

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH,
NEW DELHI**

Original Application No. 676 of 2023

In Re: News Item Appearing in The Times of India dated 12.10.2023 entitled "Agriculture Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe Reveals Study".

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Submitted by



(Priyank Bharti)

Date: 28th JANUARY, 2025
Place: Chandigarh

Secretary to Government of Punjab
Department of Science, Technology & Environment

(On behalf of State of Punjab)

Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH,
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In Re: News Item Appearing in The Times of India dated 12.10.2023 entitled "Agriculture Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe Reveals Study".

Reply of Secretary to Government of Punjab, Department of Science Technology and Environment in compliance to order dated 17.01.2025.

Respectfully Showeth

- 1) That the above-mentioned case is pending before this Hon'ble Tribunal and vide order dated 17.01.2025 the State was granted time to place on record the time lines for the completion of the study and for taking remedial steps in the area for treatment of contaminated water. The relevant extract of the order dated 17.01.2025 is reproduced below for kind perusal and reference.

"In order to complete the study and for taking remedial steps in the area for treatment of contaminated water, learned Counsel appearing for State of Punjab states that he may be granted a week's time to place on record the timeline showing intent on the part of State to act with expeditiousness, considering seriousness of the issue."

- 2) That in compliance to the order dated 17.01.2025 of the Hon'ble Tribunal, it is submitted that the Punjab Biotechnology Incubator (PBTI), SAS Nagar has been assigned the project relating to the study of biomagnification of contaminants in food chain. The PBTI has submitted project proposal on "Assessments of Contaminants (Heavy Metals) in Crops Grown in Punjab" to the Department of Agriculture and

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Farmer's Welfare. The brief scope of work of the study is mentioned herein below:

- a) Collection of 1700 samples of Agri-Food Commodities (Pulses, Cereals, Fruits & Vegetables and Milk) from 34 locations across 16 districts of Punjab and analysis of samples for 10 heavy metals including uranium.
 - b) Collection and analysis of 600 soil samples from the locations where agri-food commodities are being sampled and analysis of these samples for 10 heavy metals including uranium.
 - c) Collection of 500 irrigation water samples (from tubewell / surface water sources) being used for irrigation of above Agri-Food Commodities and analysis of these samples for 10 heavy metals including Uranium, 05 cations, 05 anions and 05 general parameters.
 - d) Data analysis and report preparation.
- 3) That the objective of the study is to assess the Biomagnification of contaminants (heavy metals) in food chain through analysis of agri-food commodities, soil and irrigation water.
- 4) That the duration of the project of the aforementioned study is 18 months. The interim reports and the final report of the study will be submitted by the Punjab Biotechnology Incubator (PBTI), SAS Nagar (Mohali) to the Government at the end of 4th, 8th and 12th and 18th months as per details given below
- i. 1st interim report of pre monsoon season (8 districts) at the end of 4th month.
 - ii. 2nd interim report of pre monsoon season (16 districts) at the end of 8th month.

- iii. 3rd interim report of post monsoon season (8 districts) at the end of 12th month.
 - iv. Final report submission at the end of 18th month.
- 5) That a copy of the project proposal on Assessments of Contaminants (Heavy Metals) in Crops Grown in Punjab given by Punjab Biotechnology Incubator (PBTI), SAS Nagar is enclosed as **Annexure-A**.
 - 6) That the Government of Punjab undertakes to implement the recommendations of the interim study reports as well as the final report of the PBTI and based on the findings and recommendations of the study report, remedial measures will be taken.
 - 7) That further it is submitted that after the analysis of samples collected from 337 locations in the State of Punjab, 34 locations were found contaminated. Out of the said 34 contaminated locations, 18 locations fall under the purview of the Department of Water Supply and Sanitation and 16 locations fall under the purview of the Department of Local Government. The said 34 contaminated locations have been sealed by the concerned departments and the remedial measures taken for supply of potable drinking water are summarized herein below.

A) 18 Locations (Department of Water Supply and Sanitation)

- i. 02 locations namely Chunni Kalan & Bhugrana of District Fatehgarh Sahib have recently been covered with the Large Surface Water Project Nanowal and 01 location namely Sangatpura of District Patiala has been attached with adjoining Water Supply Scheme of Laloda, District Patiala which is supplying potable water.
- ii. Out of remaining 15 locations, 08 locations are provided with Reverse Osmosis (RO) plants, 06 locations are provided with Community Water Purification Plant (CWPP) and one location is provided with Arsenic cum Iron Removal Plant.



- iii. As regards, the performance of AIRPS/CWPP/ROs installed and their efficiency for the remaining 15 site locations of DWSS, the samples of raw water as well as treated water were collected and got analyzed in the NABL accredited laboratory of DWSS, which reveals that all the Plants are functioning well and giving satisfactory results.
- iv. These plants have been found efficient in the removal of contaminants from the sources of the Department of Water Supply and Sanitation and potable drinking water is being provided through these plants.
- v. A copy of the report given by the Department of Water Supply and Sanitation vide letter no. 58 dated 14.01.2025 is enclosed as **Annexure-B**.

B) 16 (Department of Local Government)

- i) To provide potable drinking water at the 16 sealed locations through other nearest municipal water source, water samples from that nearest municipal water source were collected and analyzed for 24 parameters based upon physiochemical parameters and heavy metals through NABL accredited labs of DWSS. Out of these 16, results of 10 were found to be within permissible limits. Results of balance 6 water sources of respective towns Bhikhiwind, Jagraon, Nihal Singh Wala, Rahon, Kotha Guru and Bhadaur, were found to be more than permissible limits.
- ii) Swift action was taken to evaluate the availability and feasibility of providing potable water to the six affected towns from alternative nearby sources. Options such as utilizing the nearest available Water Treatment Plant (WTP), installing tubewells adjacent to nearby canals, etc. were thoroughly assessed. During this evaluation, it was identified that a 50 MLD capacity WTP at Village Daudhar, near Nihal Singh Wala



town, is already operational under the Department of Water Supply and Sanitation and has surplus availability of potable water. Accordingly, an MoU was signed between the departments to supply potable water to Nihal Singh Wala by tapping into the existing water supply line near the town. The work has already commenced, and potable water will be provided to the residents of Nihal Singh Wala by 14.01.2025.

- iii) Additionally, the feasibility of providing potable water to the six affected towns by Installing tubewells adjacent to nearby canals was also evaluated. As a result, tenders worth Rs. 55.84 crore have already been floated to provide potable water supply to these towns. Work orders have been issued for Bhadaur, Bhikhiwind, Nihal Singh Wala, and Jagraon, with the Installation expected to be completed within the next four to six months. For Kotha Guru and Rahon, tenders have been technically evaluated and will be awarded by 20.01.2025. Meanwhile, potable water is being supplied to the public through municipal tankers.
 - iv) Simultaneously, under the AMRUT 2.0 scheme, the groundwater supply for these six towns is being transitioned to surface water supply. Funding of Rs. 155.43 crore has already been secured to support this initiative.
 - v) A copy of the report given by the Punjab Water Supply and Sewerage Board vide letter no. PWSSB/2024/729 dated 10.01.2025 is enclosed as **Annexure-C**.
- 8) That further it is submitted that health check-up camps conducted by the Department of Health and Family Welfare, Punjab through the respective Civil Surgeons at all the 34 contaminated sites. At 18 contamination sites, the health check-up camps were conducted by the Department Water Supply and Sanitation and at 16 contamination sites by the Punjab Water Supply and Sewerage Board. Also, health check-



up camps were conducted at few additional sites to find and disease related to the mentioned pollutants and to monitor the health of residents. In the report, it has been found that none of the examined population reported by symptoms related to ground water contamination. A copy of letter dated 16.01.2025 of the Department of Health and Family Welfare, Punjab is enclosed as **Annexure-D**.

- 9) That in view of the above stated facts, it is submitted that remedial and mitigation measures have been taken at the contaminated sites to ensure portable drinking water to the people of the area. The study relating to the assessment of heavy metals in crop growth in the State of Punjab has been entrusted to Punjab Biotechnology Incubator (PBTI), SAS Nagar (Mohali) and as per the proposal given by PBTI, the study will take around 18 months for completion and the PBTI will submit interim reports to the Government at the end of 4th, 8th, 12th months and the final report at the end of 18th month. The Government of Punjab undertakes to implement the remedial measures considering the findings and recommendations of the study report of PBTI.
- 10) It is, therefore, prayed that the above-mentioned case may kindly be disposed with appropriate orders and time period of 18 months may kindly be granted to the State of Punjab for the completion of the study relating to the assessment of heavy metals in crop growth.

Submitted by



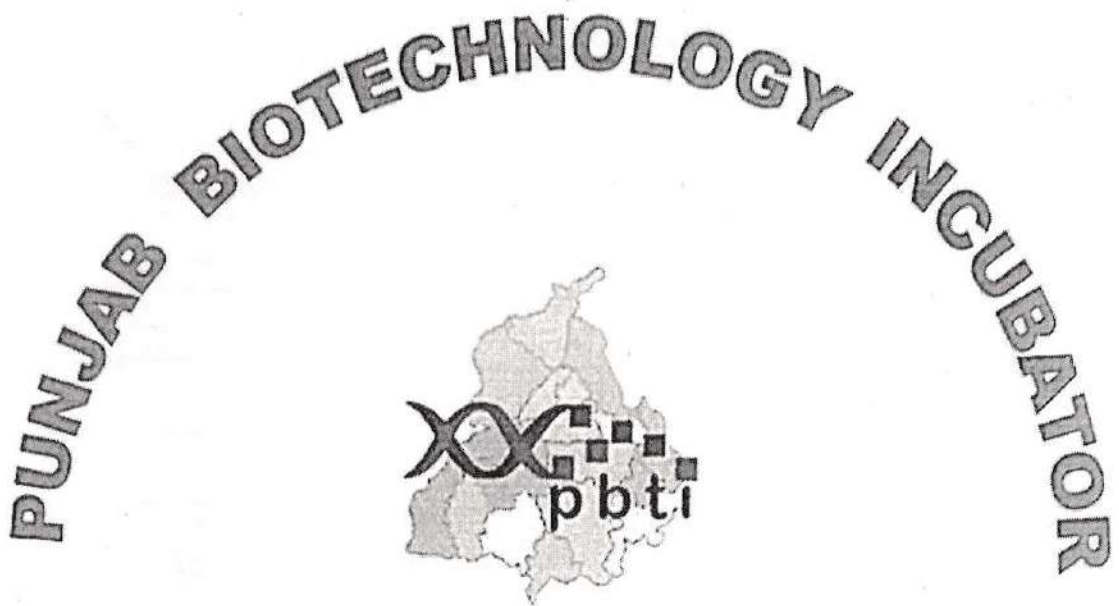
(Priyank Bharti)

Secretary to Government of Punjab
Department of Science, Technology & Environment

(On behalf of State of Punjab)

Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

Date: 28 JAN 2025
Place: Chandigarh



Department of Science, Technology & Environment, GoP

Revised Project Proposal

on

**Assessment of Contaminants (Heavy Metals) in
Crops Grown in Punjab**

Submitted for Funding

to

**Department of Agriculture & Farmer Welfare
Government of Punjab**

By

**Punjab Biotechnology Incubator
(January 2025)**

Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

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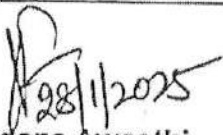
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Executive Summary

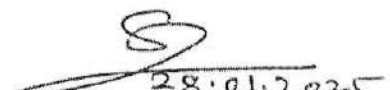
Project Proposal on

"Assessment of contaminants (Heavy Metals) in Crops grown in Punjab"

Sl. No.	Particulars	Details
1.	Name and complete address of the proposing organization	Punjab Biotechnology Incubator (PBTI), (Department of Science, Technology & Environment, GoP) Knowledge City, Sector- 81, SAS Nagar (Mohali), Punjab, India
2.	Collaborating organisation	Punjab Agricultural University, Ludhiana (Department of Soil Science)
3.	Objective of Study	To assess the Biomagnification of contaminants (heavy metals) in food chain through analysis of agri-food commodities, soil, and irrigation water.
4.	Brief Scope of work	<ul style="list-style-type: none"> Collection of 1700 samples of Agri-Food Commodities (Pulses, Cereals, Fruits & Vegetables and Milk) from 34 locations identified by Department of Agriculture across 16 districts of Punjab and their analysis for 10 heavy metals. Collection and analysis of 600 soil samples (for heavy metals) and 500 irrigation water samples (for heavy metals, cations, anions, and general parameters) from the locations where Agri-Food Commodities are being sampled. Data Analysis of total 2800 samples
5.	Total cost of the project	115 Lacs (97 lacs + 18 % GST)
6.	Duration of Project	18 Months (Interim reports at the end of 4 th , 8 th and 12 th months)


28/1/2025

Dr Vandana Awasthi
Head Quality Assurance


28.01.2025
Santosh Kumar Singh
Scientist (Chemical)


28/01/25
Dr Ajit Dua

Senior Scientist & Chief Executive Officer

Forwarded by

Sh Priyank Bharti, IAS
Secretary to Government of Punjab


Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
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Department of Science, Technology & Environment

1. Title of the Project

Assessment of contaminants (Heavy Metals) in Crops grown in Punjab

2. Background

A meeting was held on 05.06.2024 for the discussion of NGT case OA No. 676/2023 -news item titled "Agriculture Runoff causing ground water pollution in Punjab, making drinking water unsafe, reveals study" appearing in the Times of India dated 12.10.23, under the Chairmanship of the then Special Chief Secretary GoP, wherein along with other decisions the chair indicated its apprehension that the contaminants in the ground water should not come to the food chain through irrigation. In this regard, it was desired that a proposal for conducting study of contaminants and entering in the existing cropping system of state may be drafted in coordination with Punjab Biotechnology Incubator. The relevant portion of minutes is reproduced below:

The Chair desired that the consistency in the data be maintained and the ground water monitoring be intensified. Further, the Chair directed that for drinking purposes only fit sample areas should be considered so that the human/animal health should not be at risk. Further, the contaminants in the ground water should not come to the food chain through irrigation. Also, proposal for conducting study of contaminants entry in the existing cropping system of the State may be drafted in coordination with Punjab Bio Technology Incubator (PBTI) Laboratory. In areas where shallow aquifers are contaminated for drinking purposes, the deeper aquifer should be tapped for drinking purposes after chemical analysis.

Accordingly, a proposal was sought by Department of Agriculture & Farmer Welfare (DoA&FW) Government of Punjab (GoP) vide memo no./1078 dt 08.11.2024 from PBTI. Based on the request, a proposal was drafted in consultation with DoA&FW, GoP. The suggestions received from DoA&FW, GoP, vide note dt. 16.12.2024 were incorporated and proposal was submitted on 15.01.2025.

Further, a meeting was again held on 23.01.2025 for the discussion of the above mentioned NGT case, on 12.10.23 under the Chairmanship of Worthy Chief Secretary GoP, wherein the project proposal was deliberated. PBTI was advised

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Chandigarh



to carry out sampling and analysis of crops, including milk, for heavy metals, including Uranium, in coordination with Punjab Agriculture University (PAU), Ludhiana, at 34 contaminated sites only across 16 districts of Punjab. In line with this, the revised Project Proposal is being submitted.

3. Objective

To assess the Biomagnification of contaminants (heavy metals) in food chain through analysis of agri-food commodities, soil, and irrigation water.

4. Scope of Work:

- i. Collection of 1700 samples of Agri-Food Commodities (Pulses, Cereals, Fruits & Vegetables and Milk) from 34 locations across 16 districts of Punjab and analysis of samples for 10 heavy metals including Uranium.
- ii. Collection of 600 soil samples from the locations where Agri-Food Commodities are being sampled, and analysis of these samples for 10 heavy metals including Uranium.
- iii. Collection of 500 irrigation water samples (from tubewell/surface water sources) being used for irrigation of above Agri-Food Commodities, and analysis of these samples for 10 heavy metals including Uranium, 05 cations, 05 anions, and 05 general parameters.
- iv. Data Analysis and Report preparation.

5. Methodology

- I. **Sampling Locations:** The details of the sampling locations are provided by the Department of Agriculture and Farmer Welfare, as outlined below. From each location 50 samples of agri-food commodities, i.e. pulses, cereals, fruits, vegetables, and milk, shall be drawn. Accordingly, the district wise no. of samples is as below:

S.No.	Name of Districts	Name of Locations	No. of samples
1	Amritsar	Ajnala	200
		Ramdas	
		Urdhan	
		Gaggo Mahal	
2	Tarn Taran	Bhikiwind	100
		Goindwal Sahib	
3	Patiala	Samana	400

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S.No.	Name of Districts	Name of Locations	No. of samples
		Thuha	
		Kami Kalan	
		Lacharu	
		Lohakheri	
		Bir Kauli	
		Rajgarh	
		Sangatpura	
4	Sangrur	Bugra	50
5	Ropar	Chak Dehra	50
6	Fatehgarh Sahib	Chunni Kalan	
		Bhangrana	100
7	Fazilka	Abohar	
		Deepulana	100
8	Ludhiana	Chatar Singh Park	
		Jagraon	
		Begowal	200
		Doraha	
9	Faridkot	Kotkapura	
		Deepsingwala	100
10	Jalandhar	Shahkot	50
11	Kapurthala	Kapurthala	
		Bholath	100
12	Moga	Nihal Singh Wala	50
13	Barnala	Bahadour	50
14	Nawanshaheer	Rahon	50
15	Mohali	Issapur	50
16	Bathinda	Kothaguru	50
Total	16 Districts	34 Locations	1700 Samples

II. **Sample Collection:** Sampling will be facilitated by Department of Agriculture and Farmer Welfare. PBTI's team shall accompany Department of Agriculture & Farmer Welfare Government of Punjab for sample collection. A total of 2,800 samples (1,700 agri-food commodities, including pulses, cereals, fruits, vegetables, and milk; 600 soil samples; and 500 irrigation water samples) will be collected, covering both pre-monsoon and post-monsoon seasons throughout the course of the project. The indicative details of samples to be drawn is as below:

i. **Agri-Food Commodities Samples:** The commodity-wise sample details are as follows:

a. Plant Origin Commodity

• Vegetables

Leafy Vegetables: Spinach, Coriander, Fenugreek, Mustard etc.

Fruit Vegetables: Bottle Guard (Lauki), Brinjal, Lady's finger, Tomato, Peas, Cucumber, Cauliflower etc.

Root Vegetables: Potato, Onion, Radish, Sweet Potato, Carrot etc.

• Cereals

Maize, Rice, Wheat, Barley, etc.

• Pulses

Bengal gram, Chickpeas, Red kidney beans, Lentils, White peas etc.

b. Animal Origin Commodity

• Milk

- ii. **Irrigation water Samples:** Water samples (Tubewell/Surface) will be collected from Tubewell/ Surface water being used for irrigation. A total of 500 water samples will be collected during the project.
- iii. **Soil Samples:** Soil samples will be collected from the farms growing crops for correlation studies. A total of 600 soil samples will be collected throughout the project.

III. Analysis of Samples

- i. The Agri-Food Commodities shall be analysed by using ICP-MS as per AOAC/Validated method for the following 10 heavy metals including Uranium as per FSSAI requirements:

Sr. No.	Name of heavy metals
1.	Arsenic (As)
2.	Lead (Pb)
3.	Cadmium (Cd)
4.	Copper (Cu)
5.	Chromium (Cr)



Sr. No.	Name of heavy metals
6.	Mercury (Hg)
7.	Nickel (Ni)
8.	Antimony (Sb)
9.	Tin (Sn)
10.	Uranium (U)

- ii. The Soil samples shall be analysed by ICP-MS as per AOAC/Validated method for above 10 heavy metals including Uranium to assess the source of contamination.
- iii. The Irrigation water samples shall be analysed by ICP-MS, Ion Chromatography, spectrophotometric and Titrimetric methods as per APHA/IS/Validated method for following parameters to assess the source of contamination as well as quality of irrigation water as per IS 11624: 2019.

Sr. No.	Parameters
Heavy Metals (10)	
1.	Arsenic (As)
2.	Lead (Pb)
3.	Cadmium (Cd)
4.	Copper (Cu)
5.	Chromium (Cr)
6.	Mercury (Hg)
7.	Nickel (Ni)
8.	Antimony (Sb)
9.	Tin (Sn)
10.	Uranium (U)
Cations (05)	
11.	Zinc
12.	Calcium
13.	Magnesium
14.	Sodium
15.	Potassium
Anions (05)	
16.	Fluoride
17.	Chloride
18.	Nitrate
19.	Bicarbonates
20.	Carbonates
General Parameters (05)	
21.	Boron
22.	Sodium Adsorption Ratio (SAR) by calculation using the parameters Na, Ca, Mg

Sr. No.	Parameters
23.	Residual Sodium Carbonate (RSC) by calculation using the parameters carbonate, bicarbonate, Ca, and Mg
24.	pH
25.	Electrical Conductivity

The quality control samples shall be run from time to time to assure the quality of data.

IV. The study shall be jointly undertaken by PBTI and PAU, as per decision taken by the committee in its meeting held on 23.01.25

6. Summarized Budget: Total Cost of Project: Rs 115 lakhs (97 lakhs + 18% GST)

S.No.	Expenditure Head	Total Expenditure for 18 months (Rs in lakhs)
I.	Non- recurring	0
II.	Recurring	
A.	Manpower	37.0
1)	Senior Project Associate-II @ Rs 42,000/- +16%	17.6
2)	Project Associate-II @ Rs 28,000/- +16%	11.7
3)	Field Worker @ Rs 18,000/- +16%	3.8
4)	Lab Assistant @ Rs 18,000/- +16%	3.8
B.	Travel	5.0
C.	Consumables and spares	44.0
D.	Contingency	2.2
	Sub Total (X=A+B+C+D)	88.2
E.	Overhead charges @ 10% on (X)	8.82
	Grand Total	97.02 Or 97 lakhs

Rs 114.46 Lakhs (97.0 +18% GST)

7. Stakeholder Departments: The stakeholder departments pertaining to the proposed projects are:

- i. Department of Local Government, Punjab
- ii. Department of Rural Development and Panchayat, Punjab
- iii. Department of Water Supply and Sanitation, Punjab
- iv. Department of Agriculture & Farmer Welfare, Punjab
- v. Punjab Pollution Control Board
- vi. Central Ground Water Board


 Secretary to Govt. of Punjab
 Deptt. of Science, Technology & Environment
 Chandigarh

8. Project Timeline: 18 months

S. No.	Activities	0-3 months	3-6 months	6-9 months	9-12 months	12-15 months	15-18 months
1.	Recruitment of Manpower						
2.	Phase -1: Sampling and Analysis of Agri-Food Commodities, Soil & Irrigation water-pre-monsoon season from 16 districts						
3.	Submission of Interim Report of pre-monsoon sampling						
4.	Phase -2: Sampling and Analysis of Agri-Food Commodities, Soil & Irrigation water-post-monsoon season from 16 districts						
5.	Submission of Interim Report of post-monsoon sampling from 8 districts						
6.	Phase -3: Sampling and Analysis of Agri-Food Commodities, Soil & Irrigation water samples from same locations						
7.	Data Analysis and Final Report submission						

Note:

1. 1st interim report of pre monsoon season (8 districts) at the end of 4th month.
2. 2nd interim report of pre monsoon season (16 districts) at the end of 8th month.
3. 3rd interim report of post monsoon season (8 districts) at the end of 12th month.
4. Final Report submission at the end of 18th month.


 Secretary to Govt. of Punjab
 Deptt. of Science, Technology & Environment
 Chandigarh



**O/o EXECUTIVE ENGINEER, WATER QUALITY
DEPARTMENT OF WATER SUPPLY & SANITATION**

Water Works Complex, Phase-2, Sahibzada Ajit Singh Nagar-160055

Tele: 0172-4330340-342, E-Mail eedwss.wq@punjab.gov.in

To,

Ld. Secretary to Govt. of Punjab,
Department of Science, Technology and Environment
Punjab

No. 58

Date 14.01.24

Subject: OA 676/2023 news item titled "Agriculture Runoff Causing Groundwater Pollution in Punjab making drinking water unsafe reveals study" appearing in the Times of India dated 12.10.2023

Reference : 1. Member Secretary, PPCB letter no. 31614-17 dated 18.12.2024

2. Hon'ble NGT Court orders dated 24.09.2024

Respected sir,

With respect to the subject cited above, it is humbly submitted that as per the approval accorded by Ld. Principal Secretary, WSS vide E-office file no 647953, the status report in annotated format along with annexures are attached herewith for information and necessary action for the compliance of the directions of Hon'ble NGT order dated 24.09.24, the relevant portion of the orders is reproduced herewith:

"2. Learned AAG has also submitted that on the next date the Secretary, Environment, State of Punjab will virtually remain present to appraise the Tribunal."

This status report (attached) is shared with the approval of competent authority for the compliance of Hon'ble NGT Court orders, please.

DA/ As Above

Executive Engineer (WQ)



Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

Endst. No. 59

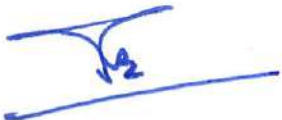
Date: 14.12.24


Copy of the above is forwarded to following for information please:

1. PA to Ld. Chief Secretary to Govt. of Punjab
2. PA to Ld. Special Chief Secretary, Department of Agriculture & Farmer Welfare, Punjab
3. PA to Ld. Principal Secretary, Department of Water Supply & Sanitation, Punjab
4. PA to Ld. Principal Secretary, Department of Health & Family Welfare, Chandigarh
5. Spl. Secretary – cum - Head, Department of Water Supply and Sanitation Punjab
6. Chairman, Punjab Pollution Control Board in reference to CE(South)-cum-Adv.(WQ) letter no. 141 dated 04.12.2024.
7. Member Secretary, Punjab Pollution Control Board in reference to their letter no. 31614-17 dated 18.12.2024.
8. Chief Engineer (South)-cum-Advisor (WQ), Department of Water Supply and Sanitation, Punjab
9. Director, Department of Local Government, Punjab.


Executive Engineer (WQ)
Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

Status Report in Annotated form in OA 676/2023 news item titled "Agriculture Runoff causing groundwater pollution in Punjab Making Drinking Water unsafe Reveals Study" appearing in the Times of India dated 12.10.2023.

Date	Description	Reply by DWSS
17.05.2024	<p>In the above mentioned case i.e. OA 676 of 2023, Hon'ble National Green Tribunal (NGT), New Delhi passed the <u>order dated 17.5.24</u>, the relevant portion is as under: "8... We further find from the report that:</p> <p>i. Department of Water Supply and Sanitation got the ground water samples analyzed from 337 locations taking reference locations from Central Ground Water Board (CGWB).</p> <p>ii. Out of 337 monitored sites, contamination has been noted at 34 sites for which remediation work is taken up.</p> <p>iii. We find the following deficiencies for which corrective measures are required as under:</p> <p>a. Chief Secretary, Punjab need to ensure that ground water monitoring is carried out adequately in all the districts.</p> <p>b. Performance of AIRPs/CWPPs/RO/ATM and others be furnished with the next report in reference to the efficiency in removal of contaminants. Individual and community based plants be propagated, as per need.</p> <p>c. CGWB and DWSS should jointly regularly monitor the shallow and deep water sources. It should also be ensured that contaminant does not bio- magnify in food chain including milk and vegetables/crops. Regular health check-ups should also be conducted in the contaminant site areas to monitor health of the citizens.</p> <p>9. In view of the above, we require the State of Punjab to take appropriate remedial action and submit action taken report keeping in view the observations made above at least one week before the next date of hearing by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.</p> <p>10. List on 24.09.2024."</p> <div style="text-align: center;">  <p>Secretary to Govt. of Punjab Deptt. of Science, Technology & Environment Chandigarh</p> </div>	<p>Reply by DWSS</p> <p>1. In compliance to NGT <u>order dated 17.5.24</u>, It is submitted that as per the approval accorded by Ld. PSWSS sir, DWSS has submitted its information to Department of Science, Technology and Environment (being the nodal department for filing affidavit in Hon'ble NGT Court) vide letter no. <u>SPL-1</u>, dated <u>26.08.2024</u> and additional information vide letter no. <u>100-101 dt. 05.09.2024</u> Accordingly in compliance to <u>order dated 17.5.24</u>, Status/Action taken Report on the behalf of the State of Punjab was filed on 13.9.24 (<u>Annexure IV</u>) through Joint Secretary to Government of Punjab, Department of Science, Technology and Environment by incorporating DWSS reply also.</p> <p>2. Thereafter a VC was held on 22.09.2024 under the chairmanship of Ld. Chief Secretary Sir, Punjab regarding the above cited matter which was attended by EE (WQ). During the VC, AAG Sh. Sandeep Bajaj raised concerns regarding 16 contaminated sites falling in the jurisdiction of Department of Local Bodies and potential impact of contamination of Water in the food chain which was related to Department of Agriculture. Ld. Special Chief Secretary, Agriculture, Govt. of Punjab, apprised that Department of Agriculture and Farmer Welfare has taken Punjab Biotechnology Incubator (PBTI, SAS Nagar) on board to conduct a study in this regard. It was decided during the VC that Joint Secretary to Govt. of Punjab, Department of Science, Technology and Environment, on behalf of the State of Punjab, may file an additional affidavit covering the reply of the Department of Local Bodies regarding 16 contaminated sites falling in its jurisdiction and also including study by Department of Agriculture regarding potential impact of contamination of Water in the food chain before the next date of NGT hearing i.e. 24.09.2024.</p> <p>3. Accordingly In compliance to the NGT</p>

		<p>order dated 17.5.24, an additional affidavit was filed in Hon'ble Court dated 23.9.24 by Joint Secretary to Govt. of Punjab, Department of Science, Technology and Environment <u>Annexure V</u>.</p> <p>Therefore, in compliance of the NGT order dated 17.05.2024, affidavit dated 13.09.2024 and additional affidavit dated 23.09.2024 was filed in the Hon'ble NGT court by State of Punjab through Joint Secretary, Department of Science, Technology and Environment.</p>
<p>24.09.2024</p>	<p>During the hearing held on 24.09.2024, the Hon'ble NGT has passed the orders which are as under:</p> <p>"1. Status/Action Taken Report dated 13.09.2024 has been filed by the State of Punjab. Learned AAG submits that the aforesaid status Report covers 18 locations falling under the jurisdiction of Department of Water Supply and Sanitation. He submits that another report has been filed yesterday covering the 16 locations falling under the purview of Department of Local Government. The second report filed yesterday has not come on record because it was filed belatedly. Let the report filed by the State of Punjab yesterday be placed on record.</p> <p>2. Learned AAG has also submitted that on the next date the Secretary, Environment, State of Punjab will virtually remain present to appraise the Tribunal."</p> <p>The next date of hearing is 17.01.2025."</p>	<p>1. It is humbly submitted that the compliance of the NGT courts order dated 17.5.24 has already been done by the State of Punjab by filing affidavit dated 13.09.2024 and additional affidavit dated 23.09.2024 in the Hon'ble NGT Court.</p> <p>2. In continuation to the NGT Court's order dated 24.09.2024, PPCB vide no. 25927-29 dated 14.10.2024 has written a letter to DWSS and accordingly as per the approval accorded vide e-file no. 656970 at Note #109, a letter has been sent to Chairman, PPCB vide O/o CE (South)-cum-Advisor (WQ) letter no 141-142 dated 04.12.2024 (Annexure III), requesting them to directly take up the matter with Administrative Secretary, Department of Science, Technology and Environment in consultation with Learned AAG for further necessary action.</p>
<p>18.12.2024</p>	<p>Letter received from Member Secretary, PPCB vide no. 31614-17 dated 18.12.2024 -(PUC) with the request as under:</p> <p>"It is, therefore, requested to issue necessary instructions to the officers concerned to apprise the Secretary, Science, Technology and Environment about the latest status report of your department in reference to the subject cited case and also to participate in the proceedings to be held before the Hon'ble NGT through Virtual mode on 17.01.2025"</p> <p style="text-align: center;">  Secretary to Govt. of Punjab Deptt. of Science, Technology & Environment Chandigarh </p>	<p>1. It is submitted that in compliance of Hon'ble NGT court order dated 17.05.2024, the joint compliance of all the Departments in the form of affidavit dated 13.09.2024 has already been submitted which has also been taken up on record by Hon'ble NGT court during hearing dated 24.9.2024. The relevant portion of the compliance done by DWSS is reproduced as under:</p> <p>a. It is submitted that 34 locations were found contaminated after the analysis of samples collected from 337 locations. Out of 34 contaminated locations, 18 locations fall under the preview of Department of Water Supply and Sanitation, whereas 16 locations fall under the preview of the Department of Local</p>

Government.

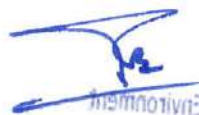
- b. Out of the 18 locations which fall under the jurisdiction of Department of Water Supply and Sanitation, 2 locations namely Chundi Kalan & Bhugrana of District Fatehgarh Sahib have recently been covered with the Large Surface Water Project Nanowal and one location namely Sangatpura of District Patiala has been attached with adjoining Water Supply Scheme of Laloda, District Patiala which is supplying potable water. The Test Reports of these 3 locations were already annexed with the affidavit filed in the Hon'ble NGT court dated 13.09.2024 (as Annexure-B)

- c. As regards, the performance of AIRPs/CWPP/ROs installed and their efficiency for the remaining 15 site locations of DWSS, the samples of raw water as well as treated water were collected and got analyzed in the NABL accredited laboratory, which reveals that all the Plants are functioning well and giving satisfactory results. These plants have been found efficient in the removal of contaminants from the sources of the Department of Water Supply and Sanitation and potable drinking water is being provided through these plants. The Test Results as referred to above are also annexed with the affidavit dated 13.09.2024 filed in the Hon'ble NGT court (as Annexure-C)

2. In compliance to Point 8 iii(c) of the NGT order dated 17.5.24, it is informed that:

- a. Department of Water Supply and Sanitation has already physically verified the 337 locations (Which have been endorsed by Central Ground Water Board) thereby establishing collaboration between both the Departments (CGWB & DWSS). Both the departments of Central and State Government are now continuously sharing data. This status has already been filed in the affidavit dated 13.09.2024 by Joint Secretary to Government of Punjab, Department of Science Technology and Environment.

- b. The water quality data sharing



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		<p>between DWSS (Deep tubewells) and CGWB (Shallow Tubewells) till date is attached as <u>Annexure VI</u>.</p> <p><i>Note: That data sharing analysis beyond 337 locations between two Departments was not considered as a part of affidavit because it further confuses the court.</i></p> <p>4. In compliance to Point 8 iii(c) of the NGT order dated 17.5.24, it is informed that:</p> <ul style="list-style-type: none">a. Director Health and Family Welfare had already conducted the health checkup camps in the contaminated sites of both the Departments i.e. 18 contaminated sites of Department of Water Supply and Sanitation and 16 sites of Department of Local Government.b. Now Director Health and family welfare has again issued directions to the concerned civil surgeon vide letter No. pollution control /Pb/2024/15-35 dated 23.12.2024 (<u>Annexure VII</u>) for again conducting Health checkup camps in the 18 and 16 contaminated sites of Department of Water Supply and Sanitation and Local Government respectively.
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Status of 18 Habitations of DWSS- NGT Case OA 676/2023

SR no	Name of district	Name of division as per DWSS	Name of block as per DWSS	Name of location of CWGD	Name of Scheme/ Habitation as per DWSS	Contaminated Parameters in 18 Locations	Status of mitigation Measures taken by DWSS	Quality of Water after treatment	Remarks
1	2	3	4	5	6	7	8	9	
1	Fatehgarh Sahib	Fatehgarh Sahib	Kheera	Churna Kalan	Churna Kalan	Fluoride	Surface Water Project National	Possible	Water Quality of Surface Water Project attached at Annexure B
2	Fatehgarh Sahib	Fatehgarh Sahib	Kheera	Bharyana	Bharyana	Fluoride	Surface Water Project National	Possible	Water Quality of Surface Water Project attached at Annexure B
3	Patala	Patala, Div-1	Nasoh	Sangarpura	Sangarpura	Uranium	Attached with W/s Scheme Taluka	Possible	Water Quality of Village Talukas attached at Annexure B
4	Amritsar	Amritsar Div-1	Ajnala	Urdhan	Urdhan	Arsenic	AIRP	Possible	Water Quality of AIRP (Raw & Treated water) is attached at Annexure C
5	Amritsar	Amritsar Div-1	Ajnala	Gagga Mahul	Gagga Mahul	Arsenic	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
6	Tarn Taran	Tarn Taran no. - 2	Khadour Sahib	Gandwal Sahib	Gandwal Sahib	Arsenic	RO Plant	Possible	Water Quality of RO plant (Raw & Treated water) is attached at Annexure C
7	Patala	Rajpura	Shambhu Kalan	Thaha	Thaha	Fluoride	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
8	Patala	Rajpura	Ghannur	Kami Kalan	Kami Kalan	Fluoride, Sulphate	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
9	Patala	Rajpura	Ghannur	Ladhara	Ladhara Kalan	Sulphate	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
10	Patala	Rajpura	Sankur	Bir Kauli	Bir Kauli	Fluoride, Sulphate	RO Plant	Possible	Water Quality of RO plant (Raw & Treated water) is attached at Annexure C
11	Patala	Rajpura	Ghannur	Lohayhen	Lohayhen	Uranium, Sulphate, Hardness	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
12	Patala	Rajpura	Shambhu Kalan	Rajpura	Rajpura	Sulphate	CWPP	Possible	Water Quality of CWPP (Raw & Treated water) is attached at Annexure C
13	Ludhiana	Khanna	Doraha	Begowal	Begowal	Selenium	RO Plant	Possible	Water Quality of RO plant (Raw & Treated water) is attached at Annexure C
14	Ludhiana	Khanna	Doraha	Doraha	Begowal	Selenium	RO Plant	Possible	Water Quality of RO plant (Raw & Treated water) is attached at Annexure C

SR no	Name of district	Name of division as per DWSS	Name of block as per DWSS	Name of location of CWGB	Name of Scheme/ Habitation as per DWSS	Contaminated Parameters in 18 Locations	Status of Mitigation Measures taken by DYSS	Quality of Water after treatment	Remarks
15	Sangur	Malerkotla	Dhuri	Bugra	Bugra	Uranium	RO Plant	Potable	Water Quality of RO plant (Raw & treated water) is attached at Annexure C
16	Ropar	Ropar	Roopnagar	Chak Dehra	Miani	Arsenic	RO Plant	Potable	Water Quality of RO plant (Raw & treated water) is attached at Annexure C
17	Fazilka	Fazilka	Fazilka	Deopulana	Dipulana	Nitrate	RO Plant	Potable	Water Quality of RO plant (Raw & treated water) is attached at Annexure C
18	Fazilka	Fazilka	Fazilka	Deepsingwala	Deep Singh Wala/Deep Singh wala	Schemes Non Functional and Potable water is being provided through RO Plant	RO Plant	Potable	Water Quality of RO plant (Raw & treated water) is attached at Annexure C

Notes: 1. AIRP - Arsenic - cum - Iron Removal Plant
 2. CWTP - Community Water Purification Plant
 3. RO Plant - Reverse Osmosis Plant


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 Chandigarh

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ANNEXURE C

PUNJAB WATER SUPPLY & SEWERAGE BOARD
PLOT NO.1-B, SECTOR 27-A, CHANDIGARH

To

Joint Secretary,
Department of Science, Technology and Environment,
Punjab

No. PWSSB/2024/729

Dated 10/01/2025

Subject:- O.A. No. 676 of 2023 – News Item titled "Agriculture Runoff causing groundwater pollution in Punjab Making Drinking Water unsafe Reveals Study" appearing in The Times of India dated 12.10.2023 (Fixed for 17.01.2025).

In context to above mentioned subject, it is submitted that earlier the Department of Water Supply & Sanitation shared a list of 46 sampling sites along with their latitude / longitudes vide DO letter SS/PSWSS/2024/1064 dated 07.05.2024 falling under the jurisdiction of Department of Local Government. The samples of drinking water source at these 46 locations were got collected and got analyzed in NABL accredited laboratories of DWSS. These tests were conducted for 24 parameters based upon physiochemical parameters and heavy metals parameters prescribed for the purpose of drinking water as per IS 10500: 2012 (Rev 2). Out of these 46 locations, 30 locations were found to be within permissible limits and water sample results of remaining 16 locations were found to be beyond permissible limits in various parameters and consequently, all these non-compliant locations were sealed immediately.

To provide potable drinking water at these 16 sealed locations through other nearest municipal water source, water samples from that nearest municipal water source were collected and analyzed for 24 parameters based upon physiochemical parameters and heavy metals through NABL accredited labs of DWSS. Out of these 16, results of 10 were found to be within permissible limits. Results of balance 6 water sources of respective towns Bhikhiwind, Jagraon, Nihal Singh Wala, Rahon, KothaGuru and Bhadaur, were found to be more than permissible limits.

Swift action was taken to evaluate the availability and feasibility of providing potable water to the six affected towns from alternative nearby sources. Options such as utilizing the nearest available Water Treatment Plant (WTP), installing tubewells adjacent to nearby canals, etc. were thoroughly assessed. During this evaluation, it was identified that a 50 MLD capacity WTP at Village Daudhar, near Nihal Singh Wala town, is already operational under the Department of Water Supply and Sanitation and has surplus availability of potable water. Accordingly, an MoU was signed between the departments to supply potable water to Nihal Singh Wala by tapping into the existing water supply line near the town. The work has already commenced, and potable water will be provided to the residents of Nihal Singh Wala by 14.01.2025.

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Additionally, the feasibility of providing potable water to the six affected towns by installing tubewells adjacent to nearby canals was also evaluated. As a result, tenders worth Rs. 55.84 crore have already been floated to provide potable water supply to these towns. Work orders have been issued for Bhadaur, Bhikhlind, Nihal Singh Wala, and Jagraon, with the installation expected to be completed within the next four to six months. For KothaGuru and Rahon, tenders have been technically evaluated and will be awarded by 20.01.2025. Meanwhile, potable water is being supplied to the public through municipal tankers.

Simultaneously, under the AMRUT 2.0 scheme, the groundwater supply for these six towns is being transitioned to surface water supply. Funding of Rs. 155.43 crore has already been secured to support this initiative.

The department acknowledges its core responsibility to provide a safe and reliable supply of potable water to the public and remains fully committed to fulfilling this duty.

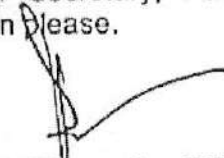
This is for your kind information further necessary action.

DA/As Above


Chief Executive Officer
Punjab W/s & Sew. Board

Endst No.: PWSSB/2024/ 730 Dated: 10/01/2025

Copy of above is forwarded to Member Secretary, Punjab Pollution Control Board for information and further necessary action please.


Chief Executive Officer
Punjab W/s & Sew. Board


Secretary to Govt. of Punjab
Deptt. of Science, Technology & Environment
Chandigarh

HFW-HLH5021/65/2024-1H5-Part(1) I/1011832/2025



Government of Punjab
Department of Health and Family Welfare
(Health-5 Branch)

To

✓ Member Secretary,
Punjab Pollution Control Board, Nabha, Distt.- Patiala.

Dated, Chandigarh; 16.01.2025

Subject:- NGT:- Original Application: 676/2023 Compliance of order dated 17.05.2024 of Hon'ble NGT. In re: News item appearing in the Times of India dated 12.10.2023 titled "Agricultural runoff causing ground water pollution in Punjab, making drinking water unsafe, reveals study" (Fixed for 17.01.2025).

Sir,

02. I am directed to invite your kind attention to letter no. 31614-17 dated 18-12-2024, in which latest status report was asked from the Department of Health and Family Welfare, Punjab. It is submitted that the health check-up camps were conducted at all the contamination sites. At 18 contamination sites, the health check-up camps were conducted by the department of Water Supply & Sanitation and at 16 contamination sites by the Punjab Water Supply & Sewerage Board. Also health check-up camps were conducted at few additional sites to find any disease related to the mentioned pollutants and to monitor the health of residents. In the report, it has been found that none of the examined population reported any symptoms related to ground water contamination, report is attached at Annexure 'A'. The health awareness activities and health check-up camps are being carried out regularly by the Department of Health and Family Welfare, Punjab.

03. This letter is being issued with the approval of competent authority.

Yours faithfully,

Under Secretary Health

No. HFW-HLH5021/65/2024-1H5-Part(1) I/1011832/2025 Dated, Chandigarh; 16.01.2025

A copy of above letter is sent to the following:-

1. Secretary, Department of Science technology & environment for information/necessary action.
2. O.S.D (Lit.) to Chief Secretary, Punjab for information only.

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Chandigarh

sd/-
Superintendent

Annexure - 1A

Reporting Format for Health Check-Ups at Contamination Site

S.No.	District Name	Name of Block	Name of Village affected	Total Population/Population examined	Main Contamination	No. of people found affected due to said contamination	Remarks
1	Moga	Nihal singh wala	Nihal singh wala	10852/265	No Contamination Uranium (N 0.03) found 34.86, Nitrate N 0.1 found 1.26, G3Calcium N 75 found 150, Magnesium N 50 found 50.5	0	
2	Bathinda	Bhagia	Kohta Gurnu Near Ajit Motor Carrage (Ward No. 22)	5500/5500	Uranium	0	
3	Kapurthala	Kapurthala	Kalra Filling Station, Kartarpur road, Bholarth, Ward no. 10	900/900	Selenium	0	
4	Kapurthala	Bholarth Muzaffar nagar	Nilowal	1238/1238	Nitrate Anions 45.74	0	
5	SBS Nagar	Muzaffar nagar	Kor Ranjhha	670/161	Nitrate Anions 45.74	0	
6	SBS Nagar	Muzaffar nagar	URDHAN	1443/217	FLUORIDE, ARSENIC	0	
7	Amritsar	Ramdass	GAGGOMAHAL	924/120	FLUORIDE, ARSENIC	0	Health education given, Public made aware regarding symptoms and effects of the contaminants
8	Amritsar	Ramdass	RAMDASS	6753/110	FLUORIDE, ARSENIC	0	
9	Amritsar	Ramdass	RAMDASS	233450/105	FLUORIDE, ARSENIC	0	

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10	Amritsar	SDH Ainala Dabwala	Ainala	21635/236	FLUORIDE, ARSENIC	0	
11	Fazilka	Kalan	Jhok Dipulana	3031/3031	Water works	0	
12	Fazilka	Abohar	Johri Mandir	295/295	taps	0	
13	Fatehgarh Sahib	Khera	Chunni Kalan	68/68	Fluride	0	
14	JALANDHAR	SHAHKOT	SHAHKOT URBAN	3244/3244	NIL	0	
15	Barnala	Tapa	Bhadour Shanti Van Kokkapura	24225/24225	Heavy Metal Uranium Sulfate Fluoride	0	
19	Faridkot	SDH KKP		2982/216		0	Nil
22				46/30	Selenium heavy metal	0	
23				42/32	Selenium heavy metal	0	
				43/40	Selenium heavy metal	0	
				362/32	Selenium heavy metal	0	
				362/31	Selenium heavy metal	0	
24		CHC Payal	Rest house Doraha	362/34	Selenium heavy metal	0	
			Gurdwara Begowal	150/20	Nitrate anion	0	
25			Sarwan service station, petrol pump, near bus stand, opposite Preet Palace Town	150/18	Nitrate anion	0	
				150/12	Nitrate anion	0	
				1250/504	Nitrate anion	0	
				1250/681	Nitrate anion	0	
26		SDH Jagraon	Back site of bus stand near truck union	1250/283	Nitrate anion	0	
				4215/4215	Uranium	0	
	Sangrur	Longowal	Bahadurpur				
27	Sangrur	Sheppur	Bugra	2536/2536	Uranium	0	Health education was given and survey was done
28	Tam Taran	Mianwind	Goindwal sahib	11264/11264	Arsenic heavy metals 0.012	0	

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29	Tam Taran	Sur Singh	Bhikhwind	12997/12997	Selenium heavy metals 0.058 mg/l Uranium heavy metals 85.77ug/l Nitrates Anions 99.06 mg/l	0	Health education was given and survey was done
30	Rupnagar	Bharatgarh	Miani	532/532	Arsenic	0	Health education was given and survey was done
31	Rupnagar	Bharatgarh	Chak Dhera Gagar Jugiya, Chadiala	95/95	Arsenic	0	
32	SAS Nagar	Derabassi	Issapur	366/366	None	0	
33	SAS Nagar	Derabassi	Issapur	2250/2250	Nitrate anions	0	
34	Patiala	Harpalpur	Kami Kalan	2090/37	Fluoride Anions Uranium Heavy Metals	0	Camp was organized, people were made aware about the health education and to drink clean drinking water
35	Patiala	Harpalpur	Loha Kheri	485/34	Sulphate Anions	0	
36	Patiala	Harpalpur	Rajgarh	1733/47	Sulphate Anions	0	
37	Patiala	Harpalpur	Lachhu Kalan	1668/29	Sulphate Anions	0	
38	Patiala	Kalo Maira	Thuha	2670/23	None	0	
39	Patiala	Kauli	Bir Kauli	300/52	Flouride and Sulphate	0	
40	Patiala	Bhadson	Sangarpura	957/146	Nil	0	

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