



# PROJECT ENGINEER *for*

National Mission for Clean Ganga- Development, Rehabilitation with  
Operation & Maintenance of STPs at Kanpur under Hybrid Annuity based PPP mode

## Shah Technical Consultants Private Limited

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Ref. STC / PE / KNP / 1880 /Unnao

Date: 15/11/ 2022

To,

Superintendent Engineer,  
3rd Circle, UP Jal Nigam (Rural)  
Lucknow

**Sub: HAM KANPUR – Joint Site Inspection for Progress of 15 MLD STP Unnao**

Dear Sir,

This has reference to the captioned subject and letters; site inspection report regarding 15 MLD STP at Dakari, Unnao is submitted for your information and necessary action. It is advised to direct the Concessionaire for immediate actions and submit compliance report for record.

Yours sincerely

(Dr. Giridhar Prabhukumar)  
Team Leader, STC Kanpur

Encls.: as above

Copy to the following for information:

1. Mr. Rajat Kr. Gupta, Sr. Specialist, NMCG New Delhi
2. Chief Engineer, Lucknow Zone, UP Jal Nigam (Rural) Lucknow
3. Ms. Nidhi Dwivedi, Project Officer – Technical, NMCG New Delhi
4. SE- E&M, 23<sup>rd</sup> Circle, UP Jal Nigam (Rural) Lucknow
5. EE (CD), UP Jal Nigam (Rural) Unnao
6. Project Manager, KRMPL Kanpur

An Inspection of 15 MLD Unnao STP construction site and I&D facilities was jointly conducted by PE and UPJN officials in the presence of KRMPL Representatives, and our findings are noted below:

<b>Dates of Inspection</b>	<b>15/11/2022</b>
<b>InspectionTeam</b>	Mr. Subash Chandra, AE- Civil, UPJN, Unnao Mr. Manish Tiwari, JE-Civil, UPJN, Unnao Mr. Puneet Kumar, JE-Civil, UPJN, Unnao Mr. Priyesh Shukla , Support Engineer- Civil, STC Kanpur Mr. K. V. Singh , Supervisor- Civil, STC Kanpur
<b>KRMPL Personnel</b>	Mr. Goutam Sarkar, Deputy Manager KRMPL, Kanpur
<b>Location</b>	<b>Dakari 15 MLD STP and I&amp;D Structure - Unnao</b>

#### A. General Points:

1. During visit progress of different STP components were checked as per the approved construction plan and it was found that total progress till 15 Nov 2022 is 92.5%. Out of total 8 milestones, till date only 7 milestones have been achieved by the Concessionaire.
2. It is to be noted that, commissioning of all mechanical, electrical and instrumentation equipment are not possible until testing equipment (vibration meter, temperature meter, and tachometers etc.) are supplied by KRMPL as per CA schedule 11. Testing equipments were not provided on site by KRMPL for testing installed equipment.
3. During visit it was noticed that at most of the civil structures, finishing, painting, hand railing paint etc works were not completed by KRMPL. KRMPL was directed submit the micro planning for the same and plan accordingly to complete the whole STP in every aspect by 20.12.2022 as committed at the HAM Kanpur Project Progress meeting held on 01.11.2022.
4. As committed by KRMPL during NMCG meeting held on 01.11.2022, the KRMPL personnel on site were instructed to commission the system as per the following schedule:

<b>SN</b>	<b>Particular</b>	<b>Date of Completion</b>
1	De-silting of Manholes	30/11/2022
2	Chlorination System	20/11/2022
3	Full plant completion with Automation	30/11/2022
4	Panel Supply	15/11/2022
5	Manhole Cleaning	30/11/2022
6	Sewer Intake	01/12/2022
7	Trial Run start	01/12/2022

5. Manpower Deployed at the site was found to be low. PE & UPJN Team inspected the site on 15.11.2022, and during site inspection it was observed that only 15 nos. manpower (Civil, E&M) were deployed at the site. It seems that with the present manpower

deployed at the site the Concessionaire would not be able to complete the work and meet the target dates noted above. Therefore, it was recommended to increase the manpower for completing the work with all respects and also as per above mentioned schedule.

Total Manpower deployed on 15.11.2022 at 15 MLD STP Unnao	
Civil Manpower	10 nos.
Mechanical manpower	5 nos.



**Fig 1: Total manpower deployed at 15 MLD STP Unnao on 15.11.2022**

6. Approved Windows and Doors schedule were not provided onsite by KRMPL for inspection / verification of the same.

#### **INSPECTION OF UNIT WISE STRUCTURES OF 15 MLD STP:**

##### **1. Main Pumping Station (MPS):**

- i. In MPS no brick masonry provided up to date. Walking platform (RCC/ Fabrication) required near PTU Screen Channel area for easy access during manual Screen cleaning.
- ii. De-silting work pending in, inlet chamber , screen & main pumping station. Presence of E&M OEM is required for the rectification and proper commissioning of the screen.
- iii. Staircases have not been constructed for receiving chamber.
- iv. Electrical hoist installation is incomplete. It is to be noted, that “shrouded bus bar” has not been installed till date. Both stiffeners should be installed as per approved drawing. Also, trial run of the hoist is required for the electrical hoist as per approved QAP and acceptance certificate of the installation is required from the OEM.

- v. All openings to be covered with checkered plate/gratings
- vi. Final coat of painting work is required to be done
- vii. Internal lighting & switch work was pending.
- viii. Ramp work needs to be done by KRMPL.
- ix. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe are pending.
- x. Outer face painting work needs to be done.
- xi. Inlet Pumps:
  - a. Hydro test for Pumps discharge line is pending.
  - b. Performance test is required for pumps in the presence of OEM.

## **2. Primary Treatment unit (PTU):**

- i. Concreting of Parshall flume wall has not been done properly (Level Difference) KRMPL need to rectification of Parshall flume .
- ii. Fine screen & belt conveyor and gate testing pending
- iii. Chute fabrication and fixing work pending.
- iv. Grit mechanism and Screw conveyor LPBS is pending.
- v. Flow meter installation pending in the parshall flume.
- vi. Manual flow measurement scale is to be installed in the Parshall flume.
- vii. Some piping and valve fixing work still pending.
- viii. Painting & Finishing work was still pending.
- ix. Testing of Mechanical screen and Mechanical grit chamber pending.

## **3. Guard Room:**

- i. Internal electrification, fittings including ceiling fan still pending.
- ii. Exhaust Fan still pending.
- iii. Toilet flooring and wall tiles is pending.
- iv. Green strip not execute on external painting.
- v. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe are pending.
- vi. Final coat of painting work is required to be done. Gap between aluminium doors, windows and finishing of plaster work needs to be rectified.

## **4. Staff Quarter:**

- i. Internal electrification, fitting including ceiling fan installation & testing pending.
- ii. Exhaust Fan still pending.
- iii. Toilet flooring & wall tiles still pending.
- iv. Railing work is pending
- v. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe are pending.
- vi. Final coat of painting work is required to be done.
- vii. Gap between aluminium door, windows and finishing of plaster work needs to be rectified.

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#### **5. Metering Room:**

- i. KESCO meter installed, internal electrification is pending.
- ii. Exhaust Fan still pending.
- iii. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe is pending.
- iv. Final coat of painting work is required to be done. Gap between aluminium doors, windows and finishing of plaster work needs to be rectified.

#### **6. HT VCB Room:**

- i. Panel has been installed, and charging has been done
- ii. Internal electrification and earthing work, Lighting protection, Checker plate work is pending.
- iii. Plinth protection, surface roof treatment work and fixing of rainwater pipe is pending.
- iv. Final coat of painting work is required to be done.

#### **7. MCC Panel room:**

- i. Main PMCC panel has been installed & tested.
- ii. Earthing & Tray work has been completed.
- iii. Checker plate for trench work is pending.
- iv. Light fitting work is pending.
- v. Internal electrification, fitting including ceiling fan, Exhaust fan work is still pending.
- vi. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe are pending.
- vii. Final coat of painting work is required to be done.

#### **8. PLC Panel Room:**

- i. BOP PLC Panel Cable laying & termination work were in progress.
- ii. SBR C-Tech panel cable dressing work is pending.
- iii. Cable gland is observed to be loose for both the SBR Panel & BOP Panel.
- iv. SCADA Screen for SBR and BOP shall be submitted for review.
- v. The concessionaire shall provide Air conditioner for control room.
- vi. PLC panel body earthing shall be isolated from electrical earth.
- vii. The PLC panel has been powered up without Instrumentation earth, the concessionaire shall connect the instrumentation earth immediately.
- viii. The DO analyzers shall be installed to continuously record the dissolved oxygen level at every grid within each SBR basin. KRMPL has not taken the supply and installed the DO analyzer as per CA requirement till date.
- ix. Inlet flow meter
  - a. The concessionaire has not yet installed the Electromagnetic flow meter at the common discharge of the MPS pumps. Required upstream and downstream lengths are to be maintained between its fittings as per CPHEEO;
  - b. The concessionaire shall provide the required chamber in RCC for installation of the flow meter. Design drawings for the same have also not been submitted.
- x. Plinth protection, surface roof treatment work and fixing of rainwater drainpipe is pending.
- xi. Final coat of painting work for rolling shutter is required to be done.
- xii. Final flooring works needs to be done.

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**9. Transformer yard:**

- i. Tray for control cable to be installed.
- ii. Transformer charged and natural earthing done.
- iii. Transformer Gravel filling work is pending.
- iv. Cable dressing work is pending.
- v. Walkway & Approach to transformer for maintenance are pending.
- vi. Transformer is charged and neutral earthing is completed.

**10. Blower Room:**

- i. Checker plate for trench work is pending.
- ii. Stair railing and internal paint works are pending.
- iii. Acoustic enclosures on 2 no. blower are pending.
- iv. LCS panel installation work pending.
- v. Cable, tray, earthing etc work not completed yet.
- vi. Internal electrification, fitting including Ceiling fan work is pending.

**11. SBR Basin:**

- i. Nozzle grouting in basin 2 need to be done.
- ii. Plaster work of staircase needs to be done.
- iii. SBR Tanks Leakage needs to be rectified.
- iv. Flooring work of platform needs to be done.
- v. Hand railing work is pending and needs to be completed by KRMPL.
- vi. Outer painting work needs to be done.

**12. Admin Building:**

- i. M.S Grouting on top of cable trench work need to be done
- ii. Internal electrification work not completed yet.
- iii. Lab equipment not shifted in lab room.
- iv. Plumbing, Flooring door window are pending.

**13. Centrifuge Building:**

- i. KRMPL need to provide Railing on staircase.
- ii. Finishing and & painting work is pending.
- iii. Internal electrification, fitting including ceiling fan, Exhaust fan work is still pending.
- iv. LCS LPBS panel installation is pending.
- v. Centrifuge feed pump, poly dosing agitator cable laying done.
- vi. Chute fabrication and & fixing work is pending.
- vii. Final coat of painting work is required to be done
- viii. Testing of all equipment installed in the centrifuge building is pending.
- ix. Agitator cable termination work done.
- x. Cable dressing not done properly; work is in progress.
- xi. Plinth protection, surface roof treatment work and fixing of rain water pipe is pending.

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**14. Supernatants Sump:**

- i. Stair railing and finishing work is pending.
- ii. Supply of LPBS is still pending.
- iii. Cable dressing and termination work is pending.
- iv. Nozzle grouting and hydro testing is pending.
- v. Plinth protection, surface roof treatment work and fixing of rain water pipe is pending.
- vi. Final coat of painting work is required to be done.
- vii. Final flooring works needs to be done.
- viii. Hand railing work is pending and needs to be completed by KRMPL.
- ix. Outer painting work needs to be done.

**15. Sludge Thickener:**

- i. Railing work is pending
- ii. Hydro testing is pending
- iii. LPBS to be installed, torque switch supply is pending.
- iv. Cable dressing is not done properly.

**16. Chlorination Room:**

- i. Complete Installation of Chlorination system is pending.
- ii. Hydro test pending of chlorination tank.
- iii. Inflow and outflow wall top need to finishing.
- iv. Internal electrification, fitting including ceiling fan, Exhaust fan work is still pending
- v. Cable trench& termination of recirculation blowers are pending.
- vi. Light DB termination work done.
- vii. Plinth protection, surface roof treatment work and fixing of rain water pipe is pending.
- viii. Final coat of painting work is required to be done.
- ix. Hand railing work is pending and needs to be completed by KRMPL.
- x. Outer face painting work needs to be done.

**17. DG sets:**

- i. DG Set not placed centrally on Foundation, so overhang of DG portion appears on one side of foundation.
- ii. There is also no walking platform around DG Set for periodically maintenance & repairing. KRMPL instructed to provide at least 1 m wide walking RCC/Fabrication platform at periphery of DG Foundation & placed DG exactly central part of foundation.
- iii. Walkway & extension of foundation are still pending.
- iv. KARMPL has not start yet of Chimney work.



**Overhang of DG portion appears on one side of foundation.**

**18. Rising main:**

- i. Valve chamber with flow meter is pending
- ii. Backfilling is pending

**19. Campus Backfilling and development:**

- i. 600 m3 earth filling against 36000m3 done, rest is pending
- ii. Internal rod and drainage works are pending
- iii. Approx 30 mtr retaining wall is pending.
- iv. Fixing of entrance gate is pending.
- v. Coping and painting work is pending.
- vi. Electric pole & lighting fixing work is pending.

**20. INTERCEPTION & DIVERSION**

- i. KRMPL has to need uplift of I&D structure
- ii. Railing work is pending.
- iii. KRMPL has to cover land area by boundary wall and fencing.
- iv. All manhole finishing work is pending
- v. De-silting work in pending manhole and Pipe line.
- vi. Manhole no 30, 31, 28, 29, 36, required backfilling.



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**B. Site Safety Points:**

Safety measures were not taken at various construction locations:

- i. Safety signs were not posted wherever necessary at all construction locations where work was ongoing. KRMPL safety personnel were instructed to post safety signs boards for the protection of workers and general public in the vicinity.
- ii. Appropriate PPE, including hardhats, steel toe shoes and safety harness, were not worn by workers onsite.
- iii. Dust mitigation measures were not taken at sewer laying areas, at Unnao STP.
- iv. Road restoration work quality was found very poor. CE, UPJN and rest of the inspection team raised concerns regarding public safety due to the road conditions created by the work and negligence of KRMPL. CE strongly directed PM, KRMPL to:
  - a. Remove excess excavated material from the roads and move them to fill the area within ICI nallah IPS.
  - b. Re-do the restored road sections as they were in very poor condition.
  - c. Complete rest of the road restoration works at the earliest.
  - d. Barricading to be done around the excavated location.
  - e. Install appropriate shoring for the safety of the construction workers inside manholes.

KRMPL should be instructed to submit the compliance of above points at earliest.