Quality Aspects in Implementation of JJM Schemes

Mizoram, Himachal Pradesh, Ladakh, Uttarakhand, Maharashtra

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Issues in JJM Schemes

- Quality is affected by *every stage of scheme* formulation & implementation. Requires attention at every stage
- Scheme Formulation/ Initiation
- Source Strengthening/ Certification
- Scheme Design
- Institutional Arrangements
- Implementation Stage Issues
- O&M

Project/ Scheme Initiation

- **Technical Audit to be conducted for existing infra- (avoid duplication/ use of deteriorated components)**
  - on abandoned schemes for quality of system before proposing any new schemes
  - on existing water supply systems for suitability of components of the existing system for taking up Retrofitting Schemes
- Baseline assessment of existing infrastructure/ facilities in the village for **preparation of Village Action Plan (community involved at start)**
- IT tool used for preparation of VAP to capture village data in scientific manner and analytics
- Statewide mapping of all available sources by remote sensing/ GIS
- **Strategy on Source Strengthening** measures are taken up by GSDA separately **(sustainability , avoid disuse, public dissatisfaction**)

Source Strengthening Measures

- **Source Strengthening Measures** are taken up by States
  - Direct Ground Water Recharge structures (Aquifer Recharge Shaft System, Recharge Trench cum Recharge shaft, Recharge Shaft, Fracture Seal Cementation and Bore blast technique)
  - Take up source strengthening measures under convergence.
  - Conventional Water Conservation Structure (Nala deepening, Cement Bandhara, Gabbion Bandhara and Contour Trenches)
- Catch the Rain Campaign to be adopted in the States in mission mode so as to improve the water table especially in water stressed areas
- Plan for Each Source in JJM over next two – three years by convergence

Design related aspects

- Design period changed from 15 years to 30 years in line with CPHEEO manual
- IS 1172 (Code of Basic Requirements for Water Supply, Drainage and Sanitation) and CPHEEO manual are adopted
- Technical Specifications for Typical Tap Connection is prepared and shared with Implementing Agencies
- **Model/ Type design** to be further used by all the implementing agencies for preparation of DPRs- uniformity, quality ,
- Source Certification is mandatory for finalization of DPR

Institutional Arrangement

- Engage PMCs – dedicated, professional
  - To carry out Survey and preparation of DPR
  - To provide assistance in Technical and Administrative approvals
  - To assist in bid process management
  - To ensure the QA & QC of works
- Third-Party Inspection Agencies – Independence, Disclosure
- Standard Operating Procedures for both PMC and TPIA
- Material inspections/ factory inspections are carried out by independent agencies (along with the implementing agencies) appointed by QA/QC cell of MJP- access to TPIA
- Material testing to be carried out in the nearby engineering colleges – if labs not available

Implementation stage

- Empanelment of EPC contractors – monitoring works beyond capacity to contractors, actual start of works
- Agencies appointed for implementation of Electro-chlorination system at SWSM level
- Empaneled vendors/ RC for
  - Pipes (HDPE,DI,PVC,OPVC etc…)
  - Specials (Valves and fittings)
  - Electro-mechanical
  - Electro Chlorinators

Tests on R.C.C.

Water	Stone Aggregate	Sand
• Suitability for Construction Test as per IS 486	• Size & Grading, • Crushing Strength, • Abrasion, • Flakiness, etc	• Silt Content • Size & Grading
Lab	Site/ Lab	Site/ Lab

Concrete	Cement	Reinforcement
• Compressive Strength	• IS 8112	• Tensile Strength • Weight • Chemical Composition Test as per IS:1785
Site/ Lab	Lab	Lab

Testing of pipe material

Physical Test	Mechanical Properties	External Coating
• Appearance • Dimensions • Wall thickness • Ovality	• Tensile Strength • Elongation • Brinnel Hardness	• Bituminous / Zinc Coating
Factory/Site	Factory	Factory

Hydrotesting	Internal coating	Stamping/Marking
• Individual Pipe testing	• Visual Inspection • Thickness • Mortar Compressive strength	• Manufacturer Stamp • Pipe Specs • Department Stamp
Factory	Factory/Site	Factory/Site

9

Operation & Maintenance Aspects

- State level O&M policy
- Standard Operating Procedure to be part of O&M policy
- Financial Assistance/ Incentives for communities in running PWS efficiently

❖**State Specific Challenges** – Harsh Weather – Himalayan States, Lack of Access, Maintenance personnel – designing assistance on Electro – Mechanical components

❖Localized solutions on trained O&M staff

❖Technology – IOT, ElectroChlorinators

Thank You