

Ground Water Abuse In Last Decade In Ujjain District, India

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Abstract- Rise and fall in ground water levels is a characteristic cycle. Contamination of ground water is presently a shock a major worldwide issue with landfills filtering into ground water. Numerous enterprises releases close to neighborhood open channels which intersections with lakes, lakes, streams, waterways, wells and so forth. Different synthetics freed frequently steep to the cold earth water defiling it. The innate and un-controllable utilization of ground water is Deeping it overwhelmingly and in the event that it preceded with we will before long lose any desire for getting great, unadulterated, normal mineral ground water underneath our homes. A definite investigation of Ujjain locale is been done patterns are determined and here in this examination we attempted to group different spots were the utilization of ground water can be restricted so its accessibility can be shore for some more years.

Keywords- Ground water, releasing, siphoning, steep down, uncontrolled use, bunch

I. CONTRACTIONS

CGWB	-	Central Groundwater Board
EW	-	Exploration Well
mbgl	-	meters subterranean level
m amsl	-	meters above mean ocean level
PZ	-	Pizometer

II. PRESENTATION

In most recent couple of decades because of blossoming of populace the need of drinking water steep up. Filtration of stream bank is been required increasingly more to address the issues as on other hand in ground water we need commonly no filtration as its been separated by the compelling force of nature and is one of the most perfect type of water. As we as a whole realize that how and from where we get this ground water still a little figure is underneath this reveals to us how the ground water momentum streams with a limited aquifer and an unconfined spring. This has a significant part in the water table of that region.

Another inquiry comes as a main priority why Ujjain? Presently for noting this you should see the historical backdrop of the heavenly city and furthermore recollect how old the city is. Ujjain is a strict, recorded and legendary city put in the core of India in Madhya Pradesh. In old occasions it is renowned as Avantika, Vaishali, Ujjaini, Aravati and Padmavati. The world renowned Mahakaleshwar sanctuary which is excessively acclaimed for its "Bhask Aarti" is likewise arranged in Ujjain.

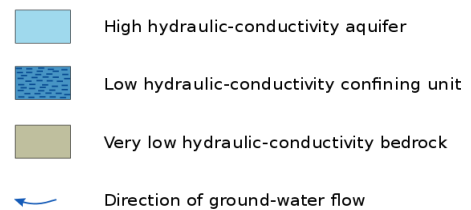
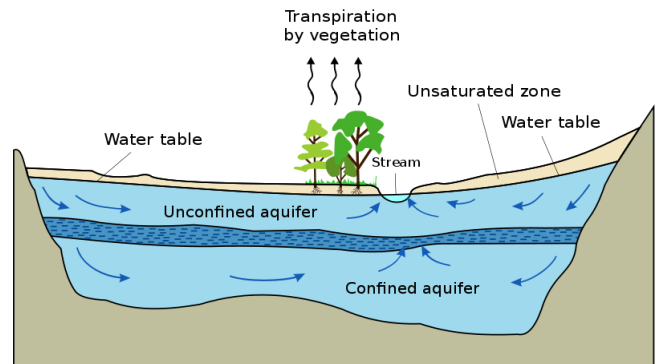


Fig. 01. Submerged flows in ground water (source – Wikipedia)

Because of quality of River Shipra the "Singhastha" for example "Kumbh Parv" which is been commended at regular intervals of which most recent were in 2016. It is accepted that drop of "Amrit" is dropped in four spots during the "Samudra Manthan" of which Ujjain is one. The powerful Lord Krishna with his sibling Balram additionally come Ujjain for their investigations to the holy person "Maharishi Sandipani" who was their instructor. Ruler Ashoka, Bhatrathari and Vikramaditya hand managed the Ujjain. Vikramaditya well known for his "judgment table" (Sinhasan Battisi) It is the origin of incredible Sanskrit artist "Kalidas" and additionally extraordinary mathematicians "Varahamihir".

Location and provincial settings: Ujjain is arranged on a one of a kind geological area from where tropic of malignancy passes. It is the 'Greenwich Mean Time' of India for Panchang. The inclining of earth at edge of 23.5 degree on its hub and topographical line of tropic of malignancy has uncommon inestimable impact making it fit for total time area. Arranged on the bank of waterway Shipra which is the main stream that heads out directly from south to north. Climate and soil condition: The city of Ujjain goes under Malwa locale which is popular for its atmosphere, which grants typical exercises all the all year. Soils of the district are of blended kind and there is no particular limit between any two sorts of soils. Profound dark soil, Lateritic soil and alluvial soil are the three distinct kinds of soil recognized. Profound dark soil, which is ripe in nature, involves major saucy of the region. Dark cotton soil is commonly found with profundity of 1 to 3 met.

III. DATA ABOUT DIFFERENT WATER BODIES OF UJJAIN CITY

Shipra River:

River Shipra is a little waterway providing water to encompassing regions of the Ujjain region (India) for homegrown and modern use. This exceptionally old stream has been of a sacrosanct significance and serves for blessed plunges on certain favorable celebrations like "Kumbh" and so forth. The fundamental tainting of this hallowed waterway is through the intensely contaminated stream Khan which goes along with it in Ujjain. The Shipra, otherwise called the Shipra, is a stream in Madhya Pradesh condition of focal India. The waterway ascends in the Vindhya Range north of Dhar, and streams south over the Malwa Plateau to join the Chambal River. It is one of the hallowed streams in Hinduism. The sacred city of Ujjain is arranged on its correct bank. At regular intervals, the Kumbh Mela celebration happens on the city's intricate riverside ghats, as do yearly festivals of the waterway goddess Shipra. There are many Hindu sanctuaries along the banks of the stream Shipra. Shipra is an enduring stream. Prior there used to be a lot of water in the waterway. Presently the waterway quits streaming following two or three months. After the storm with this reference, the word Shipra is utilized as an image of "purity"(of soul, feelings, body and so on.) or "virtue" or "lucidity". In any case, presently days the immaculateness of this waterway is totally destroyed.

Rudra Sagar:

Which is arranged at Harsiddhi Temple individuals gives salt and symbol of Nandi (bull).

Pushkar Sagar:

Which is arranged at Naliabakhal individuals give here Yellow vastra, Gold and Chana dal.

Kshir Sagar:

Which is arranged at Naisadak individuals give here sabudane ki kheer in a bowl.

Goverdhan Sagar:

Arranged at Nikas Chourha individuals give here Makhan Mishri wheat gud red fabric and material of man.

Ratnakar Sagar:

Arranged Odasa town .individuals gives fabric of ladies and enhancing material of ladies and pancharatna.

Vishnu Sagar:

Situated In ankat behind the sanctuary ramlaxaman .individuals gives Panchapatra and Idol of Vishnu.

Purushotam Sagar:

Situated near the Ankat Darwaja it is additionally called Solah Sagar People give Malpua in Chalni.

IV. HISTORY OF DIFFERENT WATER BODIES

The story behind Kshir Sagar is as per the following: In old time there was a ruler Suddhumns His better half was vararoha they were rich and they have such an office yet they are childless. At long last they have gone to dalabhya rishi is demand him to satisfy their desire. At that point he got the help from ruler Shiva master bhotbhavan booned them for a youngster and requested that he welcome the four ocean which are Kshar Sagar from Jambu Kshir Sagar from shaked vip Dadhi Sagar from Kushdiv is lost one is Iksha Sagar from Shalmaldiv and love with salt, milk, dadhi, gud this story is characterized in awantika kahnd of Skandpuran throughout the entire existence of old Ujjain there was just four Sagar in particular Kshar Kshir ikshu, Dadhi. In any case, the convention of sapta Sagar began after prolonged stretch of time so the Kshir Sagar is just a single the lake which is as yet later and each of the three are vanish at later. The four Sagar which were adored by lord suddhaumn were arranged close the rajastahl. at ongoing Rajasthaleshwar sanctuary is arranged close to the Bhagsipursa as per the assessment of neighborhood individuals there are same kund as tadag based on these data one can reasoned that there was Kshir Sagar from Kshir Sagar kunda to Bhagasipura15-19 .

V. MATERIAL AND METHODS

In the investigation part we have taken Ujjain area this is been taken as the entire region lies on plateau which don't have any tac-tonic plates and the stone is likewise hard. The elite comprises of dark cotton soil which is delicate and for the most part spillover and cutoff in floods and substantial downpours. We have taken 7 urban communities including Ujjain they are –

1. Badnagar
2. Ujjain
3. Ghatiya
4. Mahidpur
5. Khachrode
6. Tarana
7. Nagdha

In every one of these urban communities we have determined mbgl from various inspecting focuses haphazardly taken by and large from CGWB. In checking we have taken about numerous focuses as indicated by dug well dispersion over the city atleast one kilometer from one another.

VI. RESULTS AND CONVERSATIONS

Table 1 – Dug well : Water level trend pre-Monsoon 2010 to 2020

S. No.	Block	Location	Data Points	Rise/Fall(Met/year)	Intercept in meters
1.	Badnagar	Kharotia	13	-1.26	98.90
2.	Ghatia	Bachhukhera	20	-1.32	106.47
3.	Khachrode	Khachrode 1	10	-2.67	108.70
4.	Khachrode	Unhel	8	-1.33	140.07
5.	Mahidpur	Bajinath	10	-5.85	157.98
6.	Mahidpur	Delchi buzurg	9	-6.54	202.59
7.	Mahidpur	Khera Khajuria	10	-0.28	86.22
8.	Raghvi	Raghvi	8	2.78	86.31
9.	Tarana	Dablahardu	15	-2.67	134.03
10.	Tarana	Makdon	10	4.14	111.92
11.	Tarana	Rupakhedi	8	-1.01	130.50
12.	Tarana	Tarana	20	2.25	117.26
13.	Ujjain	Chandukhedi	6	3.21	127.39
14.	Ujjain	Mohanpura	8	-2.99	134.47
15.	Ujjain	Hasampura	10	-6.06	189.93
16.	Ujjain	Palkhanda	28	-1.36	102.48
17.	Ujjain	Patpala	10	4.51	85.29

Table – 2 – Shallow PZ (Pizometer) trend of water level Pre-monsoon 2010 to 2020

S. No.	Block	Location	PZ's	Data Points	Rise/fall in (m/y)	Intercept
1.	Badnagar	Bhatpachlana	S	5	0.00	8.97
2.	Badnagar	Runija	S	10	-0.726	149.14
3.	Mahidpur	Mahidpur Road	S	10	-2.873	89.151
4.	Ujjain	Ujjain	S	10	1.15	68.175

Table – 3 – Deep PZ trend of water level – Pre Monsoon : year 2010 to 2020

S. No.	Block	Location	PZ's	Data Points	Rise/fall in (m/y)	Intercept
1.	Badnagar	Runija	D	9	-3.623	270.224
2.	Khachrode	Khachrode	D	10	-2.371	97.738
3.	Khachrode	Unhel	D	8	-1.188	125.93
4.	Mahidpur	Mahidpur road	D	8	-0.680	411.31
5.	Mahidpur	Mahidpur town	D	10	-3.919	143.180
6.	Raghvi	Raghvi	D	9	-2.946	86.598
7.	Tarana	Tarana	D	8	-4.377	511.378
8.	Ujjain	Narwar	D	7	-11.674	243.117
9.	Ujjain	Panth piplai	D	6	-5.248	191.503
10.	Ujjain	Ujjain	D	8	-3.257	85.581

Table – 4 –Exploratory drilling state both CGWB and private wells –

S. No.	Block	No. of EW	Depth range	EW Elevation ranges
			mbgl	m amsl
1.	Badnagar	5	148.25 – 203.65	485 - 520
2.	Ghatiya	2	203.25 – 216.45	478 - 496
3.	Khachrode	1	191.25	490
4.	Mahidpur	1	203.10	498
5.	Tarana	1	201.30	492
6.	Ujjain rural	6	143.30 – 203.35	495 – 518
7.	Ujjain Urban	10	140.20 – 280.6	473.60 – 604.65

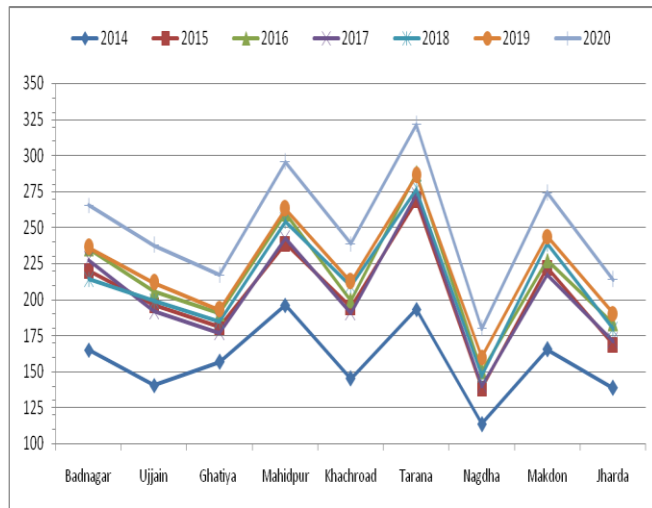
Table – 5 –Block wise exploration of wells

S. No.	Block	Exploration	Elevation	Total Depth	Longitude	Latitude
		EW	m amsl	Mbgl	m	m
1.	Badnagar	Badnagar	485	191.25	23.08	75.39
2.		Amla	513	203.45	23.01	75.33
3.		Kharsaud Khurd	499	202.1	23.12	75.46
4.		Lohana	515	203.65	22.92	75.37
5.		Runija	520	148.5	23.16	75.26
6.	Ghatia	Goyala Buzurg	478	203.25	23.28	75.71
7.		Jaithal	496	216.4	23.28	75.82
8.	Khachrode	Unhel	490	191.25	23.34	75.44
9.	Mahidpur	Khed Khajuriya	495	203.1	23.46	75.79
10.	Tarana	Sumarkhera	499	166.2	23.26	76.07
11.	Ujjain	Kakaria chirakhan	515	143.3	23.03	75.72
12.		Kithroda rao	495	202	23.08	75.84
13.		Nalwa	501	203.2	23.12	75.46
14.		Palkhanda	518	202.1	23.04	75.95
15.		Pingleshwar	507	203.65	23.23	75.85
16.		Tajpur	515	206	23.33	75.91

Table 6 – Average EW of Ujjain district year wise from 2014 to 2020

Ground water of Ujjain District depth in meters								
S. No.	Area	2014	2015	2016	2017	2018	2019	2020
1	Badnagar	165.23	219.94	235.53	227.59	214.37	236.22	265.43
2	Ujjain	140.59	196.27	206.02	191.82	199.20	211.58	237.75
3	Ghatiya	156.88	180.96	190.29	177.06	185.14	193.07	216.94
4	Mahidpur	196.18	238.93	259.75	242.22	254.27	263.04	295.57
5	Khachroad	145.05	194.88	199.33	190.70	209.36	212.42	238.69
6	Tarana	193.22	268.92	287.45	272.90	276.89	286.05	321.42
7	Nagdha	113.62	138.38	150.44	140.28	147.26	160.08	179.87
8	Makdon	165.35	222.16	227.24	217.40	238.67	243.88	274.03
9	Jharda	138.60	168.80	183.52	171.13	179.64	190.43	213.97

Graphical representation of table 6 –



The normal EW of Ujjain in the above graphical portrayal above delineates that the additional precipitation in year 2013 and 2014 permits the ground water to get topped off effectively and shows us less profundity in every single territory of locale with its least level in Nagdha 113.62 mbgl. As we further go toss the chart the year 2015 to 2019 delineates same pattern all through with least at Nagdha and Maximum at Tarana, abandoning Mahidpur which was clincher in year 2014. In this Corona year 2020 the pattern moves a smidgen because of enormous populace remaining at home washing their hands vivaciously for 20 seconds frequently. This impact occurs on fabrics and other family things as well so the utilization of ground water out of nowhere builds which give us at least 179.87 mbgl in Nagdha when contrasted with 113.62 mbgl of Nagdha in 2014. The greatest at 321.42 mbgl in Tarana in 2020 contrasted with 193.22 mbgl in Tarana in 2014. The normal precipitation in year 2018 to 2020 ascents still there is a huge dunk in ground water level to a great extent because of runoff of downpour water and uncontrolled use in Corona times.

VII. END

From the above exploration it is been presumed that this Corona year for example 2020 because of the plague the individuals quit agonizing over numerous different issues one of which is Ground water level, Washing hands, washing, washing garments, washing roads, structures, disinfection and some different employments of water increments unexpectedly which bring about increment of profundity in dug wells or EW.

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