the Corporation, this 3rd day of April 1997.

CRISPIN S. SABIDO
Board Secretary/Affiant

REP. of the Phil.)
QUEZON CITY (M.M) SS.

SUBSCRIBED AND SWORN to before me this APR 04 1997 of April 1997, at QUEZON CITY affiant Crispin Sabido exhibited his Com. Tax Cert. No. 15112833, issued on 15 Jan. 1997, at Polangui, Albay.

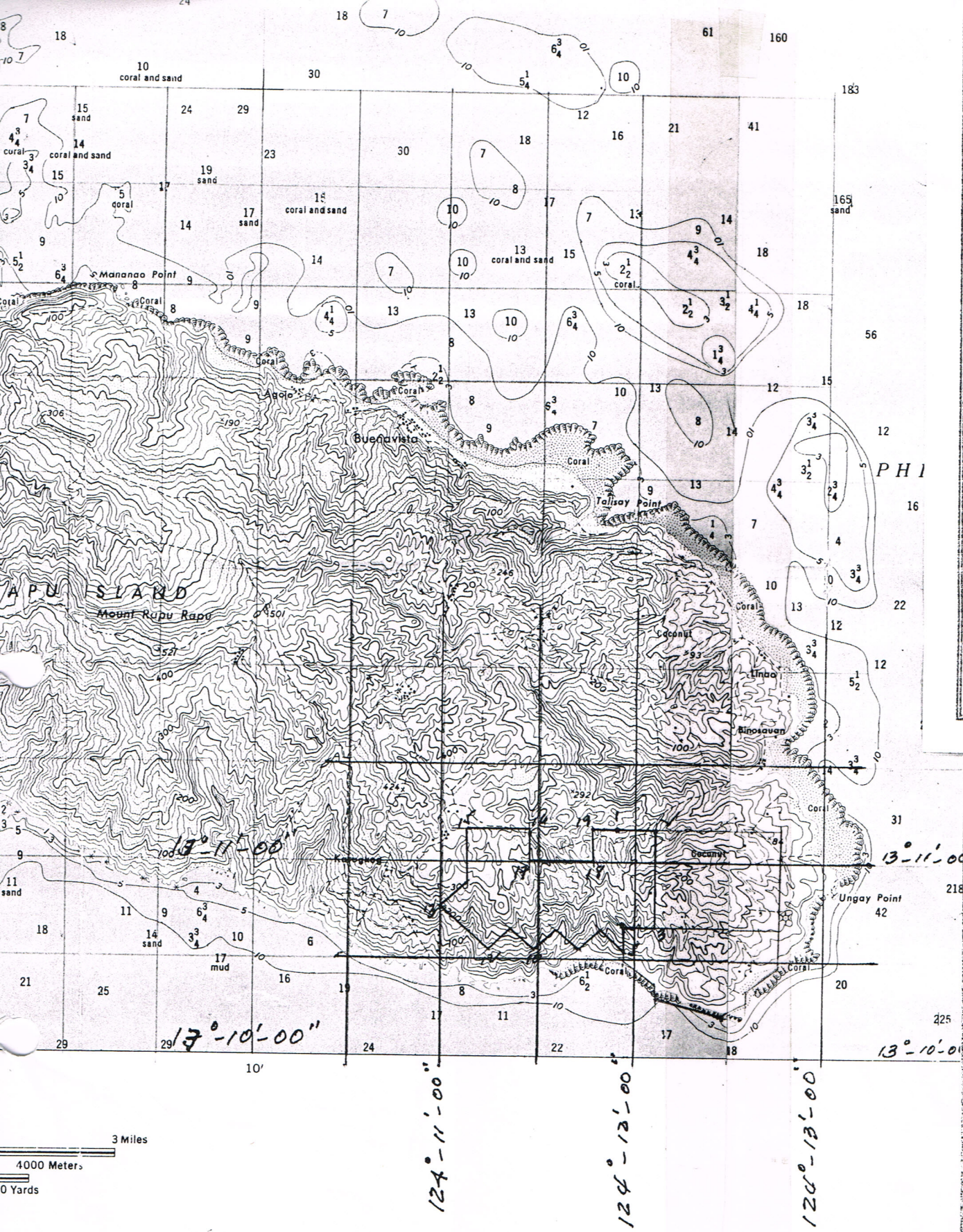
Doc. No. 227; Page No. 46
Book No. XX; Series of 1997.

NOTARY PUBLIC
My Commission Expires on ___, 199_.
Notary Public
Until December 31, 1997
PTR No. 2141740; 1-2-97; Q.C.

4th Floor, Emerald Building, Emerald Avenue, Ortigas Office Complex, Pasig, Metro-Manila
Telephone Numbers: 673-1293 to 1298

ANNEX "B"

LOCATION MAP



TECHNICAL DESCRIPTION				
Line	Bearing			Distance
1-2	S	89-49	E	300.00 M.
2-3	S	00-11	W	900.00 M.
3-4	N	89-49	W	300.00 M.
4-5	S	00-11	W	197.75 M.
5-6	S	45-11	W	42.65 M.
6-7	N	44-49	W	300.00 M.
7-8	S	45-11	W	300.00 M.
8-9	N	44-49	W	300.00 M.
9-10	S	45-11	W	300.00 M.
10-11	N	44-49	W	300.00 M.
11-12	S	45-11	W	300.00 M.
12-13	N	44-49	W	600.00 M.
13-14	N	45-11	E	321.32 M.
14-15	N	00-11	E	476.44 M.
15-16	S	89-49	E	600.00 M.
16-17	S	00-11	W	300.00 M.
17-18	S	89-49	E	600.00 M.
18-19	N	00-11	E	300.00 M.
19-1	S	89-49	E	300.00 M.

Tie Line from Triangulation Station Rapu-Rapu, USC & GS S 70-05 E, 4,756.81 Meters to Corner No. 1

MAP

Showing the area applied for

MINERAL PRODUCTION SHARING AGREEMENT (MPSA)
(APSA-V-0026)

As prepared for

UNGAY-MALOBAGO MINES, INC./
RAPU-RAPU MINERALS, INC.

Situated in

Barangay of	:	Malobago
Municipality of	:	Rapu-Rapu
Province of	:	Albay
Island of	:	Rapu-Rapu

Containing an area of 167.8625 hectares more or less.
Scale 1:50,000

Prepared by: Date: September 12, 1997

CESAR K. GOSGOS
Geodetic Engineer
PRN No. 028-072-293
PRC No. 2576

RAPU-RAPU
PHILIPPINE ISLA

W	300.00 M.	
W	197.75 M.	
W	42.65 M.	
W	300.00 M.	
W	300.00 M.	
W	300.00 M.	
W	300.00 M.	
W	300.00 M.	
W	300.00 M.	
W	600.00 M.	
E	321.32 M.	
E	476.44 M.	
E	600.00 M.	
W	300.00 M.	
E	600.00 M.	
E	300.00 M.	
E	300.00 M.	

S 70°05'00" E, 4,756.81 M. from Triangulation Rapu-Rapu, U.S.C. & G.S.

P U B L I C L A N D

LAND

"CAN BE" MINERAL CLAIM Lla-11924-D UNGAY-MALOBAGO MINES, INC.

"TOM" MINERAL CLAIM Lla-11935-D UNGAY-MALOBAGO MINES, INC.

"AIDA" MINERAL CLAIM Lla-11930-D UNGAY-MALOBAGO MINES, INC.

"POLANGUI" MINERAL CLAIM Lp-715-D UNGAY-MALOBAGO MINES, INC

"LIGAO" MINERAL CLAIM Lp-711-D UNGAY-MALOBAGO MINES,

"SAN" MINERAL CLAIM Lp-3294-D UNGAY MALOBAGO MINES, INC.

"ANDY" MINERAL CLAIM Lp-3282-D UNGAY MALOBAGO MINES, INC.

"RIDE FR." MINERAL CLAIM Lp-3293-D UNGAY MALOBAGO MINES, INC.

"TEAM" MINERAL CLAIM Lp-3296-D UNGAY MALOBAGO MINES, INC.

"SHOW" MINERAL CLAIM Lp-3295-D UNGAY MALOBAGO MINES, INC.

"VISING FR." MINERAL CLAIM Lp-3299-D UNGAY MALOBAGO MINES, INC.

"CHIEF" MINERAL CLAIM Lp-3284-D UNGAY MALOBAGO MINES, INC.

"MARILYN" MINERAL CLAIM Lla-11917-D UNGAY-MALOBAGO MINES, INC.

"SOFIA" MINERAL CLAIM Lp-2079-D UNGAY-MALOBAGO MINES, INC.

N

Locator / Applicant — UNGAY MALOBAGO MINES, INC.
Deed of Assignment Recorded on
Application for Order of Quarry/Lease Survey Filed
Mining Lease Application No. Filed
Order of Survey Issued on
Survey Returns Submitted on
Mineral Land Survey Map
Province of

PLAN

OF

PROPOSED MINERAL PRODUCTION SHARI AGREEMENT

AS SURVEYED FOR

~~QUARRY/LEASE PURPOSES FOR~~

UNGAY-MALOBAGO MINES, INC.

C/O 12 ADB AVENUE, MANDALUYONG CITY

SITUATED IN THE

SITIO OF PAGCOLBON
BARRIO OF MALOBAGO
MUNICIPALITY OF RAPU RAPU
PROVINCE OF ALBAY
ISLAND OF RAPU RAPU
CONTAINING AN AREA OF 167,8625 // HAS

PHILIPPINE TRANSVERSE MERCATOR PROJECTION
CENTRAL MERIDIAN 125°00' E.
BEARINGS PLANE

SCALE 1: 10,000 m.

0 100 200 300 400 500

Prepared: February 10 - 20 1996

I hereby certify that the above information is true and correct.

AUTHORIZED ASS'T. BY:

GEODETIC ENGINEER

PTR NO.:
DATE

JACOBO R. ARAGONES JR.
GEODETIC ENGINEER
PTR NO.: 3349009
DATE : 1-31-96

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MINES AND GEO-SCIENCES DEVELOPMENT SERVICE
REGION NO

I CERTIFY THAT THIS IS A CORRECT PLAN OF THE SURVEY HEREIN PLATTED. THE VERIFIED ORIGINAL FIELD NOTES, COMPUTATIONS AND REPORT OF WHICH ARE ON FILE IN THIS OFFICE EXECUTED UNDER AUTHORITY OF SECTION ACT NO. AS AMENDED AND P.D. NO. 463 AND IN ACCORDANCE WITH THE EXISTING REGULATIONS OF THE BUREAU OF MINES AND GEO-SCIENCES, WHEREFORE, THE SAME IS HEREBY APPROVED.

THE APPROVAL OF THIS PLAN, HOWEVER, DOES NOT NECESSARILY GIVE ANY PREFERENTIAL AND/OR ADDITIONAL RIGHTS FOR

ANNEX "C"

TWO-YEAR EXPLORATION WORK PROGRAM

MGB Form No. 05-4

(ref: Annex A of Environmental Work Program)

Republic of the Philippines
Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
North Avenue, Diliman, Quezon City

TWO YEAR EXPLORATION WORK PROGRAM (Updated August 2000)

1.0 Name and Address of Company/Proponent

Company : **UNGAY-MALOBAGO MINES, INC./RAPU RAPU MINERALS, INC.**

Address : c/o Rapu Rapu Minerals, Inc.
Suite 23 Legaspi Suites, 178 Salcedo St. Makati
Tel. No 813 4131 • Fax No. 893 9349

2.0 Mineral Commodity Applied

Gold, Copper, Silver and other associated minerals

3.0 Location of Project

The Ungay Malobago prospect is located in Barangay Malobago in the municipality of Rapu-Rapu, Province of Albay, Island of Rapu-Rapu, Bicol Region. It is about 45 aerial kilometers east of Legaspi City and approximately 420 kilometers southeast of Manila.

Geographic Coordinates

The tenement lies within Latitude 13° 10' 30" to 13° 11' 25" N and from Longitude 124° 11' 00" to 124° 12' 00"E, more or less. Please refer to the attached Map Scale 1:50,000 with technical descriptions.

4.0 Area of Coverage

The project area applied for MPSA No. APSA-V-0026 by Ungay-Malobago Mines, Inc comprises a total land area of 167.8625 has. more or less.

D. R. Aytona

5.0 Project Area Description

5.1 Terrain/Physiography

The topography of the area is moderate to rugged with dominantly northwest rending ridges. Elevation within the claim area varies from 40 to 350 meters above sea level.

The project sites in Rapu-Rapu experience two (2) pronounce seasons. The wet season caused by northeast monsoon start from October to February while the dry season occurs for the rest of the year.

5.2 Accessibility

The Philippine Airlines provides daily B 737 service to Legaspi from Manila with a flying time of approximately 45 minutes. A daily scheduled ferry and motorized banca (small outrigger boat) service provides access to Rapu-Rapu town from Legaspi City. Travel time is 2 to 4 hours depending on vessel type and weather conditions. Small fishing vessels may be chartered in Rapu-Rapu wharf/pier docks to provide access to outlying villages on the coast of Rapu-Rapu. Travel time from Rapu-Rapu pier dock to Barrio Malobago, the landing area for base camp at Barrio Pagcolbon, is 40 minutes to one (1) hour by motorized fishing banca.

5.3 Drainage System

The major creeks and their tributary system have dominantly dendritic pattern draining generally southeastward into the Albay Gulf. A dominant trellis pattern of the drainage system is apparently due to the schistosity and faulting of the rocks in the area. Water is available from the creeks the whole year round.

5.4 Vegetation and Land Use

Elsewhere the forest has largely removed by "kaingin" (slash and burn) agricultural practices. Only small portion of the land area is planted with coconut, banana, abaca and other fruit-bearing trees. Second and third growth trees common in the vicinity grew in the interior and along creeks and steeply dipping slopes. The rest of the area is cogon grass and shrubs.

6.0 DESCRIPTION OF EXPLORATION PROGRAM

The activities will consist of surface and subsurface investigation for the purpose and/or main objective of determining or ascertaining the existence, quality, quantity and kind of mineral resources present on the area applied.

Surface activities as indicated on the exploration work program consist of geological mapping/sampling, stream sediments sampling, geochemical soil survey and topographic survey. Sub-surface investigation like test pitting, trenching and diamond drilling will be implemented on areas that show significant mineralization.

The exploration period will start upon approval of the MPSA that shall have a term of two (2) years from the effectivity date of MPSA. Renewable for another two (2) years each but in no case shall exceed a total of eight (8) years depending on the sufficiency of data or information obtained for feasibility study and compliance of the terms and conditions of MPSA contract.

The manpower requirement for the project shall be more or less, Geologist - 1, Geological Mapper -1, Laborer -3, Surveyor - 1, Draftsman/Computer - 1 and Survey Aide -4. Their services will be as required depending on the needs on the particular aspect of the exploration activities.

6.1 Research Work

The initial geological information obtained from previous exploration group who studied the Ungay-Malobago area is a good background.

Sometime between 1962-1965, mining companies conducted semi-detailed geological mapping aditting, sampling and limited exploratory drilling within the several mineral properties of Ungay-Malobago Mines, Inc.

In 1980 and 1981, Dowa Engineering Co., Ltd of Japan Co., conducted brief reconnaissance creek and coastal geological mapping. Results of exploration work done by both agencies were encouraging as revealed by traces of gold in rock, soil and stream sediment samples and arrived at a conclusion that a more detailed geological investigation be pursued.

There will be no costs incurred in this area of work as covered by this application.

6.2 Reconnaissance/Regional Survey or Studies

Regional geological studies will be necessary to understand the general geology, structural control, and mineralization and alteration pattern of the island and for the purpose of extrapolation.

6.2.1. Regional Geological Mapping

Regional geological mapping will be conducted simultaneously with stream sediment sampling. Geological mapping, rock/chips sampling will be conducted over the entire applied area covered by APSA-V-0026 comprising 167.8625 hectares and will take a minimum period of two (2) months involving six (6) men and a Geologist. The mapping will cover creeks and tributaries, road cuts, foot trails, shoreline outcrops and abandoned excavations (test pits, trenches, adits, and tunnels).

Expected output will be identification of significant geological data such as lithology, alteration, mineralization and structural controls. All the geological data gathered will be incorporated in a map. These data will be used for detailed geological investigation and sub-surface evaluation. Estimated cost for this program is **P 500, 000.00**

6.2.2. Regional Geochemistry Survey

Regional geochemistry (Stream Sampling) will be conducted simultaneously with geological mapping. This will cover the entire area covered by APSA-V-0026 comprising 167.8625 hectares. The regional survey will be conducted for a minimum period of two (2) months involving six (6) men and a staff. An estimated 50 -60 stream sediment samples and corresponding pan concentrate samples is programmed to be collected along selected portions of creeks and tributaries. Expected output will be a map with sample locations and its immediate geology. Assay results will be utilized for more detailed geological studies.

Estimated cost for sample analysis is **P 160,000.00.**

6.3 Semi-Detailed Survey

6.3.1 Geological Mapping/Alteration Studies

Geological mapping/alteration studies will be conducted over the entire 167.8625 hectares for a period of 4 months. Mapping will cover creeks, tributaries, road cuts/trails, shoreline outcrops and abandoned excavations (TP, trench, dog holes, adits, Inc.) involving eight (8) spot hires, one Sr. Geologic Aide and a Geologist. Expected output will be the identification of geological data such as rock types, alteration and mineralization and structural controls which will be utilized to plan targets for the next detailed geological studies and sub-surface evaluation.

Estimated cost is **P 550,000.00**.

6.3.2. Geochemical Survey (Stream Sediment Sampling)

Stream sediment sampling will be conducted simultaneously with semi-detailed geological mapping covering creeks and tributaries within three (3) months period. Stream sediment samples will be collected along selected portion of the creek and tributaries. It is expected to collect 20 stream sediment samples and 60 rock samples. All data gathered would be incorporated in the geological map that will be used for planning the succeeding detailed exploration activities.

Estimated cost of sample analysis is about **P 80, 000.00**.

6.3.3 Geophysical Survey

Time Domain electromagnetic (TDEM) and Magnetometer geophysical survey application will be utilized along 15,000 linear meters (15 km) more or less. This exploration activity will be contracted out with a budget of P360, 000.00 for 20 working days more or less plus P45, 000.00 for 15 local hire support personnel. Expected output are maps/graphs of the available metals and or elements, contour and profile maps which will be utilized in planning sub-surface exploration such as test pitting, tunneling and diamond drilling.

Total estimated budget is **P 405, 000.00**.

6.3.4 Subsurface Investigation

Test pitting, trenching and aditting will be decided as the exploration phase advances.

6.4 Topographic Survey

Survey Activities

a) To establish control points (stations) within the area to be explored.

b) To lay out tie points for geological and geochemical surveys and be plotted on base maps.

c) To establish grid lines for geochemical survey, TDEM, IP and magnetic surveys. The grid lines are 100 meters X 150 meters interval perpendicular to the trend of mineralization. The sampling points in normally set at

25 meters apart along the grid lines and closer spacing is done on selected areas of mineralization.

d) To survey the actual location of trenches, test pits, adits portals and headings, outcrop/float sample points, diamond drill hole collar, auger hole collar and other significant outcrop within the prospect area.

e) To conduct detailed topographic survey of potential orebody, proposed mill site, mine waste dump, tailing pond areas, surface property/claims and other sites for related civil works. Normally the topographic map for base map is 1:2,000 with contour interval of two meters.

f) The survey will cover all up 4 working months within the two year exploration period including one (1) Senior Surveyor, one (1) Survey Aide and seven(7) support personnel (spot hires). One Geodimeter total Station survey instrument will be commissioned.

Total estimated budget is **P 480,000.00**, more or less.

6.5 Detailed Survey or Follow-up Studies

6.5.1 Detailed Geological Mapping

Detailed geological mapping will be conducted using compass and tape traverse over suspected mineralized zone and along creeks, ridges and spurs road cuts and trails, outcrops and previous subsurface workings with emphasis on the lithology, alterations, mineralization and structures. Mapping will be drawn on 1:500 scale field maps and transferred into 1:2000 base maps. This will involve six (6) men and a staff who previously conducted the semi-detailed mapping for a period of 5 months with an estimated budget of 400,000.00. There will be 150 channel and rock samples expected to be collected and estimated assaying cost is P150, 000.00 more or less. Total budget is **P 550, 000.00**. Expected outputs are the following:

a) Geologic potential of the property
b) Determine the lateral extent of the mineralized zone
c) Establish surface parameters needed for subsurface program/evaluation

6.5.2. Detailed Geochemical Survey

Detailed geochemical survey will be applied over the identified mineralized area at 100 X 50-meter grid with 25 meter sampling interval. Around 225 grid soil geochem samples will be

collected. Gold and silver will be assayed by Fire Assay while copper, lead, zinc, Arsenic, Antimony and Mercury will be assayed by AAS. This activity will involve one Geologist and six (6) trained personnel for a period of two (2) months with an estimated budget of P190, 000.00. The purpose of this program is to delineate anomaly zone for subsurface exploration such as diamond drilling and test pitting. Estimated assaying cost is P225, 000.00

Estimated total budget is **P 415, 000.00.**

6.5.3. Subsurface Investigation

6.5.3.1 Drilling

Reverse Circulation (RC) / Diamond drilling will be accomplished on contract basis on a per linear meter advance. The depth, direction, inclination and number of drillholes shall be finalized as the exploration activity advances. Initially 2500m more or less are programmed with a target depth of up to 150 meters per hole to be completed in the first year upon approval of the MPSA. About 1250 drill samples are expected to be collected

Clearing of access route and drill site preparation will be done by hand tools and where necessary by bulldozer.

Estimated bulldozer cost is	**P 480,000.00**
Estimated fuel cost is	**P 60,000.00**
Estimated assaying cost is	**P 2,018,660.00**
Estimated RC-Drilling cost is	**P 6,480, 000.00**
Estimated Diamond-Drilling cost is	**P 8,100, 000.00**

6.5.4 Trenching and Test Pitting

Test pit shall be 1 m X 1 m wide with variable depth and trench shall be 1 meter wide with variable depth and length depending on the thickness of the gossan/massive sulphide or mineralized felsic outcrop. The number of test pits and trenches shall be decided as the exploration activity advances, therefore a cost estimation cannot be carried out at this s tage.

6.5.5 Resource Estimation

In the second year of exploration resource estimation will generate costs of approximately **P 1,000,000.00**.

MGB Form No. 05-4

7.0 **Estimated Exploration Cost:**

Year 1	**P 9,969,561.00**
Year 2	**P11,309,099.00**

Grand Total	**P21, 278,660.00**

8.0 **Attachment**

8.1 **Schedule of Activities**

8.2 **Namria Map** - Scale 1:50,000 in addition to the map previously submitted.

9.0 **Signature of Geologist that prepared the Exploration Work Program**

Prepared by:

RIZALDY G. PALOMARIA
GEOLOGIST
PRC License No. 0810
PTR No. 3735731
Date issued: March 2, 2000
TIN No. 162-931-328

Conforme:

RODERICK D. WATT
COUNTRY MANAGER
Lafayette Phils. Inc.

UNGAY-MALOBAGO MINES
TWO-YEAR EXPLORATION WORK PROGRAM

ACTIVITY/SUB-ACTIVITIES	Month												Month												Grand Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1.Regional Geological Mapping	■	■																							500,000.00
2.Regional Geochemistry Survey	■	■	■																						160,000.00
3. Geologicl Mapping/Alteration Study							■	■	■	■															550,000.00
4. Stream Sediment Sampling			■			■	■																		80,000.00
5. Geophysical Survey		■	■																						405,000.00
6. Topograhic Survey	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	480,000.00
7. Detailed Geological Mapping		■	■				■	■	■																550,000.00
8. Detailed Geochemistry Survey							■	■																	415,000.00
9. Drilling								■	■				■	■	■										17,138,660.00
10. Testpitting/Trenching																									
11. Resource Estimation																			■	■	■	■	■	■	1,000,000.00
																								Total	21,278,660.00

ANNEX "D"

TWO-YEAR ENVIRONMENTAL WORK PROGRAM

MGB Form No. 16-1

Republic of the Philippines
Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
North Avenue, Diliman, Quezon City

ENVIRONMENTAL WORK PROGRAM

1.0 Name and Address of the Applicant/Permittee/Contractor

Applicant : **UNGAY-MALOBAGO MINES, INC.**
(CLAIM HOLDER)

TVI RESOURCE DEVELOPMENT (PHILS.), INC.
(OPERATOR)

Address : W-1903B West Tower, Phil. Stock Exchange Centre
Exchange Road, Ortigas Center, Pasig City
Tel. No. 637-0450 to 63 • Fax No. 631-4876

2.0 Type and Nature of Project

Type : Mineral Production Sharing Agreement (MPSA)
Application No. AMA-V-0136

The Project is Categorized as Resource Extractive, i.e., Exploration Mining Ventures.

2.1 **Project description** (objectives, schedule, and cost)

The objective is to conduct prospecting and exploration activities in an environmentally technical, responsible and acceptable manner. The activities will consist of surface and subsurface investigation for the purpose and/or main objective of determining or ascertaining the existence, quality, quantity and kind of mineral resources present on the area applied.

Surface activities as indicated on the exploration work program consist of geological mapping/sampling, geochemical survey, topographic survey, and geophysical survey. Should the assay result indicate encouraging data which would warrant sub-surface investigation, then test pitting, trenching and diamond drilling will be implemented on areas that shows significant mineralization.

The exploration period will start upon approval of the MPSA which shall have a term of two (2) years form the effective date of MPSA, renewable for another two (2) years each but in no case shall exceed a total of six (6) years depending on the sufficiency of data or information obtained for feasibility study and compliance of the terms and condition of MPSA contract

2.2 **Type and nature of mineral deposit(s) to be explored and mineral(s) to be derived**

Minerals Deposits: Gold, Copper, Silver and other associated minerals.

3.0 General Location and Area to be Covered by the Proposed Permit/Contract Area

3.1 Location and accessibility

The tenement lies west of Legaspi City situated and bounded by geographic coordinates as follows:

Barangay of	:	Pagcolbon
Municipalities of	:	Rapu-Rapu
Province of	:	Albay
Island of	:	Rapu-Rapu

Geographic Coordinates:

The tenement lies within Latitude 13° 10' 15" to 13° 11' 15" N and from Longitude 124° 11' 25" to 124° 12' 45"E, more or less. Please refer to the attached Map Scale 1:50,000 with technical descriptions.

Accessibility:

The Philippine Airlines provides daily B 737 service to Legaspi from Manila with a flying time of approximately 45 minutes. A daily scheduled ferry and motorized banca (small outriggers boat) service provides access to Rapu-Rapu town from Legaspi city. Travel time is 2 to 4 hours depending on vessel type and weather conditions. Small fishing vessels may be chartered in Rapu-Rapu wharf/pier docks to provide access to outlying villages on the coast of Rapu-Rapu. Travel time from Rapu-Rapu pier dock to Barrio Malobago, the landing area for base camp at Barrio Pagcolbon, is 40 minutes to one (1) hour by motorized fishing banca.

3.2 Total area covered by the application

The project area is composed of twenty (20) mining claims located under Philippine Bill of 1902 containing an area of 144.2 hectares more or less.

The MPSA application designated as AMA-V-0136 was filed on March 6, 1996.

4.0 Description of the Existing Environment where Work is Proposed to be Undertaken

4.1 Land Environment

4.1.1 Topography/physiography

The topography of the area is moderate to rugged with dominantly northwest rending ridges. Elevation within the claim area varies from 0 to 400 meters above sea level.

The project site in Rapu-Rapu experience two (2) pronounce seasons. The wet season caused by northeast monsoon start from October to February while the dry season occurs for the rest of the year.

4.1.2 Land use/Capability/Vegetation

Elsewhere the forest has largely removed by "kaingin" (slash and burn) agricultural practices. Only small portion of the land area is planted with coconut, banana, abaca and other fruit-bearing trees. Second and third growth trees common in the vicinity grew in the interior and along creeks and steeply dipping slopes. The rest of the area are cogon grass and shrubs.

4.1.3 Pedology

These data can be collected as part of the exploration work from test pit and/or trenches and although analysis and descriptions focus on the economic minerals present much of the data recorded/collected has vital environmental applications.

4.2 Water Environment

4.2.1 Water Quality

Water samples shall be collected at least every three or six months at a permanent designated stations on a river or creek where significant mineralization will be discovered during the dry and wet season for water analysis of its physical and heavy metal contents using the following parameters such as, ph, total dissolved solids, total suspended solids, total hardness, total acidity, cadmium, conductivity, temperature, alkalinity, sulphate, calcium, magnesium, sodium, potassium. Aluminum, iron, silica, copper, lead, zinc and mercury. If warranted, ground water samples from drill holes, water wells shall also be collected for similar purpose.

Water quality sampling shall also include potability test for domestic use. These tests shall be conducted at least twice a year although this is dependent on the availability of suitable laboratory facilities in Legaspi City.

The physical and heavy metals analysis for the above-cited parameters shall be analyzed at the Mines and Geosciences Bureau laboratory Region-V, Legaspi City if available and in Diliman, Quezon City, while the potability test shall be coordinated with the nearest provincial or city hospital in Legaspi City which ever is the nearest in view of the time limit (6 hours) required for water potability test.

The environmental accomplishment shall be incorporated on the semi-annual status or accomplishment report which will be submitted to the MGB/Regional office, EMPAS and other government office concern.

4.2.2 **Hydrology**

Water flow measurement will be conducted along the river/creek at a permanent designated stations where significant mineralization will be discovered during the dry and wet months together with water sampling. The purpose is to keep historical records of the volume of water flowing from each creeks. Water table measurement shall also be made on each diamond drill hole. These data are of specific needs for environmental applications, etc.

4.3 **Climatology/Meteorology**

Collection of meteorological data shall be initiated during the exploration phase as these data may vary from month to month or year to year. Rainfall gauge can be installed in the conspicuous place or near the camp or field office. Rainfall measurement shall be recorded and file on the standard form.

These data are of specific needs for environmental applications, however, historical data of this nature can be researched from the Weather Bureau (PAGASA), Quezon City, and local climatic data station in the Region.

4.4 **Geological/Geomorphological Environment**

Any information that could be obtained during the research shall be incorporated in the semi-annual status/accomplishment report to be submitted to MGB/Regional office, EMPAS and other government office concern.

4.5 **Biological Environment**

4.5.1 **Terrestrial plants and animals**

For environmental monitoring purposes, the recording of plants and animals seen in the area shall be initiated during the exploration phase, a logbook shall be provided which will indicate the information as follows:

1. Species sighted
2. Date and time
3. Location
4. Number
5. Other/Specify
6. Name of person recording

Recording of scientific name is not required, local name will do.

4.5.2 **Marine plants and animals** (including protists)

If the exploration crew will chance upon species of these nature, same will be recorded on the logbook similar to item no. 4.5.1.

The records under item nos. 4.5.1 and 4.5.2 shall be incorporated on the semi-annual status/accomplishment report to be submitted to MGB/Regional office, EMPAS and other government office concern.

4.6 Socioeconomic Environment

Initial on site observation shall be incorporated on the semi-annual status/accomplishment report to be submitted to MGB and other office concerned.

The other source of information can be researched from the national or local statistics office.

5.0 Description of Exploration Work

5.1 Description of exploration method(s) and equipment to be used

5.1.1 **Geological mapping** - will be conducted with in the 1,701 hectares more or less along the creeks and outcrop. Detailed mapping will be conducted on selected areas after identifying the significant occurrences of mineralization. The result will be used to plan targets for sub surface evaluation such as test pitting, and diamond drilling if necessary.

The equipment to be used are magnetic compass, measuring tape, sample pick and Global Positioning System (GPS) a modern surveying instrument.

5.1.2 **Geochemical Surveys** - Geochemical survey will involve the stream sediments samplings covering creek and its tributaries. The equipment to be used are sample pick, crow bar and shovel. The output is to prepare a geologic map showing the geological environment of any mineral deposit and correlate with the other data obtained which will be the basis for planning the succeeding exploration activities.

5.1.3 **Others and/or Sub-surface Investigation**

Subsurface investigation such as but not limited to test pitting/trenching, and diamond drilling will be carried-out upon the completion of detailed mapping, geochemical survey and interpretation of results which will be decided as the exploration phases progresses.

5.1.3.1 **Test Pitting/Trenching**:

The use of test pits or trenching will depend on the expose outcrop/mineralization and ground condition. The location should be carefully planned/designed in such a manner that will provide the required geological information and with minimal surface disturbance on vegetation, surface, drainage and erosion. The test pits, dimension is about 1 meter square with variable depth or down to bed rock while the trenches dimension is about 1 meter wide with variable length and depth or down to bedrock

The tools and implements to be used are crow bar, shovel, bucket, pulley, nylon rope and sample pick.

The four walls/sides of the test pit/trenches shall be mapped and channel sampled.

5.1.3.2 **Core Drilling**

The use of diamond drilling with variable depth for each hole, location, intervals, direction and number shall be determined as the exploration activities progresses. The objective is to determine the depth, and lateral extent of mineralization.

The access route and location shall be carefully planned with the objective of minimizing surface disturbance, by considering the following criteria:

1. The required width of access road for a drill machine is only two meters.

2. The drill machine is mounted to an sledge about 1.5x2.5 meters and equip with winch gadget mechanism, pulley, cable rope attached to the winding drum and as such it can travel by itself utilizing its winch and its accessories loaded on its side.

3. The drill machine can travel as high as 30% slope or grade of road.

4. The space requirement for a drill site is 3 meters wide x 3 meters long.

5. The drill rigs are made of collapsible tripod made of pipes mounted by a bolt and can be manually transported from one site to another.

6. Clearing of obstruction for access route and excavation of drill site to mount the drill machine will be manual.

7. The drill machine will be using diesel, oil, lubricant, drilling mud, cement.

8. The drill machine will be using water that will be either source out through gravity or pump and be contained on a water tank near the drill site such that the water can be conveyed to the drill machine via a hose by gravity. The used water from the drill hole

will be screen to collect the sludge and directed to an storage tank of about 1.5m diameter by 1 meter high or to a sump usually with a dimension of 1 meter square opening x 1 meter high depending on the capacity needs and local condition and said water will be re-cycled back to the machine by means of portable water pump.

5.2 **Preliminary processing of samples**

All samples from Geochem, test pits and core drilling shall be kept in core house. The core samples are placed in core box properly labeled and piled up in the shelves. Drying, screening and quartering of samples about 500 grams per sample will be done here. Manual splitting of core samples will also be done here. Samples and ½ of the core will be sent to Mcphar laboratory for analysis. The remaining samples and the other half of the core samples shall be retained on the core house for safekeeping and future reference. The remaining samples and/or reject samples shall be retained placed in a paper bag and plastic bag properly labeled and sealed and place in a wooden box for safe keeping and future reference. These samples can serve as a check sample in case of doubt or disagreement among laboratory analysis result and kept for inspection by interested parties, consultants in the future.

The equipment to be used are gas stove, drying pan, split core, shieve, sledge hammer and other protective gadgets with necessary accessories.

5.3 **Namria Map** - Scale 1:50,000 showing the location of the area applied, drainage system, topography, coordinates and other environmental features.

5.4 **Estimated Exploration Costs**

The initial annual budget for the two year exploration work program are as follows:

Year - 1	P1,857.960.00
Year - 2	P1,427,960.00
Total	*P3,285,960.00* more or less

The annual budget will always be updated as a matter of standard operating procedure.

6.0 **Identification of Potential Environmental Effects**

6.1 **On land**

6.1.1 **Surface disturbance off the mineral property**

Surface disturbance off the mineral property is expected to be minimal. The exploration crew vehicle will only travel up to the existing road.

Road will not be constructed during the two (2) year exploration period until the results of exploration activities/work will warrant the existence of mineral potential. The field camp will be rented from existing house in the locality as much as possible.

The drill machine will be dismantled enough to be 2 or 4 man carry. Same will be assembled on site within the prospect area.

6.1.2 **Surface disturbance on the mineral property**

6.1.2.1 **Stream sediment sampling** - Indiscriminate digging of the streams or creek alluvial deposition and panning in obtaining samples will alter the surface.

6.1.2.2 **Grade line for geophysical surveys and soil sampling** - Indiscriminate cutting of trees or vegetation along the line will destroy vegetation cover while indiscriminate digging of hole for soil sampling will alter the ground surface.

6.1.2.3 **Sump for storage of used water from the drill machine** - Indiscriminate digging and storage of excavated material will alter the ground surface and will cause possible soil erosion and sedimentation.

6.1.2.4 **Road access for drill machine, its impact on cutting of trees, vegetation and soil compaction** - Construction of road access indiscriminately will entails surface excavation, cutting of trees along the route and soil compaction along the wheel tire path ways.

6.1.2.5 **Test pits** - Construction of test pit will entail excavation of top soil down to the bed rock. Indiscriminate digging and disposal of excavated materials will alter ground surface and possible soil erosion and siltation. Unprotected test pit opening will pose hazards to the residents and animals in the area.

6.1.2.6 **Drill site, drill machine operation, using diesel, fuel, lubricants, mud drilling, cement and smoke emissions.**

- Drill site preparation will entails excavation and if done indiscriminately will cause surface disturbance and erosion; installation of water pipe line.

- Drill machine operation using diesel fuel, oil and lubricant and if done indiscriminately without regards to safety in handling/transporting and storages will cause spillage's, soil and water contamination.

- Mud drilling and cement are both similar. It being pulverized and packed in a paper bags about 40-45 kilos. If handled indiscriminately during transport/handling and storage possible

spillages which may cause contamination of solid surface and water may occur.

- Smoke emission is normal for any engine in operation. If no adequate muffler or silencer is installed sufficiently above the ground level, smoke will scatter indiscriminately and engine noise will be alarming or disturbing that will hamper effective communication between workers.

6.1.2.7 **Construction of temporary camp facilities** - will entails putting up of roofing, walls and kitchen stall, toilet and garbage pit, drinking water container.

6.2 Potential environmental effects of exploration activities on hydrology and water Quality

6.2.1 Potential generation of acid mine drainage

The possible sources of acid mine drainage could either be the result of indiscriminate and uncontrolled test pitting and drill hole where by run off water will enter into the hole which might result to oxidation, since acid mine drainage is the result from oxidation of sulphide deposits upon contact or exposure to water and air.

6.2.2 Potential siltation and pollution of surface waters

The possible sources of siltation and pollution of water are the uncontrolled drainage from access road, drilling activities, excavated materials from test pits, campsite, and indiscriminate panning of heavy metals may cause water discoloration.

6.2.3 Potential changes in hydrology

The possible changes may be on the quality of water near the working area as a result of drilling activities and campsite.

6.3 Potential effect of Exploration activities on the Ecology

The possible sources of effect are on the ecosystem of site preparation, campsite, operation and noise from the engine machine operation.

6.4 Potential effects of the presence of exploration activities on the Socioeconomic aspect in the locality as follows:

a) **Life style of locally hired employees** - most non-technical workers will be hired from the locality. As such, it is expected that their respective life style or mode of living will positively change or improve as a result of fix income during their period of employment.

b) **Increase of revenue** - It is expected that an increase of revenue will be realized or derived from income tax payment, payment of business

permit, payment of community tax certificate of all employees, professional tax receipt, payment of SSS premium, to mention a few.

c) Small scale buy and sell ventures in the locality will flourish due to increase of demands of food supplies and also farm to markets.

7.0 Environmental Management Measures Including Total Cost

7.1 Progressive rehabilitation/restoration of areas subject of exploration and related activities.

7.1.1 Access route/road for drill machine off and on the mineral property which may start from the provincial road.

The following criteria shall be considered if and when there is a need to construct access road so as to minimize land form disturbance and measures to undertake to wit:

1. Check with local government agencies regarding resolutions, restrictions and government requirements related to access road constructions.

2. Check surface land owner and determine vegetation, plants and other improvements.

3. Settle and pay disturbances compensation if any.

4. Plan and use existing trails/road to maximize advantage of usage of the trail or road for both residents and exploration activities but with minimum level of construction and disturbances. Take advantage of land form/contour configuration and avoid vegetation distraction if possible.

5. Avoid erodible areas, water course, plants and other improvement if any.

6. Clear right-of-way, plants, wood and debris in an orderly manner, dispose debris by placing in one safe place and burn.

7. Provide drainage or ditches but maintain natural drainage pattern.

8. Any disturb surface shall be revegetated with species common or suited in the vicinity and

9. Drainage/ditches shall be inspected and cleaned especially every after heavy rain.

7.1.2 Stream Sediment Sampling

The right procedure in obtaining samples from the stream sediments in order to preserve the surface is to collect or get fines or silt from the bottom of the creek bed with bare hands that would pass thru (-) 80 mesh sieve. The screening and panning for heavy metals should not be carried down stream panning should be done on a steady or stagnant water so that the silt fines will settle down at the bottom.

Avoid indiscriminate digging and panning which will cause surface disturbance and water discoloration.

7.1.3 Grade line layout for geophysical surveys and geochem sampling

The following guidelines shall be followed in laying out the grade line such as but not limited to:

a. Avoid unnecessary brush cutting and blazing of trees. Cut grid lines sufficient for line of sight.

b. Upon completion of survey, remove any materials which may endanger lives of wild life, animals and local residents.

c. Avoid throwing of cigarette butts that may cause forest fire.

d. For geochem sampling point, the hole shall be back filled after getting the required sample.

7.1.4 Sump for used water from the drill hole

The storage could be either a portable water tank or a sump dug on the ground. The excavated materials or soil shall be properly stock piled safely around the opening and be provided with sufficient base so as not to be eroded. Same materials shall be used as to soil and as back fill materials for same sump upon abandonment of the drill site. The sump should be of adequate size and capacity so as to avoid over following and spillages. The used water shall be re-cycled back to the creek or water course. Avoid wasting water by installing and using shut-off valves when water lines are not in use.

7.1.5 Test Pits/Trenches

Careful planning is necessary to identify sites that will provide the required information with minimal disturbance and to ensure safety both for animals and local residents. The safety measures shall be implemented as follows:

1. Clear the surface of any vegetation, debris for the opening and stock pile for the excavated materials. Separate the top soil from the other over burden materials. This materials must be protected by a rip-rap or other acceptable means

2. The opening of the on-going test pits shall either be barricaded or covered by lumber, branches of trees such that the opening will not be a hazard to people and livestock. Lumber can be obtained either from the tree cut along access route or from a license lumber dealer or construction store available in the town.

3. Surface drainage shall be diverted around or away from the disturb surface.

4. After the geological data, sampling, etc. are obtained, back fill the opening with the excavated material, restore or the original top soil will be restored to its original place and revegetate. Use manual labor so as to avoid excessive diggings.

5. All garbage or human waste must be properly disposed on a pit and cover properly.

7.1.6 **Drill site, Drill machine operation using drill fuel, lubricant, mud drilling, cement, noise and smoke emissions and Auger drill.**

The mitigating measures are to be undertaken for the following:

1. Drill Site

Select the stable ground when ever possible in coordination with the surface owner if any and settle for any disturbance compensation. Use the minimum area of drill pad, i.e. 3 meters square is required for a safe working area. Location of drill pad, top soil and overburden must be removed and stock piled for use in the rehabilitation when drill site is abandoned.

Locate water lines to minimize surface and vegetation cover disturbance, take advantage of the land form, avoid over flowing of water or wasting water by using shut-off valves when water lines are not in use. Divert water drainage away from the drill site.

2. Drill Machine Operation

1) **Noise/Smoke emission** - The exhaust pipe shall always be in good condition and well provided with a sufficient muffler or silencer so as to avoid unnecessary loud noise which is necessary to enhance better communication between workers. The smoke stock discharge shall be high enough (i.e. 5 meters above the ground) such that the smoke emission shall be directed towards the sky and the smoke be desipated above.

2) **Fuel, Oil and Lubricant** - must be contained in a suitable closed containers when being transported/transferred or stored. Transfer hoses must be provided and same must be drained into the containers.

Fuel containment at drill sites must be provided, i.e., the drum must be placed in an elevated platform for safety and convenience. In this manner the underneath could always be cleaned every now and then. A container with a funnel can also be placed below the opening or screw cap of the drum to catch/trap any spillages. As a precautionary measure provide a competent barrier or slab made of piece of lumber or stone where to place a container with a funnel when drawing out fuel from the fuel drum/container. The platform must be placed sloped away from any water course. Ensure proper spill handling tools like trays, shovel or open can/drum which should be of sufficient capacity to hold accidental leaks and spills.

In the event of spill or leak, the spill must be contained and absorbed along with any contaminated soil. Any contaminated/leaked material regardless of volume must be collected and burn. The corresponding area shall be reclaimed and rehabilitated.

3) **Drilling mud** - These item must be transported/transferred in a sack so as to avoid breakage of the bag. The drilling mud must be store in a safe place. The drilling mud shall be properly place in the mixing tank and mix only what is required for the drill hole. The drilling mud is similar to cement, the use is to seal off the wall of the drill hole so as to ensure that water used in the drilling operation will not leak to the under ground.

4) **Cement** - Shall also be use after the drill hole. It is use to plug or sealed off the hole opening. For selected holes for special purpose the plug is provided with a 2" diameter PVC pipe with a cover. In this manner, water table can be measured using a calibrated rope. Water sample can also be taken by using a bottle tied to a rope and drop into the hole until the bottle is filled up with water. The water is transferred to the water sampling bottle for water analysis purposes including determination of acidic drainage.

7.2 **Management of stockpile of excavated and removed earth, if any, to prevent dust and siltation problems.**

7.2.1 **Dust prevention cause by stock pile of excavated or remove earth.**

To prevent dust from this stock pile is to sprinkle water every now and then using a container on the surface of stock pile just sufficient enough to prevent dust when the wind comes. The water should not be too excessive, other wise the stock pile will be too muddy.

7.2.2 **Procedure to prevent siltation from stock pile are as follows:**

1. Surface drainage shall be diverted away from the stock pile of excavated materials.

2. These erodible materials must be protected by a rip-rap or some other acceptable means.

3. These materials shall be back filled to where it comes from or from its original source. Top soil shall be spread evenly on the surface and be revegetated/replanted with plants suited to it.

4. A sump or silt/sediments trap shall be provided to catch or entrap any silt that may accidentally flow in case of rain.

7.3 **Maintenance of road to minimize dust.**

There is no road in the island to maintain..

7.4 **Handling of toxic and hazardous materials, if any, including an Emergency Response Program.**

7.4.1 **The proper handling of fuel, oils and lubricant are as follows:**

1. All petroleum products must be contained in a suitable closed containers.

2. Fuel oils, lubricant and mud additives must be transported/transferred and stored in a closed container. Handling shall be with every precaution to prevent accidental spills and loss. Transfer hose must be drained after use into an empty container.

3. Fuel, oil and lubricant storage facilities must be provided with a roof, maintain cleanliness and provide sufficient working space.

4. Control any spills or leaks by providing a berm around storage area and provide fluid/water pumps or portable operating equipment. Drip pan must be of sufficient capacity to hold accidental leak and spills. Another alternative is to provide/place plastic or cellophane mat under the storage area

to catch or collect accidental leak or spills and to prevent surface soil contamination. The plastic is re-usable after cleaning. Any oil collected shall be placed in a container which shall be disposed together with the used plastic out of the site for proper disposal at the municipal garbage site.

5. In the event of a spill or leak, the spill including the contaminated soil must by contained. Any spill and contaminated soil regardless of volume must be collected and disposed of in an environmentally responsible manner i.e., burn the contaminated soil be placing a dry grass or flammable material on top and set fire. Turn the soil up side down and when all the oil are burnt cover with top soil and revegetate with fruit trees or other species suited for the locality.

6. Fire extinguisher shall be provided for each drill machine.

7. Ensure that appropriate spill handling gadget are in place and that all exploration crew are familiar with their use.

8. In case of skin allergy or infections of whatever kind and nature, consult a doctor or medical staff nearest to the project site for first aid purposes and/or treatment.

7.4.2 **Handling of potential acid mine drainage from exploration excavation/drilling**:

Acidic Drainage (AD) results from oxidation of sulphide minerals upon exposure to water and air. Acidic drainage occurs in areas with previous mining activities such as old adits, shafts, tunnels, waste rock stock pile from underground workings and tailings.

The exploration activities which may cause occurrence of acidic mine drainage are excavated materials, test pits and drill hole.

To prevent occurrence of acidic drainage from stock pile of excavated materials, proper drainage will be provided surrounding the stock pile in such a manner that water will not accumulate around the base of stock pile. In effect the stock pile will always be dry.

To prevent occurrence of acidic drainage from test pits is to implement the following guidelines to wit:

a) The opening will be provided with a canvass shade so that rain water will not accumulate inside/bottom of the test pits in the course of digging.

b) After sampling, mapping, soil chemistry and/or information needed are completed, the excavated material will be restored back or back fill to the test pits.

c) The top soil will be properly spread and revegetated or planted with tree. In this manner occurrence of acidic drainage is minimal.

To prevent occurrence of acidic mine drainage from drill hole is to implement the following:

a) The opening/hole shall be plug with concrete cement so that no run off or rain water will enter into the drill hole.

b) The drill hole intended for measurement of water table and water analysis shall be cemented and be provided with a 2" PVC pipe with screw cap, which could be opened when measuring the water elevation with a calibrated rope. An empty bottle tied to a string can be used to get water inside the hole through this opening for water analysis purposes.

However, based on experienced, the sulfphide are always deep-seated, as such, sulfphide are not encountered in shallow excavation, hence, the possibility of acidic drainage occurrence on excavation for drill site, test pits is minimal.

7.5 **Accommodation of other economic activities in the area.**

Our exploration project staff are receptive to whatever economic activities in the community will endeavor to undertake, be it on barangay level, municipal level, provincial level as well, that will be beneficial to populace. Proponent project employees are oriented to promote, develop and assist with community development projects with in their means, they being considered as Ambassador of Proponent in the local community.

7.6 **Alternative plans if special habitat of flora and fauna are affected.**

Probably the easiest way as an aid in environmental monitoring is to accomplish religiously the flora and fauna log book similar to log book for terrestrial plants and animals, Item No. 4.5.1. the information that will be recorded in the log book shall also aid in determining the composition of the local forest and how the local forest, other dwelling is being used by wild life, etc.

Should there be habitat of flora and fauna to be affected, safety measures suited to preserve their respective habitat and existence shall be undertaken accordingly.

7.7 **Socioeconomic mitigating measures such as.**

7.7.1 **Plans for information and education campaign and dialogue between the company and population regarding projects plans including compensation during the exploration phase:**

The exploration project in-charge and his staff are required to:

a) To implement the exploration work program to take into account potentially sensitive areas associated with government projects and local inhabitants and/or surface owner (indigenous cultural community (ICC) and non-ICC.

b) To be familiar with all statutes, regulations, resolutions (Barangay, Municipal, & Provincial), guidelines, and permit requirements governing mineral explorations in the locality where project is situated. Before the start of any phases of work, ensure that necessary permits, consent (verbal or written) are acquired and are in place.

c) Investigate local and surface ownership where work is expected to be undertaken. Avoid any misunderstanding with surface rights owners, government agency concern by discussing the presence and plans of exploration work in the area.

d) Maintain a cordial relationship, open communication with the local governments officials, surface owners/representatives and keep them be informed as required.

e) An authorized representative shall attend any meeting as observer (Barangay and municipal as well) so that project in-charge shall be aware of the agenda.

f) Local qualified residents shall be given priority for employment including surface owners.

g) The compensation shall be the minimum wage approved and implemented by the Regional Tripartite covering CAR Region.

h) All project employees shall be covered by SSS and Medicare program.

7.7.2 **Working Environment and Protection Measures for employees**:

The project in-charge and staff are required to provide and implement the following:

A. **Camp Sites**:

1. Locate temporary or permanent camp away from water courses. It should be constructed and operated in accordance with existing municipal laws and in such a way that the camp will have the minimum impact to the environment.

2. All camps shall always observe and maintain cleanliness, sanitation both inside and surrounding/backyard.

3. Provide sewage treatment facilities.

4. Camp refuse must be collected and disposed off in garbage pit and covered with top soil every layer when sufficient garbage is dump. When fully filled up, provide sufficient top soil and plant fruit trees.

B. **Test Pits/Trenches**:

1. Maintain a safe and clean working conditions.

2. Provide lumber support on loose ground. Lumber shall be obtained from a license lumber dealer available in town.

3. Provide safety rope and a ladder made of nylon rope or bamboo poles for going in and out of the test pits.

4. Provide safety gadget, like, skull guard, safety rubber boots and hand gloves.

5. Provide canvass roofing to protect workers inside from rain and heat from sunlight.

6. Provide a barricade (i.e. rope, twigs or branches) around the opening to protect person or animals to be trap inside during off time.

C. **Drilling operations**:

1. Keep to a minimum any noise pollution produced by the drill machine by providing a silencer or muffler at the exhaust pipe. This will facilitate/enhance better communication among the workers.

2. Keep the working area clean and maintain sanitation at all time.

3. Maintain the machine in good working condition.

4. Keep the drilling waste water, fuel, oil and lubricant to its proper and designated location.

5. Keep and maintain tools, spill handling and control gadget operational at all time.

6. Provide safety paraphernalia during working hours, like, skull guard, safety rubber boots, first aid kits and safe drinking water container.

7.8 **Abandonment** - measures and procedures after the conduct of exploration with cost-estimate.

7.8.1 **Exploration project in-charge and staff shall implement the following guidelines for abandonment and rehabilitation of exploration activity/ies to wit:**

A. **Camp Sites:**

1. All refuse shall be burned and buried in garbage pit and same shall be back filled and provide top soil and plant fruit trees. The surface should be tilled to break the compacted surface before revegetation. Plant appropriate fruit trees in coordination with the surface claimants if any.

2. Leave camp sites which are to be used for future operation in a clean and tidy conditions.

3. All temporary structures shall be removed and disposed off in an environmentally acceptable manner by burning them. These ashes is a good source of fertilizer even better than the commercial one in some aspect and/or unless donated and accepted by the surface owner.

B. **Access Road:**

1. All abandoned access road must have a system of permanent erosion control. i.e., canal, culvert if intended for use in the future and/or accepted by the surface claimants.

   If not, all culverts or bridge shall be removed and water course shall be restored as nearly as possible to its original condition.

2. Abandonment activities must be undertaken in a manner that will minimized sedimentation of water courses.

3. All abandoned road, will be cultivated, if necessary to break the compacted surface and be planted with fruit trees, plants and revegetated in coordination with the surface claimants if any.

4. All abandoned road will be ditched at their junction with permanent roads to prevent vehicle access/entry.

C. **Drill Sites:**

1. All empty cans or fuel drums, etc. shall be removed and stored in the main camp for future use. Damaged drum shall be cut and flattened which can be utilized to its usefulness such as wall or sidings of dwelling.

2. All garbage or refuse shall be burned and/or buried in a pit, back filled and revegetate.

3. Compacted surface shall be cultivated and revegetated accordingly.

4. Drill sumps shall be back filled and restore the top soil and revegetate.

5. Contaminated surface with oils or drilling fluids shall be excavated, back filled to the sump or pit. Replace same with top soil and revegetate.

D. **Storage area for drill core samples, active or rejected samples.**

The storage facility for drill core and other samples are normally of permanent structure so as to preserve the above cited samples for future reference by interested parties or investors. The core boxes of standard size for each core which is made of wooden siding with G.I. bottom and cover shall be properly labeled, arrange in the shelves. Same is true for the other samples which will be place in a wooden box and stored in a designated space in the core house. A caretaker usually the owner of the lot shall be designated and compensated to see to it that the core samples are kept orderly and undisturbed. All other samples not needed for future reference shall be discarded in a pit, covered with top soil and revegetated.

E. In some cases, infrastructures and facilities like road, buildings may be turned over, donated or acquired by surface claimants as a pre-arranged terms and conditions for entry to private lands, or to the barangay council to ensure their continuos maintenance and utilization. This is on a specific site and basis and in coordination with the proper entities or authorities.

7.8.2 **Control measures for acid mine drainage, the generation of which is not only limited to the period of exploration but may occurs also after exploration.**

The possible source of occurrence of acid mine drainage are the test pits and drill hole.

The control measures for occurrence of acid mine drainage are the following:

A. **Test Pits/Trenches**:

a. When the test pits/trenches is active or on going, provide a canvas roofing for the test pits so as to prevent rain water to be accumulated at the bottom of the test pit which can cause occurrence of acidic mine water inside.

b. When the test pit/trenches is completed and all required data are obtained and/or test pit is abandoned, the excavated material shall be restored/back filled and the top soil will also be restored and be planted with fruit trees or coconut. In this manner, water will not accumulate inside the test pit there after, hence the chances of producing acidic mine drainage will be minimal.

B. **Drill Hole**:

a. The hole is covered and cemented.

b. The hole with potential use for periodic measurement of water table is provided with 2" PVC pipe with a screw plug which could be open during measurement of water elevation and collection of water sample.

c. In this manner no excess water will over flow from the hole which will cause acidic mine drainage to the surface.

7.8.3 **Rehabilitation of the area by replanting and reforestation programs.**

All disturb surface shall be planted with fruit trees, coconut suited for each vicinity and/or revegetated accordingly. In areas or portion of reforestation project is located, the proponent will assist in the community reforestation program in coordination with the government agency concern so as to determine as to what assistance could be extended. Either to provide seedlings, or join the community during the designated reforestation day, i.e., plant a tree during the environmental month.

7.8 4 **Restoration of the original flow of river system that have been diverted/altered with emphasis on quality** .

All creeks, ditches or canal diverted/altered during exploration phase shall be restored as nearly as possible to its original condition.

7.8.5 **Budget Cost estimate for Environmental Protection and Rehabilitation.**

The initial annual budget presented hereunder shall be updated annually in accordance with the company policy for allocation of budget and to account for expenses for each account code under accepted accounting principles.

Year I	Labor, Materials and Supplies, restoration activities, reforestation program and other related environmental activities	P 25,000.00
Year II	Labor, Materials and supplies, implementation of rehabilitations of abandonment program, and other related environmental activities	P 50,000.00
	Total	***P 75,000.00***

8.0 **Attachments:**

Namria Maps scale 1:50,000 showing the area applied with technical description, existing provincial road, drainage pattern or water/creek courses and topography.

9.0 **Environmental Monitoring:**

The proponent shall document all exploration activities and environmental management measures undertaken during the exploration phase. The proponent is committed to prepare semi-annual environmental accomplishment or status report. The report shall incorporate the data gathered, documented exploration activities and environmental management measures etc. undertaken during the period covered. The semi-annual accomplishment or status report as to the compliance with the EWP shall be submitted to the Bureau/Regional office, EMPAS and other office concerned within fifteen (15) working days from the end of six (6) months after the approval of the EWP and every six (6) months and thereafter incompliance with section 168 of the revised IRR implementing R.A. 6942 otherwise known as The Philippine Mining Act of 1995.

10.0 **Name and Signature of Applicant or Person(s) preparing the Environmental Work Program EWP.**

Done the 6th day of October 1997 at Pasig City.

By :

CESAR K. GOSGOS
Mining Engineer
Manager
Claims Management
and Surveys
PRC License No. 0001853
PTR No. 6488134
Dated : 03/11/97
TIN No. 128-072-293