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Environmental Protection Agency

Ensuring environmental protection & conserving biodiversity

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**FIELD ASSESSMENT
AT BEA MOUNTAIN
MINING
CORPORATION IN
KINJOR, GRAND
CAPE MOUNT
COUNTY**



**Presented by
EPA Technical Team**

PRESENTATION OUTLINE



- Introduction
- Methodology
- Key Findings
- Recommendations



INTRODUCTION



- On June 10, 2020, a team of EPA technician visited Bea Mountain Mining Corporation (BMMC) in Kinjor, Grand Cape Mount County
- The purpose of the visit was to conduct compliance monitoring and field verification of three (3) submissions presented by Petra Resource on behalf of BMMC:

Project	Details	Status
NLGM TSF Expansion	Project Brief submitted to EPA on 03-April, 2020	Payment made on 12-June, 2020; document scheduled for review; field verification conducted
NLGM Process Plant Upgrade	Project Brief submitted to EPA on 03-April, 2020	Payment made on 12-June,2020; document scheduled for review; field verification conducted
Discharge of Effluent from TSF	Audit report for permit renewal submitted to the EPA on 17-March, 2020	Payment made on 12-June, 2020; document scheduled for review; field verification conducted

METHODOLOGY



- Conferences (Opening and Closing)
- Physical Observation/Assessment
- Sampling
- Exsitu Laboratory Analysis

CONFERENCES



The Team immediately convened an opening meeting with the company's representatives to reveal the purpose of the visit.

BMMC Team

- Mr. Morris Gontor, Sr. Environmental Officer
- Mr. Shadrach Fahnbolleh, H&S Officer
- Mr. Senerr Alkan, Environmental Engineer

EPA Team

- Mr. Rafael S. Ngumbu, Laboratory Supervisor
- Mr. Jerry T. Toe Sr, National Focal Point -POPs
- Mr. Joseph Charles, Lab Technician
- Mr. G.Lenn Gomah, Lab Technician
- Mr. Levi Duo, Driver

PHYSICAL OBSERVATION/FINDINGS



- Bea Mountain is current operating an open wastewater treatment system at TSF-R contrary to the closed system approved by the Agency. This is due to an ongoing construction at TSF-R without notifying the Agency.
- The Company refused to grant the EPA team access to its internal monitoring laboratory reports; physical access to the laboratory was also not approved

PHYSICAL OBSERVATION/FINDINGS (2)



The company is carrying on construction of a canal in the TSF R without approval from the Agency



TSF-R Prior to new intervention



Ensuring Sustainable Environmental Management

PHYSICAL OBSERVATION/FINDINGS (3)



- ❖ The TSF-R which was used as one compliance monitoring points has been closed since December 2019
- ❖ A metal pipe about 25cm in diameter is being used to drain water from penstock system and discharge the water into the wetland just beyond the return water dam (TSF-R).



LABORATORY ANALYSIS OF WATER



Sampling of Effluents (Left) and Analytical Methods Used (Right)



Parameter	Analytical Method (instrumentation)
Free Cyanide (Free CN)	Colorimetry
Copper (Cu)	Photometry
Iron (Fe)	Colorimetry

SAMPLING POINTS



Sample ID	Location	GPS Coordinates
SP1	Around TSF-R	N 06 ⁰ 59' 25.3'' W 011 ⁰ 08' 12.7''
SP2	TSF-D	N 06 ⁰ 59' 25.2'' W 011 ⁰ 08' 05.9''
SP3	Penstock 5	N 06 ⁰ 59' 47.5'' W 011 ⁰ 07' 52.5''
SP4	TSF Pond	N 06 ⁰ 59' 47.5'' W 011 ⁰ 07' 52.5''

LABORATORY ANALYSIS OF WATER (2)



Results from water analysis around TSF R

Parameters (ppm)	SP1	IFC	WHO	LWQS III
Free CN	0.003	0.1	NG	NG
Copper	0.99	NG	0.05	≤0.2
Iron	4.38	NG	0.1	≤2.0

NB: Figures in bold are above either of the permissible limits

LABORATORY ANALYSIS OF WATER (2)



Results from water analysis around TSF R

Parameters (ppm)	SP2	SP3	SP4	IFC	WHO	LWQS III
Free CN	0.035	0.011	0.110	0.1	NG	NG
Copper	0.84	0.07	4.21	NG	0.05	≤0.2
Iron	0.36	0.16	0.13	NG	0.1	≤2.0

NB: Figures in bold are above either of the permissible limits

CONCLUSION



- Bea Mountain is operating an open wastewater treatment system at TSF R contrary to the closed system approved by the agency with out notifying the EPA.
- The company is also carrying on construction of a canal in the TSF R without approval from the Agency.
- The Company refused to grant the assessment team access for physical inspection of its laboratory and reports from previous analysis.
- Effluents from the Penstock system pumped into the environment (through a metal pipe) contains elevated (above permissible limits) levels of dissolved copper and iron
- Phase III amendment to the TSF has not been permitted by the Agency, yet upgrade began since December, 2019

RECOMMENDATIONS



- The senior management including the relevant technical staff of Bea Mountain should be invited for a conference for presentation of key findings from the assessment.
- The various non-compliance issues revealed by the team should be preceded by the imposition of by fine.
- Bea Mountain should prepare a sedimentation pond few meters from the discharge point at TSF R. This action will allow the suspended particles settle in the pond and the supernatant effluent eventually flows in the environment.
- The entire tailing dam should be surrounded by embankment or retaining wall. This will not allow the continuous extension of the tailing dam
- Bea Mountain should be given one week to submit a wastewater testing report from a third-party accredited laboratory.

RECOMMENDATIONS



- EPA should commence a monthly compliance-monitoring visit to all mining companies.
- BMMC should design and implement (pending EPA approval) remedial measures for current dissolved iron and copper contamination of the environment emanating from discharge from the penstock system (Penstock VI)
- BMMC should immediately hire a third party EPA accredited laboratory to commence regular quality control monitoring of effluents

