



Environmental Monitoring Report

PUBLIC

Semestral Report: June 2021 - November 2021
August 2025

India: Kolkata Environmental Improvement Investment Program-Tranche 3

Prepared by The Kolkata Municipal Corporation (KMC), Kolkata for the Asian Development Bank (ADB).

Asian Development Bank

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Semi Annual Environmental Monitoring Report

SFG Log: 4938

**ADB Loan Number 3689-IND
Period Covered: June 2021 to November 2021**

December 2021

**IND: KOLKATA ENVIRONMENTAL IMPROVEMENT
INVESTMENT PROGRAM (KEIIP) – Project 3**

Prepared by Project Management Unit, Kolkata Environmental Improvement Investment Program, Kolkata Municipal Corporation, Government of West Bengal for Asian Development Bank



**KOLKATA ENVIRONMENTAL
IMPROVEMENT INVESTMENT PROGRAM
(KEIP) – PROJECT 3**

PROJECT MANAGEMENT UNIT

6th

SEMI ANNUAL ENVIRONMENTAL MONITORING REPORT

TRANCHE 3

ADB Loan 3689-IND

(Period June 2021 to November 2021)

December 2021



KOLKATA MUNICIPAL CORPORATION

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ABBREVIATIONS

AAI	-	Airport Authority of India
AAQNS	-	Ambient Air quality Noise standard
ADB	-	Asian Development Bank
ASI	-	Archaeological Survey of India
BIS	-	Bureau of Indian Standards
BOD	-	Biochemical Oxygen Demand
CBO	-	Community Based Organization
COD	-	Chemical Oxygen Demand
CPCB	-	Central Pollution Control Board
CPHEEO	-	Central Public Health and Environmental Engineering Organisation
CTE	-	Consent to Establish
CTO	-	Consent to Operate
CW	-	Canal Water
DG	-	Diesel Generator
DO	-	Dissolved Oxygen
DPR	-	Detailed Project Report
DSC	-	Design and Supervision Consultants
DWF		Dry Weather Flow
KMC	-	Kolkata Municipal Corporation
EA	-	Executing Agency
EARF	-	Environmental Assessment and Review Framework
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
GRC	-	Grievance Redressal Committee
GRM	-	Grievance Redress Mechanism
GW	-	Groundwater
HC	-	Hydrocarbons
IEE	-	Initial Environmental Examination
INR	-	Indian National Rupee
KEIP	-	Kolkata Environmental Improvement Project
KEIIP		Kolkata Environmental Improvement Investment Program
KMC	-	Kolkata Municipal Corporation
KMDA	-	Kolkata Metropolitan Development Authority
LPG	-	Liquefied Petroleum Gas

MoEFCC	- Ministry of Environment and Forest & Climate Change, Government of India
MTBM	- Micro Tunnel Boring Machine
NAAQS	- National Ambient Air Quality Standards
NIOSH	- National Institute of Occupational Health
NGO	- Non - Government Organization
O and M	- Operation and Maintenance
PMC	- Project Management Consultant
PMU	- Project Management Unit
PS	- Pumping Station
REA	- Rapid Environmental Assessment
ROW	- Right of Way
RP	- Resettlement Plan
S & D	- Sewage & Drainage
SEIAA	- State Level Environmental Impact Assessment Authority
SPM	- Suspended Particulate Matter
SPS	- Safeguard Policy Statement
STP	- Sewage Treatment Plant
SWF	- Storm Water Flow
SW	- Surface Water
TDS	- Total Dissolved Solids
TMP	- Traffic Management Plan
TSS	- Total Suspended Solids
UFW	- Unaccounted For Water
USD	- US Dollar
WBPCB	- West Bengal Pollution Control Board
WTP	- Water Treatment Plant

I. INTRODUCTION

A. Background

1. Kolkata Environmental Improvement Project (KEIP) was a key urban infrastructure initiative of the Kolkata Municipal Corporation (KMC) funded by Asian Development Bank (ADB) since 2000 which succeeded in improvement of the urban environment and quality of life in parts (mainly added areas) of KMC area. On completion of the project, both KMC & ADB agreed to continue their combined effort to improve further basic urban municipal infrastructures of Kolkata through a multi - tranche financing program (MFF) of US \$400 million - 'Kolkata Environmental Improvement Investment Program' (KEIIP). Figure in **Appendix 1** shows the areas of Kolkata considered to be taken up under KEIIP Tranche 1, 2 & 3. ADB has released the necessary fund for implementation. The total investment duration for Tranche 1, 2 & 3 is from 2014 to 2022. Tranche 3 sub projects commenced during first quarter of 2019 and will be completed in 30 months, i.e. by second quarter of 2023. Following subprojects have been included in Tranche 3 –

SD-27R: Improvement of S&D network and construction of a pumping station in Alipore body guard line premises in ward 74

SD-28: Construction of Sewage Treatment Plant (45 MLD) near WBSETCL, Joka

SD-29: Construction of Sewage Treatment Plant (40 MLD) at Bank Plot, MG road, Joka

SD-30: Construction of Sewage Treatment Plant (30 MLD) at Rajpur-Sonarpur

SD-31: Lot-1 -Development of S&D network in Churial extension PS catchment and Diamond Park catchment and construction of Churial extension pumping station (annex) in Borough XVI (part of ward 124, 143 and 144).

SD31R2 –Development of S&D network in Bakrahat Road catchment and Laying of RCC sewer line along Bakrahat Road and DH Road by microtunnelling and cut & cover method

SD – 32: Improvement of S&D system in Mukundapur area (part of ward 109) including construction of pumping station at Mukundapur (Ward 109)

SD – 34: Construction of two new pumping stations near Lalababu Nikashi and Bagjola Canal and within Behala node C premises, Shakuntala Park

2. The main objective of the Program is to improve service quality and operational sustainability of increased water supply and sewerage in 20% of the KMC area. The Investment Program also aims towards increase in operational efficiency and scale of water supply, sewerage and drainage services in 5% of KMC area.

3. The Program output comprises of:

- ✓ rehabilitation of inefficient and outdated water supply assets;
- ✓ continued extension of sewerage to newly developed areas and
- ✓ further development of financial and project management capacity.

4. The Program is being carried out by the Govt. of West Bengal (GoWB) acting through KMC as the Executing Agency (EA). Sub project location map for **Tranche 3 (Project 3)** is shown in **Figure 1**.

B. Project & Report Purpose

5. The environmental impacts of the sub projects under **Tranche 3** were assessed through Initial Environmental Examination (IEE), prepared according to ADB Safeguard Policy (SPS 2009) and have been classified as environmental assessment **category B¹** by ADB.

6. This report is the **6th Semi Annual Environment Monitoring Report (SEMR)** covering period from **June 2021 to November 2021** and describes the implementation of the environmental management plan (EMP) in respect of each subproject of Tranche 3 as laid down in the approved IEE.

¹ some negative impacts but less significant than category A as per SPS 2009

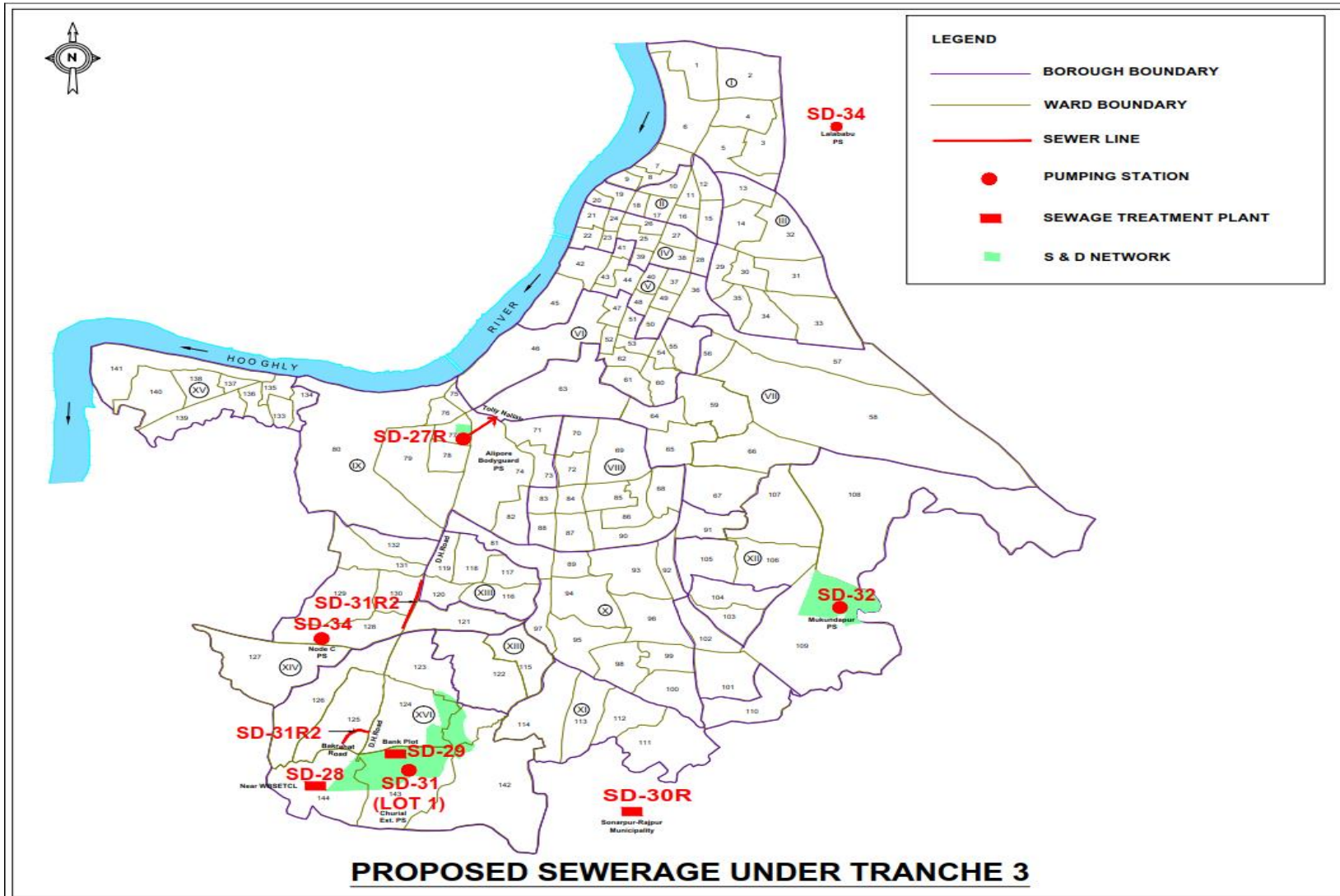


Figure 1: Sub Project location map- Project 3 (Tranche 3)

II IMPLEMENTATION PROGRESS

A. Status of Subprojects under Tranche 3

7. Total eight packages of Sewerage and Drainage have been considered under Tranche 3. Out of which 3 are STP projects², 4 projects include S&D network with pumping station³ and 1 package includes laying of RCC sewer line⁴. Table 1 shows the summary of subprojects (packages) under Tranche 3 including their work components, starting date and schedule date of completion, physical progress and progress of implementation of work components as on 30th November 2020 is presented in table 1.

8. Till date (30th November 2021) Contract has been awarded for all the 8 contract packages. All the subprojects are in implementation stage. Status of implementation of the subprojects has been presented in table 1 of this report.

² SD-28, SD-29 & SD-30

³ SD-32

⁴ SD-31 (Lot-2)

Table 1: Summary of Subprojects under KEIIP Tranche 3 (on 30th November, 2021)

Package Name and No.	Work components	Start date & Target date of completion	% Physical Progress as on 30 th November , 2021	Status off progress of work up to 31 st May, 2021
SD-27R: Improvement of S&D network and construction of a pumping station in Alipore body guard line premises in ward 74	<ul style="list-style-type: none"> Improvement of S&D network Construction of a pumping station in Alipore body guard line premises 	Start date- 20.11.19 Target date of completion 18.11.21	40.22	Contract awarded NTP issued Date of commencement 20.11.19
SD-28: Construction of Sewage Treatment Plan (45 MLD) near WBSETCL, Joka	<ul style="list-style-type: none"> Construction of Sewage Treatment Plan (45 MLD) Construction of Sewer line up to outfall 	Start date- 08.03.19 Target date of completion – 06.09.21	20.70	Contract awarded NTP issued Date of commencement: 08.03.2019
SD-29: Construction of Sewage Treatment Plant (40 MLD) at Bank Plot , MG road , Joka	<ul style="list-style-type: none"> Construction of Sewage Treatment Plan (40 MLD) Construction of Sewer line up to outfall 	Start date- 08.03.19 Target date of completion – 06.09.21	29.20	Contract awarded NTP issued Date of commencement: 08.03.2019
SD-30R: Construction of 23MLD Sewage Treatment Plant at Rajpur – Sonarpur , Rania including Operation & Maintenance for 15 years	<ul style="list-style-type: none"> Construction of Sewage Treatment Plan (23 MLD) Construction of Sewer line up to outfall 	Start date- 04.05.21 Target date of completion – 03.02.23	---	Contract awarded NTP issued Date of commencement 04.05.2021

Package Name and No.	Work components	Start date & Target date of completion	% Physical Progress as on 30 th November , 2021	Status off progress of work up to 31 st May, 2021
SD-31: Lot-1 -Development of S&D network in Churial extension PS catchment and Diamond Park catchment and construction of Churial extension pumping station (annex) in Borough XVI (part of ward 124, 143 and 144)	<ul style="list-style-type: none"> Construction of S&D network in Churial extension PS catchment and Diamond Park catchment Construction of Churial extension pumping station 	Start date- 18.10.19 Target date of completion – 16.10.22	19.96	Contract awarded NTP issued Date of commencement 18.10.19 RCC pipe laying – 2215.9 Rmt Till date 130nos. manholes have been constructed Cutting edge Fabrication work in progress for Churial PS-wet well
SD-31R2 - Development of S&D network in Bakrahat road catchment (Ward 125) by cut & cover method and laying of RCC sewer line along Bakrahat road and DH road by micro tunneling	<ul style="list-style-type: none"> RCC sewer line along Bakrahat Road and DH Road by micro tunneling and cut & cover method 	Start date- 04.01.21 Target date of completion – .3.01.23 -	4.17	Contract awarded NTP issued Date of commencement 04.01.21
SD – 32: Improvement of S&D system in Mukundapur area (part of ward 109) including construction of pumping station at Mukundapur & North Sreerampur	<ul style="list-style-type: none"> Construction of pumping station at Mukundapur Improvement of S&D system in Mukundapur area 	Start date 30.06.2021 Target date of completion – 29.06.2023	1.50	Contract awarded NTP issued Date of commencement 30.06.2021
SD – 34: Construction of pumping station at Lalababu Nikashi and Shakuntala Park	<ul style="list-style-type: none"> Construction of pumping station at Lalababu Nikashi Upgrading of existing pumping station at Shakuntala Park 	Start date- 29.11.19 Target date of completion – 27.11.21	42.55	Contract awarded NTP issued Date of commencement 29.11.19

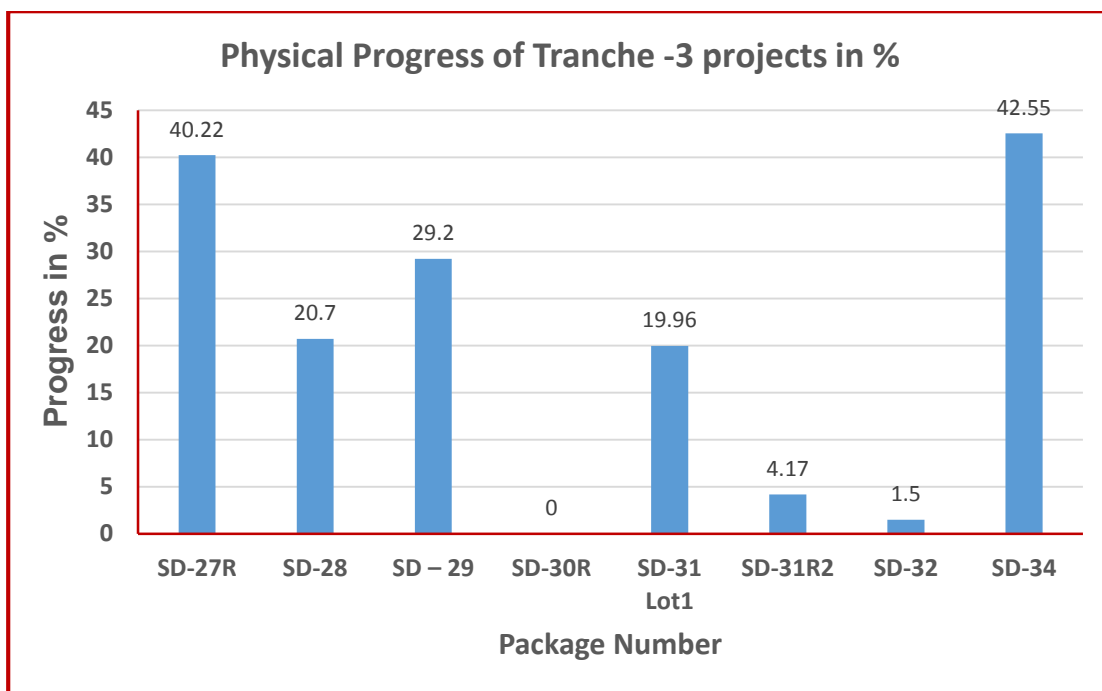


Figure 2: Status of contract package wise progress of work under Tranche 3

C. Compliance of Safeguard Loan Covenants

9. The loan agreement for KEIIP Project 3 was signed on 3rd October 2018 and details are available in ADB website (<http://www.adb.org/projects/documents/loan-3689-ind-keiip>). **Table 2** provides a summary of compliance to the loan covenants related to environmental safeguards.

Table 2: Compliance of Loan Covenants – Environment part

Serial no. Schedule 5 of loan agreement	Program Specific Covenants	Status / Issues
Environment		
7	The Borrower shall ensure or cause the EA to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all projects' facilities comply with (i) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (ii) the Environmental Safeguards; (iii) the EARF; and (iv) all	<p>Under compliance Documents have been prepared/ by complying all relevant State and National Laws, Safeguard Policy Statement (SPS 2009) of ADB, Environment Assessment Review Framework (EARF) for Tranche-3 program.</p> <p>For Tranche 3 project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB.</p>

Serial no. Schedule 5 of loan agreement	Program Specific Covenants	Status / Issues
	<p>measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</p>	<p>IEE for Sewage and Drainage for Tranche 3 has been updated due to change in scope of work and disclosed in ADB website in February 2019</p> <p>Updated IEE has recently been submitted for subprojects SD-30R, SD-31R2, SD-32 in the month of October 2020</p> <p>IEE for SD32 has been update in August 2021 due to further change in scope of work and submitted to ADB</p> <p>Statutory clearances (Consent to establish, NOC) from State Pollution control board have been obtained for proposed STPs (SD-28, SD-29)⁵</p> <p>Tree cutting permission has been obtained from DFO at SD – 29 premises⁶</p> <p>Application for Statutory clearances (Consent to establish, NOC) from State Pollution control board have been submitted for proposed STP- SD 30R</p> <p>All measures and requirements as prescribed in IEE and EMP are being considered during implementation.</p> <p>Corrective or preventive action plans will be reflected in Environment Monitoring Report and project implementation authority will take care of such actions when required.</p>
Human and Financial Resources to Implement Safeguards Requirements		
11	<p>The Borrower shall ensure or cause the EA to ensure that all necessary budgetary and human resources to fully implement the EMP and RP, as required, are made available.</p>	<p>Complied</p> <p>Budgetary provisions have been included in EMP of Tranche 3 projects.</p> <p>An Environment Specialist appointed in Project Management Unit who is</p>

⁵ Refer appendix 4A & 4B

⁶ Refer appendix 4C

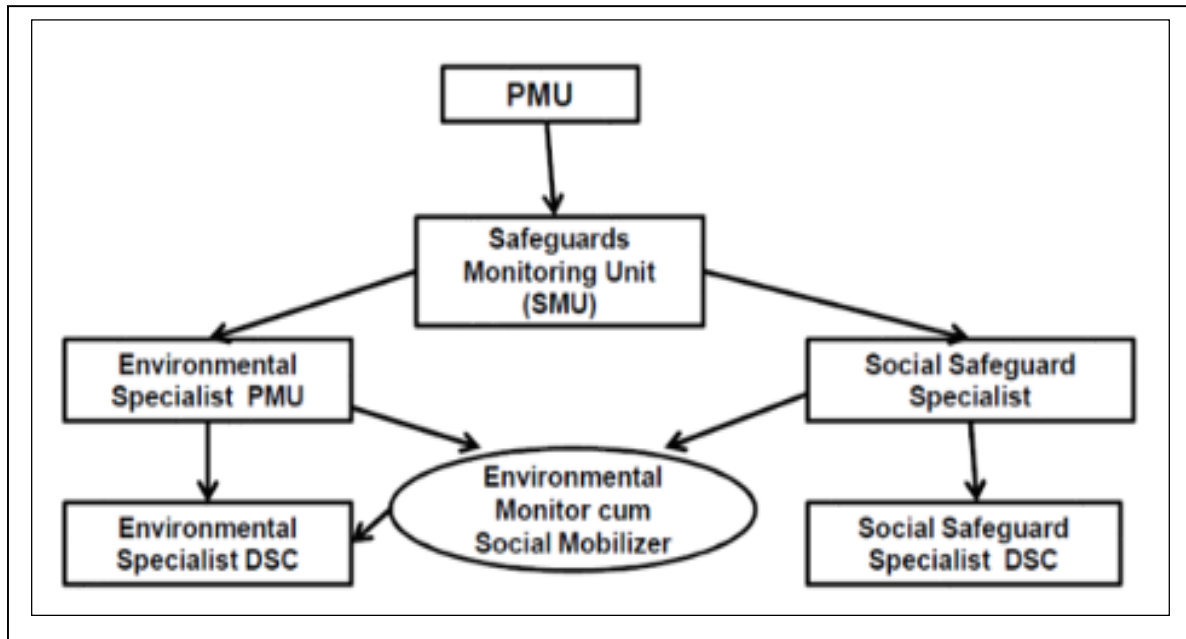
Serial no. Schedule 5 of loan agreement	Program Specific Covenants	Status / Issues
		<p>responsible for monitoring EMP compliances.</p> <p>Environmental Specialist and Environment Engineer of DSC for implementation of EMPs are in place for regular monitoring to ensure EMP compliance in the projects.</p>
Safeguards – Related Provisions in Bidding Documents and Works Contracts		
12.	<p>The Borrower shall ensure, or cause the EA to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP, the RP and the IPP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) make available a budget for all such environmental measures;</p> <p>(c) provide the EA with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or the IPP;</p>	<p>Under compliance</p> <p>(a) IEE and EMP are part of contract document. Approved IEE, EMP for Tranche 3 project is attached in Bidding documents. This process will be followed for all the sub projects within the present Tranche.</p> <p>In case of any change of scope, revised IEEs with EMP(s) and revised IEE log sheet will be prepared and corrective measures will be disclosed to the contractor and same will be reflected in the “Environment Monitoring Report”.</p> <p>Updated IEE has been submitted for subprojects SD-30R, SD-31R2, SD-32 in the month of October 2020</p> <p>IEE for SD32 has been update in August 2021 due to further change in scope of work and submitted to ADB</p> <p>IEE for Sewage and Drainage for Tranche 3 has been updated due to change in scope of work and disclosed in ADB website in February 2019</p> <p>(b) IEE indicates budgetary provisions for implementation of EMP.</p> <p>(c) During implementation of any sub project if additional impacts/risks arise due to change in scope/area, those will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Agency will inform the Construction Agency for taking relevant corrective measures.</p>

Serial no. Schedule 5 of loan agreement	Program Specific Covenants	Status / Issues
	<p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) Fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p>(d) Haul roads will be marked properly (by avoiding residential and agricultural land) before commencement of transportation of materials.</p> <p>(e) Pathways, infrastructure and land which are likely to be affected for varying periods during implementation of the sub project will be restored by concerned construction agency before acceptance of the work. Restoration status will be reflected in post construction monitoring report.</p>
Safeguards Monitoring and Reporting		
13	<p>The Borrower shall cause the EA to do the following:</p> <p>(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) Report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.</p>	<p>Under compliance</p> <p>(a) This is 6th Semi-annual safeguard monitoring report on Environment for Project 3 (Tranche 3) for the period June 2021 to November 2021. The next report will be due by end of May, 2022.</p> <p>(b) During implementation of any sub project, if additional impacts/risks arise due to change in scope /area, those will be reflected in revised IEEs with EMPs and accordingly PMU, KEIIP will inform the ADB such change along with corrective action plan which will be reflected in the subsequent Monitoring Reports. An addendum to the IEE, SOP- Health & Safety Plan in response to COVID-19 has been disclosed in ADB website in June 2020</p> <p>(c) In case of any breach of compliance with the measures and requirements set forth in the EMP, EA will promptly inform ADB and suitable corrective action program will be planned /initiated.</p>
Prohibited List of Investments		
14	<p>The Borrower shall ensure or cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.</p>	<p>Complied</p> <p>Under Tranche -3, there is no violation of prohibited investment activities as per ADB SPS (2009) Appendix 5.</p>

Serial no. Schedule 5 of loan agreement	Program Specific Covenants	Status / Issues
Other Social Measures		
15	The EA shall ensure that civil works contracts under the Project follow all applicable labor laws of the Borrower and the State, and that these further include provisions to the effect that contractors: (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; and (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts will also include clauses for termination in case of any breach of the stated provisions by the contractors.	<p>Complied in Bid documents and being complied during implementation</p> <p>Provision is included (as per EMP & BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labours (preferably from economically backward group) covering women labours.</p> <p>In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken.</p> <p>All activities including awareness program will be reflected in “Monitoring Report”.</p>

C. Implementation Arrangement

10. The institutional arrangement follows KEIIP’s organizational structure and functions (**Figure 3**). The subproject is being implemented and monitored by the Project Management Unit (PMU). The KEIIP’s PMU Environment Specialist is the overall in-charge on Environmental safeguard of the program. The responsibilities of the Environmental Specialist is to ensure that (i) environmental safeguard issues are addressed; (ii) EMP & approved Site Environment Management Plan (SEMP) is implemented; (iii) physical and non-physical activities under the subproject are monitored; and (iv) monitoring reports are prepared on time and submitted to ADB. Safeguard Monitoring Unit (SMU) of PMU is ensuring field level monitoring and safeguard documentation.



Notes: PMU = Project Management Unit; DSC = Design and Supervision Consultants

Figure 3: Institutional Arrangement – Safeguard

11. PMU is supported by the Design and Supervision Consultants (DSC). An Environment Specialist and an Environment Engineer are in place to ensure: (i) EMP/ approved SEMP is implemented; (ii) surveys and measurements are undertaken; (iii) inspections and observations throughout the construction period are recorded to ensure that safeguards and mitigation measures are provided as intended; and (iv) statutory clearances and permits from government agencies/other entities are obtained prior to start of civil works.

12. The Safeguards Monitoring Unit will:

- (i) prepare the REA checklist, draft the EIA/IEE and arrange for disclosure of the approved EIA/IEE in the website
- (ii) Ensure that Environmental Clearance (EC), Consent to Establishment and Consent to Operate and other certificates, as required, are obtained in time from appropriate authorities and ensure compliances with conditions imposed.
- (iii) ensure incorporation of the EMP, environmental mitigation and monitoring measures into the contract documents
- (iv) monitor disclosure and public consultation arranged by DSC during IEE process and ensure that comments are reflected in the IEE report
- (v) ensure disclosure of information throughout the duration of the subproject through suitable visual means and publications
- (vi) provide necessary input for grievance redress
- (vii) approve contractor's proposed locations for construction work camps, storage areas, hauling roads, lay-down areas, and disposal areas for solid and hazardous wastes on recommendations of DSC
- (viii) guide the contractor for drawing up of Site Environmental Management Plan and to approve the same
- (ix) induct the contractor for taking up the construction following environmental and social safeguards

- (x) Facilitate scheduled monitoring during implementation of the project.
- (xi) Carry out regular onsite monitoring and guide the contractor to adopt the required site management standard.
- (xii) ensure the required health and safety measures at work sites as per “Standard Operating Procedure” during COVID pandemic situation issued by DSC, KEIIP and approved by ADB
- (xiii) obtain in time and to review the monthly monitoring report of the contractors
- (xiv) prepare 6-monthly monitoring and EMP implementation report, including the status of project compliance, statutory clearances and relevant loan covenants, and submit the approved 6-monthly report to ADB and seek permission to disclose the same in the investment program website
- (xv) prepare monitoring report on post-construction activities by the contractors as specified in the EMP

13. The contractor’s responsibilities included:

- (i). Submission of Site environmental plan (SEP) covering proposed sites / locations for construction work camps, storage areas, haul roads, lay down areas, disposal areas for solid and hazardous wastes
- (ii). Compliance with all applicable legislation and be conversant with the requirements of the EMP/ approved SEMP;
- (iii). Briefing of his staff, employees, and Labours about the requirements of the EMP/ approved SEMP;
- (iv). Ensuring that all sub-contractors/suppliers engaged within the context of the contract comply with the environmental requirements of the EMP/ approved SEP. The contractor will be held responsible for non-compliance on their behalf;
- (v). Providing methodology/information for all activities requiring special attention as specified and/or requested by the DSC Environment Specialist during the duration of the Contract;
- (vi). Providing environmental awareness training to staff, employees, and Labours;
- (vii). Bearing the costs of any damages/compensation resulting from non-adherence to the EMP/ approved SEMP or written site instructions;
- (viii). Conducting all activities in a manner that minimizes disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment.
- (ix). Ensuring that the PMU and DSC Environment Specialists are timely informed of any foreseeable activities that will require their expert input
- (x). Site specific health and safety plan in response to Coronavirus disease (COVID – 19) pandemic as per “Standard Operating Procedure” issued by KEIIP, PMU
- (xi). Site specific health and safety plan needs to be approved by Environment specialist of DSC/PMU and ADB

14. Environment Specialist and Environment Engineer of DSC visited all construction sites every month and arranged orientation training program for contractors (Tranche 3) and supervisory staff and instructed contractors for application of corrective action measures to mitigate impacts. **Table 3** shows detail of environment safeguard team for KEIIP.

Table 3: Details of KEIIP Environmental Safeguard Team

Designation	Name and Contact Details
PMU, Environment officer	Name: Mrs. Runkini Ghosh Office Address: Unnayan Bhawan, 206 A. J. C Bose Road, Kolkata 700017 Phone:033 2283 0169 Email:pdkeip@gmail.com, chin_moy@yahoo.com
DSC, Environment Specialist	Name: Dr. Samar Kumar Banerjee Office Address: Unnayan Bhawan, 206 A. J. C Bose Road, Kolkata 700 017 Phone:033 2283 0044 Email:dскеip@gmail.com, samarbanerjee1@gmail.com,
DSC, Environmental Engineer	Name: Kakoli Bhattacharyya Office Address: Unnayan Bhawan, 206 A. J. C Bose Road, Kolkata 700 017 Phone:033 2283 0044 Email:dскеip@gmail.com, bhattacharyyakakoli123@gmail.com

III ENVIRONMENTAL PROCEDURE REVIEW

A. Environmental Legal Requirement

15. For implementation of the project both national and state rules & regulations need to be followed. **Table 4** in next section indicates environment legal requirement for the projects under KEIIP.

B. Compliance with Environmental Legal Requirements

16. Before implementation of the project, compliance with environmental policy, law and legislation is necessary.

17. Under **Tranche 3** present status of Environment, forest and other clearances are mentioned below.

Table 4: Status of Compliance with National and State Legal Requirements (up to 31stMay, 2021)

Package	Main package work	National and State Legal Requirement Applicable to the sub-project	Status	Conditions of the Clearance/NOCs
SD-27R	Improvement of S&D network and construction of a pumping station in Alipore body guard line premises in ward 74	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987	Contract awarded & NTP issued. Start date- 20.11.19 Target date of completion 18.11.21	NA

Package	Main package work	National and State Legal Requirement Applicable to the sub-project	Status	Conditions of the Clearance/NOCs
		In case of setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO) from SPCB		
SD-28	Construction of Sewage Treatment Plan (45 MLD) near WBSETCL, Joka	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Consent to Establish (CTE) and Consent to Operate (CTO) to be obtained from SPCB Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Contract awarded & NTP issued. Start date- 08.03.19 Target date of completion 06.09.21	CTE (NOC) from West Bengal Pollution Control Board obtained. (refer appendix-4A)
SD-29	Construction of Sewage Treatment Plant (40 MLD) at Bank Plot , MG road , Joka	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Consent to Establish (CTE) and Consent to Operate (CTO) to be obtained from SPCB Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO) from SPCB Tree cutting permission has been obtained from Forest Utilization Division	Contract awarded & NTP issued. Start date- 20.11.19 Target date of completion 18.11.21	CTE (NOC) from West Bengal Pollution Control Board obtained. (Refer appendix-4B) (Refer appendix-4C)
SD-30R	Construction of Rajpur-Sonarpur Sewage Treatment Plant (30 MLD)	West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission	Contract awarded & NTP issued Start date- 04.05.21	Applied for CTE (NOC) from West Bengal Pollution Control Board (Refer appendix-4D).

Package	Main package work	National and State Legal Requirement Applicable to the sub-project	Status	Conditions of the Clearance/NOCs
		Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Consent to Establish (CTE) and Consent to Operate (CTO) to be obtained from SPCB Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Target date of completion – 03.02.23	
SD-31 Lot-1 -	Development of S&D network in Churial extension PS catchment and Diamond Park catchment and construction of Churial extension pumping station (annex) in Borough XVI (part of ward 124, 143 and 144).	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Contract awarded & NTP issued. Start date- 18.10.19 Target date of completion 16.10.22	NA
SD-31R2	Laying of RCC sewer line along Bakrahat Road and DH Road by microtunnelling and cut & cover method	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Contract awarded & NTP issued Start date- 04.01.21 Target date of completion – .3.01.23	NA
SD – 32	Improvement of S&D system in Mukundapur area (part of ward 109) including construction of pumping statios at	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by	Start date 30.06.2021 Target date of completion – 29.06.2023	NA

Package	Main package work	National and State Legal Requirement Applicable to the sub-project	Status	Conditions of the Clearance/NOCs
	Mukundapur & North Sreerampur	Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)		
SD – 34	Construction of pumping station at Lalababu Nikashi and upgrading of existing pumping station at Shakuntala Park	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Contract awarded & NTP issued. Start date- 29.11.19 Target date of completion 27.11.21	NA

IV COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

18. Total eight packages of Sewerage and Drainage have been considered under Tranche 3. Out of which 3 are STP projects⁷, 4 projects include S&D network with pumping station⁸ and 1 package includes laying of RCC sewer line⁹. Table 1 shows the summary of subprojects (packages) under Tranche 3 including their work components, starting date and schedule date of completion, physical progress and progress of implementation of work components as on 31st May 2021 is presented in figure 2.

19. Till date (31st May 2021) Contract has been awarded and Notice to Proceed (NTP) has been issued for all the contract packages. All the contractors mobilised but the contract SD 30R has not progressed.

20. Some preliminary construction activities¹⁰ like boundary wall, chlorine unit was observed in SD 28 and in SD 29 pilling activity for SBR was observed. Progress of work was observed in all the contract packages except in SD30R.

⁷ SD-28, SD-29 & SD-30

⁸ SD-32

⁹ SD-31 (Lot-2)

¹⁰ like fencing, fixation of signboards, construction of approach road, chlorine unit ,pilling etc.

21. Statutory clearances¹¹ for SD-28 and SD-29 have been issued by West Bengal Pollution Control Board.
22. Environment Specialist from DSC and PMU carried out periodic site visits and periodic monitoring of EMP implementation through mainly desk review of contractor's records and periodic site visit. Summarised compliance of EMP in active packages (SD – 29, SD -28, SD – 31LOT1, SD 34, and SD – 27R) of TR -3 has been presented in **Table 5** of this report.
23. Contractors have been asked to submit site specific EMP before starting of each construction packages. These EMPs will be revised semi-annually as per progress of construction work.
24. Baseline environmental monitoring have been conducted in May 2019 for subprojects SD-28 & SD -29, December 2019 for subproject SD-31Lot1, July 2020 for subproject SD 27R, and October 2020 for SD-34 Construction stage monitoring has been carried out during post - monsoon season (October – November) 2021.
25. Environment Specialist from DSC and PMU are in touch with contractors and regularly monitoring EMP implementation through desk review of contractor's records and site inspections. Package wise findings for the period June 2021 to November 2021 are presented in **Tables 5** of this report.
26. Over all, most of the sites are environmentally well managed. However, scopes for further improvement in site management measures have been explained to the contractors.
27. Necessary action to minimize deficiencies in EMP implementation has been communicated verbally and also in writing to the concerned contractors.

¹¹ Consent to Establish (NOC)

Table 5: Summarized Compliance to EMP Implementation for Tranche -3 Packages (Package No. SD 27R, SD 28, SD 29 SD 30, SD 31 lot-1, SD 31R2, SD 32 & SD 34)

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
Pre Construction - Design phase													
1	Site clearance	Site preparation work including necessary clearance and permission.	<ul style="list-style-type: none"> Tree felling requirement – site environment plan. NOC – paper documents from line agency. Method - Site observation and document checking. 	Environment Specialist of DSC and PMU	All Project locations, before commencement of physical work.	Tree felling not required.	Tree felling not required.	40 (forty) nos. of tree need to be felled in the STP premises.	Tree felling not required.	Tree felling not required.	Tree felling not required.	Tree felling not required.	Tree felling not required.
							NOC issued by West Bengal Pollution Control Board for Consent to Establish	Tree cutting permission has been obtained from DFO NOC issued by West Bengal Pollution Control Board for Consent to Establish	NOC to be obtained from West Bengal Pollution Control Board for Consent to Establish				
2	Access to Site	<ul style="list-style-type: none"> maintained via existing roads Involvement of local Traffic Department in the planning stages for road closure traffic diversion. 	<ul style="list-style-type: none"> Involvement of traffic dept. Road closure planning Method – Site observation 	Environment Specialist of DSC and PMU	Specific project location	Site is accessible.	Site is accessible.	Working site is accessible.	Site is accessible.	Working site is accessible,	Site is accessible.	Site is accessible.	Site is accessible.
3	Affected utilities	Shifting of affected utilities like electric and telephone lines, cable lines, pipe lines etc.	<ul style="list-style-type: none"> List of affected utilities if any, contact operators. Bid document to include requirement for a contingency plan for service interruptions. Method - Site observation and document checking. 	Environment Specialist of DSC and PMU	Specific project location	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.
4	Water supply	Health risk due to damage in water supply line	<ul style="list-style-type: none"> Schedule of closure. Delivery of KMC potable water to affected people. Method - Site observation 	Environment Specialist of DSC and PMU	Specific project location	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work
5	Traffic Management	Planning for Traffic Management	Ensure traffic management plan is part of contract documents and being implemented. Method - Site	Environment Specialist of DSC and PMU	-	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Contractor not yet mobilized	Traffic management plan has been approved by DSC/PMU and	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
			observation and document checking.							Traffic Police Dept.			
6	Setting of construction camps, hot mix plants, stockpile areas, storage areas, and disposal areas.	<ul style="list-style-type: none"> Planning for setting up construction camp, hot mix plants, stockpile areas, storage and disposal areas – to be submitted to DSC for prior approval. Prioritize areas within or nearest possible vacant space in the sub-project location No use of residential areas No disposal of waste in water 	List of selected location for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas. Method - Site observation and document checking.	Environment Specialist of DSC and PMU	Camp and other sites, before start of physical work & Continuous	Setting of hot mix plant is not required. Labour camp is located within project site.	Setting of hot mix plant is not required. Labour camp is located within project site	Setting of hot mix plant not required. site office has been established with labor hutment.	Setting of hot mix plant is not required. Labour camp is located within project site	Setting of hot mix plant is not required. Labour camp is located within project site	Setting of hot mix plant is not required. Labour camp is located within project site	Setting of hot mix plant is not required. Labour camp is located within project site	Setting of hot mix plant is not required. Labour camp is located within project site
7	Establishing Equipment Lay-down and Storage Area ¹²	<ul style="list-style-type: none"> Choice of location for equipment lay-down and storage areas must take into account prevailing winds, distances to adjacent land uses, general on-site topography and water erosion potential of the soil. Storage areas shall be secure so as to minimize the risk of crime. Away from school and direct residential areas Fire prevention facilities must be present at all storage facilities Proper storage facilities for the storage of oils, paints, grease, 	List of selected location and facility. Method - Site observation and document checking.	Environment Specialist of DSC and PMU	Proposed locations considered in the package. Before start of physical work & Continuous	Equipment lay down and storage areas have been designated demarcated and fenced.	Equipment lay down and storage areas have been designated, demarcated and fenced	Equipment lay down and storage area areas have been designated demarcated and fenced	Equipment lay down and storage areas have been designated, demarcated and fenced	Equipment lay down and storage areas have been designated demarcated and fenced	Equipment lay down and storage areas have been designated, demarcated and fenced	Equipment lay down and storage areas have been designated, demarcated and fenced	Equipment lay down and storage areas have been designated demarcated and fenced.

¹² Storage areas can be hazardous, unsightly and can cause environmental pollution if not designed and managed carefully

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
		fuels, chemicals and any hazardous materials <ul style="list-style-type: none"> • These storage facilities (including any tanks) must be on an impermeable surface • Staff must be aware of their potential impacts and follow the appropriate safety measures 											
8	Education of site staff on general and Environmental Conduct ¹³	<ul style="list-style-type: none"> • Ensure that all site personnel have a basic level of environmental awareness training • All employees must undergo safety training and wear the necessary protective clothing 	Documentation – Training and awareness. Method - Materials and records on awareness training program	Environment Specialist of DSC and PMU	-	Training has been provided to safety officer by DSC.	Training has been provided to safety officer by DSC.	Training has been provided to safety officer by DSC.	Training has been provided to safety officer by DSC	Training has been provided to safety officer by DSC.	Training has been provided to safety officer by DSC	Training has been provided to safety officer by DSC	Training has been provided to safety officer by DSC.
Construction													
9	Materials Management – Sourcing ¹⁴	<ul style="list-style-type: none"> • Contractors shall prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc), and submit these to the DSC for approval prior to commencement of any work. • Use of Govt. approved quarry sites for 	<ul style="list-style-type: none"> • List of approved quarry sites and sources of materials • Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary. • Construction Contractor documentation • Method - Site observation and document checking. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Quarries and material source areas. Daily visit by construction supervisor of DSC. Weekly visit by Construction Manager. Fortnight visit by Environment Specialist / Environmental Engineer.	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources	Before construction at site, contractor has submitted list of construction materials and its sources

¹³ These points need to be made clear to all staff on site before the subproject begin.

¹⁴ Materials must be sourced in a legal and sustainable way to prevent offsite environmental degradation.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
		<ul style="list-style-type: none"> procurement of materials Verify suitability of all material sources and obtain approval of Investment from PMU/DSC 											
10	Maintenance of Construction Camp	<ul style="list-style-type: none"> Establishment of temporary camps with drinking water, sanitary and solid waste management arrangement Train employees in the storage and handling of materials Remove all wreckage, rubbish, or temporary structures 	<ul style="list-style-type: none"> Complaints from sensitive Receptors Water and sanitation facilities for employees Housekeeping – regular disposal of solid waste. Method – site observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Camp site. Same as above.	Moderately satisfactory	Labour camp is located within project site. Labour camp needs improvement	Labour camp is located within project site. Labour camp needs improvement	Moderately satisfactory	Moderately satisfactory	Moderately satisfactory	Moderately satisfactory	Moderately satisfactory
11	Landscape and Aesthetics	<ul style="list-style-type: none"> Removal of overburden and excavated material from working site and use / preservation of the same – as per mitigation measures Fencing of storage areas Disposal of construction debris if any as per mitigation measures Prepare and implement Waste Management List Avoid stockpiling of excess excavated soils Coordinate with KMC for beneficial uses of excess excavated soils 	<ul style="list-style-type: none"> Waste Management List Complaints from sensitive receptors PMU/PIU/DSC to report in writing that the necessary environmental restoration work has been done. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations. Same as above.	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP	Maintained as per EMP

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
12	Dust and Air Pollution ¹⁵	<ul style="list-style-type: none"> Selection of materials storage area Water sprinkling at construction site for arresting dust (if any during dry period) Use tarpaulins to cover sand and other loose material- Reducing dust hazard All vehicles and equipments mobilized to construction site and producing emission, have Pollution Under Control certification No fire wood burning is allowed on site Carry out air quality monitoring 	<ul style="list-style-type: none"> Location of stockpiles Complaints from sensitive receptors Monitoring data Heavy equipment and machinery with air pollution control Water sprinkling arrangement Cover materials. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations, same as above.	Construction equipment and vehicles are being maintained in good condition,	Construction equipment and vehicles are being maintained in good condition, Pollution under control certificate has been renewed periodically for construction vehicles, Sprinkling of water to minimize fugitive dust at site and covering up the material loaded vehicle need to be maintained at site throughout the construction period	Construction equipment and vehicles are being maintained in good condition, Pollution under control certificate has been renewed periodically for construction vehicles, Sprinkling of water to minimize fugitive dust at site and covering up the material loaded vehicle need to be maintained at site throughout the construction period	Construction equipment and vehicles are being maintained in good condition,	Mitigative measures has been adopted at work site to minimize air pollution like sprinkling of water during construction, covering up of materials carrying vehicle, air quality monitoring has been carried out at pre construction stage and to be continued throughout the construction period. PUC certificate for all vehicles engaged at site, portable toilet system	Construction equipment and vehicles are being maintained in good condition,	Construction equipment and vehicles are being maintained in good condition,	Construction equipment and vehicles have been maintained in good condition
13	Noise level	<ul style="list-style-type: none"> Noise producing work needs to be conducted at day time Regular maintenance of noise producing equipment Horns not be used unless it is necessary to warn other road users Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more 	<ul style="list-style-type: none"> Complaints from sensitive receptors Use of silencers in noise-producing equipment and sound barriers Monitoring data. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations, same as above.	Construction activities has been restricted within a reasonable working hours.	Noise level is within permissible level of commercial area	Maintenance of silencers to all machinery is ensured. Base line noise level monitoring has been conducted near project sites. Construction activities has been restricted within a reasonable working hours. Adjacent landowners will be informed about any noisy activities if	Construction activities has been restricted within a reasonable working hours	Construction activity has been limited within reasonable working hours, all machineries are well maintained, baseline monitoring has already been carried out and monitoring during construction stage to be continued throughout the	Construction activities has been restricted within a reasonable working hours	Construction activities has been restricted within a reasonable working hours	Construction activities has been restricted within a reasonable working hours

¹⁵ Main causes of air pollution during construction are dust from vehicle movements and stockpiles, vehicle emissions and fires.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
		from the vehicle/s • At sensitive locations, enclosures provided around generator set or other noise producing machinery.						needed during night time		construction period			
14	Storm water management	Arrangement of drainage of waste water and arresting of solid waste/silt from waste water generated at construction site	<ul style="list-style-type: none"> Areas for stockpiles, storage of fuels and lubricants and waste materials Number of silt traps installed along drainages (in slope) leading to water bodies. Method – checking of records, visual observation. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project location same as above	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	The site surface has been engineered and shaped in such a way that rapid and efficient evacuation of runoff is achieved. No major ground disturbance has been observed till date, waste management practices has been maintained.	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	This site has been planned in such a way that efficient drainage has been achieved from site during monsoon	Moderately satisfactory
15	Water Quality ¹⁶	<ul style="list-style-type: none"> Contractor to ensure run-off from vehicle or plant washing does not enter pond / Hooghly river Contractor to ensure every effort is made that any chemicals or hazardous substances do not contaminate the soil, Hooghly river, or groundwater on site. 	Non entry of pollutant in water body. Method – site observation.	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Not applicable as per present nature of work.	Not applicable as per present nature of work.	Applicable as per present nature of work. Baseline data for pond water quality generated in May,2019 and also during construction stage in November 2020. & May 2021	NTP issued to the contractor , contractor not yet mobilized	Not applicable as per present nature of work.	Not applicable as per present nature of work	Applicable as per present nature of work.	Not applicable as per present nature of work.

¹⁶ Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
16	Conservation of Natural Environment	<ul style="list-style-type: none"> Contractor to ensure removal of only trees that have been marked beforehand Contractor to immediately re-vegetate stripped areas Contractor to prohibit site staff from gathering firewood, fruits, plants, crops or any other natural material on-site or in areas adjacent to the sites. 	Tree felling requirement and afforestation after final design. Method – checking of records, visual observation.	For mitigation - contractor , for monitoring - Environment Specialist of DSC and PMU.	Project Locations	No tree cutting was needed as per present working condition	No tree cutting is required as per present nature of work.	40 no. tree cutting is required as per final design. Tree cutting permission has been obtained from DFO	No tree cutting was needed as per present working condition	No tree cutting as per present working condition	No tree cutting as per present working condition	No tree cutting as per present working condition	No tree cutting as per present working condition
17	Materials Management	<ul style="list-style-type: none"> Contractor to ensure stockpiles do not obstruct natural water pathways. Contractor to cover stockpiles exposed to windy conditions or heavy rain with vegetation, cloth, or tarps. Contractor to ensure all concrete mixing take place on a designated, impermeable surface. 	Stockpile management. Method – checking of records, visual observation.	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Stockpile / storage area	Stockpiling of materials has been done as per approved site plan	Stockpiling of materials has been done as per approved site plan.	Stockpiling of materials has been done as per approved site plan.	Stockpiling of materials has been done as per approved site plan	Stockpiling of materials will be done as per approved site plan.	Stockpiling of materials has been done as per approved site plan	Stockpiling of materials has been done as per approved site plan	Stockpiling of materials will be done as per approved site plan.
18	Occupational Health & safety	<ul style="list-style-type: none"> Develop and implement site-specific Health and Safety (H&S) Plan Use Personal Protective Equipment like helmet, gumboot, gloves, nose mask and earplugs H&S Training for all site personnel Documentation of work-related accidents; 	<ul style="list-style-type: none"> Site-specific Health and Safety (H&S) Plan Equipped first-aid stations; Medical insurance coverage for workers Number of accidents Supplies of potable drinking water; Record of H&S orientation trainings 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Site-specific Health and Safety (H&S) Plan has been followed during construction.	Site-specific Health and Safety (H&S) Plan has been followed during construction.	Site-specific Health and Safety (H&S) Plan has been followed during construction.	Site-specific Health and Safety (H&S) Plan will be followed during construction	Site-specific Health and Safety (H&S) Plan will be followed during construction.	Site-specific Health and Safety (H&S) Plan will be followed during construction	Site-specific Health and Safety (H&S) Plan will be followed during construction	Site-specific Health and Safety (H&S) Plan will be followed during construction.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
		<ul style="list-style-type: none"> Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU Provide specific guidance for suitable PPE for every on-site work assignment Ensure availability of First aid box at all working sites and labour camp Provide medical insurance coverage for workers; Provide supplies of potable drinking water at working sites; Provide H&S orientation training to all new workers Mark and provide sign boards for hazardous areas such as energized electrical devices and lines Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. 	<ul style="list-style-type: none"> Personal protective equipments Sign boards for hazardous areas such as energized electrical devices and lines, service rooms. Method – checking of records, visual observation. 										
19	Social Impacts ¹⁷ - Community Health & safety, accessibility	<ul style="list-style-type: none"> Plan truck routes (for carrying construction materials including pipes) to avoid narrow 	<ul style="list-style-type: none"> Traffic Management Strategy Complaints from sensitive receptors 	For mitigation - contractor, for monitoring - Environment Specialist of	Project Locations	Project information board implemented at site, sufficient	Sight fencing done, project information board implemented at site, sufficient	Sight fencing done, project information board implemented at site, sufficient	Project information board implemented at site, sufficient	Project information board implemented at site, sufficient	Project information board implemented	Project information board implemented	Project information board implemented at site, sufficient

¹⁷ Regular communication between the Contractor and the interested and affected parties is important for the duration of the contract.

Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
	<p>or congested roads and tourist sites</p> <ul style="list-style-type: none"> Contractor to ensure disruption of access for local residents is minimized Contractor to restrict activities and movement of staff to designated construction areas Contractor to provide walkways and metal sheets where required to maintain access across for people and vehicles Consideration of public safety - as per prescribed mitigation measures Contractors to ensure lighting on the construction site Provide protective fencing around open trenches Provide road signs and flag persons to warn Schedule transport and hauling activities during non- peak hours 	<ul style="list-style-type: none"> Number of signages placed at subproject location. Method – checking of records, visual observation. 	DSC and PMU.		access maintained at site	access maintained at site.	access maintained at site.		access maintained at site	at site, sufficient	at site, sufficient	access maintained at site

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation SD 27R	Compliance Status/ Explanation SD 28	Compliance Status/ Explanation SD 29	Compliance Status/ Explanation SD 30R	Compliance Status/ Explanation SD 31 lot-1	Compliance Status/ Explanation SD 31R2	Compliance Status/ Explanation SD 32	Compliance Status/ Explanation SD 34
20	Socio cultural resources	<ul style="list-style-type: none"> Strictly follow the protocol for chance archaeological finds in any excavation work Stop work immediately to allow further investigation if any finds are suspected 	Chances find protocol. Method - Checking of records	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date	Not required till date	Not required till date. Instruction has been given
21	Employment generation	<ul style="list-style-type: none"> The use of labor intensive construction measures will be used where appropriate Employ local (unskilled) labour if possible Training of labor to benefit individuals beyond completion of the subproject 	Employment record. Method - Checking of records	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Local Workers (Male/Female) and laborers are mostly engaged at all working site.	Local labour is mostly engaged.	Local Workers and laborers are mostly engaged at all working site.	Local labour is mostly engaged	Local Workers (Male/Female) and laborers are mostly engaged at all working site. Construction materials has been procured from local market.	Local labour is mostly engaged	Local labour is mostly engaged	Local Workers (Male/Female) and laborers are mostly engaged at all working site.

V ENVIRONMENTAL MONITORING AND EVALUATION

28. In addition to desk reviews and site inspections, monitoring of selected environmental parameters have been conducted during the reporting period. The frequencies of the environmental monitoring activities are commensurate to the type and significance of the impacts. For **Tranche 3** subprojects, the parameters to be monitored are ambient air quality, noise levels and nearby surface water quality.

29. Construction stage air quality, nearby surface water quality and noise level monitoring has been conducted for six active packages i.e. SD 28, SD 29, SD-31LOT1, SD 27R and SD-34 and SD 31R2) during post - monsoon season (October 2021 – November 2021)

30. Air quality monitoring results are shown in **Table 6** and comparison with standards has been presented in **Figures 4 to 7**

31. Salient findings from baseline air quality monitoring are as follows,

- Except at subproject SD-28 & SD 29 work site, PM10 value is within permissible limit for all the subprojects. Other ambient air quality parameters like SO₂, NO_x, and PM_{2.5} are well within prescribed limit of residential areas by Government of India¹⁸.
- In all the cases concentration of Hydrocarbon is below the detection limit.
- Contractors have been advised to take necessary action on dust suppression (during dry periods) by sprinkling of water whenever required so that ambient air quality can be maintained during the construction

Table 6: Ambient Air Quality Status at Working Sites SD-28, SD-29, SD-27R, SD-31LOT1 SD-34 & SD-31 R2

Construction Package	Monitoring location	Monitoring stage	Date of monitoring	Parameters, µg/m3				
				SO ₂	NO ₂	PM _{2.5}	PM ₁₀	HC
SD -28 Construction of Sewage Treatment Plan (45 MLD) near WBSETCL, Joka	Project site STP location	Base line	22.05.19	10.6	34.8	56	113	
	Project site STP location near office	Construction stage in November 2021	11.11.2021	10.5	36.2	83	143	
SD- 29 Construction of Sewage Treatment Plant (40 MLD) at Bank Plot , MG road , Joka	Project site STP location	Base line	18.05.19	11.3	37.1	50	84	
	Project site STP location near office	Construction stage in November 2021	11.11.2021	10.0	38.2	76	128	
SD-27R Improvement of S&D network and construction of a pumping station in Alipore body guard line premises in ward 74	Near barrack no.4	Construction stage in October 2021	16.10.2021	5.1	22.3	35	71	
	Near pond area	Construction stage in October r 2021	16.10.2021	4.9	21.4	34	67	
	Near R.G.Jyoti office area	Construction stage in October 2021	16.10.2021	5.4	23.5	38	73	

¹⁸ National Ambient Air Quality Standard, NAAQS, 2009, MOEFCC, Govt. of India

Construction Package	Monitoring location	Monitoring stage	Date of monitoring	Parameters, µg/m ³				
				SO ₂	NO ₂	PM _{2.5}	PM ₁₀	HC
SD-31Lot1 Development of S&D Network in Churial Extension PS catchment & Diamond Park catchment and construction of Churial Extension pumping station (Annex) in Borough XVI(Part of Ward 124, 143 & 144)	B-8 lane, Mud hut, Loha Poll	Base Line	28.12.19	8.2	32.1	57	91	
	Pragati pally	Construction Stage In December 2021	14.12.2021	9.2	35.3	76	139	
SD- 34 Construction of 2 new Pumping Stations near confluence of Lalababu Nikashi& Bagjola Canal and within Behala Node C premises, Sakuntala Park and south dumdum	Project site Biren roy road, Behala	Construction Stage In December 2021	10.12.2021-11.12.2021	9.3	31.7	63	106	
	Project site South Dumdum	Construction Stage In December 2021	10.12.2021-11.12.2021	8.4	31.4	48	74	
SD-31 R2 Development of S&D network in Bakrahat road catchment (Ward 125) by cut & cover method and laying of RCC sewer line along Bakrahat road and DH road by micro tunneling	Junction of Bakrahat road & Abhaypara Road	Construction stage in November 2021	24.11.2021-25.11.2021	10.6	34.6	68	126	

32. Base line ambient noise level data are presented in **Table 7**. In all the project site SD day time and night time **Leq db (A)** are exceeding prescribed limit of residential areas by Government of India¹⁹. Baseline noise level data for subprojects SD-27R and SD-31LOT1 are within prescribed limit of residential areas for both day time and night time (**Refer Figure - 8 & 9**)

33. Water quality of the pond near the STP 29 was also generated and the data indicate that the water quality is fit for outdoor bathing (Organised), i.e. CPCB classification of the inland surface water (class- B)²⁰ (**Refer table -8**)

34. “During construction” air quality, noise level and water quality monitoring will be continued for the packages as per Environment Management and Monitoring Plan. All monitoring expenses is being borne by contractors from their project Health safety monitoring

¹⁹ The Noise Pollution (regulation and control) rules, 2000 and its amendment in 2010 and 2012

²⁰ Inland surface water categories (CPCB,1978)

budget. As most of the projects are within the locality hence in some places air quality as well noise quality exceeds the prescribed standards due to movement of traffic. All the contractors have been instructed to control their activities to reduce day and night time noise.

35. A performance monitoring fact sheet has been prepared to facilitate tracking and quick reference on environmental monitoring of Tranche 3 subproject packages (**Tables 9**)

Table 7: Noise monitoring Status at Working Sites of SD-28, SD-29, SD-27R, SD-31LOT1, SD-34 & SD-31 R2

Package No.	Sampling Locations- Area	Implementation Stage	Date of Monitoring	Day Time Leq dB(A)	Night Time Leq dB(A)
SD -28 Construction of Sewage Treatment Plant (45 MLD) near WBSETCL, Joka	Project site STP location	Base line	08.11.2020	62.4	51.8
	Project site STP location near office	Construction stage in November 2021	11.11.2021	62.6	52.8
SD- 29 Construction of Sewage Treatment Plant (40 MLD) at Bank Plot , MG road , Joka	Project site STP location	Base line	02.11.2020	60.1	50.7
	Project site STP location near office	Construction stage in November 2021	11.11.2021	60.2	51.6
SD-27R Improvement of S&D network and construction of a pumping station in Alipore body guard line premises in ward 74	Near barrack no.4	Construction stage in October 2021	16.10.2021	61.3	52.1
	Near pond area	Construction stage in October 2021	16.10.2021	59.8	52.6
	Near R.G.Jyoti office area	Construction stage in October 2021	16.10.2021	62.3	53.1
SD-31Lot1 Development of S&D Network in Churial Extension PS catchment & Diamond Park catchment and construction of Churial Extension pumping station (Annex) in Borough XVI(Part of Ward 124, 143 & 144)	Near Main Gate	Base Line	28.11.2020	64.0	49.8
	Pragati pally	Construction Stage In December 2021	03.12.2021	62.2	50.9
SD- 34 Construction of 2 new Pumping Stations near confluence of Lalababu Nikashi& Bagjola Canal and within Behala Node C premises, Sakuntala Park & South Dumdum	Project site Biren roy road, Behala	Construction Stage In December 2021	10.12.2021-11.12.2021	61.1	48.0
	Project site South Dumdum	Construction Stage In December 2021	10.12.2021-11.12.2021	60.6	46.3
SD-31R 2 Development of S&D network in Bakrahat road catchment (Ward 125) by cut & cover method and laying of RCC sewer line along Bakrahat road and DH road by micro tunneling	Junction of Bakrahat road & Abhaypara Road	Construction stage in November 2021	24.11.2021-25.11.2021	67.2	52.6

Table 8: Surface and Ground water quality Monitoring Data at SD-29, SD-28, SD-27R, SD-31LOT1 SD-34 & SD-31 R2

Package No.	Sampling Locations-Area	Stage	Date of Monitoring	Water quality parameters				
				PH	DO Mg/l	BOD Mg/l	Total coliform (MPN/100) ml	Faecal coliform (MPN/100) ml
SD- 29 Construction of Sewage Treatment Plant (40 MLD) at Bank Plot , MG road , Joka	Pond near STP Project site	Base line	19.05.19	7.2	5.7	6.0	436.0	418.0
				7.67	5.6	7.0	414.0	390.0
SD- 28 Construction of sewage treatment plant near WBSETCL, Joka	Borewell within project site	Base Line	08.11.2020	7.44	-	-	-	-

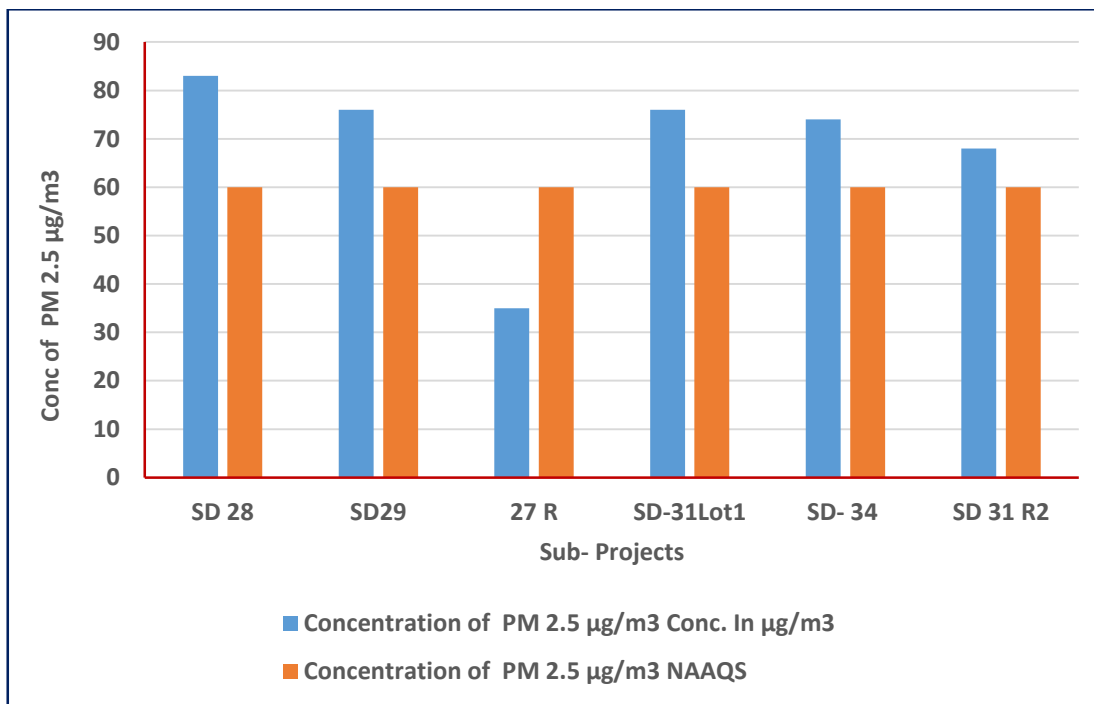


Figure 4 : Status of PM 2.5 at Tranche -3 project sites

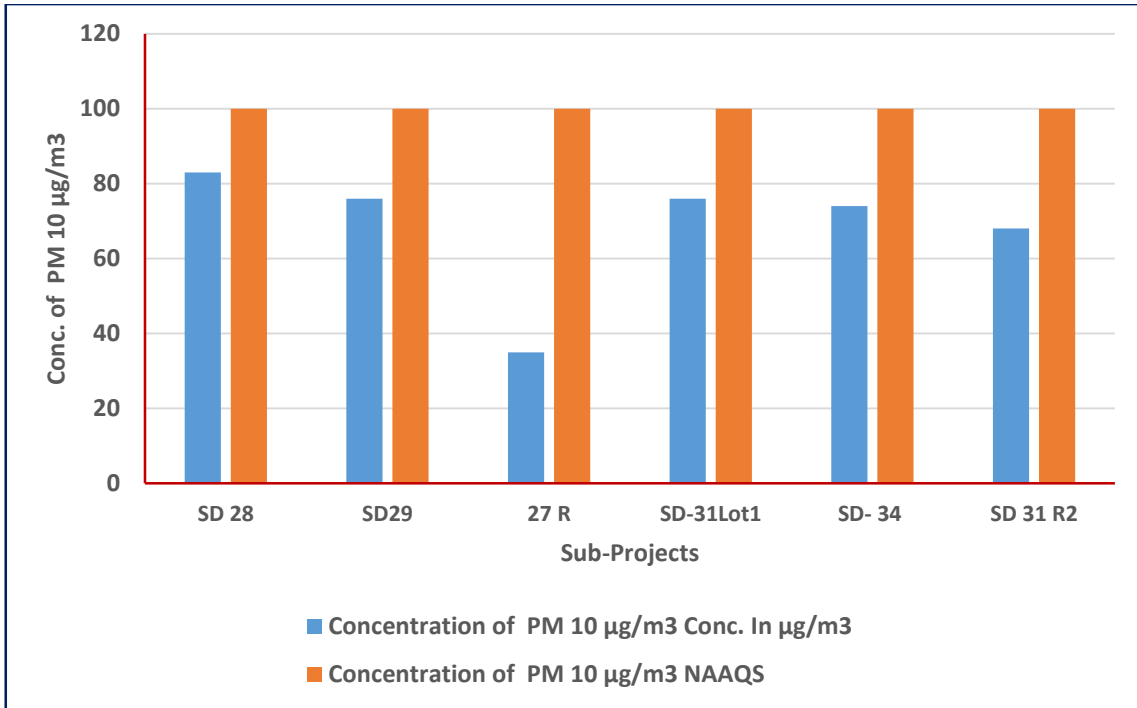


Figure 5: Status of PM 10 at Tranche -3 project sites

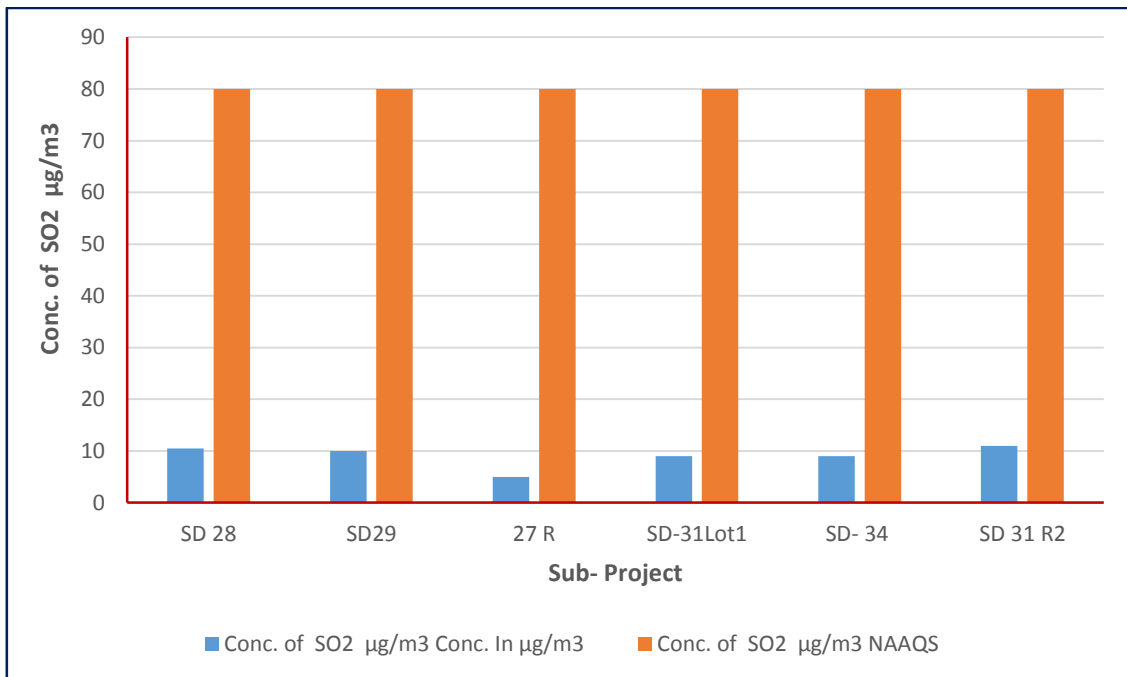


Figure 6: Status of SO2 at Tranche - 3 project sites

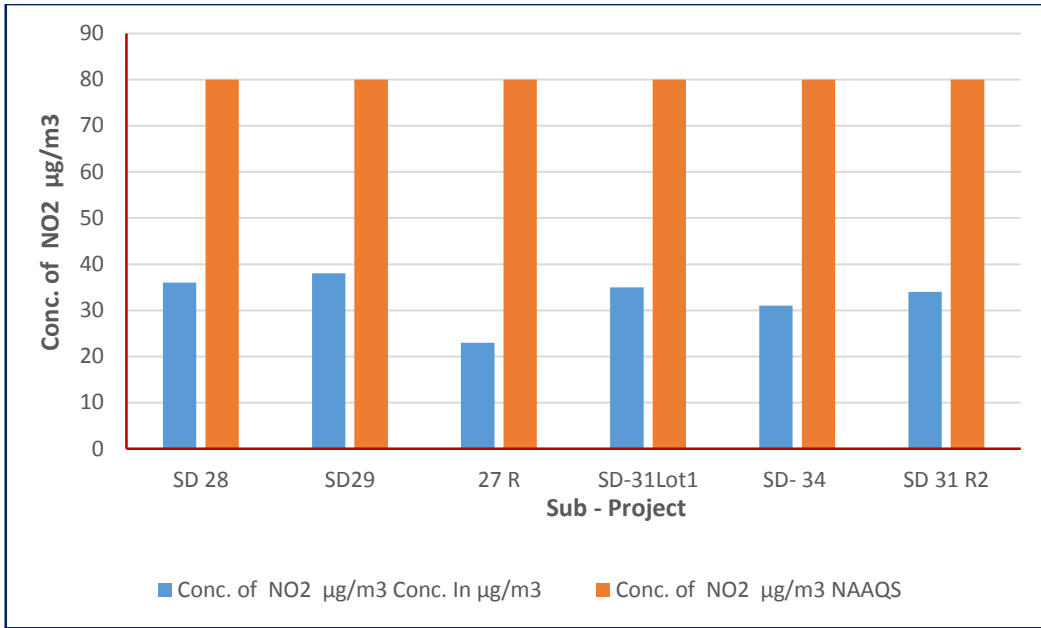


Figure 7: Status of NO2 at Tranche -3 project sites

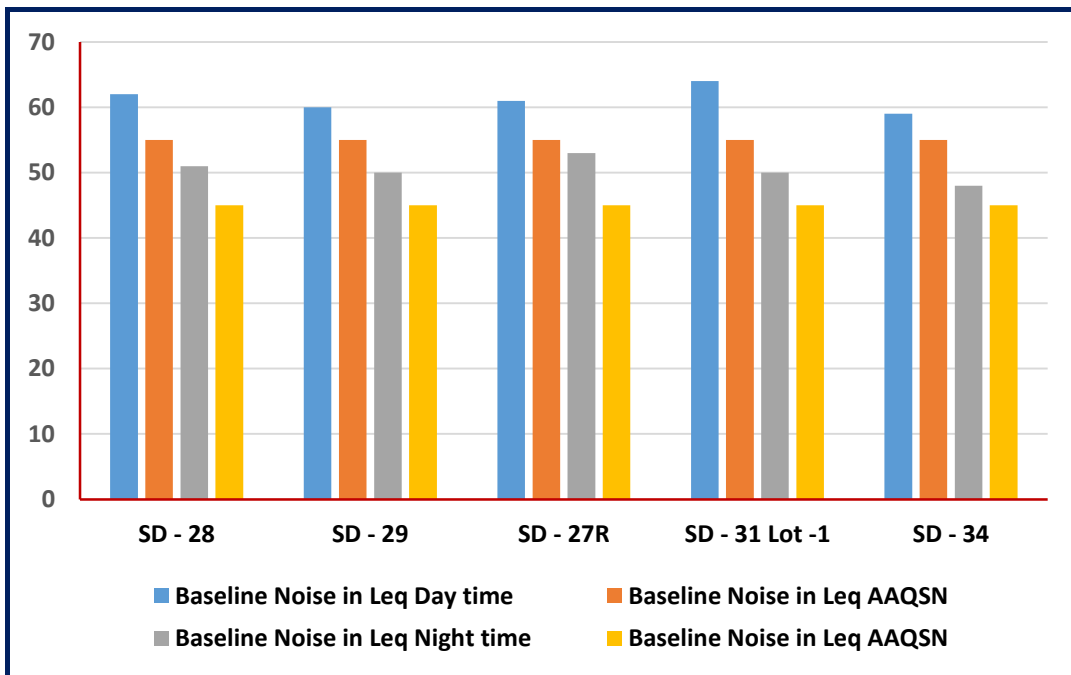


Figure 8: Base line Status of Noise at Tranche - 3 Construction sites

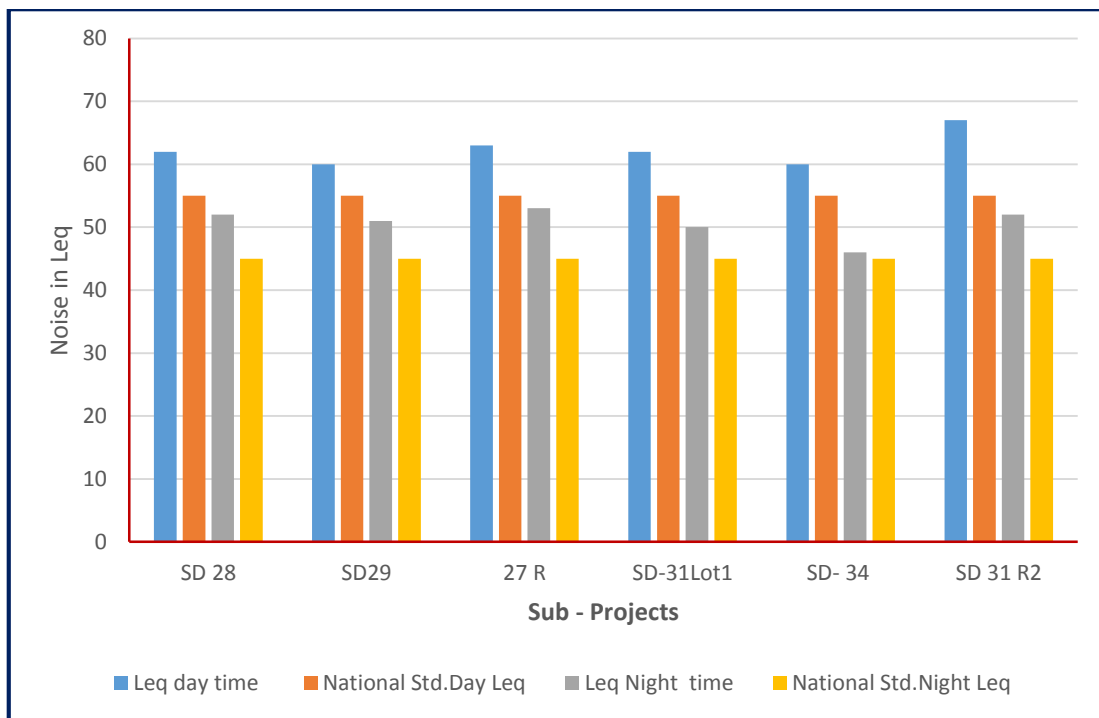


Figure 9: Status of Noise during construction stage at Tranche - 3 Construction sites

Table 9: Performance Fact Sheet for Required Environmental Consents/Clearances of KEIIP Tranche 3 (Package-wise)

Sl. No.	Package No.	Name of Contractor	EMP Part of contract Document(Yes/ No)	Environmental Consents / Clearances Required			
				Tree Cutting	i. Crusher ii. Batching Plant iii. Hot mix plant	Diesel Generator Set	Pollution Under Control Certificates (PUC) for Contractor's Vehicles
1	SD -27R	RG- JYOTI JV	Yes	Not required	Not Required (NR) as per present work program	NR as per present work program	NR as per present work program
2	SD -28	SNET-SSG JV	Yes	Not required	NR as per present work program	Using green generator	NR as per present work program
3	SD -29	SNET-Eagle JV	Yes	Required and permission has been obtained from DFO	NR as per present work program	Using green generator	NR as per present work program
4	SD -30	TEPL-SNET JV	Yes	Not required	Not required	Contractor not yet mobilized	Contractor not yet mobilized
5	SD -31 Lot-1	Simplex Infrastructure ltd	Yes	Not required	NR as per present work program	Using green generator	Submitted by the contractor
6	SD -31 R-2	A TO Z ADHUNIK JV	Yes	Not required	NR as per present work program	Using green generator	NR as per present work program
7	SD -32	Laxmi-WM JV	yes	Not required	- Not required	Using green generator	NR as per present work program
8	SD – 34	Ramky infrastructures Ltd.	Yes	Not required	NR as per present work program	Using green generator	Submitted by the contractor

VI. CONSULTATIONS AND DISCLOSURES CONDUCTED

36. As per approved IEE, consultations and disclosure will be a continuous process throughout Tranche 3 project implementation involving public consultations and focus group discussions. Informal consultations were carried out with local people, pedestrian, etc.

37. Types of consultations and disclosure conducted in active packages of Tranche 3 during June 2021 to November 2021 are presented in **Table 10** of this report. Few consultations were conducted considering within this period considering the Covid situations.

38. Table 11 indicate different types of consultations, issues raised and resolved in different packages of Tranche 3 during June 2020 to November 2020.

Table 10: Types of consultations and disclosure conducted in different packages of Tranche – 3

Type of Consultation/ Disclosure	Location	Target Participants	Responsible Person and Source of Funds
Local level consultation / FGD	At construction locations/ nearby location	General public, pedestrian	Construction supervisor, contractor Project budget – continuous process
Local level consultation / FGD with Councillor	Office of the councillor	Local people and councillor office staff	Construction Manager, Environment social team of DSC and PMU, contractor

39. Orientation training has been conducted for SD-28, SD-29, SD-27R and SD-31LOT1 (currently ongoing packages) on pre-construction obligations of the contractor.

40. There are series of informal discussions by the DSC with Chief Engineers of KMC and Director General (Projects), PMU mainly on understanding current situation and optimum design to be adopted in order to attain the objectives of taking up the work items.

41. Photographic evidences of training and awareness programme at different project sites of Tranche 3 and consultations at sites have been provided in **Appendix-8** of this report.

42. **Table 11** indicates different types of consultations, issues raised and resolved in different packages of Tranche 3 during June 2021 to November 2021.

Table 11: Issues raised during public consultation in different packages of Tranche - 3 during June 2021 to November 2021

SI No.	Name of the Packages	Place & Date of Consultation	Total Participants	Female Participants	Topic for discussion
1	SD-31	Ward No:144 03.09.2021	7	1	Nature of work
2	SD-28	Joka Kayal para Road 20.09.2021	5	0	Nature of work
		Joka Kayal para Road 20.10.2021	6	0	Nature of work
3	SD-31R2	-	-	-	-
4	SD-27R	-	-	-	-
5	SD-34	-	-	-	-

VII. GRIEVANCE REDRESSAL

43. **Common Grievance Redress Mechanism.** A common grievance redress mechanism (GRM) has been established for social, environmental or any other subproject related grievances.

44. **Grievance Redress Process.** PMU is maintaining a Complaint Cell at KEIIP office located in 206 A J C Bose Road Kolkata 700017 headed by a designated Grievance Officer (currently the Administrative Officer) under Project Director. The Complaint Cell will also be serving as Public Information Centre, where, apart from grievance registration, information on the Project, subprojects, social and environmental safeguards, etc can be provided.

45. At every Borough of KMC under which works are in progress, a Public Relations & Grievance Redressal Unit has been established for information disclosure on request from public and for receipt of complaints.

46. At contractors' site offices, complaint and suggestion books available for lodging any complaint. The concerned Executive Engineers of KEIIP will monitor these books and if possible take necessary actions for redressal of minor complaints with intimation to the complainant.

47. The Grievance Registration/Suggestion Form will be available at the Complaints Cell and in Borough Offices and will also be downloadable from the KEIIP/KMC websites. Grievances/ suggestions of affected persons can be dropped in suggestion boxes or conveyed through phone or mail. Affected Persons will also be able to register grievances - social, environmental or other, personally at the Complaint Cell and at Borough offices of KMC. The Grievance Officer and designated official at the Boroughs will be able to correctly interpret/record verbal grievances of non-literate persons and those received over telephone.

48. All complaints (unresolved at local site/Borough level) relating to KEIIP will be sent to the Project Director, KEIIP including those received in the KMC/KEIIP website for redressal. The Grievance Officer will resolve simple unresolved issues and in case of complicated issues, consult/seek the assistance of the Environment/Social Specialist of the DSC/PMU. Grievances not redressed through this process within one month of registration will be brought to the notice of the Project Director, KEIIP. Action taken in respect of all complains will be communicated to the complainant by letter, over phone or e-mail or WhatsApp as the case may be.

49. Periodic community meetings with affected communities to understand their concerns and help them through the process of grievance redress (including translation from local dialect/language, recording and registering grievances of non-literate affected persons and explaining the process of grievance redress) will be conducted if required. The above Grievance Redress Process will be discussed with the stakeholders at the proposed disclosure workshop.

50. **Grievance Redressal Committee (GRC).** A PMU level GRC has already been constituted by the Project Director to address grievances. Grievances not resolved at borough level are referred to PMU level. However grievances that cannot be resolved at PMU level will be referred to an apex grievance redress committee (GRC).²¹ Still unresolved issues will be referred to an appropriate court of law. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

²¹ The apex GRC will have the following members: KMC Commissioner as Chairperson, KEIIP Project Director, Director General (P), KEIIP, Environment/Social Safeguard Officer, Administrative Officer as the convener, representatives of APs, Community Based Organizations (CBOs), and eminent citizens. The GRC must have at least two women members.

51. The time limit for grievance redressal will be as follows,
- ✓ Site level – 7 days
 - ✓ Borough level – 7 days
 - ✓ GRC – PMU level – 15 days
 - ✓ Apex GRC- 15 days
52. **Consultation Arrangements for GR** - This will include group meetings and discussions with affected persons, to be announced in advance and conducted at the time of day agreed on with affected persons and conducted to address general/common grievances; and if required with the Environment/Social Specialist of PMU/DSC for one-to-one consultations. Non-literate affected persons/ vulnerable affected persons will be assisted to understand the grievance redress process, to register complaints and with follow-up actions at different stages in the process.
53. **Record-keeping.** Records will be kept by PMU/Borough Office/contractors' site office of all grievances received including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were in effect, and final outcome.
54. **Information Dissemination Methods of the GRM.** Grievances received and responses provided will be documented and reported back to the affected persons (**Appendix 8** -Sample Grievance Registration Format). The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the offices of the different Boroughs of KMC and web. The phone number where grievances are to be recorded will be prominently displayed at the construction sites.
55. **Periodic Review and Documentation of Lessons Learned.** PMU will periodically review the functioning of the GRM and effectiveness of the mechanism, especially on the Project's ability to prevent and address grievances.
56. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting / information dissemination) will be borne by PMU.
57. A GRM flow chart has been provided in **Figure 10** of this report.
58. Grievance recorded and resolved in different packages of Tranche 3 during June 2021 to November 2021 has been summarised in **table 12**
59. Physical activity has been initiated in Tranche 3 for all subprojects and over all sites are environmentally well managed.

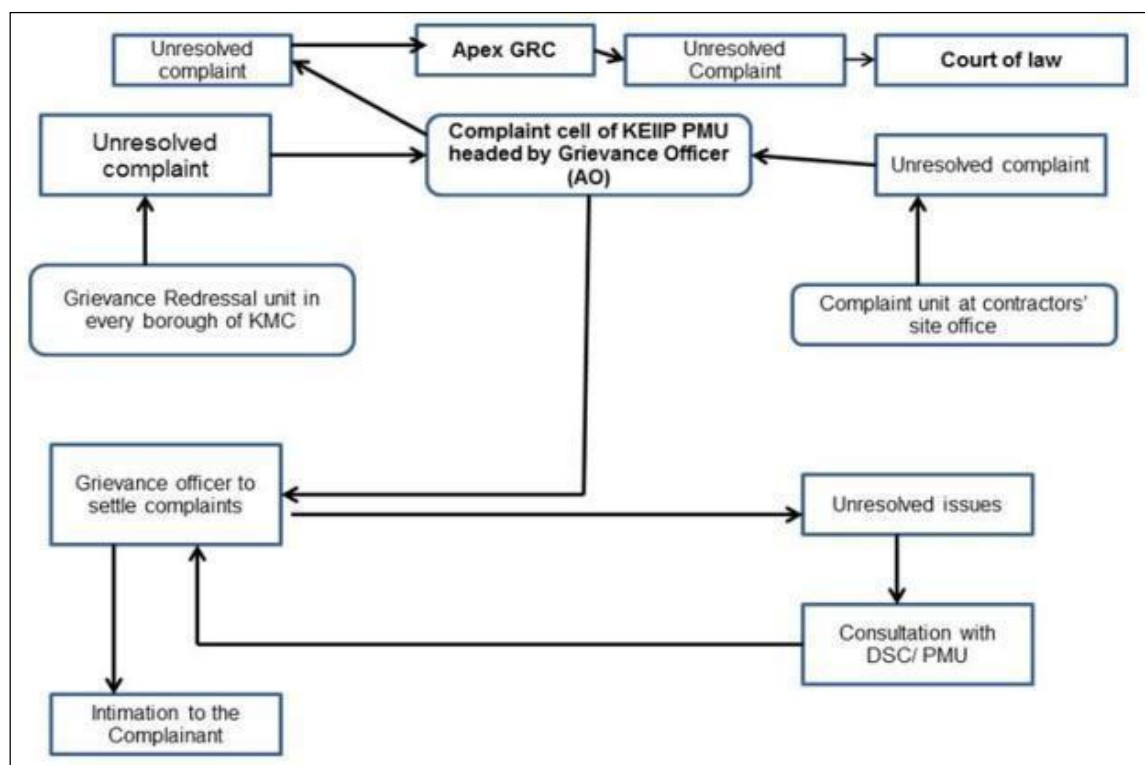


Figure 10: Grievance Redress Mechanism

Table 12: Grievance recorded and resolved in different packages of Tranche 3 during June 2021 to November 2021

SI No.	Packages Name	Place & Date of Consultation	Issued Register	Status of the issues register
1	SD-28	Site 27.07.21	Site drainage water line stopped due to soil collapse.(Heavy Rain)	Resolved within 1day
2	SD-31 Lot1	Site 28.09.2021	Boundary wall Repairing	Resolved within 1day
		Site 28.09.2021	Boundary wall Repairing	Resolved within 1day
		Site 28.09.2021	Boundary wall Repairing	Resolved within 3days
		Site 28.09.2021	Water pipe line repairing	Resolved within 1day
		Site 28.09.2021	Water pipe line repairing	Resolved within same day
		Site 28.09.2021	Water pipe line repairing	Resolved within 3days
		Site 28.09.2021	Boundary wall Repairing	Resolved within 1day

SI No.	Packages Name	Place & Date of Consultation	Issued Register	Status of the issues register
		Site 28.09.2021	Boundary wall Repairing	Resolved within 2days
		Site 28.09.2021	Boundary wall Repairing	Resolved within 2days
		Site 28.09.2021	Boundary wall Repairing	Resolved within 3days
3	SD-31R2	Site 06.07.2021	Drain Cleaning	Resolved within 1day
		Site 08.07.2021	Road Restoration	Resolved within 1day
		Site 10.07.2021	House connection	Resolved within 1day
		Site 12.07.2021	Soil cleaning near the house	Resolved within 3days
		Site 13.08.2021	Water pipe line repairing	Resolved within 1day
		Site 18.08.2021	Water pipe line repairing and change of tap	Resolved within 1day
		Site 26.08.2021	Repairing wall and pillar	Resolved within 10 days
		Site 02.09.2021	Pipe line repairing	Resolved within 1day
		Site 15.09.2021	Slab repairing	Resolved within 2days
		Site 25.09.2021	Boundary wall Repairing	Resolved within 2days
		Site 28.09.2021	Pipe line repairing	Resolved within 1day
4	SD-27R	-	-	-
5	SD-34	-	-	-
6	SD-29	-	-	-

VIII. FINDINGS AND RECOMMENDATIONS

60. Over all, SD-31LOT1, SD-28, SD-29, SD-34 & SD-27R and SD31R2 sites are environmentally well managed. However, scopes for further improvement in site management measures have been explained to the contractors. It is expected that during next report period EMP compliance of other packages may be reported as per contractors EMP implementation status.

61. Statutory clearances – consent to establish (NOC) from West Bengal Pollution Control Board (WBPCB) has been obtained for STPs of SD-28 & SD- 29. Application has been submitted to West Bengal Pollution Control Board (WBPCB) for consent to establish (NOC) for SD 30R

62. Contractors of SD-28 and SD-29 have conducted baseline environmental monitoring (Air, water and Noise) in May 2019. Base line monitoring data has been submitted by the contractor of SD-31LOT1 in January 2020, Subprojects SD-27R in July 2020 and SD-34 in November 2020.

63. All the contractors of the active construction sites have submitted their environmental monitoring data with respect to air, water and noise which were conducted in March to May 2021 (Pre-monsoon season). Contractors have appointed full time Environment safety officer at their sites and submitting monthly EHS compliance as well as EMP compliances reports.

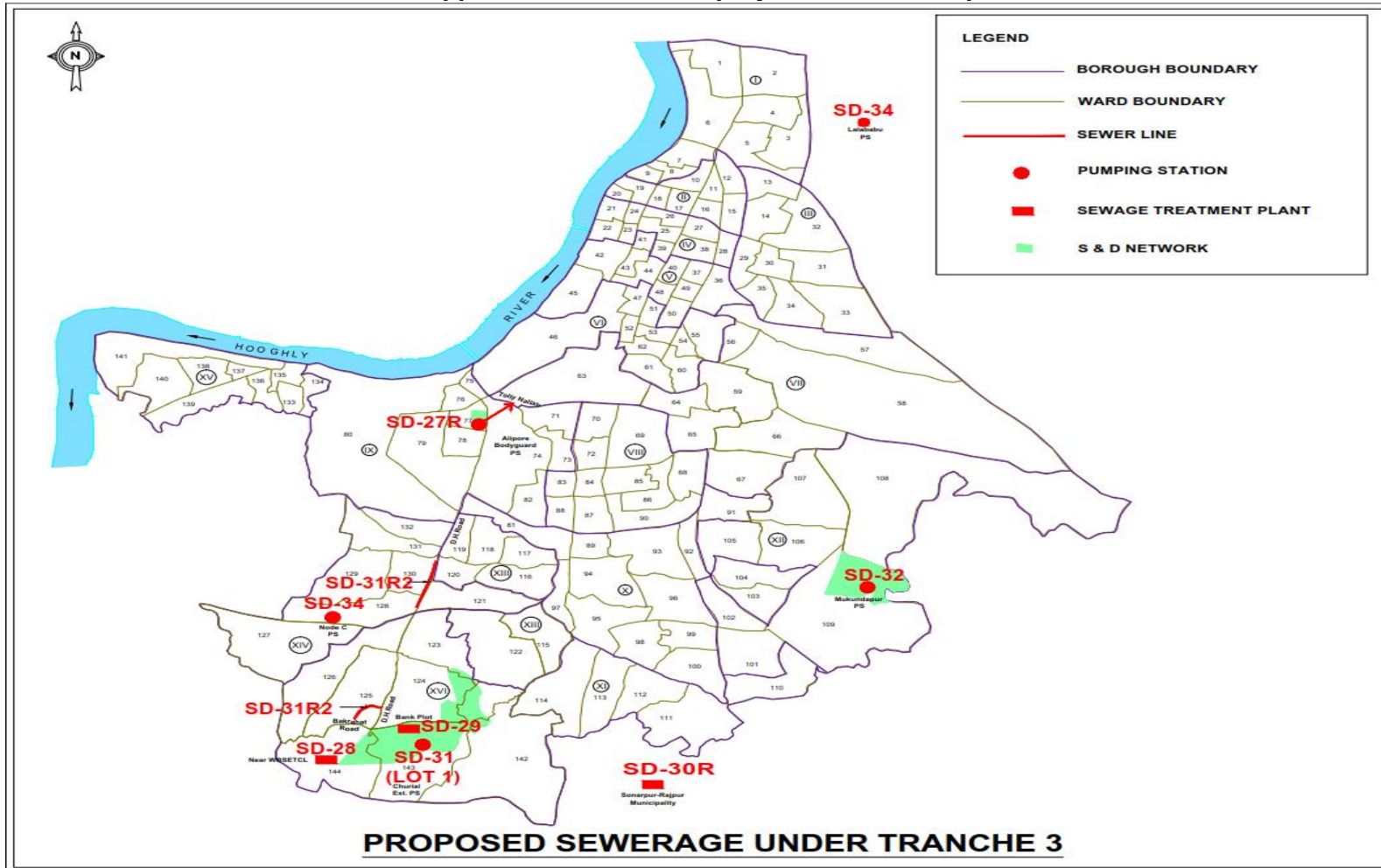
64. Based on the above, it may be concluded that KEIIP Tranche 3 sub projects are being implemented with full compliances of the required environmental safeguards during June 2021 to November 2021. EMP compliance within this period is thus satisfactory.

65. In order to further improvement and maintain satisfactory EMP compliances the following corrective and improvement action plan (Table 13) is recommended with target dates of compliance. The concerned contractors have been suitably advised. Contractors have also been advised to provide written commitment for implementation of corrective action plan.

Table 13: Corrective and Improvement Action Plan

Sr. No.	Issues to be complied	Action Required	Responsible	Target Date	Indicator of Compliance
1	Application of EMP	Continue on regular basis	Contractor in association with PIU and DSC	Continuous process	Site observation and checking
2	Use of PPEs (particularly working shoes/ gumboots, hand gloves) by contractors at different work locations	Complete use of PPEs, particularly use of working shoes, gumboots	Contractor	Immediate	Availability and use of PPE
3	Caution tape/ barricade at all required locations of packages	Complete use of caution tape/ barricade at all working sites	Contractor	Immediate	Site observation and checking
4	Availability of emergency contact no. at display/ caution board	Complete arrangement of display / caution board with all emergency contact no.	Contractor	Immediate	Site observation
5	No air pollution and increase in dust at work sites of the running packages.	Immediate action to be taken like, water sprinkling, maintaining of stack height in DG set, use of CPCB approved green DG set etc.	Contractor	Immediate	Monitoring result
6.	No noise disturbance especially in sensitive locations and in night	Immediate action to be taken like, use of less noisy instrument and no such activity during night time	Contractor	Immediate	Monitoring result
7	No Problem of public access	Sufficient access need to be provided at all working sites.	Contractor	Immediate	Site observation and checking
8	Satisfactory Housekeeping at work site	Immediate improvement of housekeeping	Contractor	Immediate	Site observation
9	Arrangement of labour camp/ rented house for contractor	Arrangement as per requirement	Contractor	Continuous process	Site observation and checking
10	Training to workers	Regular tool box training for labour. Safeguard orientation training for contractor	Contractor, PIU, DSC	Continue process	Record keeping and safeguard implementation
11	Renewal of Labour License	Continue on regular basis	Contractor, PIU, DSC	Continue process	Record keeping

Appendix 1: Tranche -3 projects location map



Appendix-2: Project Location and Activity initiated by Contractors



Project Location and Activity initiated by Contractors in SD-31LOT1 and SD-28 SD-34



Project Location and Activity initiated by Contractors in SD-29 and SD-27R SD-31R2



Project Location and Activity initiated by Contractors in SD-29 and SD-27R

Appendix 3: Training conducted at Project Sites






Appendix 4 A: NOC from WBPCB for SD – 28

DICE (1) *Amo 11.5.19*


NOC NO-159177

WEST BENGAL POLLUTION CONTROL BOARD
 Paribesh Bhawan
 10A, Block – LA, Sector III, Bidhannagar
 Kolkata - 700 105



Memo No. *016 - dt-nc-19-0098* Dated *10-05-2019*

From :
 Member Secretary,
 West Bengal Pollution Control Board
M/S. KEIIP (STP near WBSEDCL, TOKA)
206, AJC Bose Road, P. O. - CIRCUS AVENUE,
Kolkata - 700 017



To :

Sub : Consent to Establish (NOC) from Environmental Point of View

Ref : Your letter No. *882* *16/5-19* *Date submitted on 05-04-19*

WEST BENGAL

Dear Sirs,

In response to the application for Consent to Establish (NOC) for proposed Unit of *M/s. KEIIP*.....
STP NEAR WBSEDCL, TOKA.....
 for manufacturing/storage/installation of *sewage treatment plant (capacity 15 MLD) consisting*
of coarse screen, fine screen, chlorination tank (as proposed) grit.....
at Chamber, Sequential Batch Reactor at 587-611, D.H. Road, P.O. Behala,
MOUKA - TOKA, Kolkata - 700 084.
 this is to inform you that this Board hereby grants the Consent to Establish (NOC) from the environmental point
 of the above subject to the following conditions and special conditions annexed.

1. The quality of sewage and trade effluent to be discharged from your factory shall satisfy the permissible limits as prescribed in IS : 2490 (Pt. I) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.
2. Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollutional load so that the quality of the effluent satisfies the standards mentioned above.
3. You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & Control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.
4. All emission from your factory shall conform to the standards as laid down by this Board.
5. No emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.
6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/erected/re-erected without prior approval of this Board.

No. 159177

7. You shall comply with
- (i) Water (Prevention and Control of Pollution) Cess Act, 1977, if applicable.
 - (ii) Water (Prevention and Control of Pollution) Cess Act, 1978, if applicable.
 - (iii) Environment (Protection) Act, 1986
 - (iv) Environment (Protection) Rules, 1986
 - (v) Hazardous Wastes (Management and Handling) Rules, 1989 and Amended Rules, 2000
 - (vi) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Amended Rules, 2000
 - (vii) Manufacture, Use, Import and Storage and Hazardous Micro-Organisms, Genetically Engineered Organisms or Cell Rules, 1989
 - (viii) The Public Liability Insurance Act, 1991 and Amended Act, 1992
 - (ix) The Public Liability Insurance Rules, 1991 and Amended Rules 1993
 - (x) Biomedical Wastes (Management & Handling) Rules, 1998 and Amended Rules 2000 if applicable.
 - (xi) Recycled Plastics Manufacture and Usage Rules 1999, if applicable and
 - (xii) Ozone Depleting Substances (Regulation & Control) Rules, 2000, if applicable
8. You will have to abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments etc.

SPECIAL CONDITION: *Please refer to annexure*

Any violation of the aforesaid conditions shall entail cancellation of this Consent to Establish (NOC)
Gross capital Investment -RS. 701800000/-



Yours faithfully,

[Signature]
 Member Secretary,
 West Bengal Pollution Control Board

Sd/- *[Signature]* Environmental Engineer
 W.B. Pollution Control Board.

Memo No.

Copy forwarded for information to :

1. Chief Inspector of Factories, Government of West Bengal, N. S. Building, Kolkata-700 001
2. Director of Industries/Director of Cottage & Small Scale Industries, Government of West Bengal, N. S. Building. Kolkata-700 001
3. Guard file, West Bengal Pollution Control Board.
4. Environmental Engineer, I/II/Alipur R.O./Howrah R.O./Hooghly R.O./B.R.O./D.R.O./Haldia R.O./S.R.O./Asansol/ Sub-R.O./WBPC Board


Himalaya Bhawan Delhi Road, Dankuni Dist. Hooghly	Vill, Panpur Kalyani Expressway P.O. Narayanpur Dist. 24 Pgs. (N)	Sahid Khudiram Sarani City Centre, Durgapur-16 Dist. Burdwan	10, Camac Street 2nd Floor Kolkata-700 017
Paribesh Bhawan 10A, LA-Block, Sector-III Salt Lake City, Kolkata - 700 098	Block-05 at 40 Flats Complex Adjacent to Priyambada Housing Estate P.O. : Khanjanchak, P.S. Durgachak Haldia-721602 Dist. : Purba Medinipur	Paribahan Nagar Matigara, Siliguri Dist.-Darjeeling	
Satya Chowdhury Indoor Stadium Balurchar Bandh Road Malda-732101	Asansol Sub-Regional Office ADDA Commercial Market (2nd Floor) Opposite Asansol Fire Station G.T. Road, Asansol-713 301		Member Secretary, West Bengal Pollution Control Board

Appendix 4B : NOC from WBPCB for SD – 29

D7. CE(U)
Amr 6.5.19


NOC No. 159176

WEST BENGAL POLLUTION CONTROL BOARD
Paribesh Bhawan
10A, Block – LA, Sector III, Bidhannagar
Kolkata - 700 105



Memo No. 015-41-PC-12-19-0099 Dated 10-05-2019

From :
Member Secretary,
West Bengal Pollution Control Board
M/S. KEIIP (STP AT BANK PLOT, M.G. ROAD, TOKA)
206, ATC BOSE ROAD, P.O.-CIRCUS AVENUE
Kolkata - 700 017.



To :

Sub : Consent to Establish (NOC) from Environmental Point of View

Ref : Your letter No. _____ Date Submitted on 05-04-19

WEST BENGAL

Dear Sirs,

In response to the application for Consent to Establish (NOC) for proposed Unit of M/s. KEIIP
(STP AT BANK, M.G. ROAD, TOKA)
for manufacturing/storage/installation of Sewage treatment plant (capacity 4.0 MLD)
consisting of coarse screen, fine screen, grit chamber, sequential
at Batch Recycle Chlorination tank (as per spec. no. 18, 190, 469, 472,
M.G. Road, Mouza - Kallia, P.O. - Behala, Kolkata - 700034.
this is to inform you that this Board hereby grants the Consent to Establish (NOC) from the environmental point
of the above subject to the following conditions and special conditions annexed.

1. The quality of sewage and trade effluent to be discharged from your factory shall satisfy the permissible limits as prescribed in IS : 2490 (Pt. I) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.
2. Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollutional load so that the quality of the effluent satisfies the standards mentioned above.
3. You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & Control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.
4. All emission from your factory shall conform to the standards as laid down by this Board.
5. No emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.
6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/erected/re-erected without prior approval of this Board.

Appendix 4C : Tree cutting permission for SD-29

[Part I] THE KOLKATA GAZETTE, EXTRAORDINARY, FEBRUARY 9, 2007 11

Form III
Form for Permission for Felling / Disposing of Trees in Non-Forest Areas
(see Rule 5 (2))

Permit No. 122/FUD/19 Dated : 19/02/2019

Whereas the applicant, Sri / Smt/Msmt : Prady Kumar Saha (EE, KEIIP),
Address: Business Tower, 206 A.L.C. Boat Road, Kolkata-700 017, has submitted an application with the prescribed fee on 25.10.2018 for permission for felling / disposing of trees for the purpose of removal of 40 (Forty) trees which are obstructing in reconstruction of Sewerage Treatment Plant. (as per inquiry report) at the following site :-

(a) Location : Premises under Prady Kumar Saha, (EE, KEIIP)
At 228, N.C. Road, Kolkata-700 294.

(b) Details of Plot (s) of Land : Premises mentioned under (a) above in Ward No. 143 of Kolkata Municipal Corporation, P.S. - Barabazar.

AND Whereas the undersigned is satisfied with regard to the legality of documents towards the proof of ownership or lease of the land on which such tree stands;

AND Whereas the purpose for which the trees are required to be felled is in conformity with rule 4 (1) of the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007.

AND Whereas an inquiry in the prescribed manner has been carried out on 1.10.2018 and the undersigned has examined the inquiry report with due care;

AND Whereas the land in question belongs to the ~~.....~~ Tea Garden and the applicant has produced a specific consent framed under the provisions of the Plantation Labour Act, 1951 for utilizing the said proceeds strictly for the purpose of welfare of the labourers ;

AND Whereas the applicant is a developer who has already obtained a Certificate of Clearance No. 27/Clearance/19 dated 14.12.2018 issued by the undersigned and sanctioned of the building / construction plan by the sanctioning authority Project Director of The Kolkata Municipal Corporation/KEIIP vide his Notification Contract Package No.KEIIP/NCB/TR-3/SD29/2017-18 (Ref : PMU/OP/387/2018-19, dated: 28/09/2018.

AND Whereas it is found on inquiry that the proposed felling will not alter nature or character or mode of use of the land.

OR

The applicant has produced the requisite permission under section 4C of the West Bengal Land Reforms Act, 1955.

Page 1 of 5

[Permit] THE KOLKATA GAZETTE EXTRAORDINARY, FEBRUARY 3, 2021 14

AND Whereas the applicant has deposited the prescribed security amount for plantation of trees to the undersigned;

OR

The applicant has been exempted by the undersigned from the obligation of plantation of trees under sub-rule (2) of rule 6 of the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007;

OR

The applicant has expressed his inability to undertake the plantation of trees by himself and has deposited to the undersigned the amount for the designated agency as prescribed under sub-rule (3) of rule 6 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007;

OR

The applicant is a developer and not required to deposit the security amount.

- * Strike off if not applicable.
- * Strike off the option which is not applicable.

Now, therefore, in pursuance of the power conferred under sub-section (1) of section 5 of the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006, the undersigned permits the applicant to undertake the felling of the tree as included in the enclosure.

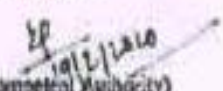
The undersigned also permits applicants (not a developer) under the first proviso to section 3 of West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006 to plant only number of trees instead of the number prescribed under sub-rule (1) of rule 6 of West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007. OR permits the applicant to plant number of trees over different plot (s) of land (as indicated in Condition No. 2 below) because (give reasons) which is in conformity with sub-rule (2) of rule 6 of the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007;

The permission as given above is subject to the following conditions:-

This Permit is non-transferable and valid only up to 30th March, 2024...

1. The applicant (if a developer) shall take up plantation of trees in accordance with the approved Plantation Plan and the Certificate of Clearance within maintenance & protection of the newly planted plantation and reimburse the same as per approved Terms, etc. issued under the Rules, month (s) from the date of sanction of the building construction plan by the sanctioning authority;
2. The applicant (if not a developer) shall take up plantation of numbers of trees over the plot (s) No. within months from the date of issue of this permit;

Species	Added	Total No. of Trees
A		
B Nirm, Jambu, Jackfruit		1+1=2
C Mango, Siris, Jam		3+3+2=8
D Kadon		1
E Banyan, Siris, Amra, Supari, Jela, Jamrul		5+1+4+5+2+1=18
Grand Total :		40 Forest No.


 (Signature of the Competent Authority)
 Name: UPL Nag
 Designation: Divisional Forest Officer
 Official Seal: Divisional Forest Officer
 Forest Utilization Division

Page 5 of 5

The Kolkata Gazette Extraordinary-February 9, 2007 Part-I

Annexure of Form III


Form Number: 122/PUD/19

Date: 19/02/2020

Number of Tree	Location (Plot No)	Species	Greatest Girth at breast height (in cm)	Condition of the tree
1	Premises of Pradip Kumar Saha (UG KEIIP) at 22B, M.G. Road, Kolkata-700 104 in Ward No. 143, of Kolkata Municipal Corporation, P.S. Hazratganj.	Sris	135	good
1		Sris	80	good
1		Sris	145	good
1		Sris	260	good
1		Sris	130	good
1		Sris	240	good
1		Sris	180	good
1		Sris	100	good
1		From	130	good
1		Kadam	80	good
1		Kadam	120	good
1		Kadam	200	good
1		Kadam	91	good
1		Kadam	70	mod
1		Kadam	85	good
1		Amsa	105	good
1		Amsa	80	good
1		Amsa	60	good
1		Amsa	70	good
1		Saisa	80	good
1		Saisa	60	good
1		Saisa	40	good
1		Saisa	154	good
1		Saisa	106	good
1		Shila	15	mod
1		Sopari	45	good
1		Sopari	45	good
1		Sopari	35	good
1		Sopari	45	good
1		Sopari	40	good
1		Alango	45	good
1		Alango	50	good
1	Jackfruit	60	good	
1	Jackfruit	90	mod	
1	Jamun	70	mod	
1	Jamun	75	good	
1	Jamun	70	good	
1	Banyan	210	good	
1	Jeta	80	good	
1	Jeta	100	good	

15 THE KOLKATA GAZETTE, EXTRAORDINARY, FEBRUARY 2, 2021 [Part I

- ~~3. As provided in section 10 of the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006, the applicant (if not a developer) shall start preparatory work for plantation within sixty days from the date for permit or the date of receipt of directions from the undersigned, as the case may be, and shall undertake plantation for trees in accordance with such directions;~~
- ~~4. The applicant shall inform the undersigned in writing immediately on completion of the plantation of trees;~~
- ✓ 5. The applicant shall, within a week of carrying out felling of trees submit a report to the undersigned indicating the total number of logs and firewood produced against each species;
- ✓ 6. Stump of the felled trees shall be retained for a at least one month from the date of felling;
- ✓ 7. The felling and carriage of trees shall not be carried out after the sun-set and before the sun-rise.
8. This permission is subject to the provisions of the West Bengal (Establishment and Regulation of Saw Mills and Other Wood-based Industries) Rules, 1982 and The West Bengal Forest Produce Transit Rules, 1959.
9. This permit should be produced for inspection on demand to the undersigned or any of the authorities specified in sections 15 and 17 of West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006.

UP
14/2/2021
(Signature of the Competent Authority)
Name U. K. Nag.....
Designation Divisional Forest Officer.....
Official Seal: 

• Strike off if not applicable.

Appendix 4D: Application for NOC from WBPCB for SD 30 (STP)

Application No	Application Date	Application For	Application Name	Type	Certificate For	Status	File No.
1250037	28-12-2021 01:11	A/W/H	Construction of 23 MLD Sewage Treatment Plant Rajpur Sonarpur, Project Director(Kolkata Environmental Improvement Investment Program)	CTE	CTE Fresh	In-Progress	1200236

Industry Details	Occupier Details
Industry name:	Construction of 23 MLD Sewage Treatment Plant Rajpur Sonarpur, Project Director(Kolkata Environmental Improvement Investment Program)
Plot No./Revenue Survey No./Chalta No/TC No. :	237
Status	proposed
Total cost of the Plant and Machinery*:	173000000.00(in Rs)
Total Cost of the project(as stated in the affidavit)	6.3270003E8
Scale of Industry	Large
GST No.	
PAN No.	
Street/Road/Building Name	RANIA ROAD
City/Village/Town	SONARPUR
District	South Twenty Four Pgs
Police Station	Bakultala
Area in Square Meters	4573
Pin Code	700154

Appendix 5: Environmental Monitoring at different project location



Ambient Air quality monitoring at project sites



Ambient Noise quality monitoring at project sites

Appendix 6 : Good practice adopted at Project Sites







Appendix – 7 :Environmental Standards

National Ambient Air quality Standards, 2009

[भाग III—खण्ड 4]		भारत का राजपत्र : असाधारण		3	
NATIONAL AMBIENT AIR QUALITY STANDARDS					
CENTRAL POLLUTION CONTROL BOARD					
NOTIFICATION					
New Delhi, the 18th November, 2009					
<p>No. B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-</p>					
NATIONAL AMBIENT AIR QUALITY STANDARDS					
S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke - Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O ₃) µg/m ³	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb) µg/m ³	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m ³	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH ₃) µg/m ³	Annual* 24 hours**	100 400	100 400	- Chemiluminescence - Indophenol blue method

4

THE GAZETTE OF INDIA : EXTRAORDINARY

[PART III—Sec. 4]

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo[a]Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m ³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m ³	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 334(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

Inland surface water categories (CPCB,1978)

The Central Pollution Control Board has classified the inland Surface water into five categories A to E. On the basis of their designated best use and the desired class. The principal concern has been the end use to which man may put to water. The classification has been made in such a manner that with the degradation in quality, the water quality requirement becomes progressively lower from A to E. The CPCB classification of the inland surface water is give as under: -

Designated Best Use	Class of Water	Criteria
Drinking water Source without Conventional treatment but after disinfections.	A	1. Total coli form organisms MPN/100 ml shall be 50(max.) 2. pH between 6.5 to 8.5 3. Dissolved Oxygen (Min) 6 mg/l 4. BOD (max) 5 days < 2.00 mg/l
Outdoor bathing(Organised)	B	1. Total coli form organisms MPN/100 ml shall be 500 (max.) 2. Fecal Coli form MPN/100 mg. to be 2500 (max.) for Ganga Action Plan. 3. pH between 6.8 to 8.5. 4. Dissolved Oxygen (min) 4 mg/l 5. BOD (Max.) 5 days @ 3 mg/l
Drinking water with conventional treatment Followed by disinfections	C	1. Total coli form organisms MPN/100 ml shall be 5000 (max.) 2. pH between 6.8 to 3. Dissolved Oxygen (min) 4 mg/l 4. BOD (max.) 5 days @ 3 mg/l
Propagation of wild life Fisheries.	D	1. pH between 6.5 to 8.5 2. Dissolved Oxygen (min) 4 mg/l. 3. Free Ammonia (as N) (max)1.2mg/l.
Irrigation, industrial cooling, and Controlled disposal	E	1. pH between 6.0 and 8.5 2. Electrical conductivity less than 2250 micro mhos/cm, 3. Sodium Aborption Ratio less than 26, and Boron less than 2 mg/l

SCHEDULE

(see rule 3(1) and 4(1))

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

- Note:-
- Day time shall mean from 6.00 a.m. to 10.00 p.m.
 - Night time shall mean from 10.00 p.m. to 6.00 a.m.
 - Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
 - Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

(Source: The Noise Pollution (regulation and control) rules, 2000 and its amendment in 2010 and 2012)

Appendix 8: Public consultation at Project Sites



Appendix 9 : Sample Grievance Redress Form

The **Kolkata Environmental Improvement Investment Program (KEIIP)** welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing ***(CONFIDENTIAL)*** above your name. Thank you.

Date		Place of registration			
Contact Information/Personal Details					
Name		Gender	Male Female	Age	
Home Address					
Village / Town					
District					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of official registering grievance)	
If – then mode:	
<ul style="list-style-type: none"> • Note/Letter • E-mail • Verbal/Telephonic 	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	<ul style="list-style-type: none"> • Yes • No
Means of Disclosure:	

GRIVENCE REDRESS REGISTAR GRIVENCES RECORD AND ACTION TAKEN

Sr. No.	Date	Name and Contact No. of Complainer	Type of Complain	Place	Status of Redress	Remarks