

PHYSICAL VERIFICATION REPORT

(Conducted by Dy. Director, Planning on 19-04-2011)

1. Name of Project: Improvement & Augmentation of Water Supply to Kathua town under UIDSSMT
2. Funding Agency: GoI & State Plan (H&UDD)
3. Executing Agency: PHE Division, Kathua
4. Year of Start: 2007-08
5. Year of Completion: 2009-10 (3 years from date of start)
6. Need/ Importance of the Project:

Only 14.48 lac gallons/day (6.576 MLD) of water was available for Kathua town in 2004 against the requirement of 18.48 lac gallons/day (8.39 MLD) worked out as per the standard norm of 135 ltrs/soul/day applicable to the town and also taking in account 15% system losses.

Moreover, the population of Kathua town was projected to increase from 0.65 lacs in 2004 to 1.06 lacs in 2019 and 1.58 lac in 2032 as a consequence of which the requirement of water was likely to go up from 18.48 lac gallons/day (8.39 MLD) in 2004 to 30.15 lac gallons/day (13.69 MLD) in 2019 and to 45.07 lac gallons/day (20.46 MLD) in 2032.

The project was approved with the objective of achieving the target of 30.15 lac gallons/day (13.69 MLD) worked out for the year 2019 by spending an amount of Rs 21.37 crores during 3 years w.e.f. 2007-08. In order to achieve this target the project envisaged to make available 5.29 lac gallons/day (2.40 MLD) of water by way of improving the existing infrastructure and another 24.87 lac gallons/day (11.29 MLD) by developing new infrastructure comprising 9 tube wells/ bore wells, 12 OHTs & 6 Sump tanks.

7. Financial Status of Work:

(Rs. in Crores)

Approved Cost	21.37
Funds released	19.01 (89%)
Expenditure Incurred (up to 03/2011)	16.59 (78%)

8. Physical Status of Work:

SNo	Major items	Physical Achievement	% Ach.
1*	Development of 9 new Tube wells	6 Completed & commissioned 3 Completed & under testing 1 yet to be taken up	70%
2	Construction of 12 OHTs, each of 1 lac gallon capacity	6 OHTs completed & commissioned 2 completed & under testing 4 completed & yet to be tested	50%
3*	Development of 9 Electric Sub Stations including HT/ LT lines	9 Electric Sub stations including HT/ LT lines completed 1 yet to be taken up	90%
4*	Electric transformer stablizers	Installed in only 4 pumping stations out of 10	40%
5*	Construction of Pump room building & compound wall	8 pump room buildings completed & 2 yet to be taken up 6 compound walls completed & rest yet to be taken up	80%
6	Construction of 6 Sump Tanks of 0.30 lac gallon capacity	3 completed & 3 yet to be taken up	50%
7	Rising Mains	12125 mtrs laid out of 14583 mtrs Or 11nos. complete, work of 5 in progress	83%
8	Distribution Network	Some work was reported to be done but most of the pipe network is yet to be laid	
9	Staff quarters	Work yet to be taken up	0%
10	Construction of PHE Mechanical Sub-Division Kathua Office building, Revenue collection room, record room, conference hall, computer lab and other repair works.	Work yet to be taken up	0%

* Target of 9 tube wells seems to have been revised to 9 tube wells and 1 bore well by PHE Division, Kathua in order to attain the targeted pumping capacity.

10. Analysis of physical status in terms of pumping/ storage capacity of Water:

(A) Tubewells/Borewell: The analysis is based on table given below: -

Sno	Source	Hours of average pumping	Minimum yield of source (GPH)	Total availability of water (GPH)	Status
	Old T/wells				
1	Barmora	16 hrs	8000	128000	Commissioned
2	Kalibari	16 hrs	10000	160000	Commissioned
3	Moola Talab	16 hrs	9000	144000	Commissioned
4	Krishna Colony	16 hrs	11000	176000	Commissioned
5	Parliband	16 hrs	10500	168000	Commissioned
6	Rajbagh	16 hrs	8000	128000	Commissioned
7	Chak Desa Singh	16 hrs	8000	128000	Commissioned
8	Chak Shekian	16 hrs	5000	80000	Commissioned
9	Shiv Nagar	16 hrs	8000	128000	Commissioned
10	Shahidi Chowk	16 hrs	13000	208000	Commissioned
		Sub-total	90500	1448000	
	New T/B wells				
1	Patel Nagar	16 hrs	17000	272000	Commissioned
2	Parli Band	16 hrs	8000	128000	Commissioned
3	Tara Nagar	16 hrs	15000	240000	Commissioned
4	Lower Shiv Nagar	16 hrs	15000	240000	Commissioned
5	Bowlan	16 hrs	25000	400000	Commissioned
6	Irrigation Colony	16 hrs	15000	240000	Complete
7	District Hospital Kathua	16 hrs	15000	240000	Complete
8	Barmoura Khad	16 hrs	15000	240000	Complete
9	Partap Nagar	16 hrs	15000	240000	Complete
10	Animal Husbandry Complex	16 hrs	15000	240000	Yet to be constructed
		Sub-total	155000	2480000	
		Total	245500	3928000	

In 2007 the total pumping capacity of the existing 10 tube wells if run for 16 hours daily (2 shifts) was 14.48 lac gallons/day. 9 new tube wells were to be developed under the project to pump about 24.80 lac gallons of water per day taking the total to 39.28 lac gallons/day.

During the last three years, 8 tube wells and 1 bore well have been completed in addition to the 10 existing ones. The total pumping capacity of the newly developed infrastructure is 22.40 lac gallons/ day.

However, out of the new infrastructure, only 5 tube wells and 1 bore well has been commissioned which have pumping capacity of 13.60 lac gallons/day and hence the actual pumping capacity as on

date is 28.08 lac gallons/day and will raise to 36.88 lac gallons/day only after the remaining 3 new tube wells are commissioned.

About 39.28 lac gallons/day of water can be generated from the old as well as the new infrastructure (after commissioning all the new ones) which is well above the requirement of 30.15 lac gallons/day worked out for the year 2019, but the following two facts which can not be ignored need to be examined: -

(a) The Engineers of PHE Division, Kathua anticipate that by 2019 the pumping capacity of the 10 old tube wells which is 14.48 lac gallons/day at present will get reduced to half, i.e., 7.28 lac gallons/day. This figure is however well above the desired level of 5.29 lac gallons/day envisaged in the project.

(b) The pumping capacity of the new infrastructure envisaged in the project in order to augment the water supply is 24.87 lac gallons/day against which the newly developed infrastructure is capable of pumping 22.40 lac gallons/day, i.e. a shortfall of only 2.47 lac gallons/day. This shortfall is to be overcome by developing another tube-well yet to be taken up under the project.

(B) OHTs: 12 OHTs each of 1 lac gallon capacity have been constructed out of which 6 have been commissioned 2 are under testing and the remaining 4 yet to be tested/ commissioned. The location wise list is given in table below: -

SNo	Location	Capacity	Status
1	Patel Nagar	1 lac gallon	Commissioned
2	Parliwand	1 lac gallon	Commissioned
3	PWD Complex	1 lac gallon	Commissioned
4	Rajbagh	1 lac gallon	Commissioned
5	Upper Shiv Nagar	1 lac gallon	Commissioned
6	Lower Shiv Nagar	1 lac gallon	Commissioned
7	Chak Desa Singh	1 lac gallon	Under testing
8	Amrit Vihar	1 lac gallon	Under testing
9	Tara Nagar	1 lac gallon	Completed but yet to be tested
10	Pratap Nagar	1 lac gallon	Completed but yet to be tested
11	Barmora Khad	1 lac gallon	Completed but yet to be tested
12	Mandi Medikar	1 lac gallon	Completed but yet to be tested
	Total	12 lac gallons	

(C) Sump Tanks: 3 Sump tanks each of 50,000 gallons capacity have been completed at Patel Nagar, Tara Nagar and Irrigation Colony to pump water in the OHTs for avoiding excess wear and tear of the machinery. Work of remaining three sump tanks is yet to be taken up.

9. Field Observations:

(A) Thirteen different sites were inspected during the field visit and the work was not in progress at any site during the visit. The detail of new/ old infrastructure developed at these sites is mentioned below: -

a. Chak Desa Singh:

- New OHT of one lac gallon capacity (Complete & under testing)
- Old tube well with 45 HP motor (Functional)
- Old 250 KVA transformer (Functional)

Although the OHT was complete, it was still in the process of testing. Some seepage marks were observed on the OHT which need to be further investigated by technical personnel since this being the reason for delay in its commissioning cannot be overruled. There was no boundary wall around the OHT/ Tube well but pipes were lying at site. The safety aspect needs to be looked into.

b. Pratap Nagar:

- New OHT of one lac gallon capacity (Complete but not tested)
- New tube well with 75 HP motor (Complete, not commissioned)
- New 250 KVA transformer (Complete)

The quality of work in the OHT and the tube well seemed good. At this site too the boundary wall was yet to be constructed. Close to the Tube well it was observed that some ropes had been tied to a pipe joint probably to prevent leakage. Proper repair needs to be carried out.

c. PWD Office Complex:

- New OHT of one lac gallon capacity (Commissioned)

The OHT was functioning properly as water being filled in the OHT was inspected from top of the OHT. There was no railing on the edges at the top of the OHT for safety of staff who operates, adds chlorine and monitors the supply of water to the adjoining areas. Being located within the PWD Complex there is no immediate requirement for construction of boundary wall. This OHT was also used as a store for placing pipes, joints, bends and other material which was observed on the floor inside the OHT and some pipes were lying outside the OHT.

d. Bowlan:

- New tube well with 75 HP motor (Complete & under testing)
- New 250 KVA transformer (Complete)

It was informed by the engineers that this location had the maximum discharge of water, i.e. 4,00,000 gallons per day. This was more than any other source in Kathua city.

e. Rajbagh:

- New OHT of one lac gallon capacity (Commissioned)
- Old tube well with 30 HP motor (Functional)
- Old 250 KVA transformer (Functional)

Dampness was observed on the roof inside this OHT but the Engineers of PHE were of view that there was so seepage. However, a joint of one of the main pipes was leaking and water had spilled all over the floor. The repair to fix the leakage needs to be conducted and the reasons for dampness inside the OHT needs further investigation by technical personnel.

f. PHE Complex:

- New OHT of one lac gallon capacity (Commissioned)
- New Bore well with 55 HP motor (Functional)
- New 250 KVA transformer (Functional)

At the PHE complex was located the only water filling station of Kathua town. There was a huge stock of pipes and construction material which was placed in open. Some sort of shed is necessary to avoid weathering and for safety. In addition to a couple of pumping rooms, one bore well without a pump room was functioning at this location and was reported to have been developed under the project although the project envisaged drilling of 9 Tube wells only. The reason could be to attain the full drilling capacity of 24.87 lac gallons/day envisaged to be augmented by developing new infrastructure under the project. One old iron OHT of about 50,000 gallons raised over an iron framework within the PHE complex was found to be leaking. The leakage needs to be fixed immediately in order to avoid wastage during supply.

g. Tara Nagar:

- New OHT of one lac gallon capacity (Complete but not tested)
- New tube well with 38 HP motor (Commissioned)
- New 250 KVA transformer (Commissioned)
- Sump tank 50,000 gallon capacity (Commissioned)

Construction of compound wall is yet to be taken up at this location.

h. Lower Shiv Nagar:

- New OHT of one lac gallon capacity (Commissioned)

- New tube well with 75 HP motor (Commissioned)
- New 250 KVA transformer (Commissioned)

Dampness was observed on the roof inside the OHT. One of the vertical main pipes was also found to be leaking. Construction of compound wall is yet to be taken up at this location

i. Upper Shiv Nagar:

- New OHT of one lac gallon capacity (Commissioned)

j. Patel Nagar:

- New OHT of one lac gallon capacity (Commissioned)
- Sump tank 50,000 gallon capacity (Commissioned)

k. District Hospital Complex:

- New tube well with 75 HP motor (Commissioned)
- New 250 KVA transformer (Commissioned)

The water of this tube well is also being supplied to the newly developed district Hospital. Construction of tube well at this location has saved extra expenditure that the Health Department would have had to incur in order to make its own arrangements for water supply.

l. Barmora Khad:

- New OHT of one lac gallon capacity (Complete but not tested)
- New tube well with 75 HP motor (Complete)
- New 250 KVA transformer (Complete)

Some local had constructed the foundation of boundary wall at this site in such a manner that there was approach only to the tube well and not to the OHT. The Engineers informed that the local is creating problems to execute the balance work by encroaching into their land. DDC Kathua needs to intervene in case the Engineers are unable to persuade the encroacher from showing restraint.

The pressure of the water being pumped out by the tube well was also inspected as the supply line to OHT had not been laid. Although the quantity of water seemed adequate, but the water being pumped was muddy. This could be owing to the fact that the tube well was new and not commissioned as yet. However, this aspect needs to be looked into with a larger perspective, i.e. for the remaining tube wells also so that the people of Kathua town are supplied hygienic water.

m. Irrigation Colony:

- New tube well with 75 HP motor (Commissioned)
- New 250 KVA transformer (Complete)
- Sump tank 50,000 gallon capacity (Complete)

10. Problem Areas/ Suggestions:

SNo	Problem Areas	Suggestions
1	<u>Dampness/ seepage/ leakage:</u> - Dampness was observed in the OHTs located at Rajbagh & Lower Shiv Nagar and seepage marks were observed in the OHT at Chak Desa Singh which is under testing. Leakage of water was observed at Rajbagh, Lower Shiv Nagar and an old iron OHT in PHE Complex.	The reasons behind the dampness and the seepage marks need to be investigated by technical personnel and the leakages repaired to prevent loss and spillage of water. The reasons behind delay in commissioning of the OHTs and tube wells that are complete raises doubts about their functioning capability and also needs to be further verified by PHE Department and, if justifiable, steps need to be taken to commission these immediately.
2	<u>Shifting of Utilities:</u> The laying of rising mains from Jerai Chowk to Parli Band and from Shastri Nagar OHT to Chak Sheikh sub tank is pending as ERA is still in the process of removing encroachments along the road, widening work of which is in progress.	ERA needs to take necessary steps at the earliest in order to provide adequate corridor for laying the rising mains in these two stretches.
3	<u>Land Encroachment:</u> At Barmora Khad a local has constructed boundary foundation in such a manner that the approach from the tube well to the OHT has been encroached and as a result there will be no way to the OHT once the local takes up construction work of boundary wall/residence.	Deputy Commissioner Kathua needs to intervene for resolving this issue in case the PHE engineers are unable to persuade the local from encroaching into the development area.
4	<u>Non-installation of Stabilizer:</u> Voltage Stabilizer has been installed only in one tube well room located at Patel Nagar.	PHE Division Kathua needs to immediately install the Voltage Stabilizer for the remaining eight pumping stations also.

5	<p><u>Non-installation of LT Control Panel:</u> It was observed that LT Control Panel was installed only in four tube well rooms (Shiv Nagar, Tara Nagar, Patel Nagar, Irrigation Colony) and was yet to be installed in the remaining five.</p>	<p>PHE Division Kathua needs to immediately install the LT control Panel in the remaining five locations to avoid damage of pumping machinery.</p>
6	<p><u>Shortage of man-power:</u> It was informed by the AEE (Civil) that they are facing shortage of manpower to operate the newly developed infrastructure/ machinery.</p>	<p>PHE Department may obtain the details of actual man-power required; men actually engaged and work out the shortage. Some decision needs to be taken to address this issue. Engagement of engineers/ ITI diploma holders registered with Employment Exchange concerned could to be considered.</p>
7	<p><u>Absence of railing along edges on top of the tanks:</u> It was observed that there was no railing along the edges on top of some of the OHT's and also in the stairways for climbing to the top. This is vital as the field staff has to often go on top of the OHT for chlorination and overseeing the proper functioning of the OHT.</p>	<p>PHE Division Kathua needs to immediately address this issue for ensuring safety of staff operating/overseeing the supply of clean drinking water.</p>
8	<p><u>Construction of Staff Quarters:</u> It was informed that the work of staff quarters has not been taken up as yet since the executing agency decided to emphasize upon developing infrastructure for pumping/ storage of water and the distribution network.</p>	<p>The 3 years given for the project have already elapsed and its time that the work of staff quarters which should have been taken up at least during the third year is taken up without further delay.</p>
9	<p><u>Stand-by Pump sets for new Tube wells:</u> On enquiring it was reported that standby pumps which could be used during damage of pumps installed in the new tube wells.</p>	<p>PHE Division Kathua needs to immediately procure adequate number of stand by pumps out of the State/ District plan, if not covered under the project in order to meet emergent situations.</p>

10	<p><u>Construction of a Mechanical Sub-Division</u> Office building, Revenue collection room, record room, conference hall, computer lab, etc. These works have also not been taken up as yet and the AEE (Mechanical) informed that they did not have sufficient accommodation to carry out their job efficiently.</p>	<p>The construction work of the Office building envisaged in the project needs to be taken up immediately so that the Mechanical staff has adequate working space and can perform their duty efficiently.</p>
11	<p><u>Distribution Network</u>: - Some work has been done on laying the distribution network but considerable work has yet to be done. With delay in funding as well as execution there is every possibility that the project cost could escalate and the work of re-laying of distribution network will remain un-attended adversely affecting the desired level of impact which the project envisages?</p>	<p>H&UD Department and PHE Department need to examine this issue and ensure that the project is executed in totality without neglecting supply/distribution network.</p>
12	<p><u>Quality of Water</u>: The quality of water pumped by tube well at Barmora khad was not good. Although it was yet to be commissioned, the water was muddy.</p>	<p>If the quality of water being pumped is not going to improve with passage of time when the tube well becomes functional, then PHE Division needs to find ways to supply hygienic water to the people of Kathua town.</p>
13	<p><u>Upgradation of electro-mechanical components of old Tube wells</u>: It was informed by AEE (mechanical) that there was need for upgradation of electromechanical components of most of the old tube wells.</p>	<p>PHE Division Kathua needs to prepare separate estimates for such works, if not covered under the project, and submit it to the administrative department for examination and release of State/District Plan funds accordingly.</p>

11. Conclusion:-

The time period prescribed for completion of this project is already over and any further delay could lead to escalation in cost. As such, the H&UDD and PHE Department need to immediately address the problem areas and completed the remaining works without further delay.

Physical Verification Conducted by :	Madan Gopal Sharma, Deputy Director Planning, Monitoring Cell, Chief Minister's Secretariat.
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