Environmental Monitoring Report

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August 2025

India: West Bengal Drinking Water Sector Improvement Project

Part 1 of 3: Main Report (Pages 1 – 284)

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IND: WEST BENGAL DRINKING WATER SECTOR IMPROVEMENT PROJECT (WBDWSIP)

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WEST BENGAL DRINKING WATER SECTOR IMPROVEMENT PROJECT (WBDWSIP)

PROJECT MANAGEMENT UNIT

13th

SEMI ANNUAL ENVIRONMENT MONITORING REPORT

ADB Loan 3696-IND

(Period November 2024 to April 2025)

July 2025

PUBLIC HEALTH ENGINEERING DEPARTMENT
GOVT. OF WEST BENGAL

TABLE OF CONTENTS

I. INTRODUCTION 4

II. COMPLIANCE STATUS WITH NATIONAL/ STATE/ LOCAL SATATUTORY ENVIRONMENTAL REQUITREMENTS 30

III. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS 57

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN 62

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT 243

VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS 245

VII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS 310

APPENDICES

Appendix 1	Photo Illustration	315
Appendix 2	Sample Labour License	318
Appendix 3	Sample Contractor's Insurance Policy for Workers	321
Appendix 4	Tree Felling NOC and Compliance	323
Appendix 5	CTE for WTP and Batching Plant	345
Appendix 6	GRC Notifications and Committee	372
Appendix 7	Public Consultation at Field Level	397
Appendix 8	Focus Group Discussion – Environment & Social	402

ABBREVATIONS

AC	-	Asbestos Cement
ADB	-	Asian Development Bank
BOD	-	Biochemical Oxygen Demand
COD	-	Chemical Oxygen Demand
CPCB	-	Central Pollution Control Board
CTE	-	Consent to Establish
CTO	-	Consent to Operate
DBO	-	Design Build Operate
DSC	-	District Steering Committee
DG	-	Diesel Generator
DO	-	Dissolved Oxygen
DSISC	-	Design, Supervision and Institutional Support Consultants
EA	-	Executing Agency
EARF	-	Environmental Assessment and Review Framework
EHS	-	Environment, Health & Safety
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
EMR	-	Environment Monitoring Report
ESSR	-	Environment and Social Safeguard Unit
GESI	-	Gender Equality and Social Inclusion
GLSR	-	Ground Level Storage Reservoir
GRC	-	Grievance Redressal Committee
GRM	-	Grievance Redress Mechanism
HDPE		High Density Poly ethylene
HSGO	-	Head Safeguards Gender Officer
IEE	-	Initial Environmental Examination
LOA	-	Letter of Acceptance
LPG	-	Liquefied Petroleum Gas
MoEFCC	-	Ministry of Environment and Forest & Climate Change, Government of India
NGO	-	Non-Government Organization
NTP	-	Notice to Proceed
OHR	-	Overhead Reservoir
O&M	-	Operation and Maintenance
PHED	-	Public Health Engineering Department
PIU	-	Project Implementation Unit
PMC	-	Project Management Consultant
PMU	-	Project Management Unit
PMx	-	Particulate Matter with size x micron
PUC		Pollution Under Control
RF	-	Resettlement Framework
RP	-	Resettlement Plan

SBR	-	Sundarban Biosphere Reserve
SEMP	-	Site Environment Management Plan
SGS	-	Safeguard and Gender Cell
SPS	-	Safeguard Policy Statement
TMP	-	Traffic Management Plan
USD	-	US Dollar
WBDWSIP	-	West Bengal Drinking Water Sector Improvement Project
WBPCB	-	West Bengal Pollution Control Board
WTP	-	Water Treatment Plant

I. INTRODUCTION

A. Background – Overall Project Description and Objective

1. Public Health Engineering Department (PHED), Govt of West Bengal (the Executing Agency) through its Project Management Unit and Project Implementing Unit is implementing the "**West Bengal Drinking Water Sector Improvement Project**" (**WBDWSIP**)". The Loan for WBDWSIP (ADB Loan 3696- IND) was signed on 3rd October 2018 between Government of India and the Asian Development Bank. Government of India has agreed to make the proceeds of the loan available to the Government of West Bengal upon terms and conditions satisfactory to the Asian Development Bank.

2. WBDWSIP will be implemented over years between 2018 and 2025. Implementation of individual package works updated till 2025, for 7 years. In order to provide safe and sustainable drinking water as per the standards set by the Government of India, the Government of West Bengal through Government of India has requested Asian Development Bank for financing to create infrastructure and strengthen institutions of the PHED and the institutions of the identified districts, blocks, and villages for piped water supply. The selected areas identified are affected with arsenic, fluoride, and salinity in the districts of Bankura, North 24 Parganas and Purba Medinipur of West Bengal where around 1.65 million people are residing.

3. The project adopted a sector approach. All subprojects selected and proposed for funding adhering to the agreed subproject selection criteria for the project. The subprojects proposed under the project stem from a district-wide comprehensive water quality and sustainability planning and completion of the Drinking Water Quality Action Plan for the concerned district. The Drinking Water Quality Action Plan for the project districts supported by the project were prepared by the executing Contractor, the Public Health Engineering Department of the Government of West Bengal, with support of project preparatory consultants from the Asian Development Bank, and has been adopted by Public Health and Engineering Department to guide present and future drinking water improvement in the districts.

4. Total WBDWSIP investment envisaged is USD 349 million and based on 70% ADB financing. ADB's loan would be USD (240+3) million ADB funding (Ordinary Capital Resources +Trust Fund) and 30% counterpart funding by Government of West Bengal would be around USD 106 million. The implementation period of WBDWSIP is updated and now from 2018 to 2025.

5. The impact of the project would ensure drinking water security in West Bengal as envisioned in Vision 2020 and national sub-mission on Arsenic and Fluoride to have an outcome of safe, sustainable, and inclusive drinking water service received in project districts. The outputs of the project are,

- ✓ **Output 1**: Climate resilient drinking water infrastructure constructed.
- ✓ **Output 2**: Institutions and capacity of stakeholders for drinking water service delivery strengthened

6. The following figures show the area covered under WBDWSIP works and the works proposed under WBDWSIP.

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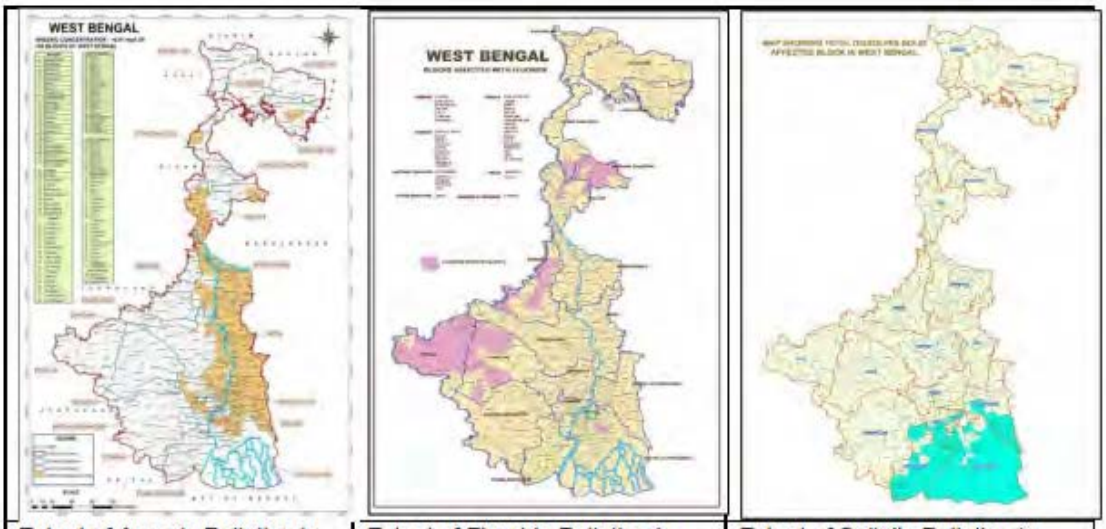


Extent of Arsenic Pollution in West Bengal	Extent of Fluoride Pollution in West Bengal	Extent of Salinity Pollution in West Bengal
Affected District (>0.01 ppm) – 11 Affected Block - 104 Affected habitations – 16,734 Affected Population – 1.80 Crores	Affected District (>1.5 ppm) – 7 Affected Block - 43 Affected habitations – 1,021 Affected Population – 74.08 Lakh	Affected District – 4 Affected Block - 57 Affected habitations – 13,762 Affected Population – 1.22 Crores

Extent of Arsenic, Fluoride and Salinity Pollution in West Bengal

Figure 1: Arsenic, Fluoride and Salinity affected area

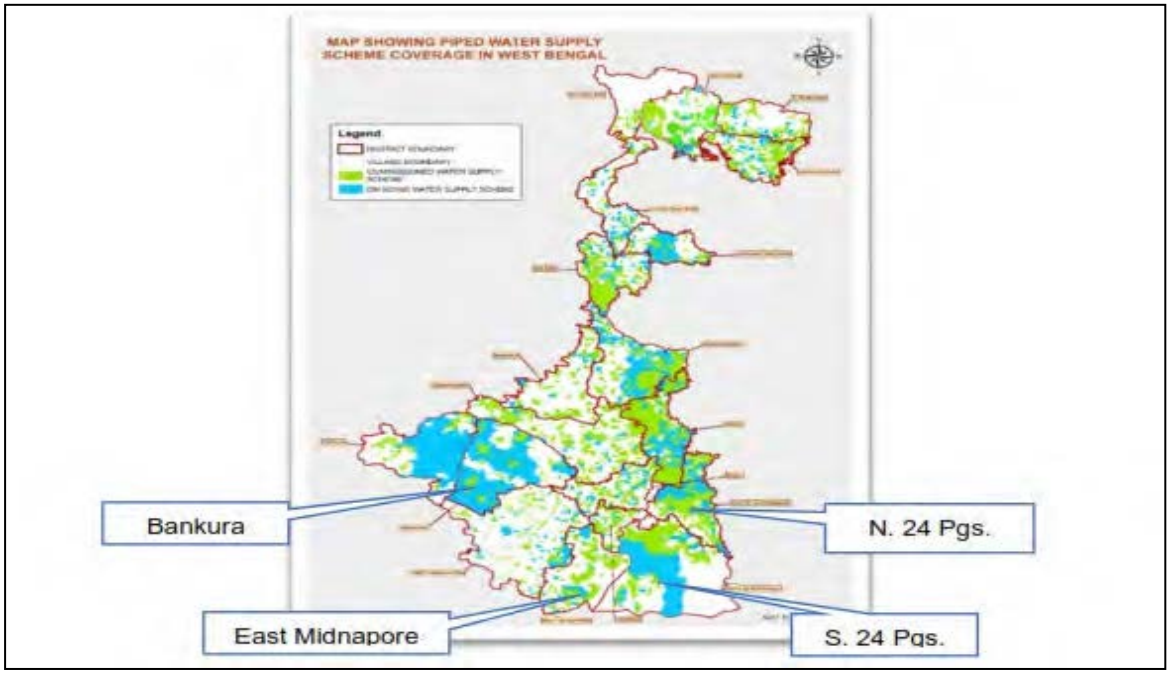


Figure 2: Location of District under the project

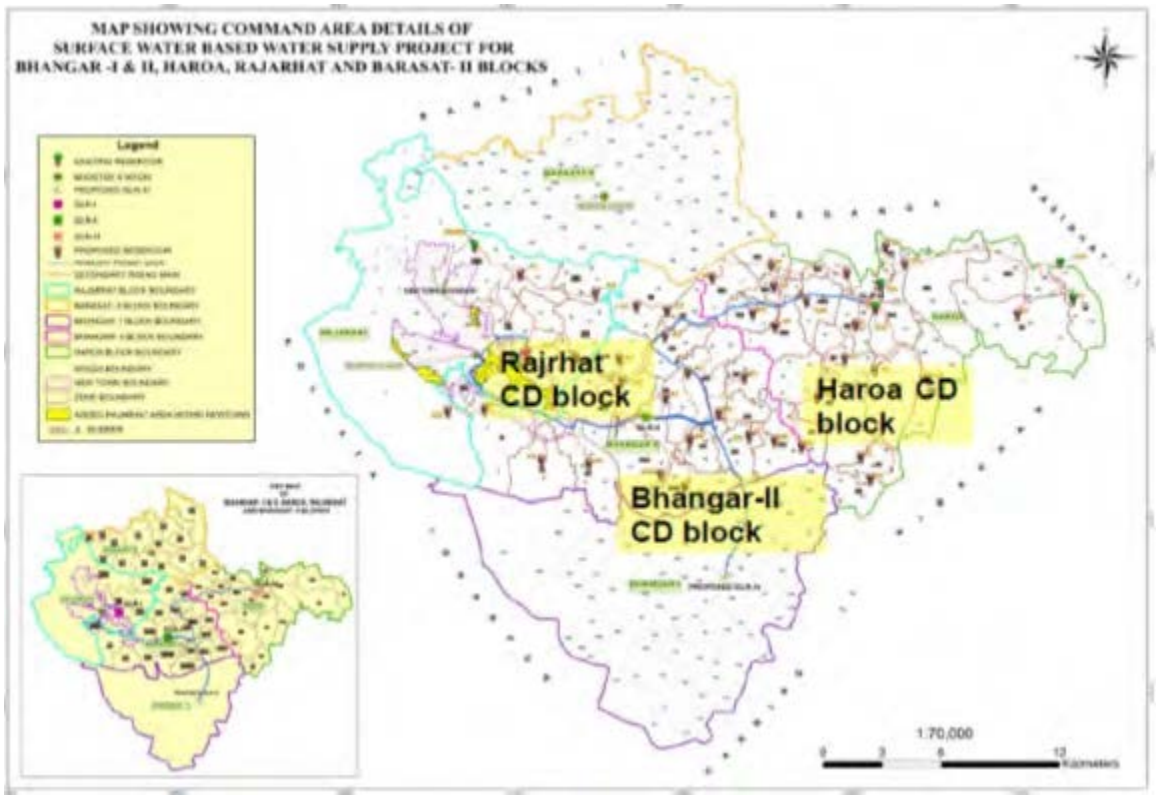


Figure 3: Location of different Blocks under South and North 24 pgs

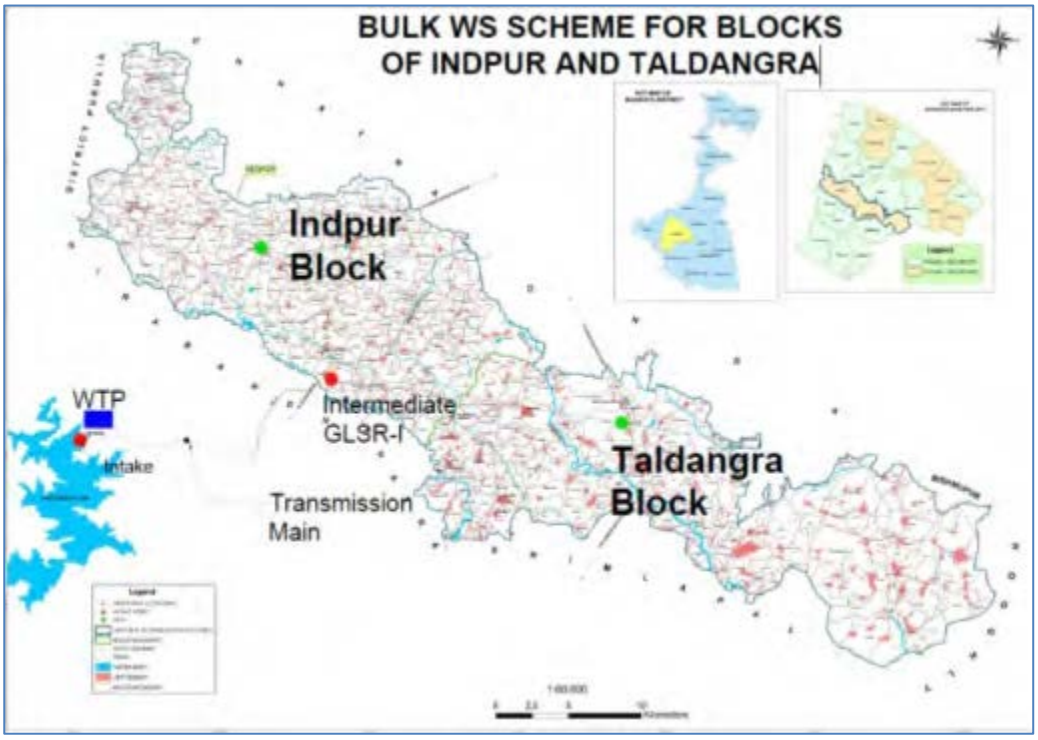


Figure 4A: Location of Two Work Blocks (Indpur & Taldangra) under Bankura District

Figure 4B: Location of Two Work Blocks (Mejhia & Gangajalghati) under Bankura District

Figure 5: Water Supply infrastructure planned in Purba Medinipur District

B. Environmental category as per ADB Safeguard Policy Statement, 2009

7. Sub Projects under **WBDWSIP** has been classified by ADB as environmental assessment **Category B** (some temporary impacts but less significant than category A) and the impacts of subprojects were assessed through Initial Environmental Examination (IEE), prepared according to ADB's Safeguard Policy (SPS 2009).

C. Environmental category of each subproject as per national laws and regulations

8. None of the 10 subprojects (civil work contracts) under WBDWSIP are included in the list of projects requiring Environmental Clearance, therefore EIA and Environmental Clearance (EC) is not required. Under National rules no categorization is considered for water supply project.

D. Project Safeguards Team

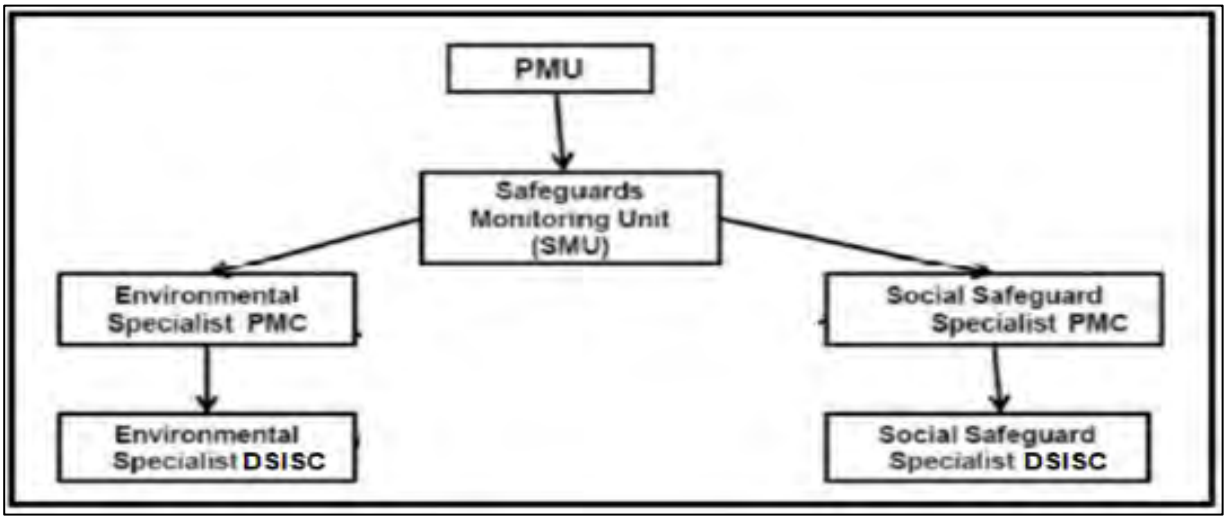
9. Environment safeguard team for the project is given in **Table 1.**

Table 1: Project Safeguard Team

Name	Designation/Office	Email Address	Contact Number
1. PMU			
Mr. Subhabrata Kundu	Superintending Engineer – Civil Head Safeguards Gender Officer (HSGO), Safeguard Gender Cell (SGC)	se.pmu.adb@wbphed.gov.in	9163236033
2. PIUs			
North 24 Parganas			
Mr.Sk.Mozammel Haque	AE-I Acting In-charge- Safeguard Officer (SO), Environmental and Social Safeguard Unit (ESSU)	ae1.piun24p.adb@wbphed.gov.in	6291880569
Mr. Prabir Kr. Naskar	AE-II Acting In-charge- Safeguard Officer (SO), Environmental and Social Safeguard Unit (ESSU)	ae2.piun24p.adb@wbphed.gov.in	9433778332
Bankura			
Mr. Gourinath Ghatak	AE- I Safeguard Officer (SO), Environmental and Social Safeguard Unit (ESSU)- since April 2024	ae2.piubankura.adb@wbphed.gov.in	94348 74995
Purba Medinipur			
Mr. Arijit Acharya	AE-I Environment Officer (EO), Environmental and Social Safeguard Unit (ESSU)- **from July 2024**	ae1.piu.purmed@wbphed.gov.in	8597245053
3. Consultants			
PMC			
Dr. Ardhendu Mitra	Environment Specialist	ardhendumitra@gmail.com	9830415953
DSISC			
North 24 pgs			
Mr. Swarnabha Bandyopadhyay	Environment Specialist	swarnabhab@gmail.com	8017668861

Name	Designation/Office	Email Address	Contact Number
Bankura			
Mr. Prasenjit Ghosh	Environment Specialist	prasenjitg6@gmail.com	8340177692
Ms. Biswesari Ghosh	Support Environment Safeguard	bisweenvs@gmail.com	8637830281
Purba Medinipur			
Mr. Partho Sarathi Mukherjee	Environment Specialist	parthosarathi05@rediffmail.com	7003881499
Mr. Tridib Karmakar	Support Environment Safeguard	tridibkarmakar3@gmail.com	9732504776

10. Safeguard management system for the project is shown below.



Note: PMU – Project Management Unit; PMC – Project Management Consultant; DSISC – Design, Supervision and Institutional Support Consultant

Figure 6: Safeguard Management system

E. Overall project and sub-project progress and status

11. There are 10 civil work sub project packages under WBDWSIP**.** Summary of work contracts including type of contract (**upto 30th April,2025**) is shown below.

Parameters	DBO Type Contract	Item Rate Contract
Total Number of Packages	4	6
Contracts Executed/Completed	0	0
Contracts under Implementation	4	6
Bidding under Progress	0	0
Planning and Design	0	0

12. Other than that, of 10 civil work packages, there are 2 small packages of $3 million as grant from the Japan Fund for Poverty Reduction. In package (JFPR) there are (i) SAN/01: Pilot Faecal Sludge and Septage Management Plant and (ii) STWM/01: Smart Water Management: Gram Panchayat level smart water management equipment These 2 packages are under Smart Water Management for “Institutions and capacity of stakeholders for drinking water service delivery strengthened”. Till report period package SAN/01 is only awarded and pilot study completed. For package STWM/01 Concept on setting up room for establishment of water management center has been finalized. Rest selection of sub-packages is under progress.

13. **Table 2** shows the sub projects and the work packages including the status of award of contracts as on **30th April, 2025.** The contract agreements for all 10 packages have been signed and project work was continued for 3 packages at North 24 pgs (N-24P/01, N-24P/02A & N-24P/02B), 5 packages at Bankura (BK/01, BK/02A, BK/02B, BK/03 and BK/04) and 2 packages at Purba Medinipur (EM/01 and EM/02).

Table 2: Summary status of Subprojects under WBDWSIP (on 30th April 2025)

Sr. No.	Package No.	Packages	Status
1	**WBDWSIP/DWW/ N-24P/NCB/01/2017-18**	Design, Construction and Operation of Water Treatment Plant, Reservoirs, Transmission Mains and Pumping Stations works in Haroa, Rajarhat, and Bhangar II.	Agreement done on 14.12.2018 NTP issued on 11.01.2019 Work under progress
2	**WBDWSIP/DWW/N-24P/ NCB/02A/2017-18**	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Haroa Block.	Agreement done on 11.10.2018 NTP issued on 05.12.2018 Work under progress
3	**WBDWSIP/DWW/NCB/ N-24P/02B/2017-18**	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Bhangar II Block.	Agreement done on 11.10.2018 NTP issued on 05.12.2018 Work under progress
4	**WBDWSIP/DWW/NCB/ BK/01/2017-18**	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Reservoir, Transmission Main for Indpur and Taldangra block in Bankura.	Agreement done on 22.01.2019 NTP issued on 24.01.2019 Work under progress
5	**WBDWSIP/DWW/NCB/ BK/02A/2018-19**	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block.	Agreement done on 10.04.2019 NTP issued on 27.05.2019 Work under progress
6	**WBDWSIP/DWW/NCB/ BK/02B/2018-19**	Design and Construction of Intermediate Pumping Station, Secondary transmission mains, overhead reservoirs including water distribution network and metering works in Taldangra Block.	Agreement done on 10.04.2019 NTP issued on 27.05.2019 Work under progress
7	**WBDWSIP/DWW/NCB/ BK/03/2018-19**	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Mejhia and Gangajalghati Block in Bankura.	Agreement done on 10.04.2019 NTP issued on 27.05.2019 Work under progress
8	**WBDWSIP/DWW/NCB/ BK/04/2018-19**	Design and Construction of Overhead Reservoir including Water Supply Distribution Network and Metering Works in Mejhia and Gangajalghati Blocks including Rehabilitation of Existing Schemes.	Agreement done on 10.04.2019 NTP issued on 27.05.2019 Work under progress

Sr. No.	Package No.	Packages	Status
9	**WBDWSIP/DWW/ICB/ EM/01/2018-19**	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Nandakumar, Chandpur, Nandigram-I and II blocks in Purba Medinipur.	Agreement done on 03.02.2020 NTP issued on 19.02.2020 Work under progress
10	**WBDWSIP/DWW/ICB/ EM/02/2018-19**	Construction of Intermediate Pumping Station, Secondary transmission mains, overhead tanks including water distribution network and metering works in Nandigram-I and Nandigram-II block in Purba Medinipur.	Agreement done on 24.10.2019 NTP issued on 07.11.2019. Work under progress
11	**SAN/01**	Pilot Faecal Sludge and Septage Management Plant under JFPR (small package)	Completed
12	**STWM/01**	Smart Water Management)/ Gram Panchayat level smart water management equipment under JFPR (multiple packages)	Management/ Concept developed Tendering time– not decided

14. For all awarded packages, contractors have been mobilized and works are in different stages of implementation. Photo illustration of project activities (sample) is shown in **Appendix 1.**

F. Description of subprojects (package-wise) and status of implementation

15. **Table 3** below shows implementation status of awarded sub project packages **upto 30th April 2025**. Site Specific Environment Management Plan (SEMP) have been submitted by the contractors of all the 10 civil packages. List of submitted zone-wise SEMPs for the packages where final design completed has been shown in earlier 12th SEMR under Table 3A. After 12th SEMR (May to October 2024) no new SEMP have been submitted.

Table 3: Status of Implementation of Sub project (30th April 2025)

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
WBDWSIP/DWW/ N-24P/NCB/01/2017-18 (Awarded to FFIL -RIL JV)	Design, Construction and Operation of Water Treatment Plant, Reservoirs, Transmission Mains and Pumping Stations works in Haroa, Rajarhat, and Bhangar II. • Construction of WTP of 100 MLD (22 MGD) within existing WTP complex at New Town, Rajarhat • Clear water transmission main of 5.1 km (1200 mm DI pipe) from WTP to clear water reservoir at booster pumping station as well as Bidyadhari river crossing and Bagjola Canal crossing • Intermediate booster pumping station cum 1 Clear water reservoir of capacity 4600 cum at Rajarhat, within existing pumping station campus • Pumping station cum GLSRs of capacity 5000 cum and 3200 cum at	**Design**: WTP---- Hydraulic design, Soil investigation, design of chemical house, administrative building superstructure, Inlet well, Parshall flume, flash mixer and flocculator, plate settler, MCC building, CWR superstructure, substation, foundation design of intake well and pump house, BS-1 foundation, substation and chlorination buildings of BS-1,Clear water transmission mains, Haroa and Bhangar-II GLSR boundary and foundation-design completed **Construction**: **<u>WTP (i/c E&M)</u>** • Administrative Building -50% • Intake Sump piling work has been completed-91% • Inlet well-98% • Flash mixture-98% • Flocculation tank-98% • Plate settler work-98% • Filter house - 71% • CWR-cum PH - 88% • MCC Building-91% • Electrical Substation Building – 92% • Chemical House – 92% **<u>For Boosting Station -1 (i/c E&M)</u>**: -	Contract awarded	**60.50%**	Extended 31.05.2025 + O & M period

[1] If on-going construction, include %physical progress and expected date of completion

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	Bhangar II and Haroa respectively • SCADA Smart water management	a) CWR cum PH-77% b) Electrical Substation building:88% c) Chlorination Building: - 58 % **For Haroa GLSR (i/c E&M): -** a) CWR cum PH-50% b) Electrical Substation building:45% c) Chlorination Building : - 5 % **For Bhangar GLSR (i/c E&M): -** a) CWR cum PH-57% b) Electrical Substation building:75% c) Chlorination Building : - 35 % **For Clear water transmission main: WTP to BS-1:** 1. A total of 5012.83 m out of 5100 m 1200 mm diameter transmission mains has been laid 2. Transmission mains done (open cut - 4812.52 m and trenchless 200.31 m) 3. Pipe laying completed.			
WBDWSIP/DWW/N-24P/NCB/02A/2017-18 (Awarded to NCC Ltd)	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Haroa Block. Construction of overhead storage reservoir 21 nos.	**Detailed Design zone wise continued and construction On-going** **Design**: Design of distribution network of 21 zones, boundary wall of 21 zones, OHR foundation design of 21 zones and superstructure of 21 zones, - completed	Contract awarded	**89.60%**	Extended 31.07.2025 + O & M period

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	(capacity 250 to 1000 m^3) • Distribution network approx. 880 km DI and HDPE pipes of dia 63 – 400 • Household service connection. No. of household approx. - 48,900 • SCADA Smart water management	Chlorination cum SCADA building GA & Structural design of 21 zones, Super structure of 21 zones- completed **Construction**: OHR construction completed with rising mains and painting at zones:1,2,3,4,5, 6,7,8,9,10, 11, 12,13, 14,15,16,17,18,19,20 and at Zone 21 OHR. Construction is yet to start: **Distribution pipe laid**: Till end of April 2025 about 872.94 km out of 880 km approved length has been laid. Hydro test has been carried out for about approx. 843.25 Km. Total household survey: 48195 House connection pipe laid connecting 34141 households. **Canal crossing**: 1. Canal crossing design completed for 17 locations by bridge/anchoring method and 4 locations has been approved for HDD crossing. 2.Canal crossing completed at all locations.			
WBDWSIP/DWW/NCB/ N-24P/02B/2017-18 (Awarded to NCC Ltd)	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Bhangar II Block • Construction of overhead storage reservoir 18 nos...	**Detailed Design zone wise continued and construction On-going** **Design:** Design of distribution network of 18 zones Pipe laying work at 18 zones , boundary wall of 18 zones, OHR foundation design of 18 zones and	Contract awarded	**79.10 %**	Extended 31.05.2025 + O & M period

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	(Capacity 300 to 1000 m^3) • Distribution network approx. 923 km DI and HDPE pipes of dia 63 – 400 • Household service connection No of household approx. -60000 • SCADA Smart water management	superstructure of 18 zones completed Chlorination cum SCADA building GA & Structural design of 18 zones, Super structure of 18 zones-completed **Distribution pipe laid**: Till end of April 2025 about 922.22 km of out of 923.97 approved HDPE and DI pipes have been laid. Hydrostatic test has been carried out for a length of about 842.27 Km. Total household survey: 60000 House connection pipe laid connecting 29985 households **Canal Crossing**: 1.Construction of canal crossings completed: a) at 4 locations with pedestals b) at 5 locations anchoring with existing bridge c) at 2 locations constructing pipe carrying bridge d) at 6 locations using HDD method 2. Construction of one crossing is yet to be completed. **Overhead Reservoir (OHR) construction stage**: Major work at 12 OHRs has been completed. Currently work is going through 3,5,8,9,11 and 14 OHR **Zone – 3**, Boundary wall work is in			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		progress, Piling work of OHR construction completed & Pilling Work of Chlorination building Completed. 1st lift column completed above 2nd bracing beam **Zone – 5**: Boundary work done and Top dome and staircase reinforcement works are in progress. Finishing works are in progress at Chlorination Building. **Zone- 9**: Boundary work done, Tank vertical wall completed, Columns below lintel beam completed for Chlorination building progress. **Zone-11**: Finishing works and piping works are in progress. Ground floor slab shuttering in progress at chlorination building. **Zone-14**: Finishing works are in progress 1st floor brickwork completed at chlorination building.			
WBDWSIP/DWW/NCB/ BKP/01/2017-18 (Awarded to Technofab Engineering and SN Envirotech JV)	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Reservoir, Transmission Main for Indpur and Taldangra block in Bankura. • Construction of Intake of 44 MLD • Raw water pumping main from intake to WTP of approx. 0.65 km	**A. Intake** • 27 nos. pile in land portion and 58 nos. in water portion completed • 20 nos. pile out of 20 nos. pile in water portion completed (Pump house). • 10 nos. pile cap completed out of 17 nos. and 08 nos. pier cap completed out of 17 nos. • Build up is in progress of 600 dia pile.	Contract awarded	**31.11%**	Extended 30.09.2025+ O & M period

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	• Construction of conventional WTP of 44 MLD at Khatra block • One Ground level water storage reservoir (only clear water reservoir part) of capacity 2500 KL • Primary clear water rising main of approx. 22.36 km • SCADA Smart water management	**B. WTP** • Pre-construction work is going on at new WTP site near intake well area. Layout of individual units done. • Boundary wall excavation & PCC started. The boundary wall construction work was halted on 19.10.2022 due to objections from local villagers. • Clariflocculator -1 civil work completed except central shaft area. • Clariflocculator - 2 civil work completed except central shaft area. • Staff quarter – 1st floor slab casting completed. • Reinforcement work is in progress of Back Wash over head tank raft (Hold due to design purpose). • Reinforcement work is in progress of Filter Bed and CWPH. • Admin Building: - up to Pedestal • backfilling work in progress. • Chemical House: - up to GL backfilling work in progress • Filter Annex: - excavation work is in progress. • Sludge Pump house: - PCC Completed • Inlet works PCC work is in progress			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		C. CWTM and GLSR • CWTM pipe line laid 9.417 km (700 mm dia.) out of 22.355 km. • IGLSR excavation completed. • IGLSR above Base Raft W1 & W3 2nd lift RCC completed & wall 2,4 4th lift RCC complete & W 5 3 rd lift and 5 nos. baffle wall 3rd lift casting completed & 2 nos. baffle wall 1st lift casting complete.			
WBDWSIP/DWW/NCB/ BK/02A/2018-19 (Awarded to L & T Ltd)	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block. • Construction of Intermediate booster pumping station at Gobindapur in Indpur block • Construction of Intermediate booster pumping station cum Ground level storage reservoirs (IBPS cum GLSR-II- 1400 KL) at Raghunathpur in Indpur block • Laying of transmission main of approx. 155.48 km • Construction of 19 overhead	**Detailed Design zone wise completed and construction ongoing.** • Clear water transmission main (DI-K9, dia range 150 to 600 mm) pipe line laid for **137.953 km out of 155.48 km.** • Distribution main pipe line laid for **761.143 km** (HDPE- 761.143 km, dia range 75 to 200 mm and DI-K7 – 14.887 km, dia range 200 to 300 mm) out of total **803.654 km**. Pipe laying work in progress at all 20 zones. • House connection work in progress at 19 zones. • Construction of overhead reservoir (OHR) ongoing at 17 Zones- under construction at different stages • Top dome work is under progress in 3 OHR location and completed in 5 OHR locations • House connection is in progress	Contract awarded	**69.56%**	To be extended upto 30.09.2025 + O & M period Official approval of extension under process

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	reservoirs (OHRs), Construction of Chlorination cum SCADA room, Construction of Boundary Wall within the OHR premises • Water supply distribution network of approx. 803.654 km at 20 Zones • Provision of domestic water meters for household water connections with water meters. • Providing of Household service connection	for 17 zones. (19799 Nos.) **IBPS/GLSR:** **Raghunathpur GLSR:** • Raghunathpur CWR cum GLSR (1400 KL) we have completed CWR raft and 18 nos. of Column above raft, Wall starter and 1st lift wall completed, plum concrete of CWR up to 900mm of Compartment 2 is completed, rest of portion is under progress. PCC of Pump house raft and wall starter is completed and 1st lift wall is under progress2nd level Tie beam completed at pump house. **Gobindapur IBPS** • At Gobindpur IBPS, the excavation and PCC work for the chlorination building have been completed. The foundation and the first lift column below the plinth beam are also finished. For the pump house, the raft and wall starter have been completed, and work on the first lift of the wall is currently in progress.			
WBDWSIP/DWW/NCB/ BK/02B/2018-19 (Awarded to L & T Ltd)	Design and Construction of Intermediate Pumping Station, Secondary transmission mains, overhead reservoirs including water distribution	**Detailed Design completed and construction ongoing** • Clear water transmission main 70.818 km **(**DI-K9, dia range 150 to 500 mm) pipe line laid. Rest under progress.	Contract awarded	**74.00%**	To be extended upto 30.09.2025 + O & M period Official approval of extension under

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	network and metering works in Taldangra Block. • Intermediate booster pumping station cum ground level storage reservoir (GLSR of capacity 1500 KL) at Chenchurya • Design of Transmission mains including laying of (rising) mains of approx. 77.28 km. • Water supply distribution network of approx. 1082.33 km at 24 zones • 24 Overhead reservoirs (OHR) Construction of Chlorination cum SCADA room, Construction of Boundary Wall within the OHR premises. • Provision of domestic water meters for household water connections with water meters. • Providing of Household service connection	• Distribution main pipe line laid for 989.312 km. Pipe laying work in progress at all 24 zones. • Construction of overhead reservoir (OHR) ongoing at 16 zone out of 24 Zones. • Chlorination building in progress at 14 Overhead water storage locations • Boundary wall construction is in progress at 11 OHR locations • House service connection related works for 21,512 Nos. (Household) is in progress at different zones. o At Chenchuriya IBPS site: work in progress			process
WBDWSIP/DWW/NCB/BK/ 03/2018-19 (Awarded to L & T Ltd)	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water	**Detailed Design completed and construction ongoing** **<u>At Intake site:</u>** • Finishing works under progress at Intake arrangements below	Contract awarded	**92.00%**	To be extended upto 31.08.2025 + O & M period Official approval of

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	Transmission Main for Mejhia and Gangajalghati Block in Bankura. • Raw water intake of 36 MLD capacity will be constructed at Nutangram mouza of Barjora Block with arrangement for housing pumping machineries • Raw water transmission Main of 16.4 Km will be laid from Intake to Proposed WTP at Basudebpur mouza of Gangajalghati Block. • Water Treatment Plant (WTP) of 36 Mld capacity with booster pumping facilities upto design period 2050 would construct at Basudebpur mouza of Gangajalghati Block. • Clear Water Main of approx. 146.56 km will be laid from WTP to 34 nos. OHT of Mejhia & Gangajaghati Block	Pump house and pump house • Inside painting work of Pump house is in progress. • Approach bridge work completed. • Balance 3 no's of VT Pump installation completed. Pipe line work in progress. **At WTP site**: • Walkway lighting fixing in progress at Clariflocculator and Clarifiers • Finishing work in progress at Filter House • Outside stair work in progress at Filter Annex building • False ceiling done at Admin building. • Electrical cabling work in progress at Pumping machineries • Balance piping work in progress at Chlorination Building • Flooring work in progress at Staff quarter • In compound wall, brick work, plastering and painting in progress • Electro & mechanical work is in progress at chemical house • **Sludge Sump-** Pump foundation completed. Piping work in progress			extension under process

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		• Raw and clear water transmission main pipe line – **145.83 km** laid out of total **163 km.**			
WBDWSIP/DWW/NCB/ BK/04/2018-19 (Awarded to L & T Ltd)	Design and Construction of Overhead Reservoir including Water Supply Distribution Network and Metering Works in Mejhia and Gangajalghati Blocks including Rehabilitation of Existing Schemes • Construction of 30 overhead reservoirs (OHRs), Construction of Chlorination cum SCADA room, Construction of Boundary Wall within the OHR premises.in Mejia and Gangajaghati Blocks • `Laying of approx. 1447.6 km distribution network • Provision of domestic water meters for household water connections with water meters.	**Detailed Design zone wise completed and construction On-going** Construction of overhead reservoir (OHR) ongoing at 6 Zones out of 30 OHSR. • Sub-structure work completed for all zones. • Super-structure work is in progress –30 Zones. **Stage wise detail progress of OHSRs** • **SCADA cum Chlorination Building-** 25 Nos. Chlorination cum SCADA building under construction out of 30 Nos. 05 Nos. yet to start • **Store Room- 8** Nos. storeroom under construction out of 10 Nos. 2 Nos. yet to start. • **Guard Room- 11 Nos.** Guard Room under construction out of 30 Nos. 19 Nos. yet to start**.** • **Boundary Wall-** Work continued at 28 zones, yet to start at 2 zones • **Distribution main pipe** Total 1207.699 km (DI K7- 49.419 km and HDPE- 1055.470km) laid out of 1447 km. Approx. 728.441 Km Hydro Test done overall	Contract awarded	**66.65%**	To be extended upto 31.08.2025 + O & M period Official approval of extension under process

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		• House service connection: 29324 No HSC under progress out of 70000.			
WBDWSIP/DWW/ICB/ EM/01/2018-19 (Awarded to L & T Ltd)	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Nandakumar, Chandpur, Nandigram-I and II blocks in Purba Medinipur. (i) Raw water intake (fixed jetty type) of 112 MLD and pumphouse – electric substation, (ii) 107 MLD capacity water treatment plant with all appurtenances, civil & electro-mechanical works, including Chlorination sludge lagoons, (iii) 17.85 km long raw water pumping mains, (iv) 35.097 km long DI K9 and MS clear water transmission mains of assorted diameter 600 mm – 1000 mm to carry treated water from WTP to proposed GLSRs of Nandigram I & II blocks, (v) Construction of RCC Bridge of width 5.0 m over Haldi River having length	**Intake Jetty and Intake raw water rising main:** Out of 17.1 km raw water rising main pipe line, 14.036 km of pipe laying has been completed. • 15.816 km of 900mm dia DI (K9) and 6.561 Km of 1000 mm of DI (K9) i.e., 22.377 Km Primary CWRM pipe laying completed out of 35.097 km. • Foundation and Substructure of Admin building is in progress. Superstructure of LT & HT Transformer and Panel room, PDB cum MCC room is completed, finishing work in progress. • 21 Nos. of piles have been completed out of 21 Nos. at Intake approach bridge by End on Gantry method. • **Pump House –** 67 Nos. of piles have been completed out of 93 Nos. • **Admin cum SCADA Building** – Piling work is in progress. Total 66 Nos. of Piles have been completed out of total 115 Nos. till date. 5 Nos. of pile cap work completed out of total 18 Nos. **WTP:** • Piling work of CWR, CWPH,	Contract awarded	**65.90%**	*Extended* 31.08.2025 + O & M period

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	600 m approx. for carrying 1000 mm dia, (K9 grade) and other utility	Chlorination building, Back Wash Overhead Tank, Sludge Sump, Admin building, Store cum Operator Room, Electrical Substation, Chemical House, Staff Quarter, Stilling Chamber cum flash mixer, IPS cum Flocculator, Filter House is completed. • Substructure of CWPH, Chemical House, Back wash Water storage tank, Staff quarter, Guard Room, Stilling Chamber & Flash mixer, Chlorination building, Store cum Operator room, Sludge sump, Electrical Substation, Filter house and Filter Annex building is completed. • Super structure of Chlorination building, Store cum operator room, Filter annex building, Staff quarters, Guard Room, Stilling Chamber & Flash mixer, Chlorination building, Sludge sump, Electrical Substation, CWPH, Chemical House, Admin building is completed. • Super structure of IPS Cum flocculator, Filter House, Admin Building is in progress. • Finishing work of Chemical house, Staff Quarter, Store cum operator room, Admin building, Chlorination building, Back, wash Overhead tank, Filter annex			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		Building, CWPH, Electrical substation, Sludge Sump is completed. Foundation of Pipe carrying bridge over River Haldi, 49 nos pile out of 98 nos has been completed.			
WBDWSIP/DWW/ICB/ EM/02/2018-19 (Awarded to L & T Ltd)	Construction of Intermediate Pumping Station, Secondary transmission mains, overhead tanks including water distribution network and metering works in Nandigram-I and Nandigram-II block in Purba Medinipur. • 2 nos. IBPS – GLSR of capacity 4300 and 2500 KL at Nandigram I and II respectively. Subcomponent of GLSRs is CWR, CWPH, Chlorination Building, Substation Building, Admin cum SCADA building, Guard Room. • 20 new overhead reservoirs (OHRs) in Nandigram-I block and 9 new overhead reservoirs in Nandigram II block as per revised scope of work. Subcomponents of OHRs are Boundary	**Distribution Main** • 1540.585km (Nandigram I – 845.013 km and Nandigram II- 695.573 km) out of 1945.113 km of distribution network has completed for Nandigram -I & II till reporting period. **Clear water rising main** • 65.927 km out of 98.243 km Secondary Clear Water Rising Main pipe laying is completed. **Ground Level storage reservoirs** • Design and drawing for both Monoharpur and Garchakraberia GLSR is approved. GLSR – CWR & Sump (Plling) a) Nandigram **– I: All the Piles are constructed** for CWR & Sump at Gar Chakraberia GLSR. b) Nandigram – II: All the piles are constructed for CWR at Monoharpur GLSR. GLSR Pump House (Piling): a) Nandigram – I: **All the piling work has been completed.** b) Nandigram – II: All the piles are	Contract awarded	**68.00%**	*Extended* 31.08.2025 + O & M period

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
	Wall, Chlorination cum SCADA room, access road. * • 98.243 km of secondary clear water rising main: 63.875 km in Nandigram I and 34.368 km in Nandigram II. The diameter of pipeline ranges from 400-600 mm; • 2338.25 km of distribution network: Approx. 1444 km in Nandigram I and approx. 894.25 km in Nandigram II block. The diameter of pipeline ranges from 75.7 mm to 500 mm* • Providing domestic water meters	constructed for Pump House at Monoharpur GLSR. <u>GLSR Chlorination Building (Piling):</u> a) At Nandigram – I: All piling works for Chlorination Building have been completed at Garchakraberia b) At Nandigram – II: All piling works for Chlorination Building have been completed at Monoharpur GLSR. <u>GLSR Admin Building (Piling):</u> a) Nandigram – I: All pile construction has been completed. b) Nandigram – II: All pile construction works are complete for Admin Building at Monoharpur up to date. <u>GLSR Electrical Substation (Piling):</u> a) At Nandigram – I: All 36 piles have been completed b) At Nandigram – II: all 39 Nos. of Piles have been constructed for Electrical Substation building at Manoharpur GLSR, up to date **<u>GLSR (Substructure)</u>** <u>GLSR – CWR & Sump (Pile Cap)</u> a) At Nandigram – I: Raft Completed for Garchakraberia GLSR b) At Nandigram – II: Raft has been constructed for Manoharpur GLSR, up to date <u>GLSR Pump House (Pile Cap)</u>: c) At Nandigram – I: Partly concreting Completed and			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		reinforcement binding in progress in the remaining part. d) At Nandigram – II: All Pile cap have been constructed for Manoharpur GLSR, up to date <u>GLSR Chlorination Building (Pile Cap):</u> e) At Nandigram – I: No activity observed. f) At Nandigram – II: All Pile cap have been constructed for Manoharpur GLSR, up to date <u>GLSR Admin Building (Pile Cap):</u> g) At Nandigram – I: All pile cap has been completed h) At Nandigram – II: All Pile cap have been constructed for Manoharpur GLSR, up to date <u>GLSR Electrical Substation (Pile Cap):</u> a) At Nandigram – I: All pile cap has been completed i) At Nandigram – II: All Pile cap have been constructed for Manoharpur GLSR, up to date **<u>GLSR (Superstructure)</u>** <u>GLSR – CWR & Sump</u> j) At Nandigram – I: 1st lift column and RC wall concreting in progress. k) At Nandigram – II: RC wall and column concreting work is under progress. <u>GLSR Pump House</u>: l) At Nandigram – I: No activity			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		observed. At Nandigram – II: Column concreting in progress. <u>GLSR Chlorination Building:</u> o) At Nandigram – I: No activity observed. p) At Nandigram – II: Slab concreting completed. <u>GLSR Admin Building:</u> q) At Nandigram – I: Ground floor Roof slab completed. At Nandigram – II: Ground floor completed. First floor work is also completed. <u>GLSR Electrical Substation:</u> s) At Nandigram – I: 2nd lift column concreting wrk in progress. t) At Nandigram – II: Roof slab completed. u) **<u>Overhead storage reservoir (Foundation)</u>** • Piling works are complete for all the OHSRs at Nandigram – I block. • Piling works are complete for all the OHSRs at Nandigram – II block. <u>OHSR Chlorination Building (Piling):</u> • Pile cap work completed at OHR – Garchakraberia,Kendamari,Samsabad, Manuchak Jalpai, Jambari, Haripur, Banasri Gouri, Durgapur,parbatipur (N-I) and Gopalchak, Birulia, Manoharpur, NS Jalpai (N-II)			

Package Number	Components/List of Works	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				% Physical Progress	Expected Completion Date
		• OHSR Superstructure work continued (a) Nandigram I- at Garchakraberia, Samsabad,Kendamari, Jambari, Durgapur, Haripur, Manuchak Jalpai, Banasrigauri,Parbatipur,Kendamari,Jalpai. (b) Nandigram II- Birulia, Gopal chak, Monoharpur and NS Jalpai			

*** Presently executed -** 10 new overhead reservoirs (OHRs) in Nandigram-I block and 5 new overhead reservoirs in Nandigram II block as per revised scope of work. Subcomponents of OHRs are Boundary Wall, Chlorination cum SCADA room, access road. (due to shortage of fund)

*** Presently executed -** 1945.553 km of distribution network: Approx. 1054.266 km in Nandigram I and approx. 891.287 km in Nandigram II block. The diameter of pipeline ranges from 75.7 mm to 500 mm (due to shortage of fund)

II. COMPLIANCE STATUS WITH NATIONAL/ STATE/ LOCAL SATATUTORY ENVIRONMENTAL REQUITREMENTS

16. For implementation of the project both national and state rules & regulations need to be followed. **Table 4** below indicates environment legal compliance status for the awarded projects under WBDWSIP.

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

18. Present status of Environment, forest and other clearances are mentioned below.

Table 4: National/State/Local Statutory Environmental Requirements

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
WBDWSIP/DWW/ N-24P/NCB/01/2017-18	Design, Construction and Operation of Water Treatment Plant, Reservoirs, Transmission Mains and Pumping Stations works in Haroa, Rajarhat, and Bhangar II	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	The sub project is not covered in the ambit of the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the proposed project	Not Applicable (NA)	None	NA
		Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments During implementation (construction phase)	**CTE for WTP was obtained from West Bengal Pollution Control Board, attached as Appendix 5**	**Validity till 30.11.2026**	Should obtain CTO prior to operation of WTP	Ambient noise level shall not exceed permissible limit. Monitoring & Compliance status – specific and general

[2] Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)
[3] Specify if obtained, submitted and awaiting approval, application not yet submitted
[4] *Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 5 trees for every tree, etc.*

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		compliance will be required Consent to Establish (CTE) has to be received from West Bengal Pollution Control Board (WBPCB) for new WTP				condition of **CTE attached in Appendix 5.**
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982 During implementation (construction phase) compliance will be required CTE and CTO for diesel generator/s, Hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction.	No establishment of diesel generator/s, Hot mix plants, wet mix plants, stone crushers **CTE received for Batching Plant. Attached in Appendix 5**	NA **Validity upto 17.03.2027**	CTO will be collected as per requirement and with advancement of project Compliance of condition. But till report period Batching plant not functioning. Before start functioning, CTO needs to be obtained.	Conditions shown in CTE of Batching plant. Monitoring of emission – liquid and gaseous is required. Monitoring & Compliance status – conditions of CTE attached in **Appendix 5** CTO of RMC Batching plant is attached as **Appendix 5.**
		Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the	PUC obtained	**Validity upto October 2025**	PUC certificate will be collected for new vehicle-equipment if any.	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		project			Also, renewal will be required as per validity	
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	To be maintained	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.	No forest land is involved. No tree felling required	NA To be updated if any tree felling required	None Till report period no tree felling is required. Tree felling NOC will be obtained if required with advancement of work	NA
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied Labour licence obtained **(sample attached in Appendix 2)**	**Renewed Valid upto 24.09.2025**	To comply with the requirements as specified in the issued license.	NA
		Labour compensation insurance	Complied Worker compensation insurance policy obtained	**Renewed Validity upto 15.11.2025**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/N-24P/ NCB/02A/2017-18	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Haroa Block.	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	The sub project is not covered in the ambit of the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered.	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			Environmental Clearance is not required for the proposed project			
		Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments During implementation (construction phase) compliance will be required	Complied as per requirement and in line of rules. Protection of water body continued at project site	NA	None	NA
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982 During implementation (construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction. Pollution under control certificate (PUC) to be obtained by the contractor	CTE & CTO will be collected as per requirement and with advancement of project - Till report period not required Diesel Generators used are of less than 5 kVA, - CTE & CTO not required PUC certificate has been collected	NA **Validity period upto September 2025**		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		for all vehicles and equipment engaged in the project				
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.	No forest land is involved. Complied. Tree felling (11 nos.) NOC obtained for Gopalpur OHR site (which shows in earlier SEMR**)** Report of Log is submitted by Panchayet office to PIU which is reverted to DFO. As a compensation, 55 trees of multiple variety are planted in the site.	NA	Tree felling NOC for other sites if required as per final design and advancement of work	

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			Compliance status including plantation photos also attached in earlier SEMR			
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		Protection of land under Sundarban Biosphere Reserve (SBR)	NOC received from Director Sundarban Biosphere Reserve on 5th March 2019 indicating non requirement of any clearance from SBR authority since no forest area involved under the package (Copy attached in earlier SEMR)	NA	None	NA
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied. Labour licence obtained	Renewed **Valid upto 03.12.2025**	To comply with the requirements as specified in the issued license.	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Labour compensation insurance	Complied. Worker compensation insurance policy obtained	Renewed. **Valid upto 20.02.2026**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/NCB/ N-24P/02B/2017-18	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Bhangar II Block.	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	The sub project is not covered in the ambit of the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the proposed project	NA	None	NA
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982	CTE & CTO will be collected as per requirement and with advancement of project- Till report period not required	NA		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		During implementation (construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction. Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the project	Diesel Generators used are of less than 5 kVA, - CTE & CTO not required PUC certificate has been collected	**Validity upto October 2025**		
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003 West Bengal Trees (Protection and Conservation in Non-	No forest land is involved. No tree felling required	NA	Tree felling NOC if required as per final design and advancement of work	To be updated tree felling status and NOC in next SEMR as per requirement

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.				
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		Protection of land under Sundarban Biosphere Reserve (SBR)	NOC received from Director Sundarban Biosphere Reserve on 5th March 2019 indicating non requirement of any clearance from SBR authority since no forest area involved under the package (**Copy attached in earlier SEMR)**	NA	No action required	NA
		East Kolkata Wetland (Conservation and Management) Act, 2006 This legislation regulates all activities within the notified area of East Kolkata Wetlands.	Zone 1, 2, and 18 falls within EKW area hence prior permission/ NOC should be obtained from the East Kolkata Management Authority for laying	**Validity expired on 31.12.2021** (No renewal required – pipe laying work completed)	OHR sites for 2 and 18 of Bhangar-II block have been relocated outside the EKWMA area. For Zone-1,	Site observation/ monitoring to check, • No construction of permanent structure • No filling of water body • No change in

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			water distribution pipe networks within EKW area. NOC received on 08.01.2020 for laying of pipes. NOC from EKW Management Authority attached in last SEMR		Bhangar II OHR land selected inside the new Zone 18 OHR premise. Work completed	characteristics of land • No discharge of effluent, waste in the water body
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied Labour licence obtained	**Renewed. V5lid upto 26.12.2025.**	To comply with the requirements as specified in the issued license.	NA
		Labour compensation insurance	Complied Worker compensation insurance policy obtained **(sample attached in Appendix 3)**	**Renewed Valid upto 20.02.2026**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/NCB/ BK/01/2017-18	Design, Construction and Operation-Maintenance of	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization	The sub project is not covered in the ambit of the EIA notification, as this is not covered	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
& WBDWSIP/DWW/NCB/ BK/03/2018-19	Raw Water Intake Well, Water Treatment Plant, Reservoir, Transmission Main for Indpur and Taldangra block in Bankura & Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Mejhia and Gangajalghati Block in Bankura.	of projects into category A and B, based on extent of impact	under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the proposed project			
WBDWSIP/DWW/NCB/ BK/01/2017-18 **& WBDWSIP/DWW/NCB/ BK/03/2018-19**	- DO – - DO -	Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments During implementation	**CTE for WTP obtained from WBPCB on 16.03.2020 for BK/01. Amendment to CTE** has been issued by WBPCB by accepting			

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		(construction phase) compliance will be required CTE has to be received from West Bengal Pollution Control Board (WBPCB) for new WTP	the change of newly proposed WTP land at Kunarbahal mouza vide Memo no. 710-dr_nc_o/ 20/ 0054 dated 28.10.21. All other conditions remain unchanged. **CTE for WTP obtained from WBPCB on 02.03.2020 for BK/03 (Both the CTE attached as Appendix 5**)	**CTE for new WTP site validity date – 31.03.2027 (BK/01)-** no change in validity date **CTE validity date – 28.02.2027 (BK/03)**	Should obtain CTO prior to operation of WTP	Ambient noise level shall not exceed permissible limit CTE and Amendment of CTE attached as **Appendix 5.** Monitoring & Compliance status – specific and general condition of CTE attached in **Appendix 5**
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982 During implementation (construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction.	CTE & CTO will be collected as per requirement and with advancement of project- Till report period not required Green – Silent Diesel Generator in use. No requirement of CTE and CTO The Consent to Establish (CTE) and Consent to Operate (CTO) for the Batching plant Were **obtained on 19-03-2025 of**	NA **Valid Up to March 2032**		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the project	**WBDWSIP/DWW/NCB/ BK/01/2017-18 Attached in Appendix 5** PUC certificate has been collected for **package BK/01 & Bk/03**	**Validity upto June 2025 (BK/01) and June 2025 (BK/03)**		
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from	No forest land is involved . **For Package BK/03-** 232 no. of tree felling done at WTP site for construction activities by the respective Forest dept. (Permission obtained on 05.12.2019, copy		4000 number of compensatory plantations has been done at WTP location. Mostly local spp. of *Sonajhuri, Palash and few Mango trees.* New plantation drive to be taken this year also before onset of monsoon.	Site observation/ monitoring and recording, • Information to Forest Dept. after completion of plantation • Within a week of carrying out felling of trees submission of report to forest dept. indicating the total number of logs and firewood produced against

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Forest dept./ concerned dept.	attached as **Appendix 4**). Compensatory plantation has been done during onset of monsoon, but no survival of the species due to lack of maintenance and care.			each species • Retention of stamps of the felled trees for at least one month from date of felling • Felling & carriage of trees shall not be carried out after the sun-set and before sun-set
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	**WBDWSIP/DWW/NCB/BK/01/2017-18** To be comply Labour licence obtained **WBDWSIP/DWW/NCB/BK/03/2018-19** Complied Labour licence obtained	**Renewed Valid upto 07-06-2025** **Renewed Valid upto 12.08.2025**	To comply with the requirements as specified in the issued license.	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Labour compensation insurance	**WBDWSIP/DWW/NCB/ BK/01/2017-18** Complied Worker compensation insurance policy obtained. **WBDWSIP/DWW/NCB/ BK/03/2018-19** Complied Group Insurance WC policy obtained.	Renewed **Valid upto 22.06.2025** Renewed **Valid upto 30.03.2026**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/NCB/ BK/02A/2018-19 **WBDWSIP/DWW/NCB/ BK/02B/2018-19**	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block. Design and Construction of Intermediate Pumping Station, Secondary	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	The sub project is not covered in the ambit of the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the proposed projects	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
WBDWSIP/DWW/NCB/ BK/04/2018-19	transmission mains, overhead reservoirs including water distribution network and metering works in Taldangra block Design and Construction of Overhead Reservoir including Water Supply Distribution Network and Metering Works in Mejhia and Gangajalghati Blocks including Rehabilitation of Existing Scheme					
WBDWSIP/DWW/NCB/ BK/02A/2018-19 & **WBDWSIP/DWW/NCB/ BK/02B/2018-19** & **WBDWSIP/DWW/NCB/**	- DO – - DO – - DO -	The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982 During implementation	CTE & CTO will be collected as per requirement and with advancement of project- Till report period not required For all the packages	NA		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
BK/04/2018-19		(construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction. Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the project	Green – Silent Diesel Generator in use. No requirement of CTE and CTO **WBDWSIP/DWW/NCB/ BK/02A/2018-19** Received. **WBDWSIP/DWW/NCB/ BK/02B/2018-19** Received. **WBDWSIP/DWW/NCB/ BK/04/2018-19** Received.	**Validity period 23.10.2025** **Validity period 17.02.2026** **Validity period 27.09.2025**		
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and	No forest land is involved. No tree felling required for all the 3 packages	NA	Tree felling NOC for other sites if required as per final design and advancement	To be updated tree felling status and NOC in next SEMR as per

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		2003 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.			of work	
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied **WBDWSIP/DWW/NCB/ BK/02A/2017-18** Labour licence obtained. **(sample attached in Appendix 2)** **WBDWSIP/DWW/NCB/ BK02B/2018-19**	**Renewed Valid upto 19.08.2025** **Renewed Valid upto**	To comply with the requirements as specified in the issued license.	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			Labour licence obtained **WBDWSIP/DWW/NCB/ BK04/2018-19** Labour licence obtained	**19.08.2025** **Renewed Valid upto 11.08.2025**		
		Labour compensation insurance	Complied Group compensation insurance policy in favor of contractors for **all packages** obtained	Renewed **Valid upto 30.03.2026 for all the 4 packages**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/ICB/ EM/01/ 2018-19	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Nandakumar, Chandpur, Nandigram-I and II blocks in Purba Medinipur.	The EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	The sub project is not covered in the ambit of the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			proposed project			
		Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments During implementation (construction phase) compliance will be required CTE has to be received from West Bengal Pollution Control Board (WBPCB) for new WTP	CTE has been obtained for WTP on 5th November 2020 and attached as **Appendix-5**	**CTE validity date – 31.10.2027 (EM/01)**	Should obtain CTO prior to operation of WTP	Ambient noise level shall not exceed permissible limit Monitoring & Compliance status – specific and general condition of CTE attached in **Appendix 5**
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules, 1982 During implementation (construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction.	CTE & CTO will be collected as per requirement and with advancement of project Green- Silent Diesel Generator used, - CTE & CTO not required	NA CTO for RMC Batching plant is attached as **Appendix 5 - Validity of Batching plant (Bagnan) up to 28.02.2029**		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the project	PUC certificate has been collected	**Validity period upto July 2025**		
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003 West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.	No forest land is involved. Tree felling permission of 98 no of trees from Intake to Ganganarayanpur has been obtained from Forest Department. Tree felling done. Also 698 numbers of tree felling permission have been obtained from Forest Department for Mograjpur to Chakpatna clear water transmission main (**Appendix 4).** Tree	NA	Tree felling NOC for other sites if required as per final design and advancement of work	Compensatory plantation of 490 trees against 98 nos. felling and plantation of more than 5 times (more than 25000 trees covering yearly plantation program) against 698 nos. of tree felling Has been done. Compliance status is shown in earlier SEMR and plantation photos during report period shows in **Appendix 4.**

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
			felling done During the report period tree felling permission for 201 nos. tree (SH 4) in the stretch of Ganjanarayanpur to Nandakumar Market have been obtained from DFO (**Appendix 4)**. Tree felling is completed			
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied. Labour licence obtained	Renewed **Valid upto 03.06.2026**	Timely renewal will be required	NA
		Labour compensation insurance	Obtained Group compensation insurance policy	Renewed **Valid upto 30.03,202\6**	To ensure all potential risks are covered.	NA
WBDWSIP/DWW/ICB/EM02/ 2018-19	Construction of Intermediate	The EIA notification, 2006 (and its subsequent	The sub project is not covered in the ambit of	NA	None	NA

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
	Pumping Station, Secondary transmission mains, overhead tanks including water distribution network and metering works in Nandigram-I and Nandigram-II block in Purba Medinipur.	amendments in 2009) provides for categorization of projects into category A and B, based on extent of impact	the EIA notification, as this is not covered under either Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the central Government is not triggered. Environmental Clearance is not required for the proposed project			
		Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments During implementation (construction phase) compliance will be required	Complied as per requirement and in line of rules	NA	None	NA
		The Air (Prevention and Control of Pollution) Act 1981, amended 1987 and The Air (Prevention and Control of Pollution) Rules,	CTE & CTO will be collected as per requirement and with advancement of project	NA		

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		1982 During implementation (construction phase) compliance will be required CTE and CTO for (i) diesel generator/s and (ii) hot mix plants, wet mix plants, stone crushers, batching plant etc. if installed for construction. Pollution under control certificate (PUC) to be obtained by the contractor for all vehicles and equipment engaged in the project	Green- Silent Diesel Generator in use, - CTE & CTO not required PUC certificate has been collected	**Validity period upto April 2026.**		
		Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009	Construction activities are being carried out in compliance with the requirements	NA	None	NA
		The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003	No forest land is involved. From Bhutar More to Garchakraberia (Sonachura GP) along the clear main pipeline tree felling NOC has	NA	Tree felling NOC for other sites if required as per final design and advancement of work	Compensatory plantation and annual plantation program covering more than 30000 trees - done

Package No.	Subproject Name	Statutory Environmental Requirements[2]	Status of Compliance[3]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[4]
		West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006- Tree felling permission In case of tree felling NOC needs to be obtained from Forest dept./ concerned dept.	been obtained for 63 nos. trees from forest department. (**Appendix 4)** Tree felling has been done. No tree felling required during report period.			
		Wildlife (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995	No Wildlife protected area within or nearby the project area	NA	None	NA
		The Ancient Monument and Archaeological Sites and Remains (Amendment and Validation) Act 2010	No protected area within or nearby the project area. But chance find protocol will be maintained	NA	Chance finds protocol to be maintained	NA
		Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Complied. Labour licence obtained	Renewed **Valid upto 02.02.2026**	Timely renewal will be required	NA
		Labour compensation insurance	Obtained Group compensation insurance policy (Sample attached as **Appendix 3**	Renewed **Valid upto 30.03.2026**	To ensure all potential risks are covered.	NA

19. Status of land clearances are provided in social safeguard monitoring report.

III. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

20. The loan agreement for WBDWSIP was signed on 3rd October 2018 and details are available in ADB website (http://www.adb.org/projects/documents/ind-49107-006-lna). **Table 5** provides a summary of compliance to the loan covenants related to environmental safeguards.

Table 5: Compliance of Loan Covenants – Environment

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
SCHEDULE 4			
5	The Borrower shall ensure, or cause the EA to ensure, that no Works contract is awarded for a Subproject which involves environmental impacts until the EA has incorporated the relevant provisions from the EMP into the Works contract	**Being Complied** After environmental assessment relevant provisions of EMP attached in the bid document and works contract. Presently work continued for different packages, progress at different stages	
8	The Borrower shall ensure, or cause the EA to ensure, that no commencement of Works is allowed under any Works contract under a Subproject which involves environmental impacts and requires environmental clearances, until the EA has obtained the final approval of (a) the IEE from ADB, and (b) environmental clearance including approval of the environmental assessment report, from the relevant environment authority of the Borrower and the State.	**Being Complied** Sub project works have been commenced after approval of IEE report from ADB For water supply projects environmental clearance not required from relevant environment authority of the country and the state.	
SCHEDULE 5			
6	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 (a) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (b) the Environmental Safe-guards; (c) the EARF;	**Being Complied** Document is prepared/ or under preparation by complying all relevant State and National Laws, Safeguard Policy Statement (SPS 2009) of ADB. Draft Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB. Updation of IEEs zone wise done for package N24P/01, N 24P/02A and N 24P/02B; BK/01, BK/02A, BK/02B, BK/03, and BK/04; EM/ 01 and EM/ 02	Based on the sites handed over, the IEE has been updated. Once all the sites are handed over- design completed, the relevant IEE will be updated further and sent for ADB's approval. IEE will be updated further in case of change in project scope and location. Continuation of

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
	and (d) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	and submitted to ADB. Updated IEE for package N24P/01, N24P/02A and N 24P/02B; BK/01, BK/02A, BK/02B, BK/03 and BK/04; EM/01 and EM/02 disclosed in ADB and project website. Updated IEE website links are available in SEMR. Further 2nd updation of IEE has been done for package N24P/01, N24P/02A, N24P/02B, BK/02A, BK/02B, BK/03, BK/04; those reports are uploaded in project website after acceptance by ADB. 2nd updation also done for the package EM/02, that report accepted by ADB and disclosed in ADB & project website 2nd updated report is finalized for the package BK/01. Report accepted by ADB and report disclosed in ADB and project website Further (3nd updation) done for the package N24P/02B and report submitted to ADB on October 2021. Report accepted and disclosed by ADB and disclosed in project website. 3rd updated IEE for package N24P/ 01 submitted to ADB on October 2023 and after acceptance report disclosed in ADB website on November 2023 2nd updated IEE for package EM /01 submitted to ADB on October 2023 and after acceptance report disclosed in ADB website on November 2023 During last quarter - 4th updated / Final IEE for the package N24P/02B prepared and submitted to ADB on May 2024. Report accepted by ADB Further updation of IEE done for the package Bk 01 (3rd updation on July 2024), Bk 03 (3rd updation on July 2024), EM 01 (3rd updation on July 2024) and EM 02 (updation on July 2024) along with EM03 and EM 04 (new packages). All reports are disclosed in ADB and project website. Site–specific Environment management plan preparation for different packages for zone wise continued. All measures as	application of SEMP as per approved IEE and during implementation of the project

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
		mentioned in Environment Management Plan (EMP) and Site-Specific Environment Management plan (SEMP) has been followed in running packages, which under implementation – N24pgs/01, N24 Pgs/02A and 02B; BK/01, BK 02A, 02B, 03 and 04; EM/01 and EM/02. In addition, SOP of COVID 19 and H & S plan for COVID 19 mitigation applied for each package. Corrective or preventive action plans reflected in Environment Monitoring Report and project implementation authority take care of such actions as per requirement. Observed non-compliances are rectified through agreed corrective and preventive actions.	
Human and Financial Resources to Implement Safeguards Requirements			
10	The Borrower shall make available, or cause the EA to make available, all necessary budgetary and human resources to fully implement the EMP required.	**Being Complied** Budgetary provisions have been included in EMP Superintending Engineer (SE) in-charge of Environment and Social Safeguard is in place in Project Management Unit heading Safeguard Monitoring Unit. An Environment Specialist is in place within Project Management Consultancy (PMC) An Environmental Specialist and support environment of DSISC, for implementation of EMPs, is in place for regular monitoring to secure complete compliance.	Training continued for Environment, health, and safety officer of Contractors for application of SEMP and necessary corrective action
Safeguards – Related Provisions in Bidding Documents and Works Contracts			
11.	The Borrower shall ensure, or cause the EA to ensure, that all bidding documents and contracts for Works contain provisions that require Contractors to: (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	**Being Complied** EMP, BOQ line items, reinstatement to pre-project conditions included in the contract agreement. (a) Approved IEE, EMP is attached in Bidding documents. In case of any change of scope, updated IEEs with EMP(s) will be prepared and corrective measures will be disclosed to the Contractor and same will be reflected	In case of any change in scope, updated IEEs with EMP(s) will be prepared and corrective measures will be disclosed to the Contractor Standard Operating Procedure (SOP) for mitigation from COVID 19 impact has been developed and followed.

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
	people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;	in the "Environment Monitoring Report". Contractors done base line pre-construction monitoring and survey of pre-works condition. Budget has been allocated for EMP application and monitoring. Pre-construction documents submitted by Contractors for all the packages, where actual physical construction started. Also, pre-construction monitoring done for all the packages. During construction monitoring continued as per EMP and Environment Monitoring Plan.	In this context, it may be noted that OHR scope/site for Zone-1, 2 and 18 of Bhangar-II block has been modified/ relocated as these locations belong to jurisdiction of EKWMA. However, it has been decided to build both OHR of zone 1 and zone 18 into a same plot. Accordingly, SEMP updated.
	(b) make available a budget for all such environmental measures.	(b) IEE includes budgetary provisions for implementation of EMP for all the packages. Contractors submit monitoring budget in the SEMPs	Land of Zone 2 and 18 has been selected outside of EKWMA jurisdiction. NOC was obtained from concerned dept.
	(c) provide the EA with a written notice of any unanticipated environ-mental 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;	(c) During implementation of any project if additional impacts/risks arise due to change in scope/area that will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Contractor will inform the Construction Contractor for taking relevant corrective measures. Till date no as such situation create for packages which under implementation.	NOC for pipe laying work in these locations has been obtained from EKWMA. Work completed on that zone. Pipeline trenches are filled up and initial road restorations are completed on the same day. Whenever incomplete restoration is observed appropriate corrective and preventive actions are taken up.
	(d) adequately record the condition of roads, agricultural land, and other infrastructure prior to starting to transport materials and construction; and	(d) Haul roads have marked properly (by avoiding residential and agricultural land) before commencement of transportation of materials.	
	(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	(e) Pathways, and land which are affected for varying periods during implementation of the sub project restored by concerned construction Contractor before acceptance of the work. Restoration status has reflected in post construction monitoring report. Since the pipe laying work continued in villages, no as such underground infrastructure noted	
Safeguards Monitoring and Reporting			
12	The Borrower shall cause the EA to do the following: (a) submit semi-annual	**Being Complied** (a) 1st to 12th SEMR have been accepted	IEE/ EMP will be revised in case of inclusion of additional impact and

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
	Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission. (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 (c) report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.	by ADB and disclosed in ADB website. 13th SEMR for the period November 2024 to April 2025 will be submitted on June 2024. (b) During implementation of any project, if additional impacts/risks arise due to change in scope/area, those will be reflected in revised IEEs with EMPs and accordingly Executing Contractor (EA) will inform the ADB such change along with corrective action plan which will be reflected in the subsequent Monitoring Reports. (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. Till date no as such breach of compliance	change in design, location/ scope for the project
Prohibited List of Investments			
13	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.	**Complied** There is no violation of prohibited investment activities as per ADB SPS (2009) Appendix 5.	
Labour Standards			
14	The EA shall ensure that civil works contracts under the Project follow all applicable labourer laws of the Borrower and the State, and that these further include provisions to the effect that Contractors: (a) carry out HIV/AIDS awareness programs for labourer 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 (b) follow and implement all	**Being Complied** 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. No child labour engaged in the packages. Health related WC policy for workers available and valid for all the packages where construction continued. (sample	HIV- AIDS training continued and is required on 6 monthly basis. In addition, H & S training for COVID 19 pandemic needs to be continued for the contract packages

Serial No. as per Loan Agreement	Program Specific Covenants	Status / Issues	Action Required
	statutory provisions on labourer (including not employing or using children as labourer, 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.	attached in **Appendix 3**) Labour license also valid for all the 10 packages under implementation. Sample labour license is attached as **Appendix 2.** HIV- AIDS training program conducted for the packages. HIV/AIDS awareness program to be continued on 6-monthly basis. Induction training and COVID -19 awareness training were conducted in running packages where actual physical work continued. Annexure 1 and Annexure 2 have been submitted by all running packages to record information about new workmen and daily health status respectively by the Contractors as per COVID-19 SOP and H & S plan for each contract. Field activity is continued. Before that all documents including SEMPs submitted by the Contractors. In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken up. All activities including awareness program reflected in "Monitoring Report".	

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN

21. There are **10 civil works contract packages** under implementation. Site Environment plans including site specific EMPs (SEMP) were submitted by the contractors before starting of each construction package. SEMPs were prepared zone wise based on final detailed design. List of SEMPs finalized before start of construction work shown in earlier SEMR. SEMPs are available with contractor, DSISC and PIU for implementation and monitoring of application of mitigation measures. Compliance status of SEMPs is also available with DSISC and PIU. **Table 6** shows package wise EMP implementation status.

Table 6: Package wise EMP Implementation Status – upto April 2025

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
WBDWSIP/DWW/ N-24P/ NCB/01/2017-18	Design, Construction and Operation of Water Treatment Plant, Reservoirs, Transmission Mains and Pumping Stations works in Haroa, Rajarhat, and Bhangar II.	DBO contract: design completed	Updated IEE based on upto date design prepared along with SEMP	1st Updated IEE submitted in December 2019 along with Log sheet. Report accepted by ADB. 2nd Updated IEE submitted in September 2021. Report accepted by ADB. After finalization of design 3rd Updated IEE submitted to ADB on October 2023. – Report accepted and disclosed by ADB	2nd Updated IEE disclosed in project website http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_N24pgs_Pack_01_September2021.aspx 3nd Updated IEE disclosed in ADB website https://www.adb.org/projects/documents/ind-49107-006-iee-26	Yes. Updated disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU
WBDWSIP/DWW/ N-24P/ NCB/02A/2017-18	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Haroa Block.	Detailed design continued zone wise. Completed mostly and work ongoing	Updated IEE prepared upto date design and SEMPs zone wise. 2nd Updation done	2nd Updated IEE submitted in August 2020 along with Log sheet. Report accepted by ADB.	Designed Zone wise 2nd Updated IEE for the package disclosed in ADB and project website https://www.adb.org/projects/documents/ind-49107-006-iee-18 (http://wbdwsipmis.wbphed.gov.in/updated_2_IEE_N24Pgs_0	Yes. Updated disclosed IEE provided to contractor Next updation will be done after completion of design for all zones	Prepared by contractor/ DSISC and approved by PIU

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
					2A_Sept2020.aspx)		
WBDWSIP/DWW/ N-24P/ NCB/02B/2017-18	Design and Construction of Overhead Reservoir including design, supply and laying of Water Supply Distribution Network in Bhangar II Block.	Detailed design completed zone wise. Work continued.	Updated IEE prepared upto date design and SEMPs zone wise. 2nd Updation done Also, 3rd and 4th updation done	2nd Updated IEE submitted in October 2020 along with Log sheet. Report accepted by ADB. 3rd Updated IEE submitted to ADB on October 2021 After finalization of design, 4th updation has been completed and submitted to ADB on April 2024. Report accepted by ADB.	Designed Zone wise 2nd Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/updated_2_IEE_N24Pgs_02B_Oct2020.aspx) Designed Zone wise 3nd Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/Updated_3_IEE_N24Pgs_Pkg_02B_Oct_2021.aspx)	Yes. Updated disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU
WBDWSIP/DWW/ NCB/ BK/01/2017-18	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Reservoir, Transmission Main for Indpur	For DBO contract detailed design completed.	Updated IEE prepared upto date design Next updation will be done in case of any change in location, scope and work methodology	1st Updated IEE submitted in October 2020 along with Log sheet 2nd Updated IEE submitted in March 2022	1st Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/updated_1_IEE_Bankura_Bk01_Nov2020.aspx 2nd updated IEE for the package	Yes. Updated disclosed IEE provided to contractor Further updation will be done in case of any change in design	Finalized and included in updated IEE Updated SEMP disclosed in project website

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
	and Taldangra block in Bankura.			3rd updated IEE for the package submitted to ADB on July 2024. Report accepted by ADB and disclosed in the website	disclosed in project website http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_Bankura_Pkg_Bk01_April_2022.aspx 3rd Updated – disclosed IEE https://www.adb.org/projects/documents/ind-49107-006-iee-28		
WBDWSIP/DWW/ NCB/ BK/02A/2018-19	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block., Bankura	Detailed design completed	Updated IEE prepared upto date design and SEMPs zone wise. 3rd updation of IEE done Next updation will be done in case of any change in location, scope and work methodology	1st Updated IEE submitted in April 2020 along with Log sheet. Report accepted by ADB. 2nd Updated IEE submitted in January 2021 along with Log sheet. Report accepted by ADB. 3rd updated IEE submitted, accepted and disclosed in ADB website on July 2024	2nd updated IEE disclosed in project website http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_Bankura_pkg_Bk_02A_Jan2021.aspx 3nd updated IEE disclosed in ADB website https://www.adb.org/projects/documents/ind-49107-006-iee-	Yes. Updated disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
					31		
WBDWSIP/DWW/ NCB/ BK/02B/2018-19	Design and Construction of Intermediate Pumping Station, Secondary transmission mains, overhead reservoirs including water distribution network and metering works in Taldangra Block.	Detailed design completed	Updated IEE prepared upto date design and SEMPs zone wise. 2nd updation of IEE done Next updation will be done in case of any change in location, scope and work methodology	1st Updated IEE submitted in June 2020 along with Log sheet. Report accepted by ADB. 2nd Updated IEE submitted in March 2021 along with Log sheet. Report accepted by ADB	2nd updated/ Final IEE disclosed in project website and ADB website http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_Bankura_Pkg_Bk_02B_March_2021.aspx ADB website https://www.adb.org/projects/documents/ind-49107-006-iee-27	Yes. Updated disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU .
WBDWSIP/DWW/ NCB/ BK/03/2018-19	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Mejhia and Gangajalghati Block in Bankura	DBO contract: design completed	Updated IEE based on upto date design prepared along with SEMP Report updated after finalization of design	1st Updated IEE submitted on February 2020 along with Log sheet. Report accepted by ADB. 2nd Updated IEE submitted in March 2021 along with Log sheet. The report accepted by ADB 3rd Updated IEE submitted to ADB on July 2024. Report accepted and disclosed in ADB website.	2nd Updated IEE for the package disclosed in project website http://wbdwsipmis.wbphed.gov.in/Updated_2_Final_IEE_Bankura_Pkg_BK_03_May_2021.aspx 3nd updated IEE disclosed in ADB website https://www.adb.org/projects/documents/i	Yes. Updated disclosed IEE provided to contractor	Finalized and disclosed in project website

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
					nd-49107-006-iee-29		
WBDWSIP/DWW/ NCB/ BK/04/2018-19	Design and Construction of Overhead Reservoir including Water Supply Distribution Network and Metering Works in Mejhia and Gangajalghati Blocks including Rehabilitation of Existing Schemes., Bankura	Detailed design completed	2nd/ Updated IEE prepared for all zones Next updation will be done in case of any change in location, scope and work methodology	1st Updated IEE submitted in April 2020 along with Log sheet. Report accepted by ADB. 2nd Updated IEE submitted in April 2021 along with Log sheet. The report accepted by ADB	2nd Updated/ Final IEE for the package disclosed in project and ADB website http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_Bankura_Pkg_Bk_04_July2021.aspx ADB Website https://www.adb.org/projects/documents/ind-49107-006-iee-20	Yes. Updated disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU .
WBDWSIP/DWW/ ICB/ EM/01/2018-19	Design, Construction and Operation-Maintenance of Raw Water Intake Well, Water Treatment Plant, Raw and Clear Water Transmission Main for Nandakumar, Chandpur, Nandigram-I and II blocks in Purba Medinipur.	DBO contract: design completed mostly	1st Updated IEE based on upto date design prepared along with SEMP Updated IEE submitted Next updation will be done in case of any change in location, scope and work methodology	Updated IEE submitted on October 2020 along with Log sheet. The report accepted by ADB Further updated IEE submitted to ADB on October 2023. Report accepted by ADB and disclosed 3rd updated IEE submitted to ADB on July 2024. Report accepted and disclosed in ADB website on July 2024	1st Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/updated_1_IEE_E_Medinipur_EM01_Nov2020.aspx) 2nd Updated IEE for the package disclosed in ADB website https://www.adb.org/projects/documents/i	Yes. Updated disclosed IEE provided to contractor	Finalized and included in updated IEE

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
					nd-49107-006-iee-25 3rd Updated IEE for the package disclosed in ADB website https://www.adb.org/projects/documents/ind-49107-006-iee-30		
WBDWSIP/DWW/ ICB/ EM/02/2018-19	Construction of Intermediate Pumping Station, Secondary transmission mains, overhead tanks including water distribution network and metering, Purba Medinipur	Detailed design continued zone wise. Partly completed	Updated IEE prepared upto date design and SEMPs zone wise. 3rd updated IEE finalized as per on date design Next updation will be done in case of any change in location, scope and work methodology	1st Updated IEE submitted in June 2020 along with Log sheet 2nd Updated IEE submitted in August 2021. Report accepted by ADB 3rd Updated IEE (along with new packages EM03 & EM04) submitted in July 2024. Report accepted and disclosed by ADB	Designed Zone wise 1st Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/updated_1_IEE_E_Medinipur_EM02_July2020.aspx) Designed Zone wise 2nd Updated IEE for the package disclosed in project website (http://wbdwsipmis.wbphed.gov.in/Updated_2_IEE_E_Medinipur_Pack_EM02_August_2021.aspx) 3rd Updated IEE for the package disclosed in ADB	Yes. Updated and disclosed IEE provided to contractor	Prepared by contractor/ DSISC and approved by PIU

Package No	Components	Design status (Preliminary Design Stage/ Detailed Design Completed	Final IEE based on Detailed Design				Site specific EMP (or construction EMP) approved by Project Director (Yes/ No)
			Not yet due (detailed design not yet completed)	Submitted to ADB (provide date of submission)	Disclosed on project website (Provide link)	Final IEE provided to Contractors (Yes/No)	
					website https://www.adb.org/projects/documents/ind-58035-001-iee		

A. Implementation Arrangement

22. Public Health Engineering Department (PHED) of Government of West Bengal is the executing and implementing agency of the WBDWSIP, responsible for management, coordination and execution of all activities funded under the loan. A project management unit (PMU), exclusively established in PHED, assist the PHED in implementation of WBDWSIP. PMU supported by district level Project Implementation Units (PIUs). PMU is headed by a Project Director. Each PIU is headed by a Superintending Engineer, reporting to the Project Director. PMU with the support of PIUs is responsible for planning, implementation, monitoring and supervision, and coordination of all activities under the WBDWSIP. Project Implementation Unit (PIU) for North 24 Parganas, Bankura and Purba Medinipur district has already been established.

23. PMU is supported by Project Management Consultant (PMC) to supervise, monitor and oversee the implementation. Each PIU is supported by a Design, Supervision and Institutional Support Consultant (DSISC); there are three DSISCs supporting 3 PIUs respectively in North 24 Parganas, Bankura and Purba Medinipur districts. PIUs appoint construction contractors to build infrastructure.

24. A Steering Committee, headed by Chief Secretary, will provide strategic guidance, and oversee the implementation of the investment project. District Steering Committee, headed by the respective District Magistrate, established for monitoring program implementation at districts level. Steering committee is already established (**Appendix 6**).

B. Safeguard Implementation Arrangement

25. **Project Management Unit.** A Safeguard and Gender Cell (SGC) established in PMU with the overall responsibility of ensuring compliance with ADB SPS. SGC is headed by a Head Safeguards Gender Officer (HSGO) and report to the Project Director directly. The HSGO have overall responsibility in implementation of the RF, EARF, RPs, EMPs, SEMP, GESI action plan, and appropriate monitoring and reporting responsibilities. Key environmental safeguard tasks and responsibilities at the PMU level are as follows:

- Ensure subprojects confirms to exclusion criteria and project selection guidelines as stipulated in the EARF;
- Approve subproject environmental category;
- Approve IEEs; ensure that updated IEEs/EMPs reflect final project designs;
- Ensure that EMPs are included in bidding documents and civil works contracts;
- Ensure proper implementation of EMPs by contractors;
- Facilitate and ensure compliance with all government rules and regulations regarding site and environmental clearances, as well as any other environmental requirements (e.g. location clearance certificates, environmental clearance certificates), as relevant;
- Oversee public consultation and disclosure;
- Approve quarterly EMP implementation reports;
- Review and approve semi-annual monitoring reports prepared by PMC; and submit to ADB;
- Oversee grievances redress process and ensure timely redress;
- Undertake regular review of safeguards related loan covenants, and the compliance in program implementation; and

- Organize periodic capacity building and training programs for WBDWSIP stakeholders, PHED, PMU and PIU staff on safeguards.

26. The SGC supported by environmental, social and gender safeguard specialists in the PMC. Key safeguard tasks and responsibilities of Environmental Specialist of the PMC on environmental safeguards are as follows:

- Review and finalize REA checklist and classify the project;
- Review and confirm project selection/ design; ensure compliance with exclusion criteria and project environmental selection guidelines;
- Review and finalize IEE reports including EMPs prepared/updated by PIUs/DSISCs;
- Oversee public consultation and information disclosure activities; ensure timely disclosure;
- Provide advise/support in obtaining government clearance/ approvals;
- Review and confirm that IEEs/EMPs are included in bids and contracts;
- Review and confirm SEMPs prepared by contractor;
- Oversee the implementation of SEMP by contractors and ensure corrective actions, where necessary;
- Review and approve quarterly environmental monitoring reports submitted by PIU/DSISCs;
- Conduct site visits of project facilities and work sites to oversee implementation;
- Prepare semi-annual environmental monitoring reports and submit to PMU SGC HSGO;
- Oversee grievance redress process; advise on critical grievance related to environmental issues and concerns;
- Review COVID 19 compliance monitoring, and
- Organize training and capacity development programs.

27. **Project Implementation Unit.** At each PIU, an Assistant Engineer is given additional responsibilities of safeguard tasks and designated as Assistant Safeguards Officer. The Safeguards Officer oversee the safeguards implementation at PIU level, coordinate public consultations, information disclosure, regulatory clearances and approvals, RP implementation, EMP implementation and grievance redressal. Key environmental safeguard tasks and responsibilities of Safeguards Officer are as follows:

- Coordinate public consultation and information disclosure;
- Liaise with local offices of regulatory agencies in obtaining clearances /approvals; assist PMU for clearances obtained at state level;
- Review and approve contractors SEMPs;
- Oversee day-to-day implementation of SEMPs by contractors including compliance with all government rules and regulations;
- Take necessary action for obtaining rights of way;
- Ensure continuous public consultation and awareness;
- Coordinate grievance redress process and ensure timely actions by all parties;
- Review monthly contractor’s SEMP Monitoring Reports;
- Review and forward quarterly monitoring reports to PMU;
- Inform PMU of unanticipated impacts and formulate corrective action plan; and
- Recommend issuance of work construction work completion certification to the contractor upon verification of satisfactory post-construction clean-up.

28. The PIUs assisted by DSISC teams which includes an Environmental Specialist and a Social Safeguards Specialist. Following are the key tasks of Environmental Specialist of DSISC:

- Assist PIU in identifying projects/components in compliance with the project exclusion criteria and selection guidelines stipulated in EARF;
- Prepare environmental screening checklists and submit to PMU for categorization; update checklist and category as and when required to reflect project changes, and report to PMU;
- Work closely with PIU and design teams to include environmental considerations in project location, design and technical specifications;
- Identify statutory clearance / permissions / approvals required for subproject; assist PIU in obtaining them;
- Assist in including standards/conditions, if any, stipulated in regulatory clearances, consents in the project design;
- Update IEE and EMP to reflect any changes in subproject during detail design / implementation; IEE shall reflect the final project design;
- Lead / assist PIU in public consultation in compliance with the EARF; reflect inputs from public consultation in IEEs, EMPs, and project design;
- Advise / assist PIU in disclosing relevant information on safeguards to stakeholders, affected people etc.;
- Assist / ensure all EMP measures related project design and location and included in the detailed designs;
- Integrate EMP into the BID and contract documents (for DBO contracts, include full IEE including EMP in bids);
- Advise contractor in preparation of SEMP as per the final design, prior to start of construction;
- Ensure that all necessary clearances/permission (including those required by Contractor) are in place prior to start of construction;
- Monitor implementation of SEMP;
- Ensure Contractors including subcontractors, if any, comply with the measures set forth in the EMP;
- Assist PIU in establishing GRM for the Project:
- Assist PIU in grievance redress, advise the contractor on appropriate actions on grievances, ensure timely resolution and proper documentation;
- Identify, if any, non-compliance, or unanticipated impacts; initiate corrective actions, report to PMU;
- Review and approve monthly monitoring reports submitted by Contractor; consolidate and prepare quarterly Environmental Monitoring Reports (EMR) and submit to PMU; and
- Conduct training and capacity building activities (workshops, hands-on trainings, visits etc.,) in EMP implementation.

29. **Civil Works Contracts and Contractors.** The contractor appoints an Environment, Health and Safety (EHS) Officer to implement EMP. The EHS Officer will update the EMP and submit a SEMP for approval of PIU. Contractors will carry out all environmental mitigation and monitoring measures outlined in EMP, approved SEMP and their contracts. Key responsibilities of the EHS supervisor are:

- Prepare SEMP and submit to PIU for approval prior to start of construction;
- Conduct orientation and daily briefing sessions to workers on environment, health and safety;

- Ensure that appropriate worker facilities are provided at the work place and labour camps as per the contractual provisions;
- Records accidents and undertake remedial actions;
- Implement SEMP measures and report to PIU/DSISC if any new impacts are surfaced; seek guidance from as required in EMP implementation;
- Compliance of H & S issues for COVID 19;
- Conduct environmental monitoring (air, noise etc.,) as per the monitoring plan
- Ensure conduct of water quality surveillance program;
- Prepare monthly EMP monitoring reports and submit to PIU;
- Work closely with PIU Safeguards Officer and consultants to ensure communities are aware of project-related impacts, mitigation measures and GRM; and
- Address any public compliance and grievances effectively and in timely manner.

30. Environment Specialist and Environment support staff of DSISC visited all construction sites every week and arranged onsite training program for contractors and supervisory staff and instructed contractors for application of corrective action measures to mitigate impacts. Environment Specialist of PMC visited work sites atleast once in a month to audit application of EMP and assess shortfall if any. **Table 7** shows detail of safeguard personal from contractor. **Table 1** shows project safeguard Team.

Table 7: Details of Contractor's safeguard officer for WBDWSIP

Designation	Name and Contact Details
North 24 Parganas	
Contractor- NCC, North 24 Pgs **Package:** N-24P/NCB/02A/2017-18, **Safeguard Officer**	Name: Mr. Saradindu Gain Phone: 9775459487 Email: gain.saradindu@gmail.com
Contractor- NCC, North 24 Pgs, **Package:** N-24P/NCB/02B/2017-18, **Safeguard Officer**	Name: Mr. Saradindu Gain Phone: 9775459487 Email: gain.saradindu@gmail.com
Contractor- Furnace Fabrica (India) Ltd.- North 24 Pgs, **Package:** N-24P/NCB/01/2017-18**,** **Safeguard Officer**	Name: Mr. Subodh Chauhan Phone: 8757473206 Email: subodhchauhan211@gmail.com
Bankura	
Contractor- Techno Fab Engineering Ltd. and S N Envirotech Pvt. Ltd. Jv, Bankura, **Package:** BK/NCB//01/2017-18**,** **Safeguard Officer**	Name: Mr. Samaya Mohanty Phone: 8249318284 Email: samayamohanti1995@gmail.com
Contractor- L & T Ltd. **Package:** BK/NCB/02A/2018-19, **Safeguard officer**	Name: Sk Laiquiddin Phone: 9861388828 Email: sheikhlaiq@lntecc.com
Contractor- L & T Ltd. **Package:** BK/NCB/02B/2018-19, **Safeguard officer**	Name: Mr. Bapi Barik Phone: 8944060687 Email: barikbapi@lntecc.com
Contractor- L & T Ltd **Package:** BK/NCB/03/2018-19, **Safeguard officer**	Name: Mr. Sovan Rout Phone: 9658789293 Email: sovan.rout@hotmail.com
Contractor- L & T Ltd. **Package**: BK/NCB/04/2018-19,	Name: R Bharati Mohan Phone: 9791008878

Designation	Name and Contact Details
Safeguard officer	Email: bharathimohan.ramalingam@lntecc.com
Purba Medinipur	
Contractor- L & T Ltd **Package**: EM/ICB/01/2018-19 **Safeguard officer**	Name: Mr. Subrata Kumar Das Phone: 8889996575 Email: DASK@lntecc.com
Contractor- L & T Ltd **Package:** EM/ICB/02/2018-19 **Safeguard officer**	Name: Mr. Tarak Das Phone: 9800369817 Email: tarakdas@lntecc.com

31. **Figure 7** shows institutional arrangement for safeguard implementations for the project.

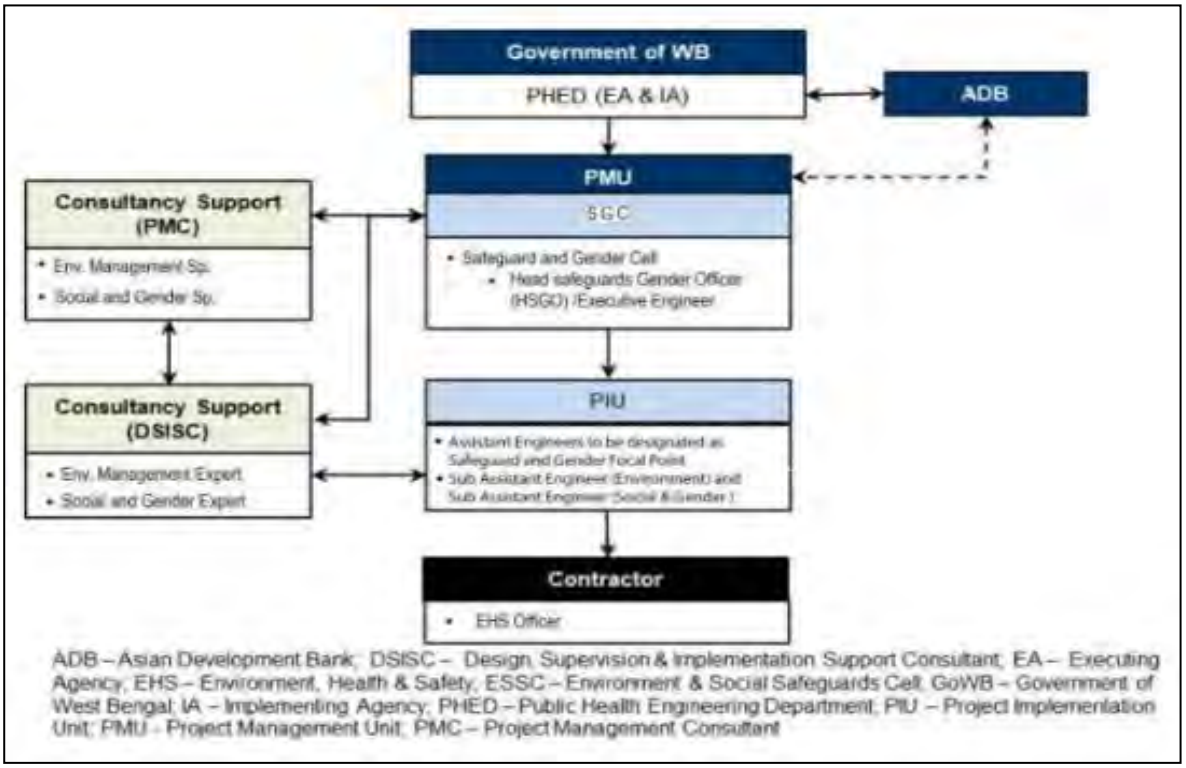


Figure 7: Overall Institutional Arrangement – Safeguards

C. EMP implementation - Application of Mitigation measures

32. Environment Specialist from DSISC and PMC carried out periodic monitoring of EMP implementation through desk review of contractor's records as submitted monthly and site inspections. Package wise status of Environment Monitoring for North 24 Parganas is shown in **Table 8** (Package: N-24P/01), **Table 9** (Package North 24 pgs N-24P/02A and N-24P/02B), **Table 10** (Package Bankura BK/01 and BK/03) **Table 11 (**Package Bankura BK/02A, BK/02B and BK/04), **Table 12** (Package Purba Medinipur EM/01) and **Table 13** (Package Purba Medinipur EM/02). Contractors are regularly submitting monthly environment monitoring reports and daily and weekly checklists. All submitted reports are available with DSISC and PIU.

33. Standard Operating Procedure (SOP) for mitigation of COVID 19 impact has been prepared for WBDWSIP and disclosed in ADB and Project website on June 2020. Later on, the

basis of project COVID 19 SOP, supplementary COVID 19 H & S plan has been developed by the construction contractors for all the 10 packages and contractor start compliance of that H & S plan from August 2020 onwards.

34. Contractors for all the packages has already complied pre construction/ implementation requirements like collection of PUC certificate, labour license (sample attached as **Appendix 2**), Workman Compensation Policy (sample attached as **Appendix 3**) and done during construction environment monitoring (Available with DSISC, PIU).

Table 8: Summary of Environmental Monitoring Activities for the Package WBDWSIP/DWW/NCB/N24P/01/2017-18: BULK WATER SUPPPLY

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
Design Phase							
Source sustainability and efficiency	o Discontinuation of current unsafe and unsustainable groundwater sources and creating a new comprehensive surface water (river) based water supply system o Recovering wash water from treatment process to optimize the water use o Treatment and reuse of sludge from treatment process o Designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage o Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies o Preparation and implementation of a water quality surveillance program including development of a laboratory as part of the project by DBO contractor to ensure that supplied water meets the drinking water standards o Development of laboratory with all necessary environment, health and safety measures and adopting international standard procedures for water quality testing o Using low-noise and energy efficient pumping systems o Installing the noise-producing pumps and motors etc., in enclosed buildings with noise reducing walls, and also maintaining adequate buffer to the nearby inhabited areas. Provision of appropriate personal protection equipment to the workers and staff	• Design philosophy • Treatment scheme • Project QA/QC plan	Document review and LOP Survey	All project locations	Before Commencement and during final design	Environment Specialist of DSISC, PIU and PMU/PMC	Detailed design completed for all components, necessary points as mentioned in IEE were considered during finalization of design
Chlorine handling and application risk	o Provide the following measure at the chlorine application unit: o Chlorine neutralization pit with a lime slurry feeder	• Project emergency management plan • Project safety and	Document review	WTP and Booster pumping	Before Commencement and during	Environment Specialist of DSISC and	Detail design completed. Project

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
– health and safety risk to workers and general public	o Chlorine absorption and neutralization facility o Proper ventilation, lighting, entry and exit facilities o Visible and audible alarm facilities to alert chlorine gas leak o Facility for isolation in the event of major chlorine leakage o Eye wash and shower facility o Personal protection and safety equipment for the operators in the chlorine plant (masks, oxygen cylinders, gloves, etc.,) o Provide training to the staff in safe handling and application of chlorine; this shall be included in the contract of Chlorinator supplier o Supplier of Chlorinator equipment shall provide standard operating manual for safe operation and as well as maintenance and repairs; preferably these shall be provided both in English and Bengali Languages	PPE use plan • Training plan		station, GLSRs site	final design	PIU	authority has been informed to get authorization under “The manufacture, storage and import of hazardous chemicals rules, 1989” as appropriate for additional storage prior to operation.
Tree cutting	o Minimize removal of trees by adopting to site condition and with appropriate layout design of GLSRs o Obtain prior permission for tree cutting o Plant and maintain 5 trees for each tree that is removed	Tree felling requirement and afforestation after final design	• Checking of records • Visual inspection of sites	Project locations	Before Commencement and during final design	Environment Specialist of DSISC and PIU	As of now, tree felling requirement is not envisaged.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
Disturbance to natural drainage	o Construction GLSR at Haroa away from the flood plain of Bidyadhari river o Integrate measures into GLSR design to avoid risk of flooding. o Proper drainage of storm water from WTP	• Location map • Design philosophy	• Document review • Visual inspection of sites	GLSR sites	Before Commencement and during final design	Environment Specialist of DSISC, PIU and PMU/PMC	Being complied- during final designing. Both the GLSR sites at Haroa and Bhangar - II block have been handed over. Drainage during heavy rain at WTP needs to be improved as it results in water logging, Drain repair has been done and no water logging seen in dry season.
Pre-Construction Phase							
Telephone lines, electric poles and wires, water lines within proposed project area	o Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; o Require construction contractor to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. o Require contractors to prepare spoils management plan and traffic Management plan	List of affected utilities if any and operators	Observation and document checking	Specific project location	Before commencement of construction	Environment Specialist of DSISC and PIU	Being Complied Transmission main pipeline design finalized for trenchless sections; few locations relating to open cut sections partially finalized. Alignment selection

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							completed considering minimum environmental and social impact. Spoil management and traffic management plan for pipe line laying prepared and implemented. Proper management for electric cable, box drain and sewage line has been carried out as per SEMP
Conflicts with local community; disruption to traffic flow and sensitive receptors	o Prioritize areas within or nearest possible vacant space in the project location; o If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems. o Not to consider residential areas. o Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. o For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no	• List of selected project location and proposed pipeline alignment plan • Involvement of traffic dept. • Road closure planning	•Site observation • Review of documents • Grievance Register	Specific project location	Before commencement of final design and commencement of construction	Environment Specialist of DSISC and PIU	Being Complied. WTP and Booster PS construction started within fixed campus. Work like boundary wall construction and piling started at GLSRs – Haroa and Bhangar II. No impact on

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements ponds/lakes or other water bodies						nearby property has been observed. Pipe laying between WTP and BS-1 has started after finalization of design and alignment. A total of 5012.83 m out of 5100 m of 1200 mm diameter transmission main has been laid Transmission mains done (open cut-4812.52 m and trenchless 200.31 m)
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging,	o Obtain construction materials only from government approved quarries with prior approval of PIU; o PIU to review, and ensure that proposed quarry sources have all necessary clearances/ permissions in place prior to approval o Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) o Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance prior to approval by PIU	• List of approved quarry sites and sources of materials • Construction Contractor documentation	• Checking of records • Visual inspection of sites	Project sites	Before commencement of construction	DSISC Construction Management and Environmental Safeguard Team	Being Complied All materials procured from licensed vendors are in compliant with environmental regulation of the country CTE and CTO for batching plant of RMC at sites also

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
and water pollution.							collected.
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	o Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. o Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction o Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. o Include in detailed design drawings and documents all conditions and provisions if necessary	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	Environment Specialist of DSISC, PIU and PMU/PMC	CTE for the WTP has been obtained Consent to Establish (CTE) for Batching plant also obtained (**Appendix 5**). Batching plant has not started functioning since commissioning WTP CTE and compliance status included in **Appendix 5** CTO of RMC Batching plant enclosed in **Appendix 5.**
Health risk due to exposure to asbestos materials	o Obtain details on location of underground asbestos cement materials o Lay the new pipes carefully to avoid encountering asbestos cement pipes o If found, leave the asbestos cement pipes undisturbed in the ground. o Some sewerage pipelines are present in the project area which will be taken care off during pipeline work specially in streets of new town area.	Asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Being Complied. Till date no rubbish containing asbestos cement has been found. However, 1200 mm pipeline alignment sometimes modified as per electric

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							cable and sewer line positions in the pipe laying area in streets of New Town, Kolkata.
Construction Phase							
Irreversible impact to the environment, workers, and community	Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.	Induction & Awareness Trainings Toolbox Talks Safeguard Trainings	Review of Training records Site Inspections	Project Locations	-	Environment Specialist of DSISC, PIU and PMU	Being Complied; Site Environmental Safety training and awareness arranged. However, number of trainings depends on arrival of new workers
Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon	**For all construction works** o Comply with the Direction of West Bengal Department of Environment under the Air Act, 1981 in controlling air pollution from construction activities o Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7/001/2009 dated: 10 December 2009" o Damp down the soil and any stockpiled material on site by water sprinkling; o Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks;	o Location of stockpiles o Complaints from sensitive receptors o Monitoring data-PM10, PM2.5 NO2, SO2, CO o Heavy equipment and machinery with air pollution control o Water sprinkling arrangement o Cover materials	Site inspection Public grievance register	Covering different locations. Air – monitoring: Monitoring is expected to be conducted at 5 locations. Pre construction monitoring remaining at one GLSR	Air – noise monitoring: Once before start of construction Yearly 3 times during construction (3-year period considered) Monitoring conducted on April 2025	DSISC Construction Management and Environmental Safeguard Team, PIU	Being Complied; During construction data has been collected results are available with DSISC. Emission of equipment and vehicle tested. PUC certificate obtained for Vehicle.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	o Provide a dust screen around the construction sites at GLSR and WTP work sites o Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry o Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area o Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition o Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; o Apply water and maintain soils in a visible damp or crusted condition for temporary stabilization o Apply water prior to leveling or any other earth moving activity to keep the soil moist throughout the process o Cover the soil stocked at the sites with tarpaulins o Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation o Ensure that all the construction equipment, machinery is fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** o Barricade the construction area using hard barricades (of 2 m height) on both sides and provide dust/wind screen (such geo textile fabric) up to 3 m height (1m above the hard barricading) o Initiate site clearance and excavation work only after barricading of the site is done o Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area			site. During construction monitoring has been conducted for the Clear Water Transmission Line. During construction monitoring was also conducted at WTP and Booster pumping station locations			Relevant regulation under compliance. Other activities like dust suppression, covering of loose materials, dust screen arranged. For pipe laying work, barricading, removal of earth, backfilling done as per SEMP. Sprinkling for suppression of dust has been noted at WTP, BS-1 and Bhangar GLSR premises. Road restoration done

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	o Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area o Undertake the work section wise: 100 – 200 m section should be demarcated and barricaded o Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done. o Remove the excavated soil of first section to the disposal site; as the work progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. o Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately. o **Rod cutting for laying of pipeline** (i) Debris, soil and silver sand generated due to the excavation of the existing road at different chainage will be suitably reused during the road restoration. (ii) No soil, sand, stone chips, bricks and debris will be staged without barricading specially near residential or commercial building entrance, culvert or near water body to minimize air-water contamination and to maintain pedestrian-vehicular movement at the locations. (iii) The existing sub base material will be used as sub base of any haul or access road, the excess will be stored at WTP premises which will be further disposed through van facility at designated place. (iv) The excavated bitumen surface will be stored						

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	separately and utilized for the paving and restoration of access road. (v) Adjacent footpath will be restored to prior condition after road cutting and pipe laying for pedestrian movement.						
Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can Contaminate nearby surface water quality. Ponding of water in the pits /foundation excavations	o All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; o Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; o Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; o Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; o Place storage areas for fuels and lubricants away from any drainage leading to water bodies; o Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling o Dispose any wastes generated by construction activities in designated sites; o Conduct surface quality inspection according to the Environmental Management Plan (EMP). o Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area o Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds o Consider safety aspects related to pit collapse due to accumulation of water	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Entry routes of pollutant in nearby Waterbodies	Site inspection Public grievance register	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	DSISC Construction Management and Environmental Safeguard Team	Silt trap arranged, fuel - lubricants are stored in small quantities at site and empty containers are used for refill and reused. All safety aspect maintained.
Increase in noise level due to earth-	o Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day	Day time and night time noise levels.	• Checking of records • Visual	Covering different locations.	Air – noise monitoring: Once before	DSISC Construction Management	Being Complied; pre-construction

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
moving and excavation equipment, and the transportation of equipment, materials, and people	which will result in least disturbance; o Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; o Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and o Maintain maximum sound levels not exceeding 80 decibels (dBA) when measured at a distance of 10 m or more from the vehicle/s. o Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity o Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; o Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.		inspection of sites	Noise level – monitoring: Monitoring is expected to be conducted at 5 locations. Pre construction Monitoring remaining at one GLSR site During construction monitoring has been conducted for the Clear Water Transmission Line. During construction monitoring was also conducted at WTP and Booster pumping station locations	start of construction Yearly 3 times during construction (3-year period considered) Monitoring conducted on April 2025	and Environmental Safeguard Team, PIU	baseline and during construction data has been collected. There is no as such noise generated from equipment. Stipulated condition as per SEMP is followed
Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete,	o Prepare and implement a Construction Waste Management Plan o As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., o Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; o Avoid stockpiling any excess spoils at the site for	• Waste Management List • Stockpile Management • Complaints from Sensitive receptors • PMU/ PIU/ DSISC to report in writing that the necessary	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/ PMC	Being Complied Excess earth mostly used for Backfilling. Domestic solid waste collection bin arranged; it is managed

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	long time. Excess excavated soils should be disposed off to approved designated areas immediately; o If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses o Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market o Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/WBPCB; o Prohibit burning of construction and/or domestic waste; o Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. o Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate o Safe practices for disposal are adopted for micro tunneling and HDD work • Muck & bentonite-based drilling mud released through horizontal directional drilling (**HDD**) method during Vidyadhari River crossing will be managed properly to prevent spoilage • Abandoned drill holes will be filled or sealed to prevent any contamination • Mud recycling systems will be used as per requirement to remove large particles like rocks	environmental restoration work has been done					through NKDA (Local Authority) appointed vendor. Excess spoil is disposed at designated location indicated by HIDCO (Premise owner). In HDD and open cut Pipeline section the spoils are used as per Spoil management plan and utilized for land filling. No as such stock piling allowed for spoil. Excavated earth that was stored in WTP and BS-1 premises for backfilling has been utilized. Also, same day back, filling was conducted for 1200 mm

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	and sand • Regular dumping of excess muck will be done through dumping van in designated place provided by HIDCO authority						pipeline open cut work.
Disruption of service and Damage to existing infrastructure at specified project location	o Prepare a list of affected utilities and operators if any; o Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	• List of affected utilities if any and operators • Public grievance	Observation and document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Being Complied as Per requirement. Consultation done with utility dept. as and when required.
Loss of vegetation and tree cover	o Minimize removal of vegetation and disallow cutting of trees; o If tree-removal will be required, obtain tree-cutting permit and o Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	As of now, tree felling requirement is not envisaged. Cleaning of seasonal shrubs and grasses has been noted in WTP and BS-1 area
Traffic problems and conflicts near project locations and haul road	**Hauling (material, waste/debris and equipment) activities** o Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites o Schedule transport and hauling activities during non-peak hours; o Locate entry and exit points in areas where there is low potential for traffic congestion; o Drive vehicles in a considerate manner o Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact	• Traffic Management Plan • Public grievance • Number of signages placed at subproject location	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Being Complied; WTP and PS location is within the PHED campus, no traffic management is required. As of now works for HDD and open cut

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	numbers for concerns / complaints. **Pipeline works** o Confine work areas along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Proper barricading should be provided; avoid o material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required. o Leave spaces for access between mounds of soil to maintain access to the houses / properties o Provide pedestrian access in all the locations; provide wooden/metal planks over the open trenches at each house to maintain the access. o Inform the affected local population 1-week in advance about the work schedule o Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. o Keep the site free from all unnecessary obstructions; o Coordinate with Traffic Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours						pipeline from WTP to BS-1 as well as Bagjola canal crossing work is being undertaken and no grievance has been registered. During pipe laying process all Traffic Management rules is followed. Pipeline laying work almost completed in "New town" streets and inside WTP premises. Diversion board barricade at pipe laying work site-noted.
Generation of temporary employment and increase in local revenue	o Employ local labor force as far as possible o Comply with labor laws	Employment record	Checking of records	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard	Environment Specialist of DSISC, PIU and PMU/PMC	Direct and indirect employment for local worker has been often noted at site.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
					Team.		
Occupational hazards which can arise during work	o Comply with all national, state and local core labor laws o Develop and implement site-specific occupational health and safety (OHS) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; o Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; o Provide medical insurance coverage for workers; o Secure all installations from unauthorized intrusion and accident risks; o Provide supplies of potable drinking water; o Provide clean eating areas where workers are not exposed to hazardous or noxious substances; o Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; o Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; o Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; o Ensure moving equipment is outfitted with audible back-up alarms; o Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment,	• 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 • Personal protective equipment • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC; PIU and PMU/PMC	Being Complied. Site-specific Health and Safety (H&S) Plan under Implementation. OHS plan submitted by contractor and approved by DSISC and PIU. That document is available with DSISC and PIU. However, the existing H&S plan is revisited including preventive and mitigative measures with respect to COVID-19 Induction and tool box training and arranged by contractor while COVID 19 awareness training and first aid training arranged by DSISC,

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and o Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. **For grit blasting and Painting works** o Provide appropriate respiratory protection and hearing protection in blasting & painting activity. o Provide full body apron with eye protector to individual blaster & painter. o Shifting duty of blaster & painter imposed. Blaster& painter can blast maximum one (1) hour at a stretch. o Blood level Oxygen is monitored before and after each shift of each blaster. If Blood level Oxygen is low first aid will be provided. (Portable first aid oxygen kit) at site and will be taken to associated hospital, if required. o Will take extra precaution for lighting and electrical activity in both blasting and painting yard. o Provide suitable fire extinguishing equipment for each work area that is immediately available in a state of readiness for instant use. o Provide Washing and cleaning facilities at site to prevent health hazards those may result from blasting and painting activities; and Standard Operating Procedure (SOP) for the project and Supplementary H & S plan for COVID 19 prepared which cover, (i) General instruction to follow to prevent the spread of COVID-19 in construction workplace (ii) Detail (step-by-step) work procedure to getting the workplace ready under COVID-19 situation (iii) Worksite prevention practice at work site, office,						however number of training conduct depends on arrival of new labour at site Satisfactory usage of safety gears was noted at WTP, BS-1 and at Bhangar, Haroa GLSR. At Haroa GLSR and pipeline work site improvement is noted in usage of safety gears. Fire safety for inflammable Drinking water and first aid box available at site. Medical Insurance arranged for the labourer Medical tie up with health institute done. The health

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	during meeting, travelling, etc. (iv) Precaution taken at workmen habitat/ camp (v) Control measures taken for deploying new workmen at site (vi) Use of PPEs: face mask – hand gloves, maintaining social distancing, disinfection, requirement of awareness covered under the H & S plan. o (Separate H & S plan for COVID 19 as supplementary document developed and keep as standalone document to mitigate COVID 19 health risk)						checkup camp has been done. No as such noise producing equipment available at site. Accident register is maintained at site. Till date no major accident recorded.
Health risk due to exposure to asbestos materials	o Obtain details on location of underground asbestos cement materials o Lay the new pipes carefully to avoid encountering asbestos cement pipes o If found, leave the asbestos cement pipes undisturbed in the ground.	Asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Till date no asbestos cement material has been found on site
Traffic accidents and vehicle collision with pedestrians during material and waste transportation	o Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) o Enforce strict speed limit (20-30 kmph) for playing on unpaved roads, construction tracks o Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities o Adopt standard and safe practices for micro tunneling	Public grievance	Review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Work continued within fixed WTP, PS and GLSR campus and in pipeline operations. No pedestrian accident has been recorded

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	o Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions o All drivers will undergo safety and training o Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel o Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation o The period of time when the pipeline trench is left open will be minimized through careful planning o Control dust pollution – implement dust control measures as suggested under air quality section o Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. o Provide road signs and flag persons to warn of on-going trenching activities.						till date Traffic control and application of traffic management plan is followed in HDD and open cut pipeline operations. Also, during transportation, entry of vehicle at construction site controlled by concerned construction supervisor. 1200 mm dia. pipe laying were conducted with hard barricading along streets. Diversion board noted.
Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and	o Ensure that a proper compound wall is provided, and erect a wind/dust screen around o Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas o Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit o Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers;	• Public grievance • Accommodation • Water and sanitation facilities for employees • Housekeeping – regular disposal of solid waste	Site inspection and review of documents	Construction camps	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Being Complied. Labour camp, access to labour camp, toilet & kitchen facilities improved after instruction to contractor. Storage and disposal of

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
poor living conditions for workers	ensure conditions of livability at work camps are maintained at the highest standards possible at all times; o Consult PIU before locating project offices, sheds, and construction plants; (viii)Minimize removal of vegetation and disallow cutting of trees o Ensure conditions of livability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers o Camp shall be provided with proper drainage, there shall not be any water accumulation o Provide drinking water, water for other uses, and sanitation facilities for employees o Prohibit employees from cutting of trees for firewood; contractor should be provided proper facilities including cooking fuel (oil or gas; fire wood not allowed) o Train employees in the storage and handling of materials which can potentially cause soil contamination o Recover used oil and lubricants and reuse or remove from the site o Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market o Remove all wreckage, rubbish, or temporary structures which are no longer required o At the completion of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve						solid waste planned accordingly. Improvement of storage area of fuel is noted at Haroa GLSR. Provision of fire extinguisher at all working locations of package 01 has been done, LPG connections have been provided at WTP, BS-1, Haroa and Bhangar GLSR camp area.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	camp clearance and closure of work site						
There are no protected properties in the subproject sites. However, in case of chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	o Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site. o Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. o In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts	Site inspection records	Site inspection and review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PMU/PMC	No chance finds on date.
Unsatisfactory compliance to EMP	o Appointment of Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation o Timely submission of monitoring reports including pictures	Appointment letter Monitoring records	Review of records	-	-	Environment Specialist of DSISC and PIU	Being Complied Monitoring report submitted timely.
Damage due to debris, spoils, excess construction materials	o Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and o All excavated roads shall be reinstated to original condition. o All disrupted utilities restored, specially at pipeline laying work roads and streets o All affected structures rehabilitated/compensated o The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. o All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of this	Stockpile Management Spoil Management Restoration of sites	Review of documents and site inspections	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Being Complied; Spoil Management Plan has been submitted for the WTP, BS-1 pipeline and Haroa and Bhangar II GLSR as part of SEMP. Excavated earth that was stored at Intake, Bhangar GLSR

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	document. o The contractor must arrange the cancellation of all temporary services. quest PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.						and BS-1 premises for reuse has been used for backfilling. This is improving site tidiness and safety. Flocculation tank working area being at considerable height, access to this area has been provided with stairs with proper handrails.

Table 9: Summary of Environmental Monitoring Activities for the Package WBDWSIP/DWW/NCB/N24P/02A/2017-18: Water Supply Distribution at Haroa Block and Package WBDWSIP/DWW/NCB/N24P/02B/2017-18: Water Supply Distribution at Bhangar II Block

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
Design Phase								
Source sustainability and efficiency	(i) Gravity distribution system: designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage (ii)Implementation of a water quality surveillance program including development of a laboratory as part of the project to ensure that supplied water meets the drinking water standards (iii)Minimizing water losses from pipelines by perfect jointing and alignments using appropriate techniques (iv) Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies	• Design philosophy • Project QA/QC plan • Selection methodology for distribution network	Document review and LOP Survey	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	Being Complied; Distribution network finalized and pipe laying work almost completed, PWD road side pipe laying, canal crossing and house connection under progress (final stage). Till date 872.94 km pipe laying and 34141 households' connection has been done. Canal crossing work through anchoring and cage bridge is under process in different zones.	Being Complied; Distribution network finalized and pipe laying work about 95 % completed, PWD road side pipe laying, canal crossing and house connection under progress (final stage) Till date 922.22 km pipe laying and 29985 households' connection has been done. Canal crossing work through anchoring and cage bridge is under process in different zones.
Socio economic impact – loss fishery area	(i) Avoid using low-lying lands / ponds for construction of OHRs; alternative private lands may be explored within the vicinity; (ii)Review the applicability of West Bengal Inland Fisheries Act, 1984, whether the site falls under the definition of fisher area; obtained permission from Fisheries	List of selected location for OHRs	Site survey	All OHR sites	Before commencement of final design	Environment Specialist of DSISC and PMC	Being Complied; No low-lying lands or ponds are being filled for construction.	Being Complied; No low-lying lands or ponds are being filled for construction.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	Department if required prior to start of construction							
Tree cutting	(i) Minimize removal of trees by adopting to site condition and with appropriate layout design of OHRs within the sites (ii)Avoid cutting of trees by adopting suitable alignment changes as required during laying of pipelines; (iii)In unavoidable cases, obtain prior permission for tree cutting (iv)Plant and maintain 5 trees for each tree that is removed	• Tree felling requirement – site layout plan • NOC – paper documents from line agency	Site survey and review of site layout/ pipeline alignment plan	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	Being Complied; except Zone 18: Gopalpur no other sites requirement for tree felling has been envisaged till date. NOC obtained and 11 no of tree felling is done for that site. Compensatory plantation is done for 55 no. of plants of multiple variety	Being complied, no tree felling envisaged yet. In case of tree felling action will be taken for planation of trees
Pre-Construction Phase								
Telephone lines, electric poles and wires, water lines within proposed project area	(i) Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; and (ii) Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. (iii) Require contractors to prepare spoils (waste) management plan and traffic management plan	List of affected utilities if any and operators	Observation and document checking	Specific project location	Before commencement of construction	Environment Specialist of DSISC and PIU	Being Complied; About 872.94 km of pipeline has been laid. Spoil Management Plan & Traffic Management Plan available with SEMP.	Being Complied; About 922.22 km of pipeline has been laid Spoil Management Plan & Traffic Management Plan available with SEMP.
Conflicts with local	(i) Prioritize areas within or nearest possible vacant	• List of selected location for OHRs	• Site observatio	Specific project	Before commencement	Environment Specialist of	Being Complied No disruption	Being Complied No disruption

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
community; disruption to traffic flow and sensitive receptors	space in the project location; (ii) If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; (iii) Do not consider residential areas; (iv) Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. (v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies.	• Involvement of traffic dept. • Road closure planning	n • Review of documents • Grievance Register	location	of final design and commencement of construction	DSISC; PIU and PMC	noted. Area selected nearby vacant place No excess spoil generated. Excess earth utilized for back filling. No complete road closure expected. Work almost completed.	noted. Area selected nearby vacant place No excess spoil generated. Excess earth utilized for back filling, which indicates in SEMP. No complete road closure expected.
Extraction of materials can disrupt natural land contours and vegetation	(i) Obtain construction materials only from government approved quarries with prior approval of PIU;	• List of approved quarry sites and sources of materials • Construction	• Checking of records • Visual inspection of sites	Quarries and material source areas	Daily visit by construction supervisor of DSISC. Weekly	DSISC Construction Management and Environmental	Being Complied; Royalty receipt checked. Extraction of materials are in	Being Complied; Royalty receipt checked. Extraction of materials are in

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	(ii) PIU to review, and ensure that proposed quarry sources have all necessary clearances/ permissions in place prior to approval (iii) Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) (iv) Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance prior to approval by PIU	Contractor documentation			visit by Construction Manager and Environment Team of DSISC at operational sites.	Safeguard Team	compliant with environmental regulation of the country Work at Haroa block almost completed	compliant with environmental regulation of the country
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	(i) Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. (ii) Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction Permission for pipeline activities such as GP clearance for laying, PWD clearance for road cutting and irrigation department permission for canal crossing should be collected (iii) Acknowledge in writing and provide report on compliance all obtained	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	Environment Specialist of DSISC and PMC	Being Complied and to be continued as per requirement Permission for some PWD and Irrigation department for pipe laying and canal crossing has been taken	NOC from EKWMA obtained for pipelaying work in EKW area i.e. Zone-1, 2 and 18. Pipelaying work completed at those zones. Decided – not to construct OHR within EKW zone. Alternate site has been selected for Zone 2 and 18 outside EKW. OHRs for Zone 1 and 18 is

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	consents, permits, clearance, NOCs, etc. (iv) Include in detailed design drawings and documents all conditions and provisions if necessary							completed with SCADA building. Permission for some PWD and Irrigation department road for pipe laying and canal crossing has been obtained.
Health risk due to exposure to asbestos materials	(i) Obtain details on location of asbestos cement materials (ii) Lay the new piper carefully to avoid encountering AC pipes (ii) Leave the AC pipes undisturbed in the ground.	Asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Complied. Till date no rubbish containing asbestos cement has been found	Complied. Till date no rubbish containing asbestos cement has been found
Construction Phase								
Irreversible impact to the environment, workers, and community	(i) Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.	Induction & Awareness Trainings Toolbox Talks Safeguard Trainings	Review of Training records Site Inspections	Project Locations	-	Environment Specialist of DSISC: PIU and PMC	Being Complied; Site Environmental Safety training and awareness arranged by contractor on regular basis. Awareness program cum training arranged by DSISC.	Being Complied; Site Environmental Safety training and awareness arranged by contractor on regular basis. Awareness program cum training arranged by DSISC.
Emissions from	**<u>For all construction works</u>** (i) Comply with the air	• Location of stockpiles	Site inspection Public	Project locations	Daily visit by construction	Environment Specialist of	Being Complied; about 872.94 km	Being Complied; about 922.22 km

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009" (ii) Damp down the soil and any stockpiled material on site by water sprinkling; (iii)Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; (iv) Provide a dust screen/high compound wall around the construction sites (OHRs) (v) Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry (vi) Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area (vii) Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition (viii) Apply water prior to leveling or any other earth	• Complaints from sensitive receptors • Monitoring data-PM!0, PM2.5, SO2, NO2, CO • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Cover materials	grievance register	Air- monitoring as per selected sites in ref. to SEMP	supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Air Monitoring - Monitoring conducted in June 2024 for package N24P/02A&02B	DSISC; PIU and PMC	pipe line laid. Water sprinkling done as per requirement. Pre-construction and during construction air quality monitoring done as per IEE (Complete result certificates available in DSISC office as back up paper) PUC certificates obtained for Vehicle and Equipment Other activities like dust suppression, covering of loose materials, dust screen arranged. For pipe line work, barricading, removal of earth, backfilling done. Work almost completed.	pipe line laid. Water sprinkling done as per requirement. Pre-construction and during construction air quality monitoring done as per IEE (Complete result certificates available in DSISC office as back up paper) PUC certificate obtained for Vehicle and Equipment Other activities like dust suppression, covering of loose materials, dust screen arranged. For pipe line work, barricading, removal of earth, backfilling done.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	moving activity to keep the soil moist throughout the process (ix) Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation (x) Ensure that all the construction equipment and machineries are fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** (i) Barricade the construction area (ii) Initiate site clearance and excavation work only after barricading of the site is done (iii)Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area (iv) Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area (v) Undertake the work section wise (vi)Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	minimum length as possible) so that backfilling, stabilization of soil can be done. (vii) Remove the excavated soil of first section to the disposal site; as the work progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. (viii) Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.							
Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can contaminate nearby surface water quality. Ponding of	(i) All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; (ii) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; (iii)Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Entry routes of pollutant in nearby Water bodies	Site inspection Public grievance register	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Monitoring conducted in March 2024 for	Environment Specialist of DSISC: PIU and PMC	Being Complied Earth work conducted during dry season. No as such requirement of disposal of spoil. Excess earth utilized for backfilling. Material never disposed in the pond located	Being Complied Earth work conducted during dry season. No as such requirement of disposal of spoil. Excess earth utilized for backfilling. Material never disposed in the pond located

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
water in the pits / foundation excavations	designated disposal areas shall be used; (iv) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; specially in piling activities of OHRs and pipeline canal crossing. (v) Place storage areas for fuels and lubricants away from any drainage leading to water bodies; (vi) Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling (vii) Dispose any wastes generated by construction activities in designated sites; and (viii) Conduct surface quality inspection according to the Environmental Management Plan (EMP). (ix) Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area (x) Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds (xi) Consider safety aspects related to pit collapse due to				package N24P/02A&02B		within this site. Silt traps / sediment basin should be installed prior to discharge of construction wastewater from site. Fuel storage not done.	within this site. Silt traps / sediment basin has been installed prior to discharge of construction wastewater from site. Fuel storage not done.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	accumulation of water							
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	(i) Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; (ii) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; (iii) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and (iv) Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity (v) Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers Monitoring data	o Checking of records o Visual inspection of sites	All project locations Noise-monitoring as per selected sites in ref. to SEMP	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Monitoring conducted latest in June 2024 for package N24P/02A & 02B	Environment Specialist of DSISC; PIU and PMC	Being Complied. No such noise generating problem near the project location. Pre-construction and during construction monitoring done. Monitoring will be continued as per IEE and SEMP. Complete result certificates available in DSISC office as back up paper. However, use of ear plugs by labourer ensured during noisy activities. Honking generally avoided at work sites.	Being Complied. No such noise generating problem near the project location. Pre-construction and during construction monitoring done. Monitoring will be continued as per IEE and SEMP. Complete result certificates available in DSISC office as back up paper. However, use of ear plugs by labourer ensured during noisy activities. Honking generally avoided at work sites.
Impacts due to excess excavated earth, excess construction materials, Bentonite	(i) Prepare and implement a Construction Waste Management Plan (ii) As far as possible utilize the debris and excess soil in construction purpose, for example for raising the	• Waste Management List • Stockpile Management • Complaints from Sensitive	o Checking of records o Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by	Environment Specialist of DSISC: PIU and PMC	Being Complied Excess earth used mostly for backfilling Excess spoils are not generally stockpiled	Being Complied Excess earth used mostly for backfilling Excess spoils are not generally stockpiled

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
sludge, Muck and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	ground level or construction of access roads etc., (iii) Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; (iv)Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed of to approved designated areas immediately; (v) If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses (vi) Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market (vii) Residual and hazardous wastes such as oils, fuels, and lubricants shall be	receptors • PMU/PIU/DSISC to report in writing that the necessary environmental restoration work has been done			Environment Specialist and Support Environment staff		No hazardous waste and construction waste generated.	No hazardous waste and construction waste generated. It should be noted that written permission of the land owner was obtained for temporary storage of vat sludge on his land adjacent to zone 8 OHR. Once dried, this sludge has been used for backfilling at Zone 8 OHR.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	disposed of in disposal sites approved by local authorities/West Bengal Pollution Control Board (WBPCB); (viii) Prohibit burning of construction and/or domestic waste; (ix) Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. (x) Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate (xi)Safe practices are adopted for Horizontal Directional Drilling (HDD) process in large diameter pipeline and canal crossings • Muck & bentonite-based drilling mud released through horizontal directional drilling (HDD) method during laying and canal crossing will be managed properly to prevent spoilage • Abandoned drill holes							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	will be filled or sealed to prevent any contamination • Mud recycling systems will be used as per requirement to remove large particles like rocks and sand • Muck will be dried in sunlight and reused for backfilling • Regular dumping of excess muck will be done through dumping van in pre identified designated place							
Disruption of service and damage to existing infrastructure at specified project location	(i) Prepare a list of affected utilities and operators if any; (ii) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	• List of affected utilities if any and operators • Public grievance	Observation And document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PIU	Being Complied as Per requirement. Consultation with utility dept. as and when required	Being Complied as Per requirement. Consultation with utility dept. as and when required
Loss of vegetation and tree cover	(i) Minimize removal of vegetation and disallow cutting of trees, by adopting best site layout and pipeline alignments (ii) If tree-removal will be required, obtain tree-cutting permit and (iii) Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	o Checking of records o Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support	Environment Specialist of DSISC and PMC	As of now, tree felling required only at Zone 18: Gopalpur. NOC obtained for felling of trees. 11 no of tree felling was done	As of now, tree felling requirement is not envisaged.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
					Environment staff		for that site. Compensatory plantation is done for 55 no. of plants of multiple variety	
Traffic problems and conflicts near project locations and haul road	**Hauling (material, waste/debris and equipment) activities** (i) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites (ii) Schedule transport and hauling activities during non-peak hours; (iii)Locate entry and exit points in areas where there is low potential for traffic congestion; (iv) Drive vehicles in a considerate manner (v) Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. **<u>Pipeline works</u>** (i) Confine work areas along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Provide barricading; avoid	• Traffic Management Plan • Public grievance • Number of signages placed at subproject location	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC; PIU and PMC	Being Complied; As of now about 872.94 km pipeline has been laid. Barricading done. Pipelaying work almost finished. Local people informed before start of work No transportation of pipe/ material done during pick hours, no impact on local public movement. Access maintained in most of the cases at pipe laying areas. Plan of work informed to local public atleast 1 week in advance. However no major pipeline work is going on	Being Complied; As of now about 922.22 km pipeline has been laid. Barricading done- mostly complied. Local people informed before start of work No transportation of pipe/ material done during pick hours, no impact on local public movement. Access maintained in most of the cases at pipe laying areas. Plan of work informed to local public atleast 1 week in advance. However no major pipeline work is going on through any of

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required (ii) Leave spaces for access between mounds of soil to maintain access to the houses / properties (iii)Provide pedestrian access in all the locations; provide wooden/metal planks over the open trenches at each house to maintain the access. (iv) Inform the affected local population 1-week in advance about the work schedule (v) Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. (vi) Keep the site free from all unnecessary obstructions; (vii) Coordinate with Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours						through any of the zones for the package 02A. Work almost completed.	the zones for the package 02B.
Generation of temporary employment and increase in local revenue	(i) Employ local labor force as far as possible (ii) Comply with labor laws	Employment record	Checking of records	Project locations	-	Environment Specialist of DSISC and PMC	Direct and indirect employment for local population - noted	Direct and indirect employment for local population - noted
Occupational hazards which can arise	(i) Comply with all national, state and local core labor laws	• Site-specific Health and Safety (H&S) Plan	o Checking of records o Visual	Project locations	Daily visit by construction supervisor of	Environment Specialist of DSISC and	Site-specific Health and Safety (H&S)	Site-specific Health and Safety (H&S)

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
during work	(ii) Develop and implement site-specific occupational health and safety (OHS) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; (iii) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; (iv) Provide medical insurance coverage for workers; (v) Secure all installations from unauthorized intrusion and accident risks; (vi) Provide supplies of potable drinking water; (vii) Provide clean eating areas where workers are not exposed to hazardous or noxious substances; (viii) Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site,	• Equipped first-aid stations; • Medical insurance coverage for workers • Number of accidents • Supplies of potable drinking water; • Record of H&S orientation trainings • Personal protective equipment • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms	inspection of sites		DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	PMC	Plan under implementation. Copy of the approved Health and Safety plan available with DSISC., PIU H & S training including COVID 19 awareness done on regular basis. Supplementary COVID 19 H & S plan including site safety compliance prepared and compliance continued Drinking water and first aid box available at site. Use of PPEs noted. Further improvement of use is required Tie up letter with nearby health center in case of emergency - obtained. Health check-up was done Medical Insurance	Plan under implementation Copy of the approved Health and Safety plan available with DSISC., PIU H & S training including COVID 19 awareness done on regular basis. Supplementary COVID 19 H & S plan including site safety compliance prepared and compliance continued Drinking water and first aid box available at site. Use of PPEs noted. Further improvement of use is required Tie up letter with nearby health center in case of emergency - obtained. During report period Health check-up done.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	personal protective protection, and preventing injuring to fellow workers; (ix) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; (x) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xi) Ensure moving equipment is outfitted with audible back-up alarms; (xii) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate						arranged for the labourer Accident/ First aid register is maintained at each site. There is minor first aid cases reported during report period. Poster on GRM-GRC and IEE's Executive Summary in local language (Bengali) has been displayed at working OHR sites	Medical Insurance arranged for the labourer Accident/ First aid register is maintained at each site. There is minor first aid cases reported during report period Poster on GRM-GRC and IEE's Executive Summary in local language (Bengali) has been displayed at working OHR sites
Health risks associated with AC pipes	(i) leave AC pipes in-situ untouched	Decommissioned AC Pipes	Site inspection	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction	Environment Specialist of DSISC and PMC	Till date no AC pipes has been found	Till date no AC pipes has been found

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
					Manager, Visit by Environment Specialist and Support Environment staff			
Impact on community safety. Traffic accidents and vehicle collision with pedestrians during material and waste transportation	(i) Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) (ii) Enforce strict speed limit (20-30 kph) for playing on unpaved roads, construction tracks (iii) Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities (iv) Adopt standard and safe practices for micro tunneling (vi) Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions (vii) All drivers will undergo safety and training (viii) Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel (ix) Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works,	Public grievance	Review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC; PIU and PMC	Being Complied No pedestrian accident has been recorded till date. Pipe line laying work mostly completed. Barricades and caution tapes in work areas, in particular along the pipelines has improved for most of the sites in Haroa. Safety signage board placed. No major pipeline laying work conducted during report period. Partial jointing and house connection work is under progress and. household connection has been done All safety measures	Being Complied No pedestrian accident has been recorded till date. Pipe line laying work continued. Barricades and caution tapes in work areas, in particular along the pipelines were noted. Safety signage board needs to be placed at all work sites. No major pipeline work conducted during report period. Partial jointing and house connection work is in progress and household connection has been done All safety measures arranged. No trench will be

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	and presence of deep excavation (x) The period of time when the pipeline trench is left open will be minimized through careful planning (xi) Control dust pollution – implement dust control measures as suggested under air quality section (xii) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. (xiii) Provide road signs and flag persons to warn of on-going trenching activities.						arranged. No trench will be kept open after pipe laying. Caution tape placed.	kept open after pipe laying. Caution tape placed.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
Impact on work camps and work site. Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	(i) As far as possible located the camp site within the work sites; if any camp to be established outside these, then select a camp site away from residential areas (atleast 100 m buffer shall be maintained) (ii) Avoid tree cutting for setting up camp facilities (iii) Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas (iv) Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit (v) Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of livability at work camps are maintained at the highest standards possible at all times; (vi) Consult PIU before locating project offices, sheds, and construction plants; (vii) Minimize removal of vegetation and disallow cutting of trees	• Public grievance • Accommodation • Water and sanitation facilities for employees • Housekeeping – regular disposal of solid waste	Site inspection and review of documents	Construction camps	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Complied However, housekeeping, needs be improved at work area. improvement. Housekeeping near work site and worker's camp improved In order to avoid contamination of groundwater, toilets built inside SCADA building with separate septic tank are mostly used in the OHRs.	Complied However, housekeeping, needs be improved at work area, provision of solid waste and wastewater disposal are some of the aspects requiring further improvement. Management of toilet waste at camp sites, use of pit latrines was a concern in most of the OHRs. This issue has been rectified in all working OHRs with provision of twin pit toilet as per Swatych Bharat Abhiyaan. .

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	(viii) Ensure conditions of livability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers (ix) Camp shall be provided with proper drainage, there shall not be any water accumulation (x) Provide drinking water, water for other uses, and sanitation facilities for employees (xi) Prohibit employees from cutting of trees for firewood; contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed) (xii) Train employees in the storage and handling of materials which can potentially cause soil contamination (xiii) Recover used oil and lubricants and reuse or remove from the site (xiv) Manage solid waste							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market (xv) Remove all wreckage, rubbish, or temporary structures which are no longer required (xvi) At the completion of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve camp clearance and closure of work site							
Unsatisfactory compliance to EMP	(i) Appointment of (I) Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation (ii) Timely submission of monitoring reports including pictures	• Appointment letter • Monitoring records	Review of records	-	-	Environment Specialist of DSISC and PMC	Safety person appointed from contractor end. Monitoring report submitted on monthly basis.	Safety person appointed from contractor end. Monitoring report submitted on monthly basis.
Damage due to debris, spoils, excess construction materials	(i) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and (ii) All excavated roads shall be reinstated to original condition. (iii) All disrupted utilities restored (iv) All affected structures	• Stockpile Management • Spoil Management • Restoration of sites	Review of documents and site inspections	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Being Complied; Spoil Management Plan has been submitted for the pipe laying work. No utilities affected during pipe laying at village roads. All excavated road reinstated	Being Complied; Spoil Management Plan has been submitted for the pipe laying work. No utilities affected during pipe laying at village roads. All excavated road reinstated

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation Pack-N24P/02A	Compliance Status/ Explanation Pack-N24P/02B
	rehabilitated/compensated (v) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. (vi) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of this document. (vii) The contractor must arrange the cancellation of all temporary services. (viii) Request PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.						to original condition	to original condition

Table 10: Summary of Environmental Monitoring Activities for the Package WBDWSIP/DWW/NCB/BK/01/2017-18 and WBDWSIP/DWW/NCB/BK/03/2018-19: Bulk Water Supply for Bankura

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
Design Phase								
Source sustainability and efficiency	o Discontinuation of current unsafe and unsustainable groundwater sources and creating a new comprehensive surface water(river)based water supply system o Recovering wash water from treatment process to optimize the water use o Treatment and reuse of sludge from treatment process o Designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage o Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies o Preparation and implementation of a water quality surveillance program including development of a laboratory as part of the project by DBO contractor to ensure that supplied water meets the drinking water standards o Development of laboratory with all necessary environment, health and safety measures and adopting international standard procedures for water quality testing o Using low-noise and energy efficient pumping systems o Installing the noise-producing pumps and motors etc.in enclosed	o Design philosophy o Treatment scheme o Project QA/QC plan	Document review and LOP Survey	All project locations	Before Commencement and during final design	Environment Specialist of DSISC, PIU and PMU/PMC	Detailed design done as per guideline of IEE. The water treatment process work will be continuing without disturbing the ground water source & optimizing the overall energy. Before supplying of treated drinking water, it will ensure the water test as per IS standard by testing of water parameter at Laboratory	Detailed design completed as per guideline of IEE. The water treatment process work will be continuing without disturbing the ground water source & optimizing the overall energy. Before supplying of treated drinking water, it will ensure the water test as per IS standard by testing of water parameter at Laboratory

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	buildings with noise reducing walls, and also maintaining adequate buffer to the nearby inhabited areas. Provision of appropriate personal protection equipment to the workers and staff							
Chlorine handling and application risk– health and safety risk to workers and general public	o Provide the following measure at the chlorine application unit: o Chlorine neutralization pit with a lime slurry feeder o Chlorine absorption and neutralization facility o Proper ventilation, lighting, entry and exit facilities o Visible and audible alarm facilities to alert chlorine gas leak o Facility for isolation in the event of major chlorine leakage o Eye wash and shower facility o Personal protection and safety equipment for the operators in the chlorine plant (masks, oxygen cylinders, gloves, etc.,) o Provide training to the staff in safe handling and application of chlorine; this shall be included in the contract of Chlorinator supplier o Supplier of Chlorinator equipment shall provide standard operating manual for safe operation and as well as maintenance and repairs; preferably these shall be provided both in English and Bengali Languages	o Project emergency management plan o Project safety and PPE plan o Training plan	Document review	WTP and pumping site	Before Commencement and during final design	Environment Specialist of DSISC and PIU	Considered in design- at the chlorination room chlorine neutralization pit & leakage detector provided for identification purpose. The adequate lighting, ventilation, proper access & egress provide at chlorination room. The Eye wash, Shower, PPEs, SCADA & handling manual in local language is provided in design.	Considered in design- at the chlorination room chlorine neutralization pit & leakage detector provided for identification purpose. The adequate lighting, ventilation, proper access & egress provide at chlorination room. The Eye wash, Shower, PPEs, SCADA & handling manual in local language is provided in design.
Tree cutting	o Minimize removal of trees by adopting to site condition and with appropriate layout design of WTP	o Tree felling requirement and	o Checking of records o Visual	Project locations	Before Commencement and during	Environment Specialist of DSISC and PIU	No tree felling required at new WTP land or	Total 232 number of tree felling required

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	o Obtain prior permission for tree cutting o Plant and maintain 5 trees for each tree that is removed	o afforestation after final design	inspection of sites		final design		any other project locations.	at WTP site. Necessary permission obtained from Forest Department (**Appendix 4**) More than 5000 number of compensatory plantations has been done at WTP location. Mostly local spp. of *Sonajhuri, Palash and few Mango trees.* New plantation drive have been taken this year also before onset of monsoon. Contractor has instructed to maintain the same.
Disturbance to natural drainage	o Diversion of drainage system o Minimization of impact on drainage basin	o Location map o Design philosophy	o Checking of records o Visual inspection of sites	Project locations	Before Commencement and during final design	Environment Specialist of DSISC, PIU and PMU/PMC	Being Complied-during implementation	Being Complied-during implementation
Pre-Construction Phase								
Telephone lines, electric poles and wires, water lines within	o Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase;	List of affected utilities if any and operators	o Observation and o Document checking	Specific project location	Before commencement of construction	Environment Specialist of DSISC and PIU	No power supply line or other utility over new WTP land. Spoil and	The overhead LT power supply line pass over WTP area. Communication

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
proposed project area	and o Require construction contractor to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. o Require contractors to prepare spoils management plan and traffic Management plan						Traffic management plan submitted.	made for shifting of LT line. Permission received, shifting of utility to be done Procedure has been initiated. Spoil and Traffic management plan submitted.
Conflicts with local community; disruption to traffic flow and sensitive receptors	o Prioritize areas within or nearest possible vacant space in the project location; o If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems. o Not to consider residential areas. o Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. o For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements ponds/lakes or other	o List of selected project location and proposed pipeline alignment plan o Involvement of traffic dept. o Road closure planning	o Site observation o Review of documents o Grievance Register	Specific project location	Before commencement of final design and commencement of construction	Environment Specialist of DSISC and PIU	The area selected for construction work camp near intake & WTP is vacant government land and free from any conflict.	The area selected for construction work camp is vacant government land and free from any conflict.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	water bodies							
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	o Obtain construction materials only from government approved quarries with prior approval of PIU; o PIU to review, and ensure that proposed quarry sources have all necessary clearances/ permissions in place prior to approval o Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) o Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance prior to approval by PIU	• List of approved quarry sites and sources of materials • Construction Contractor documentation	o Checking of records o Visual Inspection of sites	Project sites	Before commencement of construction	DSISC Construction Management and Environmental Safeguard Team	All materials procured from licensed vendors. Extraction of materials are in compliant with environmental regulation of the country	All materials procured from licensed vendors. Extraction of materials are in compliant with environmental regulation of the country
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	o Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. o Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction o Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. o Include in detailed design drawings and documents all conditions and provisions if necessary	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	Environment Specialist of DSISC, PIU and PMU/ PMC	CTE/NOC for WTP (new location) **(Appendix-5)**, land possession certificate received. Others necessary approval, NOC, clearance & permits has been initiated for safely execution of work at site. CTE compliance	CTE for WTP **(Appendix-5)**, land possession certificate received. Others necessary approval, NOC, clearance & permits has been initiated for safely execution of work at site. CTE compliance also attached in **Appendix 5**

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
							also attached in **Appendix 5**	
Health risk due to exposure to asbestos materials	o Obtain details on location of underground asbestos cement materials o Lay the new pipes carefully to avoid encountering asbestos cement pipes o If found, leave the asbestos cement pipes undisturbed in the ground.	Asbestos cement materials	Site inspection	Specific project location	Daily visit by Construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Till date no asbestos cement material has been found on site	Till date no asbestos cement material has been found on site
Construction Phase								
Irreversible impact to the environment workers, and community	o Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS) including COVID 19 H & S awareness, core labor laws, applicable environmental laws, etc.	Induction & Awareness Trainings Toolbox Talks Safeguard Trainings	Review of Training records Site Inspections	Project Locations	-	Environment Specialist of DSISC and PIU / PMU	Complied; site Environmental Safety training and awareness (including COVID 19) arranged on regular basis.	Complied; site Environmental Safety training and awareness (including COVID 19) arranged on regular basis.
Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration	**For all construction works** o Comply with the Direction of West Bengal Department of Environment under the Air Act, 1981 in controlling air pollution from construction activities o Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7/001/2009 dated:	o Location of stockpiles o Complaints from sensitive receptors o Monitoring data- PM10, PM2.5 NO2, SO2, CO o Heavy equipment and machinery with air pollution	o Site inspection o Public grievance register	Covering different locations of WTP, Intake, pumping stations as per monitoring plan.	Air – noise monitoring: Once before start of construction Yearly 3 times during construction (3-year period considered)	DSISC Construction Management and Environmental Safeguard Team, PIU	Being Complied; pre-construction baseline data generated. During construction monitoring December 2024, data has been collected. Result certificates	Being Complied; pre-construction baseline data generated. During construction (January 2025) monitoring data has been collected. Result certificates available as back up with

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	10 December 2009” o Damp down the soil and any stockpiled material on site by water sprinkling; o Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; o Provide a dust screen around the construction sites at GLSR and WTP work sites o Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry o Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area o Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition o Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; o Apply water and maintain soils in a visible damp or crusted condition for temporary stabilization o Apply water prior to leveling or any other earth moving activity to keep the soil moist throughout the process o Cover the soil stocked at the sites with tarpaulins o Control access to work area, prevent unnecessary movement	control o Water sprinkling arrangement o Cover materials					available as back up with DSISC PUC certificate obtained for Vehicle Relevant regulation under compliance. Other activities like dust suppression, covering of loose materials, dust screen arranged. For pipe line work, barricading, removal of earth, backfilling has done as per SEMP.	DSISC PUC certificate obtained for Vehicle Relevant regulation under compliance. Other activities like dust suppression, covering of loose materials, dust screen have arranged.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation o Ensure that all the construction equipment, machinery is fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** o Barricade the construction area using hard barricades (of 2 m height) on both sides and provide dust/wind screen (such geo textile fabric) up to 3 m height (1m above the hard barricading) o Initiate site clearance and excavation work only after barricading of the site is done o Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area o Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area o Undertake the work section wise: 100 – 200 m section should be demarcated and barricaded o Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done.							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	o Remove the excavated soil of first section to the disposal site; as the work progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. o Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.							
Mobilization of settled silt materials, and chemical contaminatio n from fuels and lubricants during construction can Contaminate nearby surface water quality. Ponding of water in the pits /foundation excavations	o All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; o Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; o Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; o Install temporary silt traps or sedimentation basins along the drainage leading to the waterbodies; o Place storage areas for fuels and lubricants away from any drainage leading to water bodies; o Store fuel, construction chemicals	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Entry routes of pollutant in nearby waterbodies	Site inspection Public grievance register	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	DSISC Construction Management and Environmental Safeguard Team, PIU	Construction activities ongoing at intake and WTP sites. Silt trap to be arranged if required, designated site for waste disposal under consideration. All safety aspect is maintained. During construction surface water monitoring continued (latest –	Work continued. Earthen embankment has provided instead of Silt trap, designated site for waste disposal selected and approved. All safety aspects are maintained. During construction surface water quality monitoring continued upto reporting months. (latest – November and

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	etc., on an impervious floor, also avoid spillage by careful handling o Dispose any wastes generated by construction activities in designated sites; o Conduct surface quality inspection according to the Environmental Management Plan (EMP). o Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area o Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds o Consider safety aspects related to pit collapse due to accumulation of water						November 2024 to April 2025) at present	December 2024). Work for intake has been completed.
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	o Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; o Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; o Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to	Day time and night time noise levels.	o Checking of records o Visual inspection of sites	Covering different locations of WTP, Intake, pumping stations as per monitoring plan.	Noise level monitoring: Once before start of construction Yearly 3 times during construction (3-year period considered)	DSISC Construction Management and Environmental Safeguard Team	Being Complied; pre-construction baseline completed, and during construction monitoring (December 2024), data has been collected. Result certificates available as back up with DSISC.	Being Complied; pre-construction baseline completed and during construction data has been collected. on January 2025, Result certificates available as back up with DSISC. Stipulated mitigation as per

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	surrounding sensitive receptor; and o Maintain maximum sound levels not exceeding 80 decibels (dBA) when measured at a distance of 10 m or more from the vehicle/s. o Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity o Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.						There is no as such noise generated from equipment. Stipulated condition as per SEMP is followed	SEMP is followed
Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	o Prepare and implement a Construction Waste Management Plan o As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., o Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; o Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed off to approved designated areas immediately; o If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses o Domestic solid wastes should be	• Waste Management List • Stockpile Management • Complaints from Sensitive receptors • PMU/ PIU/ DSISC to report inwriting that the necessary environmental restoration work has been done	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Excess earth used mostly for backfilling Domestic solid waste collection bin arranged. Burning of waste is strictly prohibited in site.	Being Complied Excess earth is being used for backfilling Domestic solid waste collection bin arranged. Burning of waste has been strictly prohibited in site.

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	properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market o Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/WBPCB; o Prohibit burning of construction and/or domestic waste; o Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. o Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate							
Disruption of service and Damage to existing infrastructure at specified project location	o Prepare a list of affected utilities and operators if any; o Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	• List of affected utilities if any and operators • Public grievance	Observation and document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by	Environment Specialist of DSISC, PIU and PMU/PMC	Done as per requirement. At present, there is no any disruption of service and damage the existing infrastructure	Being Complied as Per requirement. At present, there is no any disruption of service and damage the existing

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
					Environment Safeguard Team.			infrastructure.
Loss of vegetation and tree cover	o Minimize removal of vegetation and disallow cutting of trees; o If tree-removal will be required, obtain tree-cutting permit and o Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	As of now, tree felling requirement is not envisaged.	Tree felling done at WTP site only by respective Forest Department **(Appendix 4)** Compensatory plantation done at WTP site. Further plantation done during monsoon time to developed green buffer zone
Accessibility - Traffic problems and conflicts near project locations and haul road	**Hauling (material, waste/debris and equipment) activities** o Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites o Schedule transport and hauling activities during non-peak hours; o Locate entry and exit points in areas where there is low potential for traffic congestion; o Drive vehicles in a considerate manner o Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns / complaints. **Pipeline works**	• Traffic Management Plan • Public grievance • Number of signages placed at subproject location	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Haul road prepared for transportation of material to WTP site. For intake point, there is only one road which is used for transportation of material and for communication of villagers and traffic. Adequate signage, safety steward is implemented during construction.	Haul road prepared for transportation of material to WTP site. For intake point, there is only one road which is used for transportation of material and for communication of villagers and traffic. Adequate signage, safety steward is implemented during construction. Local villagers are informed in

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	o Confine work areas along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Proper barricading should be provided; avoid o material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required. o Leave spaces for access between mounds of soil to maintain access to the houses / properties o Provide pedestrian access in all the locations; provide wooden/metal planks over the open trenches at each house to maintain the access. o Inform the affected local population 1-week in advance about the work schedule o Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. o Keep the site free from all unnecessary obstructions; o Coordinate with Traffic Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours						construction. Local villagers are informed in advance to avoid the inconvenience. Traffic plan has been submitted for pipe laying work. Local people are informed in advance in every case. Construction work is limited by considering the convenience of local people.	advance to avoid the inconvenience. Traffic plan has been submitted for pipe laying work. Local people are informed in advance in every case. Construction work is limited by considering the convenience of local people.
Generation of temporary employment and increase in	o Employ local labor force as far as possible o Comply with labor laws	Employment record	Checking of records	Project locations	Daily visit by construction supervisor of DSISC. Weekly	Environment Specialist of DSISC, PIU and PMU / PMC	Direct and indirect employment for local population ensured.	Maximum number of local people are engaged in site.

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local revenue					visit by Construction Manager, Visit by Environment Safeguard Team.			
Occupational hazards which can arise during work	o Comply with all national, state and local core labor laws o Develop and implement site-specific occupational health and safety (OHS) Plan and Supplementary H & S plan for COVID 19 which will include measures such as: (a) excluding public from the site; (b) maintaining social distancing for protection from COVID 19 infection; (c) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (d) OHS Training and COVID 19 awareness training for all site personnel; (e) documented procedures to be followed for all site activities including follow of SOP for COVID 19 as developed for the project and H & S plan; and (f) documentation of work-related accidents; o Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; o Provide medical insurance coverage for workers; o Secure all installations from unauthorized intrusion and	o Site-specific Health and Safety (H&S) Plan o Equipped first-aid stations; o Medical insurance coverage for workers o Number of accidents o Supplies of potable drinking water; o Record of H&S orientation trainings o Personal protective equipment o Sign boards for hazardous areas such as energized electrical devices and lines, service rooms	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC; PIU and PMU/ PMC	Being Complied. Site-specific Health and Safety (H&S) Plan under implementation OHS plan submitted by contractor and approved by DSISC and PIU. That document is available with DSISC and PIU. Supplementary COVID 19 H & S plan prepared Induction and tool box training arranged by contractor. Use of PPEs improved. Further improvement is	Being Complied. Site-specific Health and Safety (H&S) Plan under implementation. OHS plan submitted by contractor and approved by DSISC and PIU. That document is available with DSISC and PIU. Supplementary COVID 19 H & S plan prepared Induction and tool box training arranged by contractor. Use of PPEs by workers noted. Visibility vest also used. Drinking water, first aid box, hand sanitizer, face masks etc. are available at

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	accident risks; o Provide supplies of potable drinking water; o Provide clean eating areas where workers are not exposed to hazardous or noxious substances; o Provide health and safety orientation training including COVID 19 risk and mitigation to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers o Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; o Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; o Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; o Ensure moving equipment is outfitted with audible back-up alarms; o Mark and provide sign boards for hazardous areas such as						required. Visibility vest used. Drinking water, first aid box, hand sanitizer, face masks etc. are available at site. Medical Insurance arranged for the laborers Medical tie up and health checking of workers done No as such noise producing equipment deployed at site. Accident register is maintained at site. Till date no major accident First aid case was recorded.	site. Medical Insurance arranged for the laborers Medical tie up and health checking of workers done No as such noise producing equipment available at site. Accident register is maintained at site. Till date no major accident, first aid case was recorded

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and o Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. Standard Operating Procedure (SOP) for the project and Supplementary H & S plan for COVID 19 prepared which cover, • General instruction to follow to prevent the spread of COVID-19 in construction workplace • Detail (step-by-step) work procedure to getting the workplace ready under COVID-19 situation • Worksite prevention practice at work site, office, during meeting, travelling, etc. • Precaution taken at workmen habitat/ camp • Control measures taken for deploying new workmen at site • Use of PPEs: face mask – hand gloves, maintaining social distancing, disinfection, requirement of awareness covered under the H & S plan.							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	(Separate H & S plan for COVID 19 as supplementary document developed and keep as standalone document to mitigate COVID 19 health risk)							
Health risk due to exposure to asbestos materials	o Obtain details on location of underground asbestos cement materials o Lay the new pipes carefully to avoid encountering asbestos cement pipes o If found, leave the asbestos cement pipes undisturbed in the ground.	asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Till date no asbestos cement material has been found on site	Till date no asbestos cement material has been found on site
Community safety- Traffic accidents and vehicle collision with pedestrians during material and waste transportation	o Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) o Enforce strict speed limit (20-30 kmph) for playing on unpaved roads, construction tracks o Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities o Adopt standard and safe practices for micro tunneling o Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions o All drivers will undergo safety and training o Public access to all areas where	Public grievance	Review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Work started at WTP and intake. Haul road prepared for transportation of material to WTP site. For intake point, there is only one road which is used for transportation of material and for communication of villagers and traffic. Adequate signage, safety steward needs	Haul road prepared for transportation of material to WTP site. For intake point, there is only one road which is used for transportation of material and for communication of villagers and traffic. Safety signage provided at work site. Local villagers are informed in advance to avoid the inconvenience. Traffic plan has

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	construction works are on-going will be restricted through the use of barricading and security personnel o Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation o The period of time when the pipeline trench is left open will be minimized through careful planning o Control dust pollution – implement dust control measures as suggested under air quality section o Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. o Provide road signs and flag persons to warn of on-going trenching activities.						to be implemented during construction. Improvement is required. Local villagers are informed in advance to avoid the inconvenience. Traffic plan has been submitted for pipe laying work. Local people are informed in advance in every case. Construction work is limited by considering the convenience of local people. Barricade needs to be sufficient at work sites, excavated area.	been submitted for pipe laying work. Local people are informed in advance in every case. Construction work is limited by considering the convenience of local people. Flag person posted at work site.
Temporary air and noise pollution from machine operation, water pollution from storage and use of	o Ensure that a proper compound wall is provided, and erect a wind/dust screen around o Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas	• Public grievance • Accommodation • Water and sanitation facilities for employees • Housekeeping – regular disposal of solid waste	Site inspection and review of documents	Construction camps	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit	Environment Specialist of DSISC and PIU	Being Complied. Camp developed at intake / WTP site. Housekeeping, toilet facility,	Being Complied. Housekeeping, toilet facility, testing of drinking water, provision of fuel (kerosene or LPG) for

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	o Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit o Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of livability at work camps are maintained at the highest standards possible at all times; o Consult PIU before locating project offices, sheds, and construction plants; o Minimize removal of vegetation and disallow cutting of trees o Ensure conditions of livability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers o Camp should be protected from COVID 19 health risk. All Health and safety procedure to follow for operation of camp (H & S plan for COVID 19 will be used as ref. document) during stay, cooking, eating, use of toilet- common space etc.				by Environment Safeguard Team.		testing of drinking water, provision of fuel (kerosene or LPG) for cooking, provision of solid waste and wastewater disposal are maintained. Repairing of camp is required.	cooking, provision of solid waste and wastewater disposal are properly maintained.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	o Self- hygiene, regular disinfection of entire camp and toilet, maintaining of social distancing to be continued for protection from COVID 19 infection o Camp shall be provided with proper drainage, there shall not be any water accumulation o Provide drinking water, water for other uses, and sanitation facilities for employees o Prohibit employees from cutting of trees for firewood; contractor should be provided proper facilities including cooking fuel (oil or gas; fire wood not allowed) o Train employees in the storage and handling of materials which can potentially cause soil contamination o Recover used oil and lubricants and reuse or remove from the site o Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market o Remove all wreckage, rubbish, or temporary structures which are no longer required o At the completion of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve camp clearance and closure of work site							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
There are no protected properties in the subproject sites. However, in case of chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	o Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site. o Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. o In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts	Site inspection records	Site inspection and review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PMU/PMC	No chance finds to date.	No chance finds to date.
Unsatisfactory compliance to EMP	o Appointment of Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation o Timely submission of monitoring reports including pictures	• Appointment letter • Monitoring records	Review of records	-	-	Environment Specialist of DSISC and PIU	Overall complied. Safety person appointed from contractor end. EHS training conducted on regular basis. Monitoring report submitted on monthly basis.	Overall complied. Safety person appointed from contractor end. Training conducted on regular basis. Monitoring report submitted on monthly basis.
Damage due to debris, spoils, excess construction materials	o Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and o All excavated roads shall be reinstated to original condition. o All disrupted utilities restored o All affected structures rehabilitated/compensated o The area that previously housed	Stockpile Management Spoil Management Restoration of sites	Review of documents and site inspections	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard	Environment Specialist of DSISC and PIU	Being Complied; Spoil Management Plan has been submitted as part of SEMP	Being Complied; Spoil Management Plan has been submitted as part of SEMP

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 01	Compliance Status/ Explanation for BK03
	the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. o All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the revegetation specification that forms part of this document. o The contractor must arrange the cancellation of all temporary services. quest PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.				Team.			

Table 11: Summary of Environmental Monitoring Activities for the Package WBDWSIP/DWW/NCB/ BK/02A/2018-19, WBDWSIP/DWW/NCB/BK/02B/2018-19, and WBDWSIP/DWW/NCB/BK/04/2018-19- Water Supply Distribution

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
Design Phase									
Source sustainability and efficiency	(i) Gravity distribution system: designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage (ii)Implementation of a water quality surveillance program including development of a laboratory as part of the project to ensure that supplied water meets the drinking water standards (iii)Minimizing water losses from pipelines by perfect jointing and alignments using appropriate techniques (iv) Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies	• Design philosophy • Project QA/QC plan • Selection methodology for distribution network	Document review and LOP Survey	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	Being Complied; Transmission and Distribution network design completed for all zones. Work continued.	Being Complied; Transmission and Distribution network design completed for all zones. Work continued	Being Complied; Distribution network design finalized and work continued
Socio economic impact – loss fishery area	(i) Avoid using low-lying lands / ponds for construction of OHRs; alternative private lands may be explored within the vicinity; (ii)Review the applicability of West Bengal Inland Fisheries Act, 1984, whether the	List of selected location for OHRs	Site survey	All OHR sites	Before commencement of final design	Environment Specialist of DSISC and PMC	Being Complied; No low-lying lands or ponds are being filled for construction.	Being Complied; No low-lying lands or ponds are being filled for construction.	Being Complied; No low-lying lands or ponds are being filled for construction.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	site falls under the definition of fisher area; obtained permission from Fisheries Department if required prior to start of construction								
Tree cutting	(i) Minimize removal of trees by adopting to site condition and with appropriate layout design of OHRs within the sites (ii) Avoid cutting of trees by adopting suitable alignment changes as required during laying of pipelines; (iii)I In unavoidable cases, obtain prior permission for tree cutting (iv) Plant and maintain 5 trees for each tree that is removed	• Tree felling requirement – site layout plan • NOC – paper documents from line agency	Site survey and review of site layout/ pipeline alignment plan	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	Being Complied; no tree felling has been envisaged till date.	Being Complied; no tree felling has been envisaged till date.	Being Complied; no tree felling has been envisaged till date.
Pre-Construction Phase									
Telephone lines, electric poles and wires, water lines within proposed project area	(i) Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; (ii) Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption	List of affected utilities if any and operators	Observation and document checking	Specific project location	Before commencement of construction	Environment Specialist of DSISC and PIU	Being Complied; about 137.953 km of transmission main and 761.143 km distribution network pipeline has been laid (Spoil Management Plan & Traffic	Being Complied; about 70.818 km of transmission main and 989.312 km of distribution main pipeline has been laid (Spoil Management Plan & Traffic Management	Being Complied; about 1207.699 km of distribution main pipeline has been laid (Spoil Management Plan & Traffic Management Plan attached with SEMP) No impact on utilities

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	of services. (iii) Require contractors to prepare spoils (waste) management plan and traffic management plan						Management Plan submitted along with SEMP) No impact on utilities	Plan submitted with SEMP) No impact on utilities	
Conflicts with local community; disruption to traffic flow and sensitive receptors	(i) Prioritize areas within or nearest possible vacant space in the project location; (ii) If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; (iii) Do not consider residential areas; (iv) Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. (v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from	• List of selected location for OHRs • Involvement of traffic dept. • Road closure planning	• Site observation • Review of documents • Grievance Register	Specific project location	Before commencement of final design and commencement of construction	Environment Specialist of DSISC; PIU and PMC	Being Complied, No disruption noted. Area selected nearby vacant place. No excess spoil generated. Excess earth utilized for back filling. No complete road closure expected. Partial road closure noted, which mentioned in traffic management plan	Being Complied, No disruption noted. Area selected nearby vacant place. No excess spoil generated. Excess earth utilized for back filling. No complete road closure expected. Partial road closure noted, which mentioned in traffic management plan	Being Complied, No disruption noted. Area selected nearby vacant place. No excess spoil generated. Excess earth utilized for back filling. No complete road closure expected. Partial road closure noted, which mentioned in traffic management plan

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies.								
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	(i) Obtain construction materials only from government approved quarries with prior approval of PIU; (ii) PIU to review, and ensure that proposed quarry sources have all necessary clearances/ permissions in place prior to approval (iii) Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) (iv) Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance prior to approval by PIU	• List of approved quarry sites and sources of materials • Construction Contractor documentation	• Checking of records • Visual inspection of sites	Quarries and material source areas	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC at operational sites.	DSISC Construction Management and Environmental Safeguard Team	Being Complied. All Materials procured from licensed Vendors. Extraction of materials are in compliant with environmental regulation of the country .	Being Complied. All Materials procured from licensed Vendors. Extraction of materials are in compliant with environmental regulation of the country .	Being Complied. All Materials procured from licensed Vendors. Extraction of materials are in compliant with environmental regulation of the country .

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	(i) Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. (ii) Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction (iii) Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. (iv) Include in detailed design drawings and documents all conditions and provisions if necessary	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	Environment Specialist of DSISC and PMC	Being Complied and to be continued as per requirement	Being Complied and to be continued as per requirement	Being Complied and to be continued as per requirement
Health risk due to exposure to asbestos materials	(i) Obtain details on location of asbestos cement materials (ii) Lay the new piper carefully to avoid encountering AC pipes (ii) Leave the AC pipes undisturbed in the ground.	Asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC at operational sites.	DSISC Construction Management and Environmental Safeguard Team	Being Complied. Till date no rubbish containing asbestos cement has been found	Being Complied. Till date no rubbish containing asbestos cement has been found	Being Complied. Till date no rubbish containing asbestos cement has been found
Construction phase									

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
Irreversible impact to the environment, workers, and community	(i) Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS) including COVID 19 H & S awareness, core labor laws, applicable environmental laws, etc.	Induction & Awareness Trainings Toolbox Talks Safeguard Trainings	Review of Training records Site Inspections	Project Locations	-	Environment Specialist of DSISC: PIU and PMC	Being Complied; Site Environmental Safety training and awareness arranged by contractor on regular basis Safeguard orientation/ program arranged by DSISC and PMC	Being Complied; Site Environmental Safety training and awareness arranged by contractor on regular basis Safeguard orientation program arranged by DSISC and PMC	Being Complied; Site Environmental Safety training and awareness arranged by contractor on regular basis Safeguard orientation program arranged by DSISC and PMC
Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	**For all construction works** (i) Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009" (ii) Damp down the soil and any stockpiled material on site by water sprinkling; (iii)Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; (iv) Provide a dust	• Location of stockpiles • Complaints from sensitive receptors • Monitoring data- PM!0, PM2.5, SO2, NO2, CO • Heavy equipment and machinery with air pollution control • Water sprinkling Arrangement Cover materials	Site inspection Public grievance register	Project locations Air-monitoring as per selected sites in ref. to SEMP	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Air-monitoring schedule as per SEMP Monitoring carried out on November-December	Environment Specialist of DSISC; PIU and PMC	Being Complied; During construction (January 2025) air quality monitoring done as per IEE. Complete result certificates available in DSISC office as back up paper. PUC certificate obtained for Vehicle and Equipment. Other activities like dust suppression, covering of loose materials, dust screen	Being Complied; During construction (January 2025) air quality monitoring done as per IEE. Complete result certificates available in DSISC office as back up paper PUC certificate obtained for Vehicle and Equipment. Other activities like dust suppression, covering of loose materials, dust screen	Being Complied; During construction (January 2025) air quality monitoring done as per IEE. Complete result certificates available in DSISC office as back up paper. PUC certificate obtained for Vehicle and Equipment. Other activities like dust suppression, covering of loose materials, dust screen arranged. For pipeline laying work,

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	screen/high compound wall around the construction sites (OHRs) (v) Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry (vi) Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area (vii) Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition (viii) Apply water prior to leveling or any other earth moving activity to keep the soil moist throughout the process (ix) Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation (x) Ensure that all the construction equipment and machineries are				2023 & March- April 2024		arranged. For pipeline laying work, barricading, removal of earth, backfilling done as per SEMP.	arranged. For pipeline laying work, barricading, removal of earth, backfilling done as per SEMP.	barricading, removal of earth, backfilling done as per SEMP

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** (i) Barricade the construction area (ii) Initiate site clearance and excavation work only after barricading of the site is done (iii)Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area (iv) Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area (v) Undertake the work section wise (vi)Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done. (vii) Remove the excavated soil of first section to the disposal								

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	site; as the work progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. (viii) Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.								
Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can contaminate nearby surface water quality. Ponding of water in the pits / foundation	(i) All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; (ii) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; (iii)Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Entry routes of pollutant in	Site inspection and Public grievance register	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC: PIU and PMC	Being Complied Earth work conducted during dry season. No as such requirement of disposal of spoil. Excess earth utilized for backfilling. Material never disposed in the pond located within this site. Fuel storage not started.	Being Complied Earth work conducted during dry season. No as such requirement of disposal of spoil. Excess earth utilized for backfilling. Material never disposed in the pond located within this site. Fuel storage not started.	Being Complied Earth work conducted during dry season. No as such requirement of disposal of spoil. Excess earth utilized for backfilling. Material never disposed in the pond located within this site. Fuel storage not started. Surface water

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
excavations	areas shall be used; (iv) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; (v) Place storage areas for fuels and lubricants away from any drainage leading to water bodies; (vi) Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling (vii) Dispose any wastes generated by construction activities in designated sites; and (viii) Conduct surface quality inspection according to the Environmental Management Plan (EMP). (ix) Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area (x) Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after	nearby Water bodies					Surface water quality monitoring done All safety aspect maintained	Surface water quality monitoring done All safety aspect maintained	quality monitoring done All safety aspect maintained

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	sedimentation in the temporary ponds (xi) Consider safety aspects related to pit collapse due to accumulation of water								
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	(i) Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; (ii) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; (iii) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and (iv) Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity (v) Consult local communities in advance	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers Monitoring data	o Checking of records o Visual inspection of sites	All project locations Noise-monitoring as per selected sites in ref. to SEMP	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Noise monitoring schedule as per SEMP. Monitoring carried out – latest on January 2025	Environment Specialist of DSISC; PIU and PMC	Being Complied. No such noise generating problem near the project location. During construction monitoring be continued as per IEE. Noise level is within stipulated limit at most of the locations. Complete result certificates available in DSISC office as back up paper. Honking generally avoided at work sites.	Being Complied. No such noise generating problem near the project location. During construction Monitoring be continued as per IEE. Noise levels are within stipulated limit at most of the locations. Complete result certificates available in DSISC office as back up paper. Honking generally avoided at work sites.	Being Complied. No such noise generating problem near the project location. During construction Monitoring be continued as per IEE. Noise levels are within stipulated limit at most of the locations. Complete result certificates available in DSISC office as back up paper. Honking generally avoided at work sites.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.								
Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	(i) Prepare and implement a Construction Waste Management Plan (ii) As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., (iii) Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; (iv)Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed of to approved designated areas immediately; (v) If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses (vi) Domestic solid	• Waste Management List • Stockpile Management • Complaints from Sensitive receptors • PMU/PIU/ DSISC to report in writing that the necessary environmental restoration work has been done	o Checking of records o Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC: PIU and PMC	Being Complied Excess earth used mostly for backfilling. Excess spoils are not generally stockpiled. No hazardous waste and construction waste generated.	Being Complied Excess earth used mostly for backfilling. Excess spoils are not generally stockpiled. No hazardous waste and construction waste generated.	Being Complied Excess earth used mostly for backfilling. Excess spoils are not generally stockpiled. No hazardous waste and construction waste generated.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market (vii) Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/West Bengal Pollution Control Board (WBPCB); (viii) Prohibit burning of construction and/or domestic waste; (ix) Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. (x) Conduct site clearance and restoration to original condition after								

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate								
Disruption of service and damage to existing infrastructure at specified project location	(i) Prepare a list of affected utilities and operators if any; (ii) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	• List of affected utilities if any and operator's public grievance	Observation And document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PIU	Being Complied as Per requirement. Consultation done with utility dept. as and when required	Being Complied as Per requirement. Consultation done with utility dept. as and when required	Being Complied as Per requirement. Consultation done with utility dept. as and when required
Loss of vegetation and tree cover	(i) Minimize removal of vegetation and disallow cutting of trees, by adopting best site layout and pipeline alignments (ii) If tree-removal will be required, obtain tree-cutting permit and (iii) Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	o Checking of records o Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	As of now, no tree felling is anticipated at work sites	As of now, no tree felling is anticipated at work sites	As of now, no tree felling is anticipated at work sites
Accessibility - Traffic problems and conflicts near	**Hauling (material, waste/debris and equipment) activities** (i) Plan transportation	• Traffic Management Plan • Public	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC.	Environment Specialist of DSISC; PIU and	Being Complied; Barricading done in pipe	Being Complied; Barricading done in pipe	Being Complied; Barricading done in pipe laying areas.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
project locations and haul road	routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites (ii) Schedule transport and hauling activities during non-peak hours; (iii)Locate entry and exit points in areas where there is low potential for traffic congestion; (iv) Drive vehicles in a considerate manner (v) Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. **Pipeline works** (i) Confine work areas along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Provide barricading; avoid material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required (ii) Leave spaces for	grievance • Number of signages placed at subproject location			Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	PMC	laying areas. Local people informed before start of work No transportation of pipe/ material done during pick hours, no impact on local public movement. Access maintained in most of the cases at pipe laying areas. Work plan informed to local public atleast 1 week in advance.	laying areas. Local people informed before start of work No transportation of pipe/ material done during pick hours, no impact on local public movement. Access maintained in most of the cases at pipe laying areas. Work plan informed to local public atleast 1 week in advance.	Local people informed before start of work No transportation of pipe/ material done during pick hours, no impact on local public movement. Access maintained in most of the cases at pipe laying areas. Work plan informed to local public atleast 1 week in advance.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	access between mounds of soil to maintain access to the houses / properties (iii)Provide pedestrian access in all the locations; provide wooden/metal planks over the open trenches at each house to maintain the access. (iv) Inform the affected local population 1-week in advance about the work schedule (v) Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. (vi) Keep the site free from all unnecessary obstructions; (vii) Coordinate with Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours								
Generation of temporary employment and increase in local revenue	(i) Employ local labor force as far as possible (ii) Comply with labor laws	Employment record	Checking of records	Project locations	-	Environment Specialist of DSISC and PMC	Maximum number of local people are engaged in work. Only a few locations outside/ migrant labours are engaged.	Maximum number of local people are engaged in work. Only a few locations outside/ migrant labours are engaged.	Maximum number of local people are engaged in work. Only a few locations outside/ migrant labours are engaged.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
Occupational hazards which can arise during work	(i) Comply with all national, state and local core labor laws (ii) Develop and implement site-specific occupational health and safety (OHS) Plan and Supplementary H & S plan for COVID 19 which will include measures such as (a) excluding public from the site; (b) maintaining social distancing for protection from COVID 19 infection; (c) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (d) OHS Training and COVID 19 awareness training for all site personnel; (e) documented procedures to be followed for all site activities including follow of SOP for COVID 19 as developed for the project and H & S plan; and (f) documentation of work-related accidents; (iii) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;	• 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 • Personal protective equipment • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms	• Checking of records • Visual inspection of site	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Site-specific Health and Safety (H&S) Plan under implementation Copy of the approved Health and Safety plan available with DSISC., PIU Supplementary COVID 19 H & S plan including site safety compliance prepared and compliance continued H & S training done on regular basis. Drinking water and first aid box available at site. Proper use of PPEs- noted. Tie up letter with nearby health center in case of emergency obtained. Health checkup done for worker	Site-specific Health and Safety (H&S) Plan under implementation Copy of the approved Health and Safety plan available with DSISC., PIU Supplementary COVID 19 H & S plan including site safety compliance prepared and compliance continued H & S training done on regular basis. Drinking water and first aid box available at site. Proper use of PPEs- noted. Tie up letter with nearby health center in case of emergency obtained. Health checkup done for	Site-specific Health and Safety (H&S) Plan under implementation Copy of the approved Health and Safety plan available with DSISC., PIU Supplementary COVID 19 H & S plan including site safety compliance prepared and compliance continued H & S training done on regular basis. Drinking water and first aid box available at site. Proper use of PPEs- noted. Tie up letter with nearby health center in case of emergency obtained. Health checkup done for worker Medical Insurance arranged for the

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	(iv) Provide medical insurance coverage for workers; (v) Secure all installations from unauthorized intrusion and accident risks; (vi) Provide supplies of potable drinking water; (vii) Provide clean eating areas where workers are not exposed to hazardous or noxious substances; (viii) Provide health and safety orientation training including Covid-19 risk mitigation to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; (ix) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; (x) Ensure the visibility of workers through their use of high visibility vests when working in or						Medical Insurance arranged for the labourer Accident/ First aid register is maintained at each site No case reported during report period Safety signage, emergency contact no. and project display board placed at work sites	worker. Medical Insurance arranged for the labourer Accident/ First aid register is maintained at each site No case reported during report period. Safety signage, emergency contact no. and work board placed at most of the work locations	labourer. Accident/ First aid register is to be maintained at each site No case reported during report period. Safety signage, emergency contact no. and work board placed at the work locations.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	walking through heavy equipment operating areas; (xi) Ensure moving equipment is outfitted with audible back-up alarms; (xii) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate. Standard Operating Procedure (SOP) for the project and Supplementary H & S plan for COVID 19 prepared which cover, o General instruction to follow to prevent the spread of COVID-19 in construction workplace o Detail (step-by-step) work procedure to getting the workplace ready								

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	under COVID-19 situation o Worksite prevention practice at work site, office, during meeting, travelling, etc. o Precaution taken at workmen habitat/ camp o Control measures taken for deploying new workmen at site o Use of PPEs: face mask – hand gloves, maintaining social distancing, disinfection, requirement of awareness covered under the H & S plan. (Separate H & S plan for COVID 19 as supplementary document developed and keep as standalone document to mitigate COVID 19 health risk)								
Health risks associated with AC pipes	(i) leave AC pipes in-situ untouched	Decommissioned AC Pipes	Site inspection	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by	Environment Specialist of DSISC and PMC	Till date no AC pipes has been found	Till date no AC pipes has been found	Till date no AC pipes has been found

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
					Environment Specialist and Support Environment staff				
Impact on community safety. Traffic accidents and vehicle collision with pedestrians during material and waste transportation	(i) Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) (ii) Enforce strict speed limit (20-30 kph) for playing on unpaved roads, construction tracks (iii) Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities (iv) Adopt standard and safe practices for micro tunneling (vi) Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions (vii) All drivers will undergo safety and training (viii) Public access to all areas where construction works are on-going will be restricted through the	Public grievance	Review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC; PIU and PMC	No pedestrian accident has been recorded till date. Pipe line laying work continued. All safety measures arranged. Safety signage board placed at most of the working locations. Placement of safety signage board/ poster in local language is required. No trench kept open after pipe laying. Caution tape / barricade placed.	No pedestrian accident has been recorded till date. Pipe line laying work continued. All safety measures arranged. Safety signage board placed at most of the working locations. Placement of safety signage board/ poster in local language is required. No trench kept open after pipe laying. Caution tape/ barricade placed	No pedestrian accident has been recorded till date. Pipe line laying work continued. All safety measures arranged. Safety signage board placed at most of the working locations. Placement of safety signage board/ poster in local language done mostly. No trench kept open after pipe laying. Caution tape / barricade placed.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	use of barricading and security personnel (ix) Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation (x) The period of time when the pipeline trench is left open will be minimized through careful planning (xi) Control dust pollution – implement dust control measures as suggested under air quality section (xii) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. (xiii) Provide road signs and flag persons to warn of on-going trenching activities.								
Impact on work camps and work site. Temporary air and noise pollution from machine operation,	(i) As far as possible located the camp site within the work sites; if any camp to be established outside these, then select a camp site away from residential areas (at least	• Public grievance • Accommodation Water and sanitation facilities for employees	Site inspection and review of documents	Construction camps	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager,	Environment Specialist of DSISC and PMC .	Complied. Few issues such as establishment of toilet done at active OHSR sites. In most of the	Complied Few issues such as establishment of toilet done at active OHSR sites. A central labour	Complied Toilet facility arranged at work locations. Local labours are employed in most cases. Rented house

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	100 m buffer shall be maintained) (ii) Avoid tree cutting for setting up camp facilities (iii) Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas (iv) Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit (v) Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of livability at work camps are maintained at the highest standards possible at all times; (vi) Consult PIU before locating project offices, sheds, and construction plants; (vii) Minimize removal of vegetation and disallow cutting of trees (viii) Ensure conditions of livability at work camps	• Housekeeping – regular disposal of solid waste			Visit by Environment Specialist and Support Environment staff		places local labours are employed. A central labour camp near Danga yard is established with all basic facilities to keep the migrant workers. Toilet facility needs to be maintained at all working OHR, GLSR sites	camp near Chenchuriya IBPS/GLSR site is established with all basic facilities to keep the migrant workers. Toilet facility needs to be maintained at all working OHR, GLSR sites.	has been arranged at zone 19 for few outside/migrant labours. Maintenance of housekeeping, social distancing, toilet facility, drinking water availability, `provision of fuel (kerosene or LPG) for cooking etc. are available at rented house. Toilet facility needs to be maintained at all working OHR sites.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers (ix) Camp should be protected from COVID 19 health risk. All Health and safety procedure to follow for operation of camp (H & S plan for COVID 19 will be used as ref. document) during stay, cooking, eating, use of toilet- common space etc. (x) Self- hygiene, regular disinfection of entire camp and toilet, maintaining of social distancing to be continued for protection from COVID 19 infection (xi) Camp shall be provided with proper drainage, there shall not								

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	be any water accumulation (xii) Provide drinking water, water for other uses, and sanitation facilities for employees (xiii) Prohibit employees from cutting of trees for firewood; contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed) (xiv) Train employees in the storage and handling of materials which can potentially cause soil contamination (xv) Recover used oil and lubricants and reuse or remove from the site (xvi) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market (xvii) Remove all wreckage, rubbish, or temporary structures which are no longer required (xviii) At the completion								

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve camp clearance and closure of work site								
Unsatisfactory compliance to EMP	(i) Appointment of Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation (ii) Timely submission of monitoring reports including pictures	• Appointment letter • Monitoring records	Review of records	-	-	Environment Specialist of DSISC and PMC	Safety person appointed from contractor's end; environmental safeguard training done. Monitoring report submitted on monthly basis.	Safety person appointed from contractor's end; environmental safeguard training done. Monitoring report submitted on monthly basis.	Safety person appointed from contractor end; environmental safeguard training done. Monitoring report submitted on monthly basis.
Damage due to debris, spoils, excess construction materials	(i) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and (ii) All excavated roads shall be reinstated to original condition. (iii) All disrupted utilities restored (iv) All affected structures rehabilitated/ compensated (v) The area that previously housed the construction camp is to be checked for spills of substances such as oil,	• Stockpile Management • Spoil Management • Restoration of sites	Review of documents and site inspections	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Being complied; Spoil Management Plan has been submitted for OHR and the pipe laying work. No utilities affected during pipe laying at village roads. All excavated road reinstated to original condition	Being Complied; Spoil Management Plan has been submitted for OHR and the pipe laying work. No utilities affected during pipe laying at village roads. All excavated road reinstated to original condition	Being Complied; Spoil Management Plan has been submitted for OHR and the pipe laying work. No utilities affected during pipe laying at village roads. All excavated road reinstated to original condition

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation for BK 02A	Compliance Status/ Explanation for BK 02B	Compliance Status/ Explanation for BK 04
	paint, etc. and these shall be cleaned up. (vi) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of this document. (vii) The contractor must arrange the cancellation of all temporary services. (viii) Request PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.								

Table 12: Summary of Environmental Monitoring Activities for the Package WBDWSIP/DWW/ICB/EM/01/2018-19: BULK WATER SUPPPLY

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
Design Phase							
Source sustainability and efficiency	• Discontinuation of current unsafe & unsustainable groundwater sources and creating a new comprehensive surface	• Design philosophy • Treatment	Document review and LOP Survey	All project locations	Before Commencement and during	Environment Specialist of DSISC,	Detailed design completed; work continued

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	water (river) based water supply system • Recovering wash water from treatment process to optimize the water use • Treatment and reuse of sludge from treatment process • Designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage • Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies • Preparation and implementation of a water quality surveillance program including development of a laboratory as part of the project by DBO contractor to ensure that supplied water meets the drinking water standards • Development of laboratory with all necessary environment, health and safety measures and adopting international standard procedures for water quality testing • Using low-noise and energy efficient pumping systems • Installing the noise-producing pumps and motors etc., in enclosed buildings with noise reducing walls, and also maintaining adequate buffer to the nearby inhabited areas • Provision of appropriate personal protection equipment to the workers and staff	scheme • Project QA/QC plan			final design	PIU and PMU/PMC	
Chlorine handling and application risk – health and safety risk to workers and general public	• Provide the following measure at the chlorine application unit: ➢ Chlorine neutralization pit with a lime slurry feeder ➢ Chlorine absorption and neutralization	• Project emergency management plan • Project safety	Document review	WTP and Booster pumping site	Before Commencement and during final design	Environment Specialist of DSISC and PIU	Detail design completed. Authorization under "The manufacture,

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	facility ➢ Proper ventilation, lighting, entry and exit facilities ➢ Visible and audible alarm facilities to alert chlorine gas leak ➢ Facility for isolation in the event of major chlorine leakage ➢ Eye wash & shower facility ➢ Personal protection and safety equipment for the operators in the chlorine plant (masks, oxygen cylinders, gloves, etc.,) • Provide training to the staff in safe handling and application of chlorine; this shall be included in the contract of Chlorinator supplier • Supplier of Chlorinator equipment shall provide standard operating manual for safe operation and as well as maintenance and repairs; preferably these shall be provided both in English and Bengali Languages	and PPE use plan • Training plan					storage and import of hazardous chemicals rules, 1989" will be done as per requirement
Tree cutting	• Minimize removal of trees by adopting to site condition and with appropriate layout design of GLSRs • Obtain prior permission for tree cutting • Plant and maintain 5 trees for each tree that is removed	Tree felling requirement and afforestation after final design	• Checking of records • Visual inspection of sites	Project locations	Before Commencement and during final design	Environment Specialist of DSISC and PIU	Tree felling permission of 98 no of trees from Intake to Ganganarayanpur has been obtained from Forest Department. Tree felling done. Also 698 numbers of tree felling permission have been obtained from Forest Department for

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							Mograjpur to Chakpatna clear water transmission main (**Appendix 4).** Forest dept. instructed for compensatory plantation of 1396 nos. tree. Compensatory plantation done. Tree felling NOC (201 no of trees) has been obtained from Forest Department on 22nd January, 2024. (**Appendix 4)** for the stretch Ganjanarayanpur to Nandakumar market As per instruction of Forest dept. compensatory plantation has been done. Sectional approach has been taken. Sectional tree survey has been done After finalization of pipe alignment.
Pre-Construction Phase							

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
Telephone lines, electric poles and wires, water lines within proposed project area	• Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; • Require construction contractor to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services; and • Contractor prepared spoils (waste) management plan and traffic management plan	•List of affected utilities and operators; •Bid document to include Requirement for a contingency plan for service interruptions, waste management plan and traffic management plan	Observation and document checking	Specific project location	Before commencement of construction	Environment Specialist of DSISC and PIU	Being Complied. Contingency plan preparation is under process. • Till date From Mirpur to Ganjanarayanpur all 40 electric poles have been shifted. • Ganjanarayanpur to Talpukur 26 electric poles have been shifted. • From Talpukur rail crossing to Shrikrishnapur 62 no of electrical pole shifted. • At Shrikishnapur 4 nos. of poles have been shifted. • From Shrikrishnapur to Nandakumar circle 88 no of poles have been identified. • From Ganjanarayanpur to Nandakumar rotary final survey is

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							completed and quoted money paid. • Nandakumar to WTP, 84 no of electrical pole has been identified and final survey has completed and quoted amount paid. It is not shifted till reporting period. • Haldi bridge to Mograjpur railway crossing final survey has been completed and 23 no of electrical poles has been shifted. • Mograjpur to Chakpatna survey completed 78 nos. of electrical pole shifted. • Tengua to Nandigram bus stand final survey completed 85 Electric poll & 56 Lamp post has been

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							shifted and 8 Eps & 15 LPs are already been shifted. • Nandigram Bus stand to Garchakraberia final survey completed 86 Electric poles and 36 Lamp posts has been identified.It is not shifted upto date. • 15 no LED street light shifted at Bhimbazar. Spoil management plan and traffic management plan attached with SEMP.
Conflicts with local community; disruption to traffic flow and sensitive receptors	• Prioritize areas within or nearest possible vacant space in the project location; • If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; • Do not consider residential areas; • Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. • For excess spoil disposal, ensure (a) site	• List of selected sites for construction work camps, stockpile areas, storage areas, and disposal areas. • Written consent of	• Site observation • Review of documents • Field level public consultation	Specific project location	Before commencement of final design and commencement of construction	Environment Specialist of DSISC and PIU	Being Complied. WTP and Intake pump house located within fixed campus. Raw water pipe line work is going on and field level public consultation is continued on regular basis to know the problem

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written Consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies	landowner/s (not lessee/s)					of local people faced during pipe line laying work. Grievance Redressal Mechanism is implemented. Grievance has been recorded. For sludge disposal, written consent from land owner has been taken. Excess spoil is being used for land filling.
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	• Obtain construction materials only from government approved quarries with prior approval of PIU; • PIU to review, and ensure that proposed quarry sources have all necessary clearances/permissions in place prior to approval • Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) • Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance (EC) prior to approval by PIU	• List of approved quarry sites and sources of materials	• Checking of records • Visual inspection of sites	Project sites	Before commencement of construction	DSISC Construction Management and Environmental Safeguard Team	Being Complied. All Materials procured from licensed Vendors. Extraction of materials are in compliant with environmental regulation of the country .
Failure to obtain necessary consents, permits, NOCs, etc. can result to design	• Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. • Ensure that all necessary approvals for	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	Environment Specialist of DSISC, PIU and	NOC for tree felling from Intake to Ganjanarayanpur

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revisions and/or stoppage of works	construction to be obtained by contractor are in place before start of construction provisions if any. • Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. • Include in detailed design drawings and documents all conditions and provisions if necessary.					PMU/PMC	raw water transmission route and Magrajpur to Dibakarpur-Chakpatna clear water transmission main has been obtained **(NOC – Appendix 4)**. Tree felling NOC (201 no of trees) has been obtained from Forest Department on 22nd January, 2024. (**Appendix 4)** for the stretch Ganjanarayanpur to Nandakumar market NOC from I & W Department from Raw water transmission has been obtained. Inland Waterways Authority of India has given NOC for construction of intake structure on Rupnarayan river. Pipe laying permission along the PWD road

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							has been obtained. NOC of Haldi River Crossing have been obtained from I &W Department Construction is ongoing Permission of construction of Intake Jetty has been obtained from Inland Waterways Authority of India.
Health risk due to exposure to asbestos materials	• Obtain details on location of underground AC pipes • Locate the new piper carefully to avoid encountering AC pipes • Leave the AC pipes undisturbed in the ground.	Asbestos cement materials	Site inspection	Specific project location		DSISC Construction Management and Environmental Safeguard Team	Being Complied. Till date no rubbish containing asbestos cement has been found
Construction Phase							
Irreversible impact to the environment, workers, and community	Project manager and all key workers have undergone training on EMP implementation including spoils/waste management, Standard Operating Procedures (SOP) for construction works; Occupational Health and Safety (OHS) including COVID 19 H & S awareness, core labour laws, applicable environmental laws, etc.	Induction and tool box training Awareness training on COVID19	Review of Training records Site Inspections	Project Locations	-	Environment Specialist of DSISC, PIU and PMU	Safety training, PEP talk, awareness training arranged on regular basis. Also, HIV-AIDS awareness program has been conducted.
Emissions from construction vehicles, equipment, and machinery used for installation of pipelines	**For all construction works** • Comply with the Direction of West Bengal Department of Environment under the Air Act, 1981 in controlling air pollution from construction activities	• Location of stockpiles • Monitoring data-	Site inspection Public grievance register	Covering different locations. Air – noise monitoring:	Air – noise monitoring: Once before start of construction	DSISC Construction Management and Environmental	Baseline and during construction monitoring have been completed

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resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	• Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009" • Damp down the soil and any stockpiled material on site by water sprinkling; • Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; • Provide a dust screen around the construction sites at Intake and WTP work sites • Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry • Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area • Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition • Apply water and maintain soils in a visible damp or crusted condition for temporary stabilization • Apply water prior to levelling or any other earth moving activity to keep the soil moist throughout the process • Cover the soil stocked at the sites with tarpaulins • Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas;	PM10, PM2.5 NO2, SO2, CO • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Regular site visit		Monitoring is expected to be conducted at 5 locations.	Yearly 3 times during construction (3-year period considered) During construction Monitoring conducted on April 2025	Safeguard Team, PIU	as per IEE. (Complete result certificates available in DSISC office as back up paper) PUC certificate has been obtained for vehicle as well as equipment Water sprinkling is being doing as per requirement. Excavated soil is being used for backfilling as well as for filling up low laying land. Excavated soil is covered by tarpaulins during dry season. Instruction has been given to the Contractor to maintain the same Excavation work conducted as section wise. Instructed for placement of sufficient caution board at

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	limiting soil disturbance will minimize dust generation • Ensure that all the construction equipment, machinery is fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** • Barricade the construction area using hard barricades (of 2 m height) on both sides and provide dust/wind screen (such geo textile fabric) up to 3 m height (1m above the hard barricading) • Initiate site clearance and excavation work only after barricading of the site is done • Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area • Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area • Undertake the work section wise: 100 – 200 m section should be demarcated and barricaded • Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done. • Remove the excavated soil of first section to the disposal site; as the work progresses sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling,						pipelaying site Water used to maintain soils in a visible damp or crusted condition for temporary stabilization Being Intake and WTP at fixed site so no public trespassing observed. Although during pipe laying work, public trespassing was observed sometime. After backfilling water sprinkling done A plan has been adopted for pipe laying work progresses as sequentially i.e first remove the excavated soil of first section will be disposed in a disposal site, by the time second section is excavated, the first section will be ready for back filling, use the

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	this will avoid stocking of material, and minimize the dust. • Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. • The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.						freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust.
Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can Contaminate nearby surface water quality. Ponding of water in the pits /foundation excavations	• All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; • Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; • Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling • Dispose any wastes generated by construction activities in designated sites; and • Conduct surface quality inspection according to the Environmental Management Plan (EMP). • Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies	Site inspection Public grievance register	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	DSISC Construction Management and Environmental Safeguard Team	Being Complied. All safety aspect maintained. Excess spoil is being used for backfilling and filling up low laying land. Fuel has been stored at WTP in a yellow color drum. Metal tray is placing below the fuel dram. Surface water quality monitoring for pre-construction phase done. During construction river water quality monitoring has been done as per EMP. Temporary silt traps observed at WTP site for arresting

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	• Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose off only clarified water into drainage channels/streams after sedimentation in the temporary ponds • Consider safety aspects related to pit collapse due to accumulation of water						sediments. Sludge during piling work has been collected in a truck and disposed on a designated place
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	• Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; • Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimise sound impact to surrounding sensitive receptor; and • Maintain maximum sound levels not exceeding 80 decibels (dBA) when measured at a distance of 10 m or more from the vehicle/s. • Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity • Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.	Day time and night time noise levels.	• Checking of records • Visual inspection of sites	Covering different locations. Air – noise monitoring: Monitoring is expected to be conducted at 5 locations.	Noise monitoring: Once before start of construction Yearly 3 times during construction (3-year period considered) During construction Monitoring conducted on April 2025	DSISC Construction Management and Environmental Safeguard Team	Being Complied; Pre-construction baseline monitoring done. During construction monitoring has been completed during report period Complete result certificates available in DSISC office as back up paper There is no as such noise generated from equipment. Stipulated condition as per SEMP is followed Public consultations have been done to address the key issues. Horns is not being used unless it is necessary

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Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	• Prepare and implement a Construction Waste Management Plan • As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., • Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; • Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed off to approved designated areas immediately; • If disposal is required, the site shall be selected preferably from barren, infertile lands; site should locate away from residential areas, forests, water bodies and any other sensitive land uses • Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market • Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed off in disposal sites approved by local authorities/WBPCB; • Prohibit burning of construction and/or domestic waste; • Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create	• Waste Management List • Stockpile Management Complaints from sensitive receptors • PMU/ PIU/ DSISC to report in writing that the necessary environmental restoration work has been done	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Being Complied Excess earth mostly used for Backfilling and filling of low laying land. Waste dustbin has placed at Intake and WTP for proper disposal of waste. Pilling earth has deposited at nearby barren land after getting permission. No as such stock piling allowed for spoil. Housekeeping have done at intake substation site and WTP. Compost pit is available at workers camp for disposal of biodegradable waste. All excess and unused construction materials have been stored in separate scrap

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	awareness to use the dust bins. • Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored • prior to issuing of construction completion certificate						yard. Instruction has given to contractor for non- burning of construction waste.
Disruption of service and damage to existing infrastructure at specified project location	• Prepare a list of affected utilities and operators if any; • Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	List of affected utilities if any and operators	Observation and document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Being Complied. Contingency plan developed. Most of the electrical poles have been shifted and some needs to be shifted and will be finalized after final survey. Consultation done with utility dept.as and when required.
Loss of vegetation and tree cover	• Minimize removal of vegetation and disallow cutting of trees; • If tree-removal will be required, obtain tree-cutting permit and • Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Permission of tree felling has been obtained as per final design for raw water main (Intake to Ganjanarayanpur) Tree felling is done. Also, Tree felling NOC has been obtained from Mograjpur to Dibakarpur-Chakpatna clear water

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							transmission main. Tree felling NOC (201 no of trees) has been obtained from Forest Department on 22nd January, 2024 for the stretch Ganjanarayanpur to Nandakumar market. Tree felling is done. More than 11500 number of plants already have been planted at different locations. For further processing of work, if tree felling is required, permission will be obtained from concerned department. Also, they have planted 200 trees within workers campus.
Traffic problems and conflicts near project locations and haul road	**Hauling (material, waste/debris and equipment) activities** • Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of	• Traffic Management Plan • Public grievance • Number of	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction	Environment Specialist of DSISC and PIU	Being Complied; Intake pump house and WTP is within the isolated area. No need of traffic

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	delivery sites • Schedule transport and hauling activities during non-peak hours; • Locate entry and exit points in areas where there is low potential for traffic congestion; • Drive vehicles in a considerate manner • Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. **Pipeline works** • Confine work areas along the roads to the minimum possible extent; all the activities, including material & waste/surplus soil stocking should be confined to this area. Proper barricading should be provided; avoid material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required • Leave spaces for access between mounds of soil to maintain access to the houses / properties • Provide pedestrian access in all the locations; provide wooden/metal planks • over the open trenches at each house to maintain the access. • Inform the affected local population 1-week in advance about the work schedule • Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. • Keep the site free from all unnecessary obstructions;	signages placed at subproject location			Manager, Visit by Environment Safeguard Team.		management plan. Traffic management plan has been prepared and submitted with SEMP for pipeline work. For pipeline work along the NH, traffic management plan has been updated. Safety Signage like work in progress, “Go Slow” Speed limit 20Km/hr is available with Speed breaker. Spaces for access between mounds of soil to maintained access to the houses / properties. Local people have been informed in advance. Near the house shoring has been done to protect the house. Surplus soil never stocked at congested area

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	• Coordinate with Traffic Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours						and it has been removed immediately or use for backfilling.
Generation of temporary employment and increase in local revenue	• Employ local labor force as far as possible • Comply with labor laws	Employment record	Checking of records	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC, PIU and PMU/PMC	Local people are engaged as far as possible.
Occupational hazards which can arise during work	• Comply with all national, state and local core labor laws Labour License, All Risk policy, and WC Policy. • Develop and implement site-specific occupational health and Site-specific occupational health and safety (OHS) Plan and Supplementary H & S plan for COVID 19 have been developed and implemented which included measures such as: (a) excluding public from the site; (b) maintaining social distancing for protection from COVID 19 infection; (c) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask, face mask and ear plugs; (d) OHS Training and COVID 19 awareness H & S training for all site personnel; (e) documented procedures to be followed for all site activities including follow of SOP for COVID 19 as developed for the project and H & S plan; and (f) documentation of work-related accidents;	• 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 • Personal protective equipment • Sign boards for	• Checking of records • Visual inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC; PIU and PMU/PMC	Being Complied. Site-specific Health and Safety (H&S) Plan include COVID19 mitigation plan submitted by contractor and approved by DSISC and PIU. Induction and tool box training arranged by contractor and first aid training arranged by DSISC. PPEs are available at site and PPEs are using by workers. Drinking water,

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	• Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; • Provide medical insurance coverage for workers; • Secure all installations from unauthorized intrusion and accident risks; • Provide supplies of potable drinking water; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • Provide health and safety orientation training including COVID 19 risk and mitigation to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; • Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; • Ensure moving equipment is outfitted with audible back-up alarms; • Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. • Disallow worker exposure to noise level	hazardous areas such as energized electrical devices and lines, service rooms					Oral Rehydration Syrup (ORS) and first aid box available at site and for medical emergency purpose ambulance available at sites. Medical Insurance arranged for the labourer. Medical tie up with health institute done and also health check-up done. Accident/ First Aid register is maintained at site, Sign boards found in all working site for electrical devices and lines, high voltage equipment, and areas for storage and disposal. Workers are using high visibility vests during working.

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	greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. • Standard Operating Procedure (SOP) for the project and Supplementary H & S plan for COVID 19 prepared which cover, o General instruction to follow to prevent the spread of COVID-19 in construction workplace o Detail (step-by-step) work procedure to getting the workplace ready under COVID-19 situation o Worksite prevention practice at work site, office, during meeting, travelling, etc. o Precaution taken at workmen habitat/ camp o Control measures taken for deploying new workmen at site o Use of PPEs: face mask – hand gloves, maintaining social distancing, disinfection, requirement of awareness covered under the H & S plan. (Separate H & S plan for COVID 19 as supplementary document developed and keep as standalone document to mitigate COVID 19 health risk)						
Health risks associated with AC pipes	• Leave AC pipes in-situ untouched	Asbestos cement materials	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction	DSISC Construction Management and Environmental Safeguard Team	Till date no asbestos cement material has been found on site

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					Manager and Environment Team of DSISC of operational sites.		
Traffic accidents and vehicle collision with pedestrians during material and waste transportation	• Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) • Enforce strict speed limit (20-30 kmph) for playing on unpaved roads, construction tracks • Night-time haulage will be by exception only, as approved by the PIU to minimise driving risk and disturbance to communities • Adopt standard and safe practices for micro tunnelling • Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions • All drivers will undergo safety and training • Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel • Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation • The period of time when the pipeline trench is left open will be minimized through careful planning • Control dust pollution – implement dust control measures as suggested under air quality section	Public grievance	Review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Work continued within fixed WTP campus. No pedestrian accident has been recorded till date. Barricading at NH116B has been observed for traffic management and it has showed in updated traffic management plan. Traffic management – placement of barricade and flag man complied Safety training provided All vehicle serviced regularly from authorized center. Access available for local public.

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	• Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Provide road signs and flag persons to warn of on-going trenching activities						
Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	• As far as possible located the camp site within the work sites; if any camp to be established outside these, then select a camp site away from residential areas (at least 100 m buffer shall be maintained) • Avoid tree cutting for setting up camp facilities • Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas • Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit • Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; • Consult PIU before locating project offices, sheds, and construction plants; • Minimize removal of vegetation and disallow cutting of trees • Ensure conditions of liability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far	• Water and sanitation facilities for employees • Housekeeping regular disposal of solid waste	Site inspection and review of documents	Construction camps	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PIU	Being Complied. Labour camp have completed near Bonvera for accommodation of 150 workmen with all basic facilities. Separate bathing and toilet facility has been provided. Drinking water has been provided Cooking and dining area has been provided with available cooking gas. Fire extinguisher available at camp First aid box arranged at labour camp. Snake detector has been installed at labour camp. Drainage system noted at camp

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	as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers • Camp should be protected from COVID 19 health risk. All Health and safety procedure to follow for operation of camp (H & S plan for COVID 19 will be used as ref. document) during stay, cooking, eating, use of toilet- common space etc. • Self- hygiene, regular disinfection of entire camp and toilet, maintaining of social distancing to be continued for protection from COVID 19 infection • Unknown person not allowed within the camp • Camp shall be provided with proper drainage, there shall not be any water accumulation • Maintenance of hygienic environment at staying area, cooking area and toilet • Provide drinking water, water for other uses, and sanitation facilities for employees • Prohibit employees from cutting of trees for firewood; contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed) • Train employees in the storage and handling of materials which can potentially cause soil contamination • Recover used oil and lubricants and reuse or remove from the site • Manage solid waste according to the following preference hierarchy: reuse,						site.

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	recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market • Remove all wreckage, rubbish, or temporary structures which are no longer required • At the completion of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve camp clearance and closure of work site						
There are no protected properties in the subproject sites. However, in case of chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	• Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site • Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. • In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts	Site inspection records	Site inspection and review of documents	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Safeguard Team.	Environment Specialist of DSISC and PMU/PMC	Not found any Archaeological site within the vicinity.
Unsatisfactory compliance to EMP	• Appointment of EHS Supervisor to ensure EMP implementation • Timely submission of monitoring reports including pictures	Appointment letter Monitoring records	Review of records	-	-	Environment Specialist of DSISC and PIU	Being Complied EHS officer already appointed for the package Monitoring report preparation continued.
Damage due to debris, spoils, excess construction materials	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and • All excavated roads shall be reinstated to	Stockpile Management Spoil Management Restoration of	Review of documents and site inspections	Project Locations	Daily visit by construction supervisor of DSISC. Weekly visit by	Environment Specialist of DSISC and PIU	Being Complied; Spoil Management Plan has been submitted as a

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	original condition. • All disrupted utilities restored • All affected structures rehabilitated/compensated • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the revegetation specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services. • Request PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.	sites			Construction Manager, Visit by Environment Safeguard Team.		part of SEMP. Spoil management plan updated along with updation of IEE

Table 13: Summary of Environmental Monitoring Activities for the Purba Medinipur Package WBDWSIP/DWW/ICB/EM/02/2018-19- Water Supply Distribution at Nandigram I and II Block

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
Design Phase							
Source sustainability and efficiency	(i) Gravity distribution system: designing the entire system to maintain optimal flow and terminal pressure, and optimizing the overall energy usage (ii)Implementation of a water quality surveillance program including development	• Design philosophy • Project QA/QC plan • Selection methodology for distribution	Document review and LOP Survey	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	• Pipe laying work continued at different zones of the blocks

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	of a laboratory as part of the project to ensure that supplied water meets the drinking water standards (iii)Minimizing water losses from pipelines by perfect jointing and alignments using appropriate techniques (iv) Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies	network					
Socio economic impact – loss fishery area	(i) Avoid using low-lying lands / ponds for construction of OHRs; alternative private lands may be explored within the vicinity; (ii)Review the applicability of West Bengal Inland Fisheries Act, 1984, whether the site falls under the definition of fisher area; obtained permission from Fisheries Department if required prior to start of construction	List of selected location for OHRs	Site survey	All OHR sites	Before Commencement of final design	Environment Specialist of DSISC and PMC	No ponds have been filled for construction work. *Balla* pilling is being used in case of water body crossing of pipeline
Tree cutting	(i) Minimize removal of trees by adopting to site condition and with appropriate layout design of OHRs within the sites (ii)Avoid cutting of trees by adopting suitable alignment changes as required during laying of pipelines; (iii)In unavoidable cases, obtain prior permission for tree cutting (iv)Plant and maintain 5 trees for each tree that is removed	• Tree felling requirement • Site layout plan • NOC – paper documents from line agency	Site survey and review of site layout/ pipeline alignment plan	All project locations	Before commencement of final design	Environment Specialist of DSISC; PIU and PMC	Being Complied, From Bhutar More to Garchakraberia tree felling NOC has been obtained from forest department for 63 no trees. Tree felling has been done. 5000 tree plantations have been done at Nandigram -I & II by contractor.
Pre-Construction Phase							
Telephone lines, electric	(i) Identify and include locations and operators of these utilities in the detailed	• List of affected utilities if any and	• Observation And	Specific project	Before commenceme	Environment Specialist of	Being Complied at Monoharpur,

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
poles and wires, water lines within proposed project area	design documents to prevent unnecessary disruption of services during construction phase; and (ii) Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. (iii) Require contractors to prepare spoils (waste) management plan and traffic management plan	operators • Bid document to include requirement for a contingency plan for service interruptions (example provision of water if disruption is more than 24 hours), waste management plan and traffic management plan	• document checking	location	nt of construction	DSISC; PIU and PMC	Narasinghapur Jalpai OHR site electric pole has been shifted. At all Pipe line site overhead wire has been shifted. A contingency plan has been prepaid for avoiding unnecessary disruption of services during construction. Spoil and Traffic Management plan prepared and enclosed in SEMP
Conflicts with local community; disruption to traffic flow and sensitive receptors	(i) Prioritize areas within or nearest possible vacant space in the project location; (ii) If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; (iii) Do not consider residential areas; (iv) Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. (v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at lPurba 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive	• List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas • Written consent of landowner/s (not lessee/s)	• Site observation • Review of documents • Grievance Register	Specific project location	Before commencement of final design and commencement of construction	Environment Specialist of DSISC; PIU and PMC	Being Complied No as such conflict. Sludge from pilling work has been disposed at designated place after taking written consent from concerned land owner. Excess soil generation is very less and used for backfilling, filling low laying land & landscaping.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	locations like settlements, ponds/lakes or other water bodies.						
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	(i) Obtain construction materials only from government approved quarries with prior approval of PIU; (ii) PIU to review, and ensure that proposed quarry sources have all necessary clearances/ permissions in place prior to approval (iii) Contractor to submit to PIU on a monthly basis documentation on material obtained from each source (quarry/ borrow pit) (iv) Avoid creation of new borrow areas, quarries etc., for the project; if unavoidable, contractor to obtain all clearances and permissions as required under law, including Environmental Clearance prior to approval by PIU	List of approved quarry sites and sources of materials	• Checking of records • Visual inspection of sites	Quarries and material source areas	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	DSISC Construction Management and Environmental Safeguard Team	Being Complied. All Materials procured from licensed Vendors. Extraction of materials are in compliant with environmental regulation of the country .
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	(i) Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. (ii) Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction (iii) Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. (iv) Include in detailed design drawings and documents all conditions and provisions if necessary	List of applicable legislation	Checking of documents	All project locations	Before commencement of construction	DSISC Construction Management and Environmental Safeguard Team	Being Complied Till date tree cutting completed after receiving of NOC. Further NOC will be obtained as per requirement 15000 tree plantations have been done by contractor. at Nandigram Certificate and pictures have been attached. In **Appendix 4.**
Health risk due to exposure to asbestos materials	(i) Obtain details on location of asbestos cement materials (ii) Lay the new pipes carefully to avoid encountering AC pipes	Detailed construction drawings showing alignment of AC pipes	Site inspection	Specific project location	Daily visit by construction supervisor of DSISC.	DSISC Construction Management and	Till date no rubbish containing asbestos cement has been found

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	(ii) Leave the AC pipes undisturbed in the ground.				Weekly visit by Construction Manager and Environment Team of DSISC of operational sites.	Environmental Safeguard Team	AC pipe is not using in this project.
Construction Phase							
Irreversible impact to the environment, workers, and community	Project manager and all key workers have undergone training on EMP implementation including spoils/waste management, Standard Operating Procedures (SOP) for construction works; Occupational Health and Safety (OHS) including COVID 19 H & S awareness, core labour laws, applicable environmental laws, etc.	Induction and Tool box training on daily basis. Awareness training on OCVID19 pandemic.	Review of training records and site inspection	Project locations		Environment Specialist of DSISC: PIU and PMC	Being Complied; Induction Training, Pep talk, awareness training is arranged by contractor on regular basis. First aid training is arranged by DSISC.
Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide,	**For all construction works** • Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009" • Damp down the soil and any stockpiled material on site by water sprinkling; • Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; • Provide a dust screen/high compound wall around the construction sites (OHRs) • Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry • Control dust generation while unloading	• Location of stockpiles • Monitoring data-PM10, PM2.5, SO2, NO2, CO • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Cover materials	Site inspection	Project locations Air monitoring as per selected sites in reference to SEMP.	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff Air-monitoring schedule as per SEMP	Environment Specialist of DSISC; PIU and PMC	Being Complied. • Water sprinkling has not been done at pipe laying sites as per requirement. • Water sprinkling is noted at different OHSR & GLSR site. • Water sprinkling is noted at WTP site. • Used tarpaulins and plastic for covering construction material.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area • Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition • Apply water prior to levelling or any other earth moving activity to keep the soil moist throughout the process • Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation • Ensure that all the construction equipment and machineries are fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate **Pipeline works** • Barricade the construction area • Initiate site clearance and excavation work only after barricading of the site is done • Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.,), to the barricaded area • Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area • Undertake the work section wise • Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done. • Remove the excavated soil of first section to the disposal site; as the work				Last monitoring conducted on April 2025		• During construction ambient air, noise, soil and water monitoring has been completed as per IEE. and Scanned test certificates available with DSISC. • PUC certificate of vehicle obtained and copy of PUC is available at DSISC office. • Section wise work has been conducted. • Road restoration and back filling work is continued. • Caution tape noted at work site, improvement is required. • Safety signage found in all working site • Caution Board & Emergency contact no. board should be replaced with

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. • Backfilled trench at any completed section after removal of barricading will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.						new one in some work site. • Excavated soil reused in backfilling & landscaping work. • Excess soil has been disposed properly.
Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can contaminate nearby surface water quality. Ponding of water in the pits / foundation excavations	• All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; • Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; • Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling • Dispose any wastes generated by construction activities in designated sites; and • Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area	Areas for stock piles, storage of fuels and lubricants and waste materials. Entry routes of pollutant in nearby water bodies.	Site inspection	All project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC: PIU and PMC	Being complied • All excess spoil, utilized for backfilling and for filling up of low laying sites. • Sludge from pilling is being deposited to land after taking NOC from concerned land owner • No sludge has been deposited nearby waterbody • Surface and ground water quality has been monitored as per EMP • Generation of construction waste is very less. Generated

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	• Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds • Consider safety aspects related to pit collapse due to accumulation of water • Surface and ground water quality have been monitored according to the Environmental Management Plan (EMP) and after collection of representative samples from different work sites						waste disposed in designated sites. • Fuel and lubricant not stored near to water bodies.
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	• Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; • Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and • Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity • Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals. • Noise level have been monitored at different work locations	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment • Monitoring data	• Checking of records • Visual inspection of sites	All project locations Noise-monitoring as per selected sites in ref. to SEMP	Noise monitoring conducted as per SEMP. Last monitoring conducted on April 2025	Environment Specialist of DSISC; PIU and PMC	Being Complied. No such noise generating problem near the project location. Pre-construction and during construction monitoring done. Monitoring will be continued as per IEE. Pre construction and during construction results are available at DSISC office and disclosed in the project website. There is no building nearby working area which is under risk by earth moving activities.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
							Public consultation is a continuous process and is being done regularly to identify and address the key issues.
Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	• Prepare and implement a Construction Waste Management Plan • As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., • Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; • Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed of to approved designated areas immediately; • If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses • Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market • Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/West Bengal Pollution Control	• Waste Management List and Spoil Management Plan • Stockpile Management • Complaints from Sensitive receptors • PMU/PIU/DSISC to report in writing that the necessary environmental restoration work has been done	• Checking of records • Visual • inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC: PIU and PMC	Complied. Debris and excess soils are used to fill the low laying land and also used for construction of approach road. No hazardous waste is generated. Separate fuel storage available at OHR site. At labour camp dustbins are available. Domestic solid waste properly segregated at Labour camp. Road restoration work is done at pipe laying site after pipe laying. Road restoration and back filling done. Contractor is not burning any waste. Bins have been provided in all working site as well as Camp site.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	Board (WBPCB); • Prohibit burning of construction and/or domestic waste; • Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. • Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate						
Disruption of service and damage to existing infrastructure at specified project location	• Prepare a list of affected utilities and operators if any; • Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	List of affected utilities if any and operators.	Observation and document checking	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PIU	Being Complied. Contingency plan has been developed. Electrical pole and high-tension line have been shifted for execution of work at some of the working sites. As per requirement. consultation with utility dept. as and when required.
Loss of vegetation and tree cover	• Minimize removal of vegetation and disallow cutting of trees, by adopting best site layout and pipeline alignments • If tree-removal will be required, obtain tree-cutting permit and • Plant 5 native trees for every one that is removed.	Tree felling requirement and afforestation after final design	• Checking of records • Visual • inspection of sites	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and	Environment Specialist of DSISC and PMC	Tree felling already done after receive of NOC

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
					Support Environment staff		
Traffic problems and conflicts near project locations and haul road	**Hauling (material, waste/debris and equipment) activities** • Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites • Schedule transport and hauling activities during non-peak hours; • Locate entry and exit points in areas where there is low potential for traffic congestion; • Drive vehicles in a considerate manner • Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. **Pipeline works** • Confine work areas along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Provide barricading; avoid material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required • Leave spaces for access between mounds of soil to maintain access to the houses / properties • Provide pedestrian access in all the locations; provide wooden/metal planks over the open trenches at each house to maintain the access. • Inform the affected local population 1-week in advance about the work schedule	Traffic Management Plan Project information board. Safety signages placed at subproject locations.	Site visit and document review	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC; PIU and PMC	Complied Traffic management plan has been already prepared and maintained. At some of the place barricade observed during pipe laying work and its mostly complied. All pipe transport during non- peak hours. All working site is at village area and there is no any such traffic congestion. Safety signage available at OHRs, GLSRs and pipeline laying sites. Project information board has been displayed at OHR sites. Replacement should be needed at few locations Adequate walking path is available at all pipelaying site.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	• Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum. • Keep the site free from all unnecessary obstructions; • Coordinate with Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours						
Generation of temporary employment and increase in local revenue	• Employ local labor force as far as possible • Comply with labor laws	Employment record	Checking of records	Project locations		Environment Specialist of DSISC and PMC	Complied. Engagement of local labour as far as possible.
Occupational hazards which can arise during work	• Comply with all national, state and local core labor law. • Develop and implement site-specific occupational health and Site-specific occupational health and safety (OHS) Plan and Supplementary H & S plan for COVID 19 have been developed and implemented which included measures such as: (a) excluding public from the site; (b) maintaining social distancing for protection from COVID 19 infection; (c) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask, face mask and ear plugs; (d) OHS Training and COVID 19 awareness H & S training for all site personnel; (e) documented procedures to be followed for all site activities including follow of SOP for COVID 19 as developed for the project and H & S plan; and (f) documentation of work-related accidents;	• Site-specific Health and Safety (H&S) Plan • Equipped first-aid • stations; • Medical insurance coverage for workers • Supplies of potable drinking water; • Record of H&S Orientation trainings • Personal protective Equipment • Daily worker health check-up before commencement of work due to COVID19	• Checking of records • Visual inspection	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Being Complied Workman compensation insurance for workers have been obtained. First aid box available at all work sites. Toilet facility is noted at OHSR & GLSR sites Potable drinking water is available at working sites. Medical tie-up letter is available and medical check- up done. Moving equipment is outfitted with audible back-up

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	• Qualified first-aiders have been provided at all times. Equipped first-aid stations (with sufficient disinfectant) are easily accessible throughout the site; • Availability of Ambulance at work site; • WC policy has been received by the contractor of the package (Appendix 15); • Secure all installations from unauthorized intrusion and accident risks; • Provide supplies of potable drinking water; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • Provide health and safety orientation training including COVID 19 risk and mitigation to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; • Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; • Ensured the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; • Ensured moving equipment is outfitted with audible back-up alarms; • Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and						alarms available. Ambulance availability is noted at working site. Separate eating area is noted at lobour camp. High visibility vests have provided to worker during heavy equipment operating areas.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	easily understood by workers, visitors, and the general public as appropriate; • Standard Operating Procedure (SOP) for the project and Supplementary H & S plan for COVID 19 prepared which cover, o General instruction to follow to prevent the spread of COVID-19 in construction workplace o Detail (step-by-step) work procedure to getting the workplace ready under COVID-19 situation o Worksite prevention practice at work site, office, during meeting, travelling, etc. o Precaution taken at workmen habitat/ camp o Control measures taken for deploying new workmen at site o Use of PPEs: face mask – hand gloves, maintaining social distancing, disinfection, requirement of awareness covered under the H & S plan. (Separate H & S plan for COVID 19 as supplementary document developed and keep as standalone document to mitigate COVID 19 health risk)						
Health risks associated with AC pipes	• Leave AC pipes in-situ untouched	Decommissioned AC Pipes	Site inspection	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and	Environment Specialist of DSISC and PMC	Complied. No AC pipe is being used.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
					Support Environment staff		
Traffic accidents and vehicle collision with pedestrians during material and waste transportation	• Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) • Enforce strict speed limit (20-30 kph) for playing on unpaved roads, construction tracks • Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities • Adopt standard and safe practices for micro tunnelling • Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions • All drivers will undergo safety and training • Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel • Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation • The period of time when the pipeline trench is left open will be minimized through careful planning • Control dust pollution – implement dust control measures as suggested under air quality section • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by	Accident register	Review of documents	Project locations	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	No pedestrian accident has been recorded till date. Pipe line laying work continued. Barricades and caution tapes in work areas, in particular along the pipelines were found. TMP needs to be followed. Flagman is using at all pipeline site as per requirement. Speed limit maintained at all working site All drivers have been undergone safety training. Road safety workshop also been arranged by contractor. Training has been arranged by contractor. Documents are available with DSISC.

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	equipment malfunction or premature failure. • Provide road signs and flag persons to warn of on-going trenching activities.						
Impact on work campus and working sites. Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	• As far as possible located the camp site within the work sites; if any camp to be established outside these, then select a camp site away from residential areas (at least 100 m buffer shall be maintained) • Avoid tree cutting for setting up camp facilities • Camp site shall not be located near (100 m) water bodies, flood plains flood prone/low lying areas, or any ecologically, socially, archeologically sensitive areas • Separate the workers living areas and material storage areas clearly with a fencing and separate entry and exit • Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; • Consult PIU before locating project offices, sheds, and construction plants; • Minimize removal of vegetation and disallow cutting of trees • Ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as	• Water and sanitation facilities for employees. • Regular disposal of solid waste • Proper sanitization of work place • Regular disinfection of toilet	Site inspection and review of documents	Construction camp	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager, Visit by Environment Specialist and Support Environment staff	Environment Specialist of DSISC and PMC	Complied Construction of workman camp has completed. It constructed at Thakurchak. 50 labours can be stayed at the camp. Separate bathing and toilet facility has been provided. Drinking water has been provided. Cooking and dining area has been arranged. Fire extinguisher available at camp. First aid box arranged at labour camp. Snake detector has been installed at labour camp. CCTV and separate CCTV room has been arranged at labor camp. Drainage system noted at camp site

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	accommodation for workers • Camp should be protected from COVID 19 health risk. All Health and safety procedure to follow for operation of camp (H & S plan for COVID 19 will be used as ref. document) during stay, cooking, eating, use of toilet- common space etc. • Self- hygiene, regular disinfection of entire camp and toilet, maintaining of social distancing to be continued for protection from COVID 19 infection • Unknown person not allowed within the camp • Camp shall be provided with proper drainage, there shall not be any water accumulation • Maintenance of hygienic environment at staying area, cooking area and toilet • Provide drinking water, water for other uses, and sanitation facilities for employees • Prohibit employees from cutting of trees for firewood; contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed) • Train employees in the storage and handling of materials which can potentially cause soil contamination • Recover used oil and lubricants and reuse or remove from the site • Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market • Remove all wreckage, rubbish, or						

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	temporary structures which are no longer required • At the completion of work, camp area shall be cleaned and restored to pre-project conditions, and submit report to PIU; PIU to review and approve camp clearance and closure of work site						
There are no protected properties in the subproject sites. However, in case of chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	• Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site • Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. • In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts	• Utility survey • Topographical survey	Review of documents	Project locations		Environment Specialist of DSISC and PMC	Being Complied No archeological structure observed within the working sites.
Unsatisfactory compliance to EMP	• Appointment of Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation • Timely submission of monitoring reports including pictures	• Appointment letter • Monitoring records	Review of records				Safety person appointed from contractor end, Induction training conducted. Monitoring report submitted on monthly basis.
Damage due to debris, spoils, excess construction materials	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and • All excavated roads shall be reinstated to original condition. • All disrupted utilities restored • All affected structures rehabilitated/	• Stockpile Management • Spoil Management • Restoration of sites	Review of documents and site inspection	Project location	Daily visit by construction supervisor of DSISC. Weekly visit by Construction Manager,	Environment Specialist of DSISC and PMC	Spoil Management Plan has been submitted for the pipe laying work. No utilities affected during pipe laying at village roads Road restoration

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring	Compliance Status/ Explanation
	compensated • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the revegetation specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services. • Request PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.				Visit by Environment Specialist and Support Environment staff		done or continued at pipe laying sites Instruction given to contractor for restoration of roads to pre-project conditions before acceptance of work.

D. Site Specific Issues and Present Compliance Status

North 24 pgs

35. Few site- specific issues and compliance status as recorded during report period (November 2024 to April 2025) are given below.

- ***Posters in local language at working sites-WTP: GRM and Executive Summary of IEE***

36. After several site visit and intimation, display of GRM and Executive Summary of IEE in local language (Bengali) has been displayed at all working sites of package 01 such as WTP, BS-1, Haroa and Bhangar-II GLSR.

Fig: Executive Summary of IEE in local language- WTP

Fig: GRM in local language-BS-1

Fig: Executive Summary of IEE & GRM in local language- Haroa GLSR

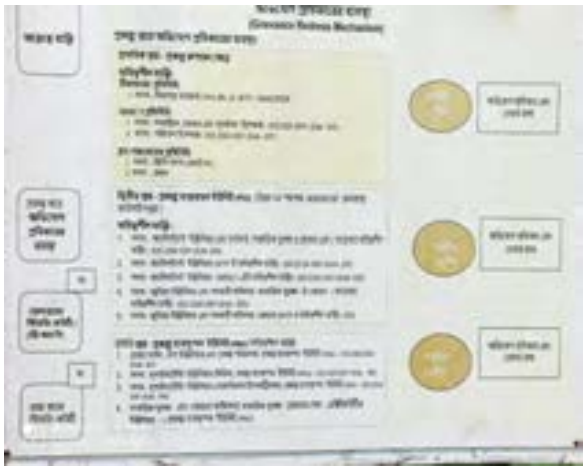


Fig: GRM in local language-Bhangar-II GLSR

o ***Camp Housekeeping and Kitchen Amenities in subproject locations-WTP***

- Damaged camp shed and housekeeping are major issues reported during this period mainly at WTP and Bhangar-II GLSR, however, after persistent intervention from Environment Safeguard Team these aspects were improved at WTP and Haroa GLSR. LPG cylinders are used at all the work locations under Package 1 (i.e. BS-1, Haroa and Bhangar-II GLSR) except for some contractors at WTP.

Fig: Good housekeeping and maintained camp-WTP

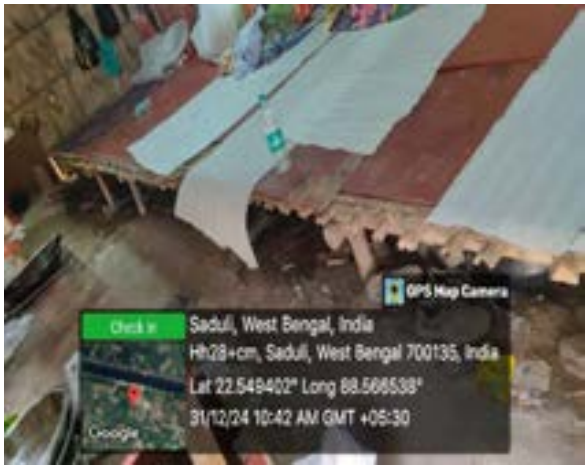


Fig: Good housekeeping and maintained camp- Bhangar-II GLSR

Fig: LPG used for cooking inside the labor hutment at Bhangar GLSR.

Fig: LPG provison in separate kitchen area-Haroa GLSR

o ***PPE, Electrical Safety, barricading and First aid usage at WTP work sites***

37. Use of PPEs, safety measures while pipe laying activity were sometime found missing, however safety gears and proper barricading were reported after repeated visit of work sites.

Fig: Partial use of PPEs in WTP site

Fig: Partially Complied of electrical safety at BS1 Pumping station

Fig: Satisfactory first aid box with first aid materials –Haroa GLSR site

Fig: Barricading during Pipe laying near Canal Location, New Town

- ***Site posters including GRM & IEE Executive Summary in Bhangar-II Block***

38. Placement of site posters such as safety signage, project information board, emergency contact number, etc. are not managed properly at the work sites, also GRM & IEE Executive Summary in local language were not provided at sites. However, situation has significantly improved after repeated interventions from Environment Safeguard Team. All posters including GRM & IEE statement is now available at all working sites in Bhangar-II block.

Fig: Bengali GRM & IEE statement at zone 8 OHR- Bhangar-II Block

Fig: All posters at zone 9, OHR- Bhangar-II Block

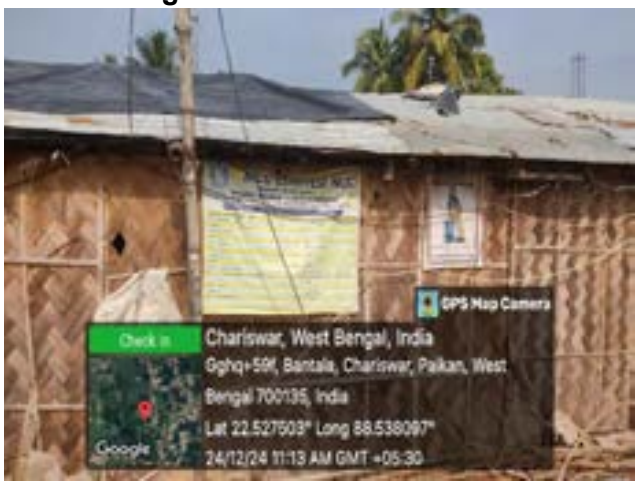


Fig: Partially improved Emergency contact no. safety awareness poster at zone 3 OHR-Bhangar-II Block

Fig: Some posters at zone 11 OHR-Bhangar-II Block

- ***Replacement of toilet at Haroa & Bhangar-II block***

39. Replacement of single pit toilet was a long pending issue in both Haroa & Bhangar-II block. In Haroa block SCADA building has been constructed in all the 20 work zones. The labours are utilizing the toilets housed in these SCADA buildings having dedicated septic tank. After strict instruction from PIU and several observations in Site Order Books by the Safeguard Team, toilets with double pits have been provided as per Swacch Bharat Abhiyaan guideline in all working sites Bhangar-II block (i.e. OHSR sites at zone 3,5,9,8,11 and 14).

Fig: Newly build twin pit toilet at zone 3 OHR Bhangar-II block

Fig: Twin pit toilet at zone 8 OHR Bhangar-II block

Fig: Twin pit toilet at zone 5 OHR Bhangar-II block

Fig: Twin pit toilet at zone 5 OHR Bhangar-II block

- ***Safety gears at working sites of Haroa & Bhangar-II block***

40. While construction work is almost finished at 20 OHSRs of Haroa Block except some canal crossing and jointing work for pipelines, however construction is in full swing in Bhangar-II block. Non-use of Helmet, reflective jacket, safety belt, shoes, hand gloves were regularly seen in both pipeline works of Haroa and in OHSR work of Bhangar-II block, however after repetitive instructions from Safeguard Team, situation has improved in all working location of both blocks.

Fig: Zone 8 Pipeline – Use of Partial PPEs in pipe laying work-Bhangar II Block

Fig:, Zone 3 OHR – Working with PPEs in OHSR foundation work-Bhangar-II Block

Fig: Zone 9 OHSR – Working with PPEs in piling work-Bhangar-II Block

Fig: Zone 8 OHSR – Working with partial PPEs in casting work at OHSR construction - Bhangar-II Block

- ***Camp shed arrangement & housekeeping at Bhangar-II Block***

41. Use of plastic sheet was seen in several camps of OHSRs during earlier visits and housekeeping often not well maintained at camp area of Bhangar-II block. After several site visit and strict comments plastic sheet covers have been replaced and housekeeping have improved in most labour camps. Pictorial evidence of the same are given below.

Fig: Zone 3 OHR- Camp shed replaced with metal sheet- Bhangar-II Block

Fig: Zone 5 OHR – Housekeeping is partially improved at working area- Bhangar-II Block

Fig: Zone 8 OHR – Camp shed replaced with metal sheet- Bhangar-II Block

Fig: Zone 9 OHR –Good housekeeping in camp-Bhangar-II Block

- ***Fire extinguisher and Electrical safety in Bhangar-II Block***

42. Timely refilling of fire extinguisher was a long pending issue observed during site visit in most of the OHR sites at Bhangar-II Block. The situation has improved, however after repeated intimation from Safeguard Team, placement of fire extinguisher has been done at all OHRs. Electrical connection and switch boards in camp and working areas have also improved. Some of the pictures from sites are given below.

Fig: Filled fire extingusher in camp area at Zone 3 OHR – Bhanagr-II block

Fig: Replaced fire exitungusher at zone 8 – OHR Bhangar-II block

Fig: Damage main switch at zone 9-OHR Bhangar-II block

Fig: Proper electrical connection at zone 3-OHR Bhangar-II block

- Kitchen provision and First Aid amenities in Bhangar-II block

43. Separate kitchen has been provided in most of the sites but provision of LPG yet not arranged at all sites. Through continuous intimations, LPG is now available at most sites except Zone 8. First Aid box arranged at all working sites with proper listing and required materials.

Fig: LPG facility required in Zone 8-OHR Bhangar-II Block

Fig: LPG connection at zone 9-OHR Bhangar-II block

Fig: First Aid box with list at zone 8 -OHR Bhangar-II block

Fig: Listed filled First Aid box at zone 05 OHR Bhnagar-II block

Bankura

44. Few site- specific issues and compliance status as recorded during report period are discussed below.

- ***Provision of project board, barricading of excavated area, separate scrap yard, worker's camp Improvement of use of PPEs.***

45. After continuous follow up by Environment safeguard team proper barricading at excavated work area done. Also, use of PPEs by workers is improved. The labor camp at BK/01, near the WTP needs to be improved.

Before: Observed at BK/01 there is no safety kit of worker

After: Immediately they provide safety kit to the worker

Before- Fire extinguisher without shade (Package BK/02A)

After- They have provide shade to the fire extinguisher. (Package BK/02A)

Condition of worker's toilet at intake/ WTP site(package BK/01) needs to be improved.

Labour camp is in same condition for the long time, needs to be improve immediately.

46. At BK/2A scrap yard and construction material was scattered,

- ***Proper Housekeeping at work site, worker staying area***

Before: Construction material was scattered condition at site. (package BK/2A)

After: Availability of proper housekeeping facility at BK/02A (Raghunathpur) site

Worker's toilet access needs to be cleaned

- ***Proper Toilet Facility***

47. Toilet facilities are provided at various construction sites after necessary instruction.

There is no door available on the toilet at Sirmonipur (package BK/2A)

Before: Proper toilet facility was not provided, there was no water facility in Package BK/2B

Before: Observed insufficient number of display board BK/2B

After: Sufficient number of display board arranged at BK/2B

Project information board location was not proper place at Package BK/02B

Project information Board has been provided place at proper location, at Package BK/02B

- ***Fire extinguisher***

Before: Fire extinguisher near the construction area was without shade (Package BK/2B)

After: New Fire extinguisher installed near the construction area (Package BK/2B)

Before: Fire extinguisher near the construction area (Package BK/02A)

After: Repair of the fire extinguisher shed has been noted

Purba Medinipur

Package: EM/01

- ***Unwanted materials have been found in the working area.***

48. At WTP site unwanted materials have been found at the working area. Unwanted materials removed from the access later on.

Before – 11.03.2025

After – 12.03.2025

- ***Body earthing not provided in welding machine. Body earthing to be provided to protect workmen for earth leakage***

49. Body earthing not provided in welding machine. After necessary instruction Body earthing is provided later on.

Before – 19.03.2025

After – 20.03.2025

50. Edge protection not provided in working platform. edge protection provided later on.

Before – 19.03.2025

After – 20.03.2025

51. Unwanted materials were found in the access area. Later all unwanted materials were removed from the access.


Before – 31.03.2025 **After – 01.04.2025**

- ***Handrail not found in stair Case***

52. Handrail not found in stair case. Handrail provided later.


Before – 09.04.2025 **After – 10.04.2025**

Package: EM/02

- **Scaffolding material has been kept at site improper way**

53. Scaffolding material has been kept at site improper way. After necessary instruction it was improved.


Before-16.04.2025 **After-17.04.2025**

58. Pipe laying work is going on at road side but there is no signal man at site. Later after

necessary instruction signal man arranged at work area.

Before-21.04.2025

After-22.04.2025

55. Worker is working with metal cutting machine without eye and face protection. Later, maintain eye protection at the time of working with reinforcement cutting.

Before-24.04.2025

After-25.04.2025

56. Based on the foregoing observations, findings and environmental monitoring carried out from November 2024, it may be concluded that the subprojects have been implemented in compliance of the required environmental safeguards. Overall compliance level is shown in **Table 14** below.

Table 14: Overall Compliance with Environmental Management Plan

No.	Sub-project Name	EMP Part of Contract Documents (Y/N)	EMP Being Implemented (Y/N)	Status of Implementation (Excellent/Satisfactory / Partially Satisfactory, Below Satisfactory)	Action Proposed and Additional Measures Required
North 24 Pgs					
1	**Package - WBDWSIP/DWW/NCB/N24P/01/2017-18: Bulk water supply**	Y	Y	Satisfactory	• Further Improvement is required for placement of barricade, caution tape and caution board at all work sites
2	**Package - WBDWSIP/DWW/NCB/N24P/02A/2017-18: Haroa Block**	Y	Y	Satisfactory	• Further improvement is required for use of PPEs by the workers
3	**Package - WBDWSIP/DWW/NCB/N24P/02B/2017-18: Bhangar - II Block**	Y	Y	Satisfactory	• Improvement of housekeeping at work sites and camp • Further improvement is required for use of PPEs by the workers
Bankura					
4	**Package - WBDWSIP/DWW/NCB/BK/01/2017-18- Bulk water supply Indpur and Taldangra**	Y	Y	Partially Satisfactory	• Safety signage board needs to be placed at all locations • Complete use of PPEs by the workers • Barricade needs to be placed properly at all work locations • Improvement of labour camp.
5	**Package - WBDWSIP/DWW/NCB/ BK/02A/2018-19- Water supply distribution Indpur block**	Y	Y	Satisfactory	• Maintained toilet facility at all active work sites • Availability of display board, GRM board at all running sites
6	**Package - WBDWSIP/DWW/NCB/BK/02B/2018-19- Water supply distribution Taldangra block**	Y	Y	Satisfactory	• Maintained toilet facility at all active work sites • Availability of display board, GRM board at all running sites
7	**Package - WBDWSIP/DWW/NCB/BK/03/2018-19- Bulk water supply Mejhia and Gangajalghati Blocks**	Y	Y	Satisfactory	• Placement of more safety signage and caution board at work site

No.	Sub-project Name	EMP Part of Contract Documents (Y/N)	EMP Being Implemented (Y/N)	Status of Implementation (Excellent/Satisfactory / Partially Satisfactory, Below Satisfactory)	Action Proposed and Additional Measures Required
8	**Package - WBDWSIP/DWW/NCB/BK/04/2018-19 Water supply distribution Mejhia and Gangajalghati Blocks**	Y	Y	Satisfactory	• At all sites safety signage should be sufficient and in local language • At all running sites facility of toilet wit available water
Purba Medinipur					
9	**Package - WBDWSIP/DWW/ICB/EM/01/2018-19 – Bulk water supply**	Y	Y	Satisfactory	• Placement of sufficient caution board, barricading at pipelaying site
10	**Package - WBDWSIP/DWW/ICB/EM/02/2018-19- Water supply distribution Nandigram I and II blocks**	Y	Y	Satisfactory	• Replacement of caution board, emergency contact no. board at few locations • Barricading improved at most of the sites. Further improvement should be done

E. Grievance Redressal Mechanism

57. A common Grievance redressal mechanism (GRM) is placed to address social, environmental, or any other project and/or subproject related grievances. The GRM has been developed in consultation with stakeholders. A public awareness campaign conducted to ensure that awareness of the project and its grievance redress procedures is generated. The campaign ensured that the poor, vulnerable, and others are made aware of grievance redress procedures and entitlements according to the project entitlement matrix, and PMU and concerned PIUs responsible for addressing their grievances.

58. GRM consists of the following three tiers, one tier at project level and two beyond project level, as shown in **Figure 8**. Each tier identifies the persons responsible for addressing grievances and provides a time limit for this.

- For the project level GRM, a Grievance Redress Cell established at PIU; the safeguards officers (Assistant Engineer and Junior Engineer of PIU) of the ESSU PIU, supported by the social safeguards specialist of DSICS is responsible for conducting periodic community meetings with affected communities to understand their concerns and help them through the process of grievance redressal including translating the complaints into Bengali or English, recording and registering grievances of non-literate affected persons and explaining the process of grievance redress mechanism.

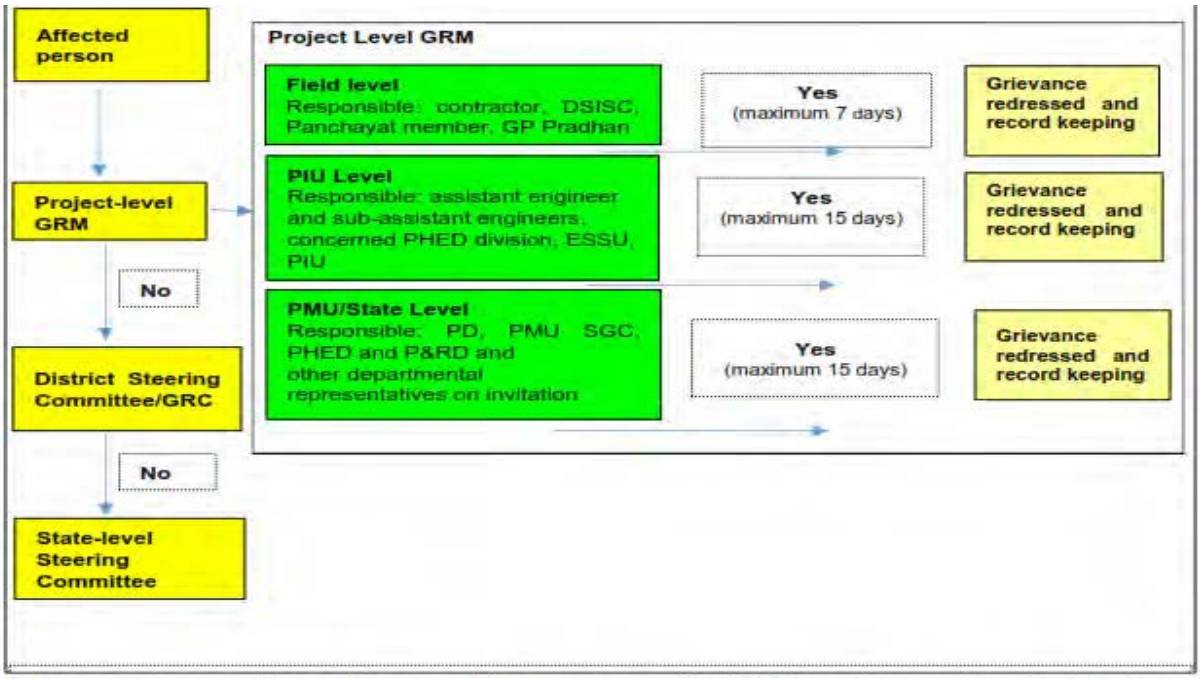
- All expedient and minor grievances is resolved at field level; should the PIU fail to resolve any grievance within the stipulated time period, the PMU will be

consulted and suggested actions by PMU taken by PIU with DSISC support, within specified time. PIU is also be responsible for follow-through for each grievance, periodic information dissemination to complainants on the status of their grievance and recording their feedback (satisfaction/dissatisfaction and suggestions). In the event that certain grievances cannot be resolved at project level, they will be referred to the District Steering Committee (DSC), which will also act as grievance redress committee (GRC), particularly in matters related to land purchase/acquisition, payment of compensation, environmental pollution etc. Any higher than district level inter-departmental coordination or grievance redress required will be referred to the state level Steering Committee.

59. The GRM aims to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. All grievances – major or minor, is registered. In case of grievances that are immediate and urgent in the perception of the complainant, the contractor, and supervision personnel from the PIU supported by DSISC will try to successfully resolve them in consultation with the Member, Panchayat and the Gram Panchayat Pradhan. In case of larger issues, they will seek the advice and assistance of the Superintending Engineer PIU. Grievances not redressed through this process within/at the project level within stipulated time period will be referred to the DSC/GRC.

60. The DSC set up to monitor project implementation in each district. In its role as a GRC, the DSC will meet every month (if there are pending, registered grievances), determine the merit of each grievance, and resolve grievances within specified time upon receiving the complaint-failing which the grievance will be addressed by the state-level steering committee. The steering committee will resolve escalated/unresolved grievances received. Grievances remaining unresolved by steering committee may be referred by affected persons to appropriate courts of law. The GRC continue to function throughout the project duration.

61. 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.



DSISC = design, supervision, and implementation support consultant; ESSU = environmental and social safeguards unit of the project implementation unit, GRC = grievance redress committee; GRM = grievance redress mechanism, PIU= project implementation unit, P&RD = Panchayat and Rural Development; PMU = project management unit, PHED = public health engineering department; SGC = safeguards and gender cell of the project management unit.

Figure 8: Grievance Redress Mechanism

Composition of the Grievance Redress Committee

62. The DSC, acting as GRC have District Magistrate (Chairperson), Superintending Engineer, PIU as Member Secretary, Additional Executive Officer, Zilla Parishad, Assistant (Social and Environmental) Safeguard Officers of the Environment and Social Safeguard Units (ESSU) of the PIU, Institutional Support and Capacity Building Officer, PIU, Block Development Officers from respective blocks, and representatives from the affected village panchayat and / or community, if any, eminent citizens, CBOs and NGOs.

63. The DSC/GRC must have a minimum of two women members. In case of any indigenous people impacts in future subprojects, the DSC/GRC must have representation of the affected indigenous people community, including at least one female indigenous person, the chief of the tribe or a member of the tribal council as traditional arbitrator (to ensure that traditional grievance redress systems are integrated) and an NGO working with indigenous people groups.

64. The State level Steering Committee include Chief Secretary, as chair, Principal Secretary/Additional Chief Secretary, PHED, Principal Secretary, Panchayat and Rural Development, Principal Secretary, Finance, Principal Secretary, Irrigation and Waterways Development Department, Principal Secretary, Public Works Department, Engineering in Chief, PHED, Member Secretary, and Others as invitees.

Areas of Jurisdiction

65. The areas of jurisdiction of the district level GRC, headed by the District Magistrate, will be (i) all locations or sites within the district where subproject facilities are proposed or being implemented, or (ii) their areas of influence within the district. The state-level steering committee

will have jurisdictional authority across the state (i.e., areas of influence of subproject facilities beyond district boundaries, if any).

Consultation Arrangements

66. Consultations include regular group meetings and discussions by the social safeguard personnel of DSISC and PIUs with affected persons, at least twice during resettlement plan preparation. During the first year of project implementation, such meetings took place on a quarterly basis, while in subsequent years they will be held at least twice a year. The consultation arrangements thus envisaged are intended to address both general and/or specific individual grievances through a participatory approach. The consultative process is meant to be flexible to provide timely mitigation of grievances of the affected persons.

Recordkeeping

67. Records 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 affected and outcome will be kept by PIU (with the support of DSISC) and submitted to PMU

Information Dissemination Methods of the Grievance Redress Mechanism

68. The PIU, assisted by DSISC responsible for information dissemination to affected persons on grievance redressal procedure. Gram Panchayat/coverage area/affected area-wide public awareness campaigns ensure that awareness on grievance redress procedures is generated through the consultation and participation plan. Public awareness campaign will be conducted to ensure that awareness on the project and its grievance redress procedures is generated. The PIU safeguard officers (environment and social) assisted by DSISC safeguards specialists with information/collateral/awareness material etc. and in conducting project awareness campaigns. The campaign ensures that the poor, vulnerable and others are made aware of grievance redress procedures and entitlements per agreed entitlement matrix including whom to contact and when, where/ how to register grievance, various stages of grievance redress process, time likely to be taken for redressal of minor and major grievances, etc. Grievances received and responses provided be documented and reported back to the affected persons. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PMU and PIU offices, Gram Panchayat/concerned local panchayat notice boards and, on the web, as well as reported in the semi-annual environmental and social monitoring reports to be submitted to ADB.

69. **Periodic review and documentation of lessons learned.** The PMU safeguards and gender cell periodically review the functioning of the GRM and record information on the effectiveness of the mechanism, especially on the PIU's ability to prevent and address grievances.

70. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) be borne by the PMU. Cost estimates for grievance redress are included in resettlement cost estimates.

71. State level and district level steering committee have been established. Also, PMU, PIU and Gram panchyat level GRC notification done for North 24 pgs, Bankura and Purba Medinipur. All Notifications related to Grievance Redressal Committee are given in **Appendix 6.**

72. Grievance Registration Form in local language as proposed for the project was disclosed in earlier SEMR.

73. Grievance Redressal Register is maintained at each of the package working sites.

74. Few complaints received during the reporting period from North 24 pgs, Bankura and Purba Medinipur districts are summarized in Tables below.

Table 15A: Summary of Grievance Received from November 2024 to April 2025 North 24 Parganas

Package name	Total No of Complaints/ enquiry Recorded	Nature of the Complaint	Issue Resolved/ Not Resolved	Minimum Time Taken to Resolve the Issue	Maximum Time Taken to resolve the Issue
N-24P/NCB/01-WTP	0		NIL		
N-24P/NCB/02B-Bhangar II	56	• Restoration not completed after pipe laying. • Road damage due to pipe laying	• 13 issues resolved • 8 issues not resolved • 17 issues not damage by us • 18 issues not identified.	2 days	3 days

Table 15B: Summary of Grievance Received from November 2024 to April 2025- Bankura

Package name	Total No of Complaints/ enquiry Recorded	Nature of the Complaint	Issue Resolved / Not Resolved	Minimum Time Taken to Resolve the Issue	Maximum Time Taken to resolve the Issue
01 Package WTP and transmission mains up to IBPS Govindpur	0		Nil	NA	NA
02A Package: Indpur distribution	0		Nil	NA	NA
02B Package: Taldangra Distribution	6	• Concrete debris was dumped near locality. • Water pipeline not reach to all villagers. • House connection was not provided.	All Resolved	1 day	5 days
03 Package: WTP and transmission mains in Megia and Gangajal ghati	0		NIL	NA	NA
04 Package: Mejhia-Gangajalghati distribution	0		NIL	NA	NA

Table 15C: Summary of Grievance Received from November 2024 to April 2025- Purba Medinipur

Package name	Total No of Complaints / Enquiry Recorded	Nature of the Complaint	Issue Resolved/ Not Resolved	Minimum Time Taken to Resolve the Issue	Maximum Time Taken to resolve the Issue
EM01	06	• Existing Drinking Water Supply pipeline was broken during MS Pipelaying works. • Culvert damage related issues. • Rainwater Stagnation near fishery area at WTP site.	Resolved	1 day	4 days
EM02	12	• Pipe laying work is obstructed, ROW issue • Dispute regarding sludge disposal on private land. • Traffic congestion due to heavy vehicular movement. • Improper stacking of DI pipes on private land. • Road cutting / obstruction issue • Existing house connection is damaged due to pipe laying.	Most of the issues resolved	1 day	5 days

75. Complaints are mostly related to,
- ✓ Road damage due to pipe laying work
- ✓ Excess earth disposal
- ✓ Traffic congestion during pipe laying work
- ✓ Storage of pipe materials
- ✓ Disallow storage of construction materials in front of house
- ✓ Problem related to public access
- ✓ Road cutting and restoration issue
- ✓ Existing house connection affected
- ✓ Road restoration at earliest and should be proper

76. Issues are resolved mostly by site supervisor engineer and safety officer of contractor within same day of complaints received.

77. Practically there is no as such major environment related grievances during report period.

F. Training, Workshop, Public consultation, and Focus group discussion

78. As per approved IEEs, consultations and disclosure are the continuous process throughout project implementation involving public consultations and focus group discussions. Informal consultations were carried out with local people, pedestrian, etc. Field level public consultation as conducted by contractor is attached as **Appendix 7.**

79. The indicative schedule for consultations and disclosure is presented in **Table 16.**

Table 16: Indicative Schedule for Consultations

Type of Consultation/ Disclosure	Target Date	Location	Target Participants	Responsible Person and Source of Funds
Local level consultation	Weekly – to be continued	At all construction locations	General public, shopkeepers, pedestrian population	Construction supervisor, Environment & safety officer of contractor Project budget – continuous process
Consultation – safety issues, implementation of EMP	During May to October 2025 and continued	At WBDWSIP office and project site office	Supervisor Engineer, PIU Engineer, all safety and environment staff of contractors	Construction Manager, Environment specialist of DSISC and PMC

80. Field level training, awareness program on safety and environment has been arranged for contractors, supervisors by DSISC's Environment Specialist on regular basis.

81. There are series of informal discussions by the DSISC engineering Consultants with PIU mainly on understanding current situation and optimum design to be adopted in order to attain the safeguard objectives.

82. Summary of trainings, workshops, public consultation and FGD arranged in all the project districts are shown below.

83. Summary of consultation for North 24 pgs package shown below (**Table 17A**) and attached sample copy in **Appendix 7.**

Table 17A: Summary of Trainings & Consultations at North 24 Pgs (November 2024 to April 2025)

Package Name and Site Location	Date of Training /Consultation/FGD	Type of Consultation	Total No of Participant	No. of Female Participant	Details of the meeting	Meeting/ Training Conductor
Package No. WBDWSIP/ DWW/ NCB/ N-24P/ 02A, Haroa						
HZ-05-Tegharia – OHR site	03.12.2024	Toolbox Training	3	-	PPEs use & Safety Signage	Contractor
HZ-13 & 18-Chouhata, Gopalpur-Pipeline	02.12.2024	Toolbox Training	6	-	Laying and excavation precautions & Safety Signage	Contractor
HZ-05-Tegharia – OHR site	03.01.2025	Toolbox Training	4	-	PPEs use & Safety Signage	Contractor
HZ-03 & 16-Adampur, Haripur-Pipeline	09.01.2025	Toolbox Training	6	-	Laying and excavation precautions	Contractor
HZ-05-Tegharia – OHR site	08.02.2025	Toolbox Training	4	-	PPEs use & Safety Signage	Contractor
HZ-09,	17.02.2025	Toolbox	6	-	PPEs use	Contractor

Package Name and Site Location	Date of Training /Consultation/FGD	Type of Consultation	Total No of Participant	No. of Female Participant	Details of the meeting	Meeting/ Training Conductor
Kalinagar, Haroa -Pipeline		Training			& Safety Signage	
HZ-05- Tegharia – OHR site	05.03.2025	Toolbox Training	4	-	PPEs use & Safety Signage	Contractor
HZ-09 & 17, Kalinagar & Salipur- Pipeline	06.03.2025	Toolbox Training	6	-	Laying and excavation precautions	Contractor
HZ-05- Tegharia – OHR site	06.04.2025	Toolbox Training	4	-	PPEs use & Safety Signage	Contractor
HZ-17 & 18 – Salipur & Gpoalpur Pipeline work	02.04.2025	Toolbox Training	4	-	PPEs use & Safety Signage	Contractor
Package No. WBDWSIP/ DWW/ NCB/ N-24P/ 02B; Bhangar II						
Z-09 – Nangla Palpur- OHR work	01.11.2024	Induction and tool box	5	-	Site Safety and PPEs management	Contractor
Z-03 – Paikan - OHR work	02.11.2024	Toolbox Training	5	-	Site Safety and PPEs management	Contractor
Z-05 – Tona - OHR work	03.11.2024	Toolbox Training	16	-	Site Safety and PPEs management	Contractor
HZ-08 – Uttar Kashipur, OHR	10.11.2024	Toolbox Training	9	-	PPEs use & Safety Signage.	Contractor
HZ-014- Pitha pukuria- OHR	11.11.2024	Toolbox Training	4	-	Site Safety and PPEs management	Contractor
HZ-03,05, 12 & 14- Paikan, Tona, Bankachua & Pitha Pukuria- Pipeline	01.11.2024	Toolbox Training	15	-	Site Safety and PPEs management	DSISC & Contractor
HZ-03 – Paikan - OHR work	10.12.2024	Toolbox Training	5	-	Site Safety and PPEs management	Contractor
HZ-8 – Uttar Kashipur, OHR site	12.12.2024	Induction and tool box	9	-	Site Safety and PPEs management	Contractor
HZ-9 – Nangla Palpur – OHR site	19.12.2024	Induction and tool box	5	-	Site Safety and PPEs management	Contractor
HZ-03 – Paikan – OHR work	06.08.2024	Induction and tool box	5	-	Site Safety and PPEs management	Contractor
HZ-14- Pitha Pukuria- OHR site	23.12.2024	Induction and tool box	4	-	Site Safety and PPEs management	Contractor
HZ-03, 05,08 &14 – Paikan, Tona, Uttar Kashipur &	02.12.2024	Induction and tool box	15	-	Site Safety and PPEs management	Contractor

Package Name and Site Location	Date of Training /Consultation/FGD	Type of Consultation	Total No of Participant	No. of Female Participant	Details of the meeting	Meeting/ Training Conductor
Pitha Pukuria – Pipeline work						
HZ-9 – Nangla Palpur – OHR site	02.01.2025	Induction and tool box	10	-	Site Safety and PPEs management	Contractor
HZ-03 – Paikan – OHR work	13.01.2025	Induction and tool box	5	-	Site Safety and PPEs management	Contractor
HZ-8 – Uttar Kashipur, OHR site	24.01.2025	Induction and tool box	9	-	Site Safety and PPEs management	Contractor
Z-05 – Tona - OHR work	15.01.2025	Toolbox Training	9	-	Site Safety and PPEs management	Contractor
HZ-14- Pitha Pukuria- OHR site	07.01.2025	Induction and tool box	4	-	Site Safety and PPEs management	Contractor
HZ- 05, 08 &14 –Tona, Uttar Kashipur & Pitha Pukuria – Pipeline work	03.01.2025	Induction and tool box	15	-	Site Safety and PPEs management	Contractor
HZ-03 – Paikan – OHR work	01.02.2025	Induction and tool box	11	-	Site Safety and PPEs management	Contractor
Z-05 – Tona - OHR work	03.02.2025	Toolbox Training	9	-	Site Safety and PPEs management	Contractor
HZ-8 – Uttar Kashipur, OHR site	04.02.2025	Induction and tool box	9	-	Site Safety and PPEs management	Contractor
HZ-9 – Nangla Palpur – OHR site	05.02.2025	Induction and tool box	10	-	Site Safety and PPEs management	Contractor
HZ-14- Pitha Pukuria- OHR site	12.02.2025	Induction and tool box	4	-	Site Safety and PPEs management	Contractor
HZ- 01, 08, 12 &14 – Dharmatala Pachuria, Uttar Kashipur, Bankachua & Pitha Pukuria – Pipeline work	05.02.2025	Induction and tool box	15	-	Site Safety and PPEs management	Contractor
HZ-03 – Paikan – OHR work	01.03.2025	Induction and tool box	11	-	Site Safety and PPEs management	Contractor
Z-05 – Tona - OHR work	15.03.2025	Toolbox Training	9	-	Site Safety and PPEs management	Contractor
HZ-8 – Uttar Kashipur, OHR site	16.03.2025	Induction and tool box	9	-	Site Safety and PPEs management	Contractor
HZ-9 – Nangla Palpur – OHR site	13.03.2025	Induction and tool box	10	-	Site Safety and PPEs management	Contractor

Package Name and Site Location	Date of Training /Consultation/FGD	Type of Consultation	Total No of Participant	No. of Female Participant	Details of the meeting	Meeting/ Training Conductor
HZ-14- Pitha Pukuria- OHR site	12.03.2025	Induction and tool box	4	-	Site Safety and PPEs management	Contractor
HZ- 01, 03, 05, 06 11 & 12 – Dharmatala Pachuria, Paikan, Tona, Shyamnagar, Dhayati & Bankachua – Pipeline work	09.03.2025	Induction and tool box	15	-	Site Safety and PPEs management	Contractor
HZ-03 – Paikan – OHR work	02.04.2025	Induction and tool box	11	-	Site Safety and PPEs management	Contractor
Z-05 – Tona - OHR work	24.04.2025	Toolbox Training	9	-	Site Safety and PPEs management	Contractor
HZ-8 – Uttar Kashipur, OHR site	06.04.2025	Induction and tool box	9	-	Site Safety and PPEs management	Contractor
HZ-9 – Nangla Palpur – OHR site	12.04.2025	Induction and tool box	10	-	Site Safety and PPEs management	Contractor
HZ-14- Pitha Pukuria- OHR site	14.04.2025	Induction and tool box	4	-	Site Safety and PPEs management	Contractor
HZ- 01, 03, 05, 11 & 12 – Dharmatala Pachuria, Paikan, Tona, Dheyati & Bankachua – Pipeline work	06.04.2025	Induction and tool box	15	-	Site Safety and PPEs management	Contractor
Package No. WBDWSIP/ DWW/ NCB/ N-24P/ 01; WTP, Rajarhat						
WTP-Intake-Rajarhat	01.11.2024	Awareness program and Toolbox Talk	11	-	Housekeeping at working site & labor hutment & PPEs	Contractor
WTP	06.11.2024	Toolbox Talk & awareness	13	-	Lifting & sifting materials	Contractor
WTP	09.11.2024	Toolbox Talk & awareness	15	-	Height work & PPEs	Contractor
WTP	11.11.2024	Toll box and awareness	15	-	Scaffolding & safety	Contractor
WTP	14.11.2024	Awareness program and Toolbox Talk	20	-	Electrical Safety	Contractor
WTP	23.11.2024	Awareness program and Toolbox Talk	13	-	Noise exposure	Contractor
WTP	29.11.2024	Awareness and Tool box	09	-	Slips, Trips & falls	Contractor

Package Name and Site Location	Date of Training /Consultation/FGD	Type of Consultation	Total No of Participant	No. of Female Participant	Details of the meeting	Meeting/ Training Conductor
WTP- Annex building-Rajarhat	08.12.2024	Awareness program and Toolbox Talk	20	-	Height work & Electrical work	Contractor
WTP-Plate Settler-Rajarhat	10.12.2024	Tool box and awareness	20	-	Scaffolding & Housekeeping	Contractor
WTP-Bhangar GLSR	13.12.2024	Awareness program and Toolbox Talk	15	-	Lifting & shifting	Contractor
WTP-Bhangar GLSR	03.09.2024	Awareness & training	15	-	Welding Safety	Contractor
WTP-Bhangar	19.12.2024	Awareness program and Toolbox Talk	21	-	Work at Height	Contractor
WTP-Plate Settler-Rajarhat	26.12.2024	Awareness program and Toolbox Talk	10	-	Housekeeping & PPEs	Contractor
WTP-Bhangar GLSR	02.01.2025	Awareness program and Toolbox Talk	16	-	Electrical safety	Contractor
WTP-Bhangar GLSR	08.01.2025	Awareness program and Toolbox Talk	17	-	Excavation Safety	Contractor
WTP	11.01.2025	Awareness program and Toolbox Talk	17		Scaffolding & Height work	Contractor
WTP	01.02.2025	Awareness program and Toolbox Talk	20		Height work	Contractor
WTP-Bhangar GLSR	07.02.2025	Awareness program and Toolbox Talk	16	-	Housekeeping & PPEs	Contractor
WTP	06.03.2025	Awareness program and Toolbox Talk	20		Height work	Contractor
WTP	18.03.2025	Awareness program and Toolbox Talk	15		Lifting & Sifting	Contractor
WTP-Bhangar GLSR	03.04.2025	Awareness program and Toolbox Talk	20		Slip, Trip & Fall Hazard	Contractor
WTP	17.04.2025	Awareness program and Toolbox Talk	18		Lifting & Sifting	Contractor

* On an average 10 Toolbox trainings are conducted every month per package however, all are not listed above.

84. Summary of consultation for Bankura package shown below (**Table 17B)** and attached sample copy in **Appendix 7.**

Table 17B: Summary of Consultation, meeting for Bankura Packages from November 2024 to April 2025

Public Consultation at pipe laying site organized by Contractor & DSISC							
BK 02A (Raghunathpur IBPS)	08.12.2024	Public consultation	Problem of local mobilisation due to project activity	1	-	Dust & noise problems, use of safety arrangements- caution tap/barricades, road restoration etc.	Contractor
BK 02A (Gobindpur OHSR)	13.12.2024	Public consultation	Problem of local mobilisation due to project activity	1	-	Problem of local mobilisation due to project activity.	Contractor
Kantakuli (BK-02A)	16.12.2024	Public consultation	Problem of local mobilisation due to project activity	1	-	Project related other problem.	Contractor
BK 02A (Golokpur OHSR)	28.12.2024	Public consultation	Social safety arrangements caution tape and barricade near work site	1	-	Dust & noise problems, Problem of local mobilisation due to project activity etc.	Contractor
BK 02A (Nayekhir OHSR)	07-01-2025	Public consultation	Problem of local mobilisation due to project activity.			Dust & noise problems, Problem of local mobilisation due to project activity etc.	Contractor
BK 02A Siromonipur OHSR Tunamara Shaluka Gottoriya Surulia Tunamara Shaluka Gobindpur Tunamara Kantakuli Jugibad	11-01-2025 15-02-2025 22-02-2025 04-03-2025 08-03-2025 17-03-2025 24-03-2025 08-04-2025 11-04-2025 16-04-2025 20-04-2025	Public consultation	Overburden soil debris Dust and noise problem. Problem of local movement.			 Overburden soil/sludge removal from site. Social safety arrangement cautions tape/barricade etc.	Contractor
BK-02B Monipur OHSR Khichka OHSR Asnasundarpur Monipur Harmasra	03-12-2024 07-01-2025 05-02-2025 03-03-2025 04-04-2025	Public consultation	Road restoration after pipelaying Problem of local movement. Dust and noise problem.	2	-	 Overburden soil/sludge removal from site.	Contractor
BK 03 Maliyal area	**NIL**						

BK 04 Majia zone (BT Road) Bankadaha zone (near BT Road) Mochrakend zone Majia zone Chausal zone	06-11-2024 to 29-11-2024 (6), 04-12-2024 to 30-12-2024 04-01-2025 to 28-01-2025 04- 03-2025 to 28-04-2025 03-04-2025 to 26-04-2025	Public consultation	Social safety arrangements caution tape and barricade near work site	6	-	Safety arrangements caution tape and barricade near work site	Contractor
Workers Orientation Training Programme by contractor							
Before start of work in all location BK/01	Continuous	Construction worker	Worksite Safety, COVID prevention, HIV, Dengue etc	All labors and staff at site		• Orientation program on various environmental issues at site. • Introduction of GRM, first aid register, attendance register and its importance. • Various Safety precaution and use of PPE at site. • COVID awareness and important of vaccination. • Safety measures to be taken during painting work, work at height. • Precautions to be taken during hot summer	Contractor's representative in presence of Safeguard Team, DSISC

85. During the report period nine public consultation has been conducted at East Medinipur project sites. It is recorded that out of 121 participants, 20 female participants attended the discussion which is 16.53%. Summary shows in the Table below (**Table 17C**, **Appendix 8)**.

Table 17C: Public Consultation from November'24 to April'25

Package- EM 01 and EM02

Sl no	Location	Date of Consultation	Total no of Participants	Issue Discussed
1.	Byabatta Market	27.12.2024	M=10, F=01 Total = 11	• Different issues due to pipe laying like water body along the pipe alignment, private land issue, road cutting issues ,road restoration issues etc. • GRM issue discussed. • Commencement of Pipe laying work. • Discussion regarding traffic management • Safety related issues • Pipe laying along the PWD/CC road • Private land issue. • Regarding the lifting of suspension of work in "Bandevi Temple" adjacent area. • Obstruction of excavation to Presetting Pond at WTP
2.	Nandakumar Market	06.01.2025	M=15, F=02 Total = 17	
3	Shitalpur	19.02.2025	M=11, F=01 Total = 12	
4	Nandakumar Market	04.03.2025	M=12, F=01 Total = 13	
5	Khagda	01.04.2025	M=8, F=03 Total = 11	
6	Ganjnarayanpur	16.04.2025	M=07, F=01 Total = 08	
7	WTP	25.04.2025	M=24, F=01 Total = 25	
8	Samsabad	24.12.2024	M=03, F=09 Total = 12	
9	Nandigram Bypass	08.04.2025	M=11, F=1 Total=12	

86. Training has been conducted on environment, Health and safety issues, including awareness programme for HIV/ AIDS, First Aid for North 24 pgs, Bankura and Purba Medinipur districts DSISC at project sites. All training documents and records are available with DSISC and PIUs.

87. During the report period Environment and Social safeguard related Audit has been conducted by PMC at North 24 pgs PMU/ PMC office, through site visit & review for Purba Medinipur PIU & DSISC and Bankura PIU & DSISC. PIU staffs, contractor's project manager, safety officers, DSISC staff attended that Audit Program. Review meeting cum orientation program on environment safeguard for DSISC, PIU and contractors are also conducted on regular basis. Training back-ups are available with PMC, DSISC, PIU and PMU.

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

88. For effective monitoring, selected environmental parameters have been identified as indicators which will be qualitatively and quantitatively measured and compared over a period of time in order to assess/ensure the compliance of Environment Management Plan (EMP). The environmental performance indicators are physical, biological and social characteristics identified as most important in affecting the environment at critical locations all along the subproject locations. The parameters identified as performance indicators are:

- Air, noise and water quality
- Compliance to EMP
- Compliance to local/state/national environmental regulations

89. Field level monitoring comprises monitoring of environmental parameters like air quality, noise level and water quality. These are monitored for understanding base line conditions at project locations and during construction monitoring for understanding level of impact on environment (in respect to those parameters) from project activity during implementation of the project. Monitoring is conducted as per monitoring plan of approved IEE.

90. Field level monitoring also carried out during pre-construction, construction, and operation phases for understanding degree of impacts and mitigation measures. Corrective action plan and target date for effective implementation of mitigation measures planned accordingly. Site Environment Management Plan is the base document for implementation of EMP and application of corrective measures. This field level monitoring is continuous process and reported through weekly, monthly checklist.

91. Monitoring of applicability of local/state/national environmental regulations in respect to project activity and locations is also required for smooth progress of the project. For that site verification and desk review is essential. Starting from pre-construction to construction – operation phases screening of work areas, work components under the national, state and local statutory rules and regulations is necessary.

VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS

A. Brief discussion on the basis for monitoring

92. In addition to desk reviews and site inspections, monitoring of selected environmental parameters has been conducted during the reporting period. The frequencies of the environmental monitoring activities are commensurate to the type and significance of the impacts. Monitoring of ambient air quality, noise level, soil quality and water quality has been conducted to establish baseline of environmental qualities in the project area and during construction impact on environment.

I. North 24 pgs District

93. In accordance with the IEE & SEMP, the contractors are required to undertake environmental monitoring as per below table.

Table 18A: Environmental Monitoring Requirement – Bulk water supply (Package N 24 pgs/ 01)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	5 locations (WTP, Booster pumping station, 2 GLSRs, 1 pipe line)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	5 locations (WTP, Booster pumping station, 2 GLSRs, 1 pipe line)	Day time and night time noise levels	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Surface water quality	2 locations (Bidyadhari River and Kestopur Canal)	pH, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	Once before start of construction half yearly during construction (3-year construction period considered)

Table 18B: Environmental Monitoring Requirement – Water storage & distribution network (Package N 24 pgs/02A – Haroa and 02B- Bhangar II block)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	5 locations (Selection during implementation to represent the overall project area)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	5 locations (Same as air quality monitoring)	Day time and night time noise levels (24 hours)	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Surface water quality	2 locations (to be selected during implementation and as per site condition)	pH, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	Once before start of construction Half yearly during construction (3 - year construction period considered)

II. Bankura District

94. Environmental Monitoring Plan of IEE/SEMP is the basis for environmental monitoring before start of the work and during implementation of the project.

Table 19A: Environmental Monitoring Requirement- Bulk water supply (Package BK/01)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	2 locations (WTP and GLSR- IBPS sites)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	4 locations (Intake, WTP and GLSR-IBPS sites)	Day time and night time noise levels	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Reservoir water quality	One location (Reservoir intake point)	pH, TDS, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	(i) Once before start of construction (ii) Monthly (yearly 12 times) (3-year construction period considered)

Table 19B: Environmental Monitoring Requirement – Water storage & distribution network (Package BK/02A and BK/02B)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	5 locations (Selection during implementation to represent the overall project area)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	10 locations (covering air quality monitoring stations)	Day time and night time noise levels (24 hours)	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Surface water quality	5 locations (Selection during implementation to represent the overall project area)	pH, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
			period considered)
Soil quality	5 locations (including, construction camps, workers camps)	pH, Elect. Conductivity (at 25^0C), Moisture (at 105^0C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO_4), Potassium (as K), Organic Matter, oil and grease	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ground Water Quality	5 locations (including workers camp site & Construction camp/ storage yards)	As per IS10,500: 2012	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)

Table 19C: Environmental Monitoring Requirement - Bulk water supply (Package BK/03)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	2 locations (WTP & Intake sites)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	4 locations (Intake, WTP & 2 sensitive sites like hospital /school)	Day time and night time noise levels	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Barrage water quality	One location (Reservoir intake point)	pH, TDS, Oil & grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	(i) Once before start of construction (ii)Monthly (yearly 12 times) (3 years construction period considered)

Table 19D: Environmental Monitoring Requirement - Water storage & distribution network (Package BK/04)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	10 locations (Selection during implementation to represent the overall project area)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	20 locations (covering air quality monitoring stations)	Day time and night time noise levels (24 hours)	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Surface water quality	10 locations (to be selected during implementation)	pH, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO,	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
		Total Alkalinity	during construction (3-years period considered)
Soil quality	10 locations (including, construction camps, workers camps)	pH, Elect. Conductivity (at 25^0C), Moisture (at 105^0C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO_4), Potassium (as K), Organic Matter, oil and grease	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ground Water Quality	10 locations (including workers camp site & Construction camp/ storage yards)	As per IS10,500: 2012	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)

III. Purba Medinipur District

95. Environmental Monitoring Plan of IEE/SEMP is the basis for environmental monitoring before start of the work and during implementation of the project.

Table 20A: Environmental Monitoring Requirement – Bulk water supply (Package EM/01)

Monitoring field	Monitoring location	Monitoring parameters	Frequency
Ambient air quality	5 locations (Intake, WTP, Transmission mains route)	• PM10, PM2.5 NO2, SO2, CO	(i) Once before start of construction. (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ambient noise level	5 locations (Intake, WTP, Transmission mains route)	• Day time and night time noise levels	(i) Once before start of construction (ii) Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Surface water quality	One location (River intake)	• pH, TDS, Oil & grease, Cl, F, NO3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity and Salinity	(i) Once before start of construction (ii) Monthly (yearly 12 times) (3-year construction period considered) (iii) Salinity of river water should be checked at 2-3 points downstream of intake, may at an interval of 1 km, 2 km

Table 20B: Environmental Monitoring Requirement- Water storage & distribution network (Package EM/02)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient air quality	10 locations (Reservoirs, GLSR-IBPS and pipe line)	PM_{10}, $PM_{2.5}$ NO_2, SO_2, CO	(i) Once before start of construction. (ii)Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency
Ambient noise level	20 locations (Reservoirs, IBPS and pipe line)	Day time and night time noise levels (24 hours)	(i) Once before start of construction. (ii)Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Surface water quality	10 locations (Reservoirs, GLSR-IBPS and pipe line)	pH, Oil and grease, Cl, F, NO_3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	(i) Once before start of construction. (ii)Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Soil quality	10 locations (Reservoirs, GLSR-IBPS and pipe line)	pH, Elect. Conductivity (at 25^0C), Moisture (at 105^0C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO_4), Potassium (as K), Organic Matter, oil and grease	(i) Once before start of construction. (ii)Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)
Ground Water Quality	10 locations (Reservoirs, IBPS and pipe line)	As per IS10,500: 2012	(i) Once before start of construction. (ii)Yearly 3 times (for seasons: pre-monsoon, post-monsoon and winter) during construction (3-years period considered)

B. Type and location of Environmental Parameters Monitored

96. As detailed in above tables, for all the districts, air and noise monitoring conducted for yearly 3 times except monsoon while surface water quality conducted at every half-yearly (North 24 pgs), yearly 3 times (Bankura and Purba Medinipur packages) and monthly (Barrage and reservoir of Bankura Packages and river water at intake site of Purba Medinipur). The monitoring parameters are also stated in Table above.

97. In order to determine new monitoring locations, following matrices were developed for each package.

OHT No.	Presence of Environmental Sensitivities					
	Hospital	Educational Institute	Religious Place	Dense Population	Wetland	Others
1						
2						

Zone No.	Presence of Environmental Sensitivities					
	Hospital	Educational Institute	Religious Place	Dense Population	Wetland	Others
1	Node X - Y					
2	....					

98. Based on outcome of above exercise air quality, noise level and surface and ground water quality monitoring locations were selected for packages.

99. **Monitoring Locations of North 24 pgs District Packages**. Monitoring locations are shown with Co-ordinate in Table below and in Figures followed.

Table 21A: Ambient Air Monitoring Locations –During construction monitoring - North 24 pgs – November 2024 to April 2025

Sl. No	Monitoring Location	Co-ordinates
Package N 24 Pgs/01: Bulk Water Supply		
Monitoring Phase: During-construction – April, 2025		
1.	WTP Filter house	22.587531°N, 88.446226E
2.	Booster Pumping Station - 1	22.578473°N, 88.483075°E
3.	Bhangar – GLSR	22.54951°N, 88.56682°E
4.	Haroa - GLSR	22.601791°N, 88.678114°"E

*Note: Air sampling scope exhausted; accordingly, not conducted for package 02A and 02B. Variation under process

Table 21B: Surface Water Sampling Locations – During construction monitoring -North 24 Pgs- November 2024 to April 2025

Sl. No	Monitoring Location	Co-ordinates
Package N 24 Pgs/01: Bulk Water Supply		
Monitoring Phase: During-construction – April, 2025		
1.	MR Crossing – Kestopur khal	22.583383°N, 88.473355°E
2.	Bhangar GLSR canal water- Bagjola khal	22.54951°N, 88.56682°E

*Note: Surface Water sampling scope exhausted; accordingly, not conducted for package 02A and 02B

Table 21C: Ambient Noise Monitoring Station Details-During Construction - North 24 Pgs – November 2024 to April 2025

Sl. No	Monitoring Location	Co-ordinates
Package N 24 Pgs/01: Bulk Water Supply		
Monitoring Phase: During-construction- October-24		
1.	WTP Filter house	22.587531°N, 88.446226E
2.	Booster Pumping Station - 1	22.578473°N, 88.483075°E
3.	Bhangar- GLSR	22.54951°N, 88.56682°E
4.	Haroa- GLSR	22.601791°N, 88.678114°"E

*Note: Noise monitoring scope exhausted; accordingly, not conducted for package 02A and 02B

100. The monitoring locations for the projects are marked on google earth and presented below:

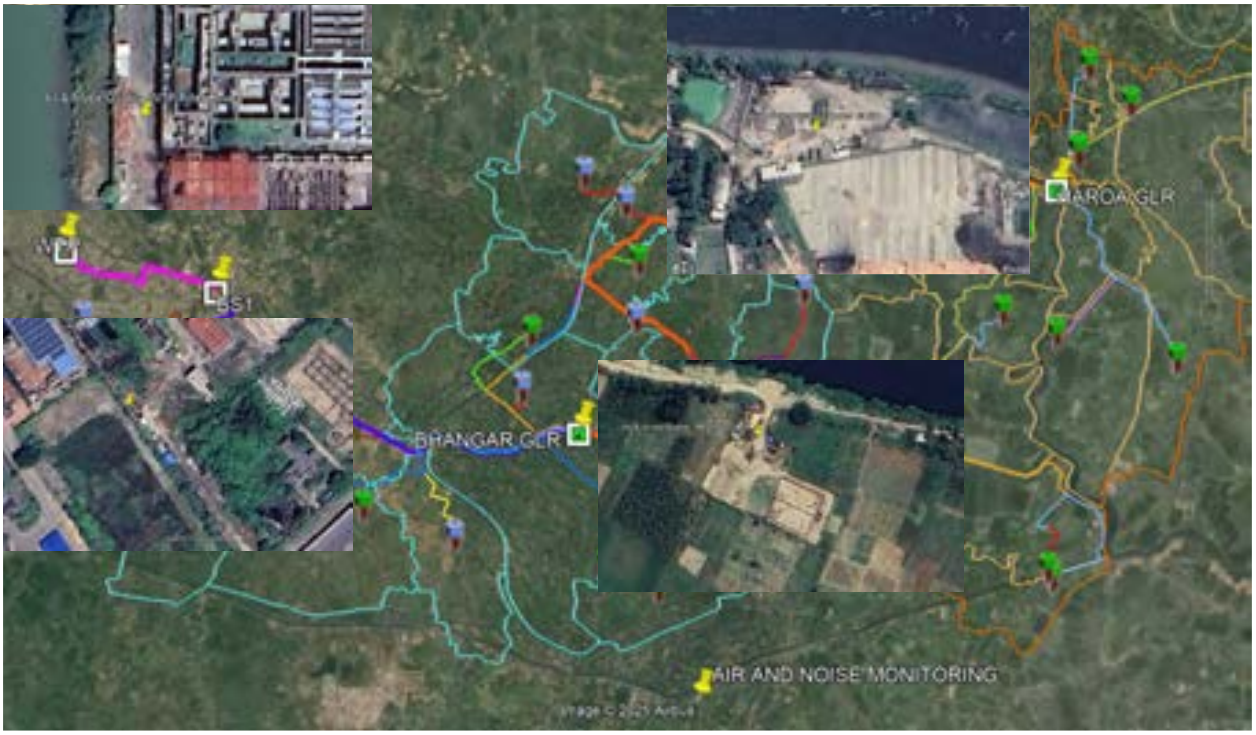


Figure 9A: Ambient Air Quality and Noise Level Monitoring Locations in Bulk Water Supply (Package N 24 Pgs/01)

Figure 9B: Surface Water Quality Sampling Locations in Bulk Water Supply (Package N 24 Pgs/01)

101. **Monitoring Locations of Bankura District Packages.** For Bankura, during construction monitoring have been conducted for 5 packages. Below tables show detail of monitoring stations, where monitoring conducted during report period.

Table 22A: Ambient Air Monitoring Station Locations –During Construction Monitoring – Bankura- November 2024 to April 2025

Sl. No.	Monitoring Location	Co-ordinates (dd)	Construction phase - Time period
Package BK/01			
1	Intake area Mukutmanipur	22.985251, 86.763894	During Construction (December,24)
Package BK/02A			
1.	Raghunathpur IBPS	23°9'12" N, 86°51'40" E	During Construction (January, 25)
2	Gobindpur IBPS	23°4'17 N, 86°57'20" E	During Construction (January, 25)
3	Surulia OHSR	23°10'53" N,86°46'1" E	During Construction (January, 25)
4	Chaukighata OHSR	23°9'33" N, 86°50'21" E	During Construction (January, 25)
5	Dumurtore OHSR	23°5'53" N, 86°59'24" E	During Construction (January, 25)
Package BK/02B			
1	Chenchuriya	23°2'50" N, 87°5'26" E	During Construction (January, 25)
2	Koniyara OHSR	22°54'4" N, 87°10'41" E	During Construction (January, 25)
3	Chakmanjuri Prasadpur	22°57'4" N, 87°14'32" E	During Construction (January, 25)
4	Panchmura OHSR	22°58'5" N, 87°10'0" E	During Construction (January, 25)
5	Khichka OHSR	22°59'52" N, 87°1'33" E	During Construction (January, 25)
Package BK/03			
1	Intake site	23°28'14.88" N,87°17'30.84E	During Construction (January, 25)
2	WTP Site (Basudebpur)	23°28'29.64" N, 87°9'28" E	During Construction (January, 25)
Package BK/04			
1	Bharra Mejia	23°32'18.6" N, 87°7'42.6" E	During Construction (January, 25)
2	Pairasol	23°31'4.44" N, 87°3' 36.71" E	During Construction (January, 25)
3	Mohona	23°33'48.24" N, 87°1'56.64"E	During Construction (January, 25)
4	Lachmanpur	23°26'33.72" N, 87°1'56.28"E	During Construction (January, 25)
5	Barsal Srirampur	23°28'46.9"N, 87°10'5.88" E	During Construction (January, 25)
6	Sarangpur	23°25'54.84"N, 87°11'23.9"E	During Construction (January, 25)
7	Rajamela	23°26'31.56" N, 87°3'22.32"E	During Construction (January, 25)
8	Subiara	23°28'6.6"N, 87°10'10.92" E	During Construction (January, 25)
9	Bakadaha	23°25' 43.32"N, 87°9'24.84"E	During Construction (January, 25)
10	Kapiata	23°23'56.4"N, 87°7'48.35" E	During Construction (January, 25)

* Due to slow progress of work number of monitoring is less

Table 22B: Ambient Noise Level Monitoring Locations - During Construction Monitoring – Bankura- November 2024 to April 2025

Sl. No.	Monitoring Location	Co-ordinates (dd)	Construction phase - Time period
Package BK/01			
1	Intake area Mukutmanipur	22.985251, 86.763894	During Construction (December,24)
Package BK/02A			
1.	Raghunathpur IBPS	23°9'12" N, 86°51'40" E	During Construction (January, 25)
2	Gobindpur IBPS	23°4'17 N, 86°57'20" E	During Construction (January, 25)
3	Surulia OHSR	23°10'53" N,86°46'1" E	During Construction (January, 25)
4	Chaukighata OHSR	23°9'33" N, 86°50'21" E	During Construction (January, 25)
5	Dumurtore OHSR	23°5'53" N, 86°59'24" E	During Construction (January, 25)
Package BK/02B			
1	Chenchuriya	23°2'50" N, 87°5'26" E	During Construction (January, 25)

Sl. No.	Monitoring Location	Co-ordinates (dd)	Construction phase - Time period
2	Koniyara OHSR	22°54'4" N, 87°10'41" E	During Construction (January, 25)
3	Chakmanjuri Prasadpur	22°57'4" N, 87°14'32" E	During Construction (January, 25)
4	Panchmura OHSR	22°58'5" N, 87°10'0" E	During Construction (January, 25)
5	Khichka OHSR	22°59'52" N, 87°1'33" E	During Construction (January, 25)
Package BK/03			
1	Intake site	23°28'14.88" N,87°17'30.84E	During Construction (January, 25)
2	WTP Site (Basudebpur)	23°28'29.64" N, 87°9'28" E	During Construction (January, 25)
Package BK/04			
1	Bharra Mejia	23°32'18.6" N, 87°7'42.6" E	During Construction (January, 25)
2	Pairasol	23°31'4.44" N, 87°3' 36.71" E	During Construction (January, 25)
3	Mohona	23°33'48.24" N, 87°1'56.64"E	During Construction (January, 25)
4	Lachmanpur	23°26'33.72" N, 87°1'56.28"E	During Construction (January, 25)
5	Barsal Srirampur	23°28'46.9"N, 87°10'5.88" E	During Construction (January, 25)
6	Sarangpur	23°25'54.84"N, 87°11'23.9"E	During Construction (January, 25)
7	Rajamela	23°26'31.56" N, 87°3'22.32"E	During Construction (January, 25)
8	Subiara	23°28'6.6"N, 87°10'10.92" E	During Construction (January, 25)
9	Bakadaha	23°25' 43.32"N, 87°9'24.84"E	During Construction (January, 25)
10	Kapiata	23°23'56.4"N, 87°7'48.35" E	During Construction (January, 25)

* Due to slow progress of work number of monitoring is less

Table 22C: Ground water Sampling Locations – During Construction Monitoring – Bankura- November 2024 to April 2025

Sl. No.	Monitoring Location	Co-ordinates	Construction phase - Time period
Package BK/02A			
1.	Raghunathpur IBPS	23°9'10" N, 86°51'40" E	During Construction (January, 25)
2	Gobindpur IBPS	23°4'17" N, 86°54'17" E	During Construction (January, 25)
3	Surulia OHSR	23°11'40" N, 86°51'44" E	During Construction (January, 25)
4	Chaukighata OHSR	23°9'43" N 86°50'25" E	During Construction (January, 25)
5	Dumurtore OHSR	23°5'47" N 86°59'26" E	During Construction (January, 25)
Package BK/02B			
1.	Khichka OHSR	22°59'58"N, 87°1'42"E	During Construction (January, 25)
2	Chenchuriya IBPS	23°2'41"N, 87°5'39"E	During Construction (January, 25)
3	Koniyara OHSR	22°53'50"N, 87°13'6"E	During Construction (January, 25)
4	Chakmanjuriprasadpur	22°57'2"N, 87°14'31"E	During Construction (January, 25)
5	Panchmura OHSR	22°58'7"N, 87°10'2"E	During Construction (January, 25)
Package BK/04			
1	Kapistha	23°23'58.56" N, 87°7'36.119" E	During Construction (January, 25)
2	Sarangpur	23°25'54.12" N, 87°11'24.72" E	During Construction (January, 25)
3	Subiara	23°28'6.6" N, 87°10'10.92" E	During Construction (January, 25)
4	Bakadaha	23°25'42.96" N, 87°9'24.839" E	During Construction (January, 25)
5	Rajamela	23°26'31.56" N, 87°3'21.96" E	During Construction (January, 25)
6	Barsal Srirampur	23°29'29.064" N, 87°11'25.428" E	During Construction (January, 25)
7	Lachmanpur	23°26'27.6" N, 87°1'55.92" E	During Construction (January, 25)
8	Mohona	23°33'48.6" N, 87°1'56.28" E	During Construction (January, 25)
9	Bharra- Mejia	23°32'19.68" N, 87°7'42.6" E	During Construction (January, 25)
10	Pairasol	23°31'3.36" N, 87°3'36.7194" E	During Construction (January, 25)

Table 22D: Surface water Sampling Locations –During Construction Monitoring – Bankura- November 2024 to April 2025

Sl. No.	Monitoring Location	Co-ordinates	Construction phase - Time period
Package BK/01			
1.	Intake point	22.985251°, 86.763894°	During Construction (November 2024 to April 2025)
Package BK/02A			
1	Raghunathpur IBPS	23°9'12"N, 86°51'38"E	During Construction (January, 25)
2	Govindpur IBPS	23°4'17"N, 86°54'20"E	During Construction (January, 25)
3	Surulia OHSR	23°12'0"N, 86°47'51"E	During Construction (January, 25)
4	Chaukighata OHSR	23°9'36"N, 86°50'20"E	During Construction (January, 25)
5	Dumurtor	23°5'55"N, 86°59'31"E	During Construction (January, 25)
Package BK/02B			
1	Chenchuria IBPS	23°1'35"N, 87°5'51"E	During Construction (January, 25)
2	Koniyara OHSR	22°55'4"N, 87°13'48"E	During Construction (January, 25)
3	Chakmanjuriprasadpur	22°57'18"N, 87°15'14"E	During Construction (January, 25)
4	Panchmura OHSR	22°58'8"N, 87°10'33"E	During Construction (January, 25)
5	Khichka OHSR	23°0'32"N, 87°1'20"E	During Construction (January, 25)
Package BK/03			
1	Intake Point (Natungram)	23.47105000, 87.29178889	During Construction (November 2024 to April 2025)
Package BK/04			
1	Kapistha	23°23'58.56"N, 87°7'36.119"E	During Construction (January, 25)
2	Mohona	23°33'49.68"N,87°1'58.079"E	During Construction (January, 25)
3	Bharra-Mejia	23°32'17.88"N, 87°7'44.759"E	During Construction (January, 25)
4	Pairasol	23°31'13.8"N, 87°3'46.079"E	During Construction (January, 25)
5	Rajamela	23°26'28.32"N, 87°3'5.759"E	During Construction (January, 25)
6	Barsal Sirampur	23°29'29.064"N,87°11'25.428"E	During Construction (January, 25)
7	Lachmanpur	23°26'24"N, 87°1'59.519"E	During Construction (January, 25)
8	Subiara	23°28'4.44"N, 87°10'11.639"E	During Construction (January, 25)
9	Sarangpur	23°25'50.88"N, 87°11'24.72"E	During Construction (January, 25)
10	Bankadaha	23°25'40.08"N, 87°9'23.399"E	During Construction (January, 25)

Table 22E: Soil Sampling Locations – During Construction Monitoring – Bankura- November 2024 to April 2025

Sl. No.	Monitoring Location	Co-ordinates	Construction phase - Time period
Package BK/04			
1	Kapistha OHSR	23°23'55" N, 87°7'48" E	During Construction (January, 25)
2	Barsal Srirampur OHSR	23°29'33" N, 87°11'18.6"E	During Construction (January, 25)
3	Lachmanpur OHSR	23°26'34" N, 87°1'56" E	During Construction (January, 25)
4	Subiara OHSR	23°28'6.6" N, 87°10'11" E	During Construction (January, 25)
5	Bankadaha	23°25'42.6" N, 87°9'25" E	During Construction (January, 25)
6	Sarangpur	23°25'54.1" N, 87°11'24.7"E	During Construction (January, 25)
7	Pairasol OHSR	23°31'4"N, 87°3'37"E	During Construction (January, 25)
8	Mohona OHSR	23°33'48.6"N, 87°1'56.3" E	During Construction (January, 25)
9	Rajamela OHSR	23°26'32.6"N, 87°3'22"E	During Construction (January, 25)
10	Bharra-Mejia	23°32'19"N, 87°7'43"E	During Construction (January, 25)

** In Packages BK/2A and BK/2B, the contractor did not carry out soil quality monitoring, slow progress of work

102. The monitoring locations for the projects were marked on Google earth and presented below.

Figure 10A: Monitoring stations for Package BK/01- Bankura

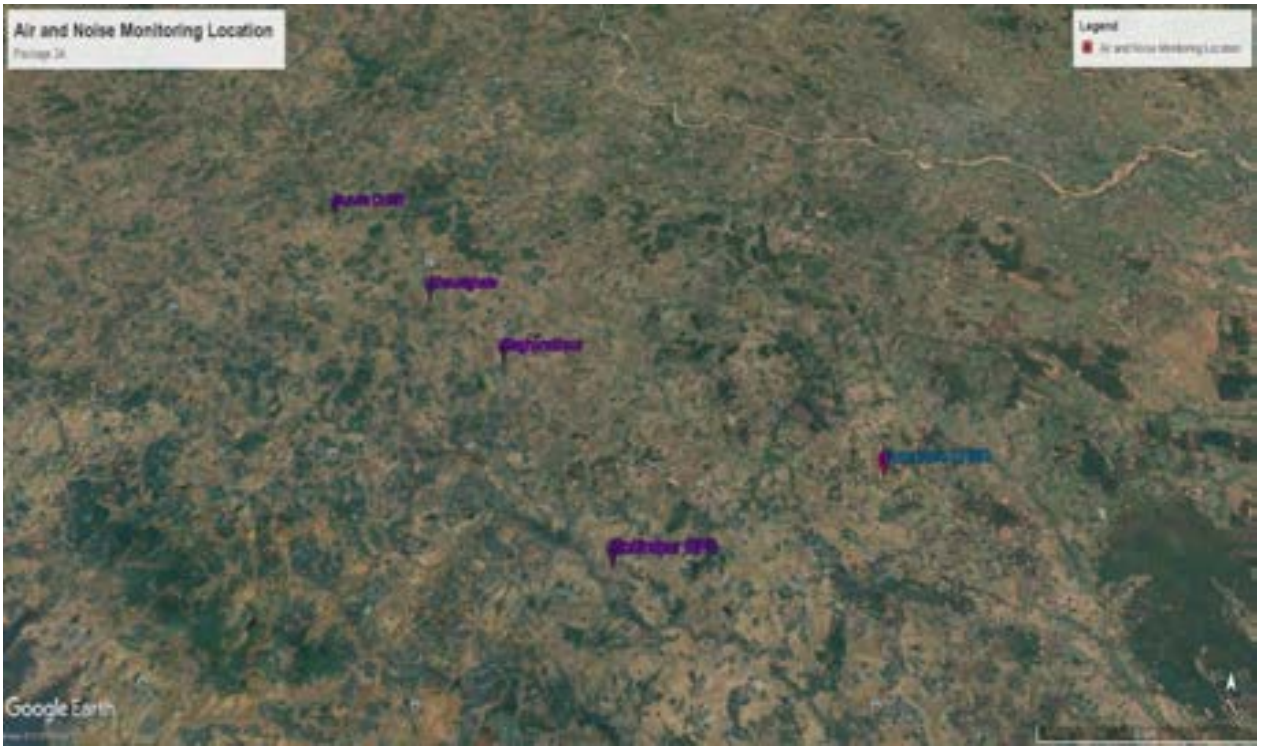


Figure 10B: Ambient Air & Noise Monitoring Locations of Package BK/2A

Figure 10C: Ambient Air & Noise Monitoring Locations of Package BK/2B

Figure 10D: Environmental Monitoring Locations of Package BK/03

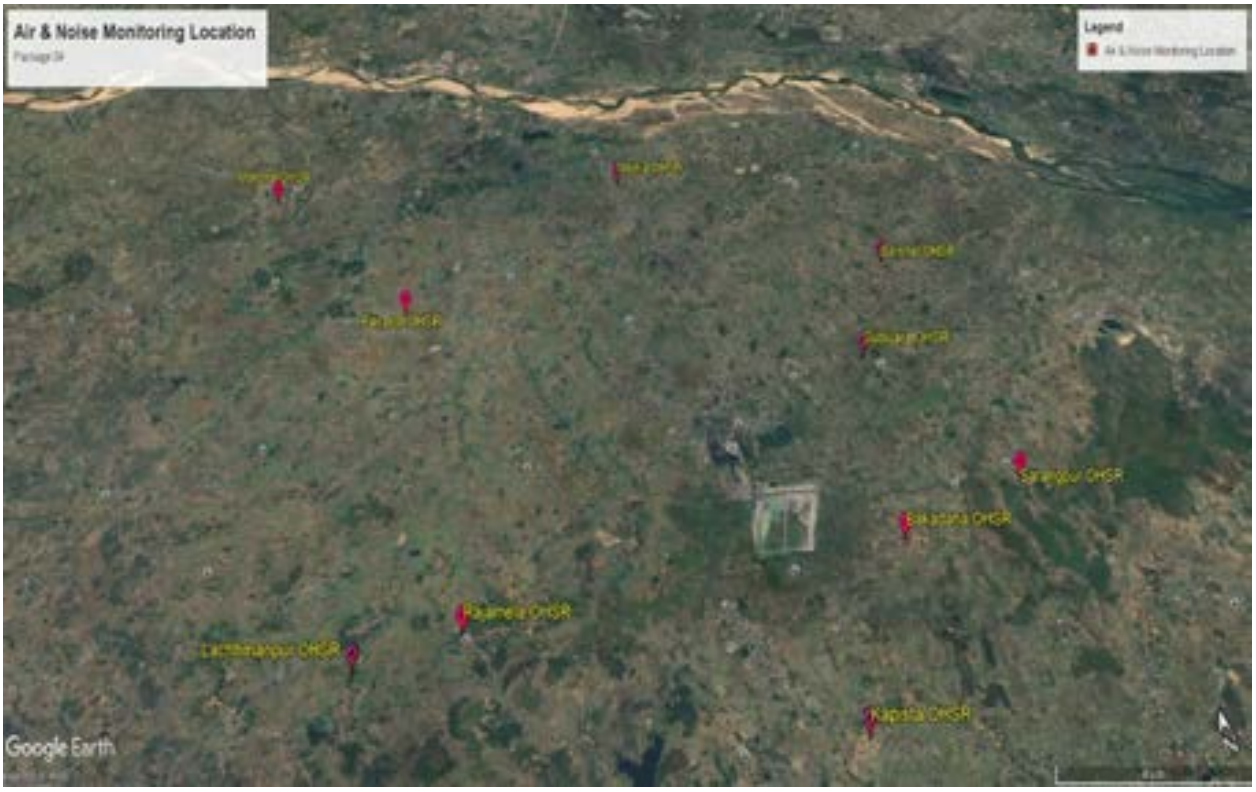


Figure 10E: Ambient Air & Noise Monitoring Locations of Package BK/04

Figure 10F: Surface Water Locations of Package BK/2A

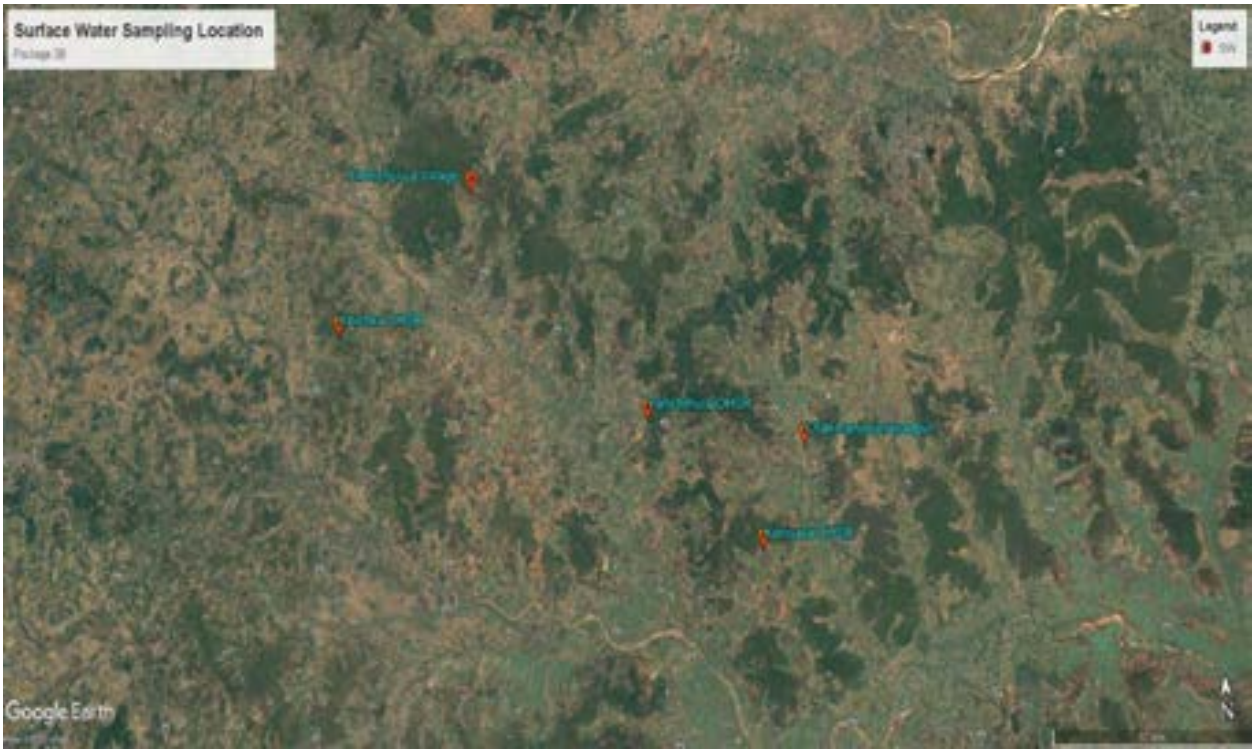


Figure 10G: Surface Water Locations of Package BK/2B

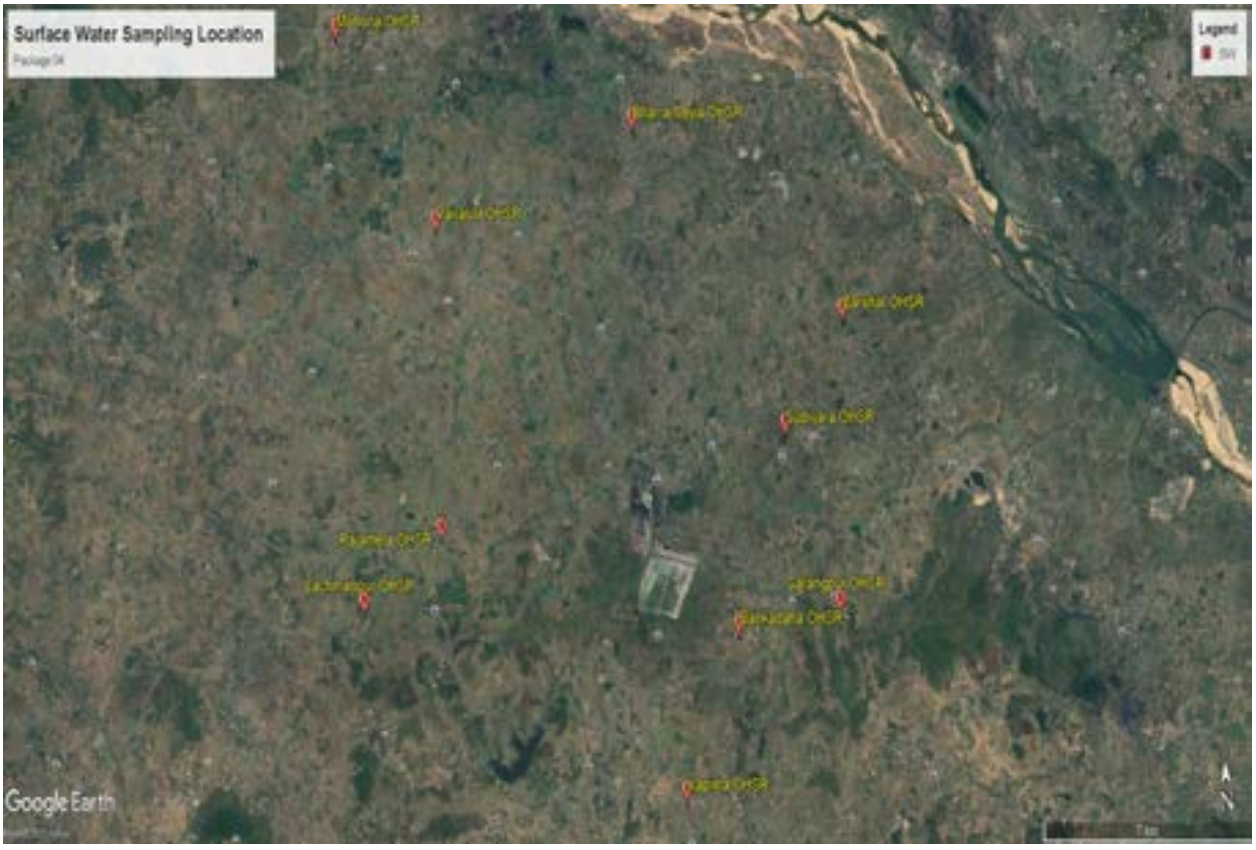


Figure 10H: Surface Water Locations of Package BK/04

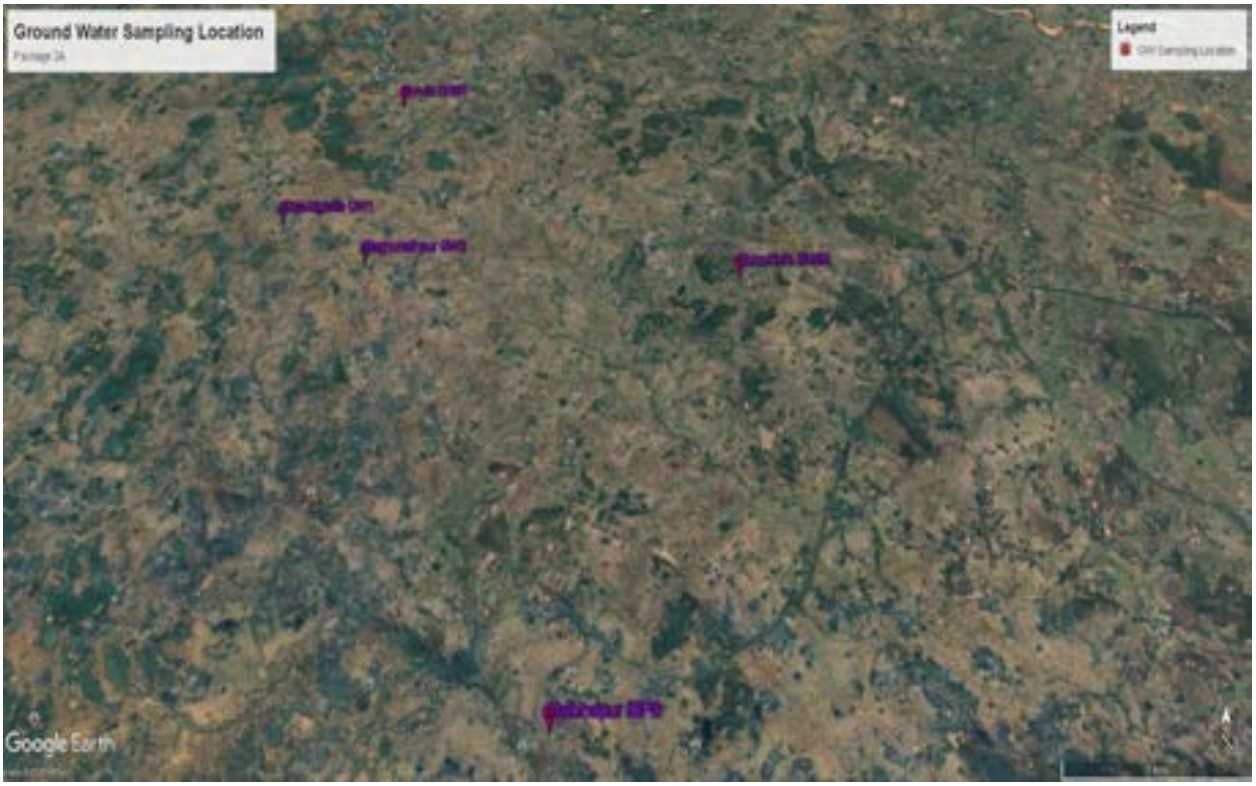


Figure 10I: Ground Water Locations of Package BK/2A

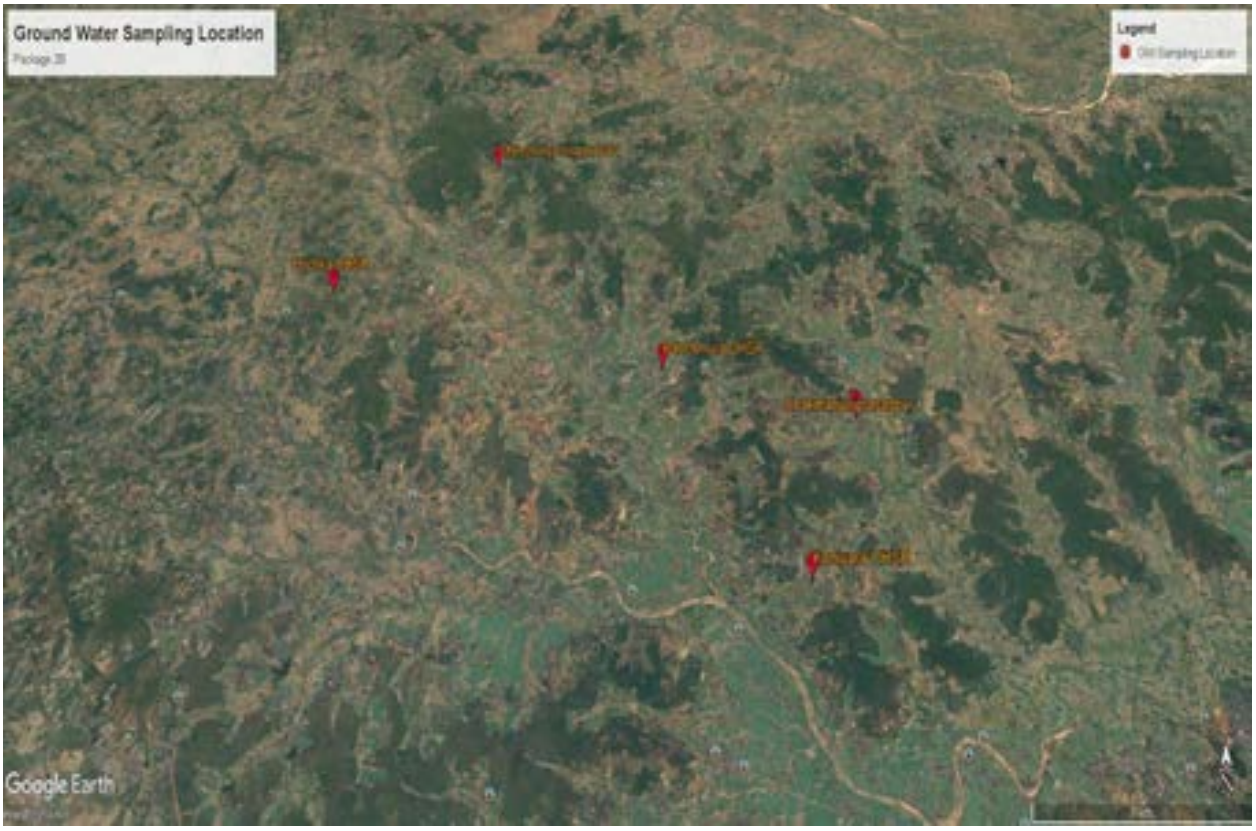


Figure 10J: Ground Water Locations of Package BK/2B

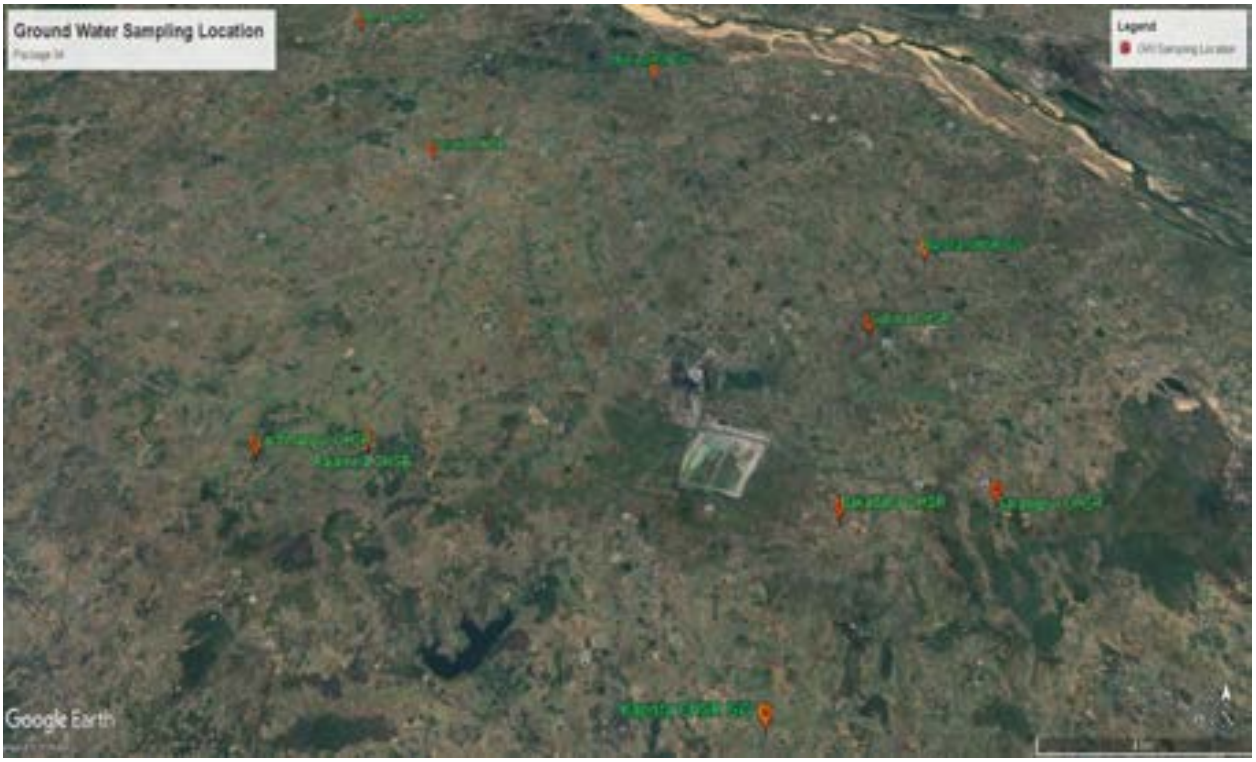


Figure 10K: Ground Water Locations of Package BK/04

Figure 10L: Soil sampling Locations of Package BK/04

103. **Monitoring locations of Purba Medinipur District packages:** For two packages of Purba Medinipur, i.e. EM/01 and EM/02, during construction monitoring work has been conducted.

Package: EM/01

Table 23A: Ambient Air Monitoring Station Locations- During construction monitoring- Purba Medinipur – Nov'24 to April'25

During Construction Location			
Sl. No	**Monitoring Location**	**Co-ordinates**	**Monitoring period**
	Package EM/01		
1	WTP	22º9'15"N, 87º54'5"E	April 2025
2	Intake	22º14'44"N, 87º57'25" E	April 2025
3	Near Narghat Bridge- Haldi River	22º8'13"N, 87º53'30"E	April 2025

Table 23B: Surface Water Sampling location- During construction monitoring- Purba Medinipur – Nov'24 to April'25

During Construction Location			
Sl. No	**Monitoring Location**	**Co-ordinates**	**Monitoring Date***
	Package EM/01		
1	Intake & Substation	22º14'44"N, 87º57'25" E	April 2025

* Note- number of samples as per approved monitoring plan exhausted. Monitoring has been conducted with lesser number

Table 23C: Noise level Monitoring Locations- During construction monitoring- Purba Medinipur – Nov'24 to April'25

During Construction Location			
Sl. No	**Monitoring Location**	**Co-ordinates**	**Monitoring Period**
	Package EM/01		
1	WTP	22º9'15"N, 87º54'4"E	April 2025
2	Intake	22º14'43"N, 87º57'23"E	April 2025
3	Near Narghat Bridge- Haldi River	22º8'13"N, 87º53'31"E	April 2025

104. The monitoring locations for the package were marked on google earth map and presented below.

Figure 11A: Air, Noise, Surface Water quality Monitoring sites for Package EM-01 at Purba Medinipur

Package: EM/02

Table 24A: Ambient Air Quality and Noise Level Monitoring Station Locations (EM02) - During construction– Purba Medinipur- Nov'24 to April'25

		During Construction Location	
Sl. No	**Monitoring Location**	**Co-ordinates**	**Monitoring period***
	Package EM/02		
1	NS Jalpai	22º3'45.71"N, 87º57'21.5"E	April 2025
2	Garhchakraberia	22º5'5.84"N, 87º58'48.8"E	April 2025
3	Jambari	21º57'31.2"N, 87º56'13.77"E	April 2025
4	Manoharpur	22º3'2.24"N , 87º54'49.37"E	April 2025
5	Samsabad	22º2'11.11"N , 87º55'24.48"E	April 2025

Table 24B: Ground Water, Surface Water and Soil Sampling locations- During construction– Purba Medinipur- Nov'24 to April'25

		During Construction Location	
Sl. No	**Monitoring Location**	**Co-ordinates**	**Monitoring period***
	Package EM/02		
1	NS Jalpai	22º3'45.71"N, 87º57'21.5"E	April 2025
2	Gopalchawk	22º5'5.84"N, 87º58'48.8"E	April 2025
3	Jambari	21º57'31.2"N, 87º56'13.77"E	April 2025
4	Manoharpur	22º3'2.24"N , 87º54'49.37"E	April 2025
5	Thakurchawk	22º2'11.11"N , 87º55'24.48"E	April 2025

Figure 11B: Monitoring locations of Air, Noise, Soil, Surface Water & Ground water sampling- pack EM/02

C Method of Monitoring and Equipment used

105. **Ambient Air Quality Monitoring Equipment and Methodology**. Respirable Dust Samplers and Fine Dust Samplers (Model no.-APM-860/APM-154) have been used to collect samples for PM (10) and PM (2.5) in ambient air at a flow rate of 1.2 m^3/min. The ambient air was sucked through the cyclone and filter paper by a blower. Samples of gases were drawn at a flow rate of 0.5 liters per minute and were analysed in the laboratory. Ambient air quality monitoring methodology is given in table below.

Table 25: Methodology for the ambient air monitoring

Sl. No	Parameters	Measurement Method	As per
1.	PM_{10}	Gravimetric	IS:5182 Part-23, RA-2017
2.	$PM_{2.5}$	Gravimetric	USEPA CFR-40, Part-50
3.	SO_2	Colorimetric (EPA modified West & Gaeke Method)	IS:5182 Part-2, 2001, RA-2017
4.	NO_X	Colorimetric (Arsenite modified Jacobs & Hochheiser Method)	IS:5182 Part-6, 2006, RA-2017
5.	CO	Non-Dispersive Infra-Red (NDIR) Spectroscopy Technique	IS:5182 Part-10, 1999, RA-2014

106. **Methodology of Surface and Ground Water Monitoring.** In order to establish baseline/ during construction conditions, grab samples were collected from water source and were analysed for various parameters as per the procedures laid down in the BIS. Samples were collected as per IS- 2488 (Part I-V). Surface water samples were analysed as per surface water quality criteria by Central Pollution Control Board (CPCB) for class B and C. Ground water samples were also analysed as per method provided by CPCB. Wet chemical, Atomic Absorption Spectrophotometer and UV/VIS Spectrophotometer were used for analysis of water samples according to the necessity.

107. **Methodology of Noise Level Monitoring**. Lutron Data logger Noise Meter (Model SL – 4023 SD) was used to monitor the noise levels. Noise level was monitored continuously for 24 hours with one-hour interval. Noise level was measured in the form of Leq dB(A), - Day and Night

D. Monitoring results and analysis of results

108. Monitoring results and analysis of results are presented below for sub projects at North 24 Pgs, Bankura and Purba Medinipur.

I. Environmental Monitoring Results of North 24 Pgs and observations

Table 26A: Ambient Air Quality Monitoring Results- North 24 pgs- Pre- Construction (Baseline) & During Construction – November 2024 to April 2025

Site No.	Date of Sampling	Site Location	Parameters				
			PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	CO ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)
Contract Package: WBDWSIP/DWW/NCB/N24P/01/2017-18							
Monitoring Phase: During construction -April 2025							
	30.04 – 01.05. 2025	WTP Filter house	67	29	709	6.2	21.3
	30.04 – 01.05. 2025	Booster Pumping Station - 1	71	29	618	5.9	22.5
	29.04 – 30.04.2025	Bhangar – GLSR	108	47	1007	8.4	24.7
	29.04 – 30.04.2025	Haroa - GLSR	83	41	858	7.4	23.1
National Ambient Air Quality Standard (NAAQS)			**100**	**60**	**2000**	**80**	**80**
WHO standard			**100**	**50**	**-**	**50***	**40***

*Interim target 2

Note: National level Central Pollution Control Board's (Govt. of India) guideline/ protocol used for sampling, for analysis. INDIAN STANDARD IS 5182 and USEPA CFR 40 (International protocol) used for analysis

Table 26B: Noise Level Monitoring data- North 24 Pgs- Pre-construction (Baseline) & during Construction – November 2024 to April 2025

Site No	Date of Monitoring	Site Location/ Land use	Leq dB(A)	
			Day Time	Night Time
Contract Package: WBDWSIP/DWW/NCB/N24P/01/2017-18				
Monitoring Phase: During construction- April 2025				
	30.04 – 01.05. 2025	WTP Filter house / A-Industrial	57.6	45.7
	30.04 – 01.05. 2025	Booster Pumping Station – 1 / A-Industrial	57.0	46.2
	29.04 – 30.04.2025	Bhangar – GLSR / C-Residential	56.2	44.2
	29.04 – 30.04.2025	Haroa – GLSR / C-Residential	57.9	45.8

Code/Category	Leq Day Time dB(A) – Standard	Leq Night Time dB(A) – Standard
A/ Industrial	**75**	**70**
B/ Commercial	**65**	**55**
C/ Residential	**55**	**45**
D/Ecological- Sensitive	**50**	**40**

109. For ease of comparison, land use of various monitoring locations is highlighted in the same colour as that of regulatory limits prescribed for such land use.

Table 26C: Surface Water quality monitoring Result – North 24 Pgs- During construction

Site no.	Date of Sampling	Site Location	Parameters													
			pH	Turbidity (NTU)	Cl- (mg/l)	F (mg/l)	No3- (mg/l)	COD (mg/l)	BOD (mg/l)	DO (mg/l)	Total alkalinity (mg/l)	Hardness (mg/l)	Oil & Grease(mg/l)	Ammonical -Nitrogen (mg/l)	Total coliform (MPN/ 100 ml)	Faecal coliform (MPN/100ml)
Contract Package WBDWSIP/DWW/NCB/N24P/01/2017-18																
MR Crossing	29.04.2025	Bajgola Khal near canal bridge	7.29	5.90	115.90	0.75	3.89	28.00	10.00	4.50	28.00	260.00	3.20	4.20	120	63
Bhangar GLSR-Canal	29.04.2024	Kestopur khal near Bhangar - GLSR	7.59	4.7	37.9	0.48	0.89	15.00	4.60	3.30	16.00	156.00	3.10	4.70	170	94
Surface water quality criteria By CPCB (class D: Propagation of Wild life and Fisheries)			**6.5-8.5**	**---**	**---**	**---**	**---**	**---**	**---**	**4 (Minimum)**	**---**	**---**	**---**	**1.2**	**---**	**---**

Analysis of Results for the Period: November 2024 to April 2025

110. The results obtained for the various environmental media at the project packages are presented graphically below and analysed therein.

A. Contract Package WBDWSIP/DWW/NCB/N24P/02A/2017-18

111. No air, noise or water sample was drawn for this package during this SEMR period as the allocated number of samples are exhausted. Variation proposal is under consideration.

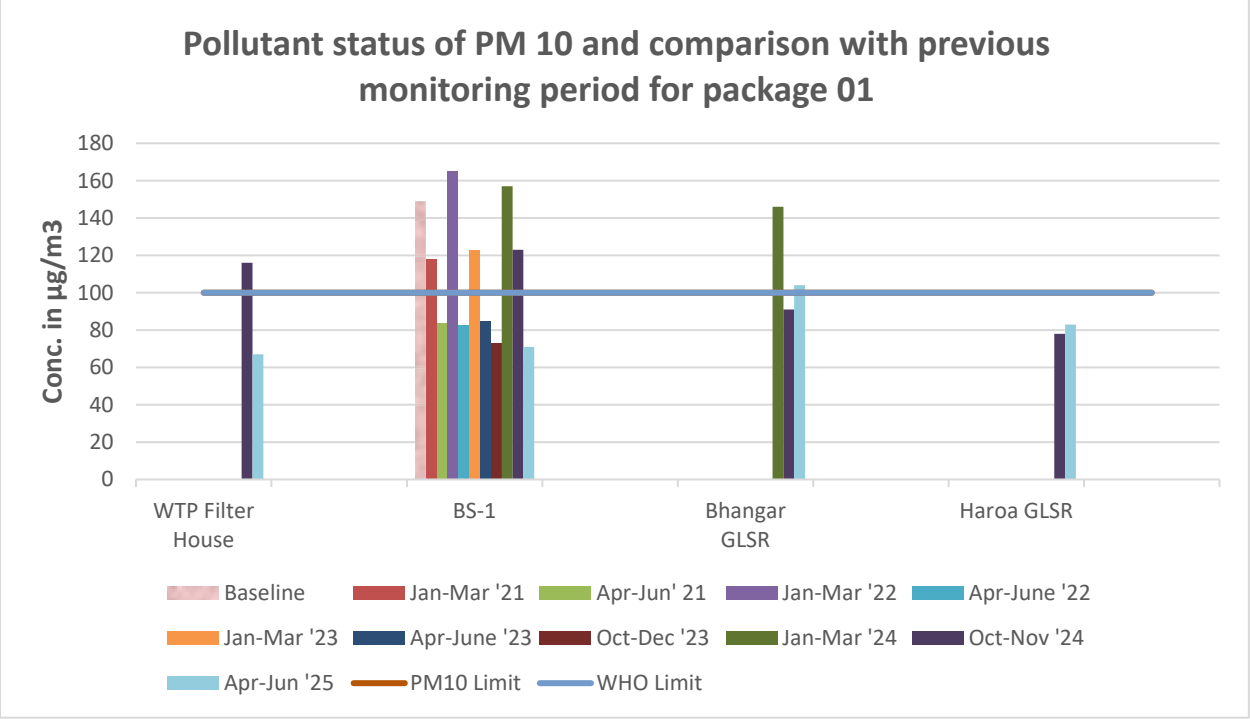
B. Contract Package WBDWSIP/DWW/NCB/N24P/02B/2017-18

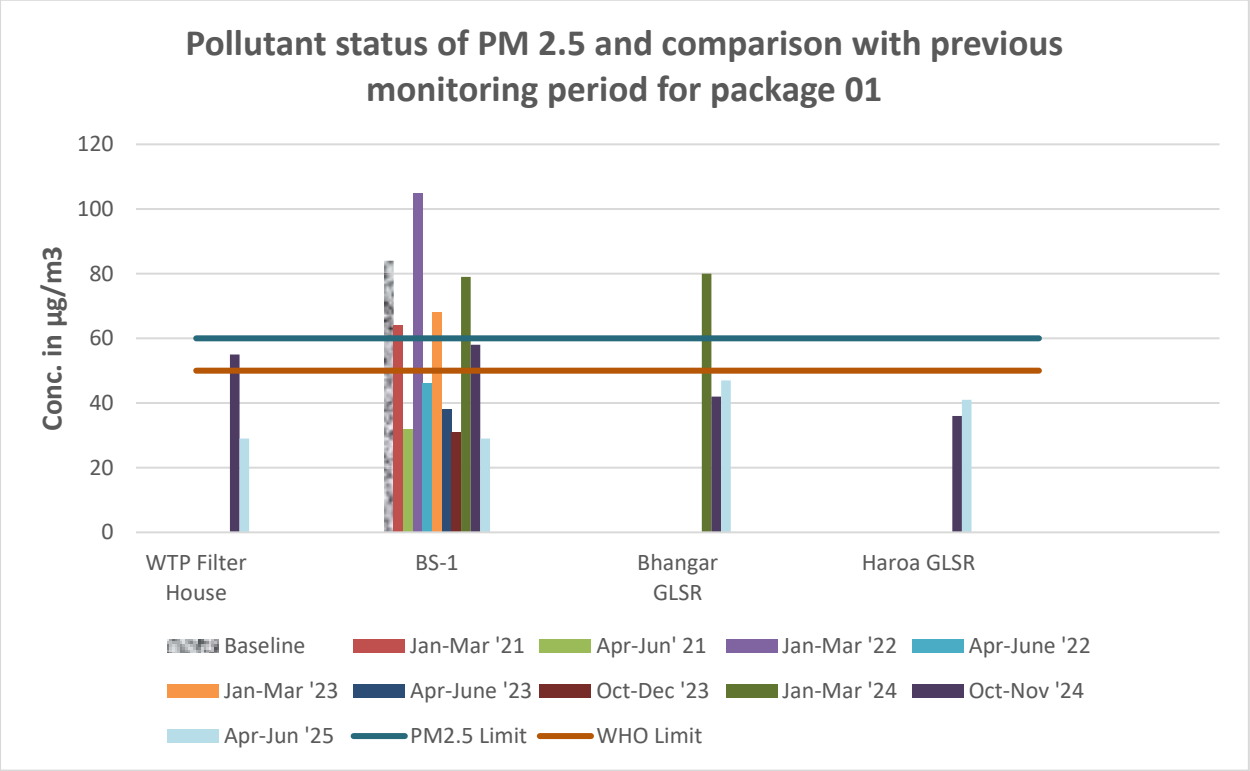
112. No air, noise or water sample was drawn for this package during this SEMR period as the allocated number of samples are exhausted. Variation proposal is under consideration

C. Contract Package: WBDWSIP/DWW/NCB/N24P/01/2017-18

a. Air Quality

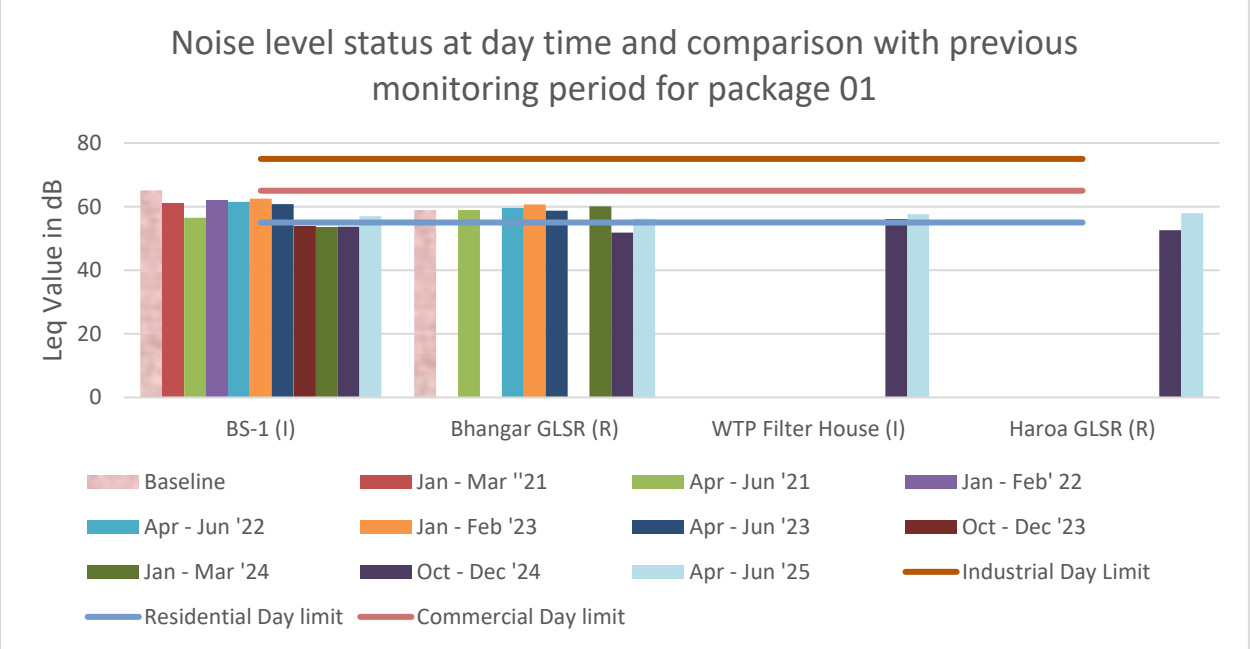
113. Analysis of PM_{10} and $PM_{2.5}$ data collected over time at the selected locations within Package 1 is presented by different season in the graphs shown below. It is evident from these graphs that the ambient concentrations of these pollutants are almost at limit or below at all the monitored locations during the present campaign (April 2025) when compared against limits set by CPCB as well as WHO. However, in comparison with previous monitoring campaign, the ambient concentration of particulates has increased, albeit marginal, at both Haroa and Bhangar GLSR. This seems justifiable considering the nature of construction activities undertaken at these two sites.

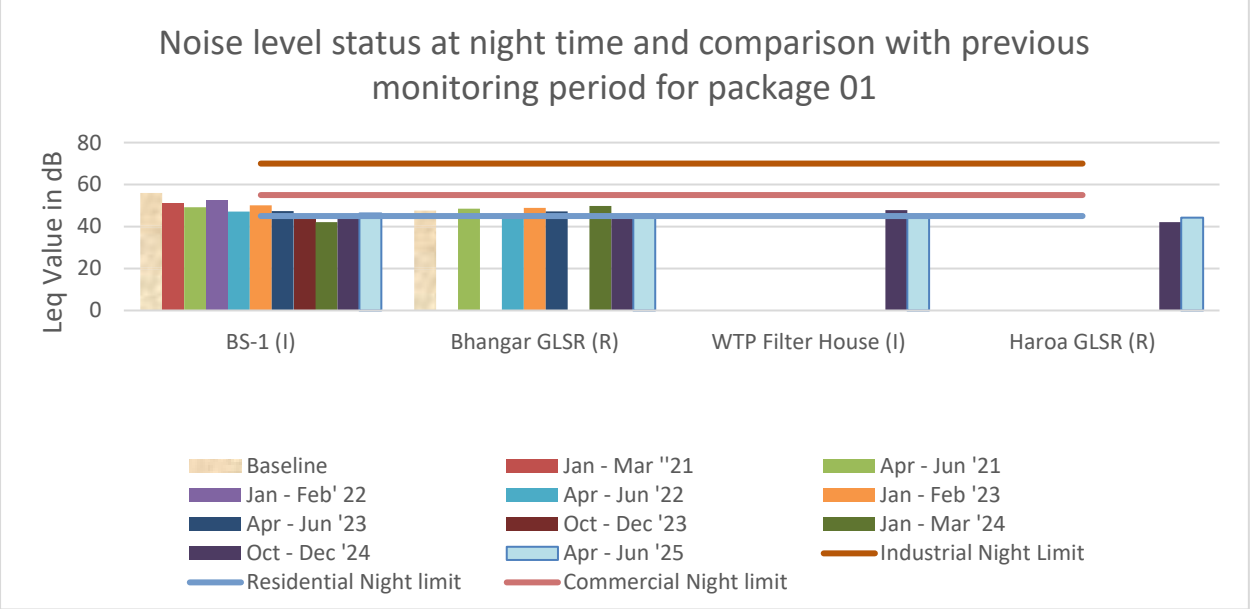




b. Noise Level

114. The noise level data collected over time and different seasons at the selected locations within Package-1 is presented below.

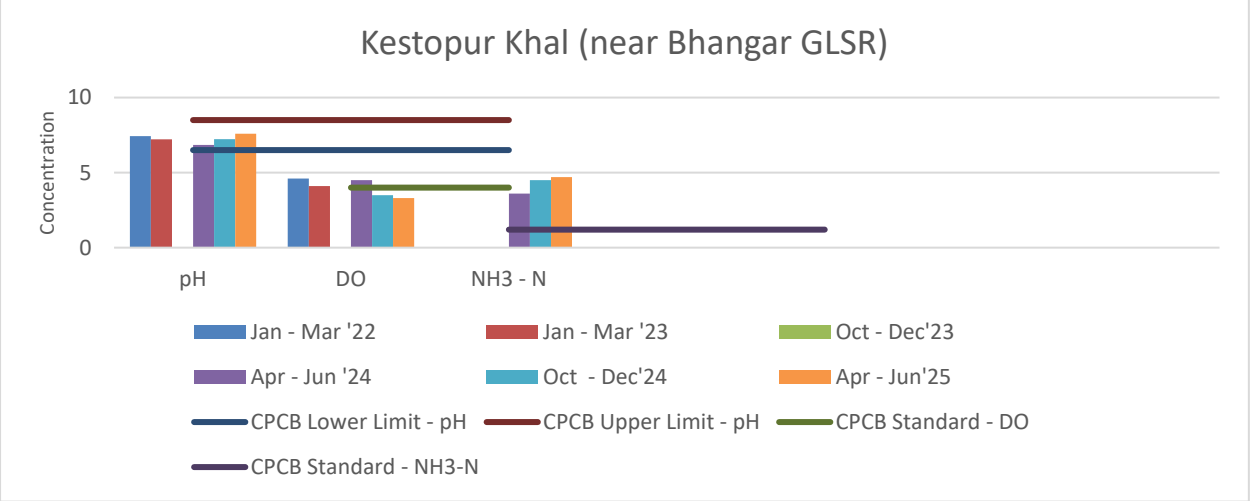


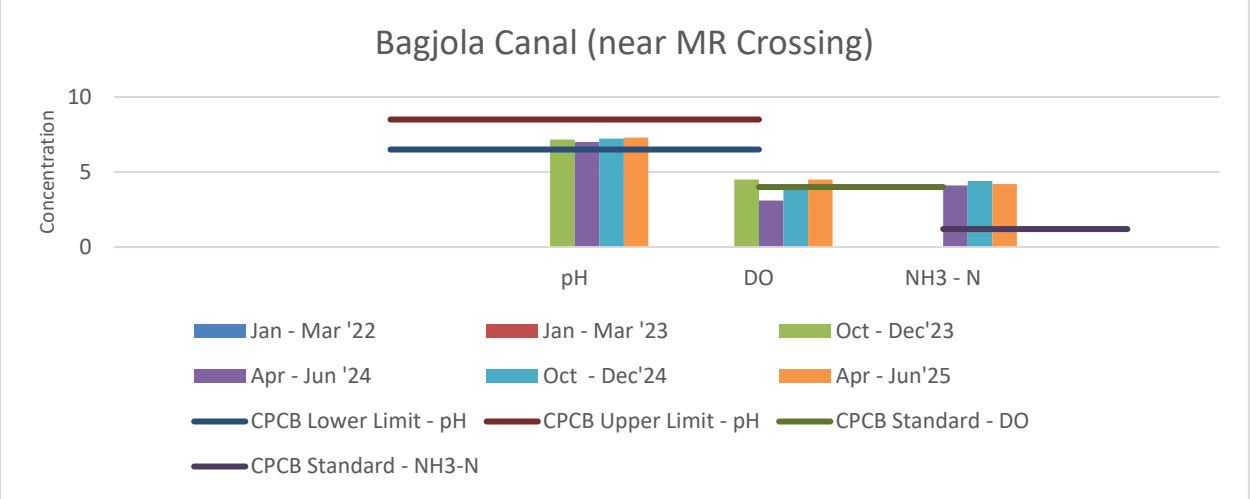


115. As per above graph representing the noise levels at the monitored locations, it is evident that for Industrial (WTP Filter House and BS-1), and Residential (Bhangar GLSR and Haroa GLSR) land uses, the noise levels are nearby (marginally higher than standard at GLSR sites) or within limits for both day as well as night time prescribed for respective land uses and almost replicating the baseline. However, day-time noise levels have increased marginally in comparison with levels recorded during previous campaign. This may be attributed to relative increase in noisy activities performed at these locations presently.

116. Further the noise levels have dipped at night as compared to day time in all monitored locations due to absence of contribution from project.

c. Water Quality





117. Surface water samples were collected from Kestopur and Bagjola canal. Analysis of these samples represents erratic trend in DO, while it is decreasing in Kestopur, the reverse is seen in Bagjola canal when compared to last monitoring campaign. This behaviour is most likely due to local changes in the canal water feed pattern. However, pH level found within prescribed limit but free ammonia in both locations found higher than prescribed limit as per CPCB class D[5] water category.

118. It should be noted here that while the DO level at Kestopur Khal is below the desired level, the level found at Bagjola Canal is just meeting the requirement.

119. During Construction, air quality, noise level and water quality monitoring will be continued as per Environment Management and Monitoring Plan. All monitoring expenses will be borne by contractors from their project Health safety monitoring budget

120. All original test certificates are available in DSISC/PIU office as back-up.

II. Environmental Monitoring Results of Bankura Packages and observations

121. Environmental monitoring results and observations of different packages under Bankura District are given below.

Table 27A: Ambient Air Quality Monitoring Results- Bankura- During Construction: November 2024 to April 2025

Sl. no.	Date of Sampling	Site Location	Parameters				
			PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	CO ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)
Contract Package: WBDWSIP/DWW/NCB/BK/01/2017-18							
1	13-04-2025	Near project site	73	32	892	6.4	30.2
Contract Package: WBDWSIP/DWW/NCB/BK/02A/2018-19							
1	31-01-2025	Raghunathpur IBPS	70	33	709	6.5	26.5
2	30-01-2025	Gobindpur IBPS	64	26	652	6.2	25.3
3	29-01-2025	Surulia OHSR	55	23	629	5.6	24.7

[5] Class D water is for the propagation of wildlife and fisheries.

Sl. no.	Date of Sampling	Site Location	Parameters				
			PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	CO ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)
4	30-01-2025	Chaukighata OHSR	74	35	755	755	26.9
5	29-01-2025	Dumurtor OHSR	57	32	685	6.7	26.3
Contract Package: WBDWSIP/DWW/NCB/BK/02B/2018-19							
1	25-01-2025	Chenchuriya	58	23	641	5.7	23.6
2	31-01-2025	Koniyara OHSR	62	26	664	5.9	24.1
3	28-01-2025	Chakmanjuriprasadpur	76	35	732	6.8	35.8
4	27-01-2025	Panchmura OHSR	53	21	595	5.6	23.2
5	26-01-2025	Khichka OHSR	65	26	698	6.3	24.5
Contract Package: WBDWSIP/DWW/NCB/BK/03/2018-19							
1	31-01-2025	Intake	118	51	1190	9.3	36.2
2	31-01-2025	WTP	132	57	1167	8.4	32.1
Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19							
1	13-01-2025	Bharra-Mejia	74	32	721	6.8	25.8
2	13-01-2025	Pairasol	80	37	892	7.3	29.1
3	13-01-2025	Mohona	108	50	1007	7.8	32.5
4	12-01-2025	Lachmanpur	102	48	995	8.5	29.7
5	12-01-2025	Barsal Srirampur	125	61	1087	9.6	33.1
6	11-01-2025	Sarangpur	86	42	892	8.2	27.4
7	11-01-2025	Rajamela	98	45	938	8.8	28.0
8	11-01-2025	Subiara	92	43	984	8.4	29.1
9	10-01-2025	Bankadaha	76	34	549	6.7	24.8
10	10-01-2025	Kapista	66	27	698	6.2	26.1
National Ambient Air Quality Standard			**100**	**60**	**2000**	**80**	**80**
WHO standard			**100**	**50**	**-**	**50***	**40***

**Interim target 2, ** 8 hours monitoring

Note: National level Central Pollution Control Board's (Govt. of India) guideline/ protocol used for sampling, For analysis. INDIAN STANDARD IS 5182 and USEPA CFR 40 (International protocol) used for analysis

Table 27B: Noise Level Monitoring Data- Bankura- During Construction: November 2024 to April 2025

Site No	Date of Sampling	Site Location	Leq dB(A)	
			Day Time	Night Time
Contract Package: WBDWSIP/DWW/NCB/BK/01/2017-18				
1	21-10-2024	Near project Office	55.8	45.9
2	13-04-2025	Near project site	56.6	45.5
Contract Package: WBDWSIP/DWW/NCB/BK/02A/2018-19				
1	31-01-2025	Raghunathpur IBPS	55.9	44.5
2	31-01-2025	Gobindpur IBPS	54.6	44.0
3	29-01-2025	Surulia OHSR	55.7	45.1
4	30-01-2025	Chaukighata OHSR	56.4	44.1
5	28-01-2025	Dumurtor OHSR	58.6	46.1
			Average Leq dB (A)	
1	30-01-2025	Bibarda pipeline	49.6	
2	30-01-2025	Raghunathpur pipeline	50.4	
3	30-01-2025	Harmasra pipeline	48.1	
4	30-01-2025	Nayekhir pipeline	49.4	
5	30-01-2025	Gunnath pipeline	51.7	
Contract Package: WBDWSIP/DWW/NCB/BK/02B/2018-19				
1	25-01-2025	Chenchuriya IBPS	56.0	43.7
2	26-01-2025	Koniyara OHSR	56.0	45.5
3	27-01-2025	Chakmanjuri prasadpur	53.7	42.7
4	27-01-2025	Panchmura OHSR	54.9	44.1
5	25-01-2025	Khichka OHSR	55.0	43.6

Site No	Date of Sampling	Site Location	Leq dB(A)	
			Day Time	Night Time
			Average Leq dB (A)	
6	30-01-2025	Asnasundarpur Zone Pipeline	52.4	
7	30-01-2025	Panchmura zone pipeline	51.5	
8	30-01-2025	Bibarda Zone pipeline	45.7	
9	30-01-2025	Taldangra Zone pipeline	45.0	
10	30-01-2025	Belasulishyamsundarpur zone pipeline	50.0	
Contract Package: WBDWSIP/DWW/NCB/BK/03/2018-19				
1	31-01-2025	Intake	60.2	48.5
2	31-01-2025	WTP	62.6	48.4
Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19				
1	13-01-2025	Bharra-Mejia	53.6	42.3
2	13-01-2025	Pairasol	53.0	42.7
3	13-01-2025	Mohona	55.0	40.7
4	12-01-2025	Lachhmanpur	52.9	39.8
5	12-01-2025	Barsal Srirampur	51.7	40.2
6	12-01-2025	Rajamela	53.9	43.3
7	11-01-2025	Sarangpur	54.8	40.4
8	11-01-2025	Subiara	52.9	42.5
9	11-01-2025	Bakadaha	53.4	39.9
10	10-01-2025	Kapistha	53.8	42.5
			Average Leq dB (A)	
STANDARD				
Code/Category		**Leq Day Time dB(A) – Standard**	**Leq Night Time dB(A) – Standard**	
A/	**Industrial**	**75**	**70**	
B/	**Commercial**	**65**	**55**	
C/	**Residential**	**55**	**45**	
D/	**Ecological- Sensitive**	**50**	**40**	

Note- All sites category C- Residential area

Table 27C: Ground Water Quality Monitoring Data for BK/02A- Bankura- During Construction- November 2024 to April 2025

Sl. No.	Parameters	Unit	Contract Package: WBDWSIP/DWW/NCB/BK/02A/2018-19					National Standards for Drinking Water- BIS 10500-2012 Acceptable limit (Maximum permissible limit)
			Results (During Construction)					
			Location: Raghunathpur IBPS Date of sampling 30-01-25	Location: Gobindpur IBPS Date of sampling 29-01-25	Location: Surulia OHSR Date of sampling 28-01-25	Location: Chaukighata OHSR Date of sampling 29-01-25	Location: Gunnath Date of sampling 28-01-25	
1	pH	-	7.21	7.39	7.13	7.24	7.27	6.5-8.5
2	Colour	Hazan Unit	<1	<1	<1	<1	<1.0	5 (15)
3	Taste and Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	<1.0	<1	<1	<1.0	1 (5)
5	TDS	Mg/l	272	238	190	192	228	500 (2000)
6	Total Hardness	Mg/l	192.1	143.6	119.0	122.9	142.1	200 (600)
7	Chloride	Mg/l	50.8	43.1	39.1	37.2	43.1	250 (1000)
8	Alkalinity	Mg/l	154.4	130.7	110.9	106.9	126.7	200 (600)
9	Sulphate	Mg/l	22.4	22.4	15.4	24.3	26.1	200 (400)
10	Nitrate	Mg/l	0.84	0.74	0.52	0.65	<0.5	45
11	Fluoride	Mg/l	0.19	0.24	0.17	0.16	0.24	1 (1.5)
12	Calcium	Mg/l	54.9	41.9	33.8	35.3	36.9	75(200)
13	Iron	Mg/l	0.31	0.38	0.15	0.33	0.29	0.3
14	Residual Free Cl	Mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	0.2(1.0)
15	Ammonia	Mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
16	Chromium	Mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
17	Copper	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.05 (1.5)
18	Arsenic	Mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01 (0.05)
19	Zinc	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	5 (15)
20	Mercury	Mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
21	Manganese	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.1 (0.3)
22	Cadmium	Mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	0.03(0.2)
23	Aluminium	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.03 (0.2)
24	Cyanide	Mg/l	<0.02	<0.02	<0.0	<0.02	<0.02	0.05 (No relaxation)
25	E-Coli	MPN/100 ml	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample
26	Total Coliform	MPN/ 100 ml	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample

Table 27D: Ground Water Quality Monitoring Data for BK/02B- Bankura- During Construction- November 2024 to April 2025

Sl no.	Parameters	Unit	Contract Package: WBDWSIP/DWW/NCB/BK/02B/2018-19					National Standards for Drinking Water- BIS 10500-2012 Acceptable limit (Maximum permissible limit)
			Results (During Construction)					
			Location: Chenchuriya IBPS Date of sampling 25-01-2025	Location: Koniyara OHSR Date of sampling 26-01-25	Location: Chakmanjuriprasadpur OHSR Date of sampling 27-01-2025	Location: Panchmura OHSR Date of sampling 26-01-2025	Location: Khichka OHSR Date of sampling 25-01-2025	
1	pH	-	7.19	7.26	7.52	7.63	7.27	6.5-8.5
2	Color	Hazan Unit	<1	<1	<1	<1	<1	5 (15)
3	Taste and Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	<1	<1	<1	<1	1 (5)
5	TDS	Mg/l	306	278	252	256	288	500 (2000)
6	Total Hardness	Mg/l	205.6	188.2	195.8	172.8	207.4	200 (600)
7	Chloride	Mg/l	50.9	56.7	48.9	48.9	54.8	250 (1000)
8	Alkalinity	Mg/l	194.0	170.3	142.6	150.5	174.2	200 (600)
9	Sulphate	Mg/l	30.6	28.2	34.2	27.3	38.3	200 (400)
10	Nitrate	Mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	45
11	Fluoride	Mg/l	<0.1	0.21	0.16	0.15	0.32	1 (1.5)
12	Calcium	Mg/l	51.2	46.1	47.6	43.0	50.7	75(200)
13	Iron	Mg/l	0.29	0.37	0.32	0.23	0.39	0.3
14	Residual Free Cl	Mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	0.2(1.0)
15	Ammonia	Mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
16	Chromium	Mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
17	Copper	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.05 (1.5)
18	Arsenic	Mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01 (0.05)
19	Zinc	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	5 (15)
20	Mercury	Mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
21	Manganese	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.1 (0.3)
22	Cadmium	Mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	0.03(0.2)
23	Aluminum	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.03 (0.2)
24	Cyanide	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.05 (No relaxation)
25	E-Coli	MPN/100 ml	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample
26	Total Coliform	MPN/ 100 ml	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample

Table 27E: Ground Water Quality Monitoring Data for BK/04- Bankura- During Construction- November 2024 to April 2025

Sl. No.	Parameters	Unit	Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19										National Standards for Drinking Water-BIS 10500-2012 Acceptable limit (Maximum permissible limit)
			Results (During Construction)										
			Kapistha (09-01-2025)	Sarangpur (10-01-2025)	Subiara (10-01-22025)	Bankadha 09-01-2025	Rajamela (11-01-2025)	Barshal Srirampur (11-01-25)	Lachmanpur (11-01-25)	Mohona (12-01-25)	Bharra Mejia (12-01-25)	Pairasol (12-01-25)	
1	pH	-	7.39	7.53	7.24	7.65	7.41	7.71	7.45	7.83	7.40	7.53	6.5-8.5
2	Colour	Hazan Unit	<1	<1	<1		<1	<1	<1	<1	<1	<1	5 (15)
3	Taste and Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 (5)
5	TDS	Mg/l	190	216	208	244	244	168	254	196	208	168	500 (2000)
6	Total Hardness	Mg/l	158.4	170.3	122.7	174.2	170.3	96.0	154.4	126.7	166.3	118.8	200 (600)
7	Chloride	Mg/l	43.0	41.1	48.9	52.8	48.9	41.1	52.8	45.0	43.0	46.9	250 (1000)
8	Alkalinity	Mg/l	114.8	154.4	150.4	166.3	194.0	118.8	162.3	146.5	170.2	106.9	200 (600)
9	Sulphate	Mg/l	25.3	20.8	16.3	33.4	19.1	17.5	29.8	11.5	18.2	13.6	200 (400)
10	Nitrate	Mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	45
11	Fluoride	Mg/l	<0.1	<0.1	<0.1	0.19	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	1 (1.5)
12	Calcium	Mg/l	34.8	41.2	36.4	38.0	39.6	25.3	47.5	34.8	30.1	28.5	75(200)
13	Iron	Mg/l	0.23	0.36	<0.05	<0.05	0.25	0.16	0.34	<0.05	0.32	<0.05	0.3
14	Residual Free Cl	Mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2(1.0)
15	Ammonia	Mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
16	Chromium	Mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
17	Copper	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05 (1.5)
18	Arsenic	Mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01 (0.05)
19	Zinc	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	5 (15)
20	Mercury	Mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
21	Manganese	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.1 (0.3)
22	Cadmium	Mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.03(0.2)

Sl. No.	Parameters	Unit	Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19										National Standards for Drinking Water-BIS 10500-2012 Acceptable limit (Maximum permissible limit)
			Results (During Construction)										
			Kapistha (09-01-2025)	Sarangpur (10-01-2025)	Subiara (10-01-22025)	Bankadha 09-01-2025	Rajamela (11-01-2025)	Barshal Srirampur (11-01-25)	Lachmanpur (11-01-25)	Mohona (12-01-25)	Bharra Mejia (12-01-25)	Pairasol (12-01-25)	
23	Aluminium	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03 (0.2)
24	Cyanide	Mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05 (No relaxation)
25	E-Coli	MPN/100 ml	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample
26	Total coliform	MPN/ 100 ml	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Must not be detectable in 100 ml sample

Table 27F: Surface Water Quality Monitoring data–PKG BK/01, Bankura- During construction- November 2024 to April 2025

Sl. no.	Date of sampling	Site Location	Parameters												
			pH	Total Hardness as $CaCO_3$ (mg/L)	Total Alkalinity (mg/L)	DO (min) (mg/L)	COD (mg/l)	BOD (mg/l)	Oil & Grease (mg/l)	Turbidity (NTU)	Chlorideas Cl (mg/L)	Nitrate as NO_3 (mg/L)	Fluoride as F (mg/L)	Total coliform (MPN/ 100 ml)	Faecal coliform (MPN/ 100ml)
	Contract Package: WBDWSIP/DWW/NCB/BK/01/2018-19														
1	20-11-2024	Intake site at Mukutmanipur	7.82	88.1	92.0	5.6	27	<2	<1.4	7.4	21.9	<0.5	<0.1	187	72
2	20-12-2024		7.07	81.1	98.0	5.2	23	<2	<1.4	7.2	21.9	<0.5	<0.1	154	70
3	20-01-2025		7.02	83.1	91.0	5.9	24	<2	<1.4	7.1	21.9	<0.5	<0.1	100	65
4	20-02-2025		7.57	83.7	91.5	5.1	21	<2	<1.4	7.8	21.3	<0.5	<0.1	171	61
5	21-03-2025		7.23	81.2	96.5	5.8	18	<2	<1.4	7.6	25.3	<0.5	<0.1	140	54
6	14-04-2025		7.76	95.0	112.0	5.9	20	<2	<1.4	7.3	25.8	<0.5	<0.1	109	46
Surface water quality criteria as per IS:2296 (Class C- drinking water with conventional treatment followed by disinfection)			6.5-8.5	-	-	5.0	-	3.0	-	-	-	-	1.5	500	-

Table 27G: Surface Water Quality Monitoring data –PKG BK/02A, Bankura- During Construction – November 2024 to April 2025

Sl. no.	Date of sampling	Site Location	Parameters												
			pH	Total Hardness as $CaCO_3$ (mg/L)	Total Alkalinity (mg/L)	DO (min) (mg/L)	COD (mg/l)	BOD (mg/l)	Oil & Grease (mg/l)	Turbidity (NTU)	Chlorides Cl (mg/L)	Nitrate as NO_3 (mg/L)	Fluoride as F (mg/L)	Total coliform (MPN/ 100 ml)	Fecal coliform (MPN/100ml)
	Contract Package: WBDWSIP/DWW/NCB/BK/02A/2018-19														
1	30-01-25	Raghunathpur IBPS	7.33	82.3	130.7	5.4	8	2.2	2.8	2.8	48.9	0.72	<0.1	58	21
2	29-01-25	Gobindpur IBPS	7.36	98.0	122.8	6.3	12	2.8	<1.4	3.3	37.2	<0.5	<0.1	38	10
3	28-01-25	Surulia OHSR	7.27	125.4	103.0	4.7	12	3.4	<1.4	3.3	50.9	0.81	0.19	70	24
4	29-01-25	Chaukighata OHSR	7.14	137.2	122.8	5.6	10	2.7	2.6	3.4	52.8	0.56	<0.1	63	25
5	28-01-25	Gunnath	7.22	121.5	118.8	5.2	14	3.6	<1.4	3.3	50.9	0.53	<0.1	41	13
Surface water quality criteria as per IS:2296 (Class B- outdoor bathing)			6.5-8.5	-	-	5.0	-	3.0	-	-	-	-	1.5	500	-

Table 27H: Surface Water Quality Monitoring data –PKG BK/02B, Bankura- During Construction- November 2024 to April 2025

Sl. no.	Date of sampling	Site Location	Parameters												
			pH	Total Hardness as $CaCO_3$ (mg/L)	Total Alkalinity (mg/L)	DO (min) (mg/L)	COD (mg/l)	BOD (mg/l)	Oil & Grease (mg/l)	Turbidity (NTU)	Chloride as Cl (mg/L)	Nitrate as NO_3 (mg/L)	Fluoride as F (mg/L)	Total coliform (MPN/ 100 ml)	Faecal coliform (MPN/100ml)
	Contract Package: WBDWSIP/DWW/NCB/BK/02B/2018-19														
1	25-01-25	Chenchuriya IBPS	7.71	161.3	118.8	6.4	10	2.8	2.9	3.7	43.1	<0.5	0.39	47	17
8	26-01-25	Koniyara OHSR	7.34	119.0	83.2	5.6	8	2.4	2.5	3.2	41.1	<0.5	0.14	63	21
10	27-01-25	Chakmanjururipra sadpur	7.63	115.2	106.9	5.3	12	3.4	2.1	4.1	47.0	<0.5	0.26	58	21
6	26-01-25	Panchmura OHR	6.91	88.3	75.2	5.9	10	2.7	<1.4	3.2	29.4	<0.5	0.12	39	11
5	25-01-25	Khichka OHSR	7.29	103.7	91.1	4.7	14	3.4	2.4	2.6	54.8	<0.5	0.23	70	23
Surface water quality criteria as per IS:2296 (Class B- outdoor bathing)			6.5-8.5	-	-	5.0	-	3.0	-	-	-	-	1.5	500	-

Table 27J: Monthly Surface Water Quality Monitoring data PKG BK/03, Bankura- During Construction- November 2024 to April 2025

Sl. no.	Date of sampling	Site Location	Parameters												
			pH	Total Hardness as $CaCO_3$ (mg/L)	Total Alkalinity (mg/L)	DO (min) (mg/L)	COD (mg/l)	BOD (mg/l)	Oil & Grease (mg/l)	Turbidity (NTU)	Chloride as Cl (mg/L)	Nitrate as NO_3 (mg/L)	Fluoride as F (mg/L)	Total coliform (MPN/ 100 ml)	Faecal coliform (MPN/100ml)
	Contract Package: WBDWSIP/DWW/NCB/BK/03/2018-19														
1	12-11-2024	Intake site,	8.02	125.4	140.4	5.8	12	3.2	<1.4	3.9	21.5	<0.5	0.14	43	14
2	29-12-2024		7.71	192.0	166.3	4.5	26	7.3	<1.4	4.3	37.2	<0.5	0.21	49	21
3	31-01-2025		7.69	74.5	63.4	4.7	21	6.1	<1.4	4.1	29.4	<0.5	0.19	58	21
4	27-02-2025		7.78	81.5	91.1	4.2	24	6.5	<1.4	4.5	35.2	<0.5	<0.1	63	26
5	27-03-2025		7.55	91.1	105.6	4.1	27	6.8	<1.4	4.8	37.2	<0.5	0.18	76	33
6	30-04-2025		7.67	103.0	110.9	4.3	18	6.5	<1.4	5.1	42.0	<0.5	0.22	84	39
Surface water quality criteria as per IS:2296 (Class C- drinking water with conventional treatment followed by disinfection)			6.0-9.0	-	-	4.0	-	3.0	0.1	-	600	50	1.5	5000	-

Note:
BDL= Below Detectable Limit
*<1, indicates no colony developed in 1 ml sample.
<10, indicates no colony developed in 10 ml sample.
<100, indicates no colony developed in 100 ml sample.

Table 27K: Surface Water Quality Monitoring data –PKG BK/ 04, Bankura- During Construction- November 2024 to April 2025

Sl. no.	Date of sampling	Site Location	Parameters												
			pH	Total Hardness as $CaCO_3$ (mg/L)	Total Alkalinity (mg/L)	DO (min) (mg/L)	COD (mg/l)	BOD (mg/l)	Oil & Grease (mg/l)	Turbidity (NTU)	Chloride as Cl (mg/L)	Nitrate as NO_3 (mg/L)	Fluoride as F (mg/L)	Total coliform (MPN/ 100 ml)	Faecal coliform (MPN/100ml)
	Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19														
1	25-01-25	Kapistha	7.36	118.8	87.1	5.1	7.7	2.5	<1.4	1.3	56.7	0.56	<0.1	21	31
2	12-01-25	Mohona	7.82	63.3	107.0	4.3	5.7	<2	<1.4	2.1	43.0	1.2	<0.1	25	17
3	12-01-25	Bharra Mejia	7.42	75.2	142.5	5.7	<4.0	<2.0	<1.4	4.1	60.6	0.86	<0.1	41	32
4	12-01-25	Pairasol	7.60	79.2	122.7	4.9	10.5	2.5	<1.4	5.2	41.1	1.05	<0.1	25	20
5	11-01-25	Rajamela	7.86	114.8	83.1	5.3	12.5	3.6	<1.4	3.2	54.7	0.95	<0.1	41	22
6	11-01-25	Barsal Srirampur	7.71	95.0	71.2	4.7	<4	<2	<1.4	1.8	43.0	0.58	<0.1	70	24
7	11-01-25	Lachmanpur	7.29	91.1	75.2	4.2	<4	<2	<1.4	1.9	45.0	0.74	<0.1	13	17
8	10-01-25	Subiara	7.15	67.3	87.1	4.8	<4	<2	<1.4	2.5	46.9	1.20	<0.1	46	38
9	10-01-25	Sarangpur	7.46	103.0	99.0	4.5	<4	<2	<1.4	2.3	52.8	1.32	<0.1	27	14
10	09-01-25	Bankadaha	7.73	110.8	91.1	5.1	9.6	4.2	2.3	3.2	56.7	1.09	0.23	30	17
Surface water quality criteria as per IS:2296 (Class B- outdoor bathing)			6.5-8.5	-	-	5.0	-	3.0	-	-	-	-	1.5	500	-

Table 27L: Soil Quality Monitoring data –PKG BK/04, Bankura- During Construction - November 2024 to April 2025

Sl.	Parameters	Unit	Contract Package: WBDWSIP/DWW/NCB/BK/04/2018-19									
			Results (During Construction)									
			Kapista OHSR Date of sampling : 09-01-25	Barshal Srirampur OHSR Date of sampling: 11-01-25	Lachmanpur OHSR Date of sampling: 11-01-25	Subiara OHSR Date of sampling: 10-01-25	Bankadaha Date of sampling: 09-01-25	Sarangpur Date of sampling: 10-01-2025	Pairasol OHSR Date of sampling: 12-01-2025	Mohona OHSR Date of sampling: 12-01-2025	Rajamela OHSR Date of sampling: 11-01-2025	Bharra Majia Date of sampling: 12-01-2025
1.	pH	--	7.27	7.39	6.82	7.31	7.21	6.78	7.17	7.37	7.25	7.63
2.	Elec. Conductivity	µS/cm	0.21	0.19	0.52	0.94	1.38	1.14	0.43	0.83	0.63	0.38
3.	Moisture	%	2.4	2.3	1.5	1.7	2.1	1.8	2.6	1.8	1.7	1.4
4.	Permeability	cm/S	0.9	0.8	2.2	1.8	2.7	2.4	1.4	1.1	0.7	2.9
5.	Texture	%	Clay loam	Clay	Sandy Clay	Sandy Loam	SandyLoam	Sandy clay	Loam	Clay	Clay	Sandy loam
6.	Calcium as Ca	mg/kg	0.35	0.39	0.28	0.29	0.34	0.31	0.32	0.25	0.28	0.33
7.	Magnesium as Mg	mg/kg	0.12	0.10	0.06	0.08	0.09	0.07	0.1	0.07	0.09	0.1
8.	Nitrogen as N	Kg/Hectare	480	368	236	291	252	182	260	216	170	179
9.	Potassium as K	mg/kg	127	133	108	134	102	116	158	142	139	97
10.	Sodium as Na	mg/kg	49.8	53.4	57.1	65.2	56.9	62.5	73.4	64.1	67.3	52.7
11.	Phosphate as PO_4	mg/kg	62.9	81.4	57.7	65.9	70.2	54.7	83.4	63.8	69.1	53.8
12.	Organic Matter	%	1.64	1.28	0.86	0.81	0.94	0.82	0.91	1.74	0.88	0.76
13.	Oil & Grease	mg/kg	2.4	<0.4	0.8	<0.4	1.6	1.2	0.8	0.8	3.2	0.4

Comparative Analysis of Monitoring Results

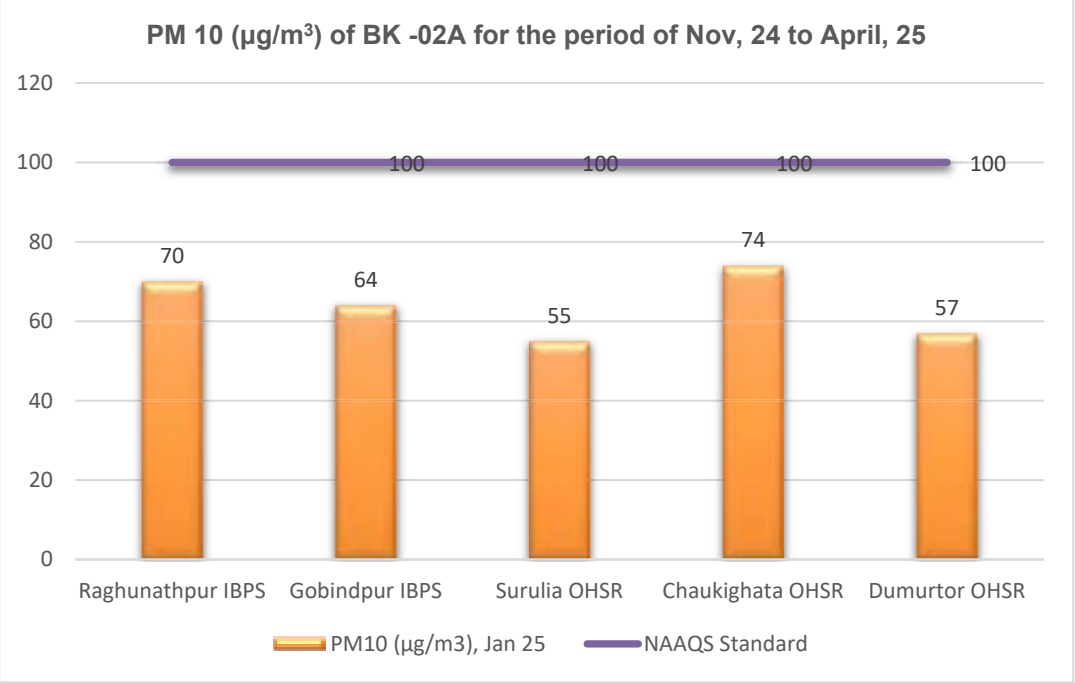
Air Quality Monitoring Results for the period of November 2024 to April 2025

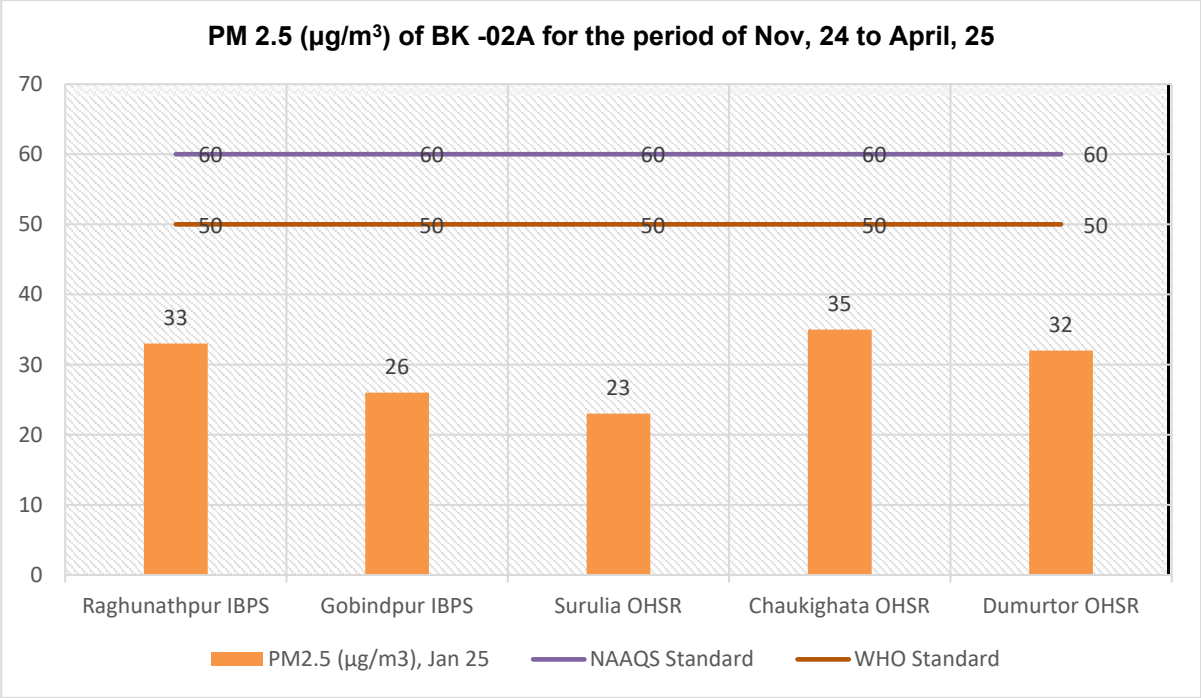
122. Ambient air quality monitoring was conducted across all five subproject packages during the construction phase. For the bulk water supply subproject, regular monitoring was undertaken at the Intake/WTP location for Package BK/01, and at both the Intake and WTP sites for Package BK/03. The results of this monitoring are presented graphically in the following section.

123. Analysis of monitoring data collected between November 2024 and April 2025 indicates that PM2.5 and PM10 concentrations were generally within the permissible limits prescribed by WHO and NAAQS at most monitoring locations. However, elevated levels of both $PM_{2.5}$ and PM_{10} were observed at the Intake site (Natungram) and the WTP site (Basudebpur) under Package BK/03. Construction activity at both the sites may be the reason of enhanced PM_{10} , values are above the standard.

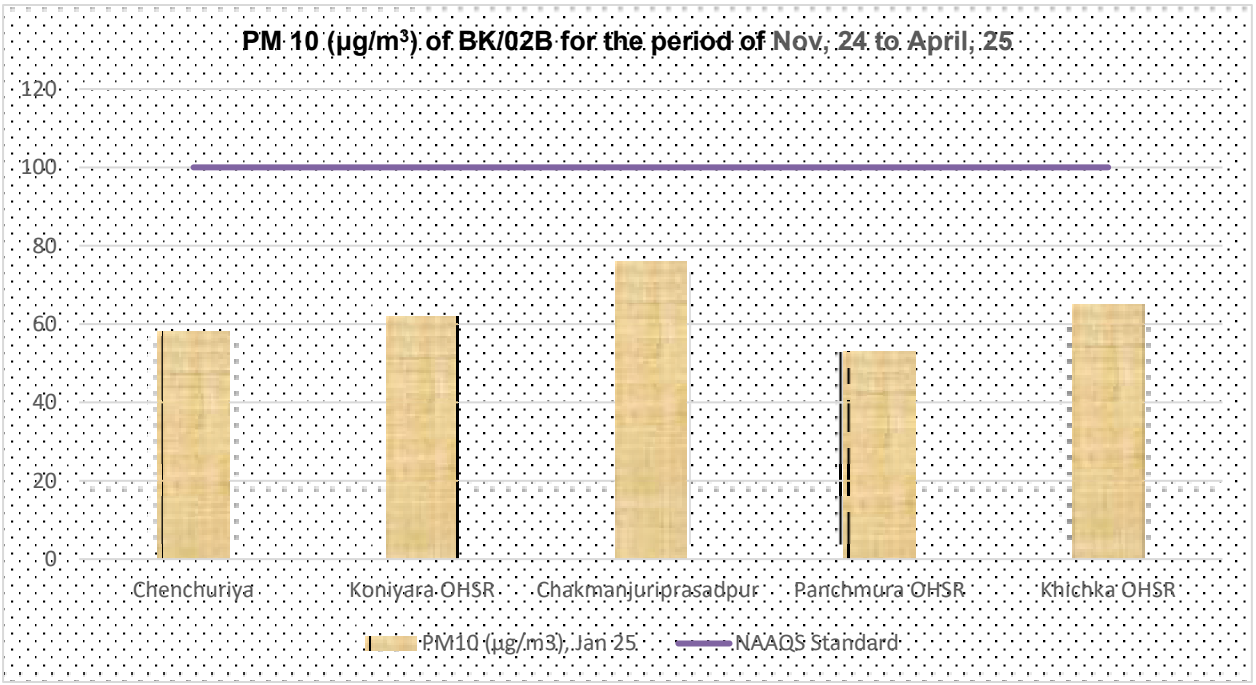
124. In contrast, SO_2, NO_2, and CO concentrations remained consistently below the thresholds established by WHO and NAAQS at all monitored locations across all packages.

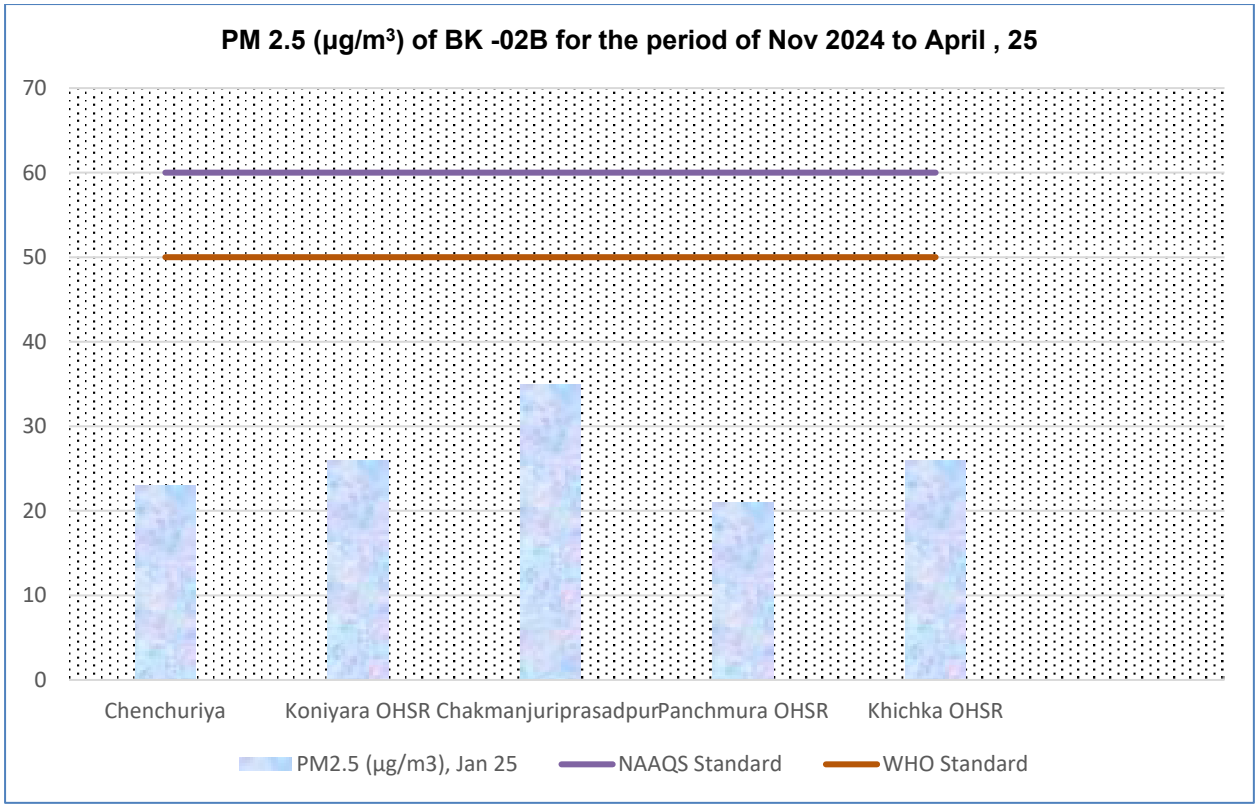
125. A review of the air quality data over time reveals that seasonal variation had a more significant impact on air quality levels than construction-related activities. To reflect this, the air quality data has been grouped and analyzed by season, as illustrated in the comparative graphs below.





126. As per the air quality monitoring data for PM10 and PM2.5 recorded in January 2025 under Package BK-2A, all monitored locations were found to have air quality levels well within the permissible limits.





127. By graphing the results from November 2024 to April 2025, it is observed that PM2.5 and PM10 levels are within the permissible limits at all locations.