

Table 1: RESULTS of U in Groundwater Repeat Survey of Malwa Belt (District Bathinda)

Sr. No	Village	Source	U content in ppb
1.	Jajjal Gurdwara	Hand Pump (HP)	61.62
2.	–do–	Motor Pump (MP)	24.98
3.	Giana (Dera Giri)	Bhakra Canal Water	09.72
4.	–do–	Tube Well	92.96
5.	Malkana (Home)	MP	35.85
6.	Malkana Nath Dera	MP	35.58
7.	Raman Village	Tube Well	55.64
8.	–do- Dera Udassian	MP	34.51
9.	Jagga Ram Tirath (Road)	HP	77.55
10.	Akal University Campus	MP	44.09
11.	Guru Kashi University	HP	24.24
12.	Bhagi Bandar(Pir Khana)	HP	139.86
13.	Kot Shamir	HP	186.61
14.	Jiwan Singhwala(Bus stop)	HP	67.18
15.	Tam Kot (Mansa district)	HP	20.88

Comments:

1. Groundwater samples were collected from villages around Talwandi Sabo area of Bathinda district of Punjab (India) on Feb. 8-10 and analysed for Uranium content on March 16 using calibrated LED Flourimeter (Quantalase Make) in GND Universty, Amritsar.
2. U content varies from 9.72 ppb (Canal water) to 186.61 ppb (Hand Pump). The safe limit of uranium in groundwater is fixed to be 60 ppb by AERB (Atomic Energy Regulatory Board) in India, while other agencies fix it in much lower limits of 30 ppb (EPA, USA); 15 ppb (WHO); 9 ppb (UNSCEAR) and 1.9 ppb (ICRP). These values are purely arbitrary and not related to health hazards.
3. In comparison with WHO safe limit of 15 ppb, all Groundwater samples have higher U content.
4. During our survey of March 2012, we reported high U content in the same area in the range 69.57 to 205.62 ppb using Laser Flourimetry. Table 2 reports a comparison of both surveys. As sample sites are not exactly the same, some large scale fluctuations in data are observed along with concordance in reported data for Jajjal, Bhagi Bandar and Jagga Ram Tirth.

Table 2: Inter-comparison of U content in Groundwater samples of Bathinda District (Punjab)

Sample Code	Location	Source of Water	Uranium Conc. $\mu\text{g/l}$ (ppb)	
			Mar.2012	Mar. 2016
1.	Jajjal Gurdwara	Hand Pump (HP)	76.37	61.62
2.	Same site	Motor Driven Pump (MP)	96.1	24.98
3.	Malkana	HP	109.07	35.85 (MP)
4.	Giana (Nath Dera)	HP	69.57	
5.	Giana	Tubewell	205.62	92.96
6.	Takhatmal (Sirsa distt., Haryana)	HP	96.90	
7.	Sangat (Dabwali Rd. Bathinda)	HP	140.10	
8.	Kot Shamir	HP	86.27	186.61
9.	Bhagi Bandar	HP	129.45	139.86
10.	Talwandi Sabo(Guru Kashi University)	HP	117.82	24.24
11.	Jaga Ram Tirth	HP	82.85	77.55
12.	Jiwan Singh Wala	HP	120.07	67.18