National Mission for Clean Ganga (NMCG)
Ministry of Jal Shakti,
River Development & Ganga Rejuvenation
Government of India

Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure Under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh

(LOA File Number: 50123/447/121, dated 10/11/2018)

Monthly Progress Report
of
Project Engineer
April 2022

Executing Agency	Funding Agency	Project Engineer	Concessionaire
GPCU, Uttar Pradesh Jal Nigam, Prayagraj, Uttar Pradesh 211008	National Mission for Clean Ganga, Ministry of Water Resources, New Delhi 110002	AECOM India Pvt. Ltd., 19/F, Bldg. 5-C, DLF Cyber City, DLF Phase-III, Gurgaon, Haryana-122002	Prayagraj Water Pvt. Ltd., (SPV of ADANI Enterprise Ltd. and Organica Technologiak ZRT) Adani House, 56 Shri Mall, Society, Navrangpura, Ahmedabad.

Table of Contents

1. Introduction

The GoI (Government of India), recognizing that the long-term rejuvenation of the river Ganga will have significant social and economic benefits on the lives of 500 Million people living along its basin, has identified cleaning of the river Ganga as one of its priorities. For this purpose, in May-2015, The Government of India approved the flagship Namami Gange Program for cleaning rejuvenation and protection of river Ganga and its tributaries. In january-2016, The Government of India approved a Hybrid annuity model to implement the STP project under the Namami Gange program on a PPP basis.

Subsequently, the MoWR (Ministry of Water Resources) issued the river Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 (Ganga 2016 Order) to constitute various authorities to assist the Government of India in achieving its aim of effective abatement of pollution in the river Ganga. The Ganga 2016 order designated NMCG as the nodal agency for implementation of the Ganga 2016 order.

Rapidly increasing population, rising standards of living and exponential growth of industrialization and urbanisation have exposed water resources, in general, and rivers to various forms of degradation. The mighty Ganga is no exception. The deterioration in the water quality impacts the people immediately. Ganga, in some stretches, particularly during lean seasons has become unfit even for bathing. The threat of global climate change, the effect of glacial melt on Ganga flow and the impacts of infrastructural projects in the upper reaches of the river, raise issues that need a comprehensive response.

In the Ganga basin approximately 12,000 million litres per day (MLD) sewage is generated, for which presently there is a treatment capacity of only around 4,000 MLD. Approximately 3000 MLD of sewage is discharged into the mainstream of the river Ganga from the Class I & II towns located along the banks, against which treatment capacity of about 1000 MLD has been created till date.

The Uttar Pradesh Jal Nigam (Jal Nigam) is a statutory body constituted under the Uttar Pradesh Water Supply and Sewerage Act, 1975, and has the power to develop, maintain and regulate water supply and sewerage works in Uttar Pradesh. With a view to implement the Namami Gange programme and the Ganga 2016 Order, the Jal Nigam, in association with the NMCG, has decided to undertake the Project;

- Development and Rehabilitation of Sewage Treatment Plants (STPs) and Associated Infrastructure at Prayagraj under Hybrid Annuity based PPP mode in State of Uttar Pradesh.

While the Jal Nigam will be the principal executing agency and bidding authority for the Project, NMCG will be responsible for making payments to the Concessionaire and Project Engineer.

2. Hybrid Annuity Model (HAM)

Government of India has approved the Namami Gange program as an integrated approach for effective abatement of pollution in river Ganga and Yamuna. As part of this and to ensure that no untreated domestic sewage flow into the river Ganga and Yamuna, various interventions are planned such as Interception & Diversion works and development & operation of Sewage Treatment Plants (STPs).

Considering various development models in practice for the construction, operation and maintenance of Sewage Treatment Plants, Government of India has approved the Hybrid Annuity based Public Private Partnership (PPP) mode as one of the options for the development & operation of STPs. Under this model, private investor/developer will design, build, finance, construct, rehabilitate, renovate, operate and maintain the asset (STPs, IPS, and MPS) to the Project Executing Agency/Jal Nigam at the end of the Concession Period (15 years). 40% of the Capital cost will be paid to the developer during construction of the STP. Balance 60% along with Operation & Maintenance (O&M) cost will be paid over the Concession Period on achievement of key performance indicators as per the contract. Entire cost of development and operation of the STPs will be 100% funded by the Government of India as central sector scheme.

National Mission for Clean Ganga (NMCG) and Uttar Pradesh Jal Nigam (UPJN) appointed M/s. AECOM India Pvt. Ltd., as Project Engineer for this project through tendering process. Letter of Award is issued dated 4th February 2019 and agreement signed between the parties on 5th April 2019.

3. Objectives

Objectives to achieve effective Development of Sewage Treatment Plants (STPs) at Jhunsi, Naini and Phaphamau, rehabilitation of existing STPs & associated Infrastructure and operation and maintenance of all assets for 15 years in Prayagraj, Uttar Pradesh, under Hybrid Annuity based PPP mode are proposed under this project.

The objectives that NMCG and the UP Jal Nigam wish to achieve through the Project is mentioned in **Figure 1;**

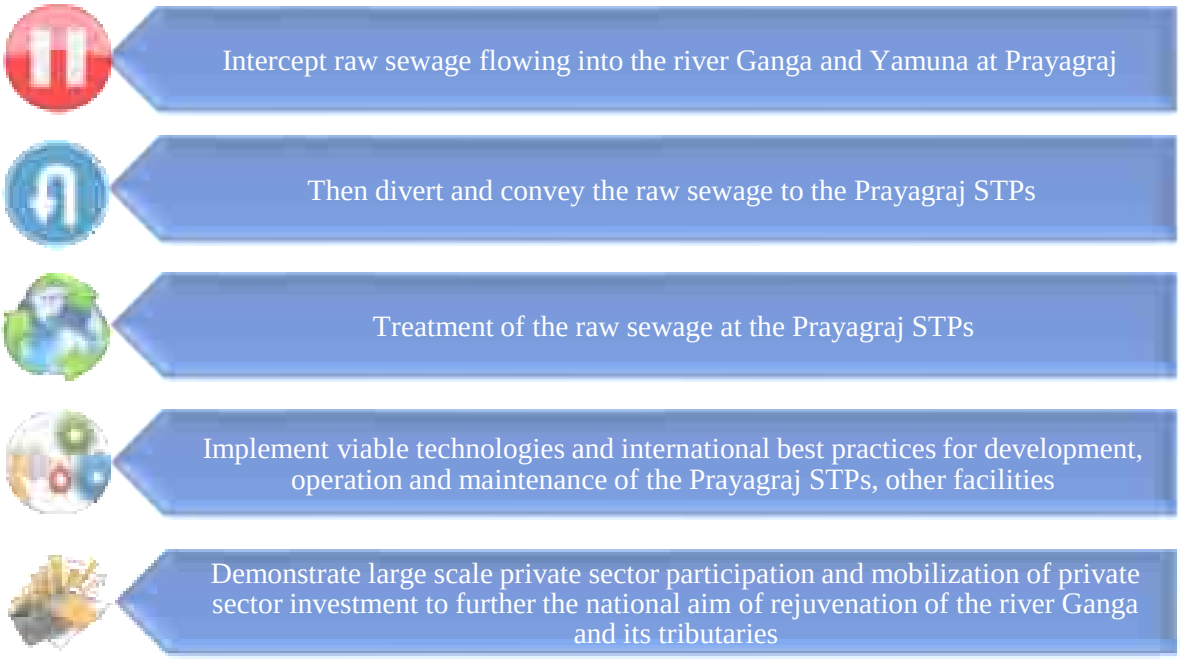


Figure 1 : Objectives of NMCG and UP JAL NIGAM

Government of India has approved the Namami Gange program as an integrated approach for effective abatement of pollution in river Ganga and Yamuna. As part of this and to ensure that no untreated domestic sewage flow into the river Ganga and Yamuna, various interventions are planned such as Interception & Diversion works and development & operation of Sewage Treatment Plants (STPs). Considering various development models in practice for the construction, operation and maintenance of Sewage Treatment Plants, Government of India has approved the Hybrid Annuity based Public Private Partnership (PPP) mode as one of the options for the development & operation of STPs. Under this model, private investor/developer will design, build, finance, construct, rehabilitate, renovate, operate and maintain the asset (STPs and Associate Infrastructure) to the Project Executing Agency/Jal Nigam/ at the end of the Concession Period (say 15 years). 40% of the Capital cost will be paid to the developer during construction of the STP. Balance 60% along with Operation & Maintenance (O&M) cost will be paid over the Concession Period on achievement of key performance indicators as per the contract. Entire cost of development and operation of the STPs will be 100% funded by the Government of India as central sector scheme.

National Mission for Clean Ganga (NMCG) appointed M/s. AECOM India Pvt. Ltd., Gurgaon as Project Engineer for this project through tendering process. Letter of Award is issued dated 4th February 2019 and agreement signed between the parties on 5th April 2019.

4. Project at Glance

The Project components details of each Facility, their grouping in each Package is presented below.

Sr. No.	Particulars	Description
1.0	**Name of Project**	**Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under HAM based PPP mode at Prayagraj, Uttar Pradesh**
	Client	National Mission for Clean Ganga (NMCG) and Uttar Pradesh Jal Nigam (UPJN)
2.0	Executing Agency	Uttar Pradesh Jal Nigam, Ganga Pollution Control Unit, Prayagraj, Uttar Pradesh
3.0	Project Engineer	AECOM India Pvt. Ltd.
4.0	Concessionaire	Prayagraj Water Pvt. Ltd. (SPV of ADANI Enterprise Ltd. JV Organica Technologiak ZRT)
5.0	Contract Value (Capex + Opex)	INR 908.3 Crore
6.0	Effective Date	16th September 2019
7.0	Construction Completion Date	Package-I; 24 months from effective date Package-II; 12 months from effective date Package-III; 6 months from effective date
6.0	Operation & Maintenance	Package-I; 15 years from commercial operation date Package-II; 16 years from commercial operation date Package-III; 16.5 years from commercial operation date

5. Site Location

Entire work has been divided/ distributed in the following 3 packages.

- Package-I: Construction of 03 Nos. new STP's with Associated Infrastructure (Naini-II (42 MLD), Jhunsi (16 MLD) & Phaphamau (14 MLD)). Setup rooftop Solar Power Plant of capacity 930kW (110kW at Phaphamau, 800kW at Naini-II and 20kW at Jhunsi).

- Package II: Rehabilitate and Restore 02 Nos. STP's with Associated Infrastructure (Rajapur (60 MLD) & Naini-I (60+20 MLD).

- Package III: Rehabilitate and Restore 04 Nos. STP's with Associated Infrastructure Numayadahi (50 MLD), Ponghat (10 MLD), Kodra (25 MLD) & Salori (29 MLD).

6. Project Components

The Project components details of each Facility, their grouping in each Package is presented below

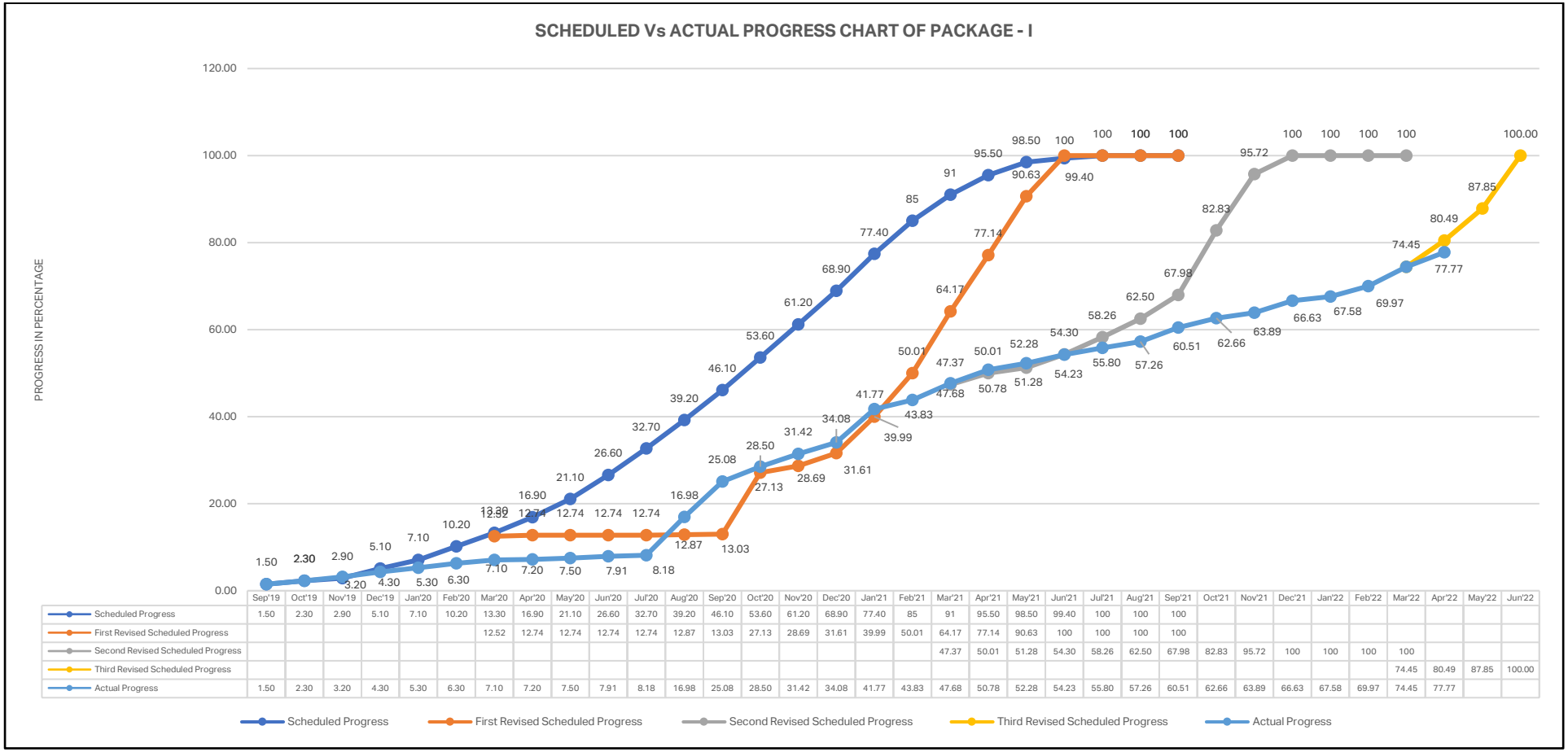
Package Number - I				
Nature of work	**Facilities**			
New construction	Design, develop, finance, construct, operate and maintain, and transfer the Package-I Facilities including three STP facilities with a proposed capacity of 42 MLD at Naini (District G), 14 MLD at Phaphamau (District F), and 16 MLD at Jhunsi along with their Associated Infrastructure, as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Phaphamau Facilities (District -F)	Phaphamau STP Facilities	Phaphamau STP Plant	14 MLD
			Solar Power Plant	110 Kw
		Phaphamau Associated Infrastructure	Basna Nalla SPS	5.53 MLD
			Nalla Tapping and Trunk Sewer	2 Nos. Tapping
			Shantipuram Main Pumping Station	14 MLD
2	Naini Facilities (District - G)	Naini – II STP Facilities	Naini –II STP	42 MLD
			Solar Power Plant	800 Kw
		Naini -II Associated Infrastructure	Mawaiya Drain SPS	35.85 MLD
			Mawaiya Drain Tapping and Trunk Sewer	3 Nos. Tapping
			Mahewaghat Drain SPS	2.15 MLD
			Mahewaghat Drain a nd Trunk Sewer	3 Nos. Of Tapping
			Main Pumping Station	43.5 MLD
3	Jhunsi Facilities	Jhunsi STP Facilities	Jhunsi STP	16 MLD
			Solar Power Plant	20 Kw
		Jhunsi Associated Infrastructure	Shastri Bridge SPS	16 MLD
			Nalla Tapping a nd Trunk Sewer	13 Nos. Tapping
			Main Pumping Station	16 MLD

Package Number - II				
Nature of work	**Facilities**			
Rehabilitation	Design (wherever necessary), rehabilitate, restore, finance, operate and transfer two existing STP Facilities, one of capacity 80 MLD at Naini (District A) and other of capacity 60 MLD at Rajapur (District D) along with their Associated Infrastructure as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators.			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Naini -I Facilities (District A)	Naini–I STP Facilities	Naini –I STP (60 MLD) STP Technology: ASP	60 MLD
			Naini –I STP (20 MLD) STP Technology: ASP	20 MLD
			Naini- I Biogas Plant	600 KW
		Naini–I Associated Infrastructure	Chachar Nalla SPS	35 MLD with 2 Nos. Tapping
			Gaughat MPS	80 MLD
2	Rajapur Facilities (District D)	Rajapur STP Facilities	Rajapur STP STP Technology: UASB	60 MLD
		Rajapur Associated Infrastructure	Mumfordgunj SPS	55 MLD with 1 Nos. Tapping
			Rajapur SPS	25 MLD with 1 Nos. Tapping

Package Number - III				
Nature of work	**Facilities**			
Rehabilitation	Design (wherever necessary), rehabilitate, restore, finance, operate and transfer four existing STP Facilities, one of capacity 50 MLD at Numayadahi (District B), one of capacity 29 MLD at Salori (District C), one of capacity 25 MLD at Kodra (District E) and another of capacity 10 MLD at Ponghat (District E), along with their Associated Infrastructure, as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators.			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Salori Facilities (District - C)	Salori STP Facilities	Salori STP (29 MLD) STP Technology: FAB	29 MLD
		Salori Associated Infrastructure	Salori MPS	29 MLD with 1 Nos. Tapping
2	Numayadahi Facilities (District B)	Numayadahi STP Facilities	Numayadahi STP STP Technology: Bio tower + ASP	50 MLD
		Numayadahi Associated Infrastructure	Ghaggar Nalla SPS	50 MLD with 1 Nos. Tapping
			Sasur Kadheri SPS	15 MLD with 1 Nos. Tapping
			Lukarganj SPS	16.5 MLD with 1 Nos. Tapping
3	Kodra Facilities (District E)	Kodra STP Facilities	Kodra STP STP Technology:Bio tower + ASP	25 MLD
		Kodra Associated Infrastructure	Kodra MPS	25 MLD with 1 Nos. Tapping
4	Ponghat Facilities (District E)	Ponghat STP Facilities	Ponghat STP STP Technology: Bio tower + ASP	10 MLD
		Ponghat Associated Infrastructure	Ponghat MPS	10 MLD with 1 Nos. Tapping

7. Status of project

7.1 Package-I Overall progress status



	Sep'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20	Apr'20	May'20	Jun'20	Jul'20	Aug'20	Sep'20	Oct'20	Nov'20	Dec'20	Jan'21	Feb'21	Mar'21	Apr'21	May'21	Jun'21	Jul'21	Aug'21	Sep'21	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Apr'22	May'22	Jun'22
Scheduled Progress	1.50	2.30	2.90	5.10	7.10	10.20	13.30	16.90	21.10	26.60	32.70	39.20	46.10	53.60	61.20	68.90	77.40	85	91	95.50	98.50	100	100	100	100									
First Revised Scheduled Progress							12.52	12.74	12.74	12.74	12.74	12.87	13.03	27.13	28.69	31.61	39.99	50.01	64.17	77.14	90.63	100	100	100	100									
Second Revised Scheduled Progress																			47.37	50.01	51.28	54.30	58.26	62.50	67.98	82.83	95.72	100	100	100	100			
Third Revised Scheduled Progress																															74.45	80.49	87.85	100.00
Actual Progress	1.50	2.30	3.20	4.30	5.30	6.30	7.10	7.20	7.50	7.91	8.18	16.98	25.08	28.50	31.42	34.08	41.77	43.83	47.68	50.78	52.28	54.23	55.80	57.26	60.51	62.66	63.89	66.63	67.58	69.97	74.45	77.77		

- **Project Engineer has provided observation on Concessionaire April'22-month MPR vide letter number AIPL/NMCG/PRAYAG/1426 on dated 12.05.2022 Therefore, status may be change after observation incorporated by Concessionaire.**

7.1.7 Physical construction Activities in April'22 month

NEW CONSTRUCTION			
S. No.	**Structure Description**	**Structure Qty.**	**Status**
PACKAGE – I			
PHAPHAMAU STP			
1.	FCR tank	01 No.	• 100% RCC Work Completed • Hydrotest work is completed.
2.	Staff Quarter	01 No.	• Brick work completed and other finishing work under progress
3.	MPS	01 No.	• Casting up to 11th lift completed. 12th lift along with final slab steel and shuttering work is under progress. • Inlet chamber - All lift casting completed.
4.	Tube Settler	01 No.	• CCT Area: Tonner room brick work completed. All other structural casting completed. • Hopper and Sludge holding tank portion: RCC work has been completed • Sludge holding portion work completed.
5.	Process Building	01 No	• Part A(Grit chamber aera and blower)- All column up to plinth beam completed. • Part B :50% plinth beam completed and 50% column upto 1st lift also casted. • Part C (DG foundation aera)- Plinth beam completed and all column above plinth beam are casted up to 1st lift.
6.	Basna Nala SPS	01 No.	• 6^{th} lift casting is completed, and 7^{th} lift steel and shuttering is under progress.
7.	Outfall Sewer	2000 mtr.	• Out fall sewer pipe laying completed 1732.5 mtr. Out of 2000 mtr.20 Nos. manhole completed out of total 29 Nos.
8.	Basna Nala SPS to Phaphamau STP	1123 mtr	• Sewer laying completed 884 Mtr.
NAINI – II STP			
9.	FCR tank	01 No.	• Civil Construction Completed. • Hydrotesting work is under Progress.

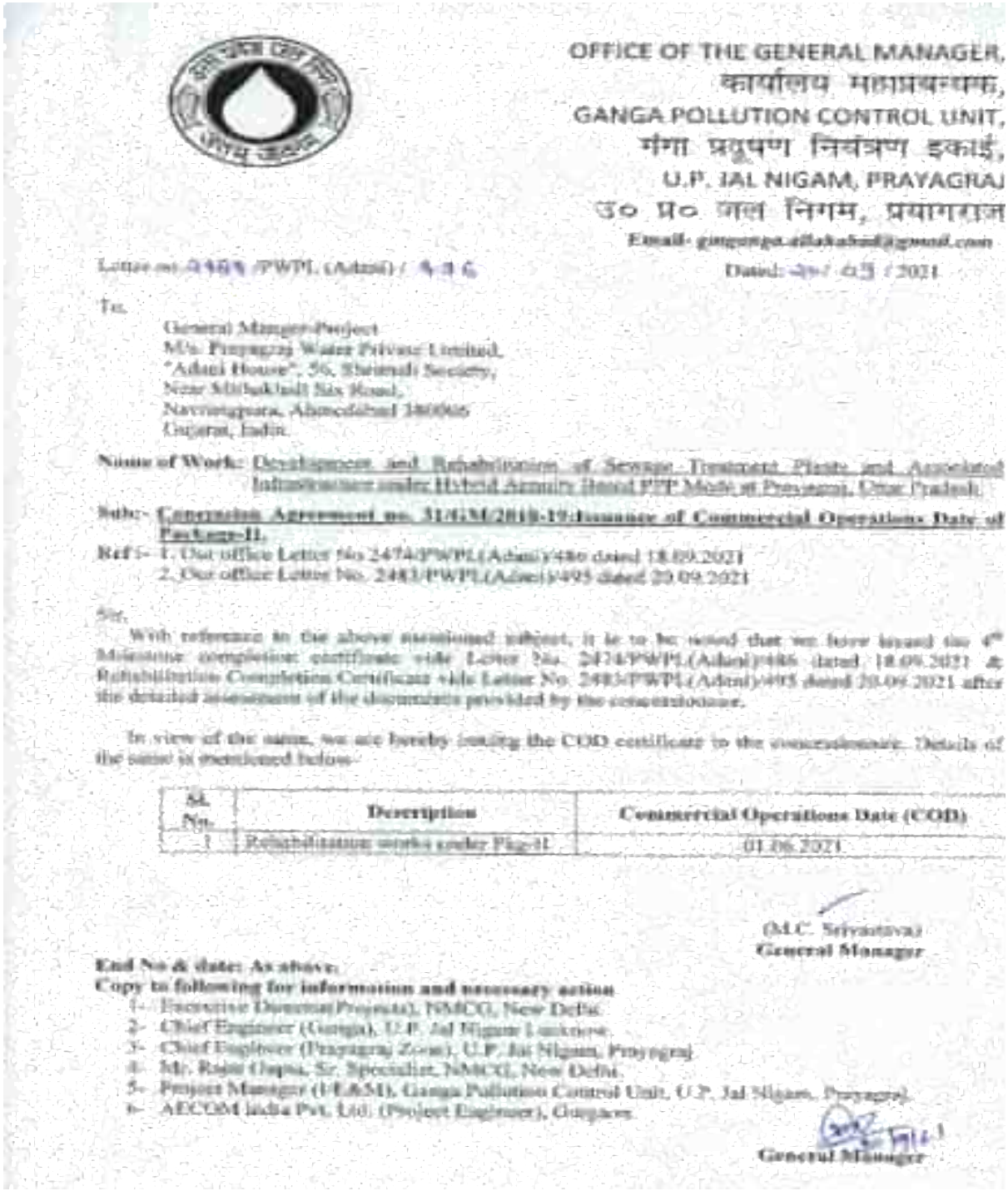
			• Installation of C- Profile for bimodule is under progress. • Installation of diffusor gride is under progress
10.	Tube Settler	01 No.	• Tank A – RCC work of CCT completed. • 2 no's hopper and Sludge holding tank portion :(7 lifts done out of 8 lift) :Casting up to 7th lift out of 8th lift has been completed & last lift along with launder steel and shuttering is under progress. • 06 Nos. Hopper portion: (8 lift done out of 8 lift) All lift casting completed. partition wall work is under progress.
11.	Staff Quarter	01 No.	• Finishing work under progress
12.	MPS	01 No.	• Raft and wall up to 14th lift out of 15th casting completed & last lift steel and shuttering is under progress. • Inlet chamber -9th lift casting completed out of total 10 lifts.
13.	Process Building	01 No.	• Part B & C - top level roof casting is completed. Foundation work for E&M equipment is under progress. Cable trench shuttering under process. Blower foundation work under process. • Part A- Grit chamber area slab reinforcement at level 98 is under progress. • Cable laying for the panel is under progress. • 2 Nos air blower erection is under progress.
14.	Mahewaghat SPS	01 No.	• Casting upto 11th lift completed out of 11th lifts. • Inlet chamber wall 6th lift is completed out of 7th lifts and last lift steel and shuttering work is under progress.
15.	Mawaiya Nalla SPS	01 No.	• 9th lift casting is completed, and last lift casting steel and shuttering is under progress. • Inlet chamber final and 6th lift is completed.
16.	Boundary Wall	01 No.	• Work under progress
17.	DI Pipeline from Mahewaghat to Naini-II (300mm Dia.)	700 Rmt.	• Total 688 mtr pipeline laying work is completed
18.	DI Pipeline from Mawaiya Nalla to Naini-II (800mm Dia.)	700 Rmt.	• Total 687 mtr pipeline laying work is completed

19.	RCC 600 dia. From Mahewaghat to Naini-II	4077 RMT	• Total 3902 mtr Completed till date. • Total 100-meter length, 1000 mm dia MS casing pipe pushing completed. No further work due to unavailability of 600 mm dia RCC pipe.
20.	RCC 1400 dia. From Mawayiya to Naini-II	3042 RMT	• 2853 m Laying work completed,
21.	RCC 1600 mm Dia	997 RMT	• 943 m Laying work completed,
22.	Out fall Sewer	730 RMT	• 557 m laying completed of 1600 Dia RCC pipe
23.	I &D work	6 No.	• At 5 Nos I&D work is under progress.
JHUNSI STP			
24.	FCR tank	01 No.	• Civil and Hydrotesting work completed. • Diffuser Frame erection Work in Progress.
25.	Process Building	01 No.	• Soil filling work up to tie beam is completed. Plinth beam casting is completed, and grade slab is also casted. Column stuttering work is under progress. (Part A). • Slab along with staircase at level 94 meter is casted. 2nd Lift column casting is also done and final top-level slab at level 98 meter is casted.
26.	Tube Settler	01 No.	• RCC Structure work 100% Completed with Hydrotest. Tonner room Brick completed.
27.	MPS	01 No.	• Final lift wall with 89.0 Level Slab Completed and Head room portion work is under progress.
28.	Security Cabin	01 No.	• Putty work is completed
29.	Staff Quarter	01 No.	• Putty work is completed
30.	Shastri Bridge SPS	01 No	• Excavation work is completed.
31.	I &D work	13 No.	• Work under progress at 12 Site.
32.	Gravity main	3165m	• 302 m of 700mm dia RCC pipe laid • 357 m of 500 mm dia pipe laid • 162m of 300 dia RCC pipe laid
33.	Raising main	3875m	• 1861m of 700 dia DI pipe laid
34.	Outfall sewer	250 m	• 52.5 m of 900 dia RCC pipe laid

PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION FOR PACKAGE-I IS MENTIONED IN

ANNEXURE - I

7.2 Package-II status



OFFICE OF THE GENERAL MANAGER,
कार्यालय महाप्रबन्धक,
GANGA POLLUTION CONTROL UNIT,
गंगा प्रदूषण नियंत्रण इकाई,
U.P. JAL NIGAM, PRAYAGRAJ
उ० प्र० जल निगम, प्रयागराज
Email- gangaup.allahabad@gmail.com

Letter no. 2484 /PWPL (Adani) / 496 Dated: 29/ 05 /2021

To,

General Manager-Project
M/s. Prayagraj Water Private Limited,
"Adani House", 56, Shrimali Society,
Near Mithakhali Six Road,
Navrangpura, Ahmedabad 380009
Gujarat, India.

Name of Work: Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh.

Sub:- Concession Agreement no. 31/4/M/2018-19/Issuance of Commercial Operations Date of Package-II.

Ref:- 1. Our office Letter No 2474/PWPL(Adani)/486 dated 18.09.2021
2. Our office Letter No. 2483/PWPL(Adani)/495 dated 20.09.2021

Sir,

With reference to the above mentioned subject, it is to be noted that we have issued the 4th Milestone completion certificate vide Letter No. 2474/PWPL(Adani)/486 dated 18.09.2021 & Rehabilitation Completion Certificate vide Letter No. 2483/PWPL(Adani)/495 dated 20.09.2021 after the detailed assessment of the documents provided by the concessionaire.

In view of the same, we are hereby issuing the COD certificate to the concessionaire. Details of the same is mentioned below:-

Sl. No.	Description	Commercial Operations Date (COD)
1	Rehabilitation works under Pkg-II	01.06.2021

(M.C. Srivastava)
General Manager

End No & date: As above.
Copy to following for information and necessary action
1- Executive Director(Projects), NMCG, New Delhi.
2- Chief Engineer (Ganga), U.P. Jal Nigam Lucknow.
3- Chief Engineer (Prayagraj Zone), U.P. Jal Nigam, Prayagraj.
4- Mr. Rajiv Gupta, Sr. Specialist, NMCG, New Delhi.
5- Project Manager (I/E&M), Ganga Pollution Control Unit, U.P. Jal Nigam, Prayagraj.
6- AECOM India Pvt. Ltd. (Project Engineer), Gurgaon.

General Manager

Commercial Operations Date was announced on 01.06.2021 vide letter no. 2484/PWPL (Adani)/496

KPI REPORT'S OF PACKAGE - II

AND

PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION IS MENTIONED IN

ANNEXURE - II

7.3 Package-III status

OFFICE OF THE GENERAL MANAGER,
कार्यालय महाप्रबन्धक,
GANGA POLLUTION CONTROL UNIT,
गंगा प्रदूषण नियंत्रण इकाई,
U.P. JAL NIGAM, PRAYAGRAJ
उ0 प्र0 जल निगम प्रयागराज,

Letter No. 2336/ PWPL (Adani) / 423 Dated: 02/ 11 /2020

To,

M/s. Prayagraj Water Private Limited,
"Adani House", 56, Shrimali Society,
Near Mithakhali Six Road,
Navrangpura, Ahmedabad-380006
Gujrat, India.

Name of Work: Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh.

Subject: **Concession Agreement no. 31/GM/2018-19:** Issuance of Commercial Operations Date of Package-III.

Sir,

With reference to the above mentioned subject, it is to be noted that we have issued the 2nd Milestone completion certificate vide Letter No. 2328/PWPL(Adani)/415 dated 31.10.2020 & Rehabilitation Completion Certificate vide Letter No. 2330/PWPL(Adani)/417 dated 31.10.2020 and LD Waiver Letter No. 2331/PWPL(Adani)/418 dated 31.10.2020 after the detailed assessment of the documents provided by the concessionaire.

In view of the same, we are hereby issuing the COD certificate to the concessionaire. Details of the same is mentioned below-

Sl. No.	Description	COD Commencement Date
1	Rehabilitation works under Pkg-III	01.11.2020

Yours faithfully

General Manager

Endt No. & and date as above:

Copy to following:

1- E.D.(Projects), NMCG, New Delhi.
2- MD, UPJN Lucknow.
3- Chief Engineer (Ganga), U.P. Jal Nigam Lucknow.
4- Chief Engineer (Prayagraj Zone), U.P. Jal Nigam Prayagraj.
5- Shri. Madav Kumar, Sr. Economics and Financial Expert, NMCG, New Delhi.
6- Project Manager (O/E&M), GPCU, U.P. Jal Nigam Prayagraj.
7- AECOM India Pvt. Ltd. (Project Engineer), Gurgaon.

Commercial Operations Date was announced on 02.11.2020 vide letter no. 2336/PWPL (Adani)/423

KPI REPORT'S OF PACKAGE - III

AND

PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION IS MENTIONED IN

ANNEXURE - III

8. Meetings, Discussions and Site Visits:

Regular progress review meetings are being held at UPJN office & sites. Following meetings were held during the month of April' 2022.

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
1.	Site inspection of Jhunsi STP	1-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
2.	Site inspection of Naini-II STP	1-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
3.	Site inspection of Kodra STP	2-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
4.	Site inspection of Ponghat STP	4-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
5.	Site inspection of Salori STP	4-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
6.	Site inspection of Rajapur STP	5-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
7.	Site inspection of Jhunsi STP	6-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
8.	Site inspection of Naini-II STP	6-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
9.	Site inspection of Naini-II STP	6-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
10.	Site inspection of Jhunsi STP	6-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
11.	Site inspection of Naini-I STP	6-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
12.	Site inspection of Phaphmau STP	8-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
13.	Site inspection of Phaphmau STP	8-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
14.	Site inspection of Kodra STP	8-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
15.	Site inspection of Naini-I STP	8-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
16.	Site inspection of Jhunsi STP	12-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
17.	Site inspection of Jhunsi STP	12-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
18.	Site inspection of Numayadahi STP	12-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
19.	Site inspection of Rajapur STP	12-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
20.	Meeting with UPJN official (M.D) and Concessionaire	13-Apr-22	Mr. Amit Ranjan	Review meeting of Physical progress of Package-I
21.	Site inspection of Naini-II STP	13-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
22.	Meeting with GOI official (SEC.) and Concessionaire	13-Apr-22	Mr. Amit Ranjan	Review meeting of Physical progress of Package-I
23.	Site inspection of Naini-II STP	13-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
24.	Site inspection of Ponghat STP	13-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
25.	Site inspection of Phaphmau STP	16-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
26.	Site inspection of Phaphmau STP	16-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
27.	Site inspection of Naini-II STP	16-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
28.	Site inspection of Naini-II STP	16-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
29.	Site inspection of Kodra STP	16-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
30.	Site inspection of Salori STP	16-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
31.	Site inspection of Jhunsi STP	18-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
32.	Site inspection of Jhunsi STP	18-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
33.	Site inspection of Ponghat STP	18-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
34.	Site inspection of Naini-I STP	19-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
35.	Site inspection of Rajapur STP	19-Apr-22	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing Operation & Maintenance
36.	Site inspection of Phaphmau STP	20-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
37.	Site inspection of Phaphmau STP	20-Apr-22	Mr. Amit Ranjan	Inspection, supervision and monitoring of ongoing Civil activities
38.	Site inspection of Numayadahi STP	20-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
39.	Site inspection of Naini-I STP	21-Apr-22	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing Operation & Maintenance
40.	Site inspection of Naini-II STP	21-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
41.	Site inspection of Jhunsi STP	21-Apr-22	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities
42.	Meeting with UPJN official (M.D) and Concessionaire	26-Apr-22	Mr. Amit Ranjan	Review meeting of Physical progress of Package-I

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
43.	Meeting with NMCG official (DG_ Project) and Concessionaire	30-Apr-22	Mr. Amit Ranjan	Review meeting of Physical progress of Package-I and Jhunsi variation

11. Outward Register

List of key design & documents were reviewed by Project Engineer during this period as below.

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)	Copies To
1.	AIPL/NMCG/PRAYAG/1400	Observation on O & M Monthly Progress report for the month of June, 2022 of Package – III.	2-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
2.	AIPL/NMCG/PRAYAG/1401	Observation on O & M Monthly Progress report for the month of July, 2022 of Package – III.	2-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
3.	L/NMCG/PRAYAG/1402	Observation on O & M Monthly Progress report for the month of August, 2022 of Package – III.	2-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
4.	AIPL/NMCG/PRAYAG/1403	Letter no.359 regarding payment certification for O&M work of Package-II of ouarter -I &II	5-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
5.	AIPL/NMCG/PRAYAG/1404	Architetual plan and elevation details of process building Naini 2 SPS	5-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
6.	AIPL/NMCG/PRAYAG/1404	Devlopment and Rehahabilitation of sewage treatment plants and associated infrastructure at prayagraj up on PPP bassis rgarding slo progress under package- I	9-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)	Copies To
7.	AIPL/NMCG/PRAYAG/1409	Observation on O & M Monthly Progress report for the month of March, 2022 of Package – III.	13-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
8.	AIPL/NMCG/PRAYAG/1410	Observation on O & M Monthly Progress report for the month of september, 2021 of Package – II.(R I)	14-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
9.	AIPL/NMCG/PRAYAG/1411	Observation on O & M Monthly Progress report for the month of October, 2021 of Package – II.	14-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
10.	AIPL/NMCG/PRAYAG/1412	Observation on O & M Monthly Progress report for the month of Novembr 2021 of Package – II.	14-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
11.	AIPL/NMCG/PRAYAG/1413	Observation on O & M Monthly Progress report for the month of March 2022 of Package – II.	15-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
12.	AIPL/NMCG/PRAYAG/1414	Regarding the submission of MPR of March 2022	16-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
13.	AIPL/NMCG/PRAYAG/1415	observation of structural drawing of Basana Nala SPS-package-1	19-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
14.	AIPL/NMCG/PRAYAG/1416	Obervation of Architectural and elevation details of	19-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL,

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)	Copies To
		procss building-Jhunsi STP			Prayagraj 3. PM-E&M - UPJN, Prayagraj
15.	AIPL/NMCG/PRAYAG/1417	Obervation of Architectural plan and elevation details of process building-phaphamau STS	19-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
16.	AIPL/NMCG/PRAYAG/1418	Regarding O&M Payment of Quarter – 2 i.e., May-21 to November-21 for Package II facilities for the SPT the project prayagraj under HAM based PPP model	19-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
17.	AIPL/NMCG/PRAYAG/1419	Inspection Report of Package-III facilities April 2022	20-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
18.	AIPL/NMCG/PRAYAG/1420	Inspection Report of Package-III facilities April 2022	20-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj
19.	AIPL/NMCG/PRAYAG/1421	Inspection Report of Package-I facilities April 2022	22-Apr-22	S.E.-2 Circle - UPJN	1. NMCG, New Delhi 2. M/s PWPL, Prayagraj 3. PM-E&M - UPJN, Prayagraj

12. Inward Register

List of key design & documents were received by Project Engineer during this period as below.

Sr. No.	PWPL Transmittal reference number	Description	Date	From
1.	PWPL/UPJN/PMCG/052/22	Submission of SLD and cable schedul sasna Nala SPS	1-Apr-22	Prayagraj water private limited
2.	PWPL/UPJN/PMCG/053/22	Submission of Electrical Design docs for Mahewaghat SPS: Prayagraj STP	1-Apr-22	Prayagraj water private limited
3.	PWPL/UPJN/PMCG/054/22	Technical docoment of naini 830 KWP solar plant	1-Apr-22	Prayagraj water private limited
4.	PWPL/UPJN/PRAYAGRAJ/SITE/782	Regarding the submission of MPR of 2022	7-Apr-22	Prayagraj water private limited
5.	PWPL/UPJN/PRAYAGRAJ/SITE/783	Regarding the work stoppage of shastri bridge sps under jhunsi STP	7-Apr-22	Prayagraj water private limited
6.	PWPL/UPJN/PRAYAGRAJ/SITE/784	Regarding progress of work in Package-I.	9-Apr-22	Prayagraj water private limited
7.	PWPL/UPJN/PMCG/055/22	Submission of shastri bridge SPS civil design and drawing Package-1	11-Apr-22	Prayagraj water private limited
8.	PWPL/UPJN/PMCG/056/21	Submission of Boundary Wall-Mawaiya drain SPS Mahewaghat SPS	12-Apr-22	Prayagraj water private limited
9.	PWPL/UPJN/PRAYAGRAJ/SITE/785	Regarding commissioning of jhunsi STP under packag-I	13-Apr-22	Prayagraj water private limited
10.	PWPL/UPJN/PRAYAGRAJ/SITE/786	Regarding notice for 60th milestone comletion of packag-I	15-Apr-22	Prayagraj water private limited
11.	PWPL/UPJN/PRAYAGRAJ/SITE/787	Regarding sewer pipe laying at NH-96 from basna nallah to phaphamau stp under packag-I	16-Apr-22	Prayagraj water private limited
12.	PWPL/UPJN/PMCG/057/21	Submission of G.A Drawing for shastri bridge SPS	20-Apr-22	Prayagraj water private limited
13.	PWPL/UPJN/PMCG/58/2022	Regarding technical and financial proposal to achive NGT norms -reg	21-Apr-22	Prayagraj water private limited

Sr. No.	PWPL Transmittal reference number	Description	Date	From
14.	PWPL/UPJN/PRAYAGRAJ/SITE/788	Regarding principal apporoval to tak up the essential work for commissioning ofpackag-I	23-Apr-22	Prayagraj water private limited
15.	PWPL/UPJN/PRAYAGRAJ/SITE/789	Regarding notice for 06th milestone completion of of package-I	27-Apr-22	Prayagraj water private limited
16.	PWPL/UPJN/PRAYAGRAJ/SITE/790	Regarding completion of sewer laying work along national	29-Apr-22	Prayagraj water private limited
17.	PWPL/UPJN/PMCG/059/21	Submission of civil drawings of Jhunsi MPS-Package-I	29-Apr-22	Prayagraj water private limited
18.	PWPL/UPJN/PMCG/060/21	Submission of civil drawings for Maheaghat security room	30-Apr-22	Prayagraj water private limited
19.	PWPL/UPJN/PMCG/061/21	Submission of civil drawings for Nawaiya nallah security room	30-Apr-22	Prayagraj water private limited

13. EHS targets, Achievement & compliance report for the month of April' 2022

Sr. No.	Goals	Target of the month	Achievement of this Month	Previous Month achievement	Remark
1	Zero total recordable injuries	100%	100%	100%	
2	All personnel Health and Safety inducted	100%	100%	100%	
3	100% incident reporting and investigation	100%	100%	100%	
4	100% adherence of usage of appropriate PPE's at work	100%	100%	100%	

14. Status of statutory permits:

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
	Phaphamau Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	2 No.	Under process towards filing the application. Will be applied before commissioning stage. Location: - 1. At Phaphmau STP 2. At Basna Nalla SPS
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received
3	Tree cutting	Forest Department	88 No.	Received NOC From Forest Dept for Cutting 88 Nos. of trees.
4	Road cutting & crossing	Public Works Department	NA	Not Required
5	Railway Crossing	Commissioner Railway Safety	NA	Not Required
6	National Highway cutting & crossing	National Highway Authority of India	1 No.	1. License fee & BG amount of 6.67 Cr. & 3.26 Lacs respectively deposited by UPJN to NH authority on 9th Jul'21. 2. Revised estimate charges against road restoration & maintenance

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
				charges of Rs 9.32 Cr received by UPJN from NH vide Letter-1115/NH-96/330 dated 5th Aug'21. 3. Letter sent to ED-Project for release of fund vide letter No.2044/PWPL(Adani)/414 Dated 11th Aug'21. 4. Letter written to ED- by UPJN regarding payment of license fee. (2576/PWPL(Adani)/508. 5. Permission Received from NH PWD vide letter no. 70/NH-96/330 dated 12th Jan 2022.
7	Revenue Road cutting & crossing	Panchayat/Local Authority	NA	Not Required
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to JN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	2 No.	Under process towards filing the application, Construction of 2 no. of Weir at; 1. Basna Nalla Drain Tapping 2. Shantipuram Nalla Tapping
10	Approach Road to new Facilities	Forest Department/ Panchayat/Local Authority/Irrigation Department	NA	Not Required
11	Consent to operate for Existing Facilities	ULB and SPCB	1 No.	Will be processed during commissioning stage.
	Naini-II Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	3 No.	Under process towards filing the application. Will be applied before commissioning stage. Location: - 1. At Naini-II STP

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
				2. At Mahewaghat SPS 3.At Mawaiya SPS
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received
3	Tree cutting	Forest Department	-	Under process towards filing the application. Finalized for laying of trunk sewer line route alignment is under progress.
4	Road cutting & crossing	Public Works Department	1 No.	NOC received from Mahewaghat SPS to Naini-II MPS on 08th Dec'2020.
5	Railway Crossing	Commissioner Railway Safety	1 No.	Permission received from railway vide letter No 86-W/KM/821/L-PRYJ-NYN DATED 16th July 2021'
6	National Highway cutting & crossing	National Highway Authority of India	NA	NA
7	Revenue Road cutting & crossing	Panchayat/Local Authority	1 No.	Under process towards filing the application to concern authority.
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to JN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	6 No.	Under process towards filing the application, Construction of Weir at 6 nos. Drains. Location: - 1. Mawaiya Drain 2. Sachcha Baba Aashram Drain Tapping 3. Kharkhauni Drain 4. Mahewaghat Nalla-1 5. Mahewaghat Nalla-2 6. Mahewaghat Nalla-3
10	Approach Road to new Facilities	Forest Department/ Panchayat/Lo	NA	Not Required

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
		cal Authority/Irrigation Department		
11	Consent to operate for Existing Facilities	ULB and SPCB	1 No.	Will be processed during commissioning stage
	Jhunsi Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	2 No.	Under process towards filing the application. Will be applied before commissioning stage. Location: - 1. Jhunsi STP 2. Shastribridge SPS
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received
3	Tree cutting	Forest Department	NA	Not Required
4	Road cutting & crossing	Public Works Department	1 No.	Under process towards filing the application to concern authority. Location: - Trivenipuram ADA Colony colony to Shashtri Bridge SPS
5	Railway Crossing	Commissioner Railway Safety	1 No.	Permission received from railway vide letter No W/98-13/2020/71/W- DATED 29/03/2022
w	National Highway cutting & crossing	National Highway	1 No.	Under process towards filing the application to concern authority. Location: - Underpass Shashtri Bridge
7	Revenue Road cutting & crossing	Panchayat/Local Authority	1 No.	Under process towards filing the application to concern authority. Location: - Shastri Bridge SPS to Jhunsi MPS
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to UPJN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	13 No	Under process towards filing the application, Construction of Weir at 13 nos. Drains. Locations: -

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
				1. Augharwa Nalla 2. Bhola Mandir Nalla 3. Gangoli Shivala Nalla I 4. Gangoli Shivala Nalla II 5. Savitri Nagar Nalla 6. Dham Nalla 7. Sashtri bridge Nalla 8. Triveni Marg Nalla I 9. Triveni Marg Nalla II 10. Ulta Quila Nalla I 11. Ulta Quila Nalla II 12. Havelia Nalla 13. Lakkar Nalla
10	Approach Road to new Facilities	Forest Department/ Panchayat/Local Authority/Irrigation Depar4ent	NA	Not Required
11	consent to operate for Existing Facilities	ULB and SPCB	1 No	Will be processed during commissioning stage

15. Plant & Machinery Status

Sr. No.	Machinery Name	PHAPHAMAU	Naini-II	Jhunsi
1.	JCB	1	3	2
2.	Dumper	-	-	-
3.	Proclaim	1	2	1
4.	Ajax	-	4	1
5.	Hydra	-	1	-
6.	Roller	-	1	1
7.	Submersible Pump 2HP	2	3	2
8.	Diesel Pump 5 HP	1	4	2
9.	5KV generator	2	5	2
10.	Total Station	-	1	1
11.	Water tanker	-	2	1
12.	Auto level	2	7	1
13.	Mixing machine	1	3	
14.	Vibrator	2	12	6
15.	Tractor	-	9	6
16.	Concrete Chipping Machine	2	3	2
17.	Welding Machine	1	6	2
18.	Grinding Machine	2	7	6
19.	Gas cutting set	-	2	1
20.	Chain saw machine	-	2	-
21.	Chain Block	1	-	1
22.	RM 800	-	-	-
23.	Plywood cutting machine	3	8	2
24.	Steel cutting machine	3	10	3

16. ANNEXURE'S

Annexure- I: **PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION FOR PACKAGE-I**

Annexure- II: **KPI REPORTS OF PACKAGE -II AND PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION**

Annexure- III: **KPI REPORTS OF PACKAGE -III AND PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION**

Annexure- IV: **PROJECT ENGINEER ACTIVITY AS PER TOR**

Annexure- V: **QUALITY CONTROL / QUALITY ASSURANCE**

ANNEXURE-I

PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION FOR PACKAGE-I

Table of Contents

1. JHUNSI STP AND ASSOCIATE INFRASTRUCTURE

1.1 Inspection Report

Date of site visit	6th, 12th & 18th April 2022
Site Visitor	1. Mr. Santosh Kumar, UPJN 2. Mr. Tauseef Ahmed, UPJN 3. Mr. Satwant Singh, UPJN 4. Mr. Amit Ranjan, AECOM 5. Mr Gaurav Panday, AECOM 6. Mr. Sharad, PWPL.
Name of Facility	16 MLD Jhunsi STP & Associated Infrastructure, Prayagraj.

A. FCR Tank-

- RCC work at FCR tank is 100 % completed.
- Total 135.80 cubic meter PCC work has done at FCR.
- Approximately 2523.52 cum RCC work has done at FCR tank.
- Erection of all the structural steel member must adhere **clause 1.21.2 a & B of schedule 10 Part-B of Concession Agreement.**

- Concessionaire is required to finalize the framing arrangement of solar system along with base plate & railing at the top of FCR at earliest.

- Painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause 1.4.1, schedule 10 PART-B of concession agreement & as per approved Drawing of FCR tank.
- Concessionaire is required to finalize the framing arrangement of FCR module along with Air diffuser grid piping & railing at the top of FCR at earliest.

B. Staff Quarter –

- RCC work of Staff Quarter is completed. Total 129.62 cubic meter RCC is done at staff Quarter.
- Brick work, Plumbing & Lighting work is completed.
- At Staff quarter Plaster work of inside & outside wall is completed & putty work is under progress.
- Painting & Flooring of staff quarter should be done as per approved Drawing.

C. Process Building-

- Excavation at Process building is completed.
- Boulder Soling work is completed.
- PCC of Process Building is completed.
- Bottom Raft of Process Building is completed.
- RCC work of Tie Beam is completed.
- Column above Tie Beam is completed.
- Soil filling above Tie Beam up to plinth beam is completed.
- RCC work of Plinth Beam is 100% completed.
- Column above plinth beam is 100% completed.
- RCC work of Slab at 98 m level is completed.
- Grit Chamber 2nd lift reinforcement in Progress.
- Inlet Slab stagging and shuttering work in Progress.
- Cable trench PCC and reinforcement in Progress.
- Blower foundation with Grade slab work in progress.
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of Process Building is lagging far behind construction plan.
- Concessionaire is required to expedite the foundation and flooring work of DG, Transformer, Air blower, Dewatering unit and other E&M equipment foundation at earliest.

D. Tube Settler-

- Excavation work At Tube settler is completed.
- Boulder Soling work is completed.
- PCC (72 cum) work is completed.
- Reinforcement of Raft is completed.
- RCC work of Raft is completed.
- RCC work of CCT portion & Tube settler area is 100 % completed.

- Total 1442.5 cum RCC work is completed at Tube Settler.
- Hydrotesting of CCT portion & tube settler is completed.
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of Tube Settler is lagging far behind construction plan.
- Concessionaire is suggested to expedite the erection work of launder and weir arrangement for tube settler media.

E. Security Cabin-

- Excavation work is completed.
- PCC work is completed.
- Footing work is completed.
- RCC (23.75 cum) work of security cabin is completed.
- Brick Work at tube Settler is completed.
- Plaster work at security cabin is completed.
- Putty of security cabin is completed.
- Concessionaire is required to finish all the Remaining work of security cabin without any further delay.

F. Main Pumping Station-

- Excavation work At Main Pumping Station is completed.
- Boulder Soling & PCC work is completed.
- RCC of Raft is completed.
- RCC work up to 10th lift wall is completed.
- 11^{th} Lift wall with 89.0 Level Slab Completed.
- Above 89 Level Column Reinforcement work in Progress.
- Shuttering and stagging materials removing from tank in progress.
- It is suggested to provide Pipe & Pipe Barricading with GI sheet around the excavated area to avoid any casualty at site during execution.
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of MPS is lagging far behind construction plan

G. Shastri bridge SPS-

- Excavation work under progress.
- Provide GI sheet barricading around plot area.
- Dewatering work is started on 4th March 2022 and excavation work has been started on 1st April 2022. Work is very slow. It is instructed to concessionaire submit the methodology of excavation and complete the excavation works as early as possible by deploying sufficient manpower, material and machinery.
- It is also observed that there is an objection against construction of Shastri Bridge SPS at proposed site by local inhabitants, It should be noted that this particular facility has already been delayed for more than one year and no further delay will be acceptable. Needful actions to be taken and expedite the work without any further delay and complete the work within the timelines

H. Rising Main from Shastri bridge SPS to Jhunsi MPS:

- Total 1860-meter (DI 700 mm Día) laying is completed out of 3950 m.
- It is suggested to provide hard Barricades (Pipe & Pipe) around excavated trench & GI sheet at the end of daily work around open Trench to avoid any inconvenience to Local Public.

- Concessionaire is suggested to take approval of Design/Drawing of Thrust Block/Anchor Block/Pedestal for Rising main so that laying of rising main can be done in Continuity without unnecessary gaps.

I. Trunk Main & I & D works

- Total 280 m laying of Trunk Main (700 mm Dia) from Ulta Quila-I to Haveliya Nalla is completed and construction of 6 no's Manhole is under progress.
- Total 233 m laying of Trunk Main (500 mm Dia) from Lakkar Nalla to Haveliya Nalla is completed.
- Total 107 m laying of Trunk Main (300mm Dia) from Gangoli shivalay to Bhola Mandir is completed.
- Execution work of I & D structures are under progress at 9 nalla locations.

Sl No	I&D Name	Work Status
1	Augharwa Nalla	Work under progress
2	Bhola Mandir Nalla	Work under progress
3	Gangoli Shivalla Nalla-I	Work under progress
4	Gangoli Shivalla Nalla-II	Not stated yet
5	Savitri Nagar Nalla	Not stated yet
6	Dham Nalla	Not stated yet
7	Shastri Bridge Nalla	Work under progress
8	Triveni Marg Nalla-I	Not stated yet
9	Triveni Marg Nalla-II	Work under progress
10	Ulta Quila Nalla -I	Work under progress
11	Ulta Quila Nalla-II	Work under progress
12	Havelia Nalla	Work under progress
13	Lakkar Nala	Work under progress

J. Applicable Permits:

- Concessionaire is suggested to update The Status of Applicable Permit to UPJN/Project Engineer on Weekly Basis. Also, it is suggested to check, identify & apply for all the applicable permits required for whole Jhunsi Facility as no hindrance will be accepted in future due to new applicable permit issue.

K. Other miscellaneous activities-

- Concessionaire is suggested to take all the precaution during execution & follow all the standard safety Norms to avoid any causality during work.
- Concessionaire is required to provide proper Hard barricading (Pipe & pipe with G.I sheet) around Deep excavated area to avoid any casualty at site during construction.
- It is suggested to avoid direct placing of steel on ground & also cement slurry should be sprayed on steel to protect from corrosion due to moisture.

- Concessionaire is required to start the construction of Retaining wall & boundary wall at earliest.
- In the month of Feb-22 there was only 70 labour engaged at Jhunsi STP.
- Total 253 cum RCC work has done in the month of Feb-22 at Jhunsi STP.

1.2 Recommendation's-

- Concessionaire is suggested to execute the construction work with proper planning & prior information (or RFI) should be given for all the activities.
- Proper Finishing is required at Joint of RCC Wall /Column by grouting method.
- It is suggested to provide enough manpower (at least 150 labors) & resources to expedite the work.
- resolve all above-mentioned shortcomings so that in future, work can be executed smoothly.
- It is suggested to maintain all the Safety & Quality measures at site & carry out works with good engineering practice.
- Concessionaire should also strictly follow schedule 10 PART-B of concession agreement & relevant IS Standard for all civil execution works.
- Concessionaire is suggested to improve the workmanship quality to achieve the desired outcome.
- Approved Designs/Drawings/document should be kept at site during construction work.
- Concessionaire shall submit the micro level plan day wise for current milestone for better monitoring and project schedule completion controls.

2. NAINI-II STP AND ASSOCIATE INFRASTRUCTURE

2.1 Inspection Report

Name of Facility	42 MLD Naini – II STP & Associated Infrastructure, Prayagraj.
Date of visit	6th April, 13thApril ,16th April
Site Visitors	1. Mr. Santosh Kumar, UPJN. 2. Mr. Arvind Yadav, UPJN 4. Mr. Amit Ranjan AECOM. 5. Mr Gaurav Pandey,AECOM 5. Mr. Pushpender, PWPL.

A. FCR unit:

- FCR Civil construction completed - 100 %
- Tank A – Hydrotesting Completed.
- Tank B – Hydrotesting Completed
- It is instructed to concessionaire to complete repairing of joints with special materials & grinding of internal & external surface within 10 days otherwise Mile stone certification would not be possible by UPJN and Project Engineer.
- Painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause 1.4.1, schedule 10 PART-B of concession agreement & as per approved Drawing of FCR tank.
- It is suggested to concessionaire proper repairing & grinding shall be done for outer wall wherever required.
- Erection of all the structural steel member must adhere clause 1.21.2 a & B of schedule 10 Part-B of Concession Agreement.

1.21.2 **Painting on structural steel work**

Primer and finish paints shall be compatible with each other to avoid cracking and wrinkling and shall be from the same manufacturer for each painting system.

a. **Primer**

Two coats of primer shall be applied on the steel structures. First coat of lead-free, oil-based, high-quality, corrosive resistant steel primers such as Red Oxide/ Zinc Chromate as specified shall be applied before any member of steel structure are placed in position or taken out of workshop. Second coat of primer shall be applied after the erection is completed and before painting commences.

b. **Paint**

Two coats of epoxy paint shall be applied on all structural steel members. Paint delivered to the fabrication shop/site shall be ready mixed, in original sealed containers, as packed by the manufacturer. The application of paint shall be as per manufacturer's instructions. The coating thickness shall consist of the following minimum dry film thickness, or as recommended by the manufacturer, if thicker:

First coating : 100 µm

Second coating : 100 µm

- Concessionaire is required to finalize the framing arrangement of FCR module along with Air diffuser grid piping & railing at the top of FCR at earliest.
- Concessionaire is required to finalize the erection of cable tray in process building area at earliest.

- Concessionaire is required to finalize the framing arrangement of solar system along with base plate & railing at the top of FCR at earliest.

B. Tube-Settler Unit:

- The RCC work of this unit has been completed but its hydrotesting, internal and external finishing work, joint filling and painting work is still pending.
- It is instructed to concessionaire to complete repairing of joints with special materials & grinding of internal & external surface and hydrotesting within 10 days otherwise the completion of this unit is considered as incomplete.
- The slab casting of CCT portion is still balance it is very necessary to expedite the work by deploying separate labour resources for timely completion.
- Start also the painting work tank after completion of finishing work. Painting works should be done as per clause 1.4.1, schedule 10 PART-B of concession agreement & as per approved drawing of FCR tank.
- The construction of chambers is not initiated yet, it is instructed to expedite the construction of Chambers of this unit otherwise completion of work cannot possible.
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of Tube Settler is lagging far behind construction plan.
- Concessionaire is suggested to expedite the work of frame arrangement for tube settler media.

C. Process Building unit:

- Excavation & PCC is completed. RCC work of raft is completed.
- Slab casting completed at Level 92.5
- At Level + 98.85 slab casting completed.
- Grit Chamber final lift wall RCC work is completed.
- Grit channel at 94.25 walkway slab RCC work is completed
- Total 80 labors were deployed at processes building.
- Foundation and flooring work under progress.
- The RCC work has been completed except PTU. The brick masonry work, wall electrification, plumping and other misc. works are still pending. The current progress of this unit not as per approved construction plan. Due to delays in civil construction work, there is a delay in starting mechanical and electric work which is affecting the overall progress of the whole project and we are losing our targets. If this practice continues, we will not be able to commission this project on time.
- The foundation work of DG foundation, LT Panel, HT Panel are in progress

needs to expedite the work by mobilizing more resources in more shifts for timely completion. It is also instructed to do the proper curing of RCC work.

D. Boundary Wall:

- RCC for boundary wall columns, Brick work, plastering work are in progress,
- 80% RCC & Brick work Completed.
- Work is very slow. It is suggested Concessionaire work should be expedite by increasing manpower.

E. Naini-II MPS and I&D works:

- RCC of Wall is completed up to top level i.e. 89.0 level. Shuttering & Reinforcement work is under progress of slab at the level 89.0.
- Work progress of MPS is very slow. Only 30 labors were deployed at MPS.
- Work progress of MPS is very slow. Concessionaire has instructed to speed up the concreting of slab work of MPS by deploying night shift gang of bar binders without further delay & execute the works with all safety as per EHS plan.
- I&D works Status

Sl. No	I&D Name	Work Status
1	Mawaiya Nalla	Work under progress
2	Sachha Baba	Work under progress
3	Khakhrauni Nalla	Work not started
4	Mahewaghat-I Nalla	Work under progress
5	Mahewaghat -II Nalla	Work under progress
6	Mahewaghat-III Nalla	Work under progress

F. Mahewaghat SPS:

- Inlet channel Raft is completed, 6th out of 6th lift wall completed and slab reinforcement and shuttering work is under progress.
- RCC work of slab is completed
- For battery & panel room tie beam RCC work completed and column reinforcement work under progress.
- The work of staff quarter and boundary wall has not satrated yet. It is directed to immediately start the work of boundary wall and SQ.
- It is suggested to concessionaire, gradation of construction material (Aggregate and sand) must be done before RCC work. At the start of concrete pouring, Slump Cone, Cube moulds & admixture measuring jar must be available at site.
- Steel reinforcement was directly placed on ground surface. steel reinforcement should not be stacked direct on ground, that can be stacked

on wooden batten, Steel reinforcement shall ordinarily be stored in such a way as to avoid distortion and to prevent deterioration and corrosion.

- At one side SPS wall was out of plumb, it is suggested to concessionaire kindly take necessary action to rectify.
- Concessionaire has not provided safety barricades as per standard norms, it is suggested that construction site should be properly barricaded with Pipe & Pipe along with GI Sheet to avoid any incident or unauthored access at site.
- During inspection it is observed that only 15 labors were deployed at site.

G. Mawaiya Nalla SPS:

- Excavation, stone pitching, and PCC is completed.
- 2nd lift wall was completed on 03.12.2021.
- 5th lift wall was completed on 03.01.2022.
- 6th lift wall casting & slab at level +83.95m completed on 05.02.2022. RCC of 10 lift wall is completed up to level 88.84 and Reinforcement & shuttering work of slab under progress.
- In Inlet channel 6th lift wall casting completed & and Reinforcement & shuttering work of slab is under progress.
- Staff quarter tie beam reinforcement and shuttering work under progress
- During site inspection it is observed that 30 labors were deployed at site.
- During site inspection it is observed that, concessionaire has not provided safety barricades as per standard norms, it is suggested that construction site should be properly barricaded with Pipe & Pipe along with GI Sheet to avoid any incident or unauthored access at site.
- It was observed that steel reinforcement was directly placed on ground surface. steel reinforcement should not be stacked direct on ground, that can be stacked on wooden batten, Steel reinforcement shall ordinarily be stored in such a way as to avoid distortion and to prevent deterioration and corrosion.
- Site instruction register was not available at site, concessionaire is suggested to keep instruction register at site on regular basis.

H. Raising Main Mahewaghat SPS & Mawaiya SPS to Naini-II MPS:

- Raising main of DI 300 mm dia. From Mahewaghat to Naini-II MPS started on 13.01.2021 and total approx. 687.5 rmt. out of 700 Rmt. laying done at site.
- Raising main of DI 800 mm dia. From Mawaiya nalla to Naini-II MPS started on 20.01.2021 and total approx. 683.5 rmt. out of 700 rmt. laying completed.
- Air valve installation is not started as on date.
- Hydro-Testing of laid pipes has not been started till date. Due to this, the road restoration work is also affecting.
- The concessionaire is requested to carry-out all pending works and Hydro-Testing earliest

I. Trunk Sewer pipeline:

- RCC 600mm Dia. Pipe started laying form Mahewaghat to Naini-II stretch and total of 3902 Rmt. out of 4077 Rmt. laid till date.
- At Mahewaghat Gravity main near Naini old bridge for trenchless pipelaying, casing pipe pushing work was completed in first week of Oct'21, but as on date this work is pending due to unavailability of 600 mm dia carriage pipe at site which attributes unnecessary delay.
- The trunk Sewer pipeline of RCC 1400mm Dia. Pipe started laying form Mawaiya nalla to Naini-II stretch and total of approx. 2853 Rmt. out of approx. 3050 Rmt.
- 1600 Dia pipe laid 942 m out of 997m at site till date. Pipe laying work under progress Near Naini II STP,
- Total 95 nos. Manholes Completed out 108 nos.

J. Staff Quarter:

- The individual building, staff quarter is not completed as on date. Electrical, plumbing & finishing work is balance in staff quarter.
- RCC & Plastering work is completed up to 2nd Roof slab.
- It is noticed that the work in Staff quarter started in Feb-March'20 and still work is balance, it is showing the progress of work is very poor.
- The concessionaire is requested to increase the manpower and expedite the work to meet the progress & follow all the safety norms at site.

K. Other miscellaneous activities:

- The Progress at site is very slow. Availability of manpower is less at site.
- It is observed that, electric current is not available at naini II STP site, which is affecting testing of construction material at site. it is suggested to concessionaire resolve the issue at the earliest.
- Laboratory was not found fully equipped at site. It is suggested to concessionaire make an arrangement for testing of construction material & Compression testing machine (CTM) at Naini II STP site.
- Toilets are not operational at site due to unavailability of water and absence of cleaning, which violate the sanitation guidelines and involves health risk for workers. It suggested to concessionaire resolve this issue earliest and make all toilets operational at site.
- There is regular issue in availability of concrete from batching plant.
- Availability of concrete pump is not adequate.
- Concessionaire is required to provide proper hard barricading (Pipe & pipe with G.I sheet) around Deep excavated area to avoid any casualty at site during construction.
- Proper Stacking of Steel should be done at site & cement slurry should be

sprayed on steel to protect from corrosion due to moisture.

- It is found that the cement stacked and covered, but it is too close to the wall, also proper height to be provided. It is suggested provided to close all the openings of shed to protect it from rainwater and moistures. SRC Cement stack also checked at RMC Plant and same observations provided for compliance.
- I & D work at Sachcha Baba Nalla has not been started till date . It is also observed that trenchless work is also pending since from 5 months due to unavailability of pipe. It is to bring in your kind notice that generally rainy season starts from Mid of the June, therefore it is highly unlike to continue the excavation/trenchless work during this period. There is no seriousness by the concessionaire regarding curing of the structure. Finishing work is very poor at Mahewaghat SPS. Kindly instruct the concessionaire to improve workmanship at site.

2.2 Recommendation's

- The Average labour strength at Naini-II STP site is 150 nos. As the progress of work is far behind the construction schedule, concessionaire is requested to increase the labours (at least 200) and arrange separate labour gangs at different construction units. UPJN SE also instructed to Concessionaire, engage Manpower and separate gang for all unit & Concessionaire Committed to UPJN for increasing manpower.
- It is suggested to concessionaire, revised Work plan must be submitted for further review and approval.
- It suggested to concessionaire, Exposed surfaces of concrete shall be kept continuously in a damp of wet condition by ponding or by covering with a layer of sacking, canvas, hessian or similar materials and kept constantly wet for at least seven days from the date of concrete
- It is suggested to concessionaire, Expedite the work by deploying additional manpower and machinery & pipes should be made available at site.
- It is suggested to concessionaire make alternate batching plant arrangement. So that work will not be delay due to unavailability of concrete.
- It is already suggested to concessionaire; hindrance register must be maintained at all the facilities.
- Proper Finishing is required at Joint of RCC Wall /Column by grouting method.
- Work quality should be maintained & proper arrangement should be made for curing of structure.
- Copy of all approved design and drawing should be available at site.
- The concessionaire is suggested to implement all ESHS norms at site.
- The concessionaire is requested to follow 'Schedule-10 Part-B' of the

concessionaire agreement and IS-456 and other relevant IS codes for all the site execution activities and works as and when required.

- The concessionaire is suggested to take necessary action to incorporate all the observation otherwise timely completion of milestones will not be possible and any delay will be attributed at the concessionaire's end.

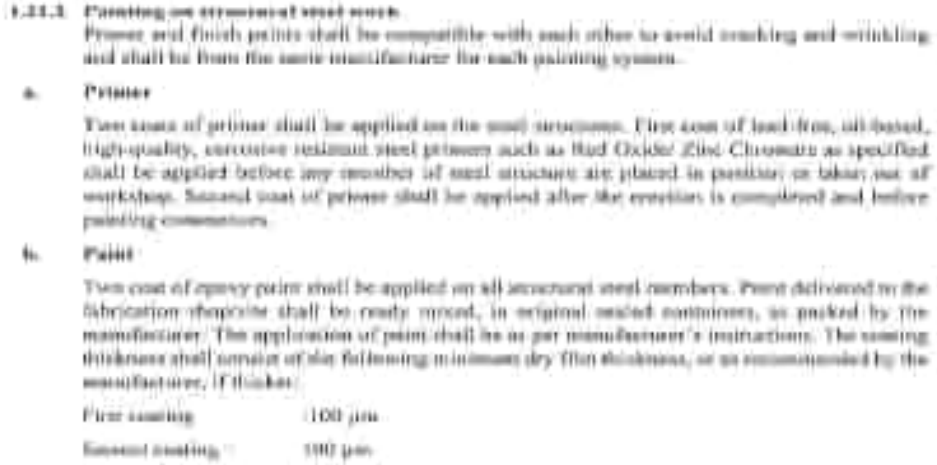
3. PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE

3.1 Inspection Report

Date of site visit	8th, 16th & 20th April 2022
Site Visitor	Mr. Santosh Kumar, UPJN Mr. Tauseef Ahmed, UPJN Mr. Amit Ranjan, AECOM Mr Gaurav Panday,AECOM Mr. Ashish Singhai, PWPL Mr. Rahul Sharma PWPL
Name of Facility	14 MLD Phaphamau STP & Associated Infrastructure

A. FCR Tank-

- FCR Civil Construction work completed. Hydrotesting work also completed.
- It is informed to concessionaire proper finishing must be done at all the grouting points.
- Painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause 1.4.1, schedule 10 PART-B of concession agreement & as per approved Drawing of FCR tank.
- Erection of all the structural steel member must adhere clause 1.21.2 a & B of schedule 10 Part-B of Concession Agreement.



1.21.3 Painting on structural steel work

Primer and finish paints shall be compatible with each other to avoid cracking and wrinkling and shall be from the same manufacturer for each painting system.

a. Primer

Two coats of primer shall be applied on the steel structures. First coat of lead-free, oil-based, high-quality, corrosive resistant steel primers such as Red Oxide/ Zinc Chromate as specified shall be applied before any member of steel structure are placed in position or taken out of workshop. Second coat of primer shall be applied after the erection is completed and before painting commences.

b. Paint

Two coat of epoxy paint shall be applied on all structural steel members. Paint delivered to the fabrication shop/site shall be ready mixed, in original sealed containers, as packed by the manufacturer. The application of paint shall be as per manufacturer's instructions. The coating thickness shall consist of the following minimum dry film thickness, or as recommended by the manufacturer, if thicker:

First coating 100 µm

Second coating 100 µm

- Concessionaire is required to finalize the framing arrangement of solar system along with base plate & railing at the top of FCR at earliest.

1.21.3 Galvanizing of structural steel

Galvanizing of structural member shall conform to IS 4759, 209, 2629, 2633 and 6745.

- Painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause 1.4.1, schedule 10 PART-B of concession agreement & as per approved Drawing of FCR tank.

- Concessionaire is required to finalize the framing arrangement of FCR module along with Air diffuser grid piping & railing at the top of FCR at earliest.

B. Staff Quarter –

- Staff Quarter structure work is completed. Finishing, electrification and plumbing work is balance.
- It is informed to Concessionaire door & window must be install as per concessionaire agreement & specification.
- Painting & Flooring of staff quarter should be done as per approved Drawing.

C. Process Building-

- Part A: RCC of 24 Nos column is completed up to plinth beam out of 24.RCC of grit chamber slab also completed
- Part B: RCC work of 4th Lift of 4 Nos of column, 2nd lift of 11 column completed and RCC of 8 Nos column is completed up to 2nd lift Reinforcement and shuttering work under progress
- Part C: RCC of 4 no column up to 4th lift and 3 no's up to 3rd lift is completed.
- It is suggested to concessionaire, speed up the work of process building as the work progress is very slow. It is suggested to concessionaire provide shear key at construction joint.
- Concessionaire is required to expedite the foundation and flooring work of DG, Transformer, Air blower, Dewatering unit and other E&M equipment foundation at earliest.
- It is informed to concessionaire all site observation given by UPJN & Project engineer must be closed at the earliest
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of Process Building is lagging far behind construction plan.

D. Tube Settler-

- CCT: Civil work completed
- Hopper area and Sludge holding portion work completed.
- During site visit it is observed that wall finishing work is not proper, it is suggested to concessionaire proper wall finishing should be done.
- Concessionaire is suggested to expedite the work of frame arrangement for tube settler media.
- Concessionaire is suggested to expedite the erection work of launder and weir arrangement for tube settler media.

E. Security Cabin-

- Execution work at Security Cabin is not started yet.

F. Main Pumping Station-

- Slab completed upto 89.0 level.
- Above 89 Level Column Reinforcement work in Progress.
- It is suggested to provide Pipe & Pipe Barricading with GI sheet around the excavated area to avoid any casualty at site during execution.
- Concessionaire is suggested to expedite the work with additional manpower & Resources as Execution of MPS is lagging far behind construction plan.

G. Basna Nalla SPS-

- Raft is completed of 5th lift wall is completed and steel and shuttering of 6th lift wall is under progress.
- It is observed that work progress is very slow which may impact the scheduled-on time completion of this project. It is found that RCC work of Slab at the level 80.50 was completed on 15th March 2021 and only shuttering work above the slab under progress
- Concessionaire is also suggested; entire construction site should be properly barricaded.
- It is informed to concessionaire increase manpower and speed up work progress.

H. Trunk Sewer & I & D works

- Total laying of 800 dia. RCC pipe along NH 482.5 m completed out of 845 m. 3 Nos of Manhole is completed and 4 Nos of manhole is under progress out of 11 manhole
- Execution work of I & D structures are under progress at 2 nalla locations.

Sl No	I&D Name	Work Status
1	Basna Nalla	Work under progress
2	Shantipuram Nalla	Work under progress

I. Applicable Permits:

- Concessionaire is suggested to update The Status of Applicable Permit to UPJN/Project Engineer on Weekly Basis. Also, it is suggested to check, identify & apply for all the applicable permits required for whole Prathama Facility as no hindrance will be accepted in future due to new applicable permit issue.

J. Other miscellaneous activities-

- Concessionaire is suggested to take all the precaution during execution & follow all the standard safety Norms to avoid any causality during work.
- Concessionaire is required to provide proper Hard barricading (Pipe & pipe with G.I sheet) around Deep excavated area to avoid any casualty at site during construction.
- It is suggested to avoid direct placing of steel on ground & also cement slurry should be sprayed on steel to protect from corrosion due to moisture.

3.2 Recommendation's

- It is observed that work progress is very slow which may impact the scheduled-on time completion of this project. Concessionaire is suggested to increase the manpower, material and machinery and expedite the work without any further delay and complete the work within the timelines of Approved Construction Plan.
- Concessionaire is suggested to execute the construction work with proper planning & prior information (or RFI) should be given for all the activities.
- Proper Finishing is required at Joint of RCC Wall /Column by grouting method.
- It is suggested to provide enough manpower (at least 150 labors) & resources to expedite the work.
- resolve all above-mentioned shortcomings so that in future, work can be executed smoothly.
- It is suggested to maintain all the Safety & Quality measures at site & carry out works with good engineering practice.
- Concessionaire should also strictly follow schedule 10 PART-B of concession agreement & relevant IS Standard for all civil execution works.
- Concessionaire is suggested to improve the workmanship quality to achieve the desired outcome.
- Approved Designs/Drawings/document should be kept at site during construction work.
- Concessionaire shall submit the micro level plan day wise for current milestone for better monitoring and project schedule completion controls.

ANNEXURE-II

KPI REPORTS OF PACKAGE -II, PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION

Table of Contents

Naini-I STP, 80 MLD STP at Prayagraj

INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 80 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design <9)	Final pH (Design- 6.5 to 9.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design- <30 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design- <100 mg/l)	Inlet TSS (Design- <300 mg/l)	Final TSS (Design- <50 mg/l)	Inlet (Design- NA)	Final (Design- <1000 MPN/100 ml)	Final (Design- 0.2 mg/l)	Outlet Concentration (>30%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Apr-22	102880	102.88	7.28	7.34	146	22	364	44	306	30	NA	500	0.3	25.5	1700000	
2-Apr-22	105180	105.18	7.31	7.35	139	20	348	40	324	32	NA	600	0.2	25.2	1400000	
3-Apr-22	100280	100.28	7.33	7.32	148	23	352	44	310	35	NA	400	0.3	25.8	1000000	
4-Apr-22	104200	104.2	7.32	7.28	138	18	344	36	308	33	NA	800	0.2	25.5	1600000	
5-Apr-22	97050	97.05	7.29	7.28	136	18	356	40	308	31	NA	400	0.3	25.8	1700000	
6-Apr-22	97290	97.29	7.35	7.28	143	22	364	44	317	29	NA	500	0.2	25.4	1100000	
7-Apr-22	0		Plant Shutdown for New flow meter installation								NA			25.60	1300000.00	
8-Apr-22	102150	102.15	7.26	7.55	129	24	348	40	308	32	NA	700	0.3	25	1500000	
9-Apr-22	108770	108.77	7.22	7.38	133	20	336	40	302	34	NA	300	0.2	25.2	1400000	
10-Apr-22	118170	118.17	7.33	7.32	128	18	344	36	306	32	NA	800	0.3	25.8	1000000	
11-Apr-22	117890	117.89	7.31	7.28	133	21	348	40	308	35	NA	800	0.2	25.8	1700000	
12-Apr-22	111050	111.05	7.33	7.34	138	23	352	44	302	33	NA	600	0.3	25.6	1500000	
13-Apr-22	108370	108.37	7.28	7.35	129	21	340	38	305	30	NA	300	0.2	25.8	1000000	
14-Apr-22	113540	113.54	7.33	7.28	136	20	340	44	307	32	NA	700	0.3	24.8	1000000	
15-Apr-22	117330	117.33	7.31	7.33	129	18	336	36	303	31	NA	500	0.2	25.3	1200000	
16-Apr-22	118810	118.81	7.33	7.28	133	20	328	40	298	33	NA	600	0.3	25.4	1700000	
17-Apr-22	116830	116.83	7.28	7.35	136	21	340	48	301	35	NA	400	0.3	25.3	1300000	
18-Apr-22	118110	118.11	7.33	7.44	128	20	332	40	306	32	NA	700	0.3	23.2	1100000	
19-Apr-22	115860	115.86	7.35	7.33	133	18	336	36	302	34	NA	600	0.2	[illegible]	1200000	
20-Apr-22	120880	120.88	7.29	7.33	128	20	340	44	328	32	NA	300	0.3	25.4	1100000	
21-Apr-22	117340	117.34	7.31	7.33	138	22	332	40	298	33	NA	600	0.2	25.2	1400000	
22-Apr-22	117580	117.58	7.28	7.33	139	24	348	44	304	32	NA	400	0.3	25.8	1900000	
23-Apr-22	116550	116.55	7.34	7.38	138	22	352	48	308	34	NA	700	0.2	25.4	1700000	
24-Apr-22	119800	119.8	7.28	7.45	135	20	368	40	304	33	NA	400	0.3	24.8	1200000	
25-Apr-22	114680	114.68	7.36	7.38	136	18	328	36	306	30	NA	400	0.2	24.8	1900000	
26-Apr-22	121220	121.22	7.50	7.41	128	21	340	44	288	38	NA	400	0.3	25.4	1600000	
27-Apr-22	111340	111.34	7.32	7.44	128	23	328	48	305	30	NA	400	0.2	25.8	1900000	
28-Apr-22	114220	114.22	7.33	7.38	133	18	340	40	288	34	NA	300	0.2	25.8	1000000	
29-Apr-22	121670	121.67	7.26	7.38	128	20	336	44	303	31	NA	500	0.3	25.5	1000000	
30-Apr-22	122770	122.77	7.35	7.41	128	21	344	36	308	33	NA	400	0.2	25.4	1400000	
Average	110894.81	114.56	7.32	7.38	132.88	20.48	341.54	41.85	304.23	32.62	#DIV/0!	538.77	0.26	24.82	1375376.37	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar, PM-I, UPJN 2. Mr. Arvind Yadav, AE, UPJN 3. Mr. Rahul Paswan, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Tomar, AECOM. 6. Mr. Shobhit Mishra, PWPL. 7. Mr. Minesh Joshi, PWPL. 8. Mr. Rahul Chaudhary, PWPL.
Place(s) of Inspection	• 80 MLD STP at Naini-i, Prayagraj • 80 MLD MPS at Gaughat, Prayagraj • 35 MLD SPS at Chacharnalla, Prayagraj

Visit was done on 06th Apr 2022, 08th Apr 2022, 19th April 2022, 21st April 2022 and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Naini-I STP	97.05 to 118.81
2	Gaughat MPS	103.09 to 120.24
3	Chacharnalla SPS	30.21 to 47.65

Note: 1) Source for above data is Site record for flow of STP/MPS/SPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	18 to 24 mg/l
2	TSS – Effluent	< 50 mg/l	29 to 35 mg/l
3	pH – Effluent	6.5 – 9.0	7.28 to 7.39
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	24.80 to 25.90 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 to 1700000 MPN/gTS

Note: 1) Source for above data is Site record for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Naini I STP	36.70 to 60.81
2	Naini I Associated Infrastructure	62.64 to 80.25

Note: 1) Source for above data is site record for Power Consumption of STP.

- **Status of various units & records at site:**

1. Online Analyzer at Inlet is not giving correct values of parameters. Concessionaire to please check &rectify the problem.
2. Communication of data from PLC system of SPS/MPS to SCADA system of STP is started but signals are breaking hence data is not received continuously, hence SCADA reports related to associated infrastructure cannot be generated. This is a long-term pending issue and hence Concessionaire is required to rectify the problem at the earliest.
3. In Naini-I STP, main MCC panel doesn't have provision for taking power from secondary sources like DG, Solar power generation system and Biogas power generation system simultaneously. It is observed that Biogas engine is operated in daytime due to which power generated from solar system is wasted during daytime. Therefore, it is suggested to operate Biogas engine in nighttime so that solar power generation system can be operated at full efficiency and full power generated from the same can be used to run equipment. This will increase the power generation from renewable resources and decrease the power requirement from grid which will ultimately lower the electricity bill of the facility.
4. Currently, Biogas engine is operated for 9 hours only during the day but as per clause no. 1.1. of Part-G in Schedule-10, the facilities shall run 24 hours every day. Hence, Concessionaire is requested to do the needful.
5. All three mechanical screens of 60 MLD part are working. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
6. All two mechanical screens of 60 MLD part are working. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
7. For 60 MLD, all grit removal units are working. Grit removal from grit separator of unit no. 2 is not efficient, Concessionaire to please rectify the problem.
8. For 20 MLD, all grit removal units are working.
9. All Primary Settling Tanks are working. Scum removal system is not working efficiently as large amount of scum can be seen floating on the surface. Scum is fully filled in the box & it is not going properly to collection chamber. Rectification of problem is required.
10. In all PSTs, it is observed that lumps of sludge are coming to the top in some parts due to which outlet quality of PSTs is deteriorating. This can be rectified by ensuring proper withdrawal of sludge. Concessionaire to please ensure the same.
11. Telescopic valves of Primary Settling Tanks are not working.
12. Installation of actuators is pending for drain valves of Primary Settling Tanks.
13. All nine surface aerators are working. It is recommended to install DO analyzer in this tank also for better monitoring.
14. For Aeration tank of 60 MLD, it is observed that DO is maintained around 1-1.5 mg/l only which means that aeration process is not performed efficiently in the aeration tanks. Also, the appearance of sewage in the same is blackish in color which must be brownish in appearance in ideal condition. Effect of the same can be seen in effluent quality also as the clarity of the same is not up to the mark. Hence, Concessionaire is required to the needful for the same so that effluent quality can be improved.
15. Aeration tank of 20 MLD is in operation. Commissioning of DO analyzer is not completed yet.
16. Interlink of DO analyzer with Aeration blowers is not done yet for running blower in auto mode as per DO levels in Aeration Tank.
17. All Aeration blowers are working.
18. All Final Settling Tanks are working.

19. It is suggested to install torque switches in all clarifiers for having better protection against excessive load on scrapper.
20. Installation of actuators is pending for drain valves of Final Settling Tanks.
21. Cleaning of Chlorine Contact Tank is required as due to flood, mud and silt is deposited in the tank which is in-turn deteriorating the quality of effluent. Concessionaire to please rectify the problem at the earliest.
22. In RSPH unit of 60 MLD, 2 out of 4 pumps are working, two pumps are under maintenance. Hence, no pump is in stand-by. Concessionaire to please rectify the problem at the earliest.
23. In RSPH unit of 20 MLD, 1 out of 2 pumps are working, one pump is under maintenance. Hence, no pump is in stand-by. Concessionaire to please rectify the problem at the earliest.
24. One chlorinator was working but one is in maintenance and one booster pump is working but one was in maintenance hence no chlorinator/pump is in stand-by.
25. Commissioning of Leak absorption system is completed. Checklist forthe same must be prepared and recorded properly every month.
26. Process analyzers at outlet is working. Installation of new analyzer is completed but verification of calibration in presence of UPJN/Project Engineer is pending. Concessionaire to please check & do the needful.
27. Chlorine analyzer at outlet is not working.
28. Outlet flowmeter is not working. This is a long-term pending issue hence Concessionaire to please rectify the problem at the earliest. Also, RCC chamber for the flowmeter is not constructed.
29. Both thickeners are in working condition. Installation of actuators for drain valves is pending. Installation of flowmeter in one out of two lines from blending tank to thickener is pending.
30. Effluent quality must be improved.
31. All thickened sludge transfer pumps are working. It is suggested to install exhaust blowers in thickened sludge pump house for releasing the gases generated inside the room for safety purposes.
32. In TEPH, all pumps are OK for operation for Dandi and Naini Area.
33. As already conveyed, it is required to do modifications in TEPH panel room for fulfilling the electrical norms due to installation of new double front panel in old room. Concessionaire to please do the needful.
34. Both DGs are in operation. Installation work of chimney for DGs as per CPCB norms is pending.
35. Sludge dewatering unit is in operation. Installation of various instruments is pending.
36. Currently, only one sludge drying bed is empty and one is running. Concessionaire is requested to keep at least 10 sludge drying beds empty for ensuring proper withdrawal of sludge from the system in all conditions.
37. All filtrate pumps are working.
38. In SCADA system, flow variation can be seen in recorded values of daily and monthly flow as per site records. This problem must be rectified.
39. Both dewatering feed pumps are working.
40. All Digesters are working.
41. Heat exchangers, sludge recirculation pumps for all digesters are working.

42. In compressor room, all six compressors are working.
43. Gas engine is working.
44. Both Gas holders are working.
45. Gas flare is working.
46. H2S scrubber unit is working. Analyzers fitted at inlet & outlet unit are working.
47. Installation of service water pumps is pending. It is observed that ground water is used as service water in whole STP which is a violation of environmental norms. Hence, to stop this installation of service water pumps and laying of required pipeline must be completed at the earliest.
48. Rehabilitation works for storm water pump house are pending.
49. As already decided, repairing/construction of retaining wall must be completed at the earliest for neutralizing the effect of floods. Since the monsoon season will start from June therefore work for the same must be completed at the earliest so that the situation which was faced last year due to floods can be avoided.
50. Rehabilitation works for tube well are pending.
51. As already discussed, printed logbooks must be present at site for daily records. Concessionaire to please do the needful at the earliest.
52. Landscaping the plant must be imporved.
53. Housekeeping of the plant must be improved.
54. Construction/repairing of roads is in progress, Concessionaire to please complete the work at the earliest.
55. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not implemented till date. Concessionaire to please check & do the needful.
56. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not completed yet, Concessionaire to pleasedo the needful.
57. Installation of Public Address System is done but its commissioning is not completed yet.
58. As already discussed, painting of all units from inside and outside is not started yet. Concessionaire to please do the needful. Proper consent for the color coding must be taken from the UPJN.
59. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement or it must be properly stacked at one place after taking proper consent from UPJN.
60. For Gaughat MPS, following observations were made during visit:
    a) Replacement of NRV in header line of HNC pumps in Gaughat MPS is required for reducing the effect of water hammering on the pumps. Concessionaire to please do the needful.
    b) All HNC pumps are working.
    c) Two out of three submersible pumps are working. One pump is under maintenance.
    d) Both mechanical screens of HNC pumps are working. Currently sensor of one screen which provides overload protection is broken, it must be replaced at the earliest as excessive wear and tear can be caused in screen due to overload. Commissioning of differential level sensors is pending.

e) Both mechanical screens for submersible pumps are working. Installation of second screen is in progress. Commissioning of differential level sensors is pending.
f) DG set of 1000 KVA and DG sets of submersible pumps are working. Repairing work of 11 KV DG synchronization panel is pending. Repairing work of 500 KVA/11KV DG set is pending. Concessionaire to please complete all pending works.
g) It is suggested to install manual screen in receiving chamber of SPS for reducing load on mechanical screens.
h) Painting for all units in the MPS is not started yet. Concessionaire to please do the needful.
i) In PLC panels, indication for ON/OFF of mechanical screens, belt/screw conveyor is not coming.

61. For Chacharnalla SPS, following observations were made during visit:

a) Currently all VNC pumps are working.
b) One out of two mechanical screens are working. One mechanical screen and belt conveyor are under maintenance.
c) Both DG sets are OK for operation.
d) Old DG set is not working due to non-availability of electrical panel. Concessionaire to please do the needful so that old DG can be kept ready for operation in emergency conditions.
e) Installation of pressure transmitter on header line of VNC pumps is pending.
f) Painting for all units in the MPS is not started yet. Concessionaire to please do the needful.
g) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.

62. Since COD is announced for all Package – II facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
b) Graphs based on data obtained from online monitoring system in accordance with clause no. 3.1 of schedule-6 in Concession Agreement.
c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
e) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
f) Quarterly report as per Part-G in Schedule-10 of CA.
g) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
h) Procedure for recording & disposal of complaints.
i) Safety & Health Records. Incident reports must also be submitted along with action plan.
j) Breakdown & failure reports within 12 hours of such breakdown/failure.

k) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.

l) Calibration reports for all instruments & meters installed at site.

m) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

1.3 Recommendations

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of FABs for checking the efficiency of FABs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

Rajapur STP, 60 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

adani

Date	Daily Feed Quantity MLD (Design- 60 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <8)	Final pH (Design- 6.5 to 8.5)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <30 mg/l)	Inlet COD (Design- <600 mg/l)	Final COD (Design- <250 mg/l)	Inlet TSS (Design- <500 mg/l)	Final TSS (Design - <50 mg/l)	Inlet (Design- NA)	Final (Design- <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Consistency (<20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Apr-22	69340	69.34	7.41	7.72	125	17	340	46	256	33	NA	500	0.2	22.89	1400000	
2-Apr-22	69830	78.83	7.37	7.69	130	15	348	44	303	34	NA	500	0.3	21.75	1700000	
3-Apr-22	75580	75.58	7.39	7.76	135	18	336	40	289	29	NA	400	0.2	22.75	1400000	
4-Apr-22	71210	71.21	7.38	7.7	133	17	344	45	307	23	NA	500	0.2	22.09	1700000	
5-Apr-22	71830	71.83	7.36	7.69	140	16	332	48	297	23	NA	500	0.2	22.93	1700000	
6-Apr-22	71230	71.23	7.41	7.75	151	15	340	44	288	27	NA	400	0.3	21.27	1400000	
7-Apr-22	74780	74.78	7.4	7.71	130	16	329	48	305	29	NA	500	0.2	22.63	1300000	
8-Apr-22	80570	80.57	7.37	7.68	140	19	338	46	309	26	NA	600	0.2	22.3	1700000	
9-Apr-22	74520	74.52	7.42	7.74	130	19	344	48	278	24	NA	400	0.3	21.88	1400000	
10-Apr-22	73530	73.53	7.37	7.69	125	16	333	36	295	28	NA	400	0.2	21.28	1300000	
11-Apr-22	70880	70.88	7.41	7.76	130	17	340	40	286	21	NA	500	0.2	21.46	1700000	
12-Apr-22	72300	72.3	7.35	7.72	135	18	336	44	297	27	NA	600	0.2	21.75	1700000	
13-Apr-22	75050	75.05	7.41	7.67	140	17	328	40	279	30	NA	500	0.3	22.27	1400000	
14-Apr-22	74310	74.31	7.35	7.69	135	15	346	44	301	24	NA	400	0.2	21.53	1600000	
15-Apr-22	76850	76.9	7.38	7.75	125	18	340	40	291	25	NA	500	0.2	22.75	1700000	
16-Apr-22	75150	75.15	7.42	7.71	140	16	332	48	285	28	NA	600	0.2	21.87	1400000	
17-Apr-22	80990	80.99	7.37	7.68	135	17	334	44	308	23	NA	600	0.3	22.79	1700000	
18-Apr-22	74610	74.61	7.41	7.73	130	18	344	40	295	27	NA	500	0.2	21.57	1700000	
19-Apr-22	77820	77.82	7.39	7.71	130	19	336	44	292	29	NA	600	0.2	22.25	1400000	
20-Apr-22	73730	73.73	7.44	7.75	133	17	338	40	307	24	NA	400	0.2	22.17	1300000	
21-Apr-22	75470	75.47	7.41	7.72	140	19	340	48	315	28	NA	400	0.2	22.55	1400000	
22-Apr-22	77950	77.95	7.36	7.69	125	18	332	44	294	25	NA	500	0.2	21.29	1700000	
23-Apr-22	79080	79.08	7.43	7.73	135	17	344	44	288	27	NA	600	0.3	22.37	1400000	
24-Apr-22	79840	79.84	7.4	7.61	140	16	336	40	296	29	NA	400	0.2	21.89	1700000	
25-Apr-22	77020	77.02	7.37	7.67	130	17	324	44	289	30	NA	600	0.2	21.76	1700000	
26-Apr-22	77870	77.87	7.41	7.7	135	16	332	40	305	24	NA	500	0.2	22.32	1400000	
27-Apr-22	78810	78.81	7.35	7.68	135	16	312	44	311	28	NA	600	0.2	23.15	1700000	
28-Apr-22	77650	77.65	7.43	7.69	130	17	336	46	297	25	NA	400	0.2	22.57	1300000	
29-Apr-22	83170	83.17	7.38	7.71	125	19	344	44	317	29	NA	500	0.2	21.83	1400000	
30-Apr-22	54650	54.65	7.43	7.68	140	14	328	36	282	33	NA	400	0.3	21.39	1400000	
Average	75163.33	75.16	7.39	7.71	133.33	17.33	334.37	42.67	288.83	26.67	#DIV/0!	452.38	0.22	22.29	1514814.81	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar, PM-I, UPJN. 2. Mr. Arvind Yadav, AE, UPJN. 3. Mr. Manish Srivastva, JE, UPJN 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Tomar, AECOM. 6. Mr. Girijesh, PWPL.
Place(s) of Inspection	• 60 MLD STP at Rajapur, Prayagraj • 25 MLD SPS at Rajapur, Prayagraj • 55 MLD MPS at Mumfodganj Prayagraj

Visit was done on 5th April,12th April & 19th April and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Rajapur STP	56.34 to 80.57
2	Rajapur SPS	5.23 to 15.39
3	Mumfodganj MPS	40.95 to 70.84

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	15 to 19 mg/l
2	TSS – Effluent	< 30 mg/l	23 to 29 mg/l
3	pH – Effluent	6.5 – 9.0	7.67 to 7.76
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 600 MPN/100 ml
5	Consistency – Sludge	> 20 %	21.27 to 23.63%
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Rajapur STP	5.44 to 27.22
2	Rajapur Associated Infrastructure	54.33 to 62.74

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site:**

1. Flowmeter at inlet was working and it was showing flow of 4751.11 m3/hr i.e., 114.02 MLD at 5.12 PM.
2. Online Analyzer at Inlet is not giving correct values of parameters which can be due to incorrect sample reaching the analyzer or due to some problem in analyzer. Concessionaire to please check and rectify the problem.
3. Communication of data from PLC system of SPS/MPS to SCADA system of STP is started but signals are breaking hence data is not received continuously, hence SCADA reports related to associated infrastructure cannot be generated. This is a long-term pending issue and hence Concessionaire is required to rectify the problem at the earliest.
4. One grit removal units is working. One grit removal unit is in maintenance.
5. Both Mechanical Fine screens at PTU are not working properly as screens are not lifting waste material properly. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
6. During visit it was found that several distribution cells of both UASB reactors are choked. Cleaning work is in progress.
7. During rehabilitation period, it was suggested to complete the cleaning of UASB reactors for increasing the efficiency of treatment process but the same was not done. Hence, Concessionaire is suggested to plan for the same.
8. It is observed that problem of leakage from HDP inlet pipes is very frequent. For minimizing this problem, it was suggested to give proper supports under the pipes. Concessionaire to please do the needful.
9. All surface aerators are working.
10. In meter room, no permanent arrangement is being made for safe approach to the electrical panel at increased height which is very dangerous and violates all safety norms. Concessionaire is required to look into the matter & do the needful at the earliest.
11. Both DG sets are working.
12. It is suggested to increase the height of chimney of DG sets as per CPCB norms.
13. All sludge transfer pumps are working.
14. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
15. For chlorination system, it was found that booster pumps were getting water from potable water system of plant which is completely against CPCB norms. Concessionaire to please look into the matter and make arrangement for using treated water in booster line.
16. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
17. Rehabilitation of Leak absorption system is completed. Testing of system for working in auto mode is not done yet. This must be done at the earliest for avoiding any kind of mis-happening at the time of chlorine leakage.
18. Process analyzers at outlet is working. Installation of new analyzer is completed but verification of calibration in presence of UPJN/Project Engineer is pending. Concessionaire to please check & do the needful.
19. Flowmeter at outlet was working and it was showing flow of 4642.60 m3/hr i.e., 111.42 MLD at 5.40 PM. Calibration flowmeter is completed by site team, Concessionaire is required to get the calibration of flowmeter verified by OEM and submit calibration certificates.

20. Calibration of flowmeter in outlet line of effluent pumps is pending. Concessionaire to please do the needful and submit calibration reports.
21. In SCADA, operations of some equipment of water line are not possible from system. Arrangement for the same must be done for complete supervision and control from SCADA system.
22. In SCADA, required changes in the report must be done as discussed.
23. Gas holder and gas flare are not in operation. Concessionaire is requested to complete the maintenance works and take both into operation.
24. Landscaping of the plant is started. Concessionaire is suggested to increases the manpower for landscaping work.
25. Housekeeping of the plant must be improved.
26. All main roads of plant are broken. Construction/repairing of roads is not started yet, Concessionaire to please start the work at the earliest.
27. As already discussed, printed logbooks must be present at site for daily records. Use of printed logbooks is started but it is still not implemented for all records yet. Concessionaire to please do the needful at the earliest.
28. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not done till date. Concessionaire to please check & do the needful.
29. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
30. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
31. Installation of Public Address System is done but its commissioning is not completed yet.
32. At Rajapur SPS following observations were made:

    a) Temporary Bund at tapping pint is damaged due to the rain. It is not repaired yet. Most of the Raw Sewage from nearby nalla is going directly into the Ganga River. Concessionaire is suggested to rectify on urgent basis.
    b) Mechanical coarse Screens at SPS is working. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
    c) All 6 pumps are OK for operation. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that pump can start & stop on the basis of level in the sump.
33. At Mumfodganj MPS following observations were made:

    a) Both Mechanical coarse screens at MPS are not working properly as screens are not lifting waste material properly. Concessionaire to please rectify the problem. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
    b) At Mumfodganj MPS, all 6 pumps are OK for operation. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that pump can start & stop on the basis of level in the sump.
    c) Dismantling joint must be provided along with flowmeter for ease in maintenance.
    d) NRV must be provided in common header to reduce the effect of water hammering.
    e) Site house Keeping & landscaping must be improved. Concessionaire is suggested to keep the Old material Properly.

f) Painting for all units in the MPS is not started yet. Concessionaire to please do the needful.

34. Since COD is announced for all Package – II facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
b) Graphs based on data obtained from online monitoring system in accordance with clause no. 3.1 of schedule-6 in Concession Agreement.
c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
e) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
f) Quarterly report as per Part-G in Schedule-10 of CA.
g) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
h) Procedure for recording & disposal of complaints.
i) Safety & Health Records. Incident reports must also be submitted along with action plan.
j) Breakdown & failure reports within 12 hours of such breakdown/failure.
k) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
l) Calibration reports for all instruments & meters installed at site.
m) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

2.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of FABs for checking the efficiency of FABs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

ANNEXURE-III

KPI REPORTS OF PACKAGE -III, PROJECT ENGINEER INSPECTION REPORT AND RECOMMENDATION

Table of Contents

1. NUMAYADAHI STP AND ASSOCIATE INFRASTRUCTURE

1.1 KPI Report

Numayadahi STP, 50 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

adani

Date	Daily Feed Quantity MLD (Design 50 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	Inlet	Outlet	Inlet pH (Design <9)	Outlet pH (Design 6.5 to 9.0)	Inlet BOD (Design <250 mg/l)	Outlet BOD (Design <30 mg/l)	Inlet COD (Design <450 mg/l)	Outlet COD (Design <100 mg/l)	Inlet TSS (Design <250 mg/l)	Outlet TSS (Design <30 mg/l)	Inlet (Design NA)	Outlet (Design <1000 MPN/100 ml)	Outlet (Design 0.2 mg/l)	Quantity (>20%)	Total Coliform (Design <1000 MPN/gTS)	
1-Apr-22																
2-Apr-22																
3-Apr-22																
4-Apr-22																
5-Apr-22																
6-Apr-22																
7-Apr-22																
8-Apr-22																
9-Apr-22																
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23-Apr-22																
24-Apr-22																
25-Apr-22																
26-Apr-22																
27-Apr-22																
28-Apr-22																
29-Apr-22																
30-Apr-22																
Average																

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar, PM-I, UPJN. 2. Mr. Tauseef Ahmed, AE, UPJN. 3. Mr. Satwant, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Tomar, AECOM. 6. Mr. Vijay Dwivedi, PWPL.
Place(s) of Inspection	• 50 MLD STP at Numayadahi, Prayagraj • 50 MLD MPS at Ghagharnalla, Prayagraj • 15 MLD SPS at Sasur Kadheri, Prayagraj • 16.5 MLD SPS at Lukarganj, Prayagraj

Visit was done on 12th Apr 2022 and 20th April 2022 and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Numayadahi STP	53.87 to 64.90
2	Ghagharnalla MPS	55.37 to 66.45
3	Sasur Kadheri SPS	25.62 to 37.73
4	Lukerganj SPS	4.57 to 5.00

Note: 1) Source for above data is Site record for flow of STP/MPS/SPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	13 to 17 mg/l
2	TSS – Effluent	< 30 mg/l	22 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.60 to 7.94
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	21.82 to 25.01 %
6	Fecal Coliform – Sludge	<20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

Note: 1) Source for above data is Site record for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Numayadahi STP	37.87 to 70.78
2	Numayadahi Associated Infrastructure	91.40 to 101.60

Note: 1) Source for above data is Site record for Power Consumption of STP.

- **Status of various units & records at site:**

1. It is observed that power cut at Numayadahi STP is very frequent and normally 2-3 times power cut takes place every day. This is having adverse effect on the operation of facilities and can lower down the efficiency of facility. Also, frequent power cuts can cause excessive wear & tear of equipment. Hence, UPJN is requested to please look into the matter and do the needful.
2. Online Analyzer at Inlet is not giving correct values of parameters which can be due to incorrect sample reaching the analyzer or due to some problem in analyzer. At the time of current visit, sample pump was not found running, Concessionaire to please check & rectify the problem.
3. Data transmission from online analyzers to servers of SPCB/CPCB is not started till date. Concessionaire to please do the needful.
4. Communication of data from PLC system of SPS/MPS to SCADA system of STP is started but signals are breaking hence data is not received continuously, hence SCADA reports related to associated infrastructure cannot be generated. This is a long-term pending issue and hence Concessionaire is required to rectify the problem at the earliest.
5. Both grit removal units were in operation.
6. Both Mechanical Screens are working. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode.
7. Currently, ground water is being used as service water for mechanical screens which is violation of environmental norms. Please make provisions for using effluent as service water for mechanical screens and similarly for whole plant.
8. All Biotowers were in operation.
9. Though overhauling of mechanical screens is completed in rehabilitation period, but still considerable amount of plastic waste is reaching the biotowers hence the gap must be checked around mechanical screens or otherwise this plastic waste can choke up the media which will ultimately lower the efficiency of Biotowers.
10. Aeration tank no. 3 is not in operation for maintenance of air grid lines and diffusers. Also, in aeration tank no. 1 & 2, air is coming out vigorously from 2-3 points due to which air distribution is not proper in the tank which could affect the quality of treatment in aeration tanks. Maintenance for these tanks must also be completed after completing the work for Aeration tank no. 3.
11. All Aeration blowers are in working condition & two blowers were found running. Ammeters of blower no. 3 & 4 are not working, please rectify the problem.
12. DO analyzer at the outlet of Aeration tank no. 3 is not working properly, please check & rectify the problem.
13. Pressure transmitted & temperature transmitted on header line of Aeration blowers is not installed yet.
14. All Centrifuges are working along with Sludge Feed pumps and Poly dosing pumps. Sludge generation is 4 – 6 trolleys per day.
15. All Sludge Recirculation Pumps are in working condition.
16. Both Secondary clarifiers were found in operation. In Secondary clarifier no. 2, it is found that dead sludge can be seen coming to the top of water surface in some parts. Though the maintenance work is completed and floatation of sludge is rectified in major parts of this clarifier but it is suggested to rectify this minor problem also.
17. Both booster pumps & both chlorinators are in working condition & chlorine dosing was found to be running around 6 kg/hr.
18. Residual chlorine was checked & found to be around 0.2 – 0.3 mg/l.
19. Rehabilitation of Leak absorption system is completed. Testing of system for working in

auto modewas checked and it was found that air blower & caustic pump start running at 3 ppm, but it must be set around 1 ppm for providing better safety measures. Concessionaire is requested to do the needful.

20. Filling of caustic solution was completed in neutralization tank and it was instructed to check the concentration of caustic solution and maintain it around 20%.
21. Process analyzers at outlet is working. Installation of new analyzer is completed but verification of calibration in presence of UPJN/Project Engineer is pending. Concessionaire to please check & do the needful.
22. Chlorine analyzer for the effluent is not giving correct values.
23. It was found that sludge is being dumped within the STP. Concessionaire to please look into the matter and dump sludge only in the land which is being allotted by UPJN for sludge disposal.
24. Minor Seepages from Biotowers & some other units can be seen, and this must be rectified.
25. As already discussed, printed logbooks must be present at site for daily records. Use of printed logbooks is started but it is still not implemented for all records yet. Concessionaire to please do the needful at the earliest.
26. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not implemented till date. Concessionaire to please check & do the needful.
27. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to pleasedo the needful.
28. Installation of Public Address System is done but its commissioning is not completed yet.
29. Painting of units in the STP is started. It is suggested to start the painting work for all units from inside also.
30. Some CCTV cameras are out of operation, please rectify the problem.
31. Recording of flow from flowmeters at inlet & outlet is not accurate in SCADA system, Concessionaire to please check & rectify the problem.
32. For Ghagharnalla MPS, following issues are required to be resolved:

    a) It is observed that overflow occurs sometimes during peak time due to deposition of sludge in the path of nalla towards tapping point even after running MPS at full capacity. Hence, UPJN is requested to please look into the matter and do the needful.
    b) Repairing of wall of pump house towards sump is required so that no sewage can go inside the pump house in any situation.
    c) Currently, all HNC pumps (5 new + 1 old) are in working condition. It is suggested to complete repairing of old pumps also so that they can be used during emergency situation.
    d) NRVs for two pumps are leaking due to which flow is going back in the pumps that are not operating and hence the condition may arise in which pumps will not give full flow if the discharge will also start leaking. This is a long-term pending issue and hence Concessionaire is required to rectify the problem at the earliest.
    e) There is minor leakage of sewage from the retaining wall at the tapping point of MPS, this must be rectified as raw swage is going directly into the river.
    f) Both Mechanical screens are working.
    g) Both DG sets are working.
    h) During the shutdown taken in the month of May-21, NRV was taken out from the main header line for maintenance purpose but it is not reinstalled till date. Concessionaire

to please do the needful so that effect of back hammering on the pumps can be reduced.

i) Painting for all units in the MPS is not started yet. Concessionaire to please do the needful.

33. For Sasur Kadheri SPS, following issues are required to be resolved:

a) Raw sewage is leaking from the sides of retaining wall at the tapping point of SPS, this must be rectified.
b) Currently all submersible pumps in the SPS are OK for operations.
c) Both Mechanical screens are working.
d) Both DG sets are OK for operation.
e) It is observed that power cut at SPS is very frequent. This can have adverse effect on the operation of facilities and can lower down the efficiency of facility. Also, frequent power cuts can cause excessive wear & tear of equipment. Hence, UPJN is requested to please look into the matter and do the needful.
f) Painting for all units in SPS is not started yet. Concessionaire to please do the needful.

34. At Lukerganj SPS,
a) All 6 pumps are OK for operation. It is suggested to complete repairing of old pumps also so that they can be used during emergency situation.
b) One mechanical screen is working and one is in .
c) Painting for units is in progress
d) Both DG sets are working.

35. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
b) Graphs based on data obtained from online monitoring system in accordance with
c) Clause no. 3.1 of schedule-6 in Concession Agreement.
d) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
e) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
f) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
g) Quarterly report as per Part-G in Schedule-10 of CA.
h) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
i) Procedure for recording & disposal of complaints.
j) Safety & Health Records. Incident reports must also be submitted along with action plan.
k) Breakdown & failure reports must be submitted within 12 hours of such breakdown/failure.
l) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
m) Calibration reports for all instruments & meters installed at site.
n) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

1.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Regular testing of samples must be done from outlet of Biotowers for checking the efficiency of Biotowers.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs

Salori STP, 29 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-29 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	Ml	MLD	Inlet pH (Design <9)	Final pH (Design 6.5 to 9.0)	Inlet BOD (Design <250 mg/l)	Final BOD (Design <20 mg/l)	Inlet COD (Design <500 mg/l)	Final COD (Design <100 mg/l)	Inlet TSS (Design <500 mg/l)	Final TSS (Design <30 mg/l)	Inlet (Design NA)	Final (Design <1000 MPN/100 ml)	Final (Design 0.2 mg/l)	Outlet Consent (>20%)	Fecal Coliform (20,00,000 MPN/g TS)	
1-Apr-22	33410	33.41	7.28	7.59	153	23	352	44	312	33	NA	800	0.3	22.7	1400000	
2-Apr-22	34025	34.03	7.34	7.63	162	25	364	40	320	33	NA	500	0.3	23.1	1200000	
3-Apr-22	33860	33.86	7.21	7.54	136	22	308	44	305	34	NA	700	0.3	22.9	1300000	
4-Apr-22	35060	35.06	7.26	7.87	165	26	348	38	316	31	NA	400	0.2	22.5	1100000	
5-Apr-22	34560	34.56	7.31	7.62	155	24	364	44	308	36	NA	600	0.3	23.2	1300000	
6-Apr-22	34200	34.2	7.40	7.56	153	23	352	40	320	32	NA	700	0.2	23.5	1400000	
7-Apr-22	33500	33.5	7.36	7.65	162	25	360	36	312	37	NA	500	0.3	23.1	1100000	
8-Apr-22	32520	32.52	7.23	7.58	136	22	348	44	306	33	NA	600	0.3	23.6	1300000	
9-Apr-22	32210	32.21	7.33	7.67	159	24	356	48	316	33	NA	400	0.2	22.9	1200000	
10-Apr-22	33950	33.95	7.29	7.62	153	21	364	44	322	34	NA	800	0.3	23.4	1600000	
11-Apr-22	33510	33.51	7.37	7.71	144	19	352	40	307	38	NA	700	0.2	22.7	1400000	
12-Apr-22	35020	35.02	7.25	7.64	156	22	344	36	328	32	NA	500	0.2	23.6	1200000	
13-Apr-22	35930	35.93	7.32	7.58	159	24	356	44	298	35	NA	600	0.3	23.1	1300000	
14-Apr-22	33050	33.05	7.38	7.69	162	25	348	40	312	33	NA	700	0.2	23.5	1600000	
15-Apr-22	33510	33.51	7.22	7.62	153	21	360	44	303	31	NA	400	0.3	23.8	1100000	
16-Apr-22	32330	32.33	7.29	7.56	153	23	352	38	315	34	NA	300	0.2	24.1	1200000	
17-Apr-22	33200	33.2	7.35	7.67	162	25	360	40	303	33	NA	400	0.2	23.6	1300000	
18-Apr-22	31470	31.47	7.28	7.59	136	22	336	36	312	34	NA	400	0.3	23.9	1100000	
19-Apr-22	33120	33.12	7.22	7.65	159	24	364	44	328	32	NA	500	0.2	23.5	1400000	
20-Apr-22	31620	31.62	7.29	7.22	164	27	348	36	306	23	NA	600	0.3	23.8	1200000	
21-Apr-22	33140	33.14	7.38	7.68	147	23	348	44	320	33	NA	700	0.3	23.6	1400000	
22-Apr-22	32980	32.98	7.31	7.63	160	24	352	36	312	34	NA	400	0.2	23.7	1200000	
23-Apr-22	32490	32.49	7.38	7.6	164	26	344	40	308	38	NA	600	0.2	24.3	1100000	
24-Apr-22	32180	32.18	7.26	7.47	172	25	360	32	309	34	NA	800	0.3	23.0	1600000	
25-Apr-22	32400	32.4	7.37	7.58	167	26	364	44	330	44	NA	700	0.3	23.4	1700000	
26-Apr-22	31510	31.51	7.39	7.55	156	23	336	40	324	42	NA	600	0.3	24.2	1300000	
27-Apr-22	32340	32.34	7.40	7.56	146	20	340	36	312	37	NA	500	0.2	23.8	1600000	
28-Apr-22	30810	30.81	7.41	7.49	154	18	360	40	319	34	NA	500	0.3	24.8	1200000	
29-Apr-22	30130	30.13	7.21	7.6	160	21	368	44	313	33	NA	750	0.3	23.1	1200000	
30-Apr-22	32180	32.18	7.29	7.53	153	24	356	40	340	42	NA	320	0.2	23.0	1600000	
Average	32930.27	32.93	7.32	7.60	157.00	23.22	351.83	40.15	316.27	34.83	#DIV/0!	577.78	0.24	23.53	1318814.81	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar, PM-I, UPJN. 2. Mr. Tauseef, AE, UPJN. 3. Mr. Gaurav Gupta, AECOM. 4. Mr. Sudhir Tomar, AECOM. 5. Mr. Vaibhav, PWPL 6. Mr. Pradeep, PWPL
Place(s) of Inspection	• 29 MLD STP at Salori, Prayagraj. • 29 MLD MPS at Salori, Prayagraj.

Visit was done on 4th April 2021, 16th Apr 2021 and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Salori STP	31.47 to 35.93
2	Salori MPS	31.10 to 34.44

Note: 1) Source for above data is site record for flow of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	19 to 26 mg/l
2	TSS – Effluent	< 50 mg/l	31 to 38 mg/l
3	pH – Effluent	6.5 – 9.0	7.54 to 7.71
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.5 to 24.1 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 to 1600000 MPN/gTS

Note: 1) Source for above data is site record for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Salori STP	83.21 to 105.71
2	Salori MPS	50.24 to 53.81

Note: 1) Source for above data is site record for Power Consumption of STP.

- **Status of various units & records at site:**

1. Process analyzers at inlet is working but it is showing major variation in values of parameters as per SCADA reports, please check & rectify the problem.
2. Process analyzers at outlet is working. Installation of new analyzer is completed but verification of calibration in presence of UPJN/Project Engineer is pending. Concessionaire to please check & do the needful.
3. Chlorine analyzer at outlet is removed, Concessionaire is requested to provide reason for that.
4. All Grit Removal Units are working.
5. Both Mechanical Screens are working but mechanical screen no.2 is not lifting screenings efficiently. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode. Concessionaire is required to rectify the problem.
6. Both FAB units are working. DO analyzer for FAB no. 2 is not working.
7. Pump for sensor cleaning of DO analyzers must be made operational for efficient working of DO analyzers.
8. All Aeration blowers are working.
9. Both Clarisettlers are working. In both Clarisettlers (especially in Clarisettler no. 2), levelling of outlet launders must be checked as supernatant is not coming equally in all outlet lauders & this can affect the quality of effluent. This problem was highlighted earlier also but no progress is madetill date. Concessionaire to please look into the matter & rectify the problem at the earliest.
10. Sample of both clarisettlers was checked and found that outlet quality of clarisettler no. 1 is not good as compared to that of clarisettler no. 2. It was also found that dead sludge is coming to the top of clarisettler which in turn is deteriorating the quality of outlet. Hence, clarisettler must be cleaned to rectify the problem.
11. In clarisettlers it is observed that when agitators are operated, sludge starts coming to the top due to which quality deteriorates. Hence, it is suggested to do necessary modifications in agitators so that the problem can be rectified.
12. Quality of effluent is not good during peak hours. Concessionaire is requested to ensure proper withdrawal of sludge so that quality of effluent can be improved during peak hours also.
13. For Sludge dewatering unit, installation of instruments (flowmeter for poly dosing line, etc.) is pending, Concessionaire to please do the needful.
14. Both Sludge transfer pumps for Clarisettler are working.
15. Both Filtrate pumps are working.
16. Both chlorinators and chlorine booster pumps are working.
17. Leak absorption system was checked in auto mode but it was not working. Concessionaire is required to rectify the problem. Also, as instructed earlier also, checklist forthe same must be prepared and recorded properly every month.
18. Thickener unit is working.
19. It was found that sludge is being dumped within the STP. Concessionaire to please look into the matter and dump sludge only in the land which is being allotted by UPJN for sludge disposal.
20. As already discussed, printed logbooks must be present at site for daily records. Use of printed logbooks is started but it is still not implemented for all records yet. Concessionaire to please do the needful at the earliest.
21. At Salori MPS, 5 pumps are OK for operation and 1 pump is in maintenance hence only one pump is in stand-by. Since the programming for running pumps in auto mode is completed, it is suggested to operate them in auto mode for optimum performance.

22. At Salori MPS, it is suggested to rectify problems in old pumps also so that they be used in emergency situation. Currently, all old pumps are not in working condition.
23. At Salori MPS, coarse screens before sump are working but lot of waste is passing due to gap between screens and RCC structure due to which pumps are getting choked and lot of wear and tear is happening in the pumps. Hence, UPJN is requested to instruct M/s Passavant to rectify the problem.
24. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not done till date. Concessionaire to please check & do the needful.
25. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
26. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This must be implemented from day 1 of O&M period but the same is not completed till date, Concessionaire to please do the needful.
27. Installation & commissioning of Public Address System is not completed yet.
28. Installation of FeCl3 dosing system is completed but it is not made operational yet. Concessionaire to please complete the work at the earliest so that the quality of effluent can be improved further.
29. Housekeeping in dewatering area must be improved, lot of sludge can be seen scattered in this area.
30. All CCTV cameras are working
31. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

    a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    b) Graphs based on data obtained from online monitoring system in accordance with clause no. 3.1 of schedule-6 in Concession Agreement.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
    f) Quarterly report as per Part-G in Schedule-10 of CA.
    g) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    h) Procedure for recording & disposal of complaints.
    i) Safety & Health Records. Incident reports must also be submitted along with action plan.
    j) Breakdown & failure reports within 12 hours of such breakdown/failure.
    k) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    l) Calibration reports for all instruments & meters installed at site.
    m) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

2.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of FABs for checking the efficiency of FABs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

3. KODRA STP AND ASSOCIATE INFRASTRUCTURE

3.1 KPI Report

Kodra STP, 25 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design 25 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	Ml	MLD	Inlet pH (Design ~8)	Final pH (Design 6.5 to 9.0)	Inlet BOD (Design <200 mg/l)	Final BOD (Design <20 mg/l)	[illegible]	[illegible]	Inlet TSS (Design <500 mg/l)	Final TSS (Design <30 mg/l)	Inlet (Design NA)	Final (Design <1000 MPN/100 ml)	Final (Design 0.2 mg/l)	Outlet Content (<20%)	Fecal Coliform [illegible]	
1-Apr-22	[illegible]	[illegible]	7.34	7.65	245	21	316	35	255	19	NA	500	0.3	22.87	[illegible]	
2-Apr-22	25910	25.91	7.41	7.57	237	16	356	32	269	18	NA	600	0.2	25.5	[illegible]	
3-Apr-22	27720	27.72	7.29	7.58	235	15	320	38	255	22	NA	400	0.4	22.57	[illegible]	
4-Apr-22	25140	25.14	7.34	7.63	241	15	308	32	272	21	NA	500	0.3	21.77	1700000	
5-Apr-22	[illegible]	[illegible]	7.18	7.41	233	17	300	32	259	15	NA	600	0.2	23.83	1400000	
6-Apr-22	[illegible]	[illegible]	[illegible]	7.60	[illegible]	[illegible]	[illegible]	40	[illegible]	23	NA	500	[illegible]	[illegible]	[illegible]	
7-Apr-22	27280	[illegible]	7.28	[illegible]	[illegible]	15	[illegible]	[illegible]	[illegible]	22	NA	[illegible]	[illegible]	[illegible]	[illegible]	
8-Apr-22	27500	27.50	7.36	7.60	233	18	324	40	265	18	NA	400	0.2	23.18	1100000	
9-Apr-22	[illegible]	[illegible]	7.23	7.18	228	21	311	33	268	20	NA	300	0.2	23.34	1200000	
10-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	19	NA	600	0.2	[illegible]	[illegible]	
11-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21	NA	500	0.3	[illegible]	[illegible]	
12-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	288	[illegible]	NA	[illegible]	0.3	[illegible]	[illegible]	
13-Apr-22	[illegible]	[illegible]	7.27	7.51	241	23	312	32	275	22	NA	300	0.2	22.75	[illegible]	
14-Apr-22	[illegible]	27.32	7.16	7.60	247	25	300	33	234	25	NA	[illegible]	0.3	23.32	[illegible]	
15-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21	NA	[illegible]	[illegible]	[illegible]	[illegible]	
16-Apr-22	27300	27.3	[illegible]	7.68	[illegible]	16	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	0.4	[illegible]	[illegible]	
17-Apr-22	27400	27.40	7.22	7.22	243	23	322	44	234	23	NA	[illegible]	0.2	23.44	[illegible]	
18-Apr-22	[illegible]	[illegible]	7.34	7.60	233	19	324	43	272	22	NA	[illegible]	0.2	23.18	[illegible]	
19-Apr-22	[illegible]	[illegible]	7.38	7.66	[illegible]	[illegible]	[illegible]	44	278	23	NA	[illegible]	[illegible]	[illegible]	[illegible]	
20-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
21-Apr-22	[illegible]	[illegible]	7.24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
22-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	23	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
23-Apr-22	[illegible]	[illegible]	7.37	7.68	[illegible]	16	310	40	264	[illegible]	NA	500	[illegible]	22.8	1600000	
24-Apr-22	[illegible]	[illegible]	7.38	7.56	247	15	311	44	277	24	NA	400	[illegible]	[illegible]	1500000	
25-Apr-22	[illegible]	25.8	7.35	7.63	[illegible]	16	[illegible]	[illegible]	268	23	NA	[illegible]	[illegible]	[illegible]	[illegible]	
26-Apr-22	[illegible]	[illegible]	[illegible]	7.71	243	[illegible]	[illegible]	[illegible]	[illegible]	24	NA	[illegible]	0.2	[illegible]	[illegible]	
27-Apr-22	[illegible]	[illegible]	7.25	[illegible]	[illegible]	13	[illegible]	[illegible]	[illegible]	21	NA	[illegible]	[illegible]	[illegible]	1700000	
28-Apr-22	[illegible]	[illegible]	7.37	7.64	[illegible]	25	320	44	[illegible]	23	NA	500	[illegible]	[illegible]	1200000	
29-Apr-22	[illegible]	[illegible]	7.35	7.58	247	14	308	26	273	20	NA	[illegible]	[illegible]	[illegible]	1300000	
30-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	22	NA	[illegible]	[illegible]	[illegible]	1200000	
Average	27254.87	27.25	7.30	7.62	[illegible]	[illegible]	[illegible]	[illegible]	271.43	[illegible]	[illegible]	[illegible]	[illegible]	23.16	[illegible]	

Source: Logbook of Laboratory at Sewage Treatment Plant

3.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar PM-I, UPJN. 2. Mr. Tauseef Ahamed, AE UPJN. 3. Mr. Narendra, JE UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Tomar, AECOM. 6. Mr. Jagdish, PWPL. 7. Mr. Rajan, PWPL.
Place(s) of Inspection	• 25 MLD STP at Kodra, Prayagraj • 25 MLD MPS at Kodra, Prayagraj

Visit of Kodra STP & MPS was done on 2th April, 8th April & 16th April and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Kodra STP	25.54 to 29.21
2	Kodra MPS	25.54 to 29.21

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	12 to 15 mg/l
2	TSS – Effluent	< 50 mg/l	18 to 24 mg/l
3	pH – Effluent	6.5 – 9.0	7.41 to 7.72
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	21.56 to 23.63%
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 to 1700000 MPN/gTS

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Kodra STP	71.43 to 98.54
2	Kodra MPS	93.97 to 102.38

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site:**

1. Flowmeter at inlet was working and it was showing flow of 1378.20 m3/hr i.e., 33.07 MLD at 11.00 AM.
2. Data transmission to servers of SPCB/CPCB is not started till date. Concessionaire to please do the needful.
3. Online Analyzer at Inlet is not working satisfactorily.
4. Both grit removal unit are working.
5. Both Mechanical Fine Screens at PTU are working.
6. All Biotowers are working. Small amount of plastic waste is reaching the biotowers.
7. All Aeration tanks are working.
8. Vigorous air is coming from marked point in Aeration Tank no. 1. This must be checked & rectified. Same is the case for Aeration Tank no. 2 also. Maintenance for the same is in progress. Concessionaire is requested to complete the maintenance work within stipulated time.
9. Both Dissolved oxygen Analyzer are not working at aeration tank.
10. All Aeration blowers are working.
11. All Centrifuge is working condition.
12. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
13. All Sludge Recirculation Pumps are working.
14. Both Centrifuge Feed Pumps are working.
15. Both Secondary Clarifiers are working. Secondary Clarifier launder cleaning is required.
16. Both Chlorine Dosing Systems are working. Chlorine dosing was around 4-5 kg/hr and residual chlorine in effluent was 0.2 to 0.3 mg/l.
17. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
18. Rehabilitation of Leak absorption system is completed. Testing of system for working in auto mode is not done yet. This must be done at the earliest for avoiding any kind of mis-happening at the time of chlorine leakage.
19. Installation of new Online Analyzer at Outlet is in Progress.
20. Flowmeter at outlet was working and it was showing flow of 1320.45 m3/hr i.e. 31.69 MLD at 11.30 AM.
21. In SCADA, operations of some equipment is not possible. Work is in progress.
22. One Mechanical coarse Screens at MPS is working. One mechanical coarse screen is in maintenance.
23. At Kodra MPS, all 6 pumps are OK for operation. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept auto so that pump can start & stop on the basis of level in the sump.
24. Site house Keeping & landscaping must be improved.
25. As already discussed, printed logbooks must be present at site for daily records. Use of printed logbooks is started but it is still not implemented for all records yet. Concessionaire to please do the needful at the earliest.
26. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not done till date. Concessionaire to please check & do the needful.
27. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.

28. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
29. Installation of Public Address System is done but its commissioning is not completed yet.
30. As already discussed, the painting of units from inside and outside but work is not completed yet.
31. Cleaning of outlet launders for secondary clarifier must be done as too much algae is deposited.
32. Raw sewage is leaking from the retaining wall at the tapping point of MPS, this must be rectified. Also, strengthening of the wall must be done so that it does not broke during rains and floods.
33. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

    a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    b) Graphs based on data obtained from online monitoring system in accordance with clause no. 3.1 of schedule-6 in Concession Agreement.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
    f) Quarterly report as per Part-G in Schedule-10 of CA.
    g) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    h) Procedure for recording & disposal of complaints.
    i) Safety & Health Records. Incident reports must also be submitted along with action plan.
    j) Breakdown & failure reports within 12 hours of such breakdown/failure.
    k) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    l) Calibration reports for all instruments & meters installed at site.
    m) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

3.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of FABs for checking the efficiency of FABs.

- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

4. PONGHAT STP AND ASSOCIATE INFRASTRUCTURE

4.1 KPI Report

Ponghat STP, 10 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design 10 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design <8)	Final pH (Design 5.5 to 9.0)	Inlet BOD (Design <250 mg/l)	Final BOD (Design [illegible])	Inlet COD (Design [illegible])	Final COD (Design [illegible])	Inlet TSS (Design <300 mg/l)	Final TSS (Design [illegible])	Inlet (Design - NA)	Final (Design <1000 MPN/100 ml)	Final (Design 0.2 mg/l)	Output [illegible]	Fecal Coliform (10,00,000 MPN/g TS)	
1-Apr-22	13315	13.31	7.27	7.56	140	22	316	40	270	22	NA	400	0.2	21.23	1000000	Plant availability = 100%
2-Apr-22	11720	11.72	7.46	7.71	134	35	421	78	336	23	NA	400	0.4	22.24	1500000	
3-Apr-22	11580	11.58	7.25	7.53	138	22	312	40	224	22	NA	600	0.3	23.25	1300000	
4-Apr-22	11340	11.34	7.18	7.48	150	18	320	44	257	24	NA	500	0.3	23.34	1700000	
5-Apr-22	[illegible]	[illegible]	[illegible]	7.67	[illegible]	17	308	[illegible]	276	[illegible]	NA	400	[illegible]	[illegible]	[illegible]	
6-Apr-22	11800	11.80	7.26	7.51	128	18	324	28	161	23	NA	700	0.2	22.78	1600000	
7-Apr-22	15000	15.00	7.21	7.34	125	23	328	44	280	20	NA	300	0.2	23.22	1200000	
8-Apr-22	13713	13.71	7.31	7.58	120	22	304	40	280	22	NA	600	0.3	22.23	1300000	
9-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
10-Apr-22	14270	14.27	7.38	7.87	155	17	328	40	300	23	NA	500	0.3	23.11	1400000	
11-Apr-22	12750	12.75	7.28	7.73	128	22	312	22	228	22	NA	700	0.2	22.88	1200000	
12-Apr-22	12840	12.84	7.20	7.61	142	22	320	40	252	22	NA	600	0.2	21.58	1200000	
13-Apr-22	13460	13.46	7.34	7.33	133	17	308	44	178	22	NA	500	0.3	22.18	1400000	
14-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
15-Apr-22	13250	13.25	7.32	7.31	128	22	316	30	204	22	NA	400	0.2	21.41	1000000	
16-Apr-22	14750	14.75	7.24	7.56	140	16	304	44	300	24	NA	500	0.3	22.83	1700000	
17-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17	[illegible]	[illegible]	[illegible]	[illegible]	NA	700	[illegible]	[illegible]	[illegible]	
18-Apr-22	[illegible]	14.7	[illegible]	7.58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
19-Apr-22	13980	13.98	7.22	7.54	152	20	308	30	272	28	NA	300	0.2	22.81	1500000	
20-Apr-22	13120	13.12	7.35	7.33	140	22	316	44	224	22	NA	700	0.2	21.43	1400000	
21-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
22-Apr-22	13720	13.72	7.27	7.67	138	20	312	44	288	28	NA	600	0.2	22.88	1400000	
23-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
24-Apr-22	14020	14.02	7.32	7.24	143	17	308	40	232	22	NA	300	0.2	22.21	1200000	
25-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
26-Apr-22	[illegible]	[illegible]	[illegible]	7.58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	[illegible]	[illegible]	[illegible]	[illegible]	
27-Apr-22	13310	13.31	7.25	7.57	146	22	312	22	282	22	NA	500	0.2	21.58	1200000	
28-Apr-22	15340	15.34	7.36	7.63	133	16	304	40	208	20	NA	400	0.3	23.24	1400000	
29-Apr-22	13300	13.3	7.31	7.58	142	18	316	22	204	22	NA	700	0.2	22.31	1200000	
30-Apr-22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17	[illegible]	[illegible]	[illegible]	[illegible]	NA	500	[illegible]	[illegible]	[illegible]	
Average	13522.[illegible]	13.52	7.27	7.57	148.[illegible]	[illegible]	314.[illegible]	[illegible]	257.[illegible]	23.[illegible]	#DIV/0!	[illegible]	0.25	22.39	[illegible]	

Source: Logbook of Laboratory at Sewage Treatment Plant

4.2 Inspection Report

Month of Site Inspection	April 2022
Site Inspectors	1. Mr. Santosh Kumar PM-I, UPJN. 2. Mr. Tauseef Ahamed, AE UPJN. 3. Mr. Narendra, JE UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Tomar, AECOM. 6. Mr. Jagdish, PWPL. 7. Mr. Anjani, PWPL.
Place(s) of Inspection	• 10 MLD STP at Ponghat, Prayagraj • 10 MLD MPS at Ponghat, Prayagraj

Visit of Ponghat STP & MPS was done on 4th April,13th April & 18th April and following observations were made:

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Ponghat STP	10.77 to 14.27
2	Ponghat MPS	10.77 to 14.27

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	14 to 18
2	TSS – Effluent	< 50 mg/l	20 to 26
3	pH – Effluent	6.5 – 9.0	7.32 to 7.73
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700
5	Consistency – Sludge	> 20 %	20.92 to 23.58
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1200000 to 1700000

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Ponght STP	102.95 to 137.42
2	Ponght MPS	80.92 to 90.63

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site:**

1. Flowmeter at inlet was working and it was showing flow of 832.63 m3/hr i.e., 19.98 MLD at10.45 AM.
2. Online Analyzer at Inlet was not working satisfactorily.
3. Data transmission to servers of SPCB/CPCB is not started till date. Concessionaire to please do the needful.
4. Both Mechanical Coarse screen at MPS are working.
5. Both Grit Removal Units are working.
6. Both Mechanical Fine Screens at PTU are working.
7. Biotower no. 1 is not working satisfactorily as its mechanism is not moving. Small amount of plastic waste is reaching the biotowers which must be stopped as it can choke up the media.
8. All Aeration tanks are working.
9. Both DO Analyzer at aeration tanks are not working.
10. All Aeration Air Blowers are working.
11. All Centrifuges are working along with Sludge Feed pumps and Poly dosing pumps. Sludge generation is 3 – 4 trolleys per day.
12. Outlet water quality is not good. Concessionaire to please do the needful.
13. MPS pump operation is not according to level of the sump.
14. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
15. One Sludge Recirculation Pumps is working and one sludge recirculation pump is in maintenance hence no pump is in stand-by.
16. Both Secondary Clarifiers are working. Weir notch levelling is not satisfactory.
17. Both Chlorine Dosing Systems are working. Chlorine dosing was around 3-4 kg/hr and residual chlorine in effluent was 0.2 to 0.3 mg/l.
18. Rehabilitation of Leak absorption system is not completed yet. Testing of system for working in auto mode is not done yet. This must be done at the earliest for avoiding any kind of mis-happening at the time of chlorine leakage.
19. Currently, water is filled in caustic tank but as per norms proper caustic solution must be present in the tank. This must be done at the earliest for avoiding any kind of mis-happening at the time of chlorine leakage.
20. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
21. Online Analyzer at Outlet is not working satisfactorily.
22. Flowmeter at outlet was working and it was showing flow of 865.29 m3/hr i.e., 20.76 MLD at 11.10 AM.
23. In SCADA, operations of some equipment is not possible in auto mode due to lack of provision in old electrical panels. Arrangement for the same must be done.
24. In SCADA, flow reports do not contain cumulative readings yet. Concessionaire to please do the needful.
25. At Ponghat MPS, all 6 pumps are OK for operation. Presser transmitter is not installed at pump discharge common header.
26. As already discussed, printed logbooks must be present at site for daily records. Use of printed logbooks is started but it is still not implemented for all records yet. Concessionaire to please do the needful at the earliest.
27. Site house Keeping & landscaping are required. Concessionaire is suggested to keep the Old material Properly.

28. Testing of all parameters given in Table – 2 in Clause no. 1.3.1 in Part-G of Concession Agreement is to be done on daily basis but it is not done till date. Concessionaire to please check & do the needful.
29. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
30. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
31. Installation of Public Address System is done but its commissioning is not completed yet.
32. As already discussed, Concessionaire must complete the painting of units from inside and outside but work is not started yet. Proper consent for the color coding must be taken from the UPJN.
33. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

    a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    b) Graphs based on data obtained from online monitoring system in accordance with clause no. 3.1 of schedule-6 in Concession Agreement.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Records as per point no. (a)(iii) of Clause no. 9.8 of the Concession Agreement.
    f) Quarterly report as per Part-G in Schedule-10 of CA.
    g) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    h) Procedure for recording & disposal of complaints.
    i) Safety & Health Records. Incident reports must also be submitted along with action plan.
    j) Breakdown & failure reports within 12 hours of such breakdown/failure.
    k) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    l) Calibration reports for all instruments & meters installed at site.
    m) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

4.3 Recommendation's

- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.

- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of FABs for checking the efficiency of FABs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- It is also instructed to fulfill all safety requirements while doing all kinds of work and proper PPEs must be used.
- All the old material removed from the dismantling works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs

ANNEXURE-IV

PROJECT ENGINEER ACTIVITY AS PER TOR

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
4.1 (i)	Review, analysis and qualifying assessment of field investigations carried out and reported by the Concessionaire in respect of topographical surveys, hydraulic & hydrologic data verification, sub-surface investigation including laboratory testing and reports of geologists wherever applicable, investigation of construction material including lab testing.	Yes	Yes	Review of construction material including lab testing.
4,1(ii)	Review, analysis and qualifying assessment of Design Memorandums, specifications and construction drawings prepared and submitted by the concessionaire.	Yes	Yes	Review of construction drawing
4.1(iii)	Conduct Kick Off meetings	Yes	NA	NA
4.1(iv)	Review and Monitor the submissions of the Concessionaire such as: a. Work Schedule b. Detailed Survey report c. Basic Engineering d. Detailed design and Drawings for i. Civil Works 1. Geo-tech reports 2. Lab testing reports 3. Third Party Inspection report ii. Mechanical and Electrical Works iii. Automation and Instrumentation works iv. Any other allied works e.QA/QC plans	Yes	Yes	Review of revised Construction plan and remaining drawing design of Civil/Mech/Electrical

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	f. Environment Health and Safety Plan, material safety data and hazardous chemicals if any.			
4.1(v)	Review of the Drawings and Documents as set forth in Paragraph 4 and 5;	Yes	Yes	Review of remaining drawing design of Civil/Mech/Electrical
4.1(vi)	Identification of Construction Milestones & Project progress monitoring and issue of Milestone Construction Certificates, Construction Completion Certificate, monitoring Trail run, recommendations for issuance of COD certificate by Jal Nigam etc.	Review and Monitoring of project	Review and Monitoring of project	Review and Monitoring of project and recommendation of issue of Milestone construction certificate
4.1(vii)	To Assist NMCG for getting Statutory permissions	NA	NA	NA
4.1(viii)	Ensure compliance with Statutory provisions under various applicable laws	Yes	Yes	Yes
4.1(ix)	Review, inspection, supervision and monitoring of Construction Works as set forth in Paragraph 6; conducting Tests on completion of construction and issuing Completion/ Provisional Certificate as set forth in Paragraph 6	Yes	Yes	Yes
	Review, inspection and monitoring of O&M as set forth in Paragraph 6;	Yes	Yes	Yes
	determining, as required under the Concession Agreement, the costs of any works or services and/or their reasonableness;	NA	NA	NA
	determining, as required under the Concession Agreement, the period or any extension thereof,	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	for performing any duty or obligation			
	Determining the Events of default and guidance on consequent Termination notices and Payment as detailed in clauses 16.1 to 16.5of the Concession Agreement	NA	NA	NA
	Determine deficiencies in the commissioning & trial runs; prepare the final acceptance document for acceptance of commissioning & trial runs. Prepare & Issue Commercial Operation certificate through Uttar Pradesh Jal Nigam	Yes	NA	NA
	Any other matter which is not specified in ((vi),(vii), or (viii) above and which creates an obligation or liability on the Employer /NMCG beyond the provisions of the Concession Agreement.	Yes	Yes	Yes
4.1(x)	Ensuring Interim Availability of the existing Facilities during construction period and certifying Scheduled Outages during Scheduled Maintenance.	Yes	NA	NA
4.1(xi)	The Project Engineer shall submit regular periodic reports, as specified in the Concession Agreement to Uttar Pradesh Jal Nigam and NMCG, in respect of its duties and functions under the Concession Agreement.	YES	YES	YES
4.1(xii)	The Project Engineer shall aid and advise the Employer on any proposal for variation under	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Article 20 of the Concession Agreement.			
4.1(xiii)	Assisting the Parties in resolution of Disputes as set forth in Paragraph 9;	Yes	Yes	NA
4.1(xiv)	Assisting the employer in the fulfilment of Hand back requirements as detailed in clause 20.3 of the Concession Agreement; and	NA	NA	NA
4.1(xv)	Undertaking all other duties and functions in accordance with this agreement. Project Engineer shall utilize best of analytical tools /computational models for review/analysis of structural/hydraulics wherever essential.	Yes	Yes	Yes
4.2	The Project Engineer shall discharge its duties in an efficient manner, consistent with the highest standards of professionalism and Good Industry Practice.	Yes	Yes	Yes
4.3	The Project Engineer must function in a manner to assist and equip the employer to ascertain that the Concessionaire shall operate and maintain the Facilities in a manner that: (i) Is in compliance with the Technical Specifications, Applicable Laws, Applicable Permits and Good Industry Practice; Results in the Facilities achieving the KPIs as detailed in schedule 9of the Concession Agreement	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	and certify within 7 days the KPI adherence Report as per clause 9.12 of the Concession Agreement; (ii) Ensures that the Allahabad Facilities are capable of treating Sewage up to the Design Capacity on a daily basis; (iii) Ensures efficient treatment of Sewage and handling and disposal of STPs By- Products and the Treated Effluent (iv) STPs are safe and reliable, subject to normal wear and tear of the Facilities and the Associated Infrastructure; (v) Is in compliance with the technology license agreement executed by the Concessionaire for the technology, processes, know-how and systems used or incorporated into the Facilities and/or the Associated Infrastructure; (vi) Maintains the safety and security of personnel, material and property at the Site, in accordance with the approved EHS Plan, Applicable Laws and Applicable Permits; and (vii) Ensures that all waste materials and hazardous substances are stored and/or disposed in accordance with the EHS Plan, Applicable Laws and Applicable Permits.			
4.4	Overall, The Project Engineer shall assist the Uttar Pradesh Jal	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Nigam in supervising the construction, rehabilitation, operation and maintenance of the Facilities and shall work closely with the Uttar Pradesh Jal Nigam and NMCG to monitor compliance with the KPIs. The detailed scope of work of the Project Engineer during various stages of the project, to be read in conjunction with the provisions of the Concession Agreement, is outlined in Paragraphs 4-12 of the TOR.			
5.1	During the Development Period, the Project Engineer shall undertake a detailed review of the basic engineering Designs, furnished by the Concessionaire along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and Sewage Flow Analysis. The Project Engineer shall complete such review and send its comments/observations to the Uttar Pradesh Jal Nigam and the Concessionaire within 10 (ten) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.	Yes	Yes	Yes
5.2	The Project Engineer shall review and assist the Uttar Pradesh Jal	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Nigam in approval of the submissions by the concessionaire relating to the "design and, Construction Plan, rehabilitation Plan of existing facilities" so as to confirm to the scope as per Schedule 1 of the Concession Agreement.			
5.3	The basic engineering drawings for the construction and rehabilitation in the above case shall mean the designs and documents to be submitted by the Concessionaire and approved by the Uttar Pradesh Jal Nigam as a Condition Precedent and shall include but not limited to (a) Conduct Kick off meeting, Scrutiny of contractor's submittals (b) Process description, process calculations and hydraulic calculations; (c) List of design codes and standards; (d) Master drawing schedule; (e) Drainage design; (f) STP Facilities layout; (g) Process flow diagram; (h) Hydraulic flow diagram; (i) Mass balance diagram; (j) Process and instrumentation diagram; (k) Single line diagram; (l) Electrical load list; and (m) Structure design and drawings	Yes	Yes	NA

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	(n) Pump Characteristics and (o) General arrangement diagrams of all units of Facilities and; (p) Any other information, design, drawings, etc needed for effective development/rehabilitation and operation of Facilities..			
5.4	The Project Engineer shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 10 (ten) days of receiving such Drawings or Documents.	Yes	Yes	Yes
5.5	The Project Engineer shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments within 10 (ten) days of receipt thereof.	Yes	Yes	Yes
5.6	Upon reference by the NMCG/Uttar Pradesh Jal Nigam, the Project Engineer shall review and; comment on the EPC Contract or any other contract for construction, operation and maintenance of the Project, and furnish its comments within 10 (ten) days from receipt of such reference from the NMCG/Uttar Pradesh Jal Nigam	NA	NA	NA
6.1	In respect of the Designs Drawing and Documents received by the	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Project Engineer for its review and comments during the Construction Period, the provisions of Paragraph 4 shall also apply, mutatis mutandis.			
6.2	The Project Engineer shall review, and assist the Uttar Pradesh Jal Nigam in reviewing the submissions by the concessionaire, the Construction plan as defined in clause 8.3, 8.4 and 8.5 of the Concession Agreement including Phase 1 and Phase II Design & Drawings, as well as the 'As Built' drawings on completion and EHS plans as defined in clause 8.6 of the Concession Agreement.	Yes	Yes	Yes
6.3	The Project Engineer shall assist the Uttar Pradesh Jal Nigam submit their comments on effectiveness or otherwise of the Work plan submitted for meeting the specified payment milestones and completion of the work on or before the scheduled construction completion date.	Yes	Yes	Yes
6.4	The Project Engineer shall review, in particular, the submissions by the Concessionaire as per Schedule 1 of the Concession Agreement and assist Uttar Pradesh Jal Nigam in assessing the effectiveness them.	Yes	Yes	Yes
6.5	The Project Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the / Uttar Pradesh Jal Nigam	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	and the Concessionaire within 7 (seven) days of receipt of such report.			
6.6	The Project Engineer shall inspect the Construction Works and the Project as and when necessary and submit a report of such inspection (the "Inspection Report"), preferably after receipt of the monthly progress report from the Concessionaire, but before the 20th (twentieth) day of each month in any case. The report shall contain, an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Project Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project. The Project Engineer shall send a copy of its Inspection Report to the / Uttar Pradesh Jal Nigam and the Concessionaire within 3 (three) days of the inspection.	Yes	Yes	Yes
6.7	However serious lapses, defects and/or deficiencies shall be reported to the Uttar Pradesh Jal Nigam/NMCG immediately without waiting for the monthly progress submissions as	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	mentioned in the previous paragraph.			
6.8	For determining that the Construction Works conform to Specifications and Standards, the Project Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Project Engineer in accordance with approved norms/Good Industry Practice for quality assurance. The Project Engineer shall issue necessary directions to the Concessionaire for ensuring that the tests are conducted in a fair and efficient manner and shall monitor and review the results thereof.	Yes	Yes	Yes
6.9	The timing of tests referred to in Paragraph 6.8, and the criteria for acceptance/ rejection of their results shall be determined by the Project Engineer in accordance with the norms /rules and Good Industry Practice. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice.	Yes	Yes	Yes
6.10	In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Project Engineer shall require the	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Concessionaire to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.			
6.11	In the event that the Concessionaire fails to achieve any of the Project Milestones, the Project Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Project Engineer identifies that completion of the Project is not feasible within the time specified in the Concession Agreement, it shall require the Concessionaire to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which COD shall be achieved. Upon receipt of a report from the Concessionaire, the Project Engineer shall review the same and send its comments to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire forthwith.	Review of Construction plan submitted by Concessionaire in line with time extension granted by NMCG	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st April 2022 to 30th April 2022		
		Undertaken till previous months	Undertaken during this month	Expected for next month
6.12	If at any time during the Construction Period, the Project Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and common public in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the common public, it shall make a recommendation to the NMCG/ Uttar Pradesh Jal Nigam forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.	NA	NA	NA
6.13	In the event that the Concessionaire carries out any remedial measures to secure the safety of suspended works and common public, it may, by notice in writing, require the Project Engineer to inspect such works, and within 3 (three) days of receiving such notice, the Project Engineer shall inspect the suspended works and make a report to the NMCG/ Uttar Pradesh Jal Nigam forthwith, recommending whether or not such suspension may be revoked by the NMCG/ Uttar Pradesh Jal Nigam.	NA	NA	NA
6.14	If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Project	NA	NA	NA

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Engineer shall determine the extension of dates set forth in the project completion schedule, to which the Concessionaire is reasonably entitled, and shall notify the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire of the same.			
6.15	Upon reference from the NMCG/ Uttar Pradesh Jal Nigam, the Project Engineer shall make a fair and reasonable assessment of the costs of providing information, works and services and certify the reasonableness of such costs for payment by the NMCG/ Uttar Pradesh Jal Nigam to the Concessionaire.	NA	NA	NA
6.16	The Project Engineer shall aid and advise the Concessionaire in preparing the Operation & Maintenance Manual.	Yes	NA	NA
6.17	Upon reference from the NMCG/ Uttar Pradesh Jal Nigam the Project Engineer shall undertake the assessment of cost of civil works, as per applicable schedule of rates, for the reduction of Scope of work if any as per Article 21.	Yes	Yes	NA
6.18	The Project Engineer shall review the construction progress as per payment milestones proposed by the concessionaire and provide necessary recommendation/s to Uttar Pradesh Jal Nigam for issuance of 'Milestone Construction Certificates'.	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
6.19	The Project Engineer shall support the employer in ensuring that the provisions specified in Clause 8, of the Concession Agreement including those for liquidated damages and Bonus, are being complied with.	Yes	Yes	Yes
6.20	On completion of construction and at behest of Employer, the Project Engineer may review the work done as per 'as built' drawings and identify defects and suggest changes as per clause 8.14(a)of the Concession Agreement.	Yes	NA	NA
6.21	Similarly, the Project Engineer may inspect the trial process and may point out the defects and cause changes or retrial of the process as per clause 8.15(d) of the Concession Agreement	NA	NA	NA
6.22	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STPs and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.23	Project Engineer shall also ensure that the STP by-products and Treated Effluents discharged from the Existing Facilities meet the relevant Discharge Standards in accordance with the Clause 9.12(c) of the Concession Agreement, from 1 year from the Effective Date	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
6.24	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STP and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.25	Project Engineer shall also ensure that the STP by-products and Treated Effluents discharged from the Existing Facilities meet the relevant Discharge Standards in accordance with the Clause 9.12(c) of the Concession Agreement, from 1 year from the Effective Date.	Yes	Yes	Yes
7.1	In respect of the Designs, Drawings, and Documents received by the Project Engineer for its review and comments during the Operation Period, the provisions of Paragraph 4 shall apply, mutatis mutandis.	Yes	NA	NA
7.2	The Project Engineer shall review the O&M Manual (Clause 9.2) and the Scheduled Maintenance Programme submitted by the concessionaire and provides its recommendations on the same, including suggestions for change, if any. The O&M Manual shall cover: a) O&M Procedures; b) O&M Plan; c) Provision of Spare Parts; d) Sampling and Testing Methodologies;	Yes	NA	NA

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	e) Storage and control of Inventory; f) Arrangements for data security and Integrity; g) Procedures for recording and disposal of complaints; h) Operational Contingencies Plans; i) Human Resources Plans; j) EHS Plans; k) Emergency procedures; l) Management of Assets Plans. And m) Annual Scheduled Maintenance Programme.			
7.3	The Project Engineer shall review the annual Maintenance Program furnished by the Concessionaire and send its comments thereon to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 10 (ten) days of receipt of the Maintenance Program.	Yes	Yes	Yes
7.4	The Project Engineer shall review the reports generated from online monitoring systems to assess adherence to KPIs and submit the monthly KPI Adherence Report to Uttar Pradesh Jal Nigam	Yes	Yes	Yes
7.5	The Project Engineer shall verify the daily reports submitted by the concessionaire regarding the volume of sewage and its quality re influent standards and monitor and record the same on regular basis;	Yes	Yes	Yes
7.6	The Project Engineer shall monitor, review and advise the	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Uttar Pradesh Jal Nigam on the reports submitted by the concessionaire as per clause 9.8(b)(iii) (A) to (G) of the Concession Agreement.			
7.7	The Project Engineer shall regularly verify the report submitted by the concessionaire on the tests conducted at the Inlet Point, the Outlet Point or at any other point at the Facilities for the Digested Sludge. Separately, the Project Engineer shall also have the right to take random samples of the incoming Sewage, the Digested Sludge and the Treated Effluent at any time during the O&M Period to test compliance with the Influent Standards and the Discharge Standards.	Yes	Yes	Yes
7.8	The Project Engineer shall review the monthly status report furnished by the Concessionaire (as required under clause 9.8(b)(iii)(E) the Concession Agreement) and send its comments thereon to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 7 (seven) days of receipt of such report	Yes	Yes	Yes
7.9	The Project Engineer shall inspect the Project once every month, preferably after receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	setting forth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements and Safety Requirements. In a separate section of the O&M Inspection Report, the Project Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Project. The Project Engineer shall send a copy of its O&M Inspection Report to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 7 (seven) days of the inspection.			
7.10	The Project Engineer may inspect the project more than once in a month, if any lapses, defects or deficiencies require such inspections.	Yes	Yes	Yes
7.11	The Project Engineer shall in its O&M Inspection Report specify the tests, if any, that the Concessionaire shall carry out, or cause to be carried out, for the purpose of determining that the project is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Concessionaire in this behalf.	Yes	Yes	Yes
7.12	The Project Engineer shall determine if any delay has occurred in completion of repair or remedial works in accordance	Yes	NA	NA

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	with the Concession Agreement, and shall also determine the Damages, if any, payable by the Concessionaire to the NMCG/ Uttar Pradesh Jal Nigam for such delay.			
7.13	The Project Engineer shall monitor and review the curing of defects and deficiencies by the Concessionaire.	Yes	Yes	Yes
7.14	In the event that the Concessionaire notifies the Project Engineer of any modifications that it proposes to make to the project, the Project Engineer shall review the same and send its comments to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 15 (fifteen) days of receiving the proposal.	Yes	NA	NA
7.15	The Project Engineer shall undertake sewage flow sampling, as and when required by the NMCG/ Uttar Pradesh Jal Nigam, under and in accordance with the provisions of this agreement.	Yes	Yes	Yes
7.16	The Project Engineer shall review and report to the employer on all the reports (Daily, Monthly, Quarterly and Annual), including monthly Environmental Monitoring Reports as detailed in Schedule 10(Part G) of the Concession Agreement.	Yes	Yes	Yes
7.17	The Project Engineer shall provide necessary training/capacity building to the	Yes	Yes	Yes

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	operators/technicians of the STP, as and when required, so as to address the gap in skill sets of the manpower deployed by the Concessionaire.			
7.18	The Project Engineer will provide necessary assistance to NMCG and UP Jal Nigam for the understanding various projects undertaken through other Central Government/State Government schemes /Urban Local Bodies and advice NMCG/UP Jal Nigam accordingly so that the overall objective preventing flow of untreated sewage into the river Yamuna is accomplished. The support by the proposed PE will include, but not limited to the following: 7.18.1 Preparation of a road map/policy note for completion of sewage related work at the City Level taking into consideration various schemes implemented through NMCG/Central/State Government funding and/or through Urban Local Body funding; 7.18.2 Assist in developing dovetailing partnerships with other schemes in the sewage sector like AMRUT, SMART City Mission and Swachh Bharat Mission to develop Synergistic plans. 7.18.3 Assist in identification of suitable new technologies for improving sewage infrastructure,	Yes	NA	NA

Activities carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2022 to 30th April 2022**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	economizing investment and for sustainable development and operation of the project; 7.18.4 Collecting information on regular monitoring and of implementation of various projects by the project implementing agencies/Urban Local Bodies and to produce status report;			
7.19	Assist in identification of bottlenecks in implementation of projects and suggesting remedial actions.	Yes	Yes	Yes

ANNEXURE-V

QUALITY CONTROL / QUALITY ASSURANCE

SL. NO	DESCRIPTION	IS CODE	Duration: 1st April 2022 to 30th April 2022				
			AS PER IS NO OF TEST REQUIRED	NO OF TEST CONDUCTED	NO OF TEST ACCEPTED	NO OF TEST REJECTED	REMARKS
1	Aggregate Impact Value	IS 2386-Part 4	ONE TEST/300 CUM	3	3	0	Aggregate Impact value test conduct in Naini-II and found satisfactory
2	Aggregate Impact Value	IS 2386-Part 4	ONE TEST/300 CUM	2	2	0	Aggregate Impact value test conduct in Phaphamau and found satisfactory
3	Aggregate Impact Value	IS 2386-Part 4	ONE TEST/300 CUM	3	3	0	Aggregate Impact value test conduct in Jhunsi and found satisfactory
4	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	3	3	0	Sand Gradation Test conduct in, Naini-II and found satisfactory
5	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	2	2	0	Sand Gradation Test conduct in, Phaphamau and found satisfactory
6	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	3	3	0	Sand Gradation Test conduct in Jhunsi and found satisfactory
7	Cube test	IS 516-2001	Quantity of concrete (m3) Number of samples 1-5 1 6-15 2 16-30 3	190	190	0	Tube Settler, Staff Quarter & Process Building, Jhunsi Stp Naini-II. Phaphamau,

SL. NO	DESCRIPTION	IS CODE	Duration: 1st April 2022 to 30th April 2022				
			AS PER IS NO OF TEST REQUIRED	NO OF TEST COND UCTED	NO OF TEST ACCEPTED	NO OF TEST REJECTED	REMARKS
			31-50 4 51 and above4 plus one additional sample for each additional 50 m3 or part thereof.				Cube test is acceptable for 7 Days
8	Cube test	IS 516-2001	Quantity of concrete (m3)Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	170	170	0	Tube Settler, Staff Quarter & Process Building, Jhunsi Stp Naini-II. Phaphamau, Cube test is acceptable for 28 Days
9	Silt Content in Sand	IS 2386: 1963-Part 2	50 M3 – 1 TEST	3	3	0	Silt Content Test conduct in Naini-II, and found satisfactory
10	Silt Content in Sand	IS 2386: 1963-Part 2	50 M3 – 1 TEST	3	3	0	Silt Content Test conduct in Phaphamau and found satisfactory
11	Silt Content in Sand	IS 2386: 1963-Part 2	50 M3 – 1 TEST	3	3	0	Silt Content Test conduct in, Jhunsi, and found satisfactory
12	Sieve analysis (Aggregate 10mm)	IS 2386	ONE TEST/300 M3	3	3	0	Sieve Test Activity conduct in , Naini-II, site as per quality of material found acceptable

SL. NO	DESCRIPTION	IS CODE	Duration: 1st April 2022 to 30th April 2022				
			AS PER IS NO OF TEST REQUIRED	NO OF TEST CONDUCTED	NO OF TEST ACCEPTED	NO OF TEST REJECTED	REMARKS
13	Sieve analysis (Aggregate 10mm)	IS 2386	ONE TEST/300 M3	3	3	0	Sieve Test Activity conduct in , Phaphamau site as per quality of material found acceptable
14	Sieve analysis (Aggregate 10mm)	IS 2386	ONE TEST/300 M3	3	3	0	Sieve Test Activity conduct in Jhunsi, site as per quality of material found acceptable
15	Sieve analysis (Aggregate 20mm)	IS 2386	ONE TEST/300 M3	3	3	0	Sieve Test Activity conduct in Naini-II, site as per quality of material found acceptable
16	Sieve analysis (Aggregate 20mm)	IS 2386	ONE TEST/300 M3	2	2	0	Sieve Test Activity conduct in , Phaphamau site as per quality of material found acceptable
17	Sieve analysis (Aggregate 20mm)	IS 2386	ONE TEST/300 M3	3	3	0	Sieve Test Activity conduct in Jhunsi, site as per quality of material found acceptable
18	Brick Test	IS 1077 & 3495	1 SAMPLE/50000 BRICKS	1	1	0	As per site brick test activity conduct at Naini- II and

SL. NO	DESCRIPTION	IS CODE	Duration: 1st April 2022 to 30th April 2022				
			AS PER IS NO OF TEST REQUIRED	NO OF TEST CONDUCTED	NO OF TEST ACCEPTED	NO OF TEST REJECTED	REMARKS
							result found acceptable as per IS
19	Cube test	IS 516-2001	Quantity of concrete (m3) Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	33	33	0	As per cube test report Phaphamau road manhole acceptable for 7 days
20	Cube test	IS 516-2001	Quantity of concrete (m3)Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	Nil	Nil	0	NA
21	SRC CEMENT	IS 4031	1 TEST PER LOT	1	1	0	Chetak (Third party batch report Submitted)
22	OPC CEMENT 43 GRADE	IS 4031	I TEST PER LOT	1	1	0	Ultratech (Third party batch report Submitted)