

2ND Quarter MMT BNC Validation

3rd Quarter Air and Water Sampling

September 13 - 16, 2022

BERONG MINING PROJECT: Brgy. Berong, Quezon, Palawan

Team Members

EMB - MIMAROPA

PEMU, PALAWAN:SEMS Zosima D. Jampit

REGIONAL OFFICE:EnMO-Geologist Niño Jefferson L. Rojas

LGU : Rodel L. Arellano

BNC Representatives

ENVIRONMENTAL LAWS



R.A. No. 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990)

R.A. No. 9003 (Ecological Solid Waste Management Act of 2000)

R.A. No. 9275 (Philippine Clean Water Act of 2004)

R.A. No. 8749 (Philippine Clean Air Act of 1999)

R.A. 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990)



Republic of the Philippines
Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
Region 4B
PENRO Compound, Brgy. Suqui, Calapan City, Oriental
Mindoro, Satellite Office, 6th Floor DENR by the Bay
Bldg., 1515 Roxas Blvd., Ermita, Manila
Telephone Nos: (02) 536-97-86
Website: <http://mimaropa.emb.gov.ph/>

HAZARDOUS WASTE GENERATOR REGISTRATION CERTIFICATE

Pursuant to Chapter 3 of DENR Administrative Order (DAO) No. 2013-22, the Implementing Rules and Regulations of Republic Act (RA) 6969, this Certificate is issued to:

Name of Establishment : CITINICKEL MINES AND DEVELOPMENT CORPORATION (CMDC)-PULOT NICKEL MINING PROJECT

Facility Address : CMDC OFFICE, PUNANG, SOFRONIO ESPAÑOLA, PALAWAN

You are hereby assigned with the new on-line registration no.

OL-GR-R4B-53-021130

This certifies that the above-named Hazardous Wastes Generator generates the following types of wastes:

Waste Class	Waste Number
Used industrial oil including sludge	I101
Oil-contaminated Materials	I104
Other inorganic acid	B207
Lead compounds	D406
Mercury and mercury compounds	D407
Grease wastes	H802
Containers previously containing toxic chemical substances	J201
Pathological or infectious wastes	M501
Pharmaceuticals and drugs	M503
Waste electrical and electronic equipment (WEEE)	M506

- The above-named HW Generator shall comply with all the requirements of R.A. 6969 and its Implementing Rules and Regulations particularly DAO 2013-22: Revised Procedures and Standards for the Management of Hazardous Wastes (Revising DAO 2004-36).
- Submission of the online self monitoring report shall be made within fifteen (15) days after the end of every reporting period.
- Please refer to this assigned registration number for every transaction related to the online Hazardous Waste Management System.
- Non-compliance to the above stipulations shall be subjected to the penalty provisions as provided under Section 41 of DAO 1992-29 and Chapter 11 of DAO 2013-22.


JOE AMIL M. SALINO
Regional Director

November 09, 2021



This is a computer generated certificate.
To verify the authenticity of this file, kindly scan the generated QR Code using your QR Code scanner / reader or visit the HWMS website for details.

Hazardous Waste Storage Area



Medical Waste Storage Area



R.A. 9003 (Ecological Solid Waste Management of 2000)

Residual Containment Area



Waste Storage Bin within the Main Campus



R.A. 9003 (Ecological Solid Waste Management of 2000)

Vermi-composting



R.A. 9275 (Philippine Clean Water Act of 2004)

Yard 7



Nursery



R.A. 9275 (Philippine Clean Water Act of 2004)

Kokokon



Km 7

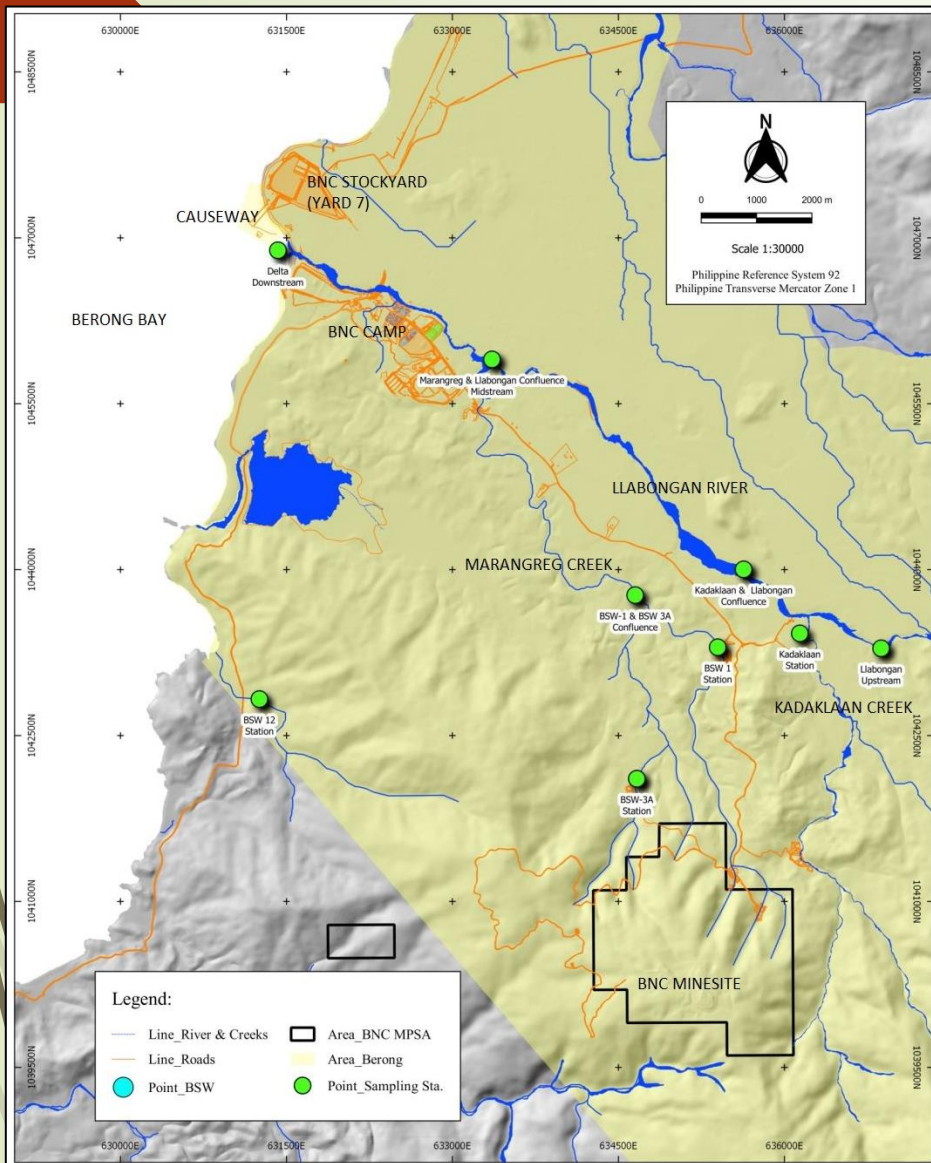


R.A. 9275 (Philippine Clean Water Act of 2004)

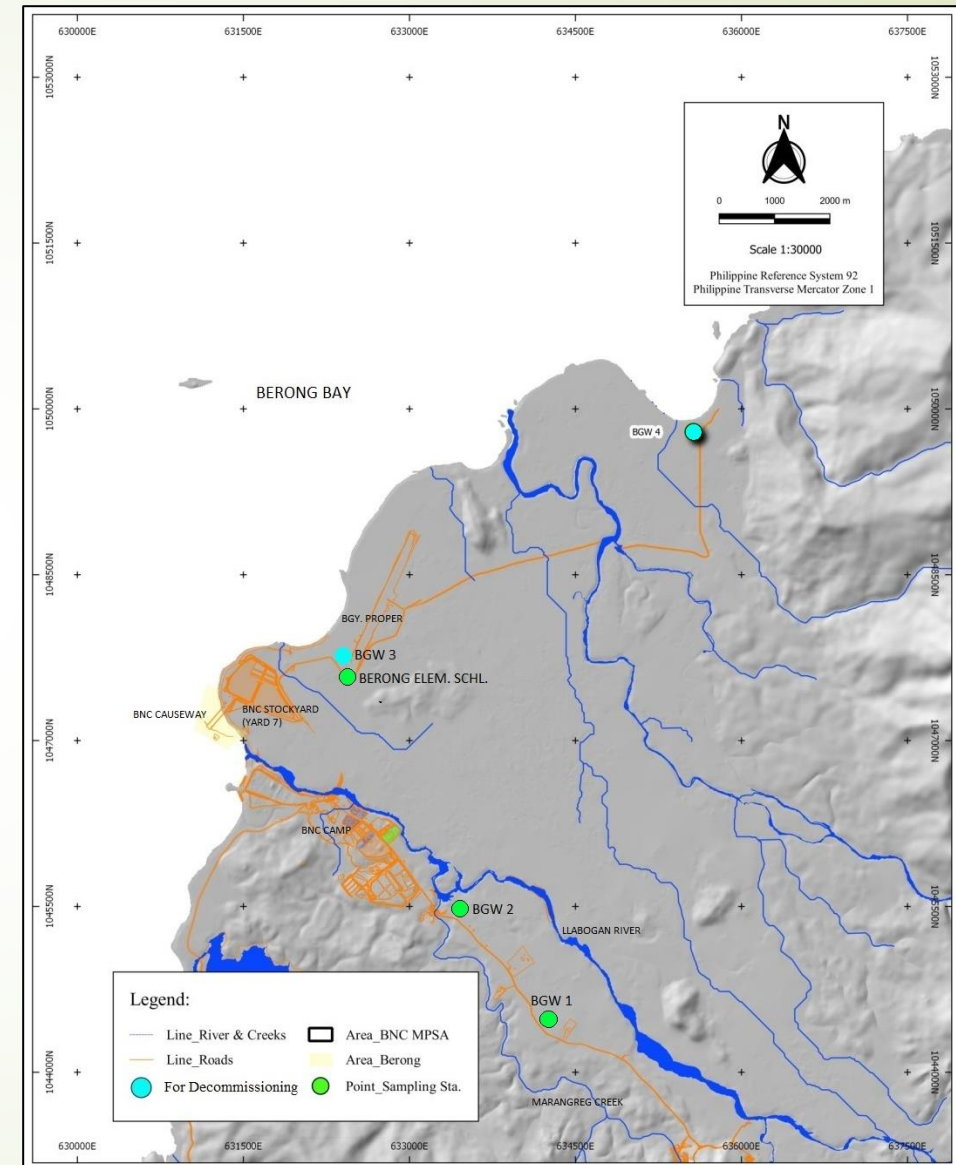
Badlisan



Surface Water Sampling Stations



Ground Water Sampling Station Map



The remaining underground water sampling station is BGW 2. The rest are no longer operational or destroyed.

MMT EFFLUENT WATER SAMPLING ACTIVITY

KM 7



Kokokon



MMT WATER SAMPLING ACTIVITY

Kadaklaan Creek



BSW 1 (Effluent)



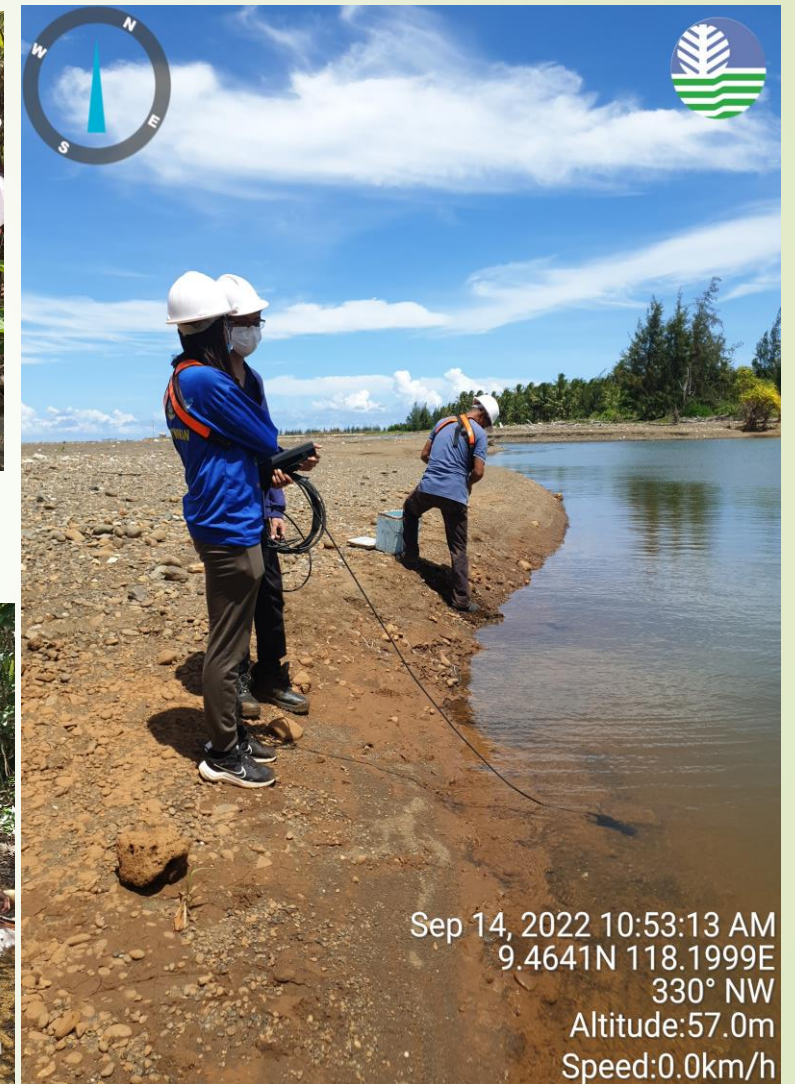
Llabungan Midstream



Marangreg



Llabungan Delta



Llabungan Upstream



BSW 12



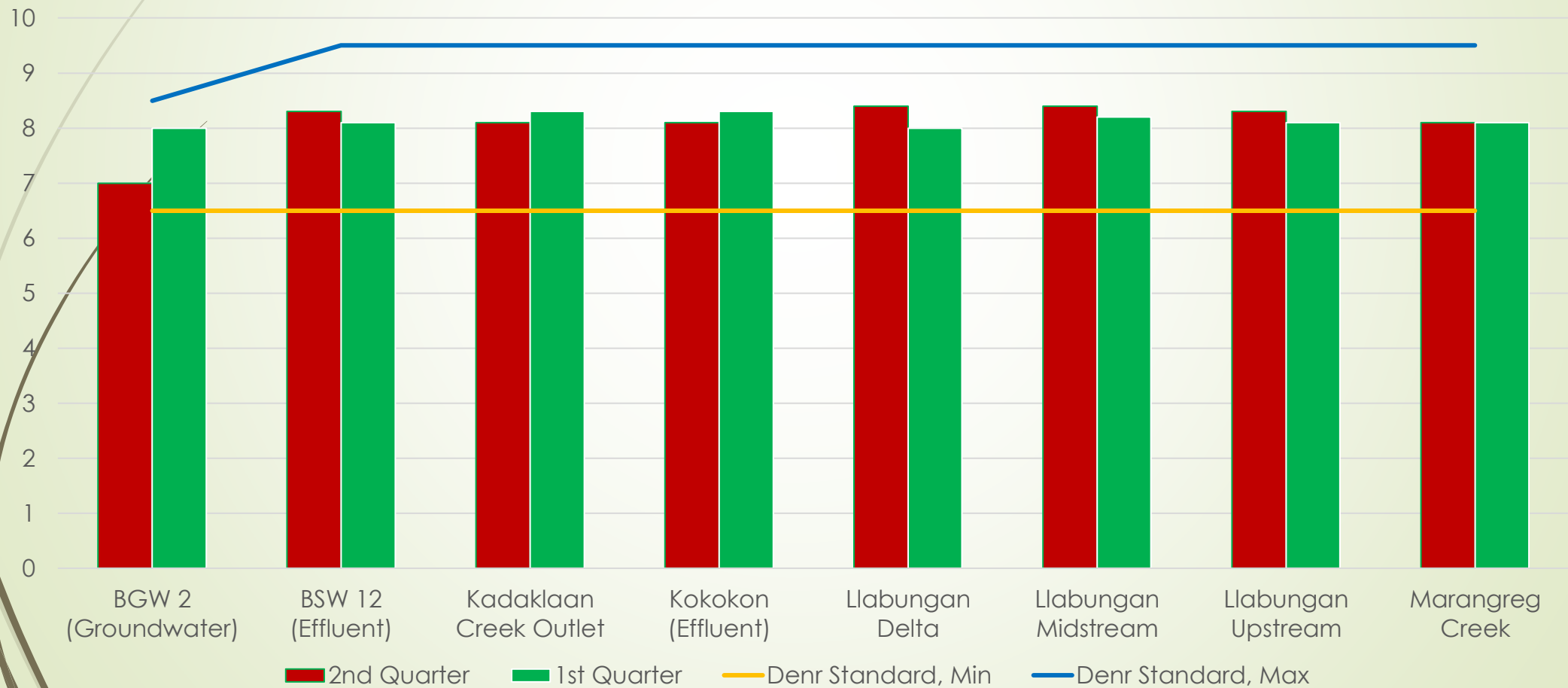
UNDERGROUND WATER SAMPLING

BGW 2



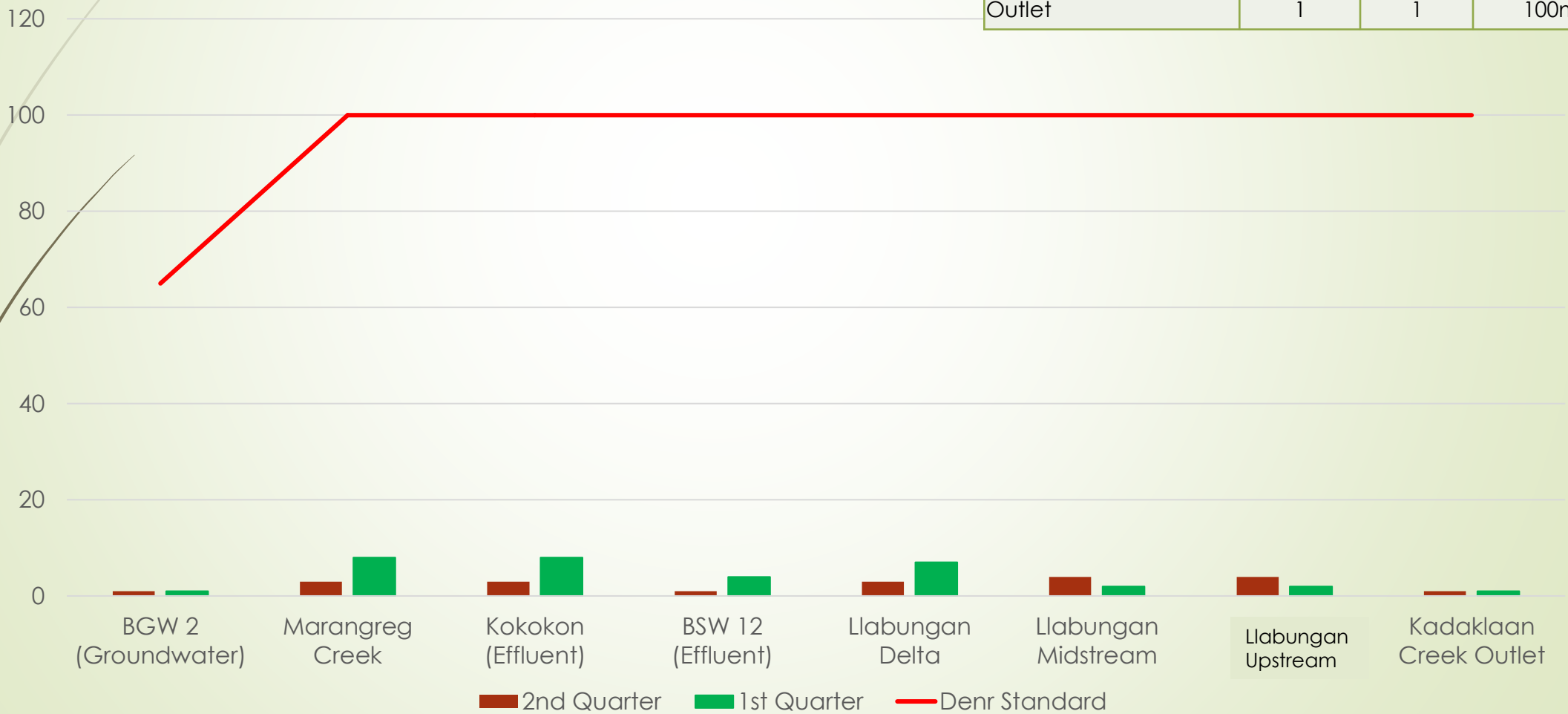
2022 Underground and Surface Water
Quality Monitoring Result
pH

	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	7	8	6.5 - 8.5
BSW 12 (Effluent)	8.3	8.1	6.5 - 9.5
Kadaklaan Creek Outlet	8.1	8.3	6.5 - 9.5
Kokokon (Effluent)	8.1	8.3	6.5 - 9.5
Llabungan Delta	8.4	8	6.5 - 9.5
Llabungan Midstream	8.4	8.2	6.5 - 9.5
Llabungan Upstream	8.3	8.1	6.5 - 9.5
Marangreg Creek	8.1	8.1	6.5 - 9.5



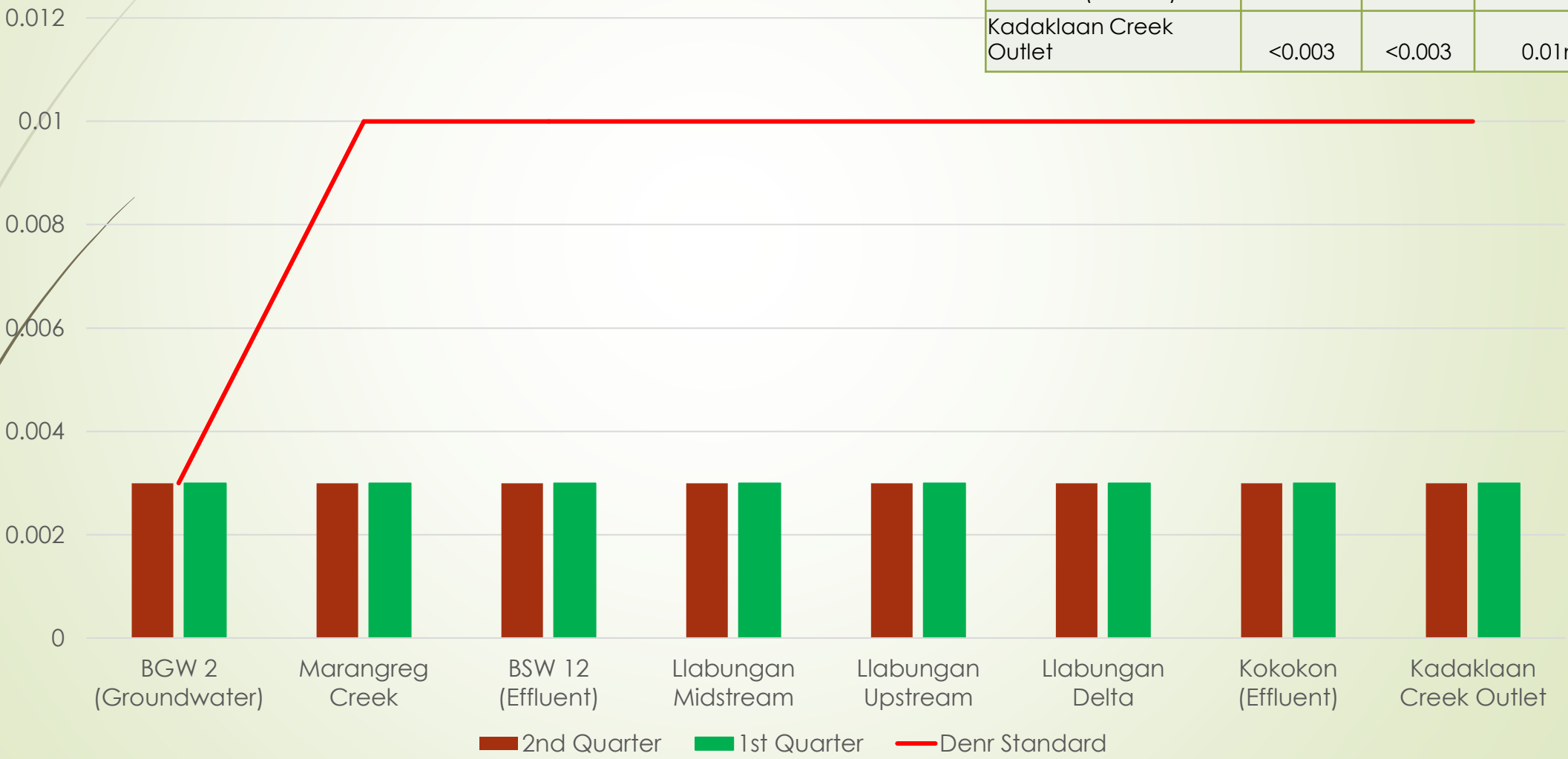
2022 Underground and Surface Water Quality
Monitoring Result
TSS

	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	1	1	65 mg/L
Marangreg Creek	3	8	100mg/L
Kokokon (Effluent)	3	8	100mg/L
BSW 12 (Effluent)	1	4	100mg/L
Llabungan Delta	3	7	100mg/L
Llabungan Midstream	4	2	100mg/L
Llabungan Upstream	4	2	100mg/L
Kadaklaan Creek Outlet	1	1	100mg/L



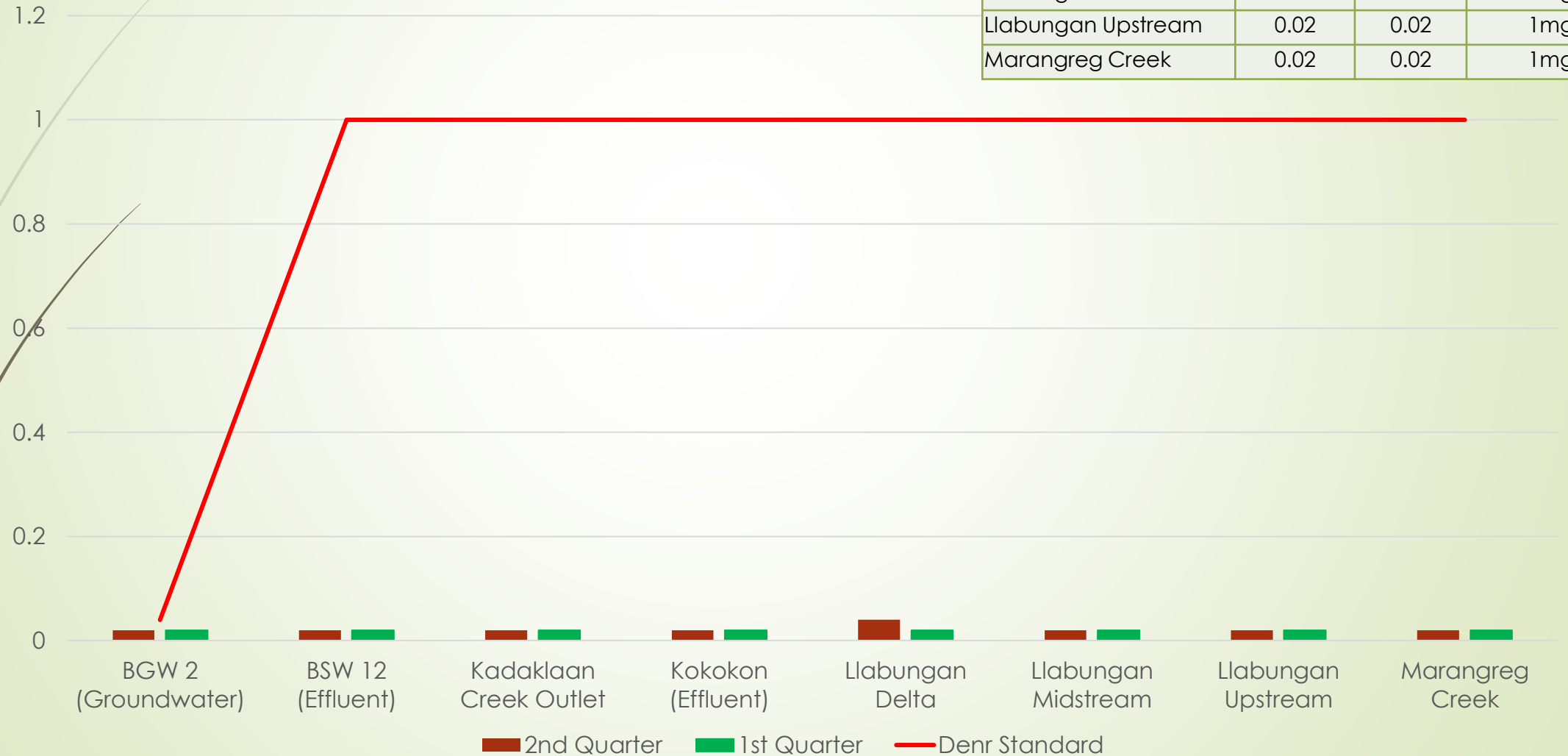
2022 Underground and Surface Water Quality
Monitoring Result
Cadmium

	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	<0.003	<0.003	0.003mg/L
Marangreg Creek	<0.003	<0.003	0.01mg/L
BSW 12 (Effluent)	<0.003	<0.003	0.01mg/L
Llabungan Midstream	<0.003	<0.003	0.01mg/L
Llabungan Upstream	<0.003	<0.003	0.01mg/L
Llabungan Delta	<0.003	<0.003	0.01mg/L
Kokokon (Effluent)	<0.003	<0.003	0.01mg/L
Kadaklaan Creek Outlet	<0.003	<0.003	0.01mg/L

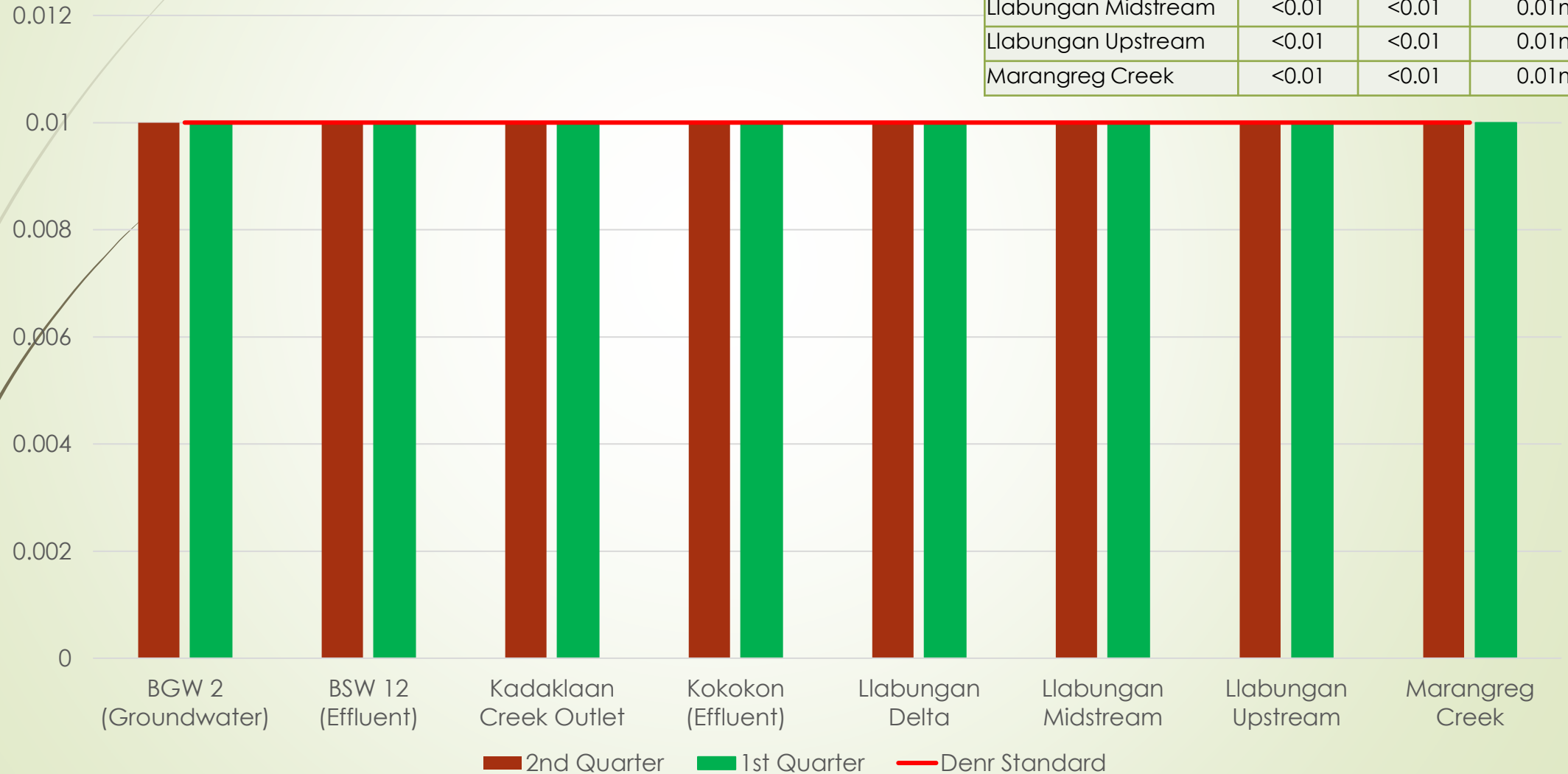


2022 Underground and Surface Water Quality Monitoring Result Nickel

	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	0.02	0.02	0.04mg/L
BSW 12 (Effluent)	0.02	0.02	1mg/L
Kadaklaan Creek Outlet	0.02	0.02	1mg/L
Kokokon (Effluent)	0.02	0.02	1mg/L
Llabungan Delta	0.04	0.02	1mg/L
Llabungan Midstream	0.02	0.02	1mg/L
Llabungan Upstream	0.02	0.02	1mg/L
Marangreg Creek	0.02	0.02	1mg/L



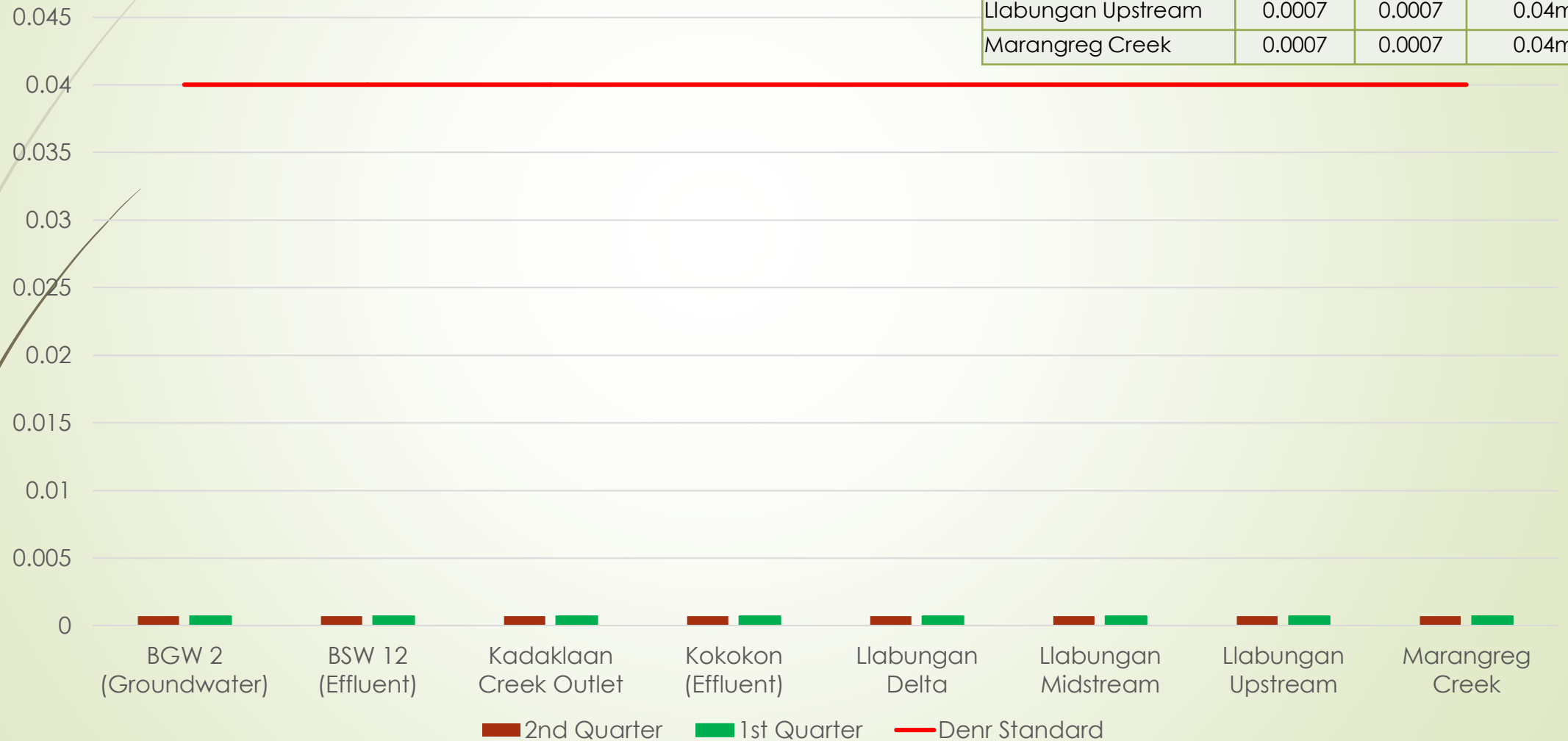
2022 Underground and Surface Water Quality Monitoring Result Lead



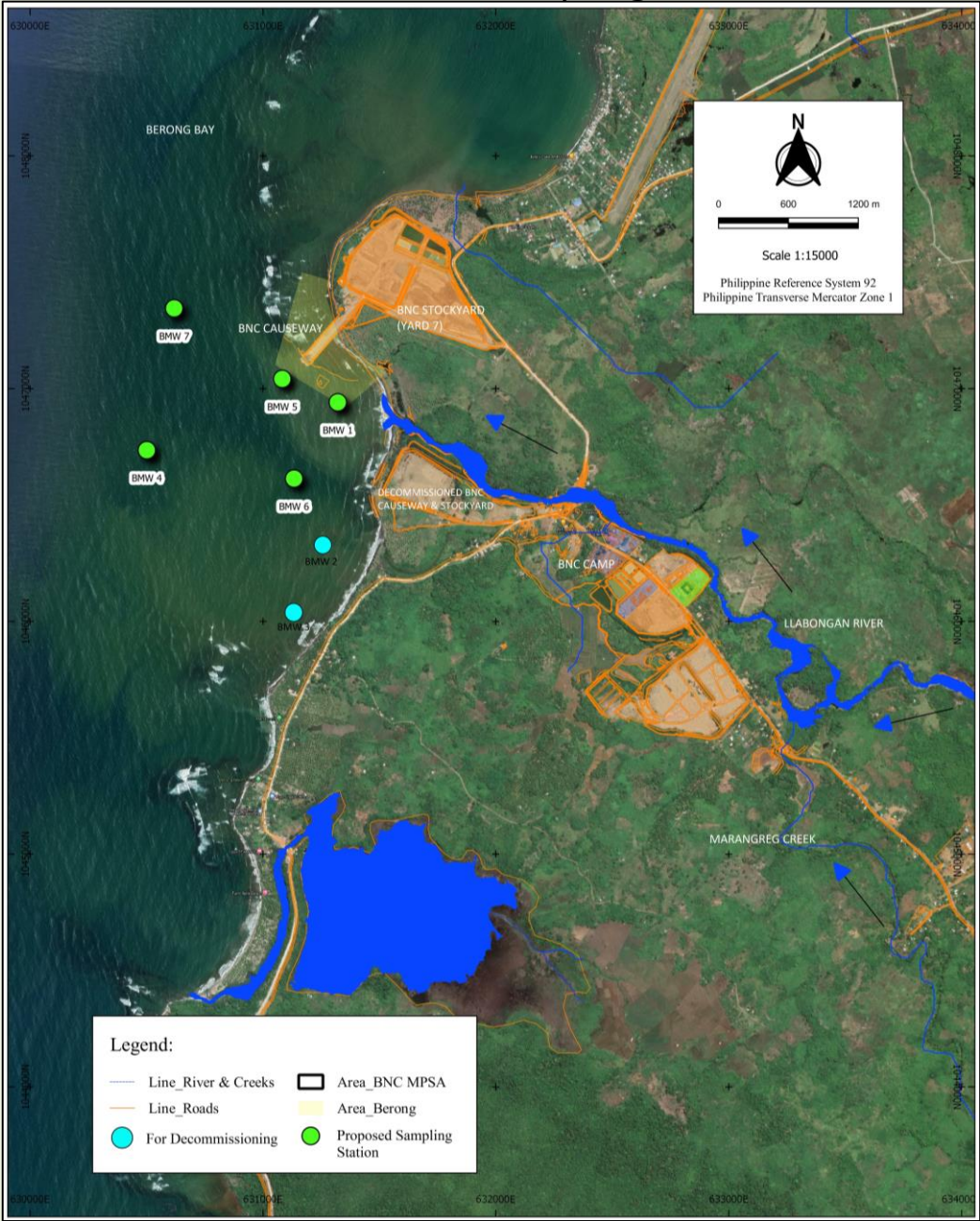
	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	<0.01	<0.01	0.01mg/L
BSW 12 (Effluent)	<0.01	<0.01	0.01mg/L
Kadaklaan Creek Outlet	<0.01	<0.01	0.01mg/L
Kokokon (Effluent)	<0.01	<0.01	0.01mg/L
Llabungan Delta	<0.01	<0.01	0.01mg/L
Llabungan Midstream	<0.01	<0.01	0.01mg/L
Llabungan Upstream	<0.01	<0.01	0.01mg/L
Marangreg Creek	<0.01	<0.01	0.01mg/L

2022 Underground and Ambient Water Quality Monitoring Result Arsenic

	2nd Quarter	1st Quarter	Denr Standard
BGW 2 (Groundwater)	0.0007	0.0007	0.04mg/L
BSW 12 (Effluent)	0.0007	0.0007	0.04mg/L
Kadaklaan Creek Outlet	0.0007	0.0007	0.04mg/L
Kokokon (Effluent)	0.0007	0.0007	0.04mg/L
Llabungan Delta	0.0007	0.0007	0.04mg/L
Llabungan Midstream	0.0007	0.0007	0.04mg/L
Llabungan Upstream	0.0007	0.0007	0.04mg/L
Marangreg Creek	0.0007	0.0007	0.04mg/L



Marine Water Sampling Stations



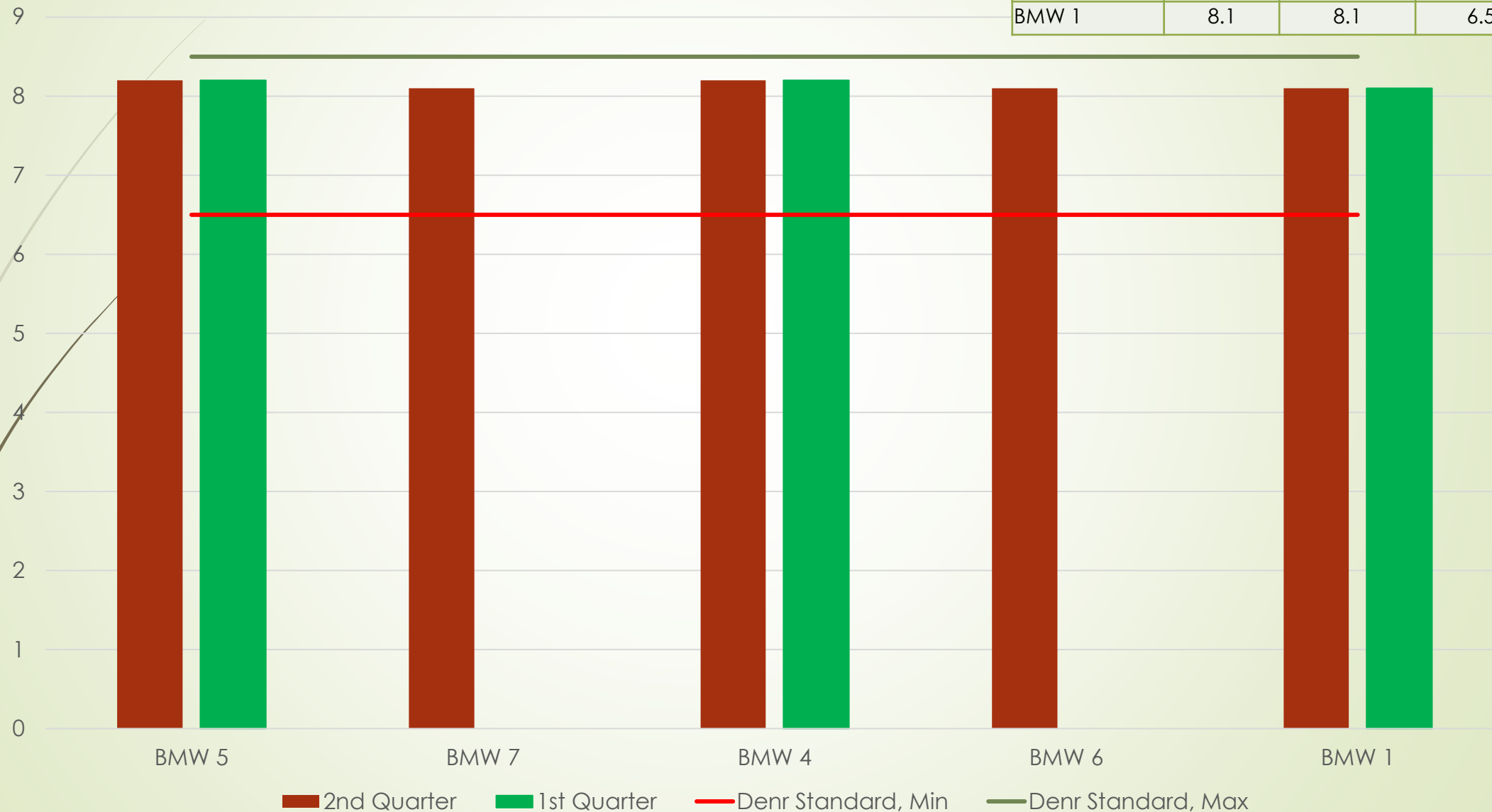
MARINE WATER SAMPLING ACTIVITY



2022 Marine Water Quality Monitoring Result

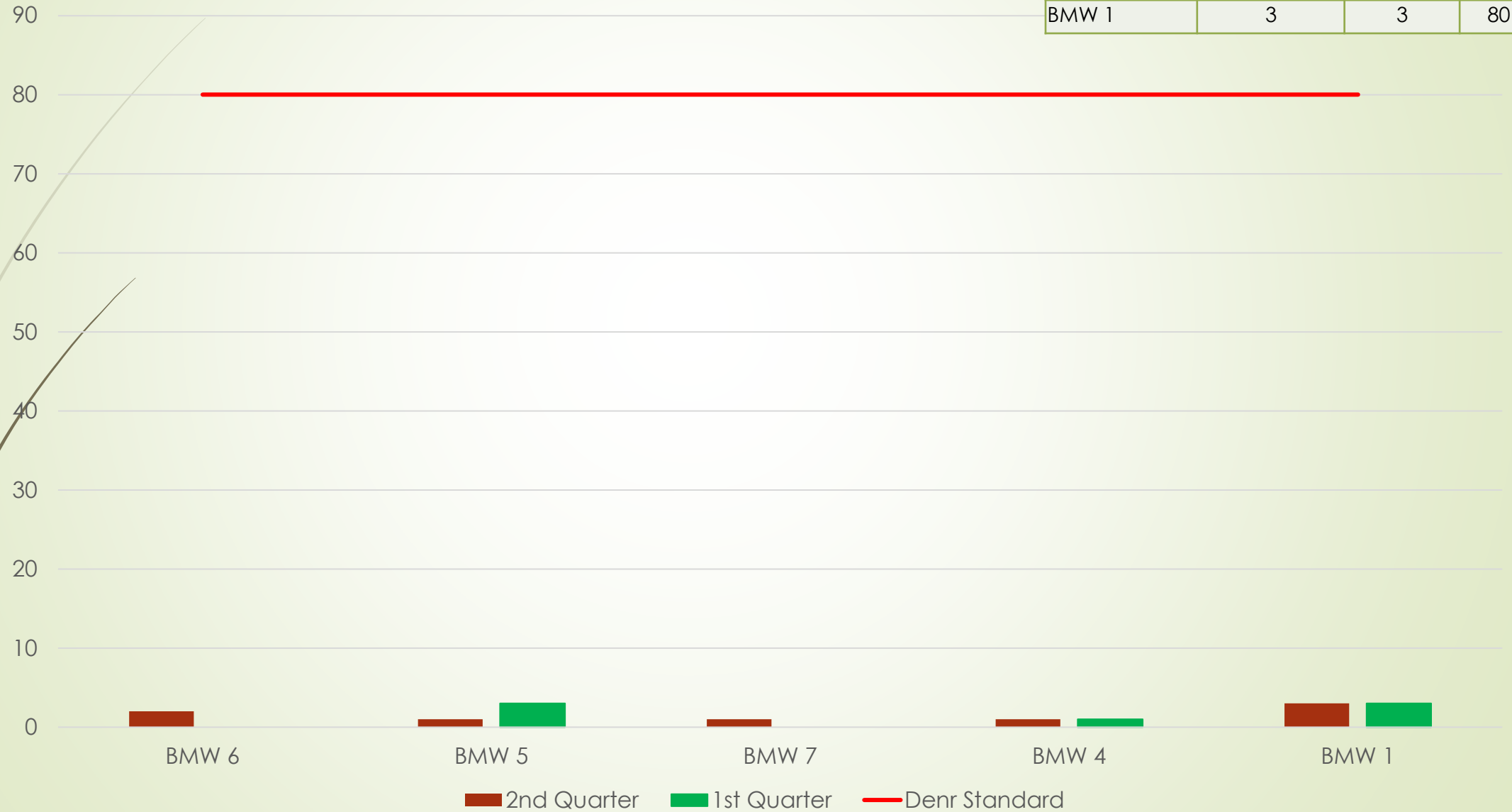
pH

	2nd Quarter	1st Quarter	Denr Standard
BMW 5	8.2	8.2	6.5 – 8.5
BMW 7	8.1	-	6.5 – 8.5
BMW 4	8.2	8.2	6.5 – 8.5
BMW 6	8.1	-	6.5 – 8.5
BMW 1	8.1	8.1	6.5 – 8.5



2022 Marine Water Quality Monitoring Result TSS

Marine	2nd Quarter	1st Quarter	Denr Standard
BMW 6	2	-	80 mg/L
BMW 5	1	3	80 mg/L
BMW 7	1	-	80 mg/L
BMW 4	1	1	80 mg/L
BMW 1	3	3	80 mg/L



2022 Marine Water Quality Monitoring Result Cadmium

Marine	2nd Quarter	1st Quarter	Denr Standard
BMW 6	0.003	-	0.005mg/L
BMW 5	0.003	0.003	0.005mg/L
BMW 7	0.003	-	0.005mg/L
BMW 4	0.003	0.003	0.005mg/L
BMW 1	0.003	0.003	0.005mg/L



2022 Marine Water Quality Monitoring Result Nickel

Marine	2nd Quarter	1st Quarter	Denr Standard
BMW 6	0.02	-	0.06 mg/L
BMW 5	0.01	0.01	0.06mg/L
BMW 7	0.02	-	0.06mg/L
BMW 4	0.02	0.02	0.06mg/L
BMW 1	0.02	0.02	0.06mg/L



2022 Marine Water Quality Monitoring Result Lead

Marine	2nd Quarter	1st Quarter	Denr Standard
BMW 6	0.01	-	0.05 mg/L
BMW 5	0.02	0.02	0.05 mg/L
BMW 7	0.01	-	0.05 mg/L
BMW 4	0.01	0.01	0.05 mg/L
BMW 1	0.01	0.01	0.05 mg/L

0.06

0.05

0.04

0.03

0.02

0.01

0

BMW 6

BMW 5

BMW 7

BMW 4

BMW 1

2nd Quarter

1st Quarter

Denr Standard

2022 Marine Water Quality Monitoring Result Arsenic

Marine	2nd Quarter	1st Quarter	Denr Standard
BMW 6	0.0007	-	0.02 mg/L
BMW 5	0.0007	0.0045	0.02 mg/L
BMW 7	0.0007	-	0.02 mg/L
BMW 4	0.0008	0.0007	0.02 mg/L
BMW 1	0.0007	0.0007	0.02 mg/L

0.025

0.02

0.015

0.01

0.005

0

BMW 6

BMW 5

BMW 7

BMW 4

BMW 1

2nd Quarter

1st Quarter

Denr Standard

R.A. 8749 (Philippine Clean Air Act of 1999)



Department of Environment and Natural Resources
Environmental Management Bureau
Region Office No. IV - B MIMAROPA

2017-POA-D-0453-334

Permit No

Date 09-Nov-17

**Additional
PERMIT TO OPERATE**
Air Pollution Source and Control Installations

Pursuant to Part VI of the Rules and Regulations of R.A. 8749, authority is hereby granted to:

BERONG NICKEL CORPORATION

Brgy. Berong, Quezon Palawan

(Name of Firm, Individual, Owner etc.)

(Address)

to operate the following:

One (1) unit 225 KVA "KOMATSU" Diesel Electric Generator; One (1) unit 360 KVA "KOMATSU" Diesel Electric Generator; One (1) unit 303 KVA "KOMATSU" Diesel Electric Generator set; One (1) unit 63 KVA "PERKINS" Diesel Electric Generator; One (1) unit 75 KVA "PERKINS" Diesel Electric Generator; Twelve (12) units 6 KVA "DOOSAN" Diesel Engine Tower Light; One (1) unit 6 KVA "TEREX" Diesel Engine Tower Light.

Recommended by:

Approved by:

ENGR. BUENA FE A. RIOFLORIDO
OIC, Clearance and Permitting Division

ENGR. MARIA SOCORRO A. ABU
OIC, Regional Director

Permit Conditions:

1. Must conform to National Ambient Air Quality Standards for Air Pollutants pursuant to Section 1, Rule XXV, Part VII of RA 8749.
2. Must submit notarized Quarterly Self-Monitoring Report (SMR) based on DAO-27, Series of 2003 on or before the filing dates:

1st Quarter SMR (January to March) -15th Day of April
2nd Quarter SMR (April to June) -15th Day of July
3rd Quarter SMR (July to September) -15th Day of October
4th Quarter SMR (October to December) -15th Day of January

3. Subject to revocation if found violating the said permit conditions and other provisions of the Philippine Clean Air Act of 1999 (RA 8749) and its Implementing Rules and Regulations.

This operating Permit shall be posted in a conspicuous location near the equipment and shall be adequately framed or otherwise protected against damage. Application for the renewal of Permit to Operate must be filed thirty (30) days before the expiration date.

O.R. No.	Fee	Date
5150149	Permit Fee 45,000.00	10/23/2017
5150149	Filing Fee 600.00	10/23/2017
5150308	Legal Research Fee 20.00	10/23/2017

Unless sooner revoked,
this permit is valid up to:
08-Nov-22



Generator Sets



2022 Air Quality Monitoring Result

	3rd Quarter	2nd Quarter	1st Quarter	DENR Standard
Minesite	0	7	1.3	300 $\mu\text{G}/\text{Ncm}$
So. Tungib	0.25	1.7	2.6	300 $\mu\text{G}/\text{Ncm}$
Campsite	0.16	2.1	2.1	300 $\mu\text{G}/\text{Ncm}$
Berong Elementary School	0.58	3.3	3.3	300 $\mu\text{G}/\text{Ncm}$
Marine Base	4.75	0.8	2.2	300 $\mu\text{G}/\text{Ncm}$
New Pieryard	0.25	1.3	2	300 $\mu\text{G}/\text{Ncm}$



AIR SAMPLING ACTIVITY

EQUIPMENT

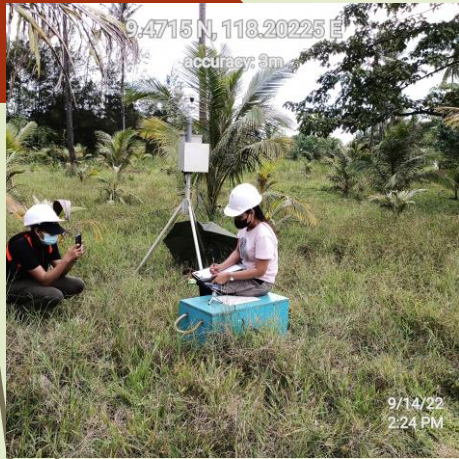
MET ONE E-SAMPLER

PARAMETER

PM10



NOISE SAMPLING ACTIVITY



Mine site



Berong Elementary School



Old Causeway



New Pier Yard 7

3rd Quarter 2022 MMT Noise Level Monitoring Results

Station Identification		Date	Time		NPCC Standard		Noise Level, dB			Remarks
					Area Category	Limit	Minimum	Maximum	Median	
AQ 1	Active Mine Site (Mine Look-out area)	15-Sep-22	8:20-8:35 AM	Morning	D	70	30.9	55.5	43.0	PASSED
AQ 2	Sitio Tungib (2 km North of mine pit)	14-Sep-22	7:40-7:55 AM	Morning	A	55	41.0	54.5	45.8	PASSED
AQ 3	BNC Camp (adjacent to ore stockyard area)	14-Sep-22	10:30-10:45 AM	Daytime	A	55	42.0	59.4	46.6	PASSED
AQ 4	Berong Elementary School	15-Sep-22	12:35-12:50 PM	Daytime	AA	50	40.8	57.3	49.0	PASSED
AQ 5	Old Causeway/Jetty Area	16-Sep-22	1:25-1:40 PM	Daytime	D	75	60.5	66.5	62.5	PASSED
AQ 6	New Pier/Yard 7	14-Sep-22	2:25-2:40 PM	Daytime	D	75	41.9	58.6	46.8	PASSED

Category of Area:

	Morning 5 AM-9 AM	Daytime 9 AM-6 PM	Evening 6 PM-10 PM	Nighttime 10 PM-5 AM
AA	45 dB	50 dB	45 dB	40 dB
A	50 dB	55 dB	50 dB	45 dB
B	60 dB	65 dB	60 dB	55 dB
C	65 dB	70 dB	65 dB	60 dB
D	70 dB	75 dB	70 dB	65 dB

Black font -within standard
Red font -failed


FINDINGS AND OBSERVATIONS

1. BNC has declared its end of mine life on December 31, 2021. The project was under Care and Maintenance from January to May 2022 wherein the Company laid off personnel and maintains a core group per department. Maintenance of the nursery and Campsite were conducted during that period
2. BNC is currently implementing the Final Mine Rehabilitation and Decommissioning Plan (FMRDP) which includes activities like bench correction, topsoil re-soiling, coco net installation, and mine-wide tree planting since 01 June 2022
3. That out of a total MPSA of 288 hectares, 169 hectares have been utilized, prior to the implementation of FMRDP activities, the Company have rehabilitated a total area of 66 hectares. Hence, the remaining mined out areas to be restored is 103 hectares with an approved fund of P110,909,970.00 for six (6) years implementation. Henceforth, the Company targeted 34.0 hectares for its first-year implementation with its respective fund of P35,618,930.00 and as of this date, out of 34 hectares, they already planted 6-hectares.
4. BNC has donated 15,093 seedlings to private individuals within and outside the impact area and in different entities both private and government offices within the province of Palawan.
5. BNC adopted seven (7) sites for the Adopt-A-Mangrove Forest project located in Puerto Princesa City, Sofronio Espanola, and Brgys. Tabon, Panitian, Isugod, Aramaywan and Berong in Quezon, Palawan with a total area of ninety-five (95) hectares and a total of 977,330 propagules planted and around 97% survival rate;

FINDINGS AND OBSERVATIONS

6. No Ore hauling was conducted since January 2022; last shipment was in May 2022;
7. A clean-up activity was conducted in celebration of the Month of the Ocean in So. Tagbolante, Brgy. Berong, Quezon, Palawan and in Yard 7;
8. A total of one hundred sixty-one (161) Pawikan (Sea Turtle) hatchings were released in April and again in June 2022 in the coast of Sitio Tagbolante, Brgy. Berong;
9. At present, there are nine (9) septic tanks for the exclusive use of the employees which are required to secure a Discharge Permit per EMB MC 2020-006.
10. There are four (4) fuel storage tanks each with a capacity of 18,000 liters in their fuel farm. The fuel tanks were not covered with Permit to Operate;
11. The twenty-seven (27) giant clams which are used as bio-indicator situated within the causeway were found to be missing, which is said to be poached by locals, accordingly.
12. There are ridges along the haul roads, specifically, Km 9.3, 7.6 and 14.2 that are exposed or bared.
13. Currently, two (2) generator sets are utilized as power source of electricity. The rest are brought to Semirara for disposal.

FINDINGS AND OBSERVATIONS



14. It has been observed that the planted giant bamboo within the on-going rehabilitation areas has low percentage of survival and deemed feeble which may not be suited to the soil/weather conditions.

15. The company is commended for the proper sloping, land preparation and usage of coco-net on rehabilitation.

RECOMMENDATIONS



1. The proponent is advised to secure an application Discharge Permit for the septic tanks as per EMB Memorandum Circular 2020-006 followed by the release of PCO accreditation certificate and to materialize the pending application for EMB permits.
2. The proponent is advised to install signages in every sampling stations even prior to the conduct of the water sampling for easy documentation of the sampling team .
3. Secure a Permit to Operate for the four (4) fuel storage tanks each with a capacity of 18,000 liters in the fuel farm one year prior to this inspection.
4. Installation of appropriate signages for the Residual Containment Area (RCA) and *apitan* as suggested by CENRO Kaluya.
5. The proponent is advised to notify EMB Regional Office regarding the disposal of the generator sets. Moreover, the company may consider the use of renewable energy to reduce carbon footprint.



THANK YOU!