

Assessment of functionality status of household tap connections in rural areas (2020-21)

State report

Punjab



Submitted to:
National Jal Jeevan Mission
Department of Drinking Water and Sanitation
Ministry of Jal Shakti

Report prepared by:
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1. Introduction

Announced in 2019, the Jal Jeevan Mission – Har Ghar Jal (JJM – HGJ) is implemented by Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti in partnership with States/ UTs. JJM aims to provide a Functional Household Tap Connection (FHTC) to every rural home in the country by 2024. A household tap connection is said to be functional when the tap water supply is of adequate quantity (minimum 55 lpcd) and prescribed quality (as per BIS:10500) on regular and long-term basis. Further, JJM seeks to promote holistic management of local water sources and not just provide tap water connections.

The DDWS had engaged Nielsen (India) Private Limited to undertake 'Functionality Assessment' of household tap connections. The assessment covered household tap connections in 6,992 villages across 704 districts from 31 States/ UTs. The survey was undertaken in November – December 2020.

2. Objectives of the study

The main objectives were an assessment of Functionality of Household Tap Connections (FHTCs) under JJM on various parameters; ascertaining, in the form of data, on-ground progress of JJM in terms of adequate quantity of prescribed quality of drinking water supplied to rural households on regular basis; and engaging with Gram Panchayats and/ or its sub-committees of the sample villages and soliciting their feedbacks and recommendations for improving the programme implementation; and to suggest measures for mid-course correction for improvement in functionality of household tap connections.

3. Approach and Methodology

The approach followed was to assess the functionality of household tap connections (within premises) and in-village drinking water supply infrastructure. The selection of sample villages was from the JJM-Integrated Management Information System (IMIS) data-base of villages having at least 15 household tap connections. In each sample village, the largest PWS scheme was sampled. The survey was planned as in-person Computer Aided Personal Interview (CAPI) survey, and included an on-ground assessment of the functionality of sample PWS schemes and tap connections attached to the same. The survey included measurement of the quantity of water received at the household level through the tap connection, as well as water testing to check whether the quality of the drinking water is as per the BIS standards, using Field Test Kits (FTKs) and H₂S vials. The study also collected supply side information, including assessment of the quantity of water supplied by the scheme, operation and maintenance arrangements, availability and functionality of scheme level infrastructure and the aspects related to source and system sustainability.

A sample of 10 villages from every district in the State were selected following probability proportionate to size (PPS) systematic random sampling method ensuring due representation of SC/ SC majority villages as well as quality-affected villages. In each selected village, households for the survey were selected at head end, middle and tail end of the selected piped water supply network. In Punjab the survey was conducted in 3130 households from 220 villages in 22 districts.

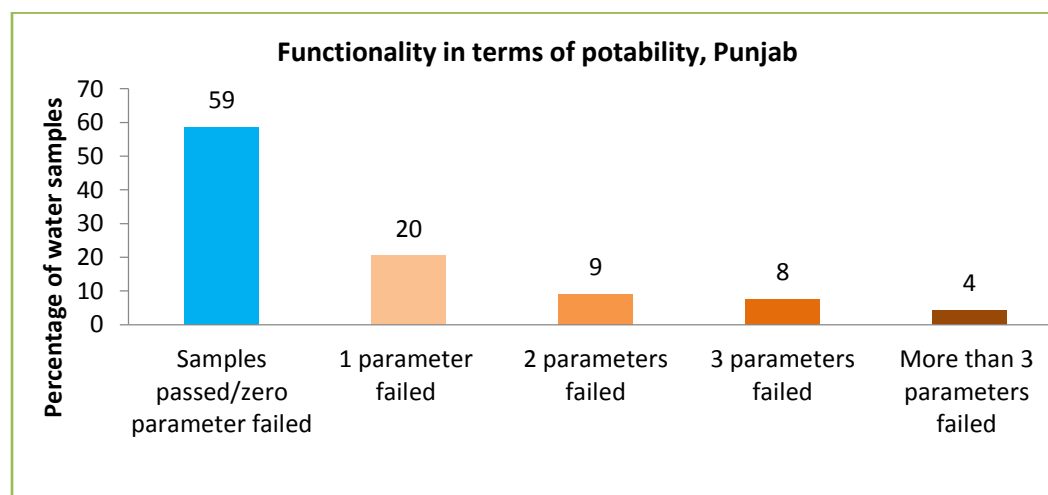
4. Key Findings

SL.	INDICATOR	Punjab	India
Household level			
1	Average household size	5.3	5.6
2	Percent of households using tap connection for drinking purpose	92.4	88.9
3	Percentage of households reported working tap connections (supply at least one day in last 7 days)	98.1	93.6
4	Number of water supply days in a usual week		
4a	1 – 2 days	1.0	7.6
4b	3 – 4 days	1.6	10.4
4c	5 – 6 days	0.5	1.5
4d	7 days	96.9	80.5
5	Number of water supply days in the last week		
5a	0 days	0.8	2.4
5b	1 – 2 days	2.0	9.7
5c	3 – 4 days	4.9	14.8
5d	5 – 6 days	2.4	4.9
5e	7 days	89.9	68.1
6	Percentage of households reporting reliability of water supply days	96.2	86.5
7	Percentage of households reporting tap connections functioning continuously for more than 15 days in a month for last 12 months	85.5	84.6
8	Average number of times water is supplied on the days of supply		
8a	1 time	21.5	56.6
8b	2 times	74.0	28.2
8c	3 times	4.5	6.1
8d	4 times/24 hours	0.0	9.1
9	Percentage of households reporting reliability of supply for different supply timings	95.8	84.3
10	Percentage of households reporting adequate water pressure for different supply timings		
10a	Morning	90.8	80.1
10b	Afternoon	93.0	84.6
10c	Evening	94.8	84.8
11	Percentage of households reported paying water tariff – separately or along with other taxes	91.7	52.8
12	Percentage of households reported receiving 55 lpcd or more	95.9	83.5
13	Percentage of households having potable water *	58.6	61.3
14	Percentage of households reporting regularity of supply	93.5	87.2
15	Percentage of households reporting functional tap connections	52.1	47.8
Village level			
16	Percentage villages having functional water and sanitation committees	53.6	48.5
17	Percentage of functional schemes in the sample villages considering all schemes (supplying water any day in the last 7 days)	84.9	86.0
18	Percentage of in-village schemes having O&M undertaken by village water	91.9	83.1

SL.	INDICATOR	Punjab	India
	and sanitation committee or by Panchayat		
19	Percentage of sample schemes reported having faced challenges in the last one year		
19a	Inadequate infrastructure	31.0	40.2
19b	Poor water availability at the source	6.9	33.0
19c	Poor maintenance	55.2	46.2
19d	Natural calamity	41.4	63.4
20	Percentage of schemes reporting measure to improve source sustainability	73.4	59.9
21	Number of sample villages found with no scheme (defunct/under construction/not handed over/not constructed)	10	751

Figures 1, 2 and 3 depicts the functionality aspects of the household tap connections in Punjab. Figure 1 presents the details of the potability aspects – the proportion of samples which have qualified as per all 13-15 parameters, as well as the proportion of sample which have failed due to one/two/three/more than three parameters.

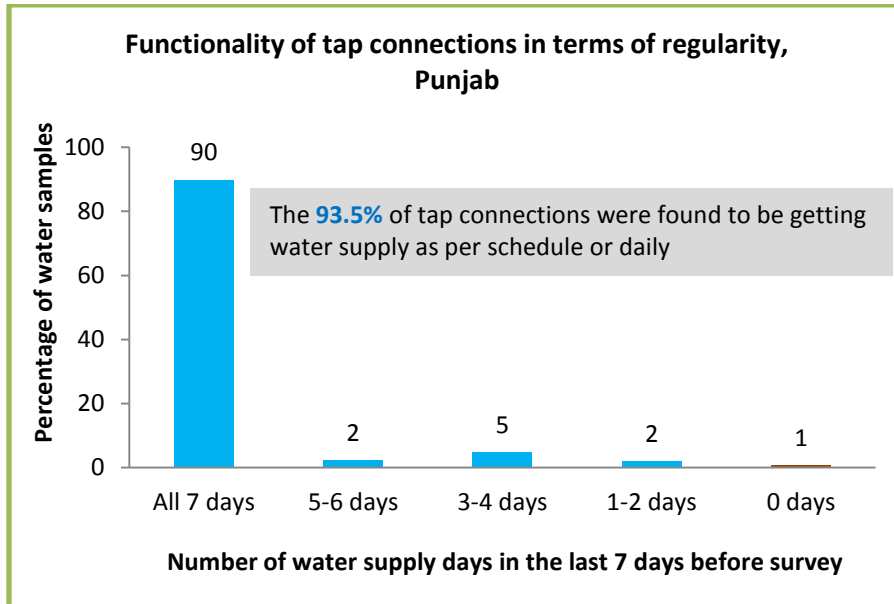
Fig 1: Functionality of the household tap connection in terms of potability - Punjab



Base: Households with water quality testing done, N: 210

Figure 2 presents functionality in terms of regularity, and presents the water supply situation in the last 7 days (before survey date). This includes information on the proportion of taps supplying water on all 7 days, 5-6 days, 3-4 days, 1-2 days and zero days in the last 7 days. As not all schemes are planned to supply water daily, the information of the proportion of taps supplying water daily or as per the water supply schedule is also presented.

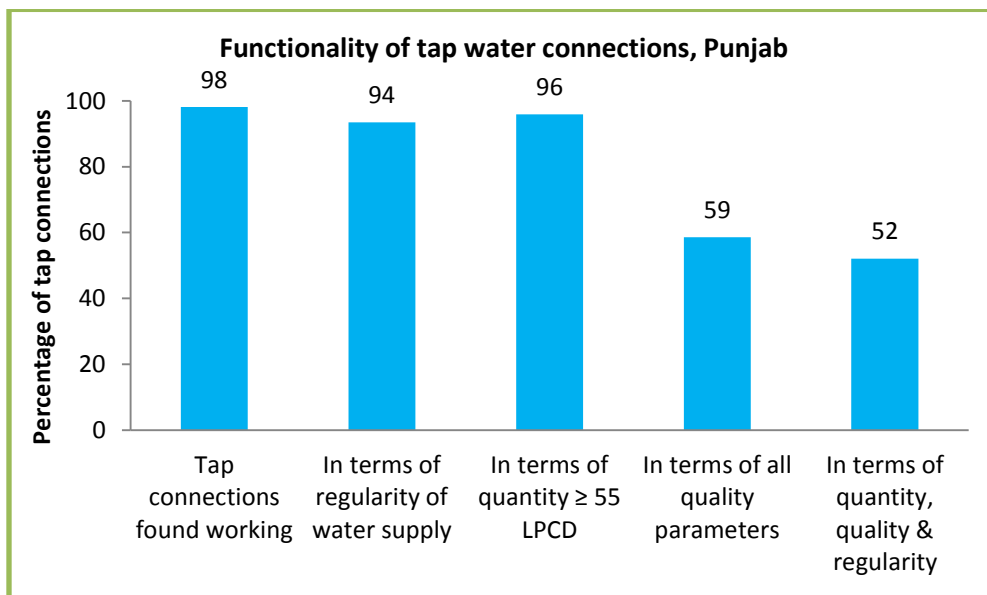
Fig 2: Functionality of the household tap connection in terms of regularity - Punjab



Base: All Households, N: 3130

Figure 3, presents the summary situation of the working tap connections (defined as supplying water atleast on one day in the last 7 days), the functionality in terms of the proportion of tap connections which have qualified regularity, quantity, quality parameters, and the proportion which have qualified all 3 parameters.

Fig 3: Overall functionality of the household tap connection - Punjab

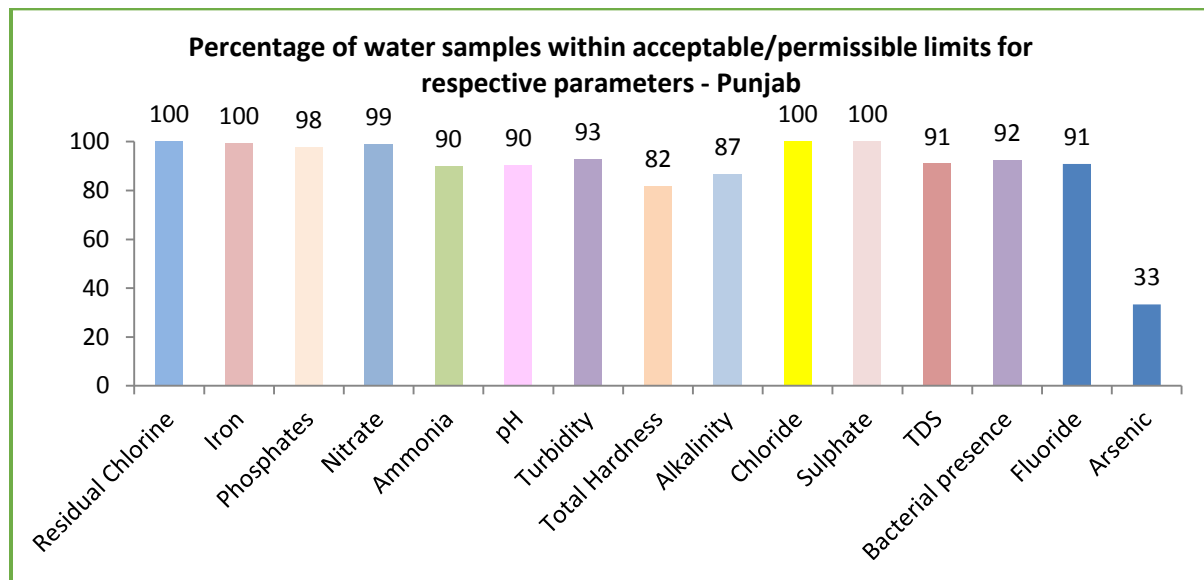


Base: Total count of tap connections considered for functionality assessment, N: 3083

A total of 210 water samples were tested as per BIS: 10,500 standards for all 13 parameters. Of these samples, 11 samples included testing for fluoride and 12 samples included testing for arsenic. All the water samples were taken from a randomly selected head end household of selected sample PWS schemes in the sample villages of Punjab – one sample for each of separate water sources in the village. The figure below shows the proportion of samples in which different parameters were found within acceptable/permisible limits.

As can be seen, almost all the samples (98% or more) had Residual Chlorine, Iron, Phosphates, Nitrate, Chloride and Sulphate within acceptable/permisible limits. Total Hardness and Alkalinity were the key issues, along with Ammonia, pH, TDS, Turbidity and Bacterial presence (Total Coliform). Two thirds of the samples tested in Arsenic affected villages were not found to be within acceptable limits. In the case of Fluoride, one of the eleven samples tested in Fluoride affected villages were outside the permisible limit.

Fig 4: Percentage of water samples within acceptable/permisible limits for respective parameters - Punjab



Pic 1: Household survey being undertaken in one of the villages in Punjab



Pic 2: Water quality sample testing being undertaken in a village in Punjab



5. Conclusions

Punjab has a slightly higher proportion of functional tap connections (52.1%) as compared with the national average. Punjab has performed very well in the provision of adequate water supply (95.9%) as well as 94 percent of tap connections were found to be supplying water daily or as per schedule, but the proportion of households receiving potable water is comparatively low (58.6%). Since the tap

connections considered to be functional were as per the JJM guidelines of including adequate quantity (55 lpcd or more), potability (as per BIS:10500 standards) and regularity of water supply (all days or as per the water supply schedule), the reason that a lower proportion of households had functional tap connections is mostly due to the lower proportion of households potable water supply. Households with taps having a combination of potability and adequate quantity and potability and regular water supply is low (55.1% households having adequate quantity and potable water; 53.5% households having potable water received on a regular basis; while 91.3% households had adequate quantity of water supply on a regular basis).

Total hardness and Alkalinity were the key water quality issues, along with Ammonia, pH, TDS, Turbidity and Bacterial presence (Total Coliform). Arsenic was also an issue in arsenic affected villages as two thirds of the samples tested in arsenic affected villages were not found to be within acceptable limits.

Almost all the households (96.9%) have reported that the water supply is usually supplied on a daily basis and almost 90 percent households have also reported receiving daily water supply in the last week before the survey. A majority of the households (74%) have reported being supplied water twice a day, and the rest, mostly once a day. Also, almost all households have reported that reliability on receiving water supply on supply days as well as the water supply timings. More than nine out of every ten households have reported adequate water pressure across all supply timings. About 86 percent households mentioned that the taps have worked on a continuous basis for more than 15 days a month for the last 12 months.

About nine out of every ten households with tap connections have reported paying water tariff. As per the JJM guidelines, the State Government needs to ensure 100 percent fund requirement for operation and maintenance of the schemes are met by the Agency responsible for water supply provision to function as a utility.

Although only a little over half of the villages (54%) have reported having water and sanitation committees – but, in most of these villages (84.9%), the water and sanitation committees were actually taking responsibility for operation and maintenance activities of the PWS schemes. As reported by the communities ‘poor maintenance, natural calamities and inadequate infrastructure’ were the main challenges faced by the schemes. About three-fourths of the schemes had taken some initiatives for source sustainability.

Annexures to this report includes:

- List of village with no scheme/defunct schemes/under construction is placed as Annexure 1,
- List of villages with schemes supplying only through tap stand/stand posts is placed as Annexure 2,
- List of villages where 15 FHTCs were not found is placed as Annexure 3,
- Indicative proportion of functional tap connections by districts is placed as Annexure 4, and
- List of villages where samples failed for given quality parameter is placed as Annexure 5

Annexure 1: List of village with no scheme/defunct schemes/under construction

S.No	District Name	Block Name	Panchayat Name	Village Name	Name of Largest Scheme in the Village	Type	Status of the Scheme	Remarks
1.	Faridkot	Faridkot	Bhagthala Kalan	Bhagthala Kalan	Near Sirhind Feeder Canal	MVS	Scheme is defunct	Scheme is not functional since last 6 years
2.	Faridkot	Faridkot	Rajowala	Rajowala	Rajowala(2B)	SVS	Scheme is defunct	Scheme is not functional since last 4 years
3.	Fazilka	Fazilka	Ahal Bodla	Ahal Bodla	Deepulana	MVS	No scheme	There is no piped water scheme in this village.
4.	Firozpur	Ghall Khurd	Anar Kali	Changali Jadid	Changali Jadid	SVS	Scheme is defunct	Scheme is not functional since last 2 years
5.	Firozpur	Ghall Khurd	Haraj	Haraj	Haraj	SVS	Scheme is defunct	Scheme is not functional since last 1 year
6.	Firozpur	Ghall Khurd	New Satiye Wala	Satyewala	Satiye Wala	SVS	Under construction	There is no piped water scheme in this village. All the boring material has reached to village but no work started till now.
7.	Gurdaspur	Dera Baba Nanak	Haruwal	Haruwal	Shahpur Goraya	MVS	Scheme is defunct	Scheme is not functional since last 1 year
8.	Jalandhar	Nakodar	Dhadha Hundal	Dhadha Hundal	Dhadha Hundal Sarai Khas Sihariwal	MVS	Scheme is defunct	Scheme is not functional since last 1 year
9.	Kapurthala	Sultanpur Lodhi	Amritpur	Amritpur	Amritpur	SVS	Scheme is defunct	Piped water supply is closed since last 3 years
10.	Ludhiana	Khanna	Bijapur	Bijapur	Faizgarh	MVS	Under construction	Bore well work has completed but no tap connection given to any HH till now.

Annexure 2: List of villages with schemes supplying only through tap stand/standpost

No villages with schemes.

Annexure 3: List of villages where 15 FHTCs were not found

S. No	District Name	Block Name	Panchayat Name	Village Name	Name of Largest Scheme in the Village	Type	Number of Households Surveyed
1	Jalandhar	Lohian	Sher Garhi	Sher Garhi	Near Bus Stand	MVS	6
2	Ludhiana	Ludhiana-II	Fatehgarh Gujran	Fatehgarh Gujraan	Fatehgarh Gujran	MVS	4

Annexure 4: Indicative proportion of functional tap connections by districts

S.No	District	Percentage Functional Taps
1.	Amritsar	88.7
2.	Barnala	80.0
3.	Bathinda	55.0
4.	Faridkot	37.5
5.	Fatehgarh Sahib	54.7
6.	Fazilka	32.6
7.	Firozpur	51.4
8.	Gurdaspur	86.7
9.	Hoshiarpur	90.0
10.	Jalandhar	38.1
11.	Kapurthala	66.7
12.	Ludhiana	12.1
13.	Mansa	55.6
14.	Moga	70.0
15.	Muktsar	66.4
16.	Pathankot	78.0

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17.	Patiala	17.4
18.	Rupnagar	10.0
19.	S A S Nagar	9.3
20.	Sangrur	39.3
21.	Shaheed Bhagat Singh Nagar	39.3
22.	Tarn Taran	59.3

Annexure 5: List of villages where samples failed for given quality parameter

S.No	District name	Block name	Gram panchayat name	Village name
Villages with failed water samples for Turbidity test				
1.	Fazilka	Arniwala Sheikh Subhan	Challan Wali	Chahlanwali
2.	Ferozepur	Ghall Khurd	Malwalpurana(Qadim)	Malwal
3.	Ludhiana	Sudhar	Budhel	Budhel
4.	Moga	Dharamkot	Noorpur Hakima	Noor Pur Hakima
5.	Moga	Nihal Singh Wala	Saido Ke	Saidoke
6.	Pathankot	Narot Jaimal Singh	Joggar	Joggar
7.	Rupnagar	Anandpur Sahib	Dabkhera	Dab Khera
8.	Rupnagar	Morinda	Sangatpura	Sangatpura
9.	Rupnagar	Nurpur Bedi	Bhatauli	Bhatauli
10.	Rupnagar	Nurpur Bedi	Munna	Munna
11.	Rupnagar	Nurpur Bedi	Makari	Makari
12.	Rupnagar	Ropar	Kotla Nihang	Kotla Nihang
13.	Sangrur	Malerkotla 1	Mahorana	Mahorana
14.	Sangrur	Malerkotla 2	Ibrahimpura	Bir Amamgarh
15.	Sangrur	Malerkotla 2	Baurhai Kalan	Baurhai Kalan
Villages with failed water samples for pH test				
1.	Faridkot	Faridkot	Sikhan Wala	Sikhanwala
2.	Faridkot	Faridkot	Burj Masta	Burj Masta
3.	Faridkot	Jaitu	Rameana	Ramiana
4.	Faridkot	Kotkapura	Panj Graien Kalan	Panjgrain Kalan
5.	Fazilka	Arniwala Sheikh Subhan	Shama Khanke	Shama Khan Ka
6.	Fazilka	Fazilka	Turkan Wali	Lallo Wali
7.	Fazilka	Jalalabad	Dhandi Qadim	Dhandi Qadim
8.	Fazilka	Khuian Sarwar	Ram Kot	Ramkot
9.	Ferozepur	Zira	Wara Waryam Singh	Wara Waryamsingh

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S.No	District name	Block name	Gram panchayat name	Village name
10.	Jalandhar	Mehatpur	Butte Diyan Chhanna	Butte Diyan Chhanna
11.	Kapurthala	Dhilwan	Pahari Pur	Paharipur
12.	Kapurthala	Sultanpur Lodhi	Thatta Nawan	Thatta
13.	Rupnagar	Morinda	Sangatpura	Sangatpura
14.	Sangrur	Dhuri	Bhasaur	Bhasaur
15.	Sangrur	Malerkotla 1	Mahorana	Mahorana
16.	Shaheed Bhagat Singh Nagar	Nawanshahr	Ramgarh	Ramgarh
17.	Shaheed Bhagat Singh Nagar	Nawanshahr	Bhanmazara	Bhan Mazara
18.	Tarn Taran	Gandiwind	Sohal Thathi	Sohal Thathi
19.	Tarn Taran	Naushehra Pannuan	Dial	Dial
20.	Tarn Taran	Patti	Assal	Assal
Villages with failed water samples for Total Hardness test				
1.	Barnala	Barnala	Hamidi	Hamidi
2.	Bathinda	Nathana	Kalyan Malki	Kalyan Malki
3.	Fazilka	Arniwala Sheikh Subhan	Shama Khanke	Shama Khan Ka
4.	Fazilka	Jalalabad	Dhandi Qadim	Dhandi Qadim
5.	Firozpur	Ghall Khurd	Malwalpurana(Qadim)	Malwal
6.	Jalandhar	Mehatpur	Butte Diyan Chhanna	Butte Diyan Chhanna
7.	Jalandhar	Nakodar	Gohir	Gohir
8.	Jalandhar	Nakodar	Dhaliwal	Dhaliwal
9.	Jalandhar	Phillaur	Barapind	Bara Pind
10.	Kapurthala	Phagwara	Maheru	Maheru
11.	Ludhiana	Ludhiana-I	Kaind	Kaind
12.	Ludhiana	Ludhiana-II	Fatehgarh Gujran	Fatehgarh Gujraan
13.	Ludhiana	Ludhiana-II	Lakhowal	Lakhowal
14.	Ludhiana	Ludhiana-II	Jahangirpur	Jahangirpur
15.	Ludhiana	Samrala	Chak Mafi	Chak Mafi
16.	Ludhiana	Sidhwan Bet	Kotman	Kotman
17.	Ludhiana	Sudhar	Budhel	Budhel
18.	Mansa	Jhunir	Fatehpur	Fatehpur
19.	Mansa	Mansa	Saharna	Saharna
20.	Patiala	Ghanour	Nathu Majra	Nathu Majra
21.	Patiala	Ghanour	Bhat Majra	Bhat Majra
22.	Patiala	Patiala	Fagan Majra	Fagan Majra
23.	Patiala	Patran	Khang	Khang
24.	Patiala	Sanour	Amam Nagar Urf Aliwala	Amam Nagar Urf Aliwala
25.	Rupnagar	Anandpur Sahib	Nangal Nikku	Nangal Nikku

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S.No	District name	Block name	Gram panchayat name	Village name
26.	Rupnagar	Anandpur Sahib	Dabkhera	Dab Khera
27.	Rupnagar	Nurpur Bedi	Bhatauli	Bhatauli
28.	S A S Nagar	Dera Bassi	Sadhanpur	Sadhanpur
29.	S A S Nagar	Kharar	Chapar Chiri Khurd	Chapar Chiri Khurd
30.	S A S Nagar	Kharar	Pir Sohana	Pir Sohana
31.	S A S Nagar	Kharar	Ghoga Kheri	Ghoga Kheri
32.	S A S Nagar	Kharar	Rasanheri	Rasanheri
33.	S A S Nagar	Majri	Palheri	Palheri
34.	Sangrur	Sunam	Lakhmir Wala	Lakhmirwala
35.	Tarn Taran	Gandiwind	Sohal Thathi	Sohal Thathi
36.	Tarn Taran	Naushehra Pannuan	Dial	Dial
37.	Tarn Taran	Patti	Assal	Assal
38.	Tarn Taran	Tarntaran	Alladinpur	Alladinpur
Villages with failed water samples for Total Alkalinity test				
1.	Fatehgarh Sahib	Khera	Loha Kheri	Loha Kheri
2.	Fatehgarh Sahib	Sirhind	Bhamarsi Bulland	Bhamarsi Bulland
3.	Fatehgarh Sahib	Sirhind	Suhagheri	Suhagheri
4.	Firozpur	Ghall Khurd	Malwalpurana(Qadi m)	Malwal
5.	Jalandhar	Mehatpur	Butte Diyan Chhanna	Butte Diyan Chhanna
6.	Jalandhar	Nakodar	Gohir	Gohir
7.	Ludhiana	Jagraon	Chakkar	Chakkar
8.	Ludhiana	Samrala	Chak Mafi	Chak Mafi
9.	Ludhiana	Sudhar	Budhel	Budhel
10.	Mansa	Sardulgarh	Phus Mandi	Phus Mandi
11.	Moga	Dharamkot	Bagge	Bagge
12.	Patiala	Ghanour	Bhat Majra	Bhat Majra
13.	Patiala	Patiala	Fagan Majra	Fagan Majra
14.	Patiala	Sanour	Amam Nagar Urf Aliwala	Amam Nagar Urf Aliwala
15.	Patiala	Sanour	Bibipur	Bibipur
16.	Rupnagar	Morinda	Sangatpura	Sangatpura
17.	Rupnagar	Ropar	Bara	Bara
18.	S A S Nagar	Dera Bassi	Sadhanpur	Sadhanpur
19.	S A S Nagar	Dera Bassi	Rani Majra	Rani Majra
20.	S A S Nagar	Dera Bassi	Bhagwasi	Bhagwasi
21.	S A S Nagar	Kharar	Pir Sohana	Pir Sohana
22.	S A S Nagar	Kharar	Ghoga Kheri	Ghoga Kheri
23.	S A S Nagar	Kharar	Rasanheri	Rasanheri
24.	S A S Nagar	Kharar	Jagatpura	Jagatpura
25.	S A S Nagar	Majri	Palheri	Palheri

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S.No	District name	Block name	Gram panchayat name	Village name
26.	Sangrur	Bhawanigarh	Ramgarh	Ramgarh
27.	Tarn Taran	Gandiwind	Sohal Thathi	Sohal Thathi
28.	Tarn Taran	Naushehra Pannuan	Dial	Dial
Villages with failed water samples for Ammonia test				
1.	Amritsar	Tarsikka	Jabbowal	Jabbowal
2.	Barnala	Mehal Kalan	Wazid Ke Khurd	Wazid Ke Khurd
3.	Hoshiarpur	Tanda	Ghorewaha	Ghorewaha
4.	Jalandhar	Jalandhar East	Alipur (M)	Alipur (M)
5.	Jalandhar	Nakodar	Gohir	Gohir
6.	Kapurthala	Phagwara	Maheru	Maheru
7.	Mansa	Sardulgarh	Phus Mandi	Phus Mandi
8.	Pathankot	Pathankot	Ghebe	Ghebe
9.	Patiala	Ghanour	Nathu Majra	Nathu Majra
10.	Patiala	Sanour	Kauli	Kauli
11.	Patiala	Sanour	Amam Nagar Urf Aliwala	Amam Nagar Urf Aliwala
12.	Patiala	Sanour	Bibipur	Bibipur
13.	Rupnagar	Nurpur Bedi	Makari	Makari
14.	Rupnagar	Ropar	Bara	Bara
15.	Sangrur	Malerkotla 1	Mahorana	Mahorana
16.	Sangrur	Malerkotla 2	Baurhai Kalan	Baurhai Kalan
17.	Shaheed Bhagat Singh Nagar	Banga	Khatkar Kalan	Khatkar Kalan
18.	Shaheed Bhagat Singh Nagar	Nawanshahr	Ramgarh	Ramgarh
19.	Shaheed Bhagat Singh Nagar	Nawanshahr	Ghataron	Ghataron
20.	Shaheed Bhagat Singh Nagar	Nawanshahr	Bhanmazara	Bhan Mazara
21.	Shaheed Bhagat Singh Nagar	Saroya	Chandiani Kalan	Chandiani Kalan
Villages with failed water samples for Phosphate test				
1.	Fatehgarh Sahib	Amloh	Kanjari	Kanjari
2.	Rupnagar	Anandpur Sahib	Bhallan	Bhallan
3.	Rupnagar	Nurpur Bedi	Makari	Makari
4.	Sangrur	Dhuri	Bhasaur	Bhasaur
5.	Shaheed Bhagat Singh Nagar	Balachaur	Garle Dhaha	Garle Dhaha
Villages with failed water samples for Iron test				
1.	Faridkot	Kotkapura	Panj Graien Kalan	Panjgrain Kalan
Villages with failed water samples for Nitrate test				
1.	Kapurthala	Phagwara	Maheru	Maheru

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S.No	District name	Block name	Gram panchayat name	Village name
2.	Rupnagar	Anandpur Sahib	Nangal Nikku	Nangal Nikku
Villages with failed water samples for Total Dissolved Solids test				
1.	Bathinda	Maur	Jodhpur Pakhar	Jodhpur Pakhar
2.	Fazilka	Arniwala Sheikh Subhan	Shama Khanke	Shama Khan Ka
3.	Ludhiana	Samrala	Chak Mafi	Chak Mafi
4.	Ludhiana	Sudhar	Budhel	Budhel
5.	Patiala	Ghanour	Nathu Majra	Nathu Majra
6.	Patiala	Ghanour	Bhat Majra	Bhat Majra
7.	Patiala	Patiala	Fagan Majra	Fagan Majra
8.	Patiala	Patiala	Chalaila	Chalaila
9.	Patiala	Patran	Khang	Khang
10.	Patiala	Sanour	Amam Nagar Urf Aliwala	Amam Nagar Urf Aliwala
11.	Rupnagar	Anandpur Sahib	Nangal Nikku	Nangal Nikku
12.	S A S Nagar	Dera Bassi	Sadhanpur	Sadhanpur
13.	S A S Nagar	Kharar	Chapar Chiri Khurd	Chapar Chiri Khurd
14.	S A S Nagar	Kharar	Pir Sohana	Pir Sohana
15.	S A S Nagar	Kharar	Ghoga Kheri	Ghoga Kheri
16.	S A S Nagar	Kharar	Rasanheri	Rasanheri
17.	S A S Nagar	Majri	Palheri	Palheri
18.	Sangrur	Bhawanigarh	Ramgarh	Ramgarh
19.	Tarn Taran	Gandiwind	Sohal Thathi	Sohal Thathi
Villages with failed water samples for Bacteriological present/ absence test using H2S vials				
1.	Barnala	Barnala	Hamidi	Hamidi
2.	Kapurthala	Phagwara	Maheru	Maheru
3.	Ludhiana	Jagraon	Chakkar	Chakkar
4.	Ludhiana	Ludhiana-I	Kaind	Kaind
5.	Ludhiana	Ludhiana-II	Lakhowal	Lakhowal
6.	Mansa	Sardulgarh	Phus Mandi	Phus Mandi
7.	Patiala	Ghanour	Bhat Majra	Bhat Majra
8.	Patiala	Patiala	Fagan Majra	Fagan Majra
9.	Patiala	Patran	Khang	Khang
10.	Patiala	Sanour	Kauli	Kauli
11.	S A S Nagar	Dera Bassi	Sadhanpur	Sadhanpur
12.	S A S Nagar	Dera Bassi	Bhagwasi	Bhagwasi
13.	S A S Nagar	Kharar	Ghoga Kheri	Ghoga Kheri
14.	S A S Nagar	Kharar	Jagatpura	Jagatpura
15.	S A S Nagar	Majri	Palheri	Palheri
16.	Sangrur	Dhuri	Bhasaur	Bhasaur
Villages with failed water samples for Fluoride test				

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S.No	District name	Block name	Gram panchayat name	Village name
1.	Kapurthala	Phagwara	Maheru	Maheru
Villages with failed water samples for Arsenic test				
1.	Amritsar	Attari	Ibban Kalan	Ibban Kalan
2.	Amritsar	Chogawan	Khussu Pur	Khussupur
3.	Amritsar	Majitha	Wadala Viram	Vadala Viram
4.	Gurdaspur	Dorangla	Sanghor	Sanghor
5.	Gurdaspur	Fateh Garh Churian	Sharf Kot	Sharafkot
6.	Hoshiarpur	Hoshiarpur 2	Tanuli	Tanuli
7.	Kapurthala	Dhilwan	Mehmadwal	Mohmadwala
8.	Kapurthala	Phagwara	Maheru	Maheru