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ENVIRONMENTAL MANAGEMENT BUREAU - MIMAROPA Region

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Department of Environment and Natural Resources
Environmental Management Bureau
MIMAROPA Region

MEMORANDUM

FOR	:	**THE EMB DIRECTOR** Visayas Ave., Diliman, Quezon City
ATTN	:	**THE CHIEF** Environmental Quality Division
		THE CHIEF Water Quality Management Section
FROM	:	**THE REGIONAL DIRECTOR** EMB MIMAROPA
SUBJECT	:	**SUBMISSION OF WATERBODY CLASSIFICATION REPORT FOR AMNAY RIVER**

This refers to the Secretary's Directive to classify all principal rivers within the MIMAROPA Region. Relative thereto, we are respectfully submitting the Classification Reports of the principal rivers that has undergone water quality monitoring and assessment for CY 2019 in the Province of Occidental Mindoro, *to wit:*

1. Alipid River
2. Amnay River
3. Mongpong River

For the information and record of the Director.

ATTY. MICHAEL DRAKE P. MATIAS

Environmental Management Bureau
Department of Environment and Natural Resources
Regional Office No. IV - B MIMAROPA
07 JAN 2020 MEMORDMATIAS03638

CC: Chief, EQD
Chief, Water
RED, DENR MIMAROPA
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Planning, EMB MIMAROPA
PENRO, MIMAROPA

CLASSIFICATION REPORT
2019

AMNAY RIVER

ENVIRONMENTAL MANAGEMENT BUREAU
MIMAROPA REGION
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Contents

I. Executive Summary

Earth's surface is known to be seventy-one percent water. Saline water in the ocean is considered as the vast majority of water on the Earth's surface. Water resources, such as water falling from the sky into streams, rivers, lakes, and groundwater provide people with the water they need to live every day.

Water is part of the daily life of humans. Our bodies use water to help regulate body temperature and maintain other bodily functions. Because our bodies lose water through breathing, sweating, and digestion, it's crucial to rehydrate and replace water by drinking fluids and eating foods that contain water.

However, with urbanization and changes in lifestyle water consumption is certain to increase. This also leads to different human activities that may cause negative impact to our environment. Lack of awareness about the environment is one of the reasons that people tend to continuously harm our environment.

People should be aware to the present condition of our environment regarding water quality. Everyone must have knowledge about sustainable development of clean water in order to take responsibility for their actions and to contribute their vision for a sustainable future. Moreover, different laws and policies may also help for the protection, preservation and conservation of the natural resources.

To educate people about the relevance and effects of human activities in water quality, Republic Act 9275 otherwise known as "Philippine Clean Water Act" was enacted by the Congress. It is stated that the characteristics of water which define its use in terms of physical, chemical, biological, bacteriological or radiological characteristics by which the acceptability of the water is evaluated. It aims to assess, monitor and classify water bodies of the country, and create policies to improve the existing quality of water. It also aims to increase the environmental awareness of every individual in the country.

Water quality refers to the suitability of water to sustain different uses or processes, thus, has certain requirements for the physical, chemical or biological

characteristics of water. For example, limits on the concentrations of toxic substances for drinking water use and restrictions on temperature and pH ranges for water supporting invertebrate communities. This requirements are useful also for the protection of our environment.

In classifying water bodies it needs quarterly monitoring for a period of one year. Other factors such as human activities, history and laboratory analysis are taken into consideration in deciding the appropriate classification of water body.

With this, the proposed classification for Amnay River is ***Class B*** in all monitoring station of the river. The intended beneficial uses of Class B waters based on DAO 2016-08 if for Recreational Water Class 1. For primarily contact recreation such as bathing, swimming, skin diving, etc. (particularly those designated for tourism purpose.)

II. Brief Introduction

Sablayan was derived from the word *sablay*, a Visayan term meaning wave convergence. In the early times, the very location of the town was where the waves from North and South China Sea meet, hence, the name *Sablay* that later became Sablayan.

Sablayan, officially the Municipality of Sablayan, is a 1st class municipality in the province of Occidental Mindoro, Philippines. According to the 2015 census, it has a population of 83,169 people.

It has a total land area of 2,188.80 square kilometers, making it the largest municipality in the Philippines. The Apo Reef, North and South Pandan Islands, and a portion of Mounts Iglit-Baco National Park are part of its jurisdiction. Sablayan Penal Colony, the Philippines' largest penal facility with sprawling lot of 16,190 hectares (40,000 acres) is also located in this municipality.

Sablayan is located in the central part of Occidental Mindoro. It is bounded to the north by the municipality of Santa Cruz and the municipalities of Baco, Naujan, Victoria and Socorro all in Oriental Mindoro province; to the east by the municipalities of Pinamalayan, Gloria, Bansud, Bongabong and Mansalay also in Oriental Mindoro; to the south by the municipality of Calintaan; and to the west by the Mindoro Strait.

HISTORICAL BACKGROUND

Mangyans were the ancient aborigines of Mindoro. They were believed to be of Malayan origin. They were joined in by natives from neighboring islands–mostly Panayeños led by the Tanungan during the second Spanish settlement established by Legaspi. Years later, more arrived who, unlike the first migrants, were already converted Christians; and sometime in 1861 migrants increased in population. The means of livelihood was agriculture, fishing and hunting. Women though were engaged in weaving sigurang, a fiber derived from buri/nipa leaves.

Sablayan then was often subject to raids by Muslim pirates and slave traders so a wooden tower was built–watched round the clock to guard against approaching raiders. This alarm system was augmented in 1896, when four bells of varied sizes–believed to have been manufactured in Spain–arrived from Manila. These bells rang musical chimes.

Upon the arrival of a Spanish priest, a church had to be built. Men, women and children were conscripted to work on it. After ten years of backbreaking arduous toil, the church was made functional sometime in 1896. This church is now in ruins, its bells gone but the biggest cannon standstill atop a small hill near the lighthouse or Parola. The church was abandoned when the town proper was moved to Buenavista.

In 1901, the first American arrived in Sablayan. Due to the outbreak of Fil-American war, Americans burned the town in 1903. It took years before Sablayan was rebuilt.

Sablayan was already a pueblo (town) under the Spaniards when the Americans came. However, when the American Government took over–owing perhaps to its proximity and accessibility to the National Government–it was converted into a full pledge municipality on January 04, 1906 by virtue of Act No. 1820 of the Philippine Commission.

Amnay River

Amnay River is a stream and is located in Province of Mindoro Occidental, Mimaropa, Philippines. The estimate terrain elevation above sea level is 6 metres(1). The Amnay River Basin, a 74,700-hectare watershed, covers some parts of Municipalities of Sablayan and Sta. Cruz in Occidental Mindoro. It covers the barangays of San Agustin, Batong Buhay, Claudio Salgad, Ibud, Ilvita, Lagnas, Malisbong, Paetan, Pag-asa, San Francisco, San Vicente, Tagumpay, and Victoria in the municipality of Sablayan; and Casague, Lumangbayan, and Pinagturilan in Santa Cruz. The DENR River Basin Control Office (RCBO) states that the Amnay River

Basin has a drainage area of 466 km2 and an estimated 746 million cubic meter (MCM) annual run-off.Its main stem, Amnay River, is under the jurisdiction of the PHIL-LIDAR 1 partner, University of the Philippines, Los Baños. The Amnay River passes through laudio Salgad, Ilvita and Pagasa in Sablayan and Pinagturilan in Santa Cruz. A total of 19,643 people are residing within the immediate vicinity of the river, with Brgy. Pinagturilan being the most populated barangay having 7,168 residents as of 2010 according to National Statistics Office Census of Population and Housing(2).

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(1)http://ph.geoview.info/amnay_river,1731027

(2)https://dream.upd.edu.ph/assets/Publications/LiDAR-Technical-Reports/UPLB/LiDAR-Surveys-and-Flood-Mapping-of-Amnay-River.pdf)

III. Objectives of Classification

The main objective of water body classification is to maintain the body of water in a safe and satisfactory condition according to its best usage. The secondary objectives are as follows:

- To determine the present quality of water body in relation to DENR's water quality criteria;
- To determine the actual best usage potential and dominant water utilization of the water body;
- To establish classification of water body as an important component in the water quality management and as a guide in the enforcement of general effluent standards as provided by the DENR AO 08 series of 2016; and
- To maintain the minimum condition necessary to assure the suitability of the water for its designated use or classification

WATER BODY CLASSIFICATION AND USAGE OF FRESH SURFACE WATER

CLASSIFICATION	INTENDED BENEFICIAL USE
Class AA	Public Water Supply Class I – Intended primarily for waters having watersheds, which are uninhabited and/or otherwise declared as protected areas, and which require only approved disinfection to meet the latest PNSDW
Class A	Public Water Supply Class II – Intended as sources of water supply requiring conventional treatment (coagulation, sedimentations, filtration and disinfection) to meet the latest PNSDW
Class B	Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)
Class C	1. Fishery Water for the propagation and growth of fish and other aquatic resources 2. Recreational Water Class II – For boating, fishing, or similar activities 3. For agriculture, irrigation and livestock watering
Class D	Navigable waters

IV. Methodology

Methodology for classifying a water body was based on the provisions of Department Administrative Order (DAO) No. 08 series of 2016 as the Water Quality Guidelines and General Effluent Standards of 2016. The process of classification was divided into six (6) phases namely:

A. Ocular Inspection
B. Establishment of sampling stations and collection of water samples
C. Analysis and interpretation of data
D. Conduct public hearing
E. Submission of classification report
F. Publication

The significant parameters for Amnay River were selected based on the existing and potential sources of pollution found in the vicinity. The river was tested for its physical and chemical properties. A total of two (2) monitoring stations were established each representing the upstream, midstream and downstream part of the river.

Samples were collected using grab sampling method last (March 20, April 30, May 27, June 24, July 29, August 13, August 26, September 9, September 23 and October 7). Measurements for pH, temperature and dissolved oxygen (DO) were taken in-situ using the YSI multi-parameter water quality checker. Prior to transport, samples were maintained at low temperature by packing it with ice to maintain uniform temperature of 4°C before the laboratory analysis of total suspended solids (TSS), nitrates and phosphates. All methods used for analysis were based on the approved method of analyses set forth in EMB MC No. 012 series of 2016 or the "EMB Approved Methods of Analysis for Water and Wastewater."

Secondary data was acquired from local government unit and other national government agencies concern. Interviews with local residents, barangay officials and stakeholders were conducted to gather pertinent information on the actual and potential beneficial usage of Amnay River. In-situ and laboratory results data were presented through public consultation. Final classification report will be submitted to EMB Central Office for final evaluation, approval and publication.

The two (2) established monitoring stations with its corresponding GPS coordinates are presented on the succeeding section. The coordinates were plotted using Google Earth to map the whole stretch of Amnay River.

WATER QUALITY MONITORING STATIONS

Station No.	Station Identification	GPS Coordinates North	GPS Coordinates East
1	Pag-asa	12°57'28.00"N	120°53'51.00"E
2	Ilvita	12°57'16.00"N	120°49'0.00"E
3	Baloc-baloc	12°57'12.00"N	120°46'37.00"E

Google Earth Plot of the Established Monitoring Stations of Amnay River

V. Results and Discussion

Parameters Monitored With Corresponding Analytical Data

The significant parameters for the water quality measurement of the water of Amnay River are pH, dissolved oxygen, temperature, total suspended solids, nitrates and phosphates. The results of both in-situ and laboratory analyses conducted during the ten (10) sampling periods are presented in the succeeding sections.

1. pH

In chemistry, pH is a measure of the acidity or basicity of an aqueous solution. It is an actual measurement of the potential activity of hydrogen ions in that solution. Pure water is said to be neutral, with a pH close to 7.0 at 25 °C. Solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are basic or alkaline. A solution of a strong acid, such as hydrochloric acid, at concentration 1 mol/L has a pH of 0. A solution of a strong alkali, such as sodium hydroxide, at concentration 1 mol/L, has a pH of 14. Thus, measured pH values will lie mostly in the range 0 to 14. Since pH is a logarithmic scale, a difference of one pH unit is equivalent to a tenfold difference in hydrogen ion concentration. In other words, pH 6.0 is ten times more acidic than pH 7.0 and pH 5 is one hundred times more acidic than pH 7.0.

The pH of a body of water is affected by several factors. One of the most important factors is the bedrock and soil composition through which the water moves, both in its bed and as groundwater. Some rock types such as limestone can, to an extent, neutralize the acid while others, such as granite, have virtually no effect on pH. Another factor which affects the pH is the amount of plant growth and organic material within a body of water. When this material decomposes carbon dioxide is released. The carbon dioxide combines with water to form carbonic acid. Although this is a weak acid, large amounts of it will lower the pH. Dumping of chemicals into the water by individuals, industries, and communities would definitely affect the pH of a water body. Shampoo rinse water is actually a chemical brew and can affect the pH along with other chemical parameters of water. Many industrial processes require water of exact pH readings and thus add chemicals to change the pH to meet their needs. After use, this altered pH water is discharged as an effluent, either directly into a body of water or through the local sewage treatment plant. Acid precipitation that falls in the watershed is also another factor. Acid rain is caused by nitrogen oxides (NOx) and sulfur dioxide (SO_2) in the air combining with water vapor. These pollutants are primarily from automobile and coal-fired power plant emissions. Acid rain is responsible for many of our first

order streams becoming acidic. Lastly, iron sulfide, a mineral found in and around coal seams, combines with water to form sulfuric acid is another great factor. Combined with the problem of acid rain, the pH of some stream waters can be drastically lowered.

Table 1: Results for pH

Station No.	Name of Station	March 20
1	Pag-asa	8.43
2	Ilvita	8.59
3	Baloc-baloc	8.52
	Overall	8.51

2. Dissolved Oxygen (DO)

Oxygen saturation or dissolved oxygen (DO) in the environment generally refers to amount of oxygen that is dissolved or carried in the soil or water body. It can be measured with a dissolved oxygen probe such as an oxygen sensor or an opt ode in water. DO is measured either in milligrams per liter (mg/L) or "percent saturation." Milligrams per liter is the amount of oxygen in a liter of water. Percent saturation is the amount of oxygen in a liter of water relative to the total amount of oxygen that the water can hold at that temperature.

The physical factors that influence DO are temperature, altitude, salinity, and stream structure. Temperature inversely controls the solubility of oxygen in water. As temperature increases, oxygen is less soluble. In contrast, there is a direct relationship between atmospheric pressure and DO. As the pressure increases due to weather or elevation changes, oxygen solubility increases. Salinity also reduces the solubility of oxygen in water. Stream structure also influences DO concentrations. Atmospheric oxygen becomes mixed into a stream at turbulent, shallow riffles, resulting in increased DO levels. Because there is less surface interaction between water and air in slow-moving water and deep sections of a stream, DO concentrations often decrease between surface and bottom measurement.

Adequate dissolved oxygen is necessary for good water quality. Oxygen is a necessary element to all forms of life. Natural stream purification processes require adequate oxygen levels in order to provide for aerobic life forms. As dissolved oxygen levels in water drop below 5.0 mg/l, aquatic life is put under stress. The lower the concentration, the greater the stress. Oxygen levels that remain below 1-2 mg/l for a few hours can result in large fish kills.

Total dissolved gas concentrations in water should not exceed 110 percent. Concentrations above this level can be harmful to aquatic life. Fish in waters containing excessive dissolved gases may suffer from "gas bubble disease". However, this is a very rare occurrence. The bubbles or emboli block the flow of blood through blood vessels causing death. External bubbles (emphysema) can also occur and be seen on fins, on skin and on other tissue. Aquatic invertebrates are also affected by gas bubble disease but at levels higher than those lethal to fish.

Table 2: Results for Dissolved Oxygen, mg/L

Station No.	Name of Station	March 20
1	Pag-asa	7.08
2	Ilvita	6.71
3	Baloc-baloc	8.25
	Overall	7.35

3. Temperature

The most common physical assessment of water quality is the measurement of temperature. Temperature impacts both the chemical and biological characteristics of surface water. It affects the dissolved oxygen level in the water, photosynthesis of aquatic plants, metabolic rates of aquatic organisms, and the sensitivity of these organisms to pollution, parasites and disease.

Thermal pollution is the introduction of water that is warmer than the body of water into which it flows. It generally occurs near power plants. In other non-industrial areas, urban runoff is the main source of thermal pollution. This is water that has been

heated as it flowed over parking lots, streets and sidewalks. Plowing near streams or the removal of the forest canopy during construction also contributes to thermal pollution by decreasing shade, thereby increasing solar heating of the water's surface. In addition to increasing the amount of solar radiation reaching the water's surface, removal of vegetation near streams often results in increased erosion and increased amounts of sediments in the water. The sediments absorb heat from sunlight rather than reflect it. This heats the water further. Warm water is less capable of holding dissolved oxygen. For this reason, temperature should be measured at the same place within the stream at which dissolved oxygen is measured. This allows the correlation between the two parameters to be observed.

The problem of low dissolved oxygen levels is magnified by the fact that the metabolic rates of aquatic plants increase as water temperature rises, thus increasing their biochemical oxygen demand. Low dissolved oxygen levels leave aquatic organisms in a weakened physical state and more susceptible to disease, parasites, and other pollutants.

Table 3: Results for Temperature, °C

Station No.	Name of Station	March 20
1	Pag-asa	29.1
2	Ilvita	29.29
3	Baloc-baloc	27.74
	Overall	28.71

4. Total Suspended Solids (TSS)

Total Suspended Solids (TSS) is a measure of concentration of all suspended particles obtained by separating these particles from a water sample using a filter. However, TSS cannot pass through a sieve of two micrometers and yet are indefinitely suspended in solution.

Suspended solids can result from erosion from urban runoff and agricultural land, industrial wastes, bank erosion, bottom feeders, algae growth or wastewater

discharges. As levels of TSS increase, a water body begins to lose its ability to support a diversity of aquatic life. Suspended solids absorb heat from sunlight, which increases water temperature and subsequently decreases levels of dissolved oxygen (warmer water holds less oxygen than cooler water). Some cold water species, such as trout and stoneflies, are especially sensitive to changes in dissolved oxygen. Photosynthesis also decreases, since less light penetrates the water. As less oxygen is produced by plants and algae, there is a further drop in dissolved oxygen levels.

TSS can also destroy fish habitat because suspended solids settle to the bottom and can eventually blanket the river bed. Suspended solids can smother the eggs of fish and aquatic insects, and can suffocate newly-hatched insect larvae. Suspended solids can also harm fish directly by clogging gills, reducing growth rates, and lowering resistance to disease. Changes to the aquatic environment may result in a diminished food sources, and increased difficulties in finding food. Natural movements and migrations of aquatic populations may be disrupted.

Table 4: Results for Total Suspended Solids, mg/L

Station No.	Name of Station	20-Mar	30-Apr	27-May	24-Jun	29-Jul	13-Aug	26-Aug	9-Sep	23-Sep	7-Oct
1	Pag-asa	6	3	34	136	169	114	277	120	1601	122
2	Ilvita	3	2	38	164	304	147	408	136	1007	184
3	Baloc-baloc	16	4	14	95	236	135	506	126	410	450
	Overall	8	3	29	132	236	132	397	127	1006	252

5. Phosphate (PO_4)

Phosphorus in small quantities is essential for plant growth and metabolic reactions in animals and plants. It is the nutrient in shortest supply in most fresh waters, with even small amounts causing significant plant growth and having a large effect on the aquatic ecosystem. Phosphate-induced algal blooms may initially increase dissolved oxygen via photosynthesis, but after these blooms die more oxygen is consumed by bacteria aiding their decomposition.

This may cause a change in the types of plants which live in an ecosystem. Sources of phosphate include animal wastes, sewage, detergent, fertilizer, disturbed land, and road salts used in the winter. Phosphates do not pose a human or health risk except in very high concentrations. It is measured in mg/L. Larger streams may react to phosphate only at levels approaching 0.1 mg/L, while small streams may react to levels of PO_4^{-3} at levels of 0.01 mg/L or less. In general, concentrations over 0.05 will likely have an impact while concentrations greater than 0.1 mg/L will certainly have impact on a river.

Table 5: Results of Phosphates, mg/L

Station No.	**Name of Station**	20-Mar	30-Apr	27-May	24-Jun	29-Jul	13-Aug	26-Aug	9-Sep	23-Sep	7-Oct
1	Pag-asa	0.037	0.04	0.176	0.026	0.039	0.045	0.041	0.032	0.062	0.051
2	Ilvita	0.037	0.048	0.172	0.026	0.03	0.047	0.036	0.032	0.063	0.048
3	Baloc-baloc	0.045	0.048	0.098	0.35	0.04	0.059	0.042	0.021	0.065	0.068
	Overall	0.037	0.04	0.176	0.026	0.039	0.045	0.041	0.032	0.062	0.051

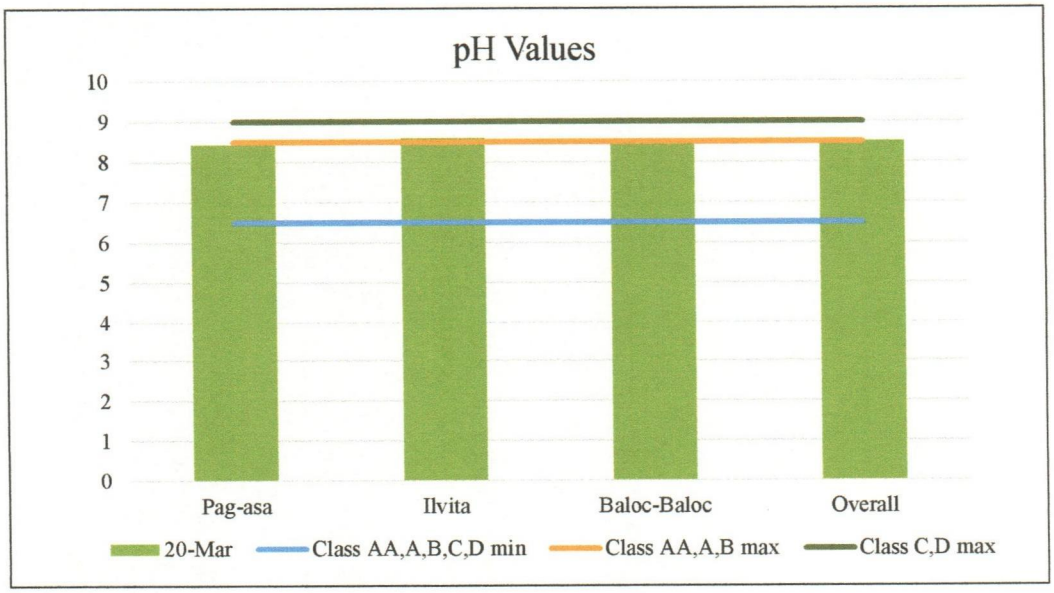
VI. Assessment of Results

The results of all the conducted physico – chemical analyses were consolidated and assessed. The average values of the four monitoring periods were compared to the 2016 Water Quality Guidelines as stipulated in the DAO 08 series of 2016. The assessment of each determined parameter is discussed in the succeeding sections.

pH

Table 6: pH

Station Number	Station Identification	Average	Water Quality Guidelines DAO 08 s. 2016				
			AA	A	B	C	D
1	Pag-asa	8.43	6.5 – 8.5	6.5 – 8.5	6.5 – 8.5	6.5 – 9.0	6.0 – 9.0
2	Ilvita	8.59					
3	Baloc-baloc	8.52					
	Overall	8.51					



The optimum pH for river water is around 7.4. Acid rain causes the increase in the acidity of river. Extremes in pH can make a river inhospitable to life. Low pH is

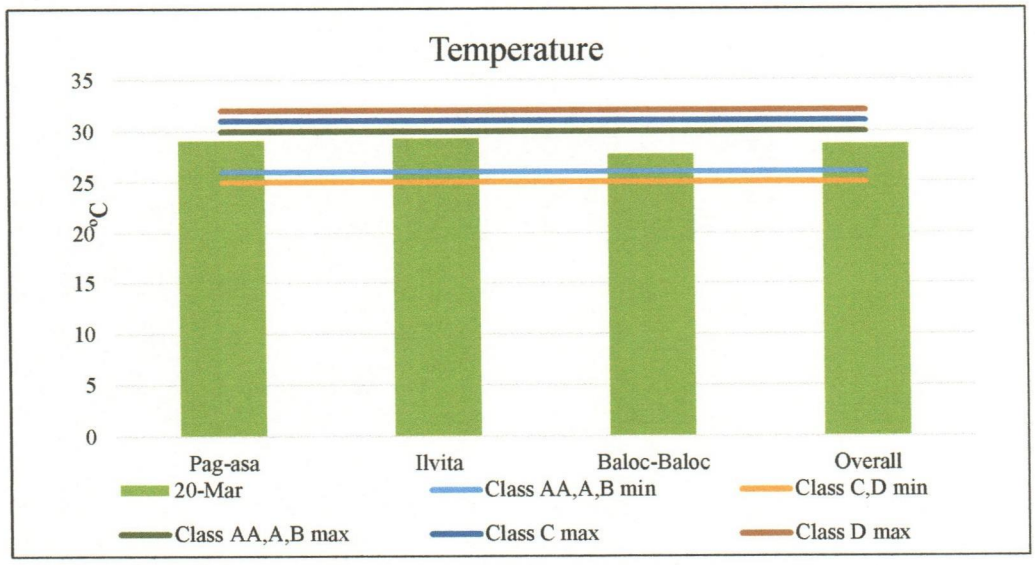
especially harmful to immature fish and insects. Acidic water also speeds the leaching of heavy metals harmful to fish. And it also creates an itchy feeling when in contact with human skin.

The river has an average of 8.51 pH units. This value is close to the optimum pH for rivers and must be carefully monitor. Based from the graph, the river fall within the acceptable range of water quality guidelines set forth by the DENR through DAO 2016-08 in all the five classifications of fresh surface waters.

Temperature

Table 7: Temperature, °C

Station Number	Station Identification	Average	Water Quality Guidelines DAO 08 s. 2016				
			AA	A	B	C	D
1	Pag-asa	29.1	26 – 30	26 – 30	26 – 30	25 – 31	25 - 32
2	Ilvita	29.29					
3	Baloc-baloc	27.74					
	Overall	28.71					



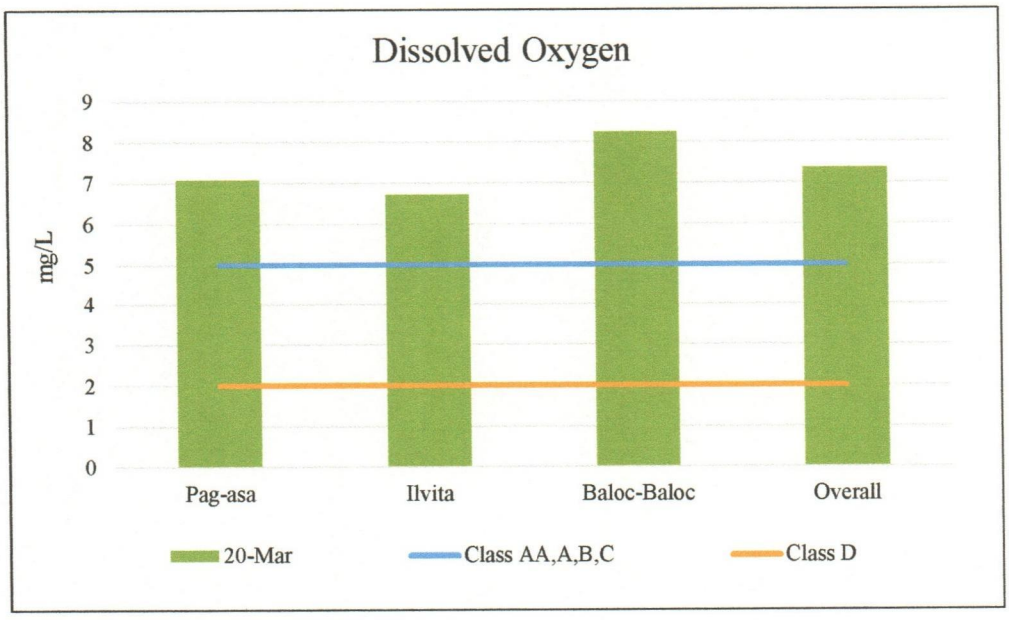
Temperature impacts the rates of metabolism and growth of aquatic organisms, rate of plants' photosynthesis, solubility of oxygen in river water and organisms' sensitivity to disease, parasites and toxic materials. At a higher temperature, plants grow and die faster, leaving behind matter that requires oxygen for decomposition.

Based from the above graph, the river has an average temperature of 28.71 °C. Based from the graph, the river fall within the acceptable range of water quality guidelines set forth by the DENR through DAO 2016-08 in all the five classifications of fresh surface waters.

Dissolved Oxygen

Table 8: DO, mg/L

Station Number	Station Identification	Average	Water Quality Guidelines DAO 08 s. 2016				
			AA	A	B	C	D
1	Pag-asa	7.08	5	5	5	5	2
2	Ilvita	6.71					
3	Baloc-baloc	8.25					
Overall		7.35					



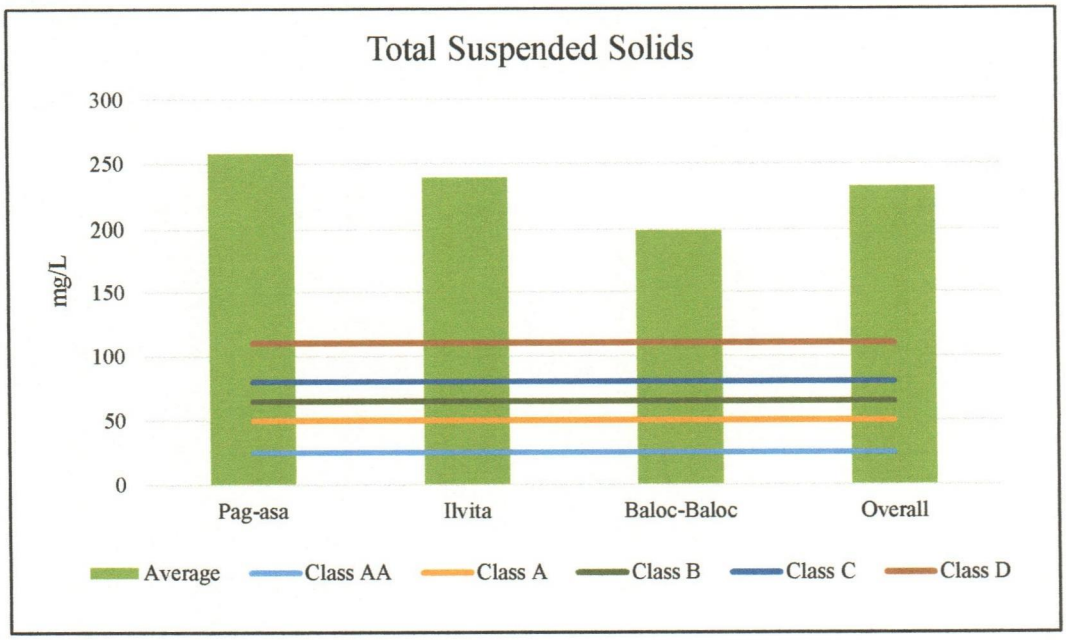
Adequate supply of dissolved oxygen gas is essential for the survival of aquatic organisms. A deficiency in this area is a sign of an unhealthy river. There are a variety of factors affecting levels of dissolved oxygen. The atmosphere is a major source of dissolved oxygen in river water. Waves and tumbling water mix atmospheric oxygen with river water. Oxygen is also produced by rooted aquatic plants and algae as a product of photosynthesis.

Based by the graph, the DO is still high in the whole length of the river. The average DO is 7.35 mg/L. The river passed the minimum DO requirement set for all five classifications. These water quality guidelines for DO are set forth in the DENR AO 2016-08.

Total Suspended Solids

Table 9: TSS, mg/L

Station Number	Station Identification	Average	Water Quality Guidelines DAO 08 s. 2016				
			AA	A	B	C	D
1	Pag-asa	258	25	50	65	80	110
2	Ilvita	239					
3	Baloc-baloc	199					
	Overall	232					



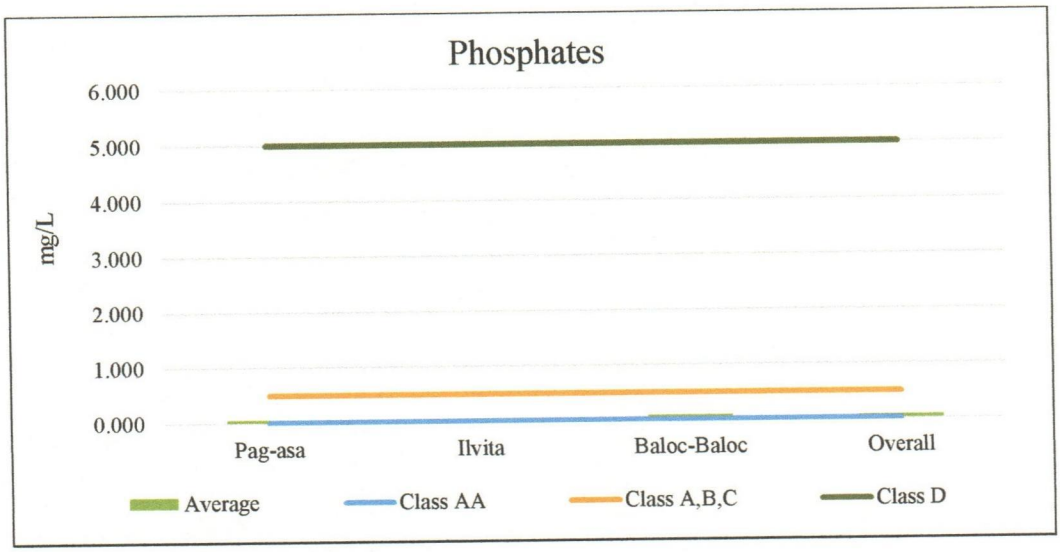
The transport of sediment is a natural function of rivers. Modification of the landscape has accelerated the rate of soil into waterways. Elevated suspended particles have many impacts including making rivers look muddy, affecting aesthetics and swimming. Sediment carries nutrients, pesticides and other chemicals into the river that may impact fish and wildlife species. Sedimentation can restrict the areas where fish spawn, limit biological diversity and keep river water cloudy, reducing potential for the growth of healthy aquatic plants.

Amnay River shows high result of TSS in all stations from June to October where heavy rainfall occur. Water from heavy rainfall cause soil loose its stability and carried by the river to downstream which causes increase in TSS. Dredging activities or excavation of sediments in the bottom of the river increases suspended sediments in the river. The average TSS for the whole river is 232 mg/L. Based from the water quality guidelines, the river failed the maximum limit for TSS concentration in all of the water body classification categories.

Phosphate

Table 10: PO_4, mg/L

Station Number	Station Identification	Average	Water Quality Guidelines DAO 08 s. 2016				
			AA	A	B	C	D
1	Pag-asa	0.055	<0.003	0.5	0.5	0.5	5
2	Ilvita	0.054					
3	Baloc-baloc	0.084					
	Overall	0.064					



Phosphates are essential for the growth of plants and animals but human activities have altered its natural cycle. The main sources are drainage from farmland particularly fertilizer and manure runoff and sewage effluent which contains dishwashing detergents, food and drink additives. Phosphate levels above 0.03 mg/L can encourage growth of algae in aquatic systems. High levels of phosphate can lead to overgrowth of plants, increased bacterial activity and decreased oxygen levels.

Based from the graph, the average phosphate concentration of Amnay is 0.064 mg/L. This is a value below the maximum limits for all classes except for Class AA category of freshwater. Therefore the river is still within the allowable range of phosphates in freshwaters.

VII. Recommendations

Results of water quality monitoring and all the data collected were presented to the public to solicit their opinion for the best usage of the waters of Amnay River. The said public hearing was conducted at the Conference Room of Municipal City Hall of Sablayan on 19 November 2019. The attendees were composed of the members of the local government units, representative from the CENRO and MENRO, and the local residents particularly those living and benefiting from the waters of Amnay River.

Officials from DENR-Sablayan said they have other supply of potable water in their barangay and only use the river for bathing, swimming and irrigation. He also added that usually during rainy season, rocks and mud from the mountain slides down to the river. He also said that there are dredging activities along the river. Dredging activities are also present in the river. The large-scale extraction of streambed materials and dredging below the existing streambed, and the alteration of channel-bed form and shape leads to several impacts such as erosion of channel bed and banks, increase in channel slope and change in channel morphology. These impacts may cause the undercutting and collapse of river banks, loss of adjacent land and structures, upstream erosion as a result of an increase in channel slope and changes in flow velocity and downstream erosion due to increased carrying capacity of the stream, downstream changes in patterns of deposition, and changes in channel bed and habitat type.

The river is also used for water supply of their agricultural land. Run-off from agricultural lands carries nutrients from fertilizers which causes increase of phosphate in the river. This may promote sudden growth of algae in the river which will affect the clarity and quality of water.

The EMB discussed with them the pros and cons of choosing the classification considering their present and future of the river. Given these facts and supported by the results of the water quality monitoring performed, the final proposed waterbody classification of the river is **Class B** for the whole stretch of the river.

As stipulated in the new DENR AO 08 series of 2016, Fresh Surface Water classified as **Class B** *Recreational Water Class 1. For primarily contact recreation such as bathing, swimming, skin diving, etc. (particularly those designated for tourism purpose.)*

Therefore, information, education and communication (IEC) campaign should be implemented by Environmental Management Bureau – MIMAROPA, to disseminate the results and findings of the sampling activities among the Local Government units (LGUs), Non-Governmental Organization (NGOs) and the concerned local communities. This is to make them aware of the situation and identify

for themselves the necessary steps/actions in achieving a sustainable river management for Amnay River with the assistance from Environmental Management Bureau – MIMAROPA Regional Office. Additionally, the local government is recommended to control the quarrying activities and backyard piggeries along the river. In this way, the sustainability of the ecosystem of the river will be attainable without sacrificing the needs and economic growth of the localities.

VIII. Annexes and Attachments

1. Photo Documentation of Activities
2. Laboratory Results of Water Sampling
3. Field Data of Water Sampling
4. Minutes of Public Hearing
5. Attendance Sheet of Public Hearing

Prepared by:

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EMED Technical Staff

KARL ALEXANDER R. DAMMAY
EMED Technical Staff

Reviewed by:

MAEVELYN KATHRYN D. TUPASI
OIC, Ambient Monitoring Section

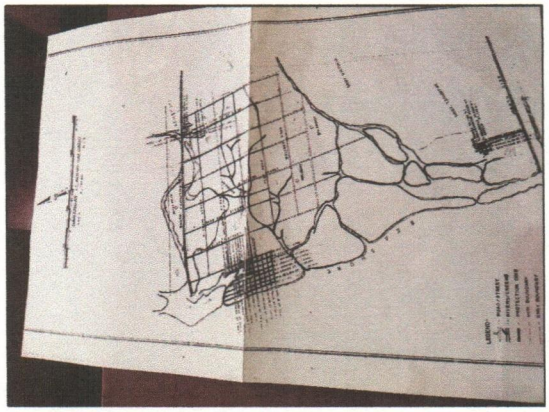
Attested by:

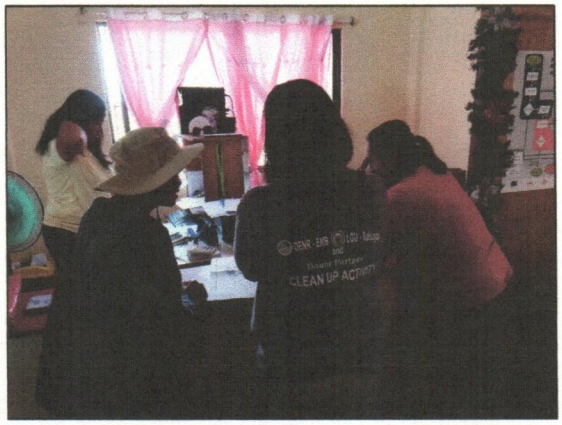
ENGR. PABLITO M. ESTORQUE, JR.
OIC, EMED

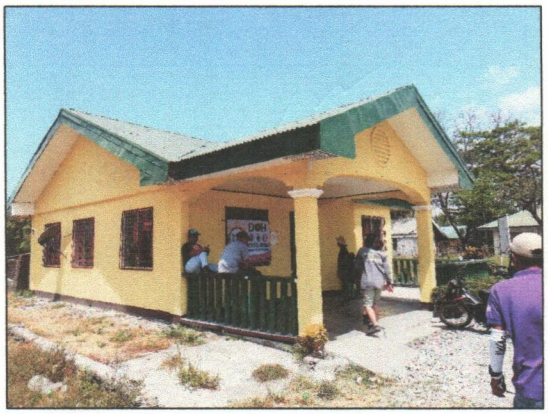
Noted by:

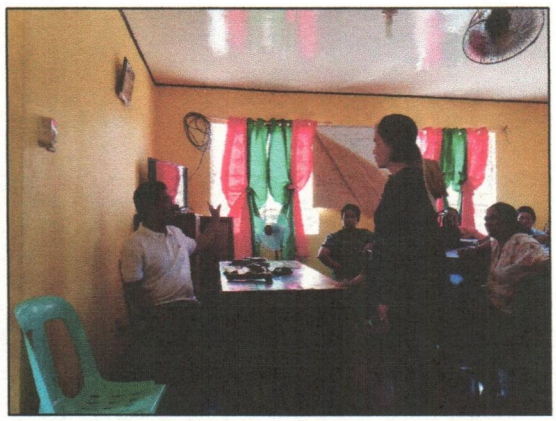
ATTY. MICHAEL DRAKE P. MATIAS
Regional Director

PHOTOS TAKEN DURING THE
LGU COORDINATION AND
ESTABLISHMENT OF MONITORING STATIONS

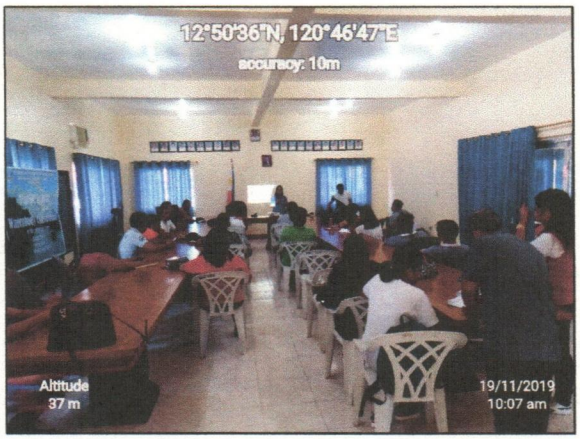


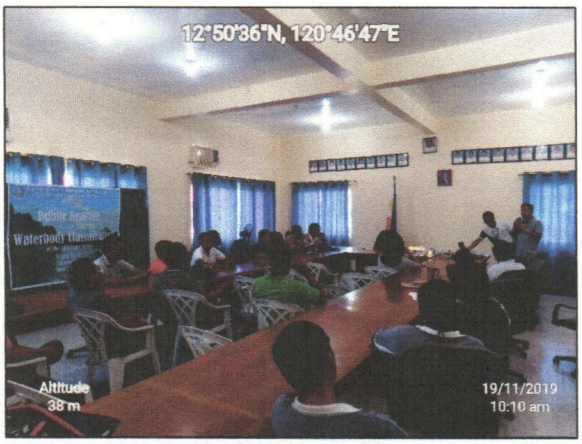




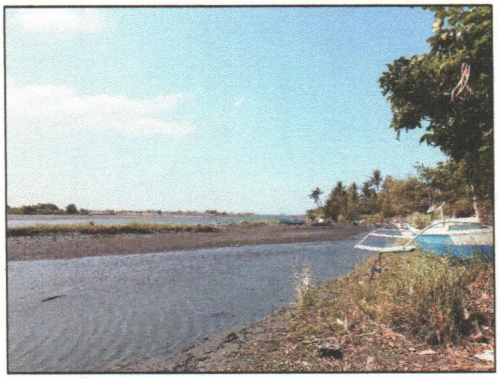


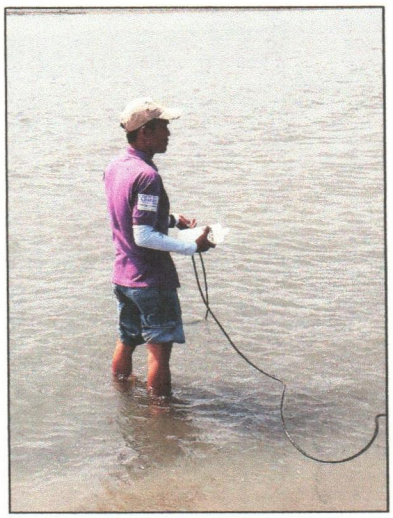
PHOTOS TAKEN DURING PUBLIC CONSULTATION

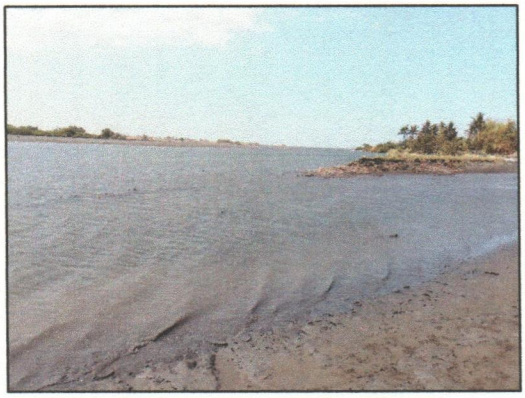


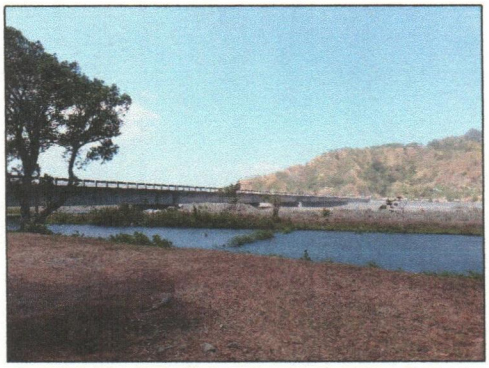


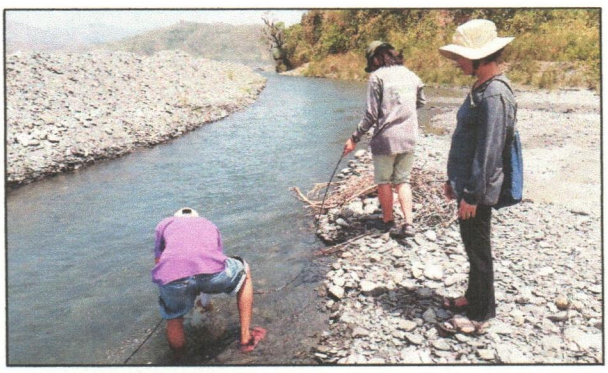
PHOTOS TAKEN DURING THE MONITORING











LABORATORY RESULTS

Department of Environment and Natural Resources
Environmental Management Bureau
MIMAROPA Region

REPORT OF PHYSICO-CHEMICAL ANALYSES

SOURCE : AMNAY RIVER
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : BDeCastro/MMDiaz/JTDumenden/MKDTupasi/CVPerez
DATE SAMPLED : 20 March 2019 DATE ANALYZED : 21 March 2019
DATE RECEIVED : 21 March 2019 DATE REPORTED : 28 March 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-157C	1	1115H	Pag-asa
19-158C	2	1110H	Ilvita
19-159C	3	1015H	Baloc-Baloc
XxxxX			

CHARACTERISTIC	LABORATORY SAMPLE NO.			
	19-157C	19-158C	19-159C	XxxxX
Phosphate (P-PO4), mg/L	0.037	0.037	0.045	
Total Suspended Solids, mg/L	6	3	16	
XxxxX				

ANALYZED and CERTIFIED BY:

ADRIAN G. UGALI, RCh
COR No.: 00012946

NOTED BY:

MAEVELYN KATHRYN D. TUPASI
OIC, Ambient Monitoring Section

PABLITO M. ESTORQUE, Jr.
OIC, Environmental Monitoring and Enforcement Division

APPROVED FOR RELEASE BY:

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E-mail Address: mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com

Department of Environment and Natural Resources
Environmental Management Bureau
Regional Office No. IV – B MIMAROPA

REPORT OF CHEMICAL AND PHYSICAL ANALYSES

SOURCE : AMNAY RIVER
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez/ARRiveraJr.
DATE SAMPLED : 27 May 2019 DATE ANALYZED : 30 May 2019
DATE RECEIVED : 29 May 2019 DATE REPORTED : 17 June 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-318C	1	1159H	Pag-asa
19-319C	2	1112H	Ilvita
19-320C	3	1028H	Baloc-Baloc
XxxxX			

CHARACTERISTIC	LABORATORY SAMPLE NO.			
	19-318C	19-319C	19-320C	XxxxX
Phosphate ($P\text{-}PO_4$), mg/L	0.121	0.225	0.093	
Total Suspended Solids, mg/L	30	75	57	
XxxxX				

ANALYZED and CERTIFIED BY:

ADRIAN G. UGALI, R.Ch
COR No.: 00012946

VERIFIED BY:

RACHEL M. VISAYA, R.Ch
COR No.: 0009695

NOTED BY:

PABLITO M. ESTORQUE, Jr.
OIC, Environmental Monitoring and Enforcement Division

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Department of Environment and Natural Resources
Environmental Management Bureau
Regional Office No. IV – B MIMAROPA

RESULT OF ANALYSIS

SOURCE : AMNAY RIVER
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez
DATE SAMPLED : 24 June 2019 DATE ANALYZED : 25 June 2019
DATE RECEIVED : 25 June 2019 DATE REPORTED : 09 July 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-419C	1	1034H	Pag-asa
19-420C	2	1005H	Ilvita
19-421C	3	0934H	Baloc-Baloc
XxxxX			

CHARACTERISTIC	LABORATORY SAMPLE NO.		
	19-419C	19-420C	19-421C
Phosphate ($P\text{-}PO_4$), mg/L	0.026	0.026	0.035
Total Suspended Solids, mg/L	136	164	95
XxxxX			

CERTIFIED BY:

ADRIAN G. UGALI, R.Ch
COR No.: 00012946
Chemist II

RACHEL M. VISAYA, R.Ch
COR No.: 0009695
Chief, Laboratory Services Unit

NOTED BY:

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website: r4b.mimaropa.emb.gov.ph

Department of Environment and Natural Resources
Environmental Management Bureau
MIMAROPA Region

RESULTS OF ANALYSIS

SOURCE : **AMNAY RIVER**
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez
DATE SAMPLED : 29 July 2019 DATE ANALYZED : 31 July 2019
DATE RECEIVED : 30 July 2019 DATE REPORTED : 22 August 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-502C	1	1116H	Pag-asa
19-503C	2	1042H	Ilvita
19-504C	3	0951H	Baloc-Baloc

CHARACTERISTIC	LABORATORY SAMPLE NO.		
	19-502C	19-503C	19-504C
Phosphate ($P\text{-}PO_4$), mg/L	0.039	0.030	0.040
Total Suspended Solids, mg/L	169	304	236

CERTIFIED BY:

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COR No.: 0009695
Chief, Laboratory Services Unit

NOTED BY:

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OIC, Environmental Monitoring and Enforcement Division

APPROVED FOR RELEASE BY:

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E-mail Address: mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com

Department of Environment and Natural Resources
Environmental Management Bureau
MIMAROPA Region

RESULTS OF ANALYSIS

SOURCE : **AMNAY RIVER**
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez
DATE SAMPLED : 13 August 2019
DATE RECEIVED : 14 August 2019
DATE ANALYZED : 14 August 2019
DATE REPORTED : 02 September 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-513C	1	1137H	Pag-asa
19-514C	2	1055H	Ilvita
19-515C	3	0953H	Baloc-Baloc

CHARACTERISTIC	LABORATORY SAMPLE NO.		
	19-513C	19-514C	19-515C
Phosphate ($P\text{-}PO_4$), mg/L	0.045	0.047	0.059
Total Suspended Solids, mg/L	114	147	135

CERTIFIED BY:

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Chief, Laboratory Services Unit

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E-mail Address: mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com

Department of Environment and Natural Resources
Environmental Management Bureau
MIMAROPA Region

RESULTS OF ANALYSIS

SOURCE : AMNAY RIVER
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez
DATE SAMPLED : 09 September 2019 DATE ANALYZED : 11 September 2019
DATE RECEIVED : 10 September 2019 DATE REPORTED : 26 September 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-702C	1	0942H	Pag-asa
19-703C	2	1014H	Ilvita
19-704C	3	1040H	Baloc-Baloc

CHARACTERISTIC	LABORATORY SAMPLE NO.		
	19-702C	19-703C	19-704C
Phosphate ($P\text{-}PO_4$), mg/L	0.032	0.032	0.021
Total Suspended Solids, mg/L	120	136	126

CERTIFIED BY:

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COR No.: 0009695
Chief, Laboratory Services Unit

NOTED BY:

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OIC, Environmental Monitoring and Enforcement Division

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E-mail Address: emb.mimaropa@emb.gov.ph
Website: www.mimaropa.emb.gov.ph

Department of Environment and Natural Resources
Environmental Management Bureau
Regional Office No. IV – B MIMAROPA

RESULTS OF ANALYSIS

SOURCE : **AMNAY RIVER**
ADDRESS : Sablayan, Occidental Mindoro
SAMPLED BY : MMVDiaz/CVPerez
DATE SAMPLED : 07 October 2019 DATE ANALYZED : 08 October 2019
DATE RECEIVED : 08 October 2019 DATE REPORTED : 24 October 2019

Laboratory Sample No.	Station Number	Time of Collection	Station Identification
19-795C	1	1010H	Pag-asa
19-796C	2	0930H	Ilvita
19-797C	3	0915H	Baloc-Baloc

CHARACTERISTIC	LABORATORY SAMPLE NO.		
	19-795C	19-796C	19-797C
Phosphate ($P\text{-}PO_4$), mg/L	0.051	0.048	0.068
Total Suspended Solids, mg/L	122	184	450

CERTIFIED BY:

RACHEL M. VISAYA, R.Ch
COR No.: 0009695
Chief, Laboratory Services Unit

APPROVED FOR RELEASE BY:

ATTY. MICHAEL DRAKE P. MATIAS
Regional Director

FIELD DATA

WATER QUALITY MONITORING
FIELD DATA FORM

Name of Waterbody: AMNAY RIVER

Date of Sampling: 8/20/19 **Sampling Team:**

Parameter	Sampling Site		
	1	2	3
	PAG-ASA ~~BRIDGE~~	ILVITA	~~ACACIA~~ BALA-BALOC
GPS Coordinates	12 57 28 120 53 51	12° 57' 16" 120° 49' 0"	~~12° 57' 12" N~~ ~~120° 46' 43" E~~ 12° 57' 12" 120° 46' 37"
Time of Sampling	11:15	11:10	10:15
Air Temperature			
Cloud Cover, %	50%	50%	50%
Weather Condition	sunny/windy	sunny/windy	sunny/windy
Visual Color of Water	clear	clear	grayish
Other Observation	strong current	Clear but w/ moss under riverbank w/oil	muddy
On-Site Analysis			
pH	~~29.10~~ 8.43	8.59	8.52
Temperature	29.10	29.29	27.74
DO	7.08	6.71	8.25
Conductivity	0.290	0.398	8.267
TDS	0.175	0.239	4.740
Salinity	0.13	0.17	3.71
Turbidity			

Sample for Laboratory Analysis

Parameters for Analysis	Sample Volume (mL)	Container Type	Sampling Method	Preservation Done
[illegible] PO4	100	P	Grab	Ice

SAMPLED BY: *(signature over printed name)*

FIELD DATA FORM

Name of Waterbody: AMLAY RIVER

Date of Sampling: APRIL 30, 2019 **Sampling Team:**

Parameter	Sampling Site		
	1	2	3
	STA. 1 BRGY. [illegible]	STA. 2 BRGY. [illegible]	STA. 3 BRGY. [illegible]
GPS Coordinates	12° 51' 24" N 120° 51' 43" E	12° 47' 33" N 120° [illegible] E	[illegible]
Time of Sampling	[illegible] am	[illegible] am	[illegible]
Air Temperature	[illegible]	[illegible]	[illegible]
Cloud Cover, %	[illegible]	SUNNY	SUNNY
Weather Condition	32°	[illegible]	[illegible]
Visual Color of Water	GRAYISH IN COLOR	CLEAR W/ ALGAE	CLEAR - WATER
Other Observation	DIVERSION OF CURRENT USE IN IRRIGATION	[illegible]	[illegible] THE RIVER
On-Site Analysis			
pH			
Temperature			
DO			
Conductivity			
TDS			
Salinity			
Turbidity			

Sample for Laboratory Analysis

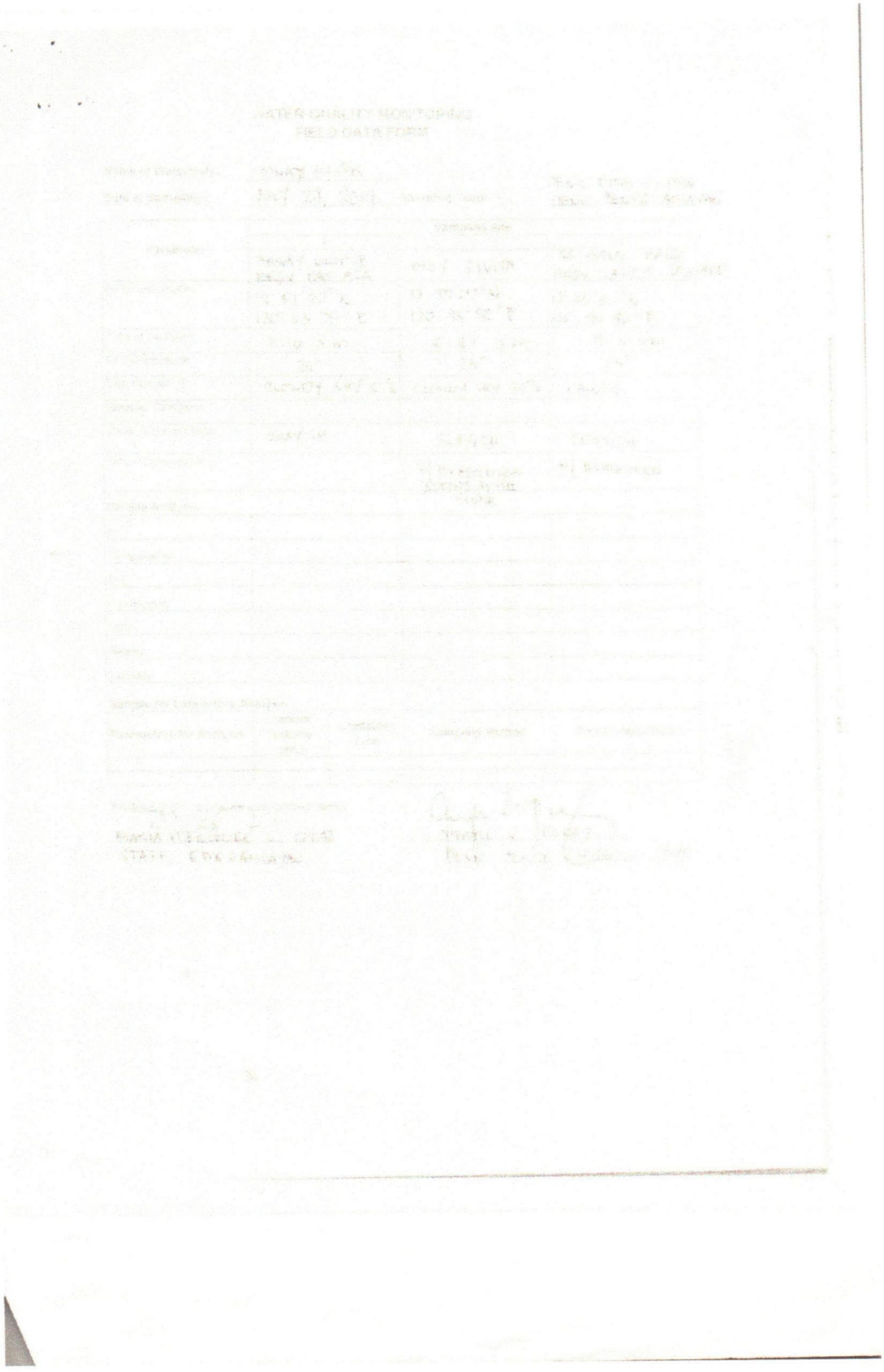
Parameters for Analysis	Sample Volume (mL)	Container Type	Sampling Method	Preservation Done
				Ice

SAMPLED BY: *(signature over printed name)*

[illegible] V. DIAZ

[illegible] V. [illegible]
[illegible] Staff

[illegible] R. [illegible], JR
[illegible] Staff



WATER QUALITY MONITORING
FIELD DATA FORM

Name of Waterbody: AMNAY RIVER

Date of Sampling: AUG. 13, 2019 Sampling Team: DENR - EMB MIMAROPA STAFF
DENR CENRO CABUYAO STAFF

Parameter	Sampling Site		
	1	2	3
	STN #1 - BRGY. PAMILA	STN #2 - BRGY. INAYA	STN #3 - BRGY. I. CARMEN BAYAN, BAYAN
GPS Coordinates	Lat: 12.966827 Long: 120.893512	Lat: 0.958965 Long: 120.870305	Lat: 12.[illegible] Long: 120.777714
Time of Sampling	11:39 AM	10:55 AM	9:54 AM
Air Temperature	28°	28°	28°
Cloud Cover, %	PARTIALLY CLOUDY	PARTIALLY CLOUDY	PARTIALLY CLOUDY
Weather Condition			
Visual Color of Water	GRAYISH	GRAYISH	GRAYISH
Other Observation			
On-Site Analysis			
pH			
Temperature			
DO			
Conductivity			
TDS			
Salinity			
Turbidity			

Sample for Laboratory Analysis

Parameters for Analysis	Sample Volume (mL)	Container Type	Sampling Method	Preservation Done

SAMPLED BY: *(signature over printed name)*

MARIA MERCEDES V. DIAZ
EMB - MIMAROPA STAFF
CENRO CABUYAO)

CHERYLL V. PEREZ
DENR CABUYAO STAFF

BENJAMIN DE CASTRO
EMB - MIMAROPA

WATER QUALITY MONITORING
FIELD DATA FORM

Name of Waterbody: AMWAY RIVER

Date of Sampling: SEPT 09, 2019

Sampling Team: DENR EMB STAFF / DENR CENRO Sablayan Staff

Parameter	Sampling Site		
	1	2	3
	BRGY CLAUDIO SALGADO (SO BALOC BALOC)	BRGY ILVITA	BRGY PAG-ASA
GPS Coordinates	12.949124 N 120.777713 E	12.954901 N 120.814438 E	12.954975 N 120.836465 E
Time of Sampling	9 42 am	10:14 am	10:40 am
Air Temperature	HOT	HOT	HOT
Cloud Cover, %	SUNNY	SUNNY	SUNNY
Weather Condition	27°	27°	27°
Visual Color of Water	clear (undisturb)	grayish	grayish
Other Observation			
On-Site Analysis			
pH			
Temperature			
DO			
Conductivity			
TDS			
Salinity			
Turbidity			

Sample for Laboratory Analysis

Parameters for Analysis	Sample Volume (mL)	Container Type	Sampling Method	Preservation Done

SAMPLED BY (*signature over printed name*)

[illegible signature] — [illegible] V. PIM

[illegible signature] — CENRO Staff

MINUTES OF THE PUBLIC HEARING

MINUTES OF THE PUBLIC HEARING/CONSULTATION OF WATERBODY CLASSIFICATION OF SABLAYAN, OCCIDENTAL MINDORO

CONFERENCE ROOM, SABLAYAN MUNICIPAL HALL, SABLAYAN OCCIDENTAL MINDORO

November 19, 2019

Part I. Introduction

- The Public meeting/consultation on classification of Sablayan, Occidental Mindoro started around 10:00 in the morning at CONFERENCE ROOM, SABLAYAN MUNICIPAL HALL.
- It was attended by officials from Barangay Batong-Buhay, Brgy. Ibud, Brgy. Tagumpay, Brgy. San Vicente, Brgy. Malisbong. Brgy. Sto. Niño, Brgy. Sta. Lucia, Brgy. San Nicolas DENR-Sablayan, MENRO-Sablayan, CENRO-Sablayan, ABC Staff, MSWD, and students from SABNAHIS and OMSC
- For. Alexander Coden, Ms. Maria Mercedita Diaz, Mr. Karl Dammay, and personnel from PEMU-Occidental Mindoro conducted the said public hearing/consultation.

Part II. Highlights of the Public Consultation

- For. Alexander Coden started the Public Hearing by welcoming the participants and giving her opening remarks on the importance of the activity in environmental protection.
- Then at 10:20am For. Alexander Coden introduce the presiding officer Mr. Karl Dammay who will discuss the importance of waterbody classification and the result of sampling activities of Amnay, Alipid and Mongpong River.
- Mr. Dammay discussed the background of waterbody classification and its legal basis. He introduced the steps of classifying waterbodies. He also stressed out that this process is important not only in the preservation of the quality of waterbody of concern but also on the regulation of those who will benefit from a waterbody.
- Mr. Dammay also emphasized that the classification activities and procedures are guided by Republic Act 9275 otherwise known as "Philippine Clean Water Act of 2004" and the Implementing Rules and Regulations Department Administrative Order 2016-08 or Water Quality Guidelines and General Effluent Standards.
- The result of water quality monitoring was presented also through a power point presentation, its guidelines and explain the effect of the parameters to water quality and human being.
- He also showed the plotted monitoring stations in google map established at Amnay, Alipid and Mongpong River.
- The proposed classification for Alipid, Amnay and Mongpong River is Class B.

Part III. Issues and Concerns raised

Alipid River

- He showed the plotted monitoring stations in google map established at Alipid River
- After the discussion of laboratory results and the proposed classification, Mr. Dammay asked the participants on what classification they will proposed considering their current usage and future use of the river.
- Punong Barangay Rolando Ibud said they have other supply of potable water in their barangay and only use the river for bathing, swimming and irrigation. He also added that usually during rainy season, rocks and mud from the mountain go down to the Alipid River that's why they don't use its water for drinking.
- Therefore, the final proposed classification of Alipid River will have **Class B** "Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)" for the whole stretch of the river.

Amnay River

- He showed the plotted monitoring stations in google map established at Amnay River.
- After the discussion of laboratory results and the proposed classification, Mr. Dammay asked the participants on what classification they will proposed considering their current usage and future use of the river.
- Officials from DENR-Sablayan said they have other supply of potable water in their barangay and only use the river for bathing, swimming and irrigation. He also added that usually during rainy season, rocks and mud from the mountain go down to the Amnay River that's why they don't use its water for drinking. Also he said there are dredging activities along Amnay River.
- Therefore, the final proposed classification of Amnay River will have **Class B** "Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)" for the whole stretch of the river.

Mongpong River

- He showed the plotted monitoring stations in google map established at Mongpong River.
- After the discussion of laboratory results and the proposed classification, Mr. Dammay asked the participants on what classification they will proposed considering their current usage and future use of the river.
- Punong Barangay Jaranilla said that Brgy. Tuban, and Sta. Lucia is usually dry throughout the summer. He also added that when this two area is dry there are still water in San Nicolas during summer. He also said that after rainy season, they dig well in the river bank and said that they use it for drinking. Therefore, he conclude that if it can be classified as Class A. He asked if the classification of the river is seasonal.
- PEMU Alexander Coden reiterate that the classification of waterbody is based on the monitoring and study for a period of one year and cannot be classified differently when season changes. He added that classification of this waterbody has implications such as; 1) changes in ordinances in the municipality and barangay especially to those applying for dredging and quarrying activities. He pointed out that these activities will be limited or prohibited once they chose to classify Mongpong River as Class B

waterbody. 2) It will serve as their basis for drafting laws and ordinances within the barangay or municipality. 3) And it can't be classified from lowest classification to highest.

- Representatives from Brgy. Batong-buhay, Malisbong, Tuban and Sta. Lucia agreed to the proposal of Class B waterbody considering their present use of the river. While Punong Barangay Jaranilla still asked if his area can be classified Class A. Again, Mr. Dammay pointed out that we cannot classify a waterbody from lowest classification to highest classification since it will imply that the river will be polluted in the future. He also added that the water that he is saying is from the groundwater seeping in the ground. Therefore it cannot be considered as Class A waterbody. In the end, Punong Barangay Jaranilla agreed to the proposed classification
- Therefore, the final proposed classification of Mongpong River will have **Class B** "Recreational Water Class 1 – Intended for primary contact recreation (bathing, swimming, etc.)" for the whole stretch of the river.

Prepared by:

Karl Alexander R. Dammay
EMS I

Jane T. Dumenden
SEMS

Maevelyn Kathryn D. Tupasi
OIC-AMS

Noted by:

Engr. Pablito M. Estorque Jr.
OIC-EMED

ATTENDANCE SHEET

Republic of the Philippines
Department of Environment and Natural Resources
Environment Management Bureau
MIMAROPA Region

PUBLIC HEARING

RE: Water Body Classification (Amnay, Alipid and Mompong Rivers)
November 19, 2019

NO.	NAME	GENDER		Office/Address	SIGNATURE
		MALE	FEMALE		
1	John Michael Dogdog	✓		SABNAHIS - Senior High School	
2.	Amar, Analiza P.		✓	OMSC - Student	
3.	Cusi, Rouza Joy A.		✓	MENRO	
4.	Fajo, Quinnie L.		✓	OMSC - Student	
5.	MARIA MERCEDES V. DIAZ		✓	DENR-EMB Sablayan, Occ. Min.	
6.	RONILO T. CONDE	✓		BRGY. BATONGBUHAY	
7.	JAY L. PADROSA	✓		CLAUDIO SALGADO	
8	Rufio J Lactin	✓		PB Sta Lucia	
9.	Oliver G. JARANILLA	✓		PB SAN-NICOLAS	
10.	Rolando V. Perez	✓		PB Tuban	
11	Marlon L. Castillo	✓		Brgy Ibud Sablayan	
12	LIPANTE, FRANCIS ALBERT D	✓		OMSC	
13	Bulima [illegible] F GUIAB		✓	APU	
14	LUIS B. CORTEZ	✓		MPDO	
15.	RUSSEL R. CAJAYON	✓		MPDO	

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NO.	NAME	GENDER MALE	GENDER FEMALE	Office/Address	SIGNATURE
16	Fe F. Cabato		✓	DENR - Sablayan	[signature]
17	Reginaldo Viana	✓		Sta. Lucia	[signature]
18	Hon. Victor B. Fabros	✓		P. B. Tagumpay	[signature]
19	Fernando L. Balao Jr.	✓		P.B. San Vicente	[signature]
20	Chezylle V. Perez		✓	CENRO Sablayan	[signature]
21	Tom Jimmy	✓		P.B. Malisbong	[signature]
22	Pamela M. Marcelino		✓	[illegible]	[signature]
23	Victorio P. Capitan	✓		DENR - CENRO Sablayan	[signature]
24	Reynaldo A. Daño	✓		DENR. CENRO Sablayan	[signature]
25	Elisa DJ Odina		✓	P.B. Sto. Niño	For: [signature]
26	[illegible] Codon	✓		[illegible]	[signature]
27	Chona A. Cañeclas		✓	ABC Staff	[signature]
28	Rosefel S. Tioayan		✓	ABC Staff	[signature]
29	Marites B. Dela Cruz		✓	ABC Staff	[signature]
30	Corazon S. Abando		✓	Sto. Niño Kagawad	[signature]

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NO.	NAME	GENDER		Office/Address	SIGNATURE
		MALE	FEMALE		
31.	JHASSA BANCE		✓	MSWD	
32.	MERLYN MANUBAY		✓		
33.	AURELIO VILLANUEVA	✓			
34.	SERNA M. URIETA		✓	DENR	
35	Merlie C. Barrera		✓	DENR-CENRO	
36	KARL ALEXANDER R. AMMAY	✓		EMB MIMAROPA REGIONAL OFFICE	
37	Jaylon C. Nocon	✓		DENR-EMB MIMAROPA	
38	ADRIANO C. TUDDAO	✓		NTO	
39	JONATHAN TIBAYAN	✓			
40.	Belen Garcia		✓	BRK	