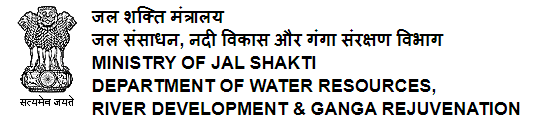
**NATIONAL MISSION FOR CLEAN GANGA (NMCG)**

**MINISTRY OF JAL SHAKTI DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION, GOVT. OF INDIA**

****

**DEVELOPMENT OF NEW SEWAGE TREATMENT PLANTS, REHABILITATION OF EXISTING SEWAGE TREATMENT INFRASTRUCTURE AND O&M FOR 15 YEARS IN KANPUR**

**UNDER**

**ONE CITY ONE OPERATOR CONCEPT THROUGH HYBRID ANNUITY BASED PPP MODE (HAM – KANPUR)**

**(STC agreement dated 19.04.2019 &LOA: Pr-12012/41/2018-PPP/NMCG dated 04.02.2019)**

**Monthly Progress Report**

**Of**

**Project Engineer**

**FEBRUARY - 2020**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | stc_logo | download4 |
| **Executing Agency**  Uttar Pradesh Jal Nigam  Benajhabar Road, Kanpur  Uttar Pradesh -208002 | **Funding Agency**  National Mission for Clean Ganga  MoWR, River Development & Ganga Rejuvenation,  New Delhi | **Project Engineer**  Shah technical Consultants Pvt. Ltd.  117/426 14-O block, Geeta Nagar  Kanpur  Uttar Pradesh - 208025 | **Concessionaire**  Kanpur River Management Pvt. Ltd.  Flat no 101,  1st Floor, 3/83, Vishnupuri,  Kanpur, Uttar Pradesh -208002 |

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**ABBREVIATIONS**

|  |  |
| --- | --- |
| ASP | Activated Sludge Process |
| BEP | Basic Engineering Package |
| BOD | Biochemical Oxygen Demand |
| CETP | Common Effluent Treatment Plant |
| COD | Chemical Oxygen Demand |
| COD | Commercial Operation Date |
| CPs | Condition Precedent |
| CTE | Consent To Establish |
| CTO | Consent to Operate |
| DFGs | Dual Fuel Generators |
| DPR | Detailed Project Report |
| ESHS | Environment, Social, Health And Safety |
| GOI | Government of India |
| HAM | Hybrid Annuity Model |
| I&D | Interception & Diversion |
| IPS | Intermediate Pumping Station |
| KPIs | Key Performance Indicators |
| KRMPL | Kanpur River Management Private Limited |
| LOA | Letter of Award |
| MOM | Minutes of Meeting |
| MPS | Main Pumping Station |
| O&M | Operation and Maintenance |
| PLC | Programmable Logic Control |
| PMC | Project Management Consultant |
| PDD | Proposal Due Date |
| PDMC | Project Development and Monitoring Consultant |
| PPP | Public Private Partnership |
| QAP | Quality Assurance Plan |
| RFP | Request for Proposal |
| RTU | Remote Terminal Unit |
| RTOLMS | Real Time Online Monitoring System |
| TOR | Terms of Reference |
| SBR | Sequential Batch Reactors |
| STP | Sewage Treatment Plant |
| TEPH | Treated Effluent Pump House |
| UASB | Up-Flow Anaerobic Sludge Blanket Reactor |

# MONTHLY PROGRESS REPORT – HAM Kanpur

# Introduction

The Govt. of India, recognizing that long-term rejuvenation of the river Ganga will have significant social and economic benefits on the lives of the 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 GoI approved the flagship NamamiGange programme for cleaning, rejuvenation, and protection of the river Ganga. In January 2016, the GoI approved a hybrid annuity model to implement STP projects under the NamamiGange programme on a PPP basis.

Subsequently, the MoWR issued the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 (Ganga 2016 Order) to constitute various authorities to assist the GoI in achieving its aim of effective abatement of pollution in the river Ganga. The Ganga 2016 Order applies to all states in the catchment of the river Ganga basin, including Uttar Pradesh. The Ganga 2016 Order revised the legal status of NMCG (which was initially constituted as a registered society under the Societies Registration Act, 1860) to an authority constituted under the Environment (Protection) Act, 1986 and designated NMCG as the nodal agency for the implementation of the Ganga 2016 Order.

Rapidly increasing population, rising standards of living and exponential growth of industrialisation and urbanisation have exposed water resources, in general, and rivers, in particular, 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.

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 NamamiGange programme and the Ganga 2016 order in the State of Uttar Pradesh, the Jal Nigam, in association with NMCG has decided to undertake the development of:

* three new STP facilities(30 MLD Pankha, 15 MLD Unnao&5 MLD Shuklaganj)and their O&M for 15 years;
* rehabilitation of existing 130 MLD Jajmau Phase-I STP facility with O&M for 15 years and;
* O&M for three existing STP facilities (43 MLD Jajmau Phase-II, 210 MLD Bingawan&42 MLD Sajari) in Kanpurunder Hybrid Annuity based PPP mode.

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.

# Hybrid Annuity Model (HAM)

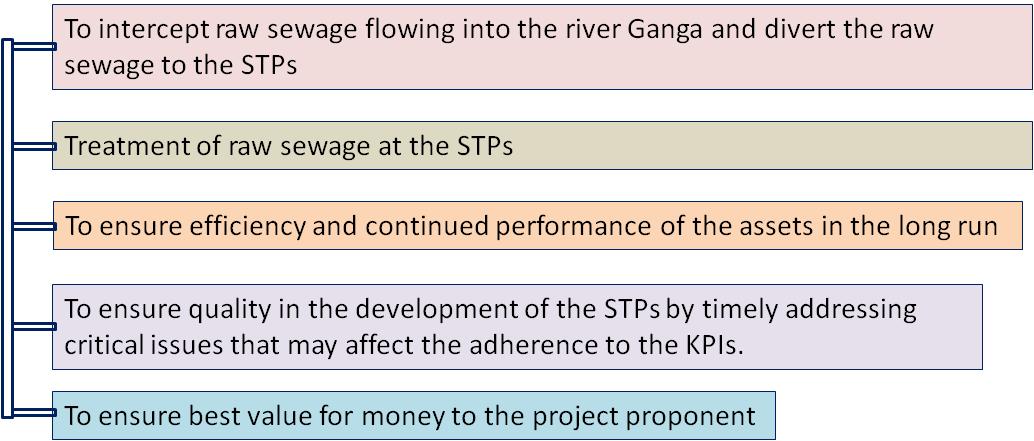
Government of India has approved the NamamiGange program as an integrated approach for effective abatement of pollution in river Ganga and Yamuna. As part of this and to ensure that no untreated domestic sewage flow into the river Ganga and Yamuna, various interventions are planned such as Interception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

Considering various development models in practice for the construction, operation andmaintenance of Sewage Treatment Plants, Government of India has approved theHybrid 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.

NMCG & UPJN appointed M/s. Shah Technical Consultant Pvt. Ltd., as third party engineering firm 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 12th April 2019.

# Objectives

To achieve above objectives effective development of STPs at Unnao, Shuklaganj and Pankha rehabilitation of existing STPs with O&M for 15 years in Kanpur are proposed under this program.The objectives that NMCG and the UP Jal Nigam wish to achieve through the Project are mentioned in Figure 1.



**Figure 1: Objectives of NMCG and UP JAL NIGAM**

# HAM Kanpur Project at a Glance

Details of HAM Kanpur project are given in the following table:

**Table 2.1: HAM Kanpur Project at a Glance**

|  |  |  |
| --- | --- | --- |
| Particulars |  | Description |
| Name of Project | : | Development of new Sewage Treatment Plantsand O&M for 15 years, Rehabilitation of existing Sewage Treatment Infrastructure and O&M for 15 years in Kanpur under One City One Operator concept through Hybrid Annuity based PPP mode. (HAM – Kanpur) |
| Client | : | National Mission for Clean Ganga (NMCG), New Delhi and UP Jal Nigam |
| Execution Agency | : | Uttar Pradesh Jal Nigam (UPJN) |
| Consultant | : | Shah Technical Consultants (P) Ltd. as **‘Project Engineer’** |
| Agreement &LOA | : | STC Agreement dated 12.04.2019 &  LOA: Pr-12012/41/2018-PPP/NMCG dated 04.02.2019 / |
| Concessionaire | : | Kanpur River Management Private Limited (KRMPL) an SPV of ShapoorjiPallonji& Company Private Limited, Mumbai |
| Concessionaire’s Agreement | : | 14/GM/2018-19dated 21.12.2018 |
| Cost of Project (CAPEX+OPEX) | : | ₹ 816.24 Cr |
| Effective Date | : | 11.10.2019 |
| Completion date (as per contract) | : | 24 Months from effective date  (21 months construction + 3 months trial run) |
| O&M period | : | 15 years after last Commercial Operation Date (COD) |
| Description of Work | : | * Construction of three new STPs (SBR) at different locations (30 MLD at Pankha, 15 MLD at Unnao and 5 MLD STP at Shuklaganj) and related infrastructure with 15 years of O&M; * Rehabilitation of 130 MLD (Phase-I) STP at Jajmauwith construction of 200 MLD TEPS and 173 MLD CCT at Jajmau with O&M for 15 years; * O&M of 43 MLD (Phase-II) Jajmau facilities, O&M of 210 MLD Bingawan facilities and O&M of 42 MLD Sajari facilities for 15 years; |

# 

# Project wise details of components under HAM Kanpur project

HAM Kanpur project is divided into 5 districts of the Kanpur– Pankha (District –III, Kanpur), Unnao&Shuklaganj – (District Unnao), Jajmau – (District I, Kanpur), Bingawan – (District II, Kanpur) and Sajari – (District IV, Kanpur).

Under this project, development and O&M work of total seven STP facilities are proposed in which three new STP facilities based on SBR technology with associated infrastructure have been proposed for - 30 MLD Pankha (District III, Kanpur), 15 MLD Unnao&5 MLD Shuklaganj.

Rehabilitation and O&M for 15 years is proposed for 130 MLD Jajmau STP facilities (Phase-I) and O&M of 210 MLD USAB based Bingawan STP facilities, 43 MLD JajmauPhase-II and for 42 MLD ASP based Sajari STP facilities for 15 years.

## Pankha Facilities

Project wise components details of Pankha Facilities are given in table 5.1:

**Table 5.1: Pankha Facilities**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SN | STP Facilities | | Capacity/dia. /size | No. of units/length |
|  | Date of Start- Effective Date (11.10.2019) | |
|  | Scope of Work- New Construction and O&M | |  |  |
| 1.1 | STP | | 30 MLD | 1 |
| 1.2 | MPS | | 115MLD | 1 |
| 1.3 | ICI Nala IPS | | 25 MLD | 1 |
| 1.4 | Sundar Nagar IPS | | 20 MLD | 1 |
| 1.5 | Thermal Nala (A)(tapping) | | 22 MLD | 1 |
| 1.6 | Thermal Nala (B)(tapping) | | 8 MLD | 1 |
| 1.7 | ICI Nala(tapping) | | 7.85 MLD | 1 |
| 1.8 | Common Collection chamber | | - | 1 |
| 1.9 | Rising main (ICI Nala IPS to collection chamber) | | 800mm-ф | 6.91km |
| 1.10 | Rising main (Sundar Nagar IPS to collection chamber) | | 800mm-ф | 0.651km |
| 1.11 | Gravity main (Thermal Nala B Tapping to common collection chamber) | |  |  |
| 1.12 | Common Gravity main (collection chamber to MPS) | | 2000mm- ф | 1.948Km |
| 1.13 | Sewage network | | 350mm-ф  400 mm-ф  450 mm-ф  500 mm-ф  600 mm-ф  700 mm-ф  800 mm-ф  900 mm-ф  1200 mm-ф  1600 mm-ф  2000 mm-ф | 2.771km  1.359km  1.272km  1.243km  1.778km  1.487km  1.012km  2.170km  3.634km  1.596km  1.948km |
| 1.14 | **Milestones** | **Date** | | **Amount** |
|  | 1st Milestone | 12-Oct-2019 to 25-Apr-2020 | | 1248,39,750 |
|  | 2nd Milestone | 26-Apr-2020 to 10-Jul-2020 | | 1248,39,750 |
|  | 3rd Milestone | 11-Jul-2020 to 24-Sep-2020 | | 1248,39,750 |
|  | 4th Milestone | 25-Sep-2020 to 09-Dec-2020 | | 1248,39,750 |
|  | 5th Milestone | 10-Dec-2020 to 13-Feb-2021 | | 1248,39,750 |
|  | 6th Milestone | 14-Feb-2021 to 21-Apr-2021 | | 1248,39,750 |
|  | 7th Milestone | 22-Apr-2021 to 22-Jun-2021 | | 1248,39,750 |
|  | 8th Milestone | 23-Jun-2021 to 25-Aug-2021 | | 1248,39,750 |

## Unnao Facilities

Project wise components details of Unnao Facilities are given in table 5.2:

**Table 5.2: Unnao Facilities**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SN | STP Facilities | | Capacity/dia. /size | No. of units/length |
|  | Date of Start- Effective Date (11.10.2019) | |
|  | Scope of Work- New Construction and O&M | |
| 1.1 | STP | | 15 MLD | 1 |
| 1.2 | Sump cum Pump house (MPS) | | 40 MLD | 1 |
| 1.3 | Trunk Sewer | | 1200mm ф | 3.2Km |
| 1.4 | I&D works (Nala tapping) | | 40 MLD | 1 |
| 1.5 | Trash screen | | 7m-1.7m x 0.8m | 1 |
| 1.6 | Grit chamber | | 12m-4m x 1m | 2 |
| 1.7 | Collection chamber | | 3.4m-6.2m x 3m | 1 |
| 1.8 | Rising main (MPS to STP) | | 750mm ф | 100m |
| 1.9 | Rising main (bypass) | | 750mm ф | 100m |
| 1.10 | Effluent distribution chamber | | - | 1 |
| 1.11 | Effluent gravity channel (STP to discharge point ) | | 1.5m x 1.0m | 300m |
| 1.12 | Effluent disposal drains | | - | 500m |
| 1.13 | **Milestones** | **Date** | | **Amount** |
|  | 1st Milestone | 12-Oct-2019 to 24-Feb-2020 | | 478,36,250 |
|  | 2nd Milestone | 25-Feb-2020 to 15-May-2020 | | 478,36,250 |
|  | 3rd Milestone | 16-May-2020to 30-Jul-2020 | | 478,36,250 |
|  | 4th Milestone | 30-Jul-2020to 14-Oct-2020 | | 478,36,250 |
|  | 5th Milestone | 15-Oct-2020to 24-Dec-2020 | | 478,36,250 |
|  | 6th Milestone | 10-Dec-2020 to 01-Mar-2021 | | 478,36,250 |
|  | 7th Milestone | 02-Mar-2021 to 05-May-2021 | | 478,36,250 |
|  | 8th Milestone | 06-May-2021to 10-Jul-2021 | | 478,36,250 |

## Shuklaganj STP Facilities

Project wise components details of ShuklaganjSTP are given in table 5.3:

**Table 5.3: Shuklaganj Facilities\***

|  |  |  |  |
| --- | --- | --- | --- |
| SN | STP Facilities | Capacity/dia. /size | No. of units/length |
|  | Date of Start- Effective Date (11.10.2019) |
|  | Scope of Work- New Construction and O&M |
| 1.1 | STP | 5 MLD\* | 1 |
| 1.2 | Sump cum Pump house (MPS) | 20 MLD | 1 |
| 1.3 | Connecting sewer | - | 1 |
| 1.4 | I&D works (Nala tapping) | - | 1 |
| 1.5 | Collection chamber | - | 1 |
| 1.6 | Rising main (MPS to STP) | 500mm ф | 50m |
| 1.7 | Rising main (bypass) | 500mm ф | 50m |
| 1.8 | Retaining wall |  | 1 |
| 1.9 | Effluent channel (STP to discharge point ) | 1.5m x1m | 100m |
| 1.10 | **Milestones** | **Land not finalized\*** |  |

*\*ABOVE PROPOSALS ARE UNDER REVISION*

## Jajmau Facilities

Project wise components details of Jajmauare given in table 5.4:

**Table 5.4: Jajmau Facilities**

|  |  |  |  |
| --- | --- | --- | --- |
| SN | STP Facilities | Capacity/dia. /size | No. of units/length |
| A | **Phase-I** |
|  | Date of Start- Effective Date (11.10.2019) |
|  | Scope of Work- Renovation and O&M |
| 1.1 | STP 1 on ASP technology with power Generation | 130 MLD | 1 |
| 1.2 | Sump cum Pump house (TEPH) | 200 MLD | 1 |
| 1.3 | CCT | 173 MLD | 1 |
| 1.4 | Nawabganj IPS | - | 1 |
| 1.5 | Parmat IPS | - | 1 |
| 1.6 | Baba Ghat/Muar mill IPS | - | 1 |
| 1.7 | GuptarGhat IPS | - | 1 |
| 1.8 | Jajmau CSPS | - | 1 |
| B | **Phase-II** | **Capacity/dia. /size** | **No. of units/length** |
|  | Schedule Handing Over Date- 01.10.2019 |
|  | Scope of Work- O&M |
| 1.1 | STP 2 on ASP technology with power Generation | 43 MLD | 1 |
| 1.2 | Sanjaypuram IPS | - | 1 |
| 1.3 | Khalisa lane IPS | - | 1 |
| 1.4 | Jajmau MPS | - | 1 |

## 43 MLD Jajmau Phase II STP Facility

Project wise components details of Jajmau Phase IIare given in table 5.4:

|  |  |  |  |
| --- | --- | --- | --- |
| SN | STP Facilities | Capacity/dia. /size | No. of units/length |
|  | Schedule Handing Over Date- 01.10.2019 |
|  | Scope of Work- O&M |
| 1.1 | STP 2 on ASP technology with power Generation | 43 MLD | 1 |
| 1.2 | Sanjaypuram IPS | - | 1 |
| 1.3 | Khalisa lane IPS | - | 1 |
| 1.4 | Jajmau MPS | - | 1 |

## Bingawan Facilities

Project wise component detail of Bingawanis given in table 5.5:

**Table 5.5: Bingawan Facilities**

|  |  |  |  |
| --- | --- | --- | --- |
| SN | STP Facilities | Capacity /dia. /size | No. of units/length |
|  | Schedule Handing Over Date- 01.04.2019 |
|  | Scope of Work- Renovation and O&M for 15 years |
| 1.1 | STP on UASB Technology with power generation | 210 MLD | 1 |
| 1.2 | Installation of online monitoring system (RTOLMS) |  | L.S. |
| 1.3 | Bingawan MPS | 200 MLD | 1 |
| 1.4 | Rakhimandi IPS | 100 MLD | 1 |
| 1.5 | Halwakhanda IPS | 20 MLD | 1 |
| 1.6 | Munshipurwa IPS | 67 MLD | 1 |
| 1.7 | ShisamauNala (tapping) | 8MLD | 1 |

## 

## Sajari Facilities

Project wise component detail of Sajariis given in table 5.6

**Table 5.6: Sajari Facilities**

|  |  |  |  |
| --- | --- | --- | --- |
| SN | STP Facilities | Capacity/dia. /size | No. of units/length |
|  | Schedule Handing Over Date- 11.10.2019 |
|  | Scope of Work- O&M for 15 years |
| 1.1 | STP on ASP technology | 42 MLD | 1 |
| 1.2 | MPS | 42 MLD | 1 |
| 1.3 | Chakeri IPS | 14 MLD | 1 |
| 1.4 | Sanigawan IPS | 14 MLD | 1 |

# Physical Progress of work

As per the provision of Concessionaire Agreement, effective date of the project was to be declared before 19th April 2019. Effective date for work execution under HAM Kanpur project was declared on 11th October 2019. Hence, work related to construction / execution of new STP facilities and related infrastructure i.e. Pankha, Unnao & Shuklaganj and renovation of existing facilities i.e. Jajmau 130 MLD started after effective date.

The overall physical progress of the facilities have been taken in the same proportion as financial progress as per milestones in approved Construction Plan. Overall progress has been divided in eight milestones each having progress of 12.5%. Therefore month wise schedule of progress is divided equally in the tenure of the milestones. For example; first milestones tenure is 5 months i.e. from 26th November 2019 to 25th April 2020 and per month progress works out to 2.5% per month (12.5% ÷ 5 months). In the same way overall progress has been derived by assigning equal weight to each activity as shown in the following graphs.

## Milestone wise activities and progress: Unnao STP

**Progress of Pankha STP**



## Milestone wise activities and progress: Pankha STP Facilities

Milestone wise activities and their progress of work for Pankha STP are given in table 6.1:

**Table 6.1: Pankha STP Facilities**

| **SN** | **Activity Name** | **Duration** | **Start** | **Finish** | **1st Milestone targets**  **(due on 25.04.2020)** | **Proportionate Targets**  **(as on 29.02.2020)** | **Achieved** | **Backlog** | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | **STP (30 MLD)** |  |  |  |  |  |  |  |  |
| **1** | **SBR Basin Area** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 26-Nov-19 | 26-Nov-19 | 100% | 100% | 95% | 5% | Electric pole shifting is pending |
|  | Excavation & PCC | 69 | 27-Nov-19 | 04-Feb-20 | 100% | 100% | 95% Excavation & 0% PCC | 5% Excavation &  100% PCC | Pole shifting is pending at UPPCL & KRMPL to pursue |
|  | RCC Foundation/Raft | 107 | 05-Feb-20 | 22-May-20 | 74% | 22% | 0% | 22% | Since Excavation work is still going on |
| **2** | **SBR Splitter Box Area** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 17-Feb-20 | 17-Feb-20 | 100% | 100% | 100% | 0% | Completed |
|  | Excavation & PCC | 34 | 18-Feb-20 | 23-Mar-20 | 100% | 32% | 0% | 32% | Delay at KRMPL Side |
|  | RCC Foundation/Raft | 69 | 24-Mar-20 | 01-Jun-20 | 45% | - | - | - | - |
| **3** | **Chlorine Contact Tank Area** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 09-Mar-20 | 09-Mar-20 | 100% | - | - | - | - |
|  | Excavation & PCC | 69 | 10-Mar-20 | 18-May-20 | 65% | - | - | - | - |
| **4** | **Chlorination House Area** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 03-Apr-20 | 03-Apr-20 | 100% | - | - | - | - |
|  | Excavation & PCC | 52 | 04-Apr-20 | 26-May-20 | 38% | - | - | - | - |
| **5** | **Sludge Thickener Area** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 18-Apr-20 | 18-Apr-20 | 100% | - | - | - | - |
| **19** | **EXTERNAL DEVELOPMENT** |  |  |  |  |  |  |  |  |
|  | **Compound Wall with Gate** |  |  |  |  |  |  |  |  |
|  | Excavation & PCC | 539 | 26-Nov-19 | 18-May-21 | 28% | 18% | 18%  Excavation&  4% PCC | 14% PCC | Excavation 450m out of 1000m & 76 pillar out of 337 PCC is done |
|  | RCC Column footing (337No.) | 541 | 15-Jan-20 | 09-Jul-21 | 18% | 8% | 6% | 2% | Only reinforcement of 17 No. column Footing is done |
|  | RCC Column and Beam | 538 | 01-Feb-20 | 23-Jul-21 | 15% | 5% | 0% | 5% | Delay at KRMPL Side |
| **B** | **MPS-2 (11MLD)** |  |  |  |  |  |  |  |  |
| **20** | **CIVIL** |  |  |  |  |  |  |  |  |
| **20A** | **Construction of Raw Sewage Sump** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 15-Jan-20 | 15-Jan-20 | 100% | - | 100% | 0% | Completed |
|  | Excavation & PCC | 69 | 16-Jan-20 | 25-Mar-20 | 100% | 64% | 0% | 64% | Delay at KRMPL Side |
|  | RCC Foundation/Raft | 69 | 26-Mar-20 | 03-Jun-20 | 42% | - | - | - | - |
| **C** | **ICI Nala IPS** |  |  |  |  |  |  |  |  |
| **22** | **CIVIL** |  |  |  |  |  |  |  |  |
| **22A** | **Construction of Raw Sewage Sump** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 01-Feb-20 | 01-Feb-20 | 100% | - | 100% | 0% | Completed |
|  | Excavation & PCC | 68 | 03-Feb-20 | 11-Apr-20 | 100% | 38% | 0% | 38% | Delay at KRMPL Side |
|  | RCC Foundation/Raft | 68 | 13-Apr-20 | 20-Jun-20 | 16% | - | - | - | - |
| **D** | **IPS-6 (Sundar Nagar- 20MLD)** |  |  |  |  |  |  |  |  |
| **25** | **CIVIL** |  |  |  |  |  |  |  |  |
| **25A** | **Construction of Raw Sewage Sump** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 1 | 03-Feb-20 | 03-Feb-20 | 100% | - | 100% | 0% | Completed |
|  | Excavation & PCC | 69 | 04-Feb-20 | 13-Apr-20 | 100% | 36% | 0% | 38% | Delay at KRMPL Side |
|  | RCC Foundation/Raft | 69 | 14-Apr-20 | 22-Jun-20 | 14% | - | - | - | - |
| **G** | **Sewer System Area (RCC Pipes-NP3 Types)** |  |  |  |  |  |  |  |  |
|  | Site Clearance | 332 | 03-Feb-20 | 31-Dec-20 | 24% | 8% | 0% | 8% | Delay at KRMPL Side |
|  | Excavation and lying of RCC pipes including bed preparation & backfilling | 538 | 04-Feb-20 | 26-Jul-21 | 14% | 5% | 0% | 5% | Delay at KRMPL Side |
| **H** | **Design, Supply, Testing & Commissioning of Sewer line (crossing national highway-2 & railway track)** |  |  |  |  |  |  |  |  |
|  | Statutory approvals from Railway & Road Dept. | 104 | 03-Mar-20 | 15-Jun-20 | 50% | - | - | - | - |

*\*Note: Delay at the KRMPL side due to less deployment of labours*

## Photographs of Pankha Site

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**Pankha Boundary Wall**

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**Excavation Work of SBR**

## Milestone wise activities and progress: Unnao STP

**Progress of Unnao STP**

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Milestone wise activities and their progress of work for Unnao STP are given in table 6.2.

**TABLE 6.2: UNNAO FACILITIES (DISTRICT UNNAO)**

| **SN** | **Activity Name** | **Duration** | **Start** | **Finish** | **1st Milestone targets**  **(due on 24.02.2020)** | **Proportionate Targets**  **(as on 29.02.2020)**  **2nd milestone**  **(due on 15.05.2020)** | **Achieved** | **Backlog** | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I** | **STP (15 MLD)** |  |  |  |  |  |  |  |  |
| **A** | **Inlet Chamber Area** |  |  |  |  |  |  |  |  |
| A-1 | Site Clearance | 1 | 12-Oct-19 | 12-Oct-19 | 100% | 100% | 100% | 0% | Completed |
| A-2 | Excavation | 70 | 26-Oct-19 | 04-Jan-20 | 100% | 100% | 0% | 100% | Geo-Tech report under review |
| A-3 | PCC | 121 | 06-Jan-20 | 06-May-20 | 40.50% | 45% | 0% | 45% | Geo-Tech report under review |
| **B** | **Fine Screen Area** |  |  |  |  |  |  |  |  |
| B-1 | Site Clearance | 1 | 01-Nov-19 | 01-Nov-19 | 100% | 100% | 100% | 0% | Completed |
| B-2 | Excavation | 69 | 02-Nov-19 | 10-Jan-20 | 100% | 100% | 0% | 100% | Geo-Tech report under review |
| B-3 | PCC , Raft with Misc works | 122 | 11-Jan-20 | 12-May-20 | 36.07% | 40% | 0% | 40% | Geo-Tech report under review |
| **C** | **Grit Chamber Area** |  |  |  |  |  |  |  |  |
| C-1 | Site Clearance | 1 | 11-Nov-19 | 11-Nov-19 | 100% | 100% | 100% | 0% | Completed |
| C-2 | Civil Work | 104 | 12-Nov-19 | 24-Feb-20 | 100% | 100% | 0% | 100% | Geo-Tech report under review |
| **D** | **Parshall Flume Channel Area** |  |  |  |  |  |  |  |  |
| D-1 | Site Clearance | 1 | 28-Nov-19 | 28-Nov-19 | 100% | 100% | 100% | 0% | Completed |
| D-2 | Civil Work | 104 | 29-Nov-19 | 12-Mar-20 | 83.65% | 88% | 0% | 88% | Geo-Tech report under review |
| **E** | **SBR Basin Area** |  |  |  |  |  |  |  |  |
| E-1 | Site Clearance | 1 | 16-Dec-19 | 16-Dec-19 | 100% | 100% | 100% | 0% | Completed |
| E-2 | PCC & Raft work | 104 | 17-Dec-19 | 30-Mar-20 | 66.35% | 71% | 0% | 71% | Geo-Tech report under review |
| **F** | **Chlorination Tank Area** |  |  |  |  |  |  |  |  |
| F-1 | Site Clearance | 1 | 25-Dec-19 | 25-Dec-19 | 100% | 100% | 100% | 0% | Completed |
| F-2 | Raft work | 86 | 26-Dec-19 | 21-Mar-20 | 69.77% | 76% | 0% | 76% | Geo-Tech report under review |
| **G** | **Sludge Thickener Area** |  |  |  |  |  |  |  |  |
| G-1 | Site Clearance | 1 | 25-Dec-19 | 25-Dec-19 | 100% | 100% | 100% | 0% | Completed |
| G-2 | RCC Wall Raft work | 86 | 26-Dec-19 | 21-Mar-20 | 69.77% | 76% | 0% | 76% | Geo-Tech report under review |
| **H** | **Supernatant Sump Area** |  |  |  |  |  |  |  |  |
| H-1 | Site Clearance | 1 | 03-Jan-20 | 03-Jan-20 | 100% | 100% | 100% | 0% | Completed |
| H-2 | PCC ,RCC wall raft work | 69 | 04-Jan-20 | 13-Mar-20 | 73.91% | 81% | 0% | 81% | Geo-Tech report under review |
| **I** | **Thickened Sludge Sump Area** |  |  |  |  |  |  |  |  |
| I-1 | Site Clearance | 1 | 13-Jan-20 | 13-Jan-20 | 100% | 100% | 100% | 0% | Completed |
| I-2 | Civil Work | 121 | 14-Jan-20 | 14-May-20 | 33.88% | 38% | 0% | 38% | Geo-Tech report under review |
| **J** | **Centrifuge House & Feed Pump House Area** |  |  |  |  |  |  |  |  |
| J-1 | Site Clearance | 1 | 25-Jan-20 | 25-Jan-20 | 100% | 100% | 100% | 0% | Completed |
| J-2 | Excavation | 39 | 27-Jan-20 | 06-Mar-20 | 71.79% | 85% | 0% | 85% | Delayed at KRMPL side |
| **K** | **Air Blower Room Area** |  |  |  |  |  |  |  |  |
| K-1 | Site Clearance | 1 | 07-Feb-20 | 07-Feb-20 | 100% | 100% | 100% | 0% | Completed |
| K-2 | Excavation | 35 | 08-Feb-20 | 14-Mar-20 | 45.71% | 60% | 0% | 60% | Delayed at KRMPL side |
| **L** | **Chlorination Room Area** |  |  |  |  |  |  |  |  |
| L-1 | Site Clearance | 1 | 20-Feb-20 | 20-Feb-20 | 100% | 100% | 100% | 0% | Completed |
| **R** | **EXTERNAL DEVELOPMENT** |  |  |  |  |  |  |  |  |
| R-1 | Boundary Wall with Gate | 434 | 12-Oct-19 | 19-Dec-20 | 31.11% | 32% | 6.00% | 26% | Stopped on 10.12.19 as increased water table was detected. |
| **II** | **I & D WORK** |  |  |  |  |  |  |  |  |
| 1 | Site Clearance | 1 | 25-Nov-19 | 25-Nov-19 | 100% | 100% | 0% | 100% |  |
| 2 | Construction of Approach Channel | 86 | 26-Nov-19 | 20-Feb-20 | 104.65% | 110% | 0% | 110% |  |
| **III** | **MPS-40 MLD** |  |  |  |  |  |  |  |  |
| **S** | **CIVIL** |  |  |  |  |  |  |  |  |
| S-1 | Site Clearance | 1 | 11-Dec-19 | 11-Dec-19 | 100% | 100% | 0% | 100% |  |
| S-2 | Construction of Inlet Chamber | 139 | 12-Dec-19 | 29-Apr-20 | 53.24% | 57% | 0% | 57% |  |
| **IV** | **SEWER SYSTEM AREA (3.2 Km)** |  |  |  |  |  |  |  |  |
| **U** | **LAYING OF PIPELINES** |  |  |  |  |  |  |  |  |
| U-1 | Site Clearance | 1 | 26-Dec-19 | 26-Dec-19 | 100% | 100% | 0% | 100% |  |
| U-2 | Cutting, Excavation, Laying of Pipes, backfilling (3.2 Km) | 291 | 27-Dec-19 | 13-Oct-20 | 20.27% | 22% | 0% | 22% |  |
| **V** | **RISING MAIN PIPING WORK (100 m)** |  |  |  |  |  |  |  |  |
| 1 | Site Clearance | 1 | 04-Jan-20 | 04-Jan-20 | 100% | 100% | 0% | 100% |  |
| 2 | Cutting, Excavation, Laying of Pipes, backfilling | 103 | 06-Jan-20 | 18-Apr-20 | 47.57% | 52% | 0% | 52% |  |

*\*The Concessionaire made unnecessary delay in performing Geo-tech investigation. In meeting with Er. M.I. Ansari SE 3rd UPJN Lucknow dated 14.06.2019he clearly directed the Concessionaire to check / review Geo-tech testing from any Gov organisation e.g. HBTU / IITK. But they took more than 5 months in compliance for which they are on fault.*

# Photographs of Unnao STP SIte



**15 MLD Unnao STP Site**

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**Excavation work of Boundary Wall**

# Progress/Status of other STP facilities under HAM project kanpur

## 5 MLD Shuklaganj STP

Site selection for the proposed STP is under progress. For previously selected site, UPPCB has not given CTE for the proposed site for the project.

## Rehabilitation of 130 MLD Jajmau STP Phase I

1. This plant could not be handed over due to existing labour problems. UPJN and KRMPL need to sort the issue in consultation with NMCG.
2. Earlier, Prof. Kazmi, IITR through E-mail dated 24-10-2019 recommended to construct a new plant on SBR /MLE Process to satisfy the latest NGT standards. Queries raised by KRMPL/ IIT,R on 130 MLD STP has been replied by letter no. 3979/W-20/536 dated 31-12-2020.
3. The recommendation was turned down and requested to act as per CA.

## 43 MLD Jajmau STP Phase II

It is under testing and trial run and handing over is to be done by UPJN after completion of trial run.

## 210 MLD Bingawan STP

The schedule date of handover of 210 MLD Bingawan Facilities as per CA was 01/04/2019 but actually could be handed over on 08/07/2019. From handover date itself it was observed and informed from time to time to Concessionaire that the operation and maintenance of the plant was not up to the mark. Out of 3 sludge filter press installed 2 got out of order and sludge extraction was not done properly resulting in all the 16 UASB reactors getting filled up with sludge completely, disturbing **Anaerobic Sludge Blankets** of all the reactors by Dec 2019. This resulted in reduction of 60% Availability and Efficiency of the plant.

0n 28/01/2020 CE Kanpur Zone UPJN along with O&M Engineer of STC inspected the Bingawan Plant and detailed inspection report was issued instructing the Concessionaire to submit an action plan for cleaning and reactivation of all the UASB reactors on war footing. Without submitting any action plan Concessionaire took up Reactor No. 8 for cleaning some time in Dec 2019.

In the month of February 2020, STC O&M engineer inspected the plant on 29.02.2020 and issued inspection report which was sent to UPJN with copy to the Concessionaire. The compliance report of inspection report dated 28.01.2020 has not submitted by the Concessionaire in the month of February even after discussion and meeting of CE UPJN on dated 05.02.2020 and instructions given by ED (T) NMCG on 07.02.2020. ED (T) visited the plant and discussed the plant performance also.

O&M of the plant is very poor and all KPIs are not being met as per prescribed limits. Inspection reports of dated 28.01.2020 and 29.02.02020 along with performance report of the plant for the month of February is attached in annexure 2.

**Further following points need compliance by the concessionaire immediately:**

Revised O&M Manual for 210 MLD Bingawan plant has not been submitted by the Concessionaire incorporating the following points (decided in the meeting of 16.12.2019):

1. Provision and methodology of sludge disposal at a place decided by UPN within 10 Km.
2. Procedure of yearly maintenance of the plant without threatening the environment of Pandu River.
3. Details of Online monitoring system to be submitted separately after installation of the system which is part of the O&M manual.
4. Revised list of manpower to be deployed as per Labour Laws.
5. Sample test report of raw sewage & treated effluent by IIT Kanpur has not been submitted.

## 42 MLD Sajari STP

For Sajari plant, till Dec 2019 KPIs (especially COD) of treated effluent was not under control and KRMPL was asked by NMCG to suggest improvements for COD to be within prescribed limit. KRMPL proposed to add one additional Aeration Tank.

Mr. Madhav Kumar NMCG requested Mr. S. Kamaraju Process Expert STC to visit the Sajari Plant to give his recommendations. Mr. S. Kamaraju Process Expert visited the Sajari Plant on 27-28 Dec 2019 and concluded that the Sajari Plant is designed for all 12 aerators to run without any standby but the plant was being run with 8 aerators only keeping 4 aerators as stand by. He submitted calculations for available aeration on dated 28.12.2019 (in discussion with GM, UPJN Kanpur) and found that sufficient aeration is available to reduce COD from 250 to 100. Therefore there is no need for any improvement as suggested by KRMPL.

All the 12 aerators got functional on 04/01/2020 in the presence of Mr. J. P. Tripathi O & M Engineer STC. Now it has been observed that since 04/01/2020 all the parameters of treated effluent are within prescribed limits except for the days when parameters of raw sewage are above the prescribed limits.

Compliance report of dated 04.01.2020 has not submitted by the KRMPL even in month of February 2020.

**Further following points need to be complied by the concessionaire:**

1. During the month of January 2020, PE inspected 42 MLD Sajari STP and inspection report was sent to UPJN with copy to the Concessionaire. But no compliance report have been submitted by the Concessionaire in the month of Feb. 2020 even after discussion and meeting of CE UPJN on dated 05.02.2020 and instructions given by ED (T) NMCG on inspection dated 07.02.2020.
2. The compliance was very important regarding improvement of aeration system for COD removal of Sajari STP.
3. Sample test report of raw sewage & treated effluent by IIT Kanpur has not been submitted.

**GENERAL ISSUES:**

1. Power Back- up to be provided at all locations as per Article 8.7 (b) which is not being accepted by KRMPL.
2. As per Article 8.8 (a): At each STP/Pumping Station (new or existing) of all locations, the Concessionaire shall install and maintain an online monitoring system, in accordance with the Technical Specifications and Applicable Laws (including specifically, the EPA) to monitor the volume, specifications and characteristics of the incoming Sewage and the Treated Effluent, as applicable.
3. As per Article 11.2: During the O&M Period of the Facilities, the Concessionaire shall obtain and maintain insurance policies including but not limited to the following:

(i) Loss, damage or destruction of the Facilities, at replacement value;

(ii) Comprehensive third party liability insurance including injury to or death of personnel of the Jal Nigam or NMCG or others caused by the Project;

(iii) The Concessionaire's general liability arising out of the Project;

(iv) Liability to third parties for goods or property damage;

(v) Workmen’s compensation insurance; and

(vi) any other insurance that may be necessary to protect the Facilities, the Concessionaire and its employees, including for all Force Majeure Events that are insurable at commercially reasonable premiums and not otherwise covered in items (i) to (v) above.

Performance report of the plant for the month of February is attached in annexure 3.

# Status Of BEP& OTHER DETAILS

Status of BEPs & other detail are given in following table 6.2:

**Table 6.2: BEPs and other details**

|  |  |  |  |
| --- | --- | --- | --- |
| **SN** | **Particulars** | **Status** | |
| **Approved** | **Pending** |
| **1.** | **BEPs (Process, Mechanical & Electrical)** | GA, Data Sheet and QAP of centrifuge, submersible pump and mechanical grid collection system, Unnao- reviewed & recommended for approval on 25.02.2020  GA, Data Sheet and QAP of centrifuge, submersible pump and mechanical grid collection system, Pankha- reviewed & recommended for approval on 28.02.2020 | BEP of Jajmau STP rehabilitation: Compliance is awaited from KRMPL  BEP of Jajmau IPS rehabilitation: Compliance is awaited from KRMPL |
| **2.** | **BEP Structure Design & Drawings** | Structure drawing, Unnao MPS- recommended for approval on 29.02.2020  Revised drawing of boundary wall, Unnao- recommended for approval on 29.02.2020 | PTU, C-Tech basin, CCT, Sludge Thickener, Supernatant sump, Centrifuge building, admin building, Staff quarters, Guard room **pending due to SBC issue. KRMPL need to pursue**  RCC drawing 20MLD, IPS Sundar Nagar, Pankha. Geo tech report is not proper.  RCC drawing 25 MLD IPS ICI Nalla, Pankha. Compliance is awaited from KRMPL |
| **3.** | **Construction Plan** | Revised construction plan Pankha-recommended for approval on 04.01.20 |  |
| **4.** | **Sewer Network/Line Design** | Design and drawings of sewer work Pankha- recommended for approval On 10.02.20  Design and drawings of sewer work Unnao- recommended for approval On 20.02.20 |  |
| **5.** | **Topo, Geo tech & survey reports** |  | Geo tech report for Unnao STP (except BW& MPS) is rejected by STC/UPJN. **KRMPL need to obtained new SBC report from HBTU** |
| **6.** | **ESHS Plan** | ESHS approval-Already vetted by STC. Approved by UPJN on 26.09.19 | **ESHS Jajmau- pending at KRMPL** |
| **7.** | **O&M** | Bingawan RTOLMS - Reviewed & found in order. Recommended for approval on 03.12.19  RTU Bingawan - Reviewed & found in order. Recommended for approval on 19.12.19  Level transmitter & flow metre - vetted & approved on 27.12.19  Sajari, O&M manual – Approved | revised O&M manual, Bingawan to be submitted by the Concessionaire |

# Meetings held / Minutes of Meeting

1. Meeting was held at CE Kanpur UPJN in his chamber by Mr. DP Mathuria, ED Technical on dated 07.02.2020;
2. NMCG meeting on progress of HAM project Kanpur dated 24.02.2020
3. Meeting was held at CE Lucknow Zone, UPJN Lucknow in his chamber about finalization of Geo-tech report / structure design of Unnao STP facilities on dated 27.02.2020, Attended by Mr. CM Dimri, TL.

**ANNEXURE**