



SIX-MONTHLY COMPLIANCE REPORT

of

ENVIRONMENT CLEARANCE

(No. J-12011/26/2012-IA-I dated 4th September, 2019)

for

LOWER KOPI LI HYDRO ELECTRIC PROJECT (120 MW), ASSAM

TO

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE,

**IA.I Division, Indira Paryavaran Bhawan, 3rd Floor, Vayu Wing, JorBagh Road,
New Delhi - 110 003**



SUBMITTED BY

ASSAM POWER GENERATION CORPORATION LIMITED


November, 2023


Compliance of stipulated conditions of Environmental Clearance


Sl. No.	EC conditions	Status of Compliance
	Specific Conditions	
I	The Environmental Management Plan (EMP) shall be strictly adhered to and a sum of Rs.26147.5077 lakhs (Capital cost: 15427.689 lakhs & Recurring cost: Rs. 10117.817 lakhs), the budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also updated proportionately.	Agreed.
II	The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No.22-6512017-IA.III dated 1 st May 2018 regarding Corporate Environment Responsibility. Project proponent shall require to invest Rs 5.81 crore for CER activities as submitted to the Ministry. A total budget of Rs. 5.81 crore shall be spent for upgradation of education facilities in existing schools (Rs. 66.0 lakhs), construction of community toilets (Rs.380.0 lakhs), upgradation of Health care facilities (Rs. 115.0 lakhs) and awareness generation (Rs 20.0 lakhs). The entire activities under CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half-yearly compliance report and to a District Collector.	<p>Year wise CER and LAD plan are being prepared under the guidance of three committees through consultations with local people, Govt. line departments, etc. As soon as the plan is finalised it will be shared with MoEF&CC.</p> <p>Annexure 1 : LAD coordination Committee</p> <p>Annexure 2: Facilitation Committee</p> <p>Annexure 3 : CER, LAD committee</p>
III	The environmental clearance is valid for period of 10 years from the date of issue of this letter for commissioning of the project.	Agreed
IV	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment and downstream ecology. The study shall be undertaken by an independent agency, decided in consultation with the Ministry.	Agreed
V	Any other clearances/permissions/approvals from any other organization/department, as applicable to the project shall be taken.	<p>Agreed and obtained all the required clearances from other organization / department.</p> <p>As per the approved MOC from CEA on 9.11.22, APGCL has applied for approval for the changes required due to detailed engineering design from MoEF&CC on 4th September 2023. Subsequently after EAC held on 26.10.2023 has recommended the changes and the minute of the meeting is annexed at Annexure 4.</p>
VI	PP shall procure construction material only from those Govt./Pvt. Agencies/Corporations/etc. that are having all applicable legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.	Minor minerals are taken from the Govt. approved agencies. For extraction of aggregates, quarry area of 4.61 Ha has been identified and necessary clearances and permissions from North Cachar Hills Autonomous Council, Directorate of Geology and Mines, Forest Department has already been taken. EC accorded for the Quarry. Mostly the aggregates are being taken from the excavated materials only.

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VII	Based on the recommendation of Cumulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months or as submitted in the EIA/EMP report, whichever value is higher, shall be released as environmental flow.	Agreed
Standard conditions of Environmental Clearance		
I. Statutory compliance:		
i	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	<ul style="list-style-type: none"> • Stage-I Forest Clearance accorded by MoEF & CC, New Delhi on 5th February, 2019. • Stage-II Forest Clearance accorded by MoEF & CC, New Delhi on 04th December, 2020. <p>Pillar erection for the reservoir spread area already started and it will be completed before impounding.</p>   <p>Map of the reservoir spread boundary pillars fixed so far. (Annexure 5)</p> <p>The signage of designated muck disposal site is already fixed.</p>


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ii	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not Applicable. There is no Wildlife Sanctuary or National Parks within 10 km radius of the project site.
iii	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden, if applicable. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six- monthly compliance report, (in case of the presence of Schedule-I species in the study area).	<p>Site Specific Conservation Plan and Wildlife Management Plan submitted to Chief Wildlife Warden, Assam on 25.6. 19.</p> <p>Biodiversity Management Committee has been constituted for implementation of the Wildlife Management Plan on 12.10.2022.</p> <p>First Biodiversity Management Committee meeting was organized on 21.12.2022. 2nd BMC meeting held on 21.06.2023 in the Divisional Forest Office, Dima Hasao West Division, Haflong and the 3rd BMC meeting held on 12.12.23.</p>  <p>Annexure 6 : Attendance sheet</p> <p>Wildlife conservation and management plan was prepared during the EIA and it was submitted to CWLW, Assam. In the last two Biodiversity Management Committee meeting it was discussed and DFO's of the respective divisions were requested to prepare a year wise action plan for its implementation. Next BMC meeting will be held on 12.12.23 at DFO office DH where the draft plan for 1st year will be finalised for implementation.</p>


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iv	<p>The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.</p>	<p>Agreed.</p> <p>Package 2 Contractor has obtained the CTE and CTO for Crusher, 4 nos of DG sets; Batching Plant near power house along with 4 nos of DG sets and CTO for Batching Plant near Dam & 4 DG sets.</p> <p>CTO for crusher and DG sets obtained on 7/12.2021 vide Ref no. WB/SLC/T-1184/21-22/09/1152.</p> <p>CTO for batching plant near Dam and DG sets obtained on 03.01.2023 vide Reference No. WB/SLC/T-1191/21-22/39.</p> <p>CTO for batching plant near Power House and DG sets obtained on 31.10.2023 vide Reference No. WB/SLC/T-1191/21-22/31.</p> <p>CTE will be obtained before construction of the 120 MW power generating plant.</p> <p>All the CTOs were submitted in the last six monthly compliance report to MoEF&CC.</p> <p>Package 2 Contractor has also obtained the following CTOs.</p> <p>CTO for 15 KLD Water Treatment Plant vide No. WB/SLC/T-1191/22-23/9 dated 26.04.2023.</p> <p>CTO for 15 KLD Water Treatment Plant vide No. WB/SLC/T-1191/22-23/12 dated 26.04.2023.</p> <p>Hot mix plant is not installed for the project. Roads were blacktopped by engaging an approved third party who was doing road improvement works from Lanka to Umrangso.</p> <p>Sedimentation tank was prepared for the batching plant. Cement slurries are regularly cleared from the tank and deposited in the dumping ground in the revenue land.</p>  <p>As the sediment tanks were not adequate additional tanks are to be constructed. Contractor has initiated the process.</p>


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v	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.	Obtained and already submitted.
vi	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crore.	Obtained and already submitted.
II. Air quality monitoring and preservation		
i	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be used as a baseline data for post construction EIA / Monitoring purposes.	Regular monitoring done at project site at various sampling stations as mentioned in the EMoP (Environmental Monitoring Reports are enclosed in Annexure-7 . The monitoring were carried out by MoEF & CC recognized Lab).
ii	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.	Regular monitoring done at project site. Adequate spraying of water in roads and dust control measures has already been installed in respective dust generation site.
iii	Necessary control measures such as water sprinkling arrangements, etc. bet taken up to arrest fugitive dust at all the construction sites.	Regular monitoring done at project site and water sprinkling done. 
III. Water quality monitoring and preservation		
i	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.	Agreed.
ii	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet is submitted to the Regional Office, MoEF & CC and to the CWC on weekly basis.	Regular recording of discharge data were taken from Kopili river. Automatic real-time sensor to collect data on water inflow and out flows from the hydropower dam is under process.

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IV. Noise monitoring and prevention		
i	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.	<p>Agreed. All the DG sets are with acoustic enclosures.</p> 
ii	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Monitoring reports are enclosed in Annexure 7 and complied the Ambient Noise level standards.
V. Catchment Area Treatment Plan		
i	Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.	<p>An Amount of Rs. 28, 29, 67,000.00 (Rupees Twenty Eight Crore Twenty Nine Lakh Sixty Seven Thousand) only already paid to Forest Department for implementation of Catchment Area Treatment Plan (CATP). APGCL is pursuing with Forest Department for implementation. Implementation report from the State Forest Department not yet received.</p> <p>As per CAT Plan the land bank map was prepared (Annexure 8). As per the letter from CEO, CAMP, Govt of Assam the preparation of the action plan and implementation of CAT Plan will be initiated in the AOP 2024-2025. Letter dated 11.10.23 enclosed (Annexure 9).</p>
VI. Waste management		
i	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.	<p>At present dumping of excavated earth in 4 locations in Revenue land are going on. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures will be carried out so that sites are stabilized quickly.</p> <p>Copy of the approved Muck Management Plan is enclosed in Annexure 10. The plan was updated based on the site conditions</p>

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		and as per the approved design by CEA. Subsequently it was approved by APGCL and PMC and submitted to ADB.
ii	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.	Agreed. SWM plan submitted to APGCL by package 2 contractor. At present segregation is going on at source and composting process is undertaken at site. Recyclable wastes are taken by vendors. Package 1, 2, 3 contractors has an agreement with the Umrangso Municipality Board for disposal of Solid wastes.
VII. Green Belt, EMP Cost, Fisheries and Wildlife Management		
i	Detailed information on species composition particular to fish species from previous study/literature be inventoried and proper management plan shall be prepared for in situ conservation in the streams, tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.	<p>Agreed. As per EC condition Downstream river ecology study will be conducted after 5 years of commissioning of the project as per the stipulation 7.(IV) to update the baseline information and plan will be updated accordingly.</p> <p>proposal is under consideration of APGCL and it will be discussed in the forthcoming MDC meeting with Fishery experts on 11.12.23 for proper implementation.</p> <p>Disaster Management Plan is already in place. Moreover M/s. RMSI has been entrusted to implement Community Resilience and Disaster Preparedness for the 5 downstream districts of the LKHEP in the state of Assam.</p> <p>The main activities are described below:</p> <ol style="list-style-type: none"> Identify six villages, one in each district and undertake a needs assessment. Following the assessment design and implement a participatory village resilience disaster risk reduction plan to increase resilience and disaster preparedness. Implement the village disaster risk reduction plan in consultation with village communities; To develop a robust flood prediction model and an early warning system and correlate to anecdotal evidence for confirmation of flood prone areas and to improve disaster preparedness of the communities, including development of


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		<p>disaster mitigation plans that will be shared with government agencies.</p> <p>iii. Undertake training of state agencies on watershed management and disaster risk management</p> <p>iv. Identify six villages (one from each district) to carry a participatory village resilience disaster risk reduction. Implement the village disaster risk reduction in consultation with the village communities</p> <p>v. In the trainings, ensure that at least 500 people (90% are vulnerable households of which about 40% to be women) have increased their capacity on disaster risk management. In the process, develop a household evacuation plan for the downstream districts of Nagaon, Hojai, and Morigaon;</p> <p>vi. Conduct training workshops for APCGL, ASDMA, WRD, Disaster Management Committees of the downstream districts of Nagaon, Hojai, and Morigaon.</p>
ii	Wildlife Conservation Plan prepared for both core and buffer zones shall be implemented in consultation with the local State Forest Department, if applicable.	Wildlife conservation and management plan was prepared during the EIA and it was submitted to CWLW, Assam. In the last two Biodiversity Management Committee meeting it was discussed and DFO's of the respective divisions were requested to prepare a year wise action plan for its implementation. Next BMC meeting will be held on 12.12.23 at DFO office DH where the draft plan for 1 st year will be finalised for implementation.
iii	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.	<p>Agreed.</p> <p>Plantation already initiated.</p>  <p>28-Sep-2023 12:08:34 25°40'3.09853"N 92°47'0.23536"E</p> <p>Plantation in the periphery of the reservoir will start soon.</p>
iv	Compensatory Afforestation programme shall be implemented as per the plan approved.	Agreed.

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		<p>An amount of Rs. 15, 94, 23,850.00 (Rupees Fifteen Crore Ninety Four Lakh Twenty Three Thousand Eight Hundred Fifty) plus overhead only already paid to Forest Department for Compensatory Afforestation (CA) in CAMPA head. The 8 patches of Revenue land has already been notified as Reserved Forest by Govt. of Assam.</p> <p>Nursery has been raised under Dima Hasao West Forest Division.</p> <p>Seedling of different sizes in the newly established nursery nearby the village TorteLangsu</p>  <p>Seedling of different sizes ready for plantation, Longku near the highway around the Forest office.</p>
v	Fish ladder/pass as envisaged in the EIA/EMP report shall be maintained for migration of fishes. Regular monitoring of this facility be carried out to ensure its effectiveness.	As the river water is acidic in nature, during the EIA study no fish ladder / pass was proposed. Hence Fish ladder/pass is not considered in this project. However as per the condition of MoEF&CC, APGCL requested CIFRI to carry out a study on the availability of migratory aquatic species in the river Kopili within the project impact area.
VIII. Public hearing and Human health issues		
i	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt., if any.	<p>Agreed. Implementation is going on.</p> <ol style="list-style-type: none"> 1. Copy of the Combined Resettlement and Tribal Development Plan (CRTDP) and the approval letters from the GOI and the autonomous district councils are attached as Annexure-11. 2. R&R Plan has been fully implemented barring few whose documents lacks authenticity. 3. Copy of fund utilization at

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		Annexure 12.
ii	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in to.	<p>Agreed. Local Area Development Plan will be implemented as per plan. Facilitation Committee for implementation of Local Area Development Plan is constituted and accordingly meetings are conducted.</p> <p>APGCL has already taken up Community development work through the respective contractors as the contract is awarded under EPC mode.</p> <p>As the requirements evolves during the progress of the project, instead of a firm plan-based implementation program, APGCL has decided to go for Need Based Community Requirement, which is more aligned to the requirement of the community.</p> <p>Moreover, APGCL will also support community development works under LAD and CER.</p>
iii	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.	<p>Agreed.</p> <p>Package 2 contractor has already taken up appropriate measures to control mosquitos.</p>
iv	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	<p>Agreed.</p> <p>Package 2 contractor has already constructed labour camps with he following facilities like - common kitchen, Sanitary and mobile toilets, safe drinking water, medical health care, etc.</p>
v	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.	<p>Medical facility (First Aid Center) provided by the contractor at site.</p>  <p>Health and AIDS awareness camp at First Aid centre.</p>
vi	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.	<p>At present Early warning is given by district administration Disaster Management Cell and discharge data is shared by NEEPCO project authority located upstream.</p> <p>Project specific Early Warning Telemetric system will be installed before impounding</p>

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		of water.
vii	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Dam Break Analysis	Agreed. The Disaster Management Plan is prepared.
IX. Corporate Environment Responsibility		
i	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 01.05.2018, as applicable, regarding Corporate Environment Responsibility.	<p>Agreed.</p> <p>Now will be covered under EMP as per OM of MoEF&CC. Moreover, there is also similar provisions in Local Area Development Fund under CRTDP. Activities will be carried out in phase manner.</p> <p>Year wise CER and LAD plan are being prepared under the guidance of three committees through consultations with local people, Govt. line departments, etc. As soon as the plan is finalised it will be shared with MoEF&CC.</p> <p>Annexure 1 : LAD coordination Committee Annexure 2: Facilitation Committee Annexure 3 : CER, LAD committee</p>
ii	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation	<p>1. Skill mapping and assessment already done under R&R Plan by NGO (Already submitted to MoEF&CC in Annexure 21 along with the last compliance report).</p> <p>2. Tender for engagement of an agency for Livelihood Training Program has been finalized. Selection of the agency is under process.</p>
iii	The PP shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	<p>Agreed.</p> <p>1. APGCL has an environmental policy in place. (Annexure 13)</p> <p>2. Standard Operating Procedure (SOP) is under review.</p>
iv	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel are in place.

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v	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	Agreed and initiated.
vi	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.	Agreed. Will be carried out after 5 years of commissioning of the project.
vii	Multi-Disciplinary Committee (MDC) be constituted with experts from Ecology, Forestry, Wildlife, Sociology, Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project. The monitoring report of the Committee shall be uploaded in the website of the Company.	Agreed and is in place. 1 st MDC meeting was convened on 6 th May, 2022. Minutes of the meeting already shared in the last Six monthly compliance report. 2 nd MDC meeting was held on 20.06.23 at site. MOM of 2 nd MDC attached in Annexure 14 . 3 rd MDC meeting held on 11.12.23 at Project site, Longku.
X. Miscellaneous		
i	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by 5 prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Already done. Copy of EC in the APGCL site : https://www.apgcl.org/lkhep.php
ii	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Already done.
iii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Agreed and posted in Parivesh portal of MOEF&CC. Displayed in the APGCL site : https://www.apgcl.org/lkhep.php
iv	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Agreed and submitted every six months in the Parivesh portal as well as hard copy submitted to IRO.
v	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Agreed and will be submitted during operation.

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vi	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Agreed.
vii	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	<p>Agreed.</p> <p>In the package 1 water flow Meters installed and records are being kept. (Annexure 15).</p>  <p>For other 2 packages, it will be implemented.</p>
viii	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Agreed.
ix	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	<p>Agreed.</p> <p>During the detail designing and execution of the EPC contract minor adjustments were made with the approval from Central Electricity Authority, Central Water Commission, Geological Survey of India, Central Soil and Material Research Station, GOI keeping the power generation capacity of 120 MW, location of the Dam Axis, FRL of 226m, alignment of HRT remaining same as mentioned in the EC. For the above changes APGCL has sought the approval from MPEF&CC and accordingly on 14.11.23 EAC recommended the proposal. (MOM of EAC enclosed in Annexure 4.)</p> <p>MoEF&CC has put two conditions for compliance, i.e.</p>

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		<p>1. Aquatic study specially, migratory aquatic species concerning occurrence of fishes / habitat impact studies shall be carried out from recognized Govt. Institutes and prepared mitigation measures, with provision of financial budget revised in the EMP, the outcome of the said study shall be implemented.</p> <p>2. Submit undertaking that R&R scenario / habitat of flora and fauna of project are not change due to modification of the project components.</p> <p>Steps has been initiated by APGCL entrusting CIFRI for undertaking the study. Copy of the undertaking is enclosed in Annexure 16.</p>
x	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.
xi	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Agreed.
xii	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Agreed.
xiii	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	Agreed.
xiv	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	Agreed.
xv	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Agreed.

ANNEXURES : 1 - 16

Annexure 1 : LAD coordination Committee



ASSAM POWER GENERATION CORPORATION LIMITED

Registered Office: Bijulee Bhawan, 3rd floor, Paltanbazar, Guwahati-781 001, Assam

Mridul saikia

Chief General Manager (PP&I)

Project Director (PMU)

E-mail : mridul.saikia@apgcl.org

No: APGCL/LKHEP/PD/2017-18/21/Part-I/Part file-1/126

Dated: 11.11.2022

OFFICE ORDER

A Co-ordination Committee is hereby constituted for Lower Kopili Hydro Electric Project to facilitate consultation between Affected Peoples (APs), APGCL, District Council and NGO for discussion of APs problem regarding Land Acquisition, Rehabilitation & Resettlement and other aspects relating to Livelihood restoration and hence smooth implementation of CRTDP with the following members:

1. CGM (PP&I) APGCL- **Chairman**
2. GM LKHEP APGCL- **Member Convener**
3. GM (PP&I) APGCL- **Member**
4. DGM (Civil) LKHEP APGCL- **Member**
5. Social Safeguard Expert APGCL- **Member**
6. Environment Expert APGCL- **Member**
7. Social & Resettlement Expert PMC- **Member**
8. NGO CRADLE & GUS representative- **Member**
9. District Council Authority representative from Dima Hasao- **Member**
10. District Council Authority representative from Karbi Anglong- **Member**
11. Affected Peoples Representative- **Member**

NGO will facilitate consultation between the APs, APGCL and District Councils at the field offices and with the APs as and when required to discuss the implementation of CRTDP.


Chief General Manager (PP&I)
APGCL

Dated: 11.11.2022

Memo No: APGCL/LKHEP/PD/2017-18/21/Part-I/Part file-1/126(a)

Copy to:

- 1) The OSD to the Chairman, APGCL - for kind information of Hon'ble Chairman, APGCL
- 2) The OSD to the MD, APGCL- for kind information of MD, APGCL
- 3) Members concerned.
- 4) Relevant file.


Chief General Manager (PP&I)
APGCL

Annexure 2: Facilitation Committee

Date: - 25/11/2022

**ASSAM POWER GENERATION CORPORATION LIMITED
LOWER KOPILI HYDRO ELECTRIC PROJECT**

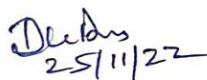
A review meeting was held on 11/10/2022 in the 3rd floor Chairman's conference hall, Bijulee Bhawan, Paltan Bazar, Guwahati-01 to discuss the CRTDP, JFPR & External monitoring works under 120MW Lower Kopili Hydro Electric Project. The meeting decided that a facilitation committee at site should be formed as per the contract agreement comprising officials of APGCL, NGO & PMC


A Facilitation Committee is hereby constituted to facilitate the implementation of CRTDP (Combined Resettlement and Tribal Development Plan) for the 120 MW Lower Kopili Hydro Electric Project funded by ADB and Govt. of Assam.

The committee shall facilitate all the works related to Resettlement and Rehabilitation (R&R) plan in accordance with the contract Agreement and liaison closely with the Project affected Families (PAF) and Project Affected Persons (PAP) in matters pertaining to other than land and property related i.e. R&R.

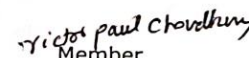
The following members of the committee are mentioned below:

1. Sri Dilip Kr Das, GM, LKHEP, APGCL-----Chairman
2. Sri Jonardan Rongpi, DGM(C), LKHEP, APGCL-----Convener
3. Sri Pankaj Hazarika, Social Expert, APGCL-----Member Secretary
4. Sri Victor Paul Choudhury, AGM (C), LKHEP, APGCL-----Member
5. Sri Sangram Singh, Social & Resettlement Expert, PMC, AFRY-----Member
6. Sri LP Singh, Social Development Expert, NGO GUS-----Member
7. Sri Mukut Deka, Training cum Livelihood Specialist, NGO Cradle-----Member


Chairman
GM, LKHEP
APGCL


Convener
DGM (C), LKHEP
APGCL


Member Secretary
Social Expert,
APGCL


Member
AGM (C), LKHEP
APGCL


Member
Social & Resettlement Expert,
PMC, AFRY


Member
Social Development Expert,
(NGO Cradle & GUS)


Member
Training cum Livelihood Specialist,
(NGO Cradle & GUS)



ASSAM POWER GENERATION CORPORATION LIMITED

Registered Office: Bijulee Bhawan, 3rd floor, Paltanbazar, Guwahati-781 001, Assam

Sri. Mridul Saikia

Project Director (PMU)

LOWER KOPILI HYDRO ELECTRIC PROJECT

E-mail: projectdirector@apgcl.com

No: APGCL/CGM(H)/W/2007/140/Pt-VI/43

Dated: 07/02/2022

OFFICE ORDER

In the interest of works, a committee is hereby constituted to supervise the works and determine the fund source for executing the works related to Corporate Environment Responsibility (CER), Conservation Plan for Schedule I Species under Environment Management Plan (EMP) and Local Area Development under Combined Resettlement and Tribal Development Plan (CRTDP) w.r.t Lower Kopili H.E. Project. The committee shall execute the works as per the regulations of Ministry of Environment, Forest & Climate Change (MoEF&CC) Govt. of India, Ministry of Tribal Affairs (MoTA) Govt. of India and Asian Development Bank (ADB). The committee shall comprise of the following members:

SL. No:	Members	Designation
1.	Th S. Singha, GM (PP&I), O/o the CGM (PP&I), APGCL	Head of the Committee
2.	Sri Saurav Saikia, GM (Civil) i/c, O/o the CGM (H&C), APGCL	Member
3.	Ph A. Singha, DGM (Civil), O/o the CGM (PP&I), APGCL	Member, Convenor
4.	Sri. A. Talukdar, DGM, O/o the CGM (PP&I), APGCL	Member
5.	Sri. M.J Pandit, AGM (Civil), O/o the CGM (PP&I), APGCL	Member
6.	Sri. P.J. Ligira, DM (ECE), O/o the GM, LKHEP, APGCL,	Member
7.	Sri. Gunjan Kr. Nath, JM (Civil), O/o the CGM (H&C), APGCL	Member
8.	Sri. A.J Pathak, AM (F&A), O/o the CGM (F&A), APGCL	Member
9.	Sri. Pankaj Hazarika, Social Safeguard Expert, APGCL	Member
10.	Dr. Deepak Baruah, Environmental Expert, APGCL	Member

The committee will be assisted by the PMC for LKHEP in the execution of the works.

Project Director (PMU)
APGCL

Copy to:

1. The OSD to the Chairman, APGCL, for kind information of Hon'ble Chairman.
2. The P.S. to Managing Director, APGCL, for kind information of Hon'ble MD.
3. The General Manager, Lower Kopili H.E. Project, Longku, for information.
4. The Team Leader, LKHEP, AFRY Ltd. for information and necessary action.
5. The Officers concerned.
6. Relevant file.



Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)



Minutes of 2ND MEETING OF THE EXPERT APPRAISAL COMMITTEE
meeting River Valley and Hydroelectric Projects held from 26/10/2023 to
26/10/2023

Date: 14/11/2023

MoM ID: EC/MOM/EAC/522623/10/2023
Agenda ID: EC/AGENDA/EAC/522623/10/2023
Meeting Venue: N/A
Meeting Mode: Virtual
Date & Time:

26/10/2023	10:30 AM	05:30 PM
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1. Opening remarks

The 2nd meeting (online mode) of the re-constituted EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on 26th October, 2023 under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The EAC while confirming the Minutes of the 1st EAC meeting held on 17-18 October, 2023 and recommended for addition of following para after completion of para no. 1.5.1 of Agenda Item No. 1.5 regarding grant of amendment in TOR issued on 09.11.2022 for conducting EIA study for construction of Tarali Off Stream Open Loop Pumping Storage Project (1500 MW) in an area of 150.74 ha at Village Kalambe, Jalu, Nivade and Tondoshi, Sub District Patan, District Satara, Maharashtra by M/s Adani Green Energy Limited, [Proposal No. IA/MH/RIV/443150/2023; F. No. J-12011/52/2023-IA.I (R)] : "...Shri Janardan Choudhary is presently working as Advisor in M/s Adani Green Energy Ltd; so, to avoid any conflict of Interest he had not participated in the deliberations on Agenda item No. 1.5 regarding grant of amendment in TOR issued by the Ministry on 09.11.2023 for conducting EIA study for construction of Tarali Off Stream Open Loop Pumping Storage Project (1500 MW) in an area of 150.74 ha at Village Kalambe, Jalu, Nivade and Tondoshi, Sub District Patan, District Satara, Maharashtra by M/s Adani Green Energy Limited of M/s Adani Green Energy Limited...." With the above corrections the EAC confirmed the Minutes of the 1st EAC meeting held on 17-18 October, 2023.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Lower Kopili HEP (120MW) in Karbi Anglong & Dima Hasao, Assam, by M/s Assam Power Generation Corporation Ltd. by APGCL located at DIMA HASAO, ASSAM			
Proposal For		Amendment in EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/AS/RIV/441844/2023	J-12011/26/2012-IA.I	23/10/2023	River Valley/Irrigation projects (1(c))

3.3.2. Project Salient Features

2.4.1: The proposal is for grant of amendment in Environmental Clearance to the Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd.

2.4.2: The Project Proponent and the accredited Consultant made a detailed presentation on the salient features of the project and informed that:

1. The Lower Kopili HEP (120 MW) is downstream development of existing Kopili HEP stage I and is located in east of Karbi Anglong and west of Dima Hasao districts of Assam.
2. The project is situated in the West Karbi Anglong and Dima Hasao (also known as North Cachar Hills) Autonomous District Council (ADC) areas of Central Assam. The Project location (dam site) is defined by 25°39'57.39"N latitude and 92°46'53.62"E longitude
3. The dam structure is located on Kopili River (a major tributary of the Brahmaputra River) and the main powerhouse and auxiliary power house structures are located on right bank of Kopili River.
4. The project envisages utilization of the regulated discharge from Kopili HEP, spills of Khandong and Umrong Dam and the discharge from the intermediate catchment by creation of a reservoir and utilizing a gross head of about 114m.
5. This is a run-of-the-river scheme.
6. The scheme has been conceived to run at full potential in monsoon season and operate as a peaking station in non-monsoon season.
7. **Land requirement:** The total land requirement of the project is 1577 ha. The forest land to be acquired for the project is 523 ha. The private land to be acquired for the project is 1054 ha.
8. **Forest Clearance:** In principle approval of Stage 1 Forest Clearance for the diversion of 523.046 ha of forest land was accorded on 27.03.2019.
9. **Environment clearance** for the project was accorded on **04.09.2019**
10. **E flow** will be maintained as per stipulation of EC.
11. **Salient features of the project:**

1. Land Area: 1577 Ha (Forest land 523.0 Ha, Revenue land 1054.0 Ha)
2. Power generation capacity: 120 MW (MPH – 2 X 55 MW; APH – 2 X 2.5 + 1 X 5 MW)
3. Location of Dam Axis: 25°39'57.39"N; 92°46'53.62"E
4. Location of MPH: 25°41'5 4.02"N; 92°48'15.98"E
5. Concrete Gravity Dam: Across the river Kopili at Longku
6. Dam Height 66.5 m
7. water conductor system comprising of an intake structure, head race tunnel along with surge shaft and pen stock.
8. **Project cost: 1031.58 Cr excluding the R&R land cost 84.33 Cr.**
9. **EMP cost: 26147.5077 lakh**
10. **CER cost: 5.81 Cr**

1. The details of amendment sought is as under: -

S. No.	Para/ details of EC issued by MoEF&CC	Details as per EC	To be revised/ read as	Justification/ reasons
1	Dam Height (m)	70.13	66.5	El. 228.00 m – El. 162.50 m = 66.50m. Change in dam design alters consumption of construction materials (e.g., concrete) and the volume of muck generated for disposal on-site.
2	Length of the Dam (m) Total width of dam structure including overflow & non overflow blocks	345.05	335.0	As per revised arrangement of NOF and OF section.
3	No of Spillways	8	6	10 m x 12.50 m. The discharging capacity of proposed spillway arrangement is verified on the physical hydraulic model study carried out in IRI, Roorkee and gate opening was found adequate to pass the PMF at N-1 condition.

				Same is approved by CEA
4	HRT Diameter (m)	6.65	7.0	Diameter of HRT is increased to ensure CEA approved head losses of 6m.
5	HRT length (m)	3619.62	3641.22	As per revised arrangement.
6	Tail Race Channel width (m)	26.3	26.0	Arrangement is revised to provide better hydraulic condition at the outlet of tail race.
7	Tail Race Channel length (m)	52.0	40.0	
8	Submergence area with the Reservoir spread (Ha)	552 submergence area	552 submergence area with reservoir spread of 620 Ha	Submergence area remains same i.e. 552 Ha within the reservoir spread of 620 Ha to accommodate plantation area as per EC and FC stipulation, Reservoir rim treatment, safety area for human and wildlife, within the existing land area of 1577 ha.

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

<p>The EAC deliberated on the information and as presented in the meeting and observed that the proposal is for Amendment in Environmental Clearance to the project for Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd.</p> <p>The project/activity is covered under Category A of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.</p>
--

3.3.5. Recommendation of EAC

Recommended

3.3.6. Details of Environment Conditions

3.3.6.1. Specific

Additional Condition	
1.	<ol style="list-style-type: none"> 1. Aquatic study specially, migratory aquatic species concerning occurrence of fishes /habitat impact studies shall be carried out from recognised govt. Institutes and prepared mitigation measures, with provision of financial budget revised in the EMP. The outcome of the said study shall be implemented. 2. Submit undertaking that R&R scenario /habitat of flora and fauna of project are not change due to modification of the project components.

	3. All the conditions mentioned in the EC dated 4.09.2019 shall remain unchanged.
--	---

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Prof. G. J. Chakrapani	Chairman	gov*****@es.iitr.ac.in	
2	Shri Ajay Kumar Lal	Member	akl****@gmail.com	
3	Dr Mukesh Sharma	Member (EAC)	muk****@iitk.ac.in	
4	Dr Uday Kumar R Y	Member (EAC)	uda*****@yahoo.com	
5	Shri Sharvan Kumar	Member (EAC)	Dir*****@gmail.com	
6	Dr J A Johnson	Member (EAC)	jaj@wii.gov.in	Absent
7	Dr B K Das	Member (EAC)	ami*****@icar.gov.in	
8	Shri Janardan Choudhary	Member	jan*****@gmail.com	
9	Dr. J V Tyagi	Member	jvt*****@gmail.com	Absent
10	Shri Kartik Sapre	Member	kar*****@gmail.com	
11	Alok Paul Kalsi	Member	emo***@nic.in	
12	Yogendra Pal Singh	Scientist E	yog*****@nic.in	

MINUTES OF THE 2ND MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 26TH OCTOBER, 2023 FROM 10:30 AM – 05.30 PM THROUGH VIDEO CONFERENCE (ONLINE MODE).

The 2nd meeting (online mode) of the re-constituted EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on 26th October, 2023 under the Chairmanship of Prof. G. J. Chakrapani. The list of Members present in the meeting is shown in the Annexure.

Agenda Item 2.4

Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd- Amendment in Environmental Clearance- Reg

[Proposal No. IA/AS/RIV/441844/2023; F. No. J-12011/26/2012-IA.I]

2.4.1: The proposal is for grant of amendment in Environmental Clearance to the Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd.

2.4.2: The Project Proponent and the accredited Consultant made a detailed presentation on the salient features of the project and informed that:

- i. The Lower Kopili HEP (120 MW) is downstream development of existing Kopili HEP stage I and is located in east of Karbi Anglong and west of Dima Hasao districts of Assam.
- ii. The project is situated in the West Karbi Anglong and Dima Hasao (also known as North Cachar Hills) Autonomous District Council (ADC) areas of Central Assam. The Project location (dam site) is defined by 25°39'57.39"N latitude and 92°46'53.62"E longitude
- iii. The dam structure is located on Kopili River (a major tributary of the Brahmaputra River) and the main powerhouse and auxiliary power house structures are located on right bank of Kopili River.
- iv. The project envisages utilization of the regulated discharge from Kopili HEP, spills of Khandong and Umrang Dam and the discharge from the intermediate catchment by creation of a reservoir and utilizing a gross head of about 114m.
- v. This is a run-of-the-river scheme.
- vi. The scheme has been conceived to run at full potential in monsoon season and operate as a peaking station in non-monsoon season.
- vii. **Land requirement:** The total land requirement of the project is **1577** ha. The forest land to be acquired for the project is 523 ha. The private land to be acquired for the project is 1054 ha.
- viii. **Forest Clearance:** In principle approval of Stage 1 Forest Clearance for the diversion of 523.046 ha of forest land was accorded on 27 .03.2019.
- ix. **Environment clearance** for the project was accorded **on 04.09.2019**
- x. **E flow** will be maintained as per stipulation of EC.
- xi. **Salient features of the project:**
 - a. Land Area: 1577 Ha (Forest land 523.0 Ha, Revenue land 1054.0 Ha)
 - b. Power generation capacity: 120 MW (MPH – 2 X 55 MW; APH – 2 X 2.5 + 1 X 5 MW)
 - c. Location of Dam Axis: 25°39'57.39"N; 92°46'53.62"E
 - d. Location of MPH: 25°41'5 4.02"N; 92°48'15.98"E
 - e. Concrete Gravity Dam: Across the river Kopili at Longku
 - f. Dam Height 66.5 m
 - g. water conductor system comprising of an intake structure, head race tunnel along with surge shaft and pen stock.
 - h. **Project cost: 1031.58 Cr excluding the R&R land cost 84.33 Cr.**
 - i. **EMP cost: 26147.5077 lakh**

j. **CER cost: 5.81 Cr**

xii. **The details of amendment sought is as under: -**

S. No.	Para/ details of EC issued by MoEF&CC	Details as per EC	To be revised/ read as	Justification/ reasons
1	Dam Height (m)	70.13	66.5	El. 228.00 m – El. 162.50 m = 66.50m. Change in dam design alters consumption of construction materials (e.g., concrete) and the volume of muck generated for disposal on-site.
2	Length of the Dam (m) Total width of dam structure including overflow & non overflow blocks	345.05	335.0	As per revised arrangement of NOF and OF section.
3	No of Spillways	8	6	10 m x 12.50 m. The discharging capacity of proposed spillway arrangement is verified on the physical hydraulic model study carried out in IRI, Roorkee and gate opening was found adequate to pass the PMF at N-1 condition. Same is approved by CEA
4	HRT Diameter (m)	6.65	7.0	Diameter of HRT is increased to ensure CEA approved head losses of 6m.
5	HRT length (m)	3619.62	3641.22	As per revised arrangement.
6	Tail Race Channel width (m)	26.3	26.0	Arrangement is revised to provide better hydraulic condition at the outlet of tail race.
7	Tail Race Channel length (m)	52.0	40.0	
8	Submergence area with the Reservoir spread (Ha)	552 submergence area	552 submergence area with reservoir spread of 620 Ha	Submergence area remains same i.e. 552 Ha within the reservoir spread of 620 Ha to accommodate plantation area as per EC and FC stipulation, Reservoir rim treatment, safety area for human and wildlife,

				within the existing land area of 1577 ha.
--	--	--	--	---

2.4.3: The EAC during deliberations noted the following:

The EAC deliberated on the information and as presented in the meeting and observed that the proposal is for Amendment in Environmental Clearance to the project for Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd.

The project/activity is covered under Category A of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

2.4.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting recommended for amendment in Environmental Clearance dated 4.09.2019 to the project for Lower Kopili HEP (120 MW) in Karbi Anglong & Dima Hasao, Assam by M/s Assam Power Generation Corporation Ltd under the provisions of EIA Notification, 2006, as proposed by the project proponent subject to compliance of following additional condition as under: -

- i. Aquatic study specially, migratory aquatic species concerning occurrence of fishes /habitat impact studies shall be carried out from recognised govt. Institutes and prepared mitigation measures, with provision of financial budget revised in the EMP. The outcome of the said study shall be implemented.
- ii. Submit undertaking that R&R scenario /habitat of flora and fauna of project are not change due to modification of the project components.
- iii. All the conditions mentioned in the EC dated 4.09.2019 shall remain unchanged.

ATTENDANCE

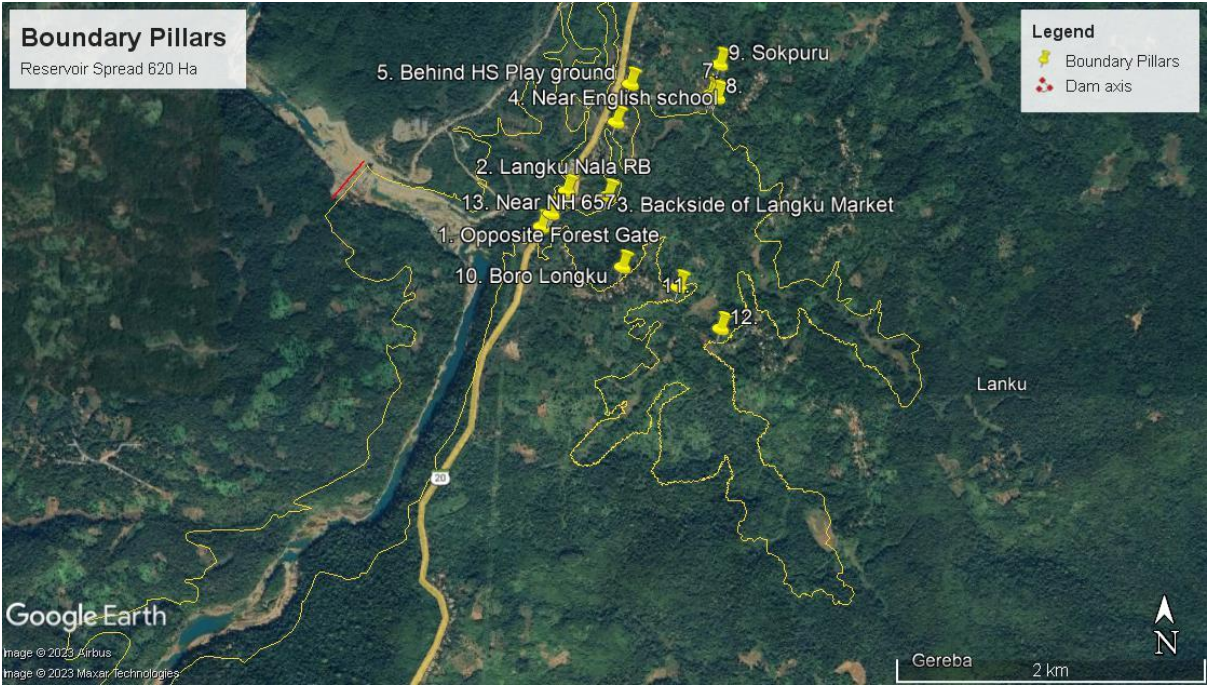
S. No.	Name	Role	Attendance
1.	Prof. G. J. Chakrapani	Chairman	P
2.	Dr. Udaykumar R. Y.	Member	P
3.	Dr. Mukesh Sharma	Member	P
4.	Shri Janardan Choudhary	Member	P
5.	Dr. J V Tyagi	Member	A
6.	Shri Kartik Sapre	Member	P
7.	Shri Ajay Kumar Lal	Member	P
8.	Shri Sharvan Kumar	Representative of CEA	P
9.	Shri Alok Paul Kalsi	Representative of CWC	P
10.	Dr. J A Johnson	Representative of WII	A
11.	Dr. A.K. Sahoo	Representative of CIFRI	P
12.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

From: "govind chakrapani" <govind.chakrapani@es.iitr.ac.in>
To: "Yogendra Pal Singh" <yogendra78@nic.in>
Cc: "Saurabh Upadhyay" <saurabh.upadhyay85@gov.in>
Sent: Tuesday, November 14, 2023 3:33:35 PM
Subject: Re: Draft MoM of the EAC (RV&HEP) meeting held on 26.10.2023-reg

The MoM are approved.
G.J. Chakrapani

Annexure 5 : Map of Reservoir spread boundary



Annexure 6 : Attendance sheet of 3rd BMC meeting

Attendance sheet for the 3rd BMC meeting held on 12.12.2022 at DFO Office, Haflong

Time: 02:00 pm



Sl No	Name	Designation	Signature	Email	Contact number
1	Tuhin Langthasa Ranjit Das	D.P.O(W) DHFD(W)		bestforestdept@gmail.com	9678670474
2	Ranjit Das	PR, DHFD(W)		—	9101645092
3	Doornai Das Theodos	RO. Garapani		—do	9957776652
4	Mridul Saikia	PD, APGL			986407180
5	Deepak Mr Barua	Env. Expert			9435113521
6	Bikash Bhattacharya	DAM(P&S), APGL			9435016470
7	Jayant Das	G.M./L, LKHEP			8638014208
8	Bhaskaranand Jaisi	Forester-I			7002181011
9	DR JAYANTA DAS	Envl Expert PRC APGL		jayanta.das@apgl.com	9435406966
10	Sangram Singh	Secy & Asstt Secy, PRC			9994432700
11					
12					

en-vision

Enviro Technologies North East

Technologies for better tomorrow

Recognized by Pollution Control Board, Assam



TC-7669

AMBIENT AIR ANALYSIS REPORT**TESTREPORT**

Rep.No. AAAR_1503163_01_394(B)

Sample ID: EETNE/NOV/07(B)/23

Issued to

M/s. Lower Kopili HEP Project, Lanku, Dist.- Dima Hasao, Assam.

Date: 11/12/2023

ULR NO.: TC76692300000085(B)F

Sample Drawn By

: UTPAL BEZBARUAH

Sampling Plan & Procedure

: EETNE/SOP/01

Analysis Duration

: 28/11/23 TO 02/12/23, 29/11/23 TO 03/12/23, 30/11/23 TO 04/12/23
01/12/23 TO 05/12/23, 02/12/23 TO 06/12/23

03/12/23 TO 07/12/23, 04/12/23 TO 08/12/23, 05/12/23 TO 09/12/23

Sampling Instrument Used

: AMBIENT AIR SAMPLER/RDS/CO Monitor/HC gas Monitor

Pollution Control Device, if any

: NO

SL. NO.	DATE OF SAMPLING	LOCATION/ SOURCE (Latitude & Longitude)	WEA THER	PARAMETERS					
				PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	NO ₂ (µg/m ³)	HC (mg/m ³)	CO (mg/m ³)	SO ₂ (µg/m ³)
i)	28/11/23	Power Inlet / Dam Site Lat N 25°39'57.39" Long E 92°46'53.62"	Clear	36.2	24.5	15.6	BDL	BDL	10.9
ii)	29/11/23	Crusher Site Lat N 25°40'37.79" Long E 92°47'43.13"		52.7	30.7	18.6	0.03	0.06	12.9
iii)	30/11/23	HRT Adit Lat N 25°40'47.89" Long E 92°48'9.67"		35.2	17.9	12.1	BDL	BDL	9.2
iv)	01/12/23	Primary Hospital Near APGCL Camp Lat N 25°39'59.93" Long E 92°47'45.52"		30.7	21.5	11.6	BDL	BDL	10.6
v)	02/12/23	Batching plant Lat N 25°41'45.31" Long E 92°48'39.79"		35.2	25.7	15.8	BDL	BDL	9.8
vi)	03/12/23	Surge Shaft Site Lat N 25°41'29.28" Long E 92°48'16.47"		32.9	24.7	14.7	BDL	BDL	11.6
vii)	04/12/23	Labour & Staff Camp Lat N 25°40'54.97" Long E 92°48'9.67"		33.8	20.1	13.6	BDL	BDL	9.7
viii)	05/12/23	Power house Lat N 25°41'54.02" Long E 92°46'53.62"		36.7	24.6	11.7	BDL	BDL	9.8

Remarks: - Sampling were done within the annual based.

Page 1 of 1


House No. 5, 1st Floor, Sankardev Path, Pub-Sarania, Chandmari, Guwahati-781003, Assam.

Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envisionghy@gmail.com




NATIONAL AMBIENT AIR QUALITY STANDARDS:

Sl. No.	Pollutant	Test Method	Time Average	Weighted	Concentration in Ambient Air
					Industrial, Residential, Rural and Other Area
1	Particulate Matter (PM_{10}), $\mu g/m^3$	IS:5182 Part-XXIII/ CPCB	Annual		60
				24 hours	100
2	Particulate Matter ($PM_{2.5}$), $\mu g/m^3$	EETNE/SOP/01/2017	Annual		40
				24 hours	60
3	Nitrogen Dioxide (NO_2), $\mu g/m^3$	IS:5182 Part-VI/ CPCB	Annual		40
				24 hours	80
4	Carbon Monoxide (CO), mg/m^3		8 Hours		2.0
5	Sulphur Dioxide (SO_2), $\mu g/m^3$	IS:5182 Part-II/ CPCB	Annual		50
				24 hours	80


Khairul Islam Sheikh
 (Environmental Chemist)

For Envision Enviro Technologies North East, Guwahati


Utpal Bezbaruah
 (Technical Manager)
 Authorized Signatory /Reviewed by

Note: i) Tests undertaken twice a week in each location.
 ii) The results relate only to the parameters tested.
 iii) The test report shall not be reproduced except in full, without written approval of laboratory.

----- END OF REPORT -----



TC-7669

Recognized by Pollution Control Board, Assam

TEST REPORT

AMBIENT NOISE LEVEL MEASUREMENT REPORT

Rep.No. ANLMR_1503163_06A_394(C)

Sample ID: EETNE/NOV/07(B)/23

Issued to : M/s. Lower Kopili HEP Project, Lanku, Dist.- Dima Hasao, Assam.

Date: 11/12/2023

ULR NO.: TC76692300020085(B)F

SL. NO.	DATE OF SAMPLING	LOCATION /SOURCE (Latitude and Longitude)	NOISE LEVEL in dB(A)Leq	
			Day (6:00 am to 10:00 pm)	Night (10:00 pm to 6:00 am)
i)	29/11/23	Power Inlet / Dam Site Lat N 25°39'57.39" Long E 92°46'53.62"	49.6	37.1
ii)	30/11/23	Crusher Site Lat N 25°40'37.79" Long E 92°47'43.13"	64.6	50.7
iii)	28/11/23	HRT Adit Lat N 25°40'47.89" Long E 92°48'9.67"	56.1	45.7
iv)	02/12/23	Primary Hospital Near APGCL Camp Lat N 25°39'59.93" Long E 92°47'45.52"	48.5	38.6
v)	03/12/23	Batching plant Lat N 25°41'45.31" Long E 92°48'39.79"	63.8	53.4
vi)	04/12/23	Surge Shaft Site Lat N 25°41'29.28" Long E 92°48'16.47"	49.2	35.9
vii)	05/12/23	Labour & Staff Camp Lat N 25°40'54.97" Long E 92°48'9.67"	52.9	43.7
viii)	04/12/23	Power house Lat N 25°41'54.02" Long E 92°46'53.62"	61.2	51.2

Remarks: Noise level is carried out during 75% of the Day Time & Night Time.

Method of analysis : IS 9989 : 1981 RA : 2014

Sampling Instrument Used : SLM100 SLN0484-I-22, SLM 100 (213 LTC-2013)

For EnVision Enviro Technologies North East, Guwahati

Ambient Noise Standards:

Area Code	Category of area	Limits in dB(A) Leq	
		Day (6:00 am to 10:00 pm)	Night (10:00 pm to 6:00 am)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Khairul Islam Sheikh
(Environmental Chemist)

Utpal Bezbaruah
(Technical Manager)
Authorized Signatory /Reviewed by

Note: i) The results relate only to the parameters tested.

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iii) Monitoring is performed twice a week in each location.

-----END OF REPORT-----

-----END OF REPORT-----

House No. 6, 1st Floor, Sankardev Path, Pub-Sarania, Chan-Amari, Guwahati-781003, Assam.

Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envislonghy@gmail.com



TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_01
ULR No: TC766923000000169P
Sample ID No: EETNE/DEC/01/23
Test Starting Date: 04/12/2023

Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water (Dam Site)			Source: Kopili River		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 29/11/2023	Time 12:15 P.M	Temperature 28°C	pH 7.3	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	----	6.92	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	2.8	IS 3025 (Part 4)	5
3	TDS	mg/L	114	IS 3025 (Part 16)	2000
4	TSS	mg/L	83.6	IS 3025 (Part 18)	----
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	----
6	Dissolved Oxygen	mg/L	5.3	APHA 23 rd Edition 2017,4500-O C,Page:4-146	----
7	Total hardness	mg/L	85.1	IS 3025 (Part 21)	600
8	Calcium	mg/L	36.8	IS 3025 (Part 40)	200
9	Magnesium	mg/L	19.4	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	27.6	IS 3025 (Part 23)	600
11	Sulphate	mg/L	10.4	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	7.3	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	----
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	----

Page 1 of 2

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

Sample ID No: EETNE/DEC/01/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	106.5	APHA 23 rd Edition 2017, 2510B, Page: 2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page: 3-36	0.05
17	Iron(as Fe)	mg/L	0.32	APHA 23 rd Edition 2017, 3500-Fe B, Page: 3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page: 9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page: 9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	5.3	APHA 23 rd Edition 2017, 5210 B, Page: 5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	24	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
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End of report

Page 2 of 2

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RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TC - 7669

TEST REPORT:

Report No: 231211_1503163_02

ULR No: TC766923000000170P

Sample ID No: EETNE/DEC/02/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project, Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water (1 km U/S of dam site)			Source: Kopili River		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 29/11/2023	Time 10:15 A.M	Temperature 28°C	pH 7.1	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.95	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	1.5	IS 3025 (Part 4)	5
3	TDS	mg/L	76.8	IS 3025 (Part 16)	2000
4	TSS	mg/L	48.3	IS 3025 (Part 18)	----
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	----
6	Dissolved Oxygen	mg/L	5.8	APHA 23 rd Edition 2017,4500-O C,Page:4-146	----
7	Total hardness	mg/L	60	IS 3025 (Part 21)	600
8	Calcium	mg/L	24.7	IS 3025 (Part 40)	200
9	Magnesium	mg/L	13.5	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	36	IS 3025 (Part 23)	600
11	Sulphate	mg/L	27.2	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	8.5	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	----
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	----

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Sample ID No: EETNE/DEC/02/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.2	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	89.4	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.67	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	3.9	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	21	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand,(TSS)Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati

Khairul Islam

KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By

Utpal Bezbaruah

UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

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RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TC - 7669

TEST REPORT:

Report No: 231211_1503163_03
ULR No: TC766923000000171P
Sample ID No: EETNE/DEC/03/23
Test Starting Date: 04/12/2023

Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water (1 km D/S of dam site)			Source: Kopili River		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 29/11/2023	Time 10:45 A.M	Temperature 28°C	pH 7.1	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.91	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	2.8	IS 3025 (Part 4)	5
3	TDS	mg/L	82.7	IS 3025 (Part 16)	2000
4	TSS	mg/L	95.4	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	----
6	Dissolved Oxygen	mg/L	5.9	APHA 23 rd Edition 2017,4500-O C,Page:4-146	----
7	Total hardness	mg/L	86.3	IS 3025 (Part 21)	600
8	Calcium	mg/L	29.6	IS 3025 (Part 40)	200
9	Magnesium	mg/L	18.1	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	58.5	IS 3025 (Part 23)	600
11	Sulphate	mg/L	28.2	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	4.1	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	-----
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	-----

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Sample ID No: EETNE/DEC/03/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

SI No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	102.7	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.63	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	4.8	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	27	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand,(TSS)Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati

Khairul Islam

KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By

Utpal Bezbaruah

UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_04

ULR No: TC766923000000172P

Sample ID No: EETNE/DEC/04/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water (3 km D/S of dam site)			Source: Kopili River		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 29/11/2023	Time 11:05 A.M	Temperature 28°C	pH 6.9	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.73	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	2.1	IS 3025 (Part 4)	5
3	TDS	mg/L	36.4	IS 3025 (Part 16)	2000
4	TSS	mg/L	88.5	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	---
6	Dissolved Oxygen	mg/L	6.9	APHA 23 rd Edition 2017,4500-O ₂ C,Page:4-146	---
7	Total hardness	mg/L	58	IS 3025 (Part 21)	600
8	Calcium	mg/L	18.4	IS 3025 (Part 40)	200
9	Magnesium	mg/L	8.7	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	36.1	IS 3025 (Part 23)	600
11	Sulphate	mg/L	27.5	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ F,Page:4-199	400
12	Nitrates	mg/L	6.3	APHA 23 rd Edition 2017,4500-NO ₃ B,Page:4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P C, Page no:4-163	---

Page 1 of 2

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RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

Sample ID No: EETNE/DEC/04/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	92.6	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.54	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	5.7	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	26	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_05

ULR No: TC766923000000173P

Sample ID No: EETNE/DEC/05/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Test Starting Date: 05/12/2023			Test completion Date: 11/12/23			
Name & Address of Client	M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Surface Water (8 km D/S of dam site)				Source: Kopili River	
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 29/11/2023	Time 11:25 A.M	Temperature 28°C	pH 7.2	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.73	APHA 23 rd Edition 2017,4500-H ⁺ 8, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	2.5	IS 3025 (Part 4)	5
3	TDS	mg/L	21.6	IS 3025 (Part 16)	2000
4	TSS	mg/L	56.4	IS 3025 (Part 18)	----
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	----
6	Dissolved Oxygen	mg/L	7.1	APHA 23 rd Edition 2017,4500-O C,Page:4-146	----
7	Total hardness	mg/L	62.6	IS 3025 (Part 21)	600
8	Calcium	mg/L	32.5	IS 3025 (Part 40)	200
9	Magnesium	mg/L	16.8	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	106.9	IS 3025 (Part 23)	600
11	Sulphate	mg/L	21.2	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	5.3	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	----
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	----

Page 1 of 2

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RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM


Sample ID No: EETNE/DEC/05/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

SI No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	118.2	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.835	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	4.5	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	----
21	COD	mg/L	20.6	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids,

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_12

ULR No: TC766923000000180P

Sample ID No: EETNE/DEC/12/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water			Source: Adit Pond		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 01/12/2023	Time 10:30 A.M	Temperature 28°C	pH 8.4	Quantity Drawn:2L	Sampling Method: EETNE/SOP/G2

Sl No.	Parameters	Unit	Result	Reference Method	IS 10560:2012
					Permissible Limit
1	pH	---	8.33	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	1.2	IS 3025 (Part 4)	5
3	TDS	mg/L	96.1	IS 3025 (Part 16)	2000
4	TSS	mg/L	51.7	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	---
6	Dissolved Oxygen	mg/L	6.9	APHA 23 rd Edition 2017,4500-O ₂ C,Page:4-146	---
7	Total hardness	mg/L	92.4	IS 3025 (Part 21)	600
8	Calcium	mg/L	30.5	IS 3025 (Part 40)	200
9	Magnesium	mg/L	14.7	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	60.8	IS 3025 (Part 23)	600
11	Sulphate	mg/L	20.6	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	3.7	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	---

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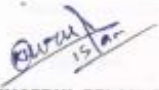
Sample ID No: EETNE/DEC/12/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	‰	0.2	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	150	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.211	APHA 23 rd Edition 2017, 3500-Fe B, Page:3-80	-----
18	Total Coliform	MPN/100	1	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	2.1	APHA 23 rd Edition 2017, 5210 B, Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	8.5	APHA 23 rd Edition 2017, 5220-B, Page No. 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_14
ULR No: TC766923000000182P
Sample ID No: EETNE/DEC/14/23
Test Starting Date: 04/12/2023

Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Test Starting Date: 01/12/2023		Test Completion Date: 11/12/23				
Name & Address of Client	M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Surface Water			Source: Adit Sedimentation Water		
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 01/12/2023	Time 11:30 A.M	Temperature 28°C	pH 8.5	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 19500:2012
					Permissible Limit
1	pH	---	8.45	APHA 23 rd Edition 2017, 4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	3.8	IS 3025 (Part 4)	5
3	TDS	mg/L	75.2	IS 3025 (Part 16)	2000
4	TSS	mg/L	83.1	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017, 5520 B, Page: 5-42	---
6	Dissolved Oxygen	mg/L	5.9	APHA 23 rd Edition 2017, 4500-O C, Page: 4-146	---
7	Total hardness	mg/L	24	IS 3025 (Part 21)	600
8	Calcium	mg/L	15.8	IS 3025 (Part 40)	200
9	Magnesium	mg/L	6.2	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	75	IS 3025 (Part 23)	600
11	Sulphate	mg/L	24.8	APHA 23 rd Edition 2017, 4500-SO ₄ ²⁻ F, Page: 4-199	400
12	Nitrates	mg/L	4.6	APHA 23 rd Edition 2017, 4500-NO ₃ ⁻ B, Page: 4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no: 4-163	---

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM


Sample ID No: EETNE/DEC/14/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	118	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.537	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	NIL	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	6.1	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	24.8	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
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TEST REPORT:

Report No: 231211_1503163_06
ULR No: TC766923000000174P
Sample ID No: EETNE/DEC/06/23
Test Starting Date: 04/12/2023

Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Test Starting Date: 01/12/2023		Test completion Date: 11/12/23				
Name & Address of Client	M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Surface Water			Source: Batching Plant Sediment Tank		
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 30/11/2023	Time 10:30 A.M	Temperature 28°C	pH 8.4	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	8.42	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	4.5	IS 3025 (Part 4)	5
3	TDS	mg/L	186.4	IS 3025 (Part 16)	2000
4	TSS	mg/L	91.3	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	---
6	Dissolved Oxygen	mg/L	7.4	APHA 23 rd Edition 2017,4500-O C,Page:4-146	---
7	Total hardness	mg/L	320	IS 3025 (Part 21)	600
8	Calcium	mg/L	121.8	IS 3025 (Part 40)	200
9	Magnesium	mg/L	67.2	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	385.6	IS 3025 (Part 23)	600
11	Sulphate	mg/L	28.7	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-149	400
12	Nitrates	mg/L	8.2	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	---

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Sample ID No: EETNE/DEC/06/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.4	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	310	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.851	APHA 23 rd Edition 2017, 3500-Fe B, Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	9.3	APHA 23 rd Edition 2017, 5210 B, Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	28.1	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati

Khairul Islam Sheikh
13/12/23

KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By



UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_09

ULR No: TC766923000000177P

Sample ID No: EETNE/DEC/09/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Test Starting Date: 30/11/2023		Test Completion Date: 12/12/23				
Name & Address of Client	M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Surface Water				Source: Power house Service Bay	
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 30/11/2023	Time 11:45 A.M	Temperature 28°C	pH 6.6	Quantity Drawn:2L	Sampling Method. EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.58	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	2.8	IS 3025 (Part 4)	5
3	TDS	mg/L	87.2	IS 3025 (Part 16)	2000
4	TSS	mg/L	63.1	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	---
6	Dissolved Oxygen	mg/L	7.3	APHA 23 rd Edition 2017,4500-O C,Page:4-146	---
7	Total hardness	mg/L	80	IS 3025 (Part 21)	600
8	Calcium	mg/L	28.2	IS 3025 (Part 40)	200
9	Magnesium	mg/L	17.7	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	5	IS 3025 (Part 23)	600
11	Sulphate	mg/L	24.6	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	4.5	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	---

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TC-7669

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Sample ID No: EETNE/DEC/09/23

Test Starting Date: 04/12/2023


Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	%	0.2	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	135	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.429	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	2	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	6.1	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	25.5	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
 Environmental Chemist
 Test Done By


UTPAL BEZBARUAH
 Technical Manager
 Authorized Signatory/Reviewed By

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_10

ULR No: TC766923000000178P

Sample ID No: EETNE/DEC/10/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water			Source: Water Treatment Plant Sediment Tank		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 30/11/2023	Time 11:55 A.M	Temperature 28°C	pH 6.5	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	6.62	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	1.3	IS 3025 (Part 4)	5
3	TDS	mg/L	68.1	IS 3025 (Part 16)	2000
4	TSS	mg/L	55.7	IS 3025 (Part 18)	-----
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	-----
6	Dissolved Oxygen	mg/L	7.8	APHA 23 rd Edition 2017,4500-O C,Page:4-146	-----
7	Total hardness	mg/L	28	IS 3025 (Part 21)	600
8	Calcium	mg/L	10.6	IS 3025 (Part 40)	200
9	Magnesium	mg/L	3.7	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	15	IS 3025 (Part 23)	600
11	Sulphate	mg/L	21.3	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	3.9	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	-----
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	-----

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Sample ID No: EETNE/DEC/10/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	‰	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	106	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.313	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	1	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	3.2	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	17.5	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati

[Signature]

KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By



UTPAL BÉZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

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TC-7669

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_13

ULR No: TC766923000000181P

Sample ID No: EETNE/DEC/13/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Surface Water			Source: Lanku Nala		
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 01/12/2023	Time 11:00 A.M	Temperature 28°C	pH 6.9	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
1	pH	---	7.28	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5
2	Turbidity	NTU	1.1	IS 3025 (Part 4)	5
3	TDS	mg/L	67.5	IS 3025 (Part 16)	2000
4	TSS	mg/L	104.8	IS 3025 (Part 18)	---
5	Oil and Grease	mg/L	<5	APHA 23 rd Edition 2017,5520 B, Page:5-42	---
6	Dissolved Oxygen	mg/L	6.5	APHA 23 rd Edition 2017,4500-O C,Page:4-146	---
7	Total hardness	mg/L	76	IS 3025 (Part 21)	500
8	Calcium	mg/L	25.4	IS 3025 (Part 40)	200
9	Magnesium	mg/L	13.6	IS 3025 (Part 46)	100
10	Total Alkalinity	mg/L	95	IS 3025 (Part 23)	600
11	Sulphate	mg/L	26.2	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	400
12	Nitrates	mg/L	2.9	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	---
13	Phosphate	mg/L	<0.02	APHA 23 rd Edition 2017, 4500-P D, Page no:4-163	---

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RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM


Sample ID No: EETNE/DEC/13/23
Test Starting Date: 04/12/2023

Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500:2012
					Permissible Limit
14	Salinity	‰	0.3	APHA 23 rd Edition 2017, 2520B, Page: 2-60	-----
15	Conductivity	µS/cm	105	APHA 23 rd Edition 2017, 2510B, Page:2-58	2500
16	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114B, Page:3-36	0.05
17	Iron(as Fe)	mg/L	0.386	APHA 23 rd Edition 2017,3500-Fe B,Page:3-80	-----
18	Total Coliform	MPN/100	3	APHA 23 rd Edition 2017, 9222B, Page:9-81	Shall not be detectable in any 100 ml Sample
19	Fecal Coliform	MPN/100	Nil	APHA 23 rd Edition 2017, 9222 D, Page:9-89	Shall not be detectable in any 100 ml Sample
20	BOD	mg/L	7.2	APHA 23 rd Edition 2017,5210 B,Page:5-6/ IS 3025 (Part 44)	-----
21	COD	mg/L	21	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	-----

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand,(TSS)Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
ii) The test report shall not be reproduced except in full, without written approval of laboratory
iii) Parameter no.11 to 19 are analyzed by Department of Chemistry,B.Boroah College as per our MOU.
End of report

Page 2 of 2

House No. 6, 1st Floor, Sankardev Path, Pub-Sarania, Chandmari, Guwahati-781003, Assam.

Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envisionghy@gmail.com

TEST REPORT:

Report No: 231211_1503163_07
ULR No: TC766923000000175P
Sample ID No: EETNE/DEC/07/23
Test Starting Date: 04/12/2023

Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Test Starting Date: 07/12/2023			Test completion Date: 11/12/23				
Name & Address of Client		M/s. Lower Kopili HEP Project. Near Lanka, Dist: Dima Hasao.					
Sample Description		Type: Drinking Water		Source: RO			
Sample collected by		M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars		Date 30/11/2023	Time 1:20 P.M	Temperature 28°C	p ^H 7.2	Quantity Drawn:4L	Sampling Method: EETNE/SOP/02

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500: 2012	
					Acceptable limit	Permissible limit
1	pH	---	7.32	APHA 23 rd Edition 2017,4500 H ⁺ B, Page:4-95 / IS 3025 (Part 11) Electrometric Method	6.5-8.5	No relaxation
2	Turbidity	NTU	<1	IS 3025 (Part 4) Nephelometric Method	1.0	5.0
3	TDS	mg/L	87.2	IS 3025 (Part 16)	500	2000
4	Total hardness	mg/L	4	IS 3025 (Part 21)	200	600
5	Calcium	mg/L	BDL	IS 3025 (Part 40) EDTA Titrimetric Method	75	200
6	Magnesium	mg/L	BDL	IS 3025 (Part 46)	30	100
7	Total Alkalinity	mg/L	15	IS 3025 (Part 23)	200	500
8	Chloride	mg/L	12.4	APHA 23 rd Edition 2017,4500-Cl ⁻ B,Page:4-75	250	1000
9	Sulphate	mg/L	5.2	APHA 23 rd Edition 2017,4500-SO ₄ ²⁻ E,Page:4-199	200	400
10	Nitrate	mg/L	3.8	APHA 23 rd Edition 2017,4500-NO ₃ ⁻ B,Page:4-127	45	No relaxation


Sample ID No: EETNE/DEC/07/23
Test Starting Date: 04/12/2023


Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500: 2012	
					Acceptable limit	Permissible limit
11	Fluoride	mg/L	0.37	APHA 23 rd Edition 2017, 4500-F D, Page: 4-90	1.0	1.5
12	Copper	mg/L	0.041	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	0.05	1.5
13	Iron(as Fe)	mg/L	0.158	APHA 23 rd Edition 2017, 3500-Fe B, Page: 3-80	0.3	No relaxation
14	Cadmium	mg/L	BDL	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	0.003	No relaxation
15	Lead	mg/L	BDL	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	0.01	No relaxation
16	Zinc	mg/L	0.189	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	5	15
17	Total Chromium	mg/L	BDL	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	0.05	No relaxation
18	Manganese	mg/L	0.035	APHA 23 rd Edition 2017, 3111 B, Page: 3-20	0.1	0.3
19	Selenium	mg/L	BDL	APHA 23 rd Edition 2017, 3114 B, Page: 3-36	0.01	No relaxation
20	Arsenic	mg/L	BDL	APHA 23 rd Edition 2017, 3114 B, Page: 3-36	0.01	No relaxation
21	BOD	mg/L	<2	APHA 23 rd Edition 2017, 5210B, Page: 5-6 / IS 3025 (Part 44)	--	--
22	COD	mg/L	<5	APHA 23 rd Edition 2017, 5220-B, Page No: 5-18	--	--

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test done by


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.
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iii) Parameter no. 8 to 20 are analyzed by Department of Chemistry, B. Borooah College as per our MOU.

End of report

Page 2 of 2

House No. 6, 1st Floor, Sankardev Path, Pub-Sarania, Chandmari, Guwahati-781003, Assam.

Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envisionghy@gmail.com

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_11

ULR No: TC766923000000179P

Sample ID No: EETNE/DEC/11/23

Test Starting Date: 04/12/2023

Date of Report: 11/12/23

Date of sample receipt: 04/12/2023

Test completion Date: 11/12/23

Name & Address of Client	M/s. Lower Koplii HEP Project, Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Wastewater				Source: Workmans Camp	
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 30/11/2023	Time 12:10 P.M	Temperature 28°C	pH 7.1	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

SL No.	Parameters	Unit	Result	Method Followed by	Permissible Limit
1.	pH	---	7.24	APHA 23 rd Edition 2017,4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	5.5-9.0
2.	Total Suspended Solids	mg/L	88.6	APHA 23 rd Edition 2017, 2540 D, Page no. 2-66	100
3.	Oil & Grease	mg/L	7.4	APHA 23 rd Edition 2017, 5520 B, Page no. 5-42	10
4.	BOD	mg/L	9	APHA 23 rd Edition 2017, 5210 B, Page no:5-6 / IS 3025 (Part 44)	30
5.	COD	mg/L	25	APHA 23 rd Edition 2017,5220 B, Page no:5-18	250
6.	Dissolved Oxygen	mg/L	5.7	APHA 23 rd Edition,4500-O C, Page no:4-146	---

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati



KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By



UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

Note: i) The results relate only to the parameters tested.

ii) The test report shall not be reproduced except in full, without written approval of laboratory

End of report

Page 1 of 2

House No. 6, 1st Floor, Sankardev Path, Pub-Sarania, Chandmari, Guwahati-781003, Assam.

Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envisionghy@gmail.com

RECOGNIZED BY POLLUTION CONTROL BOARD, ASSAM

TEST REPORT:

Report No: 231211_1503163_08
ULR No: TC766923000000176P
Sample ID No: EETNE/DEC/08/23
Test Starting Date: 04/12/2023


Date of Report: 11/12/23
Date of sample receipt: 04/12/2023
Test completion Date: 11/12/23

Test Starting Date: 30/11/2023		Test Completion Date: 30/11/2023				
Name & Address of Client	M/s. Lower Kopili HEP Project, Near Lanka, Dist: Dima Hasao.					
Sample Description	Type: Wastewater				Source: Kitchen	
Sample collected by	M/s. En-vision Enviro Technologies North East					
Sample Collection Particulars	Date 30/11/2023	Time 11:15 A.M	Temperature 28°C	pH 7.1	Quantity Drawn:2L	Sampling Method: EETNE/SOP/02

SL No.	Parameters	Unit	Result	Method Followed by	Permissible Limit
1.	pH	---	7.08	APHA 23 rd Edition 2017, 4500-H ⁺ B, Page no: 4-95 / IS 3025 (Part 11) Electrometric Method	5.5-9.0
2.	Total Suspended Solids	mg/L	94.3	APHA 23 rd Edition 2017, 2540 D, Page no. 2-66	100
3.	Oil & Grease	mg/L	<5	APHA 23 rd Edition 2017, 5520 B, Page no. 5-42	10
4.	BOD	mg/L	7	APHA 23 rd Edition 2017, 5210 B, Page no:5-6 / IS 3025 (Part 44)	30
5.	COD	mg/L	28	APHA 23 rd Edition 2017, 5220 B, Page no.5-18	250
6.	Dissolved Oxygen	mg/L	6.1	APHA 23 rd Edition, 4500-O C, Page no:4-146	---

NOTE: (BOD) Biochemical Oxygen Demand, (COD) Chemical Oxygen Demand, (TSS) Total Suspended Solids, (TDS) Total Dissolved Solids.

For Envision Enviro Technologies North East, Guwahati


KHAIRUL ISLAM SHEIKH
Environmental Chemist
Test Done By


UTPAL BEZBARUAH
Technical Manager
Authorized Signatory/Reviewed By

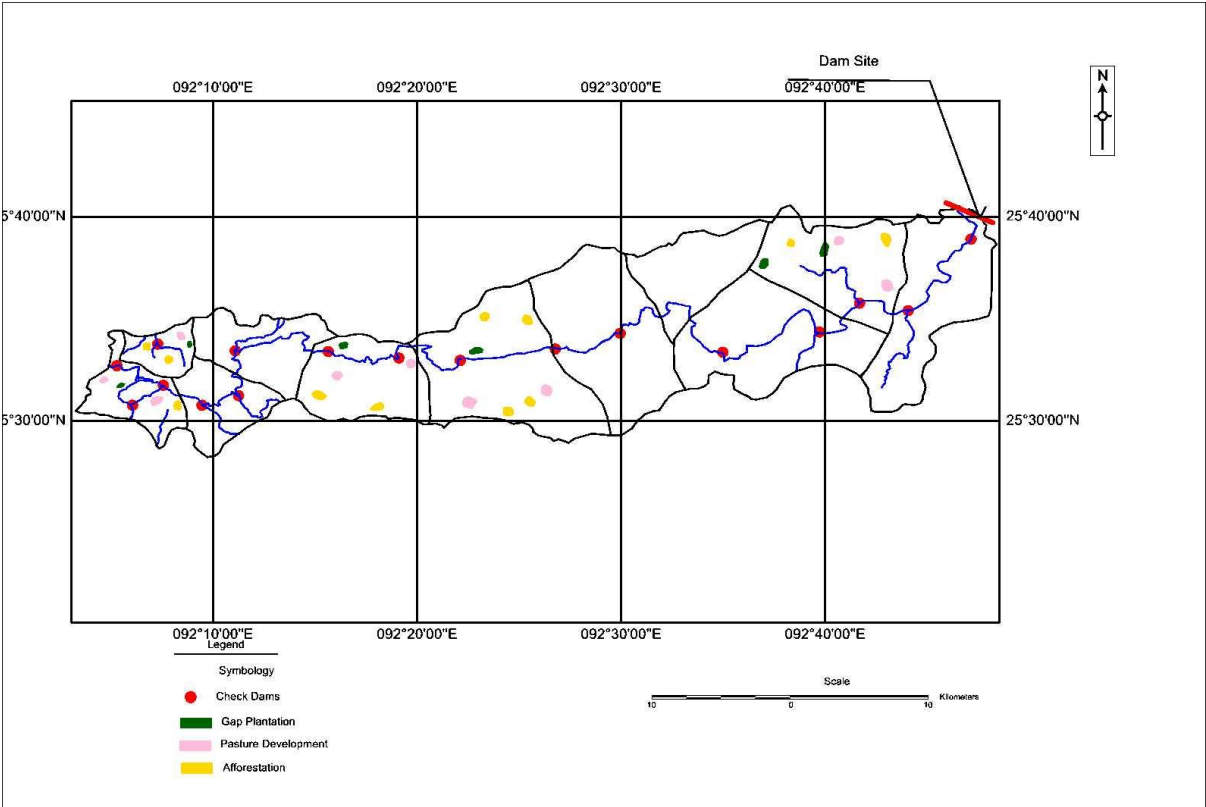
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Mobile : +91 98592 32126 / 88110 96201 ♦ e-mail : envisionghy@gmail.com

Catchment Area Treatment Measures for Lower Kopili Catchment



Annexure 9 :CAT plan implementation by Forest Department



By e-mail

**GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS &
HEAD OF FOREST FORCE, ASSAM
ARANYA BHAWAN, PANJABARI :: GUWAHATI-781037**

E-mail statecampaassam@gmail.com

No.FG.27/CAMPA/CA Pltn/2022-23

Dated Guwahati, 11th Oct, 2023

To,

The Project Director (PMU),
Assam Power Generation Corporation Limited,
Bijulee Bhawan, 3rd Floor, Paltanbazar, Guwahati-781001

Sub: Implementation of CAT Plan, SMC Plan and CA Plantation programme for 120 MW Lower Kopili Hydro Electric Project, - reg.

Ref: Your letter no.APGCL/CGM(H)/W/2007/140/Pt-VI/77 dated 21.09.2023.

Sir,

With reference to the above, I am to inform you that the activities of Catchment Area Treatment Plan & Soil & Moisture Conservation Plan drive for Lower Kopili Hydro Electric Project (120 MW) have not been implemented till now as the same are likely to be included in the APO of 2024-25. However, the programme for the Compensatory Afforestation (CA) plantation activities are started by raising of site nurseries near by the approved 8 (eight) CA sites and plantation activities are going on under APO 2023-24 in Hamren & Dima Hasao (West) Forest Division.

Yours faithfully,

(Dr. Satyendra Singh, IFS)




Addl. Principal Chief Conservator of Forests &
Chief Executive Officer, State CAMPA, Assam
Aranya Bhawan, Panjabari, Guwahati – 37

Copy to:

1. The Principal Secretary, Department of Power, Govt. of Assam, Block-C, Ground Floor, Janata Bhwan, Guwahati-6.
2. The Principal Secretary, Department of Environment & Forest, Govt. of Assam, Janata Bhwan, Guwahati-6.
3. The Chief Conservator of Forests & Nodal Officer (F.C Act), Aranya Bhawan, Panjabari
4. The Chairman, APGCL
5. The Managing Director, APGCL.

Addl. Principal Chief Conservator of Forests &
Chief Executive Officer, State CAMPA, Assam
Aranya Bhawan, Panjabari, Guwahati – 37

Annexure 10 : Approved Muck Management Plan

 QUALITY MANAGEMENT SYSTEM	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
	MUCK MANAGEMENT PLAN Doc. No: LKHEP-PKG2/LNT/142/MS/018	PMC – AF Consult Switzerland Limited	
	R-01, Date: 30.06.2022	Page 1 of 13	

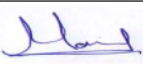
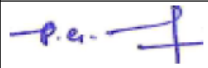
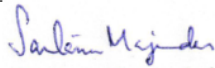
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”

TITLE : Muck Management Plan




PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

REVISION RECORD

Rev. No	Date of revision	Page No	Details of revision	Prepared by	Reviewed by	Approved by
00	14/04/2022	All	Initial Issue	MY	SM	
01	30/06/2022	All	Revised Issue	MY	SM	

Sensitivity: LNT Construction Internal Use

	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

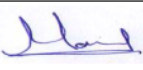
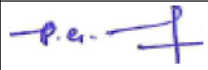
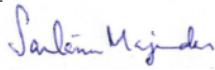
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

REVISION RECORD

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01	30/06/2022	All	Revised Issue	MY	SM	

	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

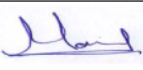
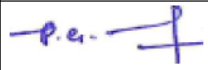
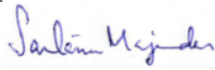
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

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01	30/06/2022	All	Revised Issue	MY	SM	

	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

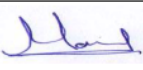
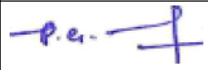
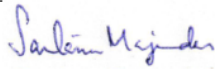
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

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01	30/06/2022	All	Revised Issue	MY	SM	

	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

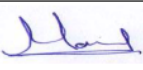
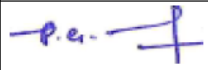
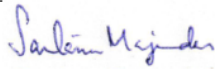
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

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01	30/06/2022	All	Revised Issue	MY	SM	

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QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

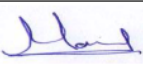
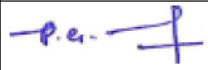
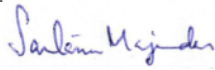
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

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QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

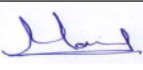
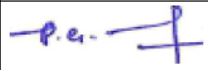
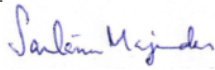
ANNEXURE-1

MUCK MANAGEMENT PLAN

“120 MW LOWER KOPILI HYDROELECTRIC PROJECT”




TITLE : Muck Management Plan

PROCEDURE NO : LKHEP-PKG2/LNT/142/MS/18

Rev. No	00	01	02	
Date:	14/04/2022	30/06/2022		
Contractor			PMC/EMPLOYER	
Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

REVISION RECORD

Rev. No	Date of revision	Page No	Details of revision	Prepared by	Reviewed by	Approved by
00	14/04/2022	All	Initial Issue	MY	SM	
01	30/06/2022	All	Revised Issue	MY	SM	

	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited	
QUALITY MANAGEMENT SYSTEM	MUCK MANAGEMENT PLAN	PMC – AF Consult Switzerland Limited	
	Doc. No: LKHEP-PKG2/LNT/142/MS/018		
	R-01, Date: 30.06.2022		
		Page 1 of 13	

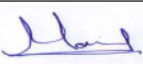
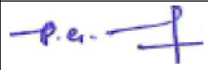
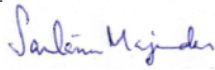
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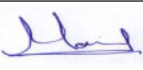
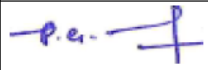
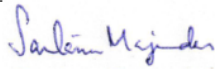
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Prepared by	Reviewed By		Approved By	
(Environmental Engineer)	EHS	(Project Manager)	(PMC)	(EMPLOYER)
				
MANOJ YADAV	PURUSOTHAM GANTAYA KUMAR	SANTANU MAJUMDAR		

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01	30/06/2022	All	Revised Issue	MY	SM	

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	MUCK MANAGEMENT PLAN Doc. No: LKHEP-PKG2/LNT/142/MS/18	PMC – AF Consult Switzerland Limited 
	R-01, Date: 30.06.2022	Page 11 of 13




4.4 Soil Working and Plantation Techniques

Isolation and screening of specialized strains of mycorrhizal fungi, rhizobia, azotobacters and phosphate solubilizers (biofertilizer inoculum) in accordance with the suitability for the spoil tips will be done at site, based on following:

- Inoculation of plants with specific biofertilizers and mycorrhizal strains.
- Periodical evaluation of rhizosphere development for physical, chemical and microbiological parameters.
- Monitoring of growth response in different plant species periodically and identification of corrective measures, if necessary. Mass culture of plant specific biofertilizers and mycorrhizal fungi.

Fig: Near Permanent Colony TR5

Permanent Dumping Sites			
D-1	Near Permanent Colony TR5	10.4	17,00,000
D-2	Near Colony TR5	3.7	2,90,000
D-3	Near PR-7 Dumping Yard-1	4.9	3,07,000
D-4	Near PR-7 towards magazine area	6.1	4,08,000
Total		25.1	27,05,000

 QUALITY MANAGEMENT SYSTEM	LARSEN & TOUBRO LIMITED HEAVY CIVIL INFRASTRUCTURE IC 120 MW Lower Kopili Hydroelectric Project (PKG-2)	Employer – Assam Power Generation Corporation Limited 
	MUCK MANAGEMENT PLAN Doc. No: LKHEP-PKG2/LNT/142/MS/18	PMC – AF Consult Switzerland Limited 
	R-01, Date: 30.06.2022	Page 11 of 13




4.4 Soil Working and Plantation Techniques

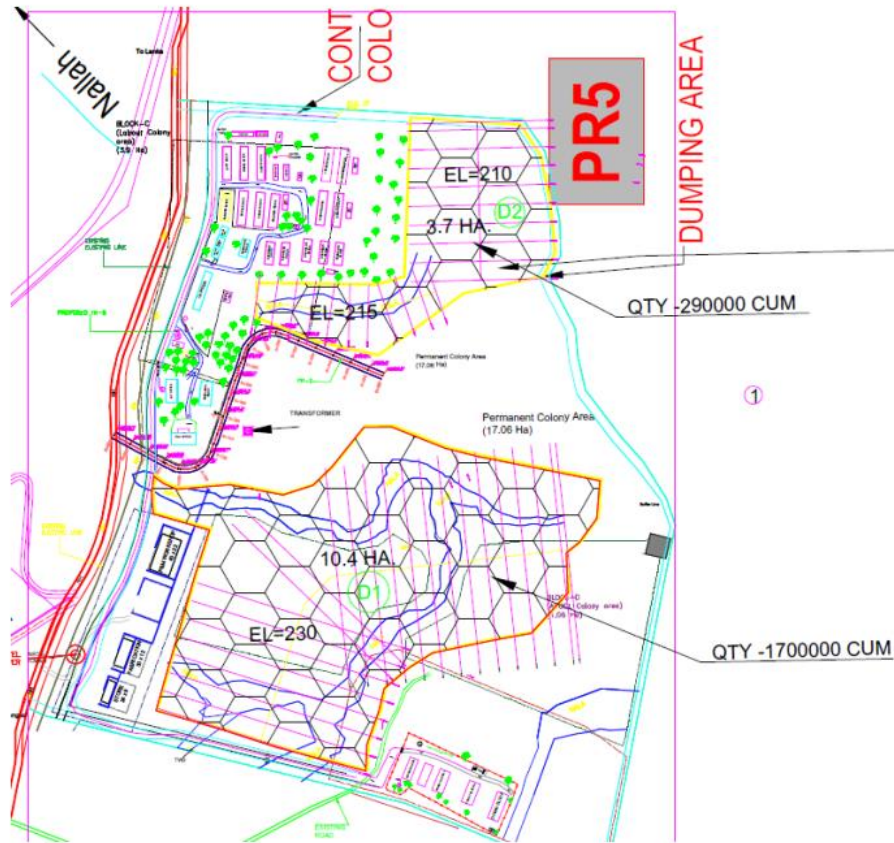
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	MUCK MANAGEMENT PLAN Doc. No: LKHEP-PKG2/LNT/142/MS/18	PMC – AF Consult Switzerland Limited 
	R-01, Date: 30.06.2022	Page 13 of 13



Sensitivity: LNT Construction Internal Use

Annexure 11: Approval of R&R Plan from Ministry of Tribal Affairs

No. 04/08/2013-CP&R/FRA
Government of India
Ministry of Tribal Affairs

216-J, D Wing,
Shastri Bhawan
New Delhi-110001
Dated: 07.02.2018

To

The Secretary,
Hill Areas Department,
Government of Assam,
Dispur, Guwahati- 781006 (Assam)

Subject:- Rehabilitation and Resettlement (R&R) plan proposal of Assam Power Generation Corporation Ltd. to implement the Lower Kopili Hydro-Electric Project (120 MW)- Regarding.

Sir,

I am directed to refer to your letter number HAD.332/2013/62 dated 7th January, 2017 and letter of Assam Power Generation Corporation Limited vide No. APGCL/CGM(H)/W/2009-10/296/115 dated 16.09.2017 on the subject mentioned above and to say that while the proposed R & R plan complies with the general requirements of RFCTLARR Act, 2013 and Forest Rights Act, 2006, this Ministry feels that it is necessary to take care of interests of the PAFs so that actual benefits of the Project can reach them and any negative consequences can be prevented and/or mitigated at the very initial stage.

2. In order to effectively monitor the implementation of the project, a Monitoring Committee through the Commissioner Rehabilitation and Resettlement (R&R) may be set up to oversee and monitor implementation of the R&R package including additional measures suggested by this Ministry. This Ministry may also please be provided feedback at half-yearly intervals. Further, the R&R Plan be disclosed not only to the Project Affected Families (PAFs), but also to the residents of the project affected area. The R&R Plan may be uploaded on the website of the Project Authority and a copy of the same may please be sent to this Ministry through e-mail for putting it up on the web-site of this Ministry as well.

Contd.....p.2/-

3. Subject to the condition that the proposed R&R Plan will be followed in totality and also point No. 9 in check list- II enclosed with this Ministry's letter of even number dated 07.09.2017 i.e. fishing rights to project affected families is secured as well as implementation of 18 additional measures (copy enclosed) are ensured by State Government, this Ministry conveys its approval to the proposal.
4. This issues with the approval of the competent authority.

Yours faithfully,



(Roopak Chaudhuri)

Deputy Secretary to the Government of India

Tel. no. 011 23387444

E-mail: r.chaudhuri@nic.in

Copy to:-

- (i) Chief General Manager, Assam Power Generation Corporation Limited, Bijulee Bhavan, 2nd Floor, Paltan Bazar, Guwahati-781001.
- (ii) ✓ Director (NIC) with request to upload the said letter on the website of Ministry of Tribal Affairs



ASSAM POWER GENERATION CORPORATION LIMITED

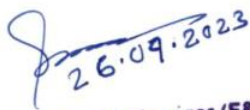
Registered Office: Bijulee Bhawan, 3rd floor, Paltanbazar, Guwahati-781 001, Assam

Status of R&R plan implementation

Statement on implementation of Resettlement & Rehabilitation (R&R) plan (CRTDP) for Lower Kopili Hydro Electric Project, APGCL, Longku is furnished below:

1. Land compensation
 - a) Dima Hasao = Rs. 44.58 Crore (completed)
 - b) Karbi Anglong = Rs. 7.05 Crore (completed)
2. R&R assistances & allowances
 - a) Dima Hasao = Rs 51.48 Crore (completed)
 - b) Karbi Anglong = Rs. 1.65 Crore (on going)

Total amount of Rs. 104.76 Crore (Rupees One Hundred Four Crore Seventy Six lakh) has been disbursed so far under the plan covering both district of Dima Hasao & Karbi Anglong of Assam.


26.09.2023

Dy. General Manager (F&A)
APGCL, Bijulee Bhawan
Paltanbazar, Ghy-01



ASSAM POWER GENERATION CORPORATION LIMITED

Registered Office: Bijulee Bhawan, Paltanbazar, Guwahati-781 001, Assam.

CIN:U40101AS2003SGC007239

Tele: 0361-2739 502; FAX: 0361-2739 546/22

E-mail: apgcl_md@yahoo.com; Website: www.apgcl.org

QUALITY, ENVIRONMENTAL, OCCUPATIONAL HEALTH & SAFETY POLICY

OUR AIM

- *To meet the ever increasing demand for electrical power by generating reliable power at competitive cost.*
- *To minimize the impact on environment while generating power.*
- *To minimize the occupational health and safety risk of all people involved in operation and maintenance of the power plants.*

OUR COMMITMENTS

- *To comply with various quality parameters specified by electricity authorities related to power generation.*
- *To comply with all environmental, occupational health & safety related legal and other requirements enacted by the Central and the State Governments.*
- *To continually improve the effectiveness of quality, environmental, occupational health & safety management system to enhance stakeholder satisfaction.*

OUR ENDEAVOUR

- *To continually improve productivity through planned operations and preventive maintenance.*
- *To adopt proactive measures for preservation of nature and reduction of work related risks.*
- *To motivate employees and all other personnel working under us to continually enhance quality, productivity, environmental, safety & occupational health performance through training and other relevant activities.*

Guwahati

Date: 30.09.2015


(Managing Director)



Minutes of the Meeting of the 2nd Multidisciplinary Committee (MDC) in respect of 120 MW Lower Kopili Hydro Electric Project (LKHEP) in the districts of Dima Hasao and Karbi Anglong, Assam held on 20th June, 2023 at Assam Power Generation Corporation Limited, Langku, Dima Hasao.

1. Shri. Mridul Saikia, Chief General Manager (PP&I), APGCL cum Project Director LKHEP was the guest of honour of the 2nd MDC. At the onset he welcomed all the members present and briefed about the overall project progress and explained the purpose of MDC. As per one of the stipulation of Environment Clearance (EC), accorded by MoEF&CC, vide No.J-12011/26/2012-IA-I. Dated 4th September, 2019, Multi-Disciplinary Committee (MDC) was constituted with experts from Ecology, Forestry, Wildlife, Sociology, Soil Conservation, Fisheries, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project.
2. The Meeting of the 2nd MDC of LKEP was chaired by Shri. Akshay Talukder, GM, PP&I, APGCL as per the notification of 9th June 2022.
3. Felicitation of the members were done by Shri. Janardhan Rongpi, GM, LKHEP after the site visit.
4. A brief presentation highlighting the Environment Clearance stipulations and the compliance adhered so far with the salient features of the project along with the possible impact and the mitigation plan suggested in the EMP of EIA was given by Jayanta Das, Environment Specialist of PMC.
5. Shri. Sanjoy Tamuli, Sub Divisional Fisheries Development Officer, CMSGUY Cell, Directorate of Fisheries, Assam suggested to incorporate pisciculture under Local Area Development (LAD) and Corporate Environment Responsibility (CER). APGCL explained that they will consider this component under LAD for the downstream. Moreover GM, PP&I, APGCL told that skill development training will also cover need analysis and if the project beneficiaries are interested, they will incorporate skill training on fish rearing. Fishery development officer said that there are government supported programme on hatchery and fishery development where beneficiaries from the project area may be linked to those government programmes.
6. Shri Tamuli also asked about the measures taken by the government for neutralization of the acid water in the kopili river. Dr Deepak Baruah, Environment Expert of APGCL summarised the cause of the low pH in the river Kopili and related it to the illegal Rat Hole Coal Mining in Meghalaya and explained the initiatives taken by the Government of Meghalaya for correction of pH under the Honourable NGT directives.
7. Shri. Pranab Bujarbaruah, from Department of Botany, Handique Girls College, Guwahati enquired about the E waste management and green belt development. APGCL explained that the Land handover is not complete and Dumping yards, quarry

area, batching plant areas and other temporary construction facility areas will be restored as per restoration plan with the native species in consultation with the local Forest Department. The mechanism of e wastes disposal is through the authorised recyclers. As the project is on initial years of construction and hence the e waste generation is almost negligible and was stored as per rule.

8. Shri Bujarbaruah also asked about the status of Compensatory Afforestation against the Forest land diversion. In reply APGCL explained that there are 7 compensatory afforestation patches in Dima Hasao and 1 in Karbi Anglong. All the 8 patches were declared as Reserved Forest vide Govt. Notifications and raising of nursery was initiated by the Forest Department under CAMPA. The entire CA costs were deposited to CAMPA by APGCL before the Stage 2 Forest Clearance.
9. Shri Bhaskar Jyoti Talukdar, Lecturer, RFTI, Amrang & Deputy Director of Fisheries (Fishery Statistics), I/C, Directorate of Fisheries, Assam, enquired about the status of ground water in the area. APGCL explained the status of ground water in the Dima Hasao district referring to the report of the Central Ground Water Board (Year 2013) and the initiatives taken by the Hydro Mechanical contractor to meet the construction water and drinking water requirements.
10. The meeting ended with a vote of thanks from the chair.
11. The list of the participants is attached as Annexure 1.


General Manager(P) PP&I
APGCL Bijules Bhawan
Guwahati-1

Annexure 15 Record of water log of ground water abstraction of CP-1 from August to Oct 2023.

Sl No.		Initial	Final	Remarks
1	1/10/23	593	604	
2	2/10/23	604	624	
3	3/10/23	624	649	
4	4/10/23	649	659	
5	5/10/23	659	676	
6	6/10/23	676	690	
7	7/10/23	690	709	
8	8/10/23	709	726	
9	9/10/23	726	741	
10	10/10/23	741	766	
11	11/10/23	766	786	
12	12/10/23	786	805	
13	13/10/23	805	826	
14	14/10/23	826	850	
15	15/10/23	850	866	
16	16/10/23	866	884	
17	17/10/23	884	894	
18	18/10/23	894	911	
19	19/10/23	911	938	
20	20/10/23	938	962	
21	21/10/23	962	971	
22	22/10/23	971	981	
23	23/10/23	981	994	
24	24/10/23	994	1004	
25	25/10/23	1004	1027	
26	26/10/23	1027	1051	
27	27/10/23	1051	1071	
28	28/10/23	1071	1092	
29	29/10/23	1092	1121	
30	30/10/23	1121	1148	
31	31/10/23	1148	1166	

Sl No.		Initial	Final	Remarks
1	1/09/23	278	282	
2	2/09/23	282	287	
3	3/09/23	287	291	
4	4/09/23	291	296	
5	5/09/23	296	303	
6	6/09/23	303	308	
7	7/09/23	308	315	
8	8/09/23	315	321	
9	9/09/23	321	326	
10	10/09/23	326	331	
11	11/09/23	331	336	
12	12/09/23	336	342	
13	13/09/23	342	349	
14	14/09/23	349	354	
15	15/09/23	354	360	
16	16/09/23	360	365	
17	17/09/23	365	368	
18	18/09/23	368	371	
19	19/09/23	371	376	
20	20/09/23	376	383	
21	21/09/23	383	398	
22	22/09/23	398	418	
23	23/09/23	418	441	
24	24/09/23	441	465	
25	25/09/23	465	491	
26	26/09/23	491	505	
27	27/09/23	505	533	
28	28/09/23	533	556	
29	29/09/23	556	576	
30	30/09/23	576	593	

Sl No.		Initial	Final	Remarks
1	1/08/23	122	126	
2	2/08/23	126	130	
3	3/08/23	130	135	
4	4/08/23	135	139	
5	5/08/23	139	147	
6	6/08/23	147	154	
7	7/08/23	154	157	
8	8/08/23	157	160	
9	9/08/23	160	166	
10	10/08/23	166	171	
11	11/08/23	171	175	
12	12/08/23	175	180	
13	13/08/23	180	182	
14	14/08/23	182	190	
15	15/08/23	190	193	
16	16/08/23	193	198	
17	17/08/23	198	204	
18	18/08/23	204	208	
19	19/08/23	208	213	
20	20/08/23	213	216	
21	21/08/23	216	220	
22	22/08/23	220	227	
23	23/08/23	227	232	
24	24/08/23	232	238	
25	25/08/23	238	242	
26	26/08/23	242	249	
27	27/08/23	249	255	
28	28/08/23	255	260	
29	29/08/23	260	265	
30	30/08/23	265	271	
31	31/08/23	271	278	



ASSAM POWER GENERATION CORPORATION LIMITED

Registered Office: Bijulee Bhawan, 3rd floor, Paltanbazar, Guwahati-781 001, Assam

Shri Saurav Saikia
Chief General Manager (Hydro & Civil)
E-mail: cgmh2010@yahoo.in

Letter No: APGCL/CGM (H)/W/2007/140/Part-VII/114

Date: 21/11/2023

To,

The Director,
cum Member Secretary of EAC
IA-I Division
Ministry of Environment, Forest and Climate Change
New Delhi-11003

Sub: Submission of Undertaking that R&R scenario / habitat of flora and fauna of project are not change due to modification of the project components under Lower Kopili HEP, 120 MW

Ref: Minute of the EAC meeting of MoEF&CC held on 26.10.2023, proposal No. IA/AS/RIV/441844/2023

Sir,

With reference to the above, and in response to the minute of the EAC meeting, it is to mention herewith that the R&R scenario / habitat of flora and fauna of project will not be changed due to modification of the project components. As the changes are made due to detail engineering design which will not create any additional impact on the biotic community within the long-term leased area of 1577 Ha under Lower Kopili HEP, 120 MW. Moreover, necessary protective and conservative measures will be adhered as per norms.

This is for favour of your kind compliance of your stipulation as per reference cited above.

Your Sincerely,

Chief General Manager (Hydro & Civil) i/c.
APGCL, Bijulee Bhawan

Copy to:

1. The OSD to Chairman, APGCL-for kind information to the Hon'ble Chairman
2. The OSD to Managing Director, APGCL-for kind information to the MD, APGCL
3. Relevant file