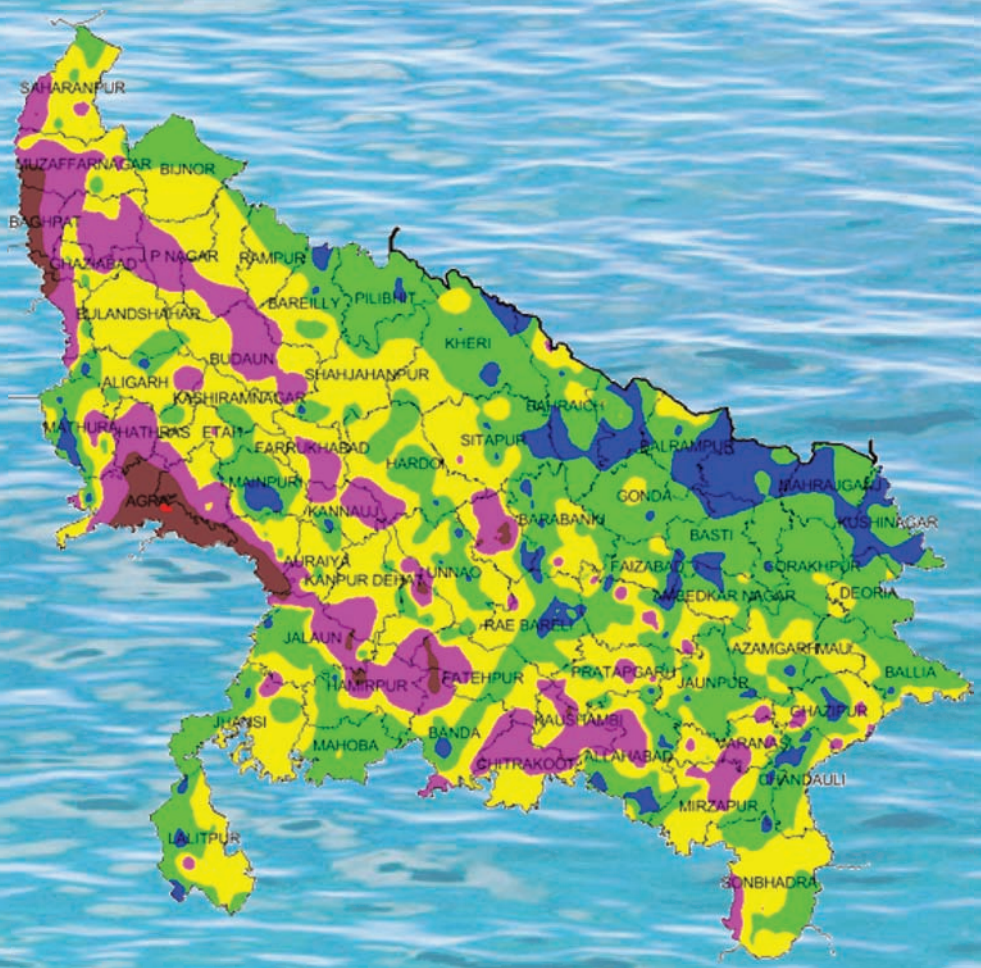
CENTRAL GROUND WATER BOARD

MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

GOVERNMENT OF INDIA



GROUND WATER YEAR BOOK
UTTAR PRADESH

(2015-2016)

December, 2016

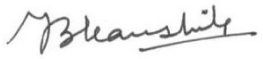
Foreword

Groundwater is the most preferred resource of water in various user sectors in India on account of its universal availability, dependability and low capital cost. The increasing dependence on ground water as a reliable source of water has resulted in indiscriminate extraction in various parts of the country without due regard to the recharging capacities of aquifers and other environmental condition. Ground water has an important role in meeting the water requirements of agriculture, industrial and domestic sectors in the state. About 78% percent of irrigation requirements in the Uttar Pradesh state are being met from ground water resources. If the present trend of the increasing demand remains incontrollable, the resource may be as strategic as are the minerals resources. Though in contrast to this, the resource of groundwater as a part of hydrologic cycle is replenishable.

The indiscriminate exploitation of groundwater has led to depletion of storage and management. There is in evident head to educate steps for sustainable ground water management and ndent head to is essential in order to avoid the adverse impact. This could be achieved only after careful monitoring of various inputs of hydrological system. Temporal variation in the Ground water system need to be studied for the scientific management of the resource. In view of this Central Ground Water Board, Northern Region, Lucknow has setup a network of 1198Ground Water Monitoring Wells all over the state to maintain a regular database. The behavior of water level is monitored four times every year in May, August, November and January. To ascertain the hydrochemical behavior of ground water, samples are collected from representative wells once a year during the month of May and samples are analysed in the chemical laboratory of the office. The data thus generated are analysed and subjected to various types of interpretation using dedicated software – GEMS (Ground Water Estimation and Management System).

The present report, Ground Water Year Book 2015 -16, is the outcome of efforts made by Dr. R.K. Prasad, Scientist 'B' (HM), Shri Anmol Sharma, Assistant Hydrogeologist and Puja Mehrotra, Scientist 'D' Chemist. Their efforts in compilation of report are praise - worthy. The input data is generated by the untiring efforts of technical personnel in the field and chemical lab.

It is hoped that the information and data presented will be of immense use to planners and ground water managers associated with the development and management of groundwater resources in the state.



(Y.B. Kaushik)
Regional Director

GROUND WATER YEAR BOOK
UTTAR PRADESH
(2015 -16)

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EXECUTIVE SUMMARY

- The state of Uttar Pradesh covering an area of 2, 40,928Sq. km. forms a part of the vast Gangetic plain. It is a south easterly sloping flat terrain with a gentle, variable land slope, steeper in western part and flattening eastward. The river Ganga is the major drainage with Yamuna, Ram Ganga, Gomti and Ghagra as its main tributaries. The state consists of two geomorphic units (i) Central Ganga plains (ii) Bundelkhand plateau. The Central Ganga plain covers nearly 85% area and is underlain by a thick pile of unconsolidated alluvial sediments of Quaternary age overlying the Precambrian basement. These sediments consist of sands of different grades with clay, silt and occasional gravel and Kankar. The southern part of the state comprises of hard rocks of Bijawar and Vindhyan groups. The alluvium forms a very rich reservoir of ground water. The exploratory data have shown that ground water occurs in a multiple aquifer system which can broadly be divided into four groups. The shallow aquifer is being extensively exploited and hence is under heavy stress.
- The State is covered with rich fertile soil and underlain by a large thickness of alluvium making it one of the richest ground water repositories of the world. The State being the most populous in the country with a population density of 649 persons per sq. km and a high rate of population growth (26%), its demand for water is soaring. Also due to industrialization, urbanization and modern farming practices, its quality is also at stake. To meet this high irrigational requirement, water resources are being increasingly developed. Ground water contributes to about 71% of the irrigation needs of the State. The indiscriminate development of ground water has resulted in depletion of groundwater storage and lowering of water level in certain areas on one hand. On other side the surface water development in areas having shallow water level has resulted in water logging and soil salinisation.
- All these negative impacts on the resource give rise to the need for regular and continuous monitoring of the ground water regime. The monitoring of hydrological regime is of utmost importance for scientific and planned management of the resource. In order to manage the water resources and plan development on scientific lines, a data base needs to be generated. In view of relative importance of this valuable resource, it becomes imperative to adopt sound and scientific management of groundwater resources.
- The State experiences a sub-humid and tropical climate with three distinct seasons summer, monsoon & winter. The summer is hot and dry with maximum daily temperature ranging between 38^0C to 43^0C. The monsoon starts retreating from the State in late September or early October. There is large variation in temperature both in time and space. The rainfall is variable over the State ranging from maximum 1002.1 to minimum of 194.3 mm at Bijnor and Allahabad district respectively. During the monsoon the eastern region has received the maximum monsoonal rainfall of 499.8mm whereas Bundelkhand region has received the minimum rainfall of 348.0mm. The central and western region has received 365.00 and 440.8mm respectively. The normal rainfall of the State is 947.4 mm and the average annual rainfall for the year 2015 is 578.4mm. The amount of monsoonal rainfall received during 2015 is 443.6mm. During the monsoon period only 53.50 percent of rainfall has been recorded as a result 50 districts was declared drought.
- Central Ground Water Board has been monitoring the ground water regime since 1969 and has generated a vast database to understand the behavior of water levels in response to recharge to ground water storage or withdrawal from it. The data is being analysed and reported annually. The present report is one in the series. There are 1198 Ground Water Monitoring Wells as on 31.3.16 out of which 298 are piezometers and 900 open dug wells.

Depth to Water Level during 2015 -16

The depth to water level was found to vary from season to season over the state. The percentage of wells showing water level depth of different range during the year is summarized below:

DEPTH RANGE (m)	No. and Percentage of wells			
	May'15	***Aug'15***	***Nov'15***	***Jan'16***
0-2	33(3.85%)	146(15.6%)	60(6.51%)	26(2.99%)
2-5	285(33.25%)	305(32.6%)	304(33.0%)	280(32.22%)
5-10	344(40.14%)	308(33.0%)	339 (36.8%)	348(40.0%)
10-20	164(19.13%)	142(15.2%)	185(20.08%)	181(20.82%)
>20	30(3.5%)	31(3.32%)	32(3.47%)	33(3.79%)

Pre monsoon Depth to Water Level (May – 15)

- The pre-monsoon (May -15) period as it appears after one complete cycle of inputs and outputs. Water level in the range of 2 - 5 mbgl is observed in 285 Monitoring Wells (about 33.25%). Along the Terai belt, extending from parts of Saharnapur to Siddarthnagar and upto Ballia in eastern U.P. through major parts of Lakhimpur Kheri, Bahraich, Shrawasti, Balrampur, Deoria, Kushinagar, Sitapur, Basti, Gonda, Faizabad, Maharajganj and Pilibhit districts, the water level ranges from 2 - 5 m bgl. There are patches in Aligarh, Allahabad, Auraiya, Barabanki, Bareilly, Chandauli, Jalaun, Hardoi, Hathras, Kanpur Nagar, Kanpur Dehat, Lalitpur, Mainpuri, Jhansi, Mathura, Moradabad, Rae Bareli, Rampur, Sahajahanpur and Unnao districts showing depth to water levels from 2 to 5 mbgl. About 344nos of wells (40.14 %) show water level between 5 and 10 m bgl in almost all parts of U.P.
- 164 wells (about 19.13%), show water levels between 10 and 20m bgl along the Ganga river. The water levels are generally 10-20m bgl in Kanpur, Mirzapur, Kaushambi, Fatehpur, Kaushambi and Allahabad districts. Similarly, all along river Yamuna right from Mathura to Allahabad district, a narrow strip shows deeper water levels in the range of 10 - 20 m bgl. This strip widens at Agra, Fatehpur, Hamirpur, Chitrakoot and Banda districts. Along the Betwa river, a tributary of Yamuna river, the deeper water levels are encountered.
- Only 30 (about 3.5%) Monitoring Wells fall in the range of more than 20 m bgl water level in isolated patches, in parts of Agra upto Kaushambi through Etawah, Banda, Fatehpur, Jalaun, and along Betwa river in Hamirpur district. Deeper levels owe to the ravinous tract along these rivers.

Depth to Water Level –August 2015

- The water level during August indicates the immediate impact of rainfall on ground water storage. The water level rises in response to rainfall.
- The distribution of water level from less than 2 m bgl to 10 mbgl shows the three ranges of 0–2, 2–5, and 5–10 mbgl occurring in 15.6%, 32.6%, and 33.0% wells respectively. Deeper water level areas of 10 – 20 mbgl have reduced to 15.2% but occur in the same areas along the River Yamuna.
- The depth to water levels from 0 to 2 m bgl is found only in 146 wells (15.6%) mainly in Saryu and parts of Gandak canal command areas.
- Water level in the range of 2-5 m bgl is observed in 305 wells (32.6%) in most districts of the state except in western U.P.

- The depth to water levels from 5 to 10 m bgl occurs all along the Ganga, Yamuna and Ganga-Yamuna interfluve area in patches right from Saharanpur upto Sonbhadra district. Along Ram Ganga and Betwa rivers water level falls in this range. A total no. of 308 wells (33.0%) fall in this category.
- The water levels between 10 and 20m bgl. are observed at 142 wells (15.2%). This range is encountered mostly along the Yamuna river from Mathura upto Allahabad and upto part of Varanasi along Ganga river.

Post Monsoon Depth to Water Level (November 2015)

- The water level starts receding gradually after August with lateral flow of ground water due to change in hydraulic conditions with recession of monsoon and ground water storage. The water level stabilizes by November and there after natural out flow reduces considerably.
- The depth to water level (November) from 0 to 2 m bgl. is observed in 60,(6.51% of the monitored wells) in patches in Mainpuri, Kannuj, Unnao, Banda, Bahraich, Balrampur, Siddharth Nagar, Sultanpur, Azamgarh, Ghazipur, Mau, Ballia and Chandauli districts.
- A large number of wells i.e., 304(about 33.0% of the monitored wells) show depth to water levels from 2 to 5 m bgl. Largest area of state is covered under this category. This range is observed in most parts of the districts in Terai, Eastern U.P. and Central U.P. and few districts of Bundelkhand region. Along the Gomti, Ghaghra and Sharda rivers, water level ranges from 2 to 5 mbgl.
- The water levels between 5 and 10 m bgl. is observed in 339 wells (36.8%) in Western, Central & Southern U.P. The water levels of 10 to 20 m bgl is noticed in 185 wells(20.08%), mostly along the Yamuna river upto Varanasi, through Mathura, Agra, Kanpur, Jalaun, Fatehpur, Hamirpur, Chitrakoot and Banda districts. The depth range of 20 m bgl and more is found only along the Yamuna river between Agra and Hamirpur and Bagpat, Etawah, Fatehpur, Jalaun, Hamirpur and Lucknow districts.

Depth to Water Level – January 2016

- Winter season is the peak season of ground water abstraction for Rabi cultivation. Consequently bulk of ground water storage is depleted during this season which is well reflected in the water level measurement during January 2016.
- The water logged area showing depth to water level in the range of 0-2 mbgl has reduced to 2.99%. Water levels in the range of 2–5 and 5-10 mbgl are predominant during this period as reflected at 32.22% and 40.0% of monitored wells respectively.
- The moderate water level zone remains at 20.82%. The very deep water level occurs in 3.79% wells. Thus there seems to be a balance between the input and output in these areas.
- The water level in the range of 0 - 2 mbgl is observed as isolated patches in Mathura, Mainpuri, Kannauj, Jalaun, Rae Bareli, Kehri, Balrampur, Bahraich and Ghazipur districts.

Seasonal Fluctuation of Water Level During 2015 -16

May 2015 – November 2015

- The difference between the pre and post-monsoon water level of the year is the most important seasonal fluctuation which gives a clear picture of groundwater potential. The depth to water level data during pre and post monsoon (May 2015-November 2015) of districts indicate a rise in water level in almost 56.67%of the wells indicating monsoon recharge to ground water
- There is a general rise in water levels from 0 to 2 m as noticed at385 (50.39%) wells. This rise is seen in almost all the districts of the state except North Central part of the State.

- The rise in water levels in the range of 2 - 4 m is observed in 43 wells (5.62%).This range is observed mostly in eastern and parts of central and southern U.P. But their spatial extent is limited to patches and is confined in Jalaun, Hamirpur, Banda, Chitrakoot of Bundelkhand region and Ballia, Faizabad, Ghaziabad, Mau and Pratapgarh districts of Poorvanchal.
- The rise of more than 4 m is observed in 5 wells (0.65%), covering few parts of hard rock areas of Allahabad, Chandauli, Chitrakoot, Fatehpur, Hamirpur, Jalaun, Jhansi, Mirzapur, Pratapgarh, Sonbhadra and Varanasi districts.
- During pre-monsoon period, 324 wells (42.40%) shows decline in water level. Fall of 0 to 2 m in water level is observed in 294 wells (38.48%) in isolated patches.
- Fall of 2 to 4 m is noticed only in 23 wells and fall of > 4 m is observed only in 7 wells. The ground water has been recharged in most parts of the State and the quantum of recharge through rise in water level to a tune of 0-4m.

May 2015 – January 2016

By January the rainfall infiltration starts dissipating and ground water extraction which had come down during the monsoon also starts building up. But the rise in water level continues though at a lower scale.

- Number of wells showing decline of 0-2m in water level from May 2015 to November 2015 and May 2015 to January 2016 from 50.39 to 36.82% respectively.
- Percentage of analysed wells showing rise of water level in the range of 2-4 m has decreased from 5.62 – 2.2 in May'2015 to November'2015 and to January'2016 respectively and number of wells showing rise of water level of more than 4 m has remained same of 0.65%.
- The overall picture of change of groundwater storage over the entire State during 2015 which emerged from the analysis of pre and post monsoon water level observation and water level fluctuation during May 15 and January 16 has been summarized as follows.

Fluctuation Change of Groundwater Level in U.P. (2015-16)

Magnitude of Change (m)	May'15 – Nov'15		May'15 – Jan'16	
	Rise (%)	Fall (%)	Rise (%)	Fall (%)
0-2	50.39	38.48	36.82	53.10
2-4	5.62	3.0	2.2	5.79
>4	0.65	0.9	0	1.37

Annual Fluctuation

The seasonal fluctuation in the water level occurs due to rainfall and irrigation as the two main factors during different periods of the year it is the annual fluctuation which gives the net result of one whole cycle of recharge and discharge that has taken place during one year. An annual decline indicates that ground water extraction has been in excess of the rainfall recharge in broad terms.

Annual Fluctuation During May 2014 -15

The water level data collected during May 2015 has been compared with May 2014 data to evaluate the rise and fall in water levels since last one year. The wells have been categorized depending on rise and fall in water levels. It is analysed that 245 no. (30.7%) monitoring wells show fall and 545 no.(68.2%) show rise in water level.

- The fall of 0 - 2 m is observed in 496 (61.76%) monitoring wells in almost all parts of the state. This fall is prominent in Agra, Aligarh, Ambedkar Nagar, Auraiya, Balrampur, Banda,

Barabanki, Bareilly, Bijnor, Budaun, Deoria, Etawah, Faizabad, Firozabad, Ghazipur, Gonda, Hathras ,Jhansi, Kanpur Nagar, Kannauj, G.B. Nagar, Kheri, Kushinagar, Maharajganj, Mau, Mathura, Pilibhit, Meerut, Raebareli, St. Kabir Nagar, Shahjahanpur, Siddhartha Nagar, Shrawasti, Sitapur, Sultanpur and Unnao districts.

- ❖ Fall of higher magnitude (2 to 4 m in water level) as compared to May'2015 is observed in 49 monitoring wells and only 8 wells shows fall more than 4 m.
- ❖ A rise of 0 - 2 m in water level is observed as patches in 215 monitoring wells (26.77%) in Rampur, Hathras, Kannauj Jhansi and Barabanki districts.
- ❖ A rise of 2-4 m in water level is observed in 21 Monitoring wells (2.61%) and rise of more than 4 m is seen in Monitoring 7 wells in small patches in Agra, Mathura, Jalaun, Hamirpur, Fatehpur, Mirzapur, and Raebareli districts.

Fluctuation During November 2014 -15:

The water level data collected during November 2015 has been compared with November 2014 data to evaluate the rise and fall in water levels since last one year. It is observed that 168 wells (21.21%) show rise and 620 no. (78.28%) wells show fall in water level. Since the state has received deficient to scanty monsoonal rainfall resulting in to decline of groundwater level.

- ❖ A rise of 0 -2 m, in water levels, is observed at 146 wells (18.43%). Rise of 0 to 2 m is observed in parts of Aligarh, Allahabad, Ambedkarnagar, Auraiya, Banda, Chandauli, Chitrakoot, Fatehpur, Jalaun, Jaunpur, Kaushambi and Sonbhadra district.
- ❖ A rise of 2 -4 m is observed at only 11 wells (1.38%) and rise of more than 4m is observed only at Fatehpur. The fall of 0 -2 m in levels is observed in 503 wells (63.5%) mostly in districts of Terai region and few parts of western U.P. Most parts of districts- Aligarh, Ambedkar Nagar, Behraich, Ballia, Barabanki, Basti, Bareilly, Bijnor, Budaun, Bulandsahar, Deoria, Etawah, Farrukhabad, Faizabad, Ghaziabad, G.B. Nagar, Ghazipur, Gonda, Hardoi, Jhansi, Kannauj, Kanpur Nagar, Kushinagar, Mathura, Muzaffar Nagar, Pilibhit, Raebareli, St. Kabir Nagar, Shrawasti, Siddhartha Nagar, Shahjahanpur, Sitapur, and Unnao .
- ❖ A fall of 2 - 4m is observed at 110 wells (12.75%). Fall in water level > 4 m is found in 16 wells (2.0%).
- ❖ The overall status of annual fluctuation in the State is summarized in the following table.

Annual Fluctuation in Water Level During 2015 –16, U.P.

FLUCTUATION RANGE	May 14 - May 15		August 14 - August 15		November 14 - November 15		January 15 - January 16	
	Rise (%)	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*
0-2	215 (26.77%)	496 (61.76%)	186 (22.90%)	457 (56.28%)	146 (18.4%)	503 (63.5%)	91 (14.51%)	442 (70.49%)
2-4	21 (2.61%)	49 (6.1%)	21 (2.58%)	110 (13.54%)	11 (1.38%)	101 (12.75%)	4 (0.63%)	75 (11.96%)
>4	7 (0.87%)	8 (0.99)	9 (1.10%)	25 (3.0%)	11 (1.38%)	16 (2.0%)	2 (0.31%)	11 (1.75%)
TOTAL	243 (30.3%)	553 (68.86%)	216 (26.6%)	592 (72.9%)	168 (21.2%)	620 (78.28%)	97 (15.47%)	528 (84.2%)

Fluctuation form the Decadal Mean During 2015 -16

The fluctuations in water level described earlier are very much dependent on the rainfall and give a very short term picture. In order to remove the rainfall anomalies the long term water level is considered as this would normalize the erratic highs and lows.

Mean May (2005-14) - May 2015

The pre-monsoon water level data for 2015 has been compared to decadal mean (2005-14) for pre-monsoon periods. The analysed data show total of 400 no. (47.6%) wells show rise and 437 no.(52.08%) show fall in water level. It is observed that 395 no. Monitoring wells (47.0 %) show a fall of 0-2 m.

- Fall of higher magnitude is found along Yamuna River. A fall in water levels between 2-4 m is observed in 37 Monitoring wells (4.41%) in major parts of Allahabad, Auraiya, Budaun, Bulandshahr, Chitrakoot, Farrukhabad, Ghaziabad, Ghazipur, Hardoi, Hathras, Jalaun, Jhansi, Kanpurdehat, Kanpur nagar, Lucknow, Mathura, Mau, Meerut, Muzaffar Nagar and Saharanpur, districts. Few patches showing a fall of more than 4m in the water levels, with respect to decadal mean of May, are seen in 5 Monitoring wells.
- There is a rise in water level from 0 to 2 m with respect to decadal mean of May in 344(41.0%) Monitoring wells.
- Rise of 2 - 4 m is observed at only 46 Monitoring wells and rise of more than 4 m is observed in 10 Monitoring wells.

Mean November (2005-14) – November 2015:

The average water level of last 10 years (2005-14) for each monitoring wells for the month of November has been evaluated and compared with water level data for November'15. There is a rise in water level in 159 nos. wells (17.54%) and fall in water level is observed in 747 Nos. of wells (82.45%).Rise in DWL is predominant in parts of most districts of central, western and southern U.P. Fall is observed majority in most districts of Terai region, eastern, south eastern, southern, western and parts of central U.P.

- The rise between 0 and 2 m in water levels is observed in 144 wells (15.89%). This range is mostly observed in parts of Agra, Aligarh, Allahabad, Auraiya, Azamgarh, Ambedkar Nagar, Bahraich, Ballia, Balrampur, Banda, Barabanki, Basti, Chandauli, Etah, Etawah, Faizabad, Farrukhabad, Fatehpur, Firozabad, Ghaziabad, Ghazipur, Gonda, Hamirpur, Hardoi, Jalaun, Jaunpur, Jhansi, Lalitpur, Lucknow, Mahoba, Mainpuri, Mathura, Meerut, Mirzapur, Pratapgarh, Raebareli, Saharanpur, Sultanpur, Shahjahanpur, Unnao and Varanasi districts. Rise of 2 -4 m is observed only at 9 wells (0.99%) and rise of more than 4m is noticed only at 6 wells.
- The fall of 0 - 2 m in water levels are noticed in 540 wells (59.60%). Districts showing major parts as decline of 0-2 m are Aligarh, Allahabad, Ambedkar Nagar, Azamgarh, Auraiya, Ballia, Bahraich, Balrampur, Barabanki, Basti, Bijnor, Budaun, Bulandsahar, Chandauli, Chitrakoot, Deoria, Faizabad, Fatehpur, Firozabad, G.B. Nagar, Ghaziabad, Gonda, Gorakhpur, Ghazipur, Hamirpur, Hardoi, Jhansi, J.P. Nagar, Jaunpur, Kannauj, Kheri,, Kaushambi, Kanpur Dehat, Kanpur Nagar, Lalitpur, Lucknow, Maharajganj, Mahoba, Mainpuri, Mau, Meerut, Muzaffarnagar, Pratapgarh, Pilibhit, Rae Bareli, St. Kabir Nagar, Sonbhadra, Sultanpur, Shrawasti, Sitapur, Unnao and Varanasi .
- The fall of 2 - 4 m is observed in 172 wells (18.98%) mainly in Agra, Allahabad, Ballia, Chitrakoot, G.B. Nagar, Ghaziabad, Ghazipur, Jaunpur, Lalitpur, Pratapgarh, St. Ravidasnagar, Sultanpur, Meerut, Mirzapur and Varanasi districts. Fall of > 4 m in water level is observed in 35no wells (3.86%) mainly in Agra, Allahabad, Auraiya, Banda,

Chitrakoot, Fatehpur, G.B. Nagar, Jalaun, Jaunpur, Lalitpur, Lucknow, Mirzapur, Moradabad, Sultanpur, Unnao and Varanasi districts.

- Fall of more than 4 m in water level is observed in 35no wells (3.86%) mainly in Agra, Allahabad, Auraiya, Banda, Chitrakoot, Fatehpur, G.B. Nagar, Jalaun, Jaunpur, Lalitpur, Lucknow, Mirzapur, Moradabad, Sultanpur, Unnao and Varanasi districts.

The status for the State as a whole is summarized as under:

DECADAL FLUCTUATION 2014 – 15, U.P.

FLUCTUATION RANGE	Mean May (2005-14) to May'15		Mean August(2005-14) to August'15		Mean Nov(2005-14) to November'15		Mean Jan(2006-15) to January'16	
	Rise (%)	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*
0-2	344 (41.0%)	395 (47.0%)	190 (21.2%)	503 (56.8%)	144 (15.9%)	540 (59.6%)	86 (10.0%)	567 (66.2%)
2-4	46 (5.48%)	37 (4.41%)	15 (1.67%)	149 (16.6%)	9 (0.99%)	172 (18.9%)	7 (0.81%)	162 (18.9%)
>-4	10 (1.19%)	5 (0.59%)	8 (0.89%)	33 (3.67%)	6 (0.66%)	35 (3.86%)	3 (0.35%)	32 (3.73%)
Total	400 (47.6%)	437 (52.1%)	213 (23.7%)	685 (76.3%)	159 (17.5%)	747 (82.5%)	96 (11.2%)	761 (88.8%)

Trend of Water Level:

The seasonal, annual and decadal fluctuations give an idea of the behavior of the water level but are subjected to many anomalous factors which give a short term picture. To have a true picture where highs and lows are balanced out, the long term trend for ten years 2006 to 2015 has been worked out and analyzed on the basis of DWL data of Ground Water Monitoring Wells. The declining trend data during Pre-monsoon for the period 2006-2015 are summarized as follows:

Percentage of wells showing Decline in Pre-monsoon Water Level (cm/year)		
0-20cm	**20-40 cm**	**>40 cm**
74.57 %	16.38 %	9.0 %

- There is a declining trend in 99.95% of the monitoring wells covering over 10 years period (Pre-monsoon for the period 2006 -2015).
- Decline of 0 – 20 cm/yr is most extensive covering 74.57% wells followed by 20 – 40 cm/yr in 16.38% wells and >40 cm/yr in 9.0%.
- The low decline is spread all over the state but dominant in eastern and central parts and along Terai belt of the state. Higher decline occurs in most of the districts of western and southern regions.
- There is a declining trend in 99.99% of the monitoring wells over 10 years period. (post-monsoon for the period 2006 -2015).
- Decline of 0 – 20 cm/yr is most extensive covering 70.23% wells followed by 20 – 40 cm/yr in 17.31% wells and >40 cm/yr also in 12.45% wells.

- ❖ The low decline is spread all over the state but dominant in central, eastern part and along Terai belt of the state. Higher decline occurs in most of the districts of western, north western and southern parts and along Yamuna River.

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GROUND WATER QUALITY

To evaluate the drinking water quality of ground water,653 water samples were collected from Ground Water Quality Monitoring Wells (GWMS) during the A.A.P. 2015-16. Generally, the ground water samples were collected from hand pumps tapping phreatic aquifer. All the samples were analysed for the determination of pH, EC, CO_3, HCO_3, Cl, F, NO_3, SO_4, PO_4, SiO_2, T.H., Ca, Mg, Na & K.

Suitability of Ground Water for Potable Purposes

The suitability of ground water for drinking purposes has been assessed according to the guidelines laid down by BIS (2012). The changes in chemical quality of ground water from the year (2014–2015 and 2015-2016) have been shown in table 3 and table 4 respectively. The chemical analysis shows that there is not much variation in maximum, minimum, and average values of pH, Electrical conductivity, CO_3, HCO_3, Cl, F, NO_3, SO_4, SiO_2, PO_4, TH, Ca, Mg, Na and K.

Hydro-Chemical Data of Ground Water in Uttar Pradesh (2014-15)

S. No.	Constituents	Minimum	Maximum	Average
1.	pH	7.0	9.1	8.04
2.	EC µS/cm at 25 ºC	149	33530	987
3.	CO_3 mg/l	Nil	132	4.67
4.	HCO_3 mg/l	85	1244	328
5.	Cl mg/l	3.5	9397	104
6.	F mg/l	Nd	5.0	0.58
7.	NO_3 mg/l	Nd	1269	22
8.	SO_4 mg/l	0.55	4659	66
9.	SiO_2 mg/l	3.0	107	30
10.	PO_4 mg/l	Nd	0.57	0.003
11.	TH (as $CaCO_3$) mg/l	50	6255	280
12.	Ca mg/l	4.0	737	44
13.	Mg mg/l	2.4	1073	41
14.	Na mg/l	3.9	5060	101
15.	K mg/l	0.13	709	8.7

Hydro-Chemical Data of Ground Water in Uttar Pradesh - (2015-16)

S. No.	Constituents	Minimum	Maximum	Average
1.	pH	7.35	8.7	7.97
2.	EC µS/cm at 25 ºC	271	18520	943
3.	CO_3 mg/l	Nil	108	1.7
4.	HCO_3 mg/l	24	1025	369
5.	Cl mg/l	3.5	3907	77
6.	F mg/l	Nd	6.0	0.58
7.	NO_3 mg/l	Nd	1370	20.6

S. No.	Constituents	Minimum	Maximum	Average
8.	SO_4 mg/l	0.6	3080	50.8
9.	SiO_2 mg/l	9.0	93	33
10.	PO_4 mg/l	Nd	2.2	0.011
11.	TH (as $CaCO_3$) mg/l	90	1997	282
12.	Ca mg/l	4.0	441	57
13.	Mg mg/l	2.4	378	34
14.	Na mg/l	5.7	3580	91
15.	K mg/l	0	658	7.7

Suitability of Ground Water for Irrigation Purpose

The chemical quality of water is an important factor to be considered in evaluating its usefulness for irrigation purposes. In addition to problems caused by excessive concentration of dissolved solids (TDS), certain constituents in irrigation water are especially undesirable and some may be damaging even when present in small concentrations viz. Sodium Adsorption Ratio (SAR) & Residual Sodium Carbonate (RSC). The potential hazards to crop growth are salinity, sodicity, alkalinity & toxicity.

The Electrical Conductivity is a reflection of the concentration of various chemical constituents in ground water and gives the overall quality of ground water for its various uses like irrigation**.** The Electrical Conductivity data reveals that the majority of the samples belong to C2, C3 class as per USSL classification given in table below -

Frequency distribution of Electrical Conductivity (2015 -16)

EC ranges in µS/cm at 25°C	**0-250 (C1)**	**251 – 750 (C2)**	**751-2250 (C3)**	**>2250 (C4)**
No. of samples	0	359	258	33
%	0	54.9	39.5	5.1

TDS is responsible for the mineralization of water and gives its degree of salinity. The perusal of the analysis data of U.P. shows that the Total Dissolved Solids in the area ranges from a minimum of 176 mg/l to a maximum of12038 mg/l at Narkhi block (distt. Ferozabad) with an average value of 615 mg/l. Its frequency distribution is given in table below-

Frequency Distribution of T.D.S. in Ground Water Quality Station of U.P.

Salinity as per T.D.S. range	No. of Samples	Percentage
Fresh, non saline (0-1000 mg/l)	590	90.4
Slightly saline (1001-3000 mg/l)	59	9.0
Moderately saline (3001-5000 mg/l)	3	0.45
Highly saline (>5000 mg/l)	1	0.15

The Residual Sodium Carbonate in the area ranges from a minimum of -32.2 meq /l to a maximum of 10 meq /l with an average value of 0.578 meq/l. The frequency distribution of RSC in Groundwater Quality Monitoring Wells of UP is given in the table below:

Frequency Distribution of R.S.C.in Groundwater Quality Monitoring Wells of U.P.

RSC range (meq/l)	No. of samples	Percentage
<1.25 (Very safe water)	428	65.5
1.25-2.5 (Marginally safe water)	133	20.4
>2.5 (Unsuitable water)	92	14.1

- By and large, the chemical quality of ground water of phreatic zone in Uttar Pradesh is found to be suitable for drinking purposes as per available analysed chemical parameter data (as per BIS 2012).
- Presence of some constituents beyond the permissible limit at some locations renders the water unfit for public water supply.
- Considering the parameters responsible for suitability of ground water of Uttar Pradesh, it is observed that it is generally fit for irrigation purposes as per Electrical conductivity, Residual Sodium Carbonate, Sodium Adsorption Ratio except at few places where corrective measures are to be taken before agricultural usage.

Ground Water Challenges:

- The rise in the number of over-exploited blocks in the state of U.P is a biggest challenge because these are the blocks wherein storage ground water resources are depleting very fast. There is a probability for adjacent block which may also be comes in water stressed category in future if proper effective intervention is not taken by stakeholder
- Non scientific and disconnected approach of ground water development for agriculture and industrial use is also creating hurdles in managing this precious resource.
- Rigidity in adoption of new cropping pattern depending on available groundwater resources because of high market value of the present crop and non availability of market for the adopted crop.
- There is increase in total Sodic soil due to water logging in most of canal command area due to excess use of surface water irrigation causing decrease in per hectare yield potential.
- Detoriating ground water quality due to geogenic and anthropogenic contamination is biggest challenge before the scientific fraternity to provide the safe domestic water.
- Agriculture and industrial revolution in central Ganga plain has added challenge both in terms quality and quantity.
- The change in climatic pattern is also exerting withdrawal pressure on groundwater resource creating imbalance in groundwater resources.

Ground Water Management Strategies

Artificial Recharge to Ground Water and Rainwater Harvesting

For identifying areas suitable for artificial recharge, the feasibility of different ground water assessment units (administrative blocks) for artificial recharge has been considered. A total of 335 blocks falling in 52 districts covering 110783.14 sq.km. area, (103621.93 sq. km for alluvial area and 7161.21 sq.km for hard rock area), have been identified as feasible for artificial recharge . The net amount of water required to be recharged by artificial methods for the feasible areas of the state was calculated as 57831 MCM to saturate the aquifer up to 3 m bgl. Based on the experience gained in the field experiments, an average recharge efficiency of 75% of the individual structure is only possible. The district wise requirement of water has been estimated as 76915 MCM.

- To calculate surface water availability, 30% of monsoon rainfall has been considered as

average monsoon run off and 50% of which is considered as non-committed water availability. The 30% of monsoon rainfall has been taken considering the erratic and localized rainfall pattern. Ensuring sufficient allocation for existing and ongoing surface water conservation projects 40% of the non-committed surface water has been considered for preparing the present district recharge plan. Non committed surface water availability for recharge in Ganga basins has been estimated as 5185 MCM.

- Based on Annual Gross Storage Capacity of Artificial Recharge and Water Conservation Structures and surface water availability the number of structures has been arrived at and the Basin wise number of structures feasible and tentative cost has been computed. The cost of the percolation tanks, Recharge shaft/dug well/ tube well recharge has been taken as Rs. 20 lakhs and Rs. 1.0 lakhs respectively, as per the earlier Master plan-2002 and also as per the cost estimates of Minor Irrigation and Ground Water Departments of Govt. of UP, in their ongoing schemes/ projects. The cost of Check Dam has been taken as per the estimates of Minor Irrigation in the ongoing demonstrative projects. A total area of **110783.14 sq.km** has been identified as area suitable for recharge and a total tentative cost for constructing recharge/ conservation structures in the region has been estimated as **Rs.7629.28 crores** given the table. This would envisage recharge/ conservation of **5185 MCM** of non-committed water resource available in the region.

Summary of Recharge Plan for Uttar Pradesh

Area identified for artificial recharge (Sq.km)	**110783.14**
Estimated sub-storage potential (MCM)	**57831**
Non-committed water resource available for artificial recharge (MCM)	**5185**
Average annual intake capacity of recharge structure (MCM)	
Percolation tanks	0.2
Recharge Shaft/ Dug Well/ Tube Well recharge	0.06
Check Dam	0.03
Total number of recharge structures required	
Percolation tanks (10% weightage for alluvium; 20% for hard rock)	3022
Recharge Shaft/ Dug Well/ Tube Well recharge(50% weightage for alluvium; 40% for hard rock)	39638
Check Dam (40% weightage for alluvium; 40% for hard rock)	66285
Cost for construction of artificial recharge structure (lakhs)	
Percolation tanks (@Rs. 20 lakhs)	60440
Recharge Shaft/ Dug Well/ Tube Well recharge (@Rs. 1.0 lakhs)	39638
Check Dam (@Rs. 10 lakhs)	662850
Estimated total cost for constructing recharge structures (lakhs)	762928
Estimated total cost for constructing recharge structures (crores)	7629.28

Roof Top Rainwater Harvesting in Urban Areas

- It has been assessed that roof top rain water harvesting can be adopted in 12 Lakh houses, govt. buildings, institutes etc. in urban and municipal areas of the state suitable for artificial recharge in the first phase.

- It will harness 221.18 MCM rain water to augment ground water resources considering normal rainfall for the state and 80% efficiency of the system.
- The cost of roof top rain water harvesting of a building having roof and paved area of ~ 200 sq.m. has been assessed to be Rs12,000/- and for bigger buildings having more than 1000 sq.m. will be Rs. 1.0 lakhs.
- The total cost for the roof top rain water harvesting for the state has been estimated to be Rs.1968 crores in the first phase considering 5% of the total buildings having larger roofs. Thus the total cost of the recharge structures and rain water harvesting in Uttar Pradesh is estimated as Rs. 9597.28 crores.

Conjunctive Water Use of Surface and Ground Water

- Using the mathematical model and other studies, the conjunctive water use mechanism has been evolved in Parts of Sharda Sahayak Irrigation Project, U.P. This is not only for scheduling of optimum use of water resources vis-à-vis demand but also to tackle the problem of rising water levels and spread of salt infested land,
- The rescheduling of the operation of canal is required to be modified in accordance with the crop water requirement during Kharif and Rabi seasons in different blocks.
- The simulation studies have clearly indicated that the water levels in the larger part of the area would remain within desirable limits and immediate impact of this mechanism would be the reduction of water logged area and area prone to water logging shall reduce from 52% to 27% within the first decade of the adoption of the scheme.

Remedial Measures in Arsenic Infested Areas

- The aquifer disposition in Ganga alluvial plain is manifested in multilayered sequence of sand, clay, sandy clay, gravel and kankar intercalations. The shallow arsenic affected aquifer is separated from underlying arsenic safe aquifers in arsenic affected district by impervious clay layers of thin to moderate thickness.
- Wells constructed compositely tapping multiple aquifer system allows contamination from adjacent contaminated aquifers through annular space packed with gravel.
- The specially designed wells with cement seal technique answer the solution to handle such situation. The cement sealing is applied to a suitably thick intervening clay layer separating the arsenic contaminated aquifer from arsenic free aquifer.
- The cement seal prevents seeping of contaminated water through the annular space which is filled with gravel material.

Conservation of Water

- In over-exploited areas, it is necessary to reduce the groundwater draft for sustainable management.
- The flow irrigation needs to be changed with piped water irrigation, drip and sprinkler irrigation. It will help in increasing the irrigation efficiency and save water up to 25%.
- There is also urgent need to consider the change in cropping pattern to the less water consuming crops. Similarly industries should adopt recycle and reuse of water to the maximum extent.

Aquifer Mapping in Uttar Pradesh

The scarcity of water resources coupled with its ever increasing demand has shifted the attention from exploitation to proper management of the ground water resources. With this view, Ministry of Water Resources, River Development and Ganga Rejuvenation Government of India has launched National Project on Aquifer Management to be implemented in phased manner, with the

broad objective of formulating aquifer-wise ground water management plans. The most important component for successful implementation of the project is Aquifer Mapping, encompassing various wide-ranging related activities for delineation and detailed characterization of aquifers in the entire country Considerable data and information has been generated by Central and State Agencies, Universities & Research Institutions, NGOs etc. at different scales. Integration of available data, identification of data gaps and generation of new data will facilitate formulation of effective ground water management strategies at regional and local/ micro levels. Ground water over exploited areas and water quality vulnerable areas are being given priority. The entire state of U.P. is proposed to be covered by year 2022.

GROUND WATER YEAR BOOK
UTTAR PRADESH
(2015 – 16)

CHAPTER 1
INTRODUCTION

The State of Uttar Pradesh forms a part of vast Gangetic Alluvial Plain covering an area of 2,40,928 Sq. Km. and lies between North latitude $23^0$52'12" & $30^0$24'30" and East longitude $77^0$05'38" & $84^0$38'30". It is bounded by Uttaranchal on the NW, Nepal on the NE, Bihar on the East, Madhya Pradesh in the South, and Haryana, Delhi & Rajasthan in the West.

The state is covered with rich fertile soil and underlain by a large thickness of alluvium making it one of the richest ground water repositories of the world. Ground water is a major source of fresh water on earth. It is the most dependable source of water, comparatively free from the vagaries of nature, easily accessible, available at the point of use and economical. Hence it is being developed indiscriminately and the ground water reservoir is stressed. The State being the most populous in the country with a population density of 649 persons per sq. km and a high rate of population growth (26%) its demand for water is soaring. Also due to industrialization, urbanization and modern farming practices its quality is also at stake.

The food production in UP is commensurate with the self sufficiency of the country. One of the major contributors for this sufficiency is irrigation. To meet this high irrigational requirement, water resources are being increasingly developed. Ground water contributes to about 71% of the irrigation needs of the State. The indiscriminate development of ground water has resulted in depletion of groundwater storage and lowering of water level in certain areas on one hand. On other side the surface water development in areas having shallow water level has resulted in water logging and soil salinisation.

All these negative impacts on the resource give rise to the need for regular and continuous monitoring of the ground water regime. The monitoring data forms the base of management practices. In order to manage the water resources and plan development on scientific lines a data base needs to be generated. In view of relative importance of this valuable resource it becomes imperative to adopt sound and scientific management of groundwater resources.

With this in view the Central Ground Water Board, an apex organisation of India in the field of ground water studies has established a network of 1198 monitoring wells, mostly open wells spread all over the State. These are being monitored four times a year (January, May, August & November). Few wells are being monitored through Participatory monitoring Programme for the remaining eight months. To study the hydro chemical behavior ground water samples are collected from these stations once a year in May and analysed in the Regional chemical laboratory. The data thus generated are carefully analysed and interpreted to study the impact of various developmental activities on the groundwater regime. As dug wells are fast becoming obsolete, these are slowly being replaced by special bore wells for monitoring called Piezometers.

The statistical analysis of water level is carried out to decipher the water level status during different seasons of the year and prepare a zoning. The water levels of different periods are compared to analyse the behavioral patterns. The trend of water level behavior is worked out and future predictions are estimated made. The management programmes are framed safe guarding the environment and meet the requirement to optimal possibility.

Ground water is a dynamic resource, hence it requires continuous monitoring both in terms of quality and quantity. The main objectives of ground water monitoring are:

-To study the behavior of the water level in space and time in response to recharge and discharge.

-To study the long term behavior and trends for future predictions.

-To assess the ground water resource.

-To study the hydro chemical behavior of shallow ground water.

-To develop Artificial Recharge plan.

The district wise status of Ground Water Monitoring Wells (G.W.M.W.) as on 31.3.2016 are shown in Table-1 and location of wells are shown in Plate -1

Plate -1

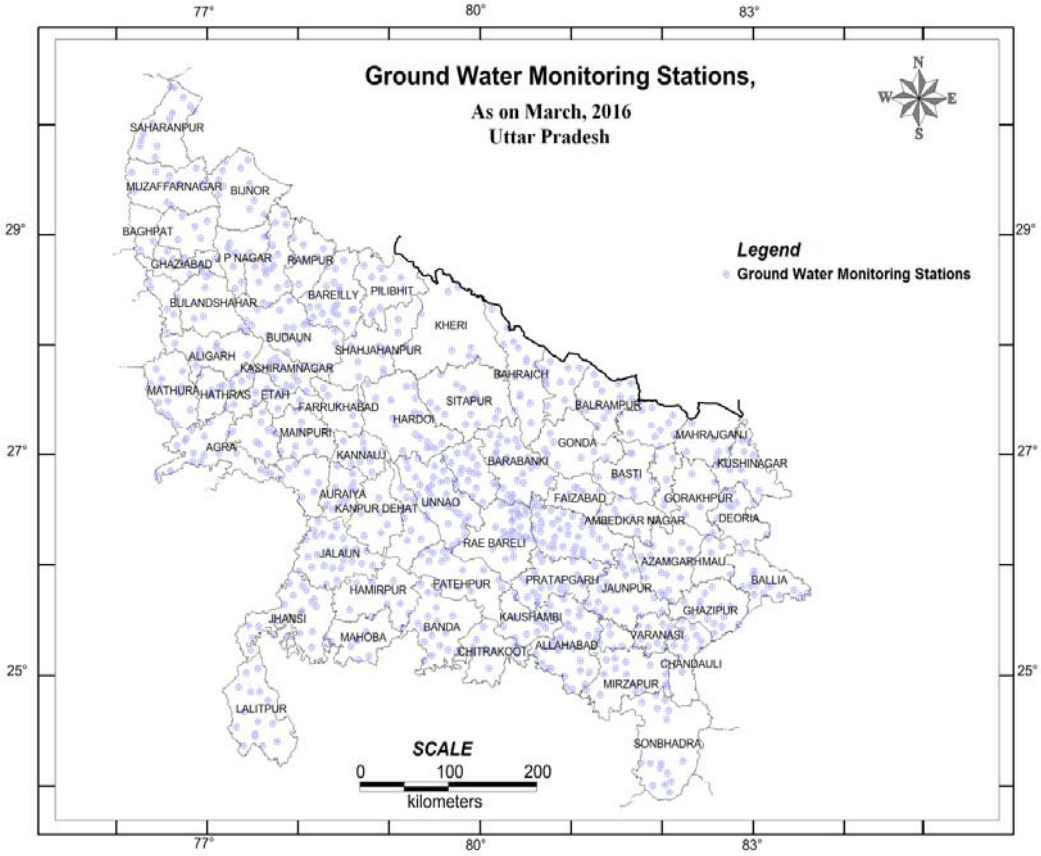


Table-1

STATUS OF GROUND WATER MONITORING WELLS (G.W.M.W.), UTTAR PRADESH AS ON 31.3.16

Sl. No.	Name of the district	No. of G.W.M.W. as on 31.3.16		
		DW	PZ	Total
1	AGRA	9	12	21
2	ALIGARH	11	1	12
3	ALLAHABAD	38	0	38
4	AMBEDKAR NAGAR	9	5	14

Sl. No.	Name of the district	No. of G.W.M.W. as on 31.3.16		
		DW	PZ	Total
5	AURAIYA	14	1	15
6	AZAMGARH	24	0	24
7	BAGHPAT	0	2	2
8	BAHRAICH	20	0	20
9	BALLIA	20	1	21
10	BALRAMPUR	17	0	17
11	BANDA	18	0	18
12	BARABANKI	26	4	30
13	BAREILLY	9	14	23
14	BASTI	11	0	11
15	BIJNOR	9	8	17
16	BUDAUN	1	15	16
17	BULAND SHAHAR	6	6	12
18	CHANDAULI	12	0	12
19	CHITRAKUT	9	0	9
20	DEORIA	10	0	10
21	ETAH (including Kanshiram Nagar)	6	15	21
22	ETAWAH	8	3	11
23	FAIZABAD	11	3	14
24	FARRUKHABAD	3	5	8
25	FATEHPUR	16	0	16
26	FIROZABAD	3	6	9
27	GAUTAM BUDDHA NAGAR	2	13	15
28	GHAZIABAD	1	14	15
29	GHAZIPUR	23	0	23
30	GONDA	10	0	10
31	GORAKHPUR	8	0	8
32	HAMIRPUR	13	0	13
33	HARDOI	23	4	27
34	HATHRAS	13	0	13
35	JALAUN	33	1	34
36	JAUNPUR	25	0	25
37	JHANSI	22	2	24
38	JYOTIBA PHULE NAGAR	0	15	15
39	KANNAUJ	5	6	11
40	KANPUR DEHAT	9	2	11
41	KANPUR NAGAR	15	5	20
42	KOSAMBI	18	0	18
43	KUSHI NAGAR	11	0	11
44	LAKHIMPUR KHERI	15	0	15
45	LALITPUR	15	3	18
46	LUCKNOW	10	36	46

Sl. No.	Name of the district	No. of G.W.M.W. as on 31.3.16		
		DW	PZ	Total
47	MAHARAJGANJ	7	0	7
48	MAHOBA	9	0	9
49	MAINPURI	5	8	13
50	MATHURA	19	2	21
51	MAUNATH BHANJAN	10	0	10
52	MEERUT	1	16	17
53	MIRZAPUR	14	0	14
54	MORADABAD	4	17	21
55	MUZAFFAR NAGAR	5	14	19
56	PILIBHIT	7	4	11
57	PRATAPGARH	28	0	28
58	RAIBARELI	27	5	32
59	RAMPUR	5	4	9
60	SAHARANPUR	7	14	21
61	SANT KABIR NAGAR	5	0	5
62	SANT RAVIDAS NAGAR	7	0	7
63	SHAHJAHANPUR	7	3	10
64	SHRAWASTI	12	0	12
65	SIDDHARTH NAGAR	11	0	11
66	SITAPUR	22	4	26
67	SONBHADRA	19	0	19
68	SULTANPUR	39	5	44
69	UNNAO	28	0	28
70	VARANASI	11	0	11
	TOTAL :	**900**	**298**	**1198**

Chapter 2
PHYSIOGRAPHY AND DRAINAGE

The State of Uttar Pradesh can broadly be divided into 2 physiographic units, the Ganga Plain and the Bundelkhand and Vindhyan Plateau.

The Ganga Plain covering 85% of the State is a vast, flat expanse of alluvium having a gentle south easterly regional slope. The highest elevation is around 350 mamsl in the north western parts and lowest 60 mamsl in extreme south eastern part of the state. The land slope is variable, being steep in the north western parts and gradually diminishing south east wards. The slope ranges between less than a metre per kilometer to 5m/km. This Plain has three sub divisions – the Terai in the northwest, the Central Ganga Plain in the centre and the Marginal alluvial Plain in the south.

The southern part of the state south of the Marginal Alluvial Plain is a part of Bundelkhand and Vindhyan plateau. This plateau region slopes northerly and is represented by undulating hilly terrain. The land slope varies from 550 – 130 mamsl in the western part and 650 – 100 mamsl in the eastern part with steeper gradients than those in the northern Ganga plain.

The State forms a part of Ganga basin. The master drainage of the state is river Ganga and its tributaries. The Ramganga, Ghagra and Gomti are the main left bank tributaries, while the Yamuna is the main right bank tributary. All these rivers except Gomti originate from Himalayan ranges and are snow fed. Initially the rivers flow southward in the northwestern part of the State, then turn south eastward and finally leave the State in an easterly direction.

Chapter 3
CLIMATE AND RAINFALL

The State experiences a sub-humid and tropical climate with three distinct seasons summer, monsoon & winter. The intervening periods are transitional period on the basis of IMD long term normal data. The summer is hot and dry with maximum daily temperature ranging between 38°C. to 43°C. The humidity during this season is lowest ranging between 30% to 53% at 08.30 hrs and 18% to 42% at 17.30 hrs. Summer seasons ends by May and transition period starts. The rainy season commences by late June when south western monsoon sets in over the State. The humidity gradually increases and reaches above 80%. August is the peak rainy season. The bulk of annual rainfall about 85% occurs during monsoon period (June to September). The monsoon starts retreating from the State in late September or early October. Then commences another transitional period followed by winter from late November till February. January is the coldest month of the period. Another transitional period follows between winter and summer.

There is large variation in temperature both in time and space. The lowest temperature is observed during January when night temperature ranges between 2°C & 6°C over the state. With the start of summer the temperature starts rising with maximum during May when the mercury may touch 45°C in central and eastern parts of the State. Gradually with the beginning of rainy season the temperature drops which again shows a mild rising trend during the intervening period before winter (October, November). The wind speed varies between 8-10 km/hr during summer season and 4-6 km/hr during winter and rainy seasons. The wind is mainly south westerly during summer and south easterly during winter. The Normal annual potential Evapotranspiration of Uttar Pradesh is 1491.5 mm. The Normal annual potential Evapotranspiration of East Uttar Pradesh is 1484.0 mm and of West Uttar Pradesh is 1499.0 mm. The monthly normal potential Evapotranspiration is high in hot months and low in winter months. Normal potential Evapotranspiration is highest in the month of May with value of 217.8 mm fallowed by June with value of 201.6 mm. The normal potential Evapotranspiration is lowest in the month of December with value of 50.7 mm fallowed by January with value of 55.6 mm.

Rainfall:

The rainfall is variable over the State ranging from maximum 1002.1 to minimum of 194.3 mm at Bijnor and Allahabad district respectively. During the monsoon the eastern region has received the maximum monsoonal rain fall of 499.8mm and the minimum rainfall of 348.0mm has been received by the district of Bundelkhand. The central and western region has received 365.00 and 440.8mm respectively. The normal rainfall of the State is 947.4 mm and the average annual rainfall for the year 2015 is 578.4mm. The amount of monsoonal rainfall received during 2015 is 443.6mm. During the monsoon period 53.50 percent of rainfall has been recorded as a result 50 districts was declared drought hit. The rainfall data of IMD Stations and State station of U.P have been analyzed. The annual rainfall data of the year 2015 is presented in the table 2. Annual and normal Isohyetal maps are presented in Plate II and III. It is seen from the table 2 that the rainfalls of the districts were below average in large parts of the State.

Table – 2

Monthly and Annual Rainfall (mm) for the Year – 2015

Division	District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Monsoon	Non-Monsoon
Saharanpur	Saharanpur	16.0	18.0	108.0	18.6	3.0	51.7	233.9	189.7	75.3	8.1	10.0	0.0	732.3	550.6	181.7
	Muzaffarnagar	24.0	0.0	113.3	24.0	13.7	158.5	230.2	125.3	78.9	2.0	10.1	0.0	780.0	592.9	187.1
	Shamali	24.0	0.0	113.3	24.0	13.7	158.5	230.2	125.3	78.9	2.0	10.1	0.0	780.0	592.9	187.1
Meerut	Meerut	30.2	22.9	98.9	21.9	25.7	74.6	160.6	114.6	38.3	0.9	4.6	0.0	593.1	388.1	205.1
	Bagpat	24.3	2.0	117.0	28.6	9.1	48.6	126.9	138.4	12.7	0.9	2.8	0.0	511.3	326.6	184.7
	Bulandshahr	13.5	0.0	56.7	14.0	1.0	47.7	189.9	221.2	3.2	6.5	0.0	0.0	553.5	461.9	91.7
	Ghaziabad	19.0	1.0	42.4	18.6	6.5	43.6	139.8	85.0	6.3	1.4	0.7	0.0	364.3	274.7	89.6
	Gautambudh Nagar	47.0	0.0	77.0	55.0	4.0	59.0	144.0	201.0	0.0	0.0	0.0	0.0	587.0	404.0	183.0
	Hapur	32.5	24.0	88.0	17.0	10.3	67.6	230.5	89.0	32.0	4.0	3.0	0.0	597.9	419.1	178.8
Aligarh	Aligarh	40.3	0.0	56.0	27.9	6.0	34.7	123.3	209.5	26.5	15.2	0.0	4.7	544.2	394.1	150.1
	Hathrus	42.3	0.0	53.5	27.5	0.0	68.5	74.0	101.8	31.0	12.5	0.0	6.5	417.6	275.3	142.3
	Etah	36.2	0.0	43.0	19.4	4.0	51.4	126.5	89.0	18.3	8.7	0.0	2.3	398.9	285.3	113.6
	Kashganj	84.0	0.0	43.4	23.0	6.0	85.0	206.0	176.0	3.0	0.0	0.0	0.0	626.4	470.0	156.4
Agra	Agra	32.0	0.5	71.8	25.5	15.1	26.5	54.6	103.0	23.9	14.0	0.0	2.9	369.7	208.0	161.7
	Mathura	8.0	0.0	55.0	33.0	1.0	116.5	152.2	76.9	25.7	0.5	0.0	3.0	471.8	371.3	100.5
	Firozabad	32.3	0.0	64.1	45.9	12.6	32.8	202.4	184.1	15.8	1.8	0.0	16.8	608.4	435.1	173.4
	Mainpuri	16.6	0.0	46.7	15.7	10.1	18.4	127.6	80.9	8.1	0.0	0.0	9.7	333.8	235.0	98.8
Bareilly	Bareilly	43.5	7.8	72.4	19.9	4.7	162.6	281.4	192.5	33.0	6.1	1.4	0.0	825.3	669.5	155.7
	Badaun	41.6	0.0	55.4	21.4	8.4	94.9	259.9	173.4	33.4	0.2	0.0	2.4	690.9	561.5	129.4
	Shahjahanpur	26.5	0.0	67.9	27.1	8.3	43.8	264.6	191.2	6.7	7.9	0.0	0.0	643.9	506.2	137.7
	Pilibhit	43.4	8.3	81.3	9.9	4.3	102.8	158.2	98.8	4.7	7.8	1.1	0.7	521.1	364.5	156.7
Moradabad	Bijnor	37.5	3.2	73.8	20.7	12.3	186.3	304.3	255.7	101.3	1.3	5.7	0.0	1002.1	847.6	154.5
	Moradabad	31.6	22.1	56.3	25.5	23.3	202.4	316.1	121.4	41.9	13.4	8.7	0.0	862.8	681.9	180.9
	Amroha	13.5	25.0	46.5	45.0	10.5	78.0	240.6	167.5	24.0	0.0	2.5	0.0	653.1	510.1	143.0

Division	District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Monsoon	Non-Monsoon
	Rampur	41.6	20.2	79.1	13.7	5.7	59.2	197.8	76.0	5.8	5.0	5.9	0.0	510.0	338.8	171.2
	Sambhal	51.1	11.0	56.2	31.4	13.2	165.6	327.8	261.0	35.1	2.0	0.3	0.0	954.8	789.6	165.2
Kanpur	Farrukhabad	23.2	0.0	60.8	19.3	5.2	46.1	115.1	128.2	14.0	9.3	0.0	0.5	421.7	303.4	118.3
	Kannauj	25.2	3.2	29.2	31.4	29.0	37.1	242.0	53.0	30.3	15.8	0.0	22.0	518.2	362.4	155.8
	Etawah	7.0	0.0	95.8	6.4	3.5	42.6	139.3	146.4	40.8	5.9	0.0	28.5	516.2	369.1	147.1
	Aurriya	16.0	0.0	61.5	1.0	2.0	28.2	128.6	69.5	9.0	18.2	0.0	0.0	334.0	235.3	98.7
	Kanpur Nagar	26.7	0.2	131.1	9.4	15.8	35.7	102.6	83.6	56.9	11.3	0.0	13.0	486.4	278.8	207.6
	Kanpur Dehat	22.6	0.0	53.8	12.8	4.6	22.8	86.1	46.8	0.7	15.4	0.0	25.9	291.4	156.3	135.0
Allahabad	Fatehpur	15.6	5.4	41.0	11.2	0.0	5.1	72.5	29.3	1.9	4.8	1.9	5.6	194.3	108.8	85.5
	Allahabad	59.8	1.0	48.3	36.3	0.0	80.8	144.5	159.5	14.2	19.9	0.0	1.2	565.5	399.0	166.5
	Kaushambi	77.3	0.0	58.9	0.9	0.0	23.1	65.0	58.9	2.7	6.1	0.0	0.0	293.0	149.7	143.3
	Pratapgarh	63.3	5.7	70.4	11.0	0.0	58.3	217.7	160.0	52.3	0.0	0.0	16.0	654.7	488.3	166.4
Jhansi	Jhansi	38.6	14.7	45.8	15.8	10.8	21.7	220.0	125.5	21.4	11.5	0.0	0.3	526.2	388.7	137.5
	Lalitpur	44.0	17.4	37.5	22.0	0.0	79.0	114.0	128.5	0.0	4.0	0.0	4.0	450.4	321.5	128.9
	Jalaun (Orai)	31.4	0.0	52.0	4.1	4.7	20.8	194.6	120.7	3.0	19.6	0.0	3.7	454.5	339.0	115.5
Chit. Dham	Hamirpur	22.7	15.4	76.7	11.2	1.3	10.4	178.2	102.8	22.8	9.3	0.3	9.0	459.9	314.1	145.8
	Mahoba	25.6	13.2	44.0	17.0	0.0	12.2	209.2	9.8	19.8	12.6	0.0	6.5	369.9	251.0	118.9
	Banda	38.1	24.5	100.8	18.0	0.0	81.6	204.1	125.8	69.3	9.0	1.6	4.1	676.7	480.9	195.8
	Chitrkut	55.3	2.8	68.5	43.5	0.0	53.1	140.8	127.5	19.5	11.6	0.0	6.0	528.5	340.9	187.6
Varanasi	Varanasi	35.6	2.4	32.6	57.6	0.0	168.4	318.7	225.2	10.1	22.4	0.0	0.7	873.6	722.4	151.2
	Chandauli	23.2	3.6	11.2	50.2	3.8	88.2	205.2	209.4	10.4	8.2	0.0	0.0	613.4	513.2	100.2
	Ghazipur	18.9	0.7	39.5	20.8	2.4	165.7	194.5	262.6	58.0	22.4	1.3	0.1	786.7	680.7	106.0
	Jaunpur	48.5	0.5	25.8	22.7	0.5	61.1	201.2	200.8	13.0	3.9	0.0	1.2	579.3	476.1	103.2
Mirzapur	Mirzapur	34.5	0.0	24.5	16.0	0.0	136.6	245.0	189.7	5.1	35.5	0.0	0.7	687.6	576.4	111.2
	Sonbhadra	41.9	4.1	26.2	10.5	20.5	111.1	208.8	262.9	9.7	25.4	0.8	4.6	726.4	592.5	133.9
	Sant. Ravidas Nagar	55.5	6.0	51.0	29.0	2.0	147.8	193.0	214.0	0.0	2.0	0.0	0.0	700.3	554.8	145.5
Azamgarh	Azamgarh	16.0	2.3	53.3	73.6	1.0	114.6	216.6	284.0	17.9	3.9	0.0	17.3	800.4	633.1	167.4

Division	District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Monsoon	Non-Monsoon
	Mau	16.0	0.0	20.0	13.0	0.0	74.1	188.7	92.0	22.5	3.0	0.0	0.0	429.3	377.3	52.0
	Ballia	14.9	0.7	16.8	27.8	12.5	105.9	142.9	231.7	31.0	9.9	0.0	0.0	594.1	511.6	82.5
Gorakhpur	Gorakhpur	28.2	8.9	48.8	29.8	29.9	129.5	134.5	271.6	26.7	7.9	0.0	0.0	715.7	562.2	153.4
	Maharajganj	14.5	2.0	39.8	21.3	18.0	82.3	156.7	157.0	30.3	64.5	0.0	0.0	586.2	426.2	160.0
	Deoria	8.5	1.0	39.5	38.0	17.0	38.0	156.8	177.0	0.0	21.5	0.0	0.0	497.3	371.8	125.5
	Kushi Nagar	10.2	0.0	14.5	17.0	2.0	55.0	93.0	92.4	11.5	8.6	0.0	0.0	304.2	251.9	52.3
Basti	Basti	16.6	2.5	24.8	15.2	21.9	164.3	163.0	270.5	3.7	8.1	0.0	0.0	690.7	601.6	89.1
	Sidharthnagar	18.5	0.0	12.8	22.0	6.0	155.9	160.4	300.5	13.2	11.3	0.0	0.0	700.7	630.0	70.6
	Sant Kabir Nagar	21.0	10.0	21.0	5.0	15.8	109.0	175.0	147.0	111.0	0.0	0.0	0.0	614.8	542.0	72.8
Lucknow	Lucknow	21.2	12.1	61.7	23.1	2.1	51.1	155.1	113.3	12.3	0.8	1.3	7.4	461.3	331.7	129.6
	Unnao	19.3	3.0	77.8	12.9	12.0	36.3	161.9	80.8	31.1	1.3	2.0	21.0	459.1	310.0	149.2
	Raebareli	18.3	2.8	46.5	12.5	5.3	34.2	111.2	69.9	15.9	5.5	1.2	10.7	333.9	231.1	102.8
	Sitapur	18.6	2.9	41.4	34.5	0.8	81.2	222.4	181.1	26.4	0.0	0.0	0.0	609.3	511.0	98.3
	Hardoi	19.4	0.7	66.9	22.8	5.1	35.3	268.5	187.5	29.0	12.9	0.0	1.9	649.9	520.3	129.6
	Kheri	29.6	5.4	80.1	34.0	4.2	232.0	266.3	224.5	37.1	4.7	0.0	0.0	917.6	759.8	157.9
Faizabad	Faizabad	22.1	2.2	34.3	29.5	5.5	84.7	149.7	222.2	4.0	0.6	0.0	0.0	554.8	460.6	94.2
	Ambedkernagar	32.0	0.0	86.2	10.7	5.0	6.0	59.0	53.0	0.0	22.0	0.0	27.0	300.9	118.0	182.9
	Sultanpur	45.4	12.6	49.1	31.3	0.0	46.0	283.2	187.2	0.7	2.0	4.0	5.3	666.7	517.1	149.7
	Barabanki	24.8	7.4	53.0	19.9	3.2	94.5	156.5	169.7	21.7	1.3	0.0	4.0	555.9	442.4	113.5
	Amethi	20.4	1.0	32.6	5.0	0.0	33.4	178.5	51.5	18.9	0.7	0.0	0.0	341.9	282.3	59.6
Devipatan	Gonda	21.1	4.5	24.6	5.0	20.4	123.1	151.9	237.1	8.7	4.8	0.0	1.0	602.2	520.8	81.4
	Balrampur	48.5	14.0	34.0	26.4	18.0	250.9	139.6	221.6	5.2	3.8	0.0	0.0	761.9	617.2	144.7
	Behraich	48.9	9.4	42.1	12.5	22.9	174.0	199.8	328.3	17.7	39.7	0.0	0.0	895.2	719.8	175.4
	Shravasti	0.0	0.0	0.0		0.0	238.8	161.3	245.2	20.4	24.3	0.0	0.0	690.0	665.7	24.3
State Average		**30.1**	**5.2**	**55.3**	**22.6**	**7.6**	**84.4**	**179.9**	**155.8**	**23.5**	**9.2**	**1.1**	**4.0**	**578.4**	**443.6**	**134.7**

Plate-II

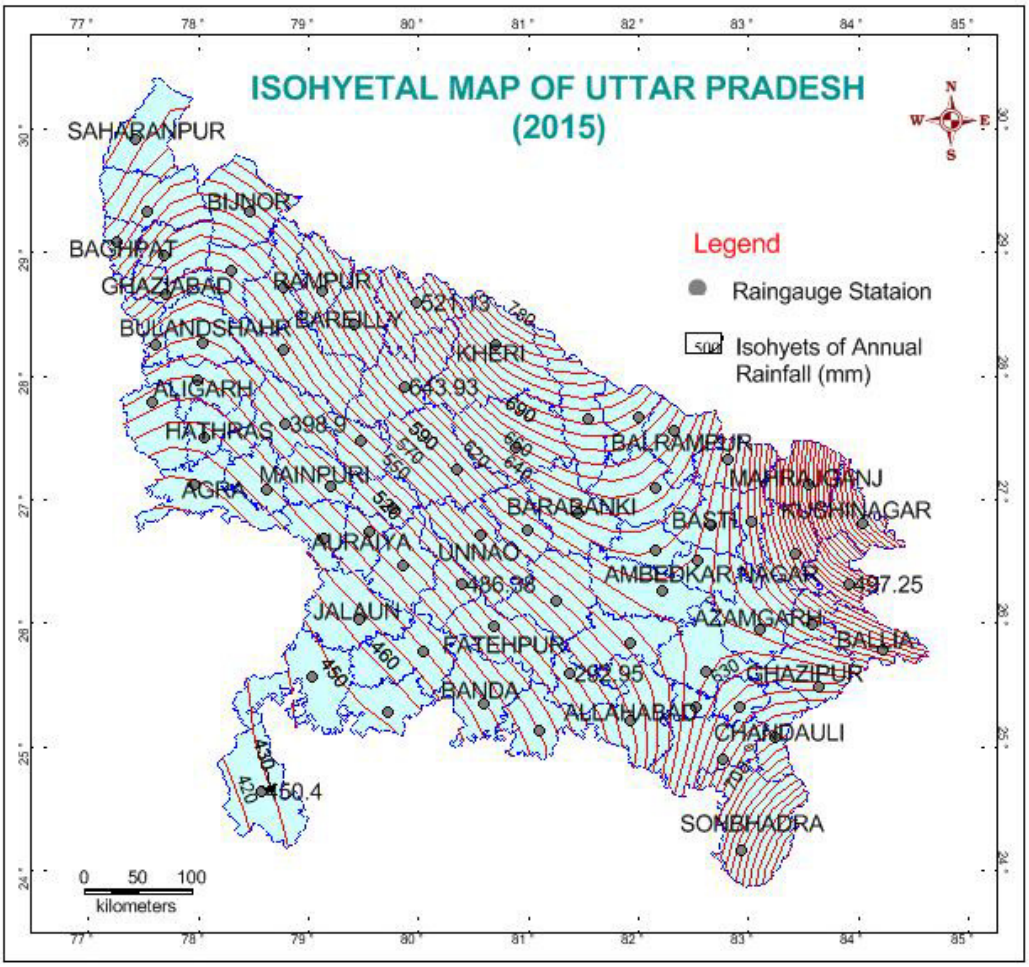
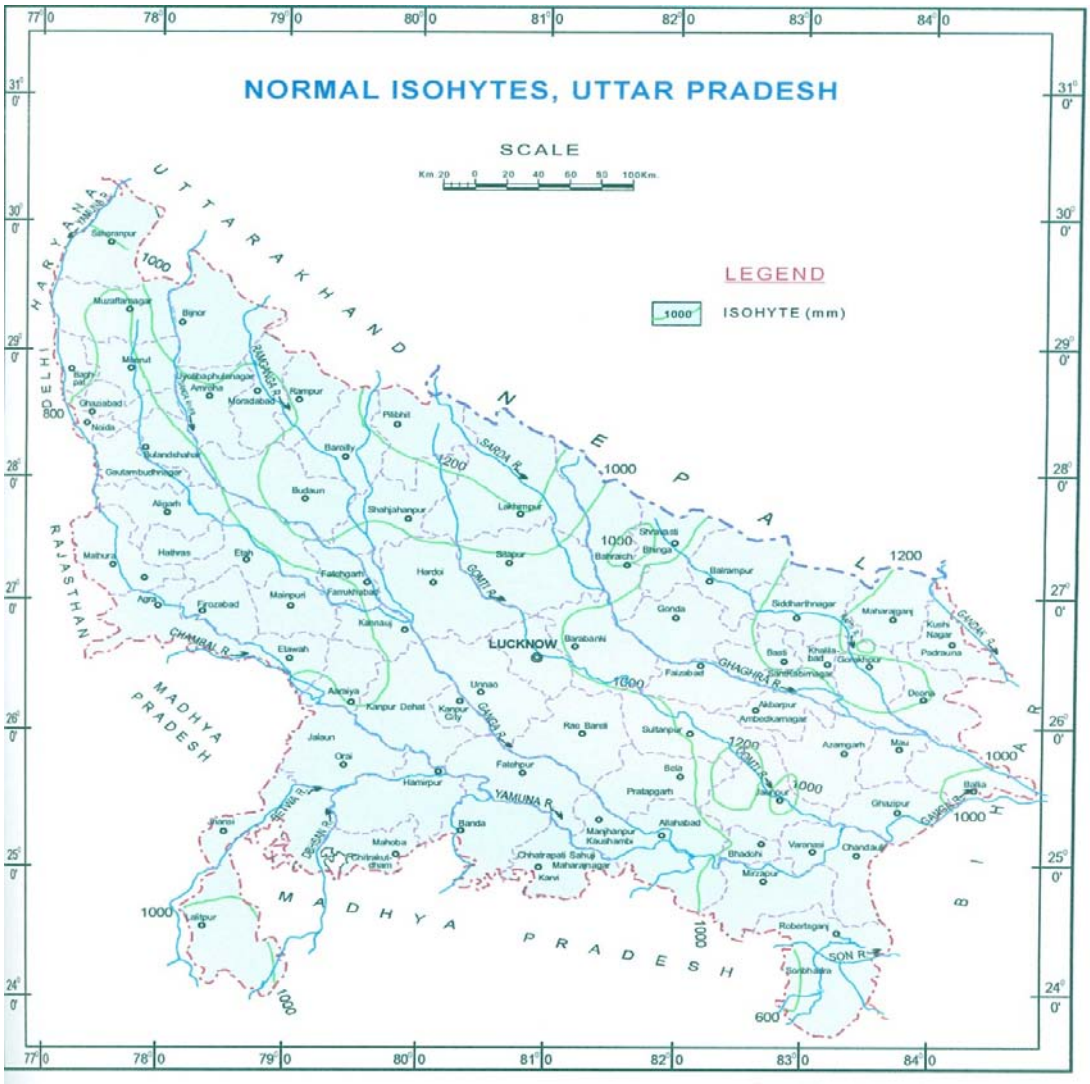

ISOHYETAL MAP OF UTTAR PRADESH
(2015)
Legend
Raingauge Stataion
Isohyets of Annual Rainfall (mm)
SAHARANPUR
BIJNOR
BAGHPAT
GHAZIABAD
RAMPUR
BAREILLY
BULANDSHAHR
KHERI
ALIGARH
HATHRAS
MAINPURI
AGRA
BALRAMPUR
MAHRAJGANJ
BARABANKI
BASTI
KUSHINAGAR
AURAIYA
UNNAO
AMBEDKAR NAGAR
JALAUN
AZAMGARH
BALLIA
FATEHPUR
GHAZIPUR
BANDA
ALLAHABAD
CHANDAULI
SONBHADRA
521.13
643.93
398.9
486.98
497.25
232.95
450.4
0 50 100
kilometers

Plate-II


NORMAL ISOHYTES, UTTAR PRADESH
SCALE
Km 20 0 20 40 60 80 100Km.
LEGEND
1000 ISOHYTE (mm)
UTTARAKHAND
NEPAL
HARYANA
DELHI
RAJASTHAN
MADHYA PRADESH
BIHAR
LUCKNOW
YAMUNA R.
GANGA R.
GOMTI R.
GHAGHRA R.
SARDA R.
RAMGANGA R.
CHAMBAL R.
BETWA R.
KEN R.
SON R.
1000
1200
800
600

Chapter 4
HYDROGEOLOGICAL FRAME WORK

The geology and structure of the formations existing in an area control occurrence and movement of ground water. The geomorphic conditions also have a great impact on ground water scenario. The larger part of the State is underlain by fluvial sediments laid down in the fore deep between Plateau region in south and Himalayas in north during the Quaternary period by the Indus-Ganga system of drainage over the Precambrian topography existing during geological past. These deposits owe their origin to riverine activity. The southern part of the State has entirely different geological conditions being underlain by Precambrian formations under a thin alluvial cover. Broadly, the State can be divided into two hydrogeological units.

1. Unconsolidated zone.
2. Consolidated, hard rock zone.

The hydrogeological conditions of the above two units widely differ and are discussed subsequently in brief.

Unconsolidated Zone:

This unit covers nearly 85% of the State area. The unconsolidated formations comprising the area have been deposited through mighty rivers originating from great Himalayan Mountains. These sediments are an admixture of pebble, gravel, sand, silt, clay and kankar. The sediments are generally coarser in the north and gradually become finer south east ward along downstream of the drainage which is a typical feature of fluvial deposits. This zone consists of mainly two parts, the Terai and the Alluvial Plain. However, foot hill zone is very small part of Bhaber belt and lies in the northern parts of Bijnore and Saharanpur districts. The Terai is a narrow disconnected belt along the north western fringe of the State. The Alluvial Plain occupies the area south of Terai and can further be divided in two sub units - Younger Alluvium and Older Alluvium.

The younger alluvium occurs mostly along the present day flood plain area. The continuous shifting of the drainage network with time caused reworking of their earlier deposits giving rise to the younger alluvium. The older alluvium occupying comparatively high area covers major part of the Plain. A typical characteristic of older alluvium is formation of kankar within itself due to leaching of calcium carbonate under favourable climatic conditions. The kankar occasionally forms pans restricting downward movement of water.

The thickness of alluvial sediments is variable and generally goes upto 500m. below which occur the semi-consolidated Upper Siwalik formations. The Shallower basement occurs in isolated areas which are known as “Basement highs."

This unconsolidated zone is porous and permeable with primary intergranular porosity and has good ground water potential. The sub-surface correlation of formations in the state has shown presence of several aquifers down to a depth of 750 m below the ground. These aquifers mainly encountered in Central Ganga Plain have been grouped on the basis of lithological characters as well as based on interpretation of electrical logs of Boreholes drilled and are as follows

1.	First aquifer	0.0 – 150.00 mbgl
2.	Second aquifer	160.00 – 210.00 mbgl
3.	Third aquifer	250.00 – 360.00 mbgl
4.	Forth deep aquifer	380.00 – 600.00 mbgl

The upper part of first aquifer down to 50 mbgl is the main source of drinking water through hand pumps and dug wells and is unconfined in nature. The first aquifer as a whole which is under unconfined to semi-confined conditions t is the most potential aquifer group which is the main source of groundwater in the State extensively exploited through private as well as Government tube wells to meet the drinking water and irrigation needs. The deeper aquifers are confined in nature being exploited to a very limited extent. The yield of second aquifer is limited while the third aquifer is potential. The shallow and phreatic aquifers are under heavy stress.

Consolidated Zone:

The Bundelkhand Vindhyan plateau region is underlain by variety of Precambrian formations, mostly granite and granite gneisses, Vindhyan sandstone, limestone & shale, under a thin a alluvial cover or without alluvial cover. As such these formations are hard and compact and devoid of any primary porosity. The ground water in these formations occurs in the secondary porosity of these formations. The secondary porosity has developed due to cracks and fractures which are open at the surface and tighten at depth. The ground water occurs under unconfined or water level conditions in these formations. The alluvial sediments of moderate depth along the river courses and in valleys form potential groundwater repositories. The weathered mantle over the entire unit also forms potential aquifers. These aquifers are being monitored mostly through open wells over the area.

Chapter 5
BEHAVIOUR OF WATER LEVEL

The groundwater storage is largely controlled by the prevailing hydrogeological and geomorphic conditions. Besides, magnitude of input (recharge) to the ground water system and output (discharge) from it also influences the status of groundwater regime. In the State of Uttar Pradesh hydrogeological as well as the geomorphological conditions are highly variable as evident from earlier chapters. The chief source of recharge to storage is rainfall which is highly variable over space and time. The main source of discharge is ground water abstraction which is also varying and also growing exponentially. The regions having ground water as the main source for irrigation always remain under heavy stress. The imbalance between the recharge and discharge expresses itself in terms of variations in the ground water level. Thus, the water level is a very important parameter for ground water studies. The behavior of the water level in the state during year 2014-15 has been studied based upon the observations made on the permanent Ground Water Monitoring Wells and described in the following paragraphs.

Depth to Water Level during 2015 -16

The depth to ground water level in the state is highly variable throughout the year ranging from ground level to 42.16 m bgl. The distribution pattern remains same during the year with the areas under different ranges increasing/reducing in different seasons.

The water level in general increases from north-east to south-west roughly parallel to the northern boundary of the State. The shallow water level occurs in the north, north eastern part and parts of central region of the state. The moderate water level occurs in the north western part, the central part and along the southern boundary. The deeper water level occurs in the western part, along Yamuna river, parts of southern U.P. and cities.

There are four canal command areas in the state but these do not have the same depth to water level pattern and all do not necessarily show very shallow ground water levels. The Gandak and Saryu command areas in general show very shallow water level 2 – 5 mbgl and water logging conditions exists in the monsoon and post monsoon period with few areas within these zones showing 5 – 10 mbgl. Generally the larger areas in Sharda Sahayak command fall under 5 – 10 mbgl water level range. In comparison to above commands, in Ramganga command the water level is generally deeper falling in the range of 5 – 10 mbgl in the north eastern part and 10 – 20 mbgl in the south western part along the River Yamuna.

The different water level zones are controlled by geomorphological features such as flood plains, natural levees of main rivers, interfluves areas etc. as well as by the nature of deposits.

May 2015:

This is the pre-monsoon period as it appears after one complete cycle of inputs and outputs. Generally this period shows the deepest water levels during the year. May is the dry season and the water levels are used for most of the ground water calculations.

In general water level ranges mostly from 2 to 20 m bgl, however parts of the state show variation 20 m bgl or above. The water levels in the range of 0 to 2 m bgl (i.e., water logged condition) is observed only in 33 wells.

Water level in the range of 2 - 5 mbgl is observed in 285 Monitoring Wells (about 33.25%). Along the Terai belt, extending from parts of Saharnapur to Siddarthnagar and upto Ballia in eastern U.P. through major parts of Lakhimpur Kheri, Bahraich, Shrawasti, Balrampur, Deoria, Kushinagar,

Sitapur, Basti, Gonda, Faizabad, Maharajganj and Pilibhit districts, the water level ranges from 2 - 5 mbgl. There are patches in Aligarh, Allahabad, Auraiya, Barabanki, Bareilly, Chandauli, Jalaun, Hardoi, Hathras, Kanpur Nagar, Kanpur Dehat, Lalitpur, Mainpuri, Jhansi, Mathura, Moradabad, Rae Bareli, Rampur, Shahjahanpur and Unnao districts showing depth to water levels from 2 to 5 mbgl.

About 40.14 % of wells (344 nos.) show water level between 5 and 10 m bgl. This area is observed in almost all parts of U.P. The water level of 5 to 10 mbgl is observed in major parts of districts of Aligarh, Auraiya, Allahabad, Ambedkar Nagar, Azamgarh, Ballia, Barabanki, Bareilly, Banda, Badaun, Chandauli, Deoria, Faizabad, Bulandsahar, Etah, Etawah, Farrukhabad, Ghazipur, Ghaziabad, Hardoi, Jhansi, Jalaun, Kannauj, Kanpur Dehat, Lalitpur, Lucknow, Meerut, Mirzapur, Pratapgarh, Rae Bareli, Sitapur, Sonbhadra, Sultanpur and Unnao.

164 wells (about 19.13%), show water levels between 10 and 20 m bgl. Along the Ganga river, the water levels are generally 10-20 m bgl in Kanpur, Mirzapur, Kaushambi, Fatehpur, Kaushambi and Allahabad districts. Similarly, all along river Yamuna right from Mathura to Allahabad district, a narrow strip shows deeper water levels in the range of 10 - 20 m bgl. This strip widens at Agra, Fatehpur, Hamirpur, Chitrakoot and Banda districts.

Table-3

DISTRICT- WISE DEPTH TO WATER LEVEL, U.P.

May, 2015

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
AGRA	13	1.59	41.60	1 7.69%	0	3 23.08%	5 38.46%	3 23.08%	1 7.69%
ALIGARH	9	1.26	9.47	1 11.11%	4 44.44%	4 44.44%	0	0	0
ALLAHABAD	31	1.99	18.21	1 3.23%	13 41.94%	8 25.81%	9 29.03%	0	0
AMBEDKAR NAGAR	13	0.90	7.60	1 7.69%	2 15.38%	10 76.92%	0	0	0
AURAIYA	12	3.19	15.57	0	3 25.00%	5 41.67%	4 33.33%	0	0
AZAMGARH	17	2.80	8.58	0	6 35.29%	11 64.71%	0	0	0
BAGHPAT	1	22.58	22.58	0	0	0	0	1 100.00%	0
BAHRAICH	13	2.12	10.28	0	10 76.92%	2 15.38%	1 7.69%	0	0
BALLIA	18	3.53	10.05	0	7 38.89%	10 55.56%	1 5.56%	0	0
BALRAMPUR	16	1.07	9.73	1 6.25%	12 75.00%	3 18.75%	0	0	0
BANDA	16	1.55	21.80	1 6.25%	6 37.50%	7 43.75%	1 6.25%	1 6.25%	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
BARABANKI	18	2.41	9.36	0	8 44.44%	10 55.56%	0	0	0
BAREILLY	20	-0.30	12.26	1 5.00%	6 30.00%	11 55.00%	2 10.00%	0	0
BASTI	10	3.43	5.90	0	9 90.00%	1 10.00%	0	0	0
BIJNOR	9	2.53	18.47	0	4 44.44%	1 11.11%	4 44.44%	0	0
BUDAUN	17	2.71	16.00	0	2 11.76%	6 35.29%	9 52.94%	0	0
BULANDSHAHR	6	3.21	9.52	0	1 16.67%	5 83.33%	0	0	0
CHITRAKOOT	8	7.00	18.43	0	0	3 37.50%	5 62.50%	0	0
DEORIA	8	2.55	7.00	0	6 75.00%	2 25.00%	0	0	0
ETAH	13	3.30	10.76	0	3 23.08%	7 53.85%	3 23.08%	0	0
ETAWAH	7	5.74	37.10	0	0	5 71.43%	0	2 28.57%	0
FAIZABAD	12	3.20	8.35	0	4 33.33%	8 66.67%	0	0	0
FARRUKHABAD	7	5.66	20.00	0	0	2 28.57%	5 71.43%	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
FATEHPUR	13	3.00	21.20	0	3 23.08%	5 38.46%	3 23.08%	2 15.38%	0
FIROZABAD	6	1.52	22.22	1 16.67%	1 16.67%	2 33.33%	1 16.67%	1 16.67%	0
GAUTAM BUDDHA NAGAR	5	6.50	16.55	0	0	2 40.00%	3 60.00%	0	0
GHAZIABAD	11	4.77	18.32	0	2 18.18%	4 36.36%	5 45.45%	0	0
GHAZIPUR	15	1.23	18.04	1 6.67%	4 26.67%	5 33.33%	5 33.33%	0	0
GONDA	9	2.35	7.31	0	8 88.89%	1 11.11%	0	0	0
GORAKHPUR	7	1.56	6.14	1 14.29%	5 71.43%	1 14.29%	0	0	0
HAMIRPUR	11	2.35	27.92	0	3 27.27%	3 27.27%	4 36.36%	1 9.09%	0
HARDOI	21	3.60	10.87	0	7 33.33%	13 61.90%	1 4.76%	0	0
HATHRAS	9	3.66	17.75	0	3 33.33%	2 22.22%	4 44.44%	0	0
JALAUN	25	0.66	29.40	4 16.00%	7 28.00%	6 24.00%	4 16.00%	4 16.00%	0
JAUNPUR	10	3.27	7.62	0	3 30.00%	7 70.00%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
JHANSI	19	0.68	21.22	1 5.26%	8 42.11%	8 42.11%	1 5.26%	1 5.26%	0
JYOTIBA PHULE NAGAR	9	6.32	15.73	0	0	2 22.22%	7 77.78%	0	0
KANNAUJ	9	-0.50	20.97	2 22.22%	1 11.11%	3 33.33%	1 11.11%	2 22.22%	0
KANPUR DEHAT	7	5.06	16.32	0	0	5 71.43%	2 28.57%	0	0
KANPUR NAGAR	14	2.86	29.75	0	5 35.71%	3 21.43%	4 28.57%	2 14.29%	0
KAUSHAMBI	9	7.24	21.09	0	0	2 22.22%	6 66.67%	1 11.11%	0
KHERI	9	2.66	9.95	0	6 66.67%	3 33.33%	0	0	0
KUSHINAGAR	8	1.94	5.89	1 12.50%	6 75.00%	1 12.50%	0	0	0
LALITPUR	13	0.85	8.30	3 23.08%	2 15.38%	8 61.54%	0	0	0
LUCKNOW	35	1.80	36.17	1 2.86%	0	14 40.00%	14 40.00%	6 17.14%	0
MAHOBA	7	3.69	8.02	0	4 57.14%	3 42.86%	0	0	0
MAHRAJGANJ	6	1.92	4.93	1 16.67%	5 83.33%	0	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
MAINPURI	7	0.67	6.30	1 14.29%	3 42.86%	3 42.86%	0	0	0
MATHURA	17	1.06	15.09	3 17.65%	5 29.41%	5 29.41%	4 23.53%	0	0
MAU	7	3.01	8.37	0	1 14.29%	6 85.71%	0	0	0
MEERUT	8	7.28	17.78	0	0	6 75.00%	2 25.00%	0	0
MORADABAD	18	2.68	16.18	0	4 22.22%	1 5.56%	13 72.22%	0	0
MUZAFFARNAGAR	14	3.43	23.27	0	2 14.29%	2 14.29%	8 57.14%	2 14.29%	0
PILIBHIT	12	3.05	5.36	0	9 75.00%	3 25.00%	0	0	0
PRATAPGARH	27	3.78	12.16	0	4 14.81%	17 62.96%	6 22.22%	0	0
RAE BARELI	20	1.29	10.85	2 10.00%	10 50.00%	7 35.00%	1 5.00%	0	0
RAMPUR	1	5.07	5.07	0	0	1 100.00%	0	0	0
SAHARANPUR	22	3.71	20.77	0	1 4.55%	12 54.55%	8 36.36%	1 4.55%	0
SANT KABIR NAGA	4	3.10	4.69	0	4 100.00%	0	0	0	0

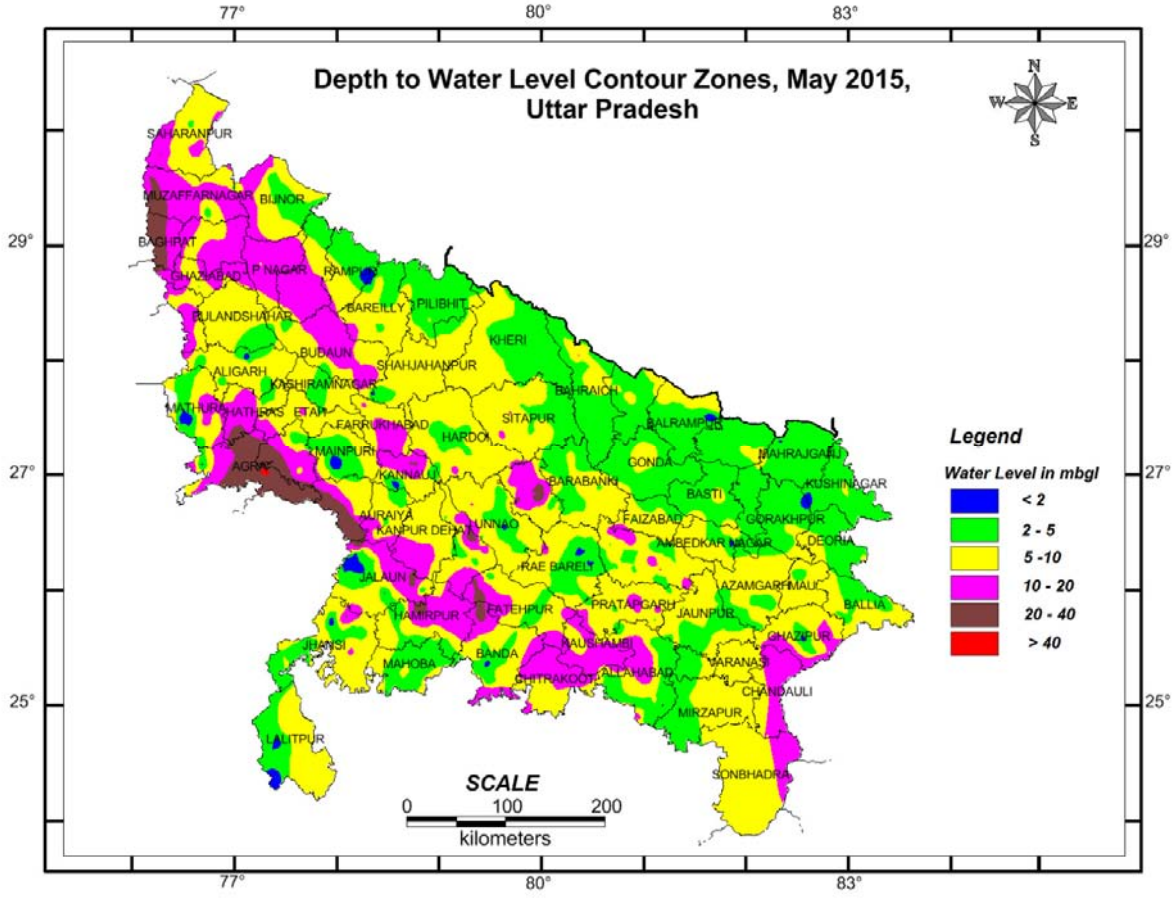
District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
SHAHJAHANPUR	8	1.40	8.19	1 12.50%	2 25.00%	5 62.50%	0	0	0
SHRAWASTI	14	2.73	7.77	0	11 78.57%	3 21.43%	0	0	0
SIDDHARTHNAGAR	11	2.50	6.33	0	9 81.82%	2 18.18%	0	0	0
SITAPUR	23	2.86	10.93	0	11 47.83%	10 43.48%	2 8.70%	0	0
SULTANPUR	40	2.00	14.30	1 2.50%	13 32.50%	20 50.00%	6 15.00%	0	0
UNNAO	23	1.29	10.00	2 8.70%	7 30.43%	14 60.87%	0	0	0
Total	**857**	**-0.50**	**41.60**	**33**	**285**	**344**	**164**	**30**	**1**

Along the Betwa river, a tributary of Yamuna river, the deeper water levels are encountered. Few patches falling in this range are observed in western U.P. in Muzaffarnagar, Meerut, Ghaziabad, Gautam Buddha Nagar, J.P. Nagar, Budaun, Hathras, districts .This range is generally observed in almost all parts of Lucknow city. In major parts of Varanasi, and Pratapgarh districts depth to water level have been observed in this range.

Only 30 (about 3.5%) Monitoring Wells fall in the range of more than 20 m bgl water level. The water levels in this range are observed along a narrow strip along Yamuna river, from parts of Agra upto Kaushambi through Etawah, Banda, Fatehpur, Jalaun, and along Betwa river in Hamirpur district. Deeper levels owe to the ravenous tract along these rivers. In parts of Lucknow city, water level in this range is observed.

The district wise categorization table of water level during May 2015 is presented in table-3 and the pictorial view is shown in Plate –IV.

Plate-IV



August 2015:

The water level during August indicates the immediate impact of rain fall on ground water storage. This is the month of peak monsoon rainfall hence this measurement is carried out to get the peak of the water level hydrograph. The water level rises in response to rainfall.

Water level has become shallower in large part of the state, with more impact of rainfall seen in areas where the water level was less than 5 mbgl. The water logged areas increased and the deeper

water level areas had shrunk. The distribution of water level from less than 2 m bgl to 10 mbgl shows the three ranges of 0–2, 2–5, and 5–10 mbgl occurring in 15.6%, 32.6%, and 33.0% wells respectively. Deeper water level areas of 10 – 20 mbgl have reduced to 15.2% but occur in the same areas along the River Yamuna.

The depth to water levels from 0 to 2 m bgl is found only in 146 wells (15.6%) mainly in Saryu and parts of Gandak canal command areas .Water level in the range of 2 - 5 m bgl is observed in 305 wells (32.6%) in most districts of the state except in western U.P. The depth to water levels from 5 to 10 m bgl are found in 308 wells (33.0%) occurs all along the Ganga, Yamuna and Ganga-Yamuna interfluves area in patches right from Saharanpur up to Sonbhadra district. Along Ram Ganga and Betwa rivers water level falls in this range.

The water levels between 10 and 20m bgl. are observed at 142 wells (15.2%). This range is encountered mostly along the Yamuna river from Mathura upto Allahabad and upto part of Varanasi along Ganga river. Parts of districts of western U.P. show this range. In Lucknow city water level in the range of 10 to 20 m bgl is observed. The deeper water levels along Yamuna River are mainly due to higher elevation of natural levee formed on either side of the river. The depth range of 20 m bgl. and more is found only along the Yamuna river between Agra and Hamirpur, Bagpat and Ghaziabad districts. Only 31 wells (3.32%) show depth to water levels greater than 20m. These areas showing deeper water levels are due to presence of ravenous tract along the river Yamuna. Many wells in Lucknow city show this range.

The district wise categorization table of water level during August 2015 is presented in table-4 and the pictorial view is shown in Plate-V.

Table-4

DISTRICT- WISE DEPTH TO WATER LEVEL, U.P.
August, 2015

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
AGRA	14	0.12	41.73	1 7.14%	0	4 28.57%	4 28.57%	4 28.57%	1 7.14%
ALIGARH	10	0.65	12.85	2 20.00%	3 30.00%	4 40.00%	1 10.00 %	0	0
ALLAHABAD	35	0.54	17.68	9 25.71%	9 25.71%	8 22.86%	9 25.71%	0	0
AMBEDKAR NAGAR	11	-1.41	7.20	3 27.27%	4 36.36%	4 36.36%	0	0	0
AURAIYA	11	2.09	15.68	0	4 36.36%	4 36.36%	3 27.27%	0	0
AZAMGARH	19	1.02	9.30	1 5.26%	7 36.84%	11 57.89%	0	0	0
BAGHPAT	1	22.07	22.07	0	0	0	0	1 100.00%	0
BAHRAICH	15	0.87	10.70	7 46.67%	4 26.67%	3 20.00%	1 6.67%	0	0
BALLIA	18	1.15	7.59	1 5.56%	11 61.11%	6 33.33%	0	0	0
BALRAMPUR	15	-0.05	9.85	7 46.67%	6 40.00%	2 13.33%	0	0	0
BANDA	16	0.35	22.10	1 6.25%	8 50.00%	4 25.00%	2 12.50%	1 6.25%	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
BARABANKI	26	1.20	12.20	5 19.23%	9 34.62%	11 42.31%	1 3.85 %	0	0
BAREILLY	18	1.25	11.00	2 11.11%	5 27.78%	10 55.56%	1 5.56 %	0	0
BASTI	10	1.22	4.47	3 30.00%	7 70.00%	0	0	0	0
BUDAUN	13	4.67	15.98	0	2 15.38%	4 30.77%	7 53.85%	0	0
BULANDSHAHR	5	4.14	9.22	0	1 20.00%	4 80.00%	0	0	0
CHANDAULI	10	0.43	12.13	3 30.00%	5 50.00%	1 10.00%	1 10.00%	0	0
CHITRAKOOT	8	6.30	16.73	0	0	3 37.50%	5 62.50%	0	0
DEORIA	9	1.38	6.79	1 11.11%	6 66.67%	2 22.22%	0	0	0
ETAH	15	1.74	10.88	1 6.67%	2 13.33%	9 60.00%	3 20.00%	0	0
ETAWAH	8	2.22	35.60	0	2 25.00%	4 50.00%	0	2 25.00%	0
FAIZABAD	13	0.85	7.80	1 7.69%	6 46.15%	6 46.15%	0	0	0
FARRUKHABAD	5	5.28	12.95	0	0	2 40.00%	3 60.00%	0	0

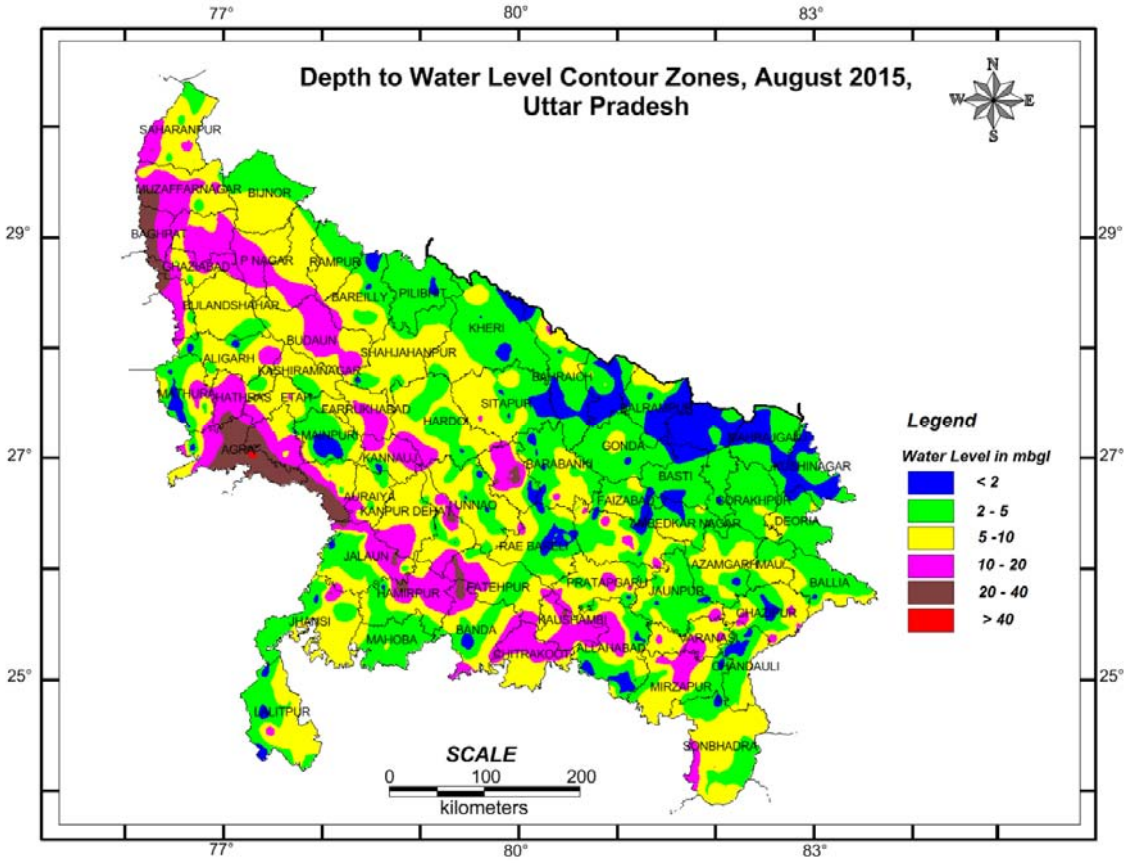
District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
FATEHPUR	13	2.20	21.68	0	3 23.08%	5 38.46%	3 23.08%	2 15.38%	0
FIROZABAD	7	0.43	21.90	1 14.29%	0	3 42.86%	2 28.57 %	1 14.29%	0
GAUTAM BUDDHA NAGAR	7	3.93	28.61	0	1 14.29%	0	4 57.14%	2 28.57%	0
GHAZIABAD	10	3.84	17.60	0	2 20.00%	4 40.00%	4 40.00%	0	0
GHAZIPUR	18	0.01	16.61	3 16.67%	4 22.22%	7 38.89%	4 22.22%	0	0
GONDA	8	1.40	7.37	1 12.50%	6 75.00%	1 12.50%	0	0	0
GORAKHPUR	7	2.47	6.13	0	6 85.71%	1 14.29%	0	0	0
HAMIRPUR	11	1.49	28.17	1 9.09%	3 27.27%	4 36.36%	2 18.18%	1 9.09%	0
HARDOI	24	1.50	11.10	2 8.33%	11 45.83%	10 41.67%	1 4.17%	0	0
HATHRAS	9	2.57	18.07	0	4 44.44%	2 22.22%	3 33.33%	0	0
JALAUN	28	1.34	28.63	2 7.14%	10 35.71%	7 25.00%	5 17.86%	4 14.29%	0
JAUNPUR	21	1.06	13.90	4 19.05%	9 42.86%	7 33.33%	1 4.76%	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
JHANSI	19	0.94	21.72	1 5.26%	9 47.37%	8 42.11%	0	1 5.26%	0
KANNAUJ	9	0.75	24.62	1 11.11%	1 11.11%	4 44.44%	2 22.22%	1 11.11%	0
KANPUR DEHAT	7	5.54	19.43	0	0	5 71.43%	2 28.57%	0	0
KANPUR NAGAR	15	1.46	29.50	2 13.33%	3 20.00%	4 26.67%	4 26.67%	2 13.33%	0
KAUSHAMBI	9	6.33	23.67	0	0	3 33.33%	4 44.44%	2 22.22%	0
KHERI	13	1.31	7.76	4 30.77%	7 53.85%	2 15.38%	0	0	0
KUSHINAGAR	10	0.65	3.71	6 60.00%	4 40.00%	0	0	0	0
LALITPUR	18	0.85	13.92	3 16.67%	8 44.44%	6 33.33%	1 5.56%	0	0
LUCKNOW	37	0.65	36.13	3 8.11%	2 5.41%	14 37.84%	13 35.14%	5 13.51%	0
MAHOBA	7	2.58	7.86	0	4 57.14%	3 42.86%	0	0	0
MAHRAJGANJ	6	1.31	3.06	3 50.00%	3 50.00%	0	0	0	0
MAINPURI	9	0.08	5.90	4 44.44%	3 33.33%	2 22.22%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
MATHURA	16	0.37	14.68	8 50.00%	2 12.50%	2 12.50%	4 25.00 %	0	0
MAU	7	2.37	7.46	0	4 57.14%	3 42.86%	0	0	0
MEERUT	8	6.05	18.64	0	0	5 62.50%	3 37.50%	0	0
MIRZAPUR	13	1.17	13.03	1 7.69%	6 46.15%	1 7.69%	5 38.46%	0	0
MUZAFFARNAGAR	13	2.77	22.23	0	2 15.38%	4 30.77%	6 46.15%	1 7.69%	0
PILIBHIT	12	1.68	4.91	2 16.67%	10 83.33%	0	0	0	0
PRATAPGARH	30	0.95	12.48	4 13.33%	5 16.67%	16 53.33%	5 16.67%	0	0
RAE BARELI	29	0.85	11.20	9 31.03%	10 34.48%	9 31.03%	1 3.45%	0	0
SAHARANPUR	22	2.76	21.08	0	6 27.27%	9 40.91%	6 27.27%	1 4.55%	0
SANT KABIR NAGA	4	1.48	4.30	1 25.00%	3 75.00%	0	0	0	0
SANT RAVIDAS NA	4	4.71	11.23	0	1 25.00%	2 50.00%	1 25.00%	0	0
SHAHJAHANPUR	8	0.67	8.04	1 12.50%	1 12.50%	6 75.00%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
SHRAWASTI	14	0.26	7.21	7 50.00%	4 28.57%	3 21.43%	0	0	0
SIDDHARTH NAGAR	11	0.58	3.97	9 81.82%	2 18.18%	0	0	0	0
SITAPUR	25	1.24	10.79	5 20.00%	7 28.00%	12 48.00%	1 4.00%	0	0
SONBHADRA	17	1.12	15.39	1 5.88%	8 47.06%	6 35.29%	2 11.76%	0	0
SULTANPUR	40	-0.45	14.03	5 12.50%	20 50.00%	8 20.00%	7 17.50%	0	0
UNNAO	23	0.68	9.83	4 17.39%	8 34.78%	11 47.83%	0	0	0
VARANASI	10	2.23	15.99	0	2 20.00%	3 30.00%	5 50.00%	0	0
Total	**933**	**-1.41**	**41.73**	**146**	**305**	**308**	**142**	**31**	**1**

Plate-V



November 2015:

The water level starts receding gradually after August with lateral flow of ground water due to change in hydraulic conditions with recession of monsoon and ground water storage. The water level stabilizes by November and there after natural out flow reduces considerably. This is the post monsoon water level which reflects the change in ground water storage which is the dynamic ground water resource. The volume of water available in storage may be safely used during the remaining year. This water level is an important parameter for resource estimation, planning etc.

Water logged area showing DWL 0-2 mbgl increases from August'15 and shown by 6.51% of wells. The depth to water level was shallow, falling in the range of 2 – 5 mbgl over a larger area and observed in 33.0% of the wells monitored, followed by water level in the range of 5 – 10 mbgl as observed in 36.80% of wells. The moderate (DWL 10 –20 mbgl) and deep water level areas (DWL> 20 mbgl) were noticed at 20.08% and 3.47% wells respectively**.**

The depth to water level from 0 to 2 m bgl. is observed in 60 (6.51% of the monitored wells). Area falling under this category are located in patches in Mainpuri, Kannuj, Unnao, Banda, Bahraich, Balrampur, Siddharth Nagar, Sultanpur, Azamgarh, Ghazipur, Mau, Ballia and Chandauli district.

The depth to water level from 2 to 5m bgl is found in 304 monitored wells (33.0%) This range is observed in most parts of the districts in Terai, Eastern, Central U.P. and few districts of Bundelkhand region. Along the Gomti, Ghaghra and Sharda rivers water level ranges from 2 to 5 mbgl. Most parts of districts of eastern U.P. and Terai region show DWL < 5mbgl.

A large number of wells i.e., 339 (about 36.8% of the monitored wells) shows depth to water levels from 5 to 10 m bgl. Largest area of state is covered under this category. This range is prominent in Western, Central & Southern U.P. A thin strip showing this range runs along the Ganga river, and extends over the Ganga - Ramganga interfluve area. This range is also seen along the Ganga-Yamuna doab from Aligarh up to Allahabad through Mathura, Kanpur Dehat, Kanpur Nagar, Jalaun, Hamirpur and Banda. On both the sides of Betwa river in Jhansi and Jalaun water level are observed to vary from 5 to 10 mbgl.

The water levels of 10 to 20 m bgl. is noticed in 185 wells(20.08%), mostly along the Yamuna river upto Varanasi, through Mathura, Agra, Kanpur, Jalaun, Fatehpur, Hamirpur ,Chitrakoot and Banda districts. This is mainly due to higher elevation of natural levee formed on either side of the Yamuna river. Most parts of districts of western U.P. -Muzaffarnagar, Baghpat, Meerut, Ghaziabad, G.B. Nagar, J.P. Nagar, Moradabad, show water level in this range. Few patches are seen in Agra, Allahabad, Bijnor, Chitrakoot, Fatehpur, Ghazipur, Hamirpur, Hathras, Kaushambi, Pratapgarh, Sultanpur and Unnao districts. Along the Ganga river a wide patch shows water level in the range. In Lucknow city water level in this range is observed.

The depth range of 20 m bgl. and more are found along the Yamuna river in Agra, Baghpat, Etawah, Fatehpur, Jalaun and Hamirpur districts. In Lucknow city DWL in this range is found .Only 32 wells shows depth to water levels greater than 20m. These areas showing deeper water levels are due to bearing of geomorphology as presence of ravenous tract along the Yamuna and Betwa rivers.

Table-5

DISTRICT- WISE DEPTH TO WATER LEVEL, U.P.
November, 2015

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
AGRA	13	0.79	42.20	1 7.69%	0	3 23.08%	5 38.46 %	3 23.08%	1 7.69%
ALIGARH	11	1.44	14.05	1 9.09%	3 27.27%	6 54.55%	1 9.09%	0	0
ALLAHABAD	30	1.65	19.17	2 6.67%	13 43.33%	8 26.67%	7 23.33%	0	0
AMBEDKAR NAGAR	11	1.79	7.50	1 9.09%	2 18.18%	8 72.73%	0	0	0
AURAIYA	11	1.16	16.20	1 9.09%	4 36.36%	2 18.18%	4 36.36%	0	0
AZAMGARH	19	0.67	8.38	1 5.26%	4 21.05%	14 73.68%	0	0	0
BAGHPAT	1	19.05	19.05	0	0	0	1 100.00%	0	0
BAHRAICH	11	1.46	8.84	3 27.27%	6 54.55%	2 18.18%	0	0	0
BALLIA	18	1.56	8.97	2 11.11%	7 38.89%	9 50.00%	0	0	0
BALRAMPUR	16	0.95	10.67	1 6.25%	12 75.00%	2 12.50%	1 6.25%	0	0
BANDA	16	1.30	22.70	1 6.25%	8 50.00%	4 25.00%	2 12.50%	1 6.25%	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
BARABANKI	24	2.25	11.90	0	12 50.00%	10 41.67%	2 8.33%	0	0
BAREILLY	18	2.80	11.20	0	6 33.33%	11 61.11%	1 5.56%	0	0
BASTI	9	2.87	5.20	0	8 88.89%	1 11.11%	0	0	0
BIJNOR	9	1.95	18.10	1 11.11%	3 33.33%	1 11.11%	4 44.44%	0	0
BUDAUN	12	5.01	16.15	0	0	5 41.67%	7 58.33%	0	0
BULANDSHAHR	5	4.92	11.60	0	1 20.00%	3 60.00%	1 20.00%	0	0
CHANDAULI	10	0.77	12.56	3 30.00%	3 30.00%	3 30.00%	1 10.00%	0	0
CHITRAKOOT	8	7.20	17.13	0	0	4 50.00%	4 50.00%	0	0
DEORIA	8	2.39	7.75	0	6 75.00%	2 25.00%	0	0	0
ETAH	15	2.17	11.30	0	3 20.00%	9 60.00%	3 20.00%	0	0
ETAWAH	6	3.90	36.60	0	2 33.33%	2 33.33%	0	2 33.33%	0
FAIZABAD	13	1.75	7.90	1 7.69%	8 61.54%	4 30.77%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
FARRUKHABAD	6	5.60	19.99	0	0	1 16.67%	5 83.33%	0	0
FATEHPUR	12	2.30	22.40	0	3 25.00%	3 25.00%	4 33.33%	2 16.67%	0
FIROZABAD	7	0.99	21.95	1 14.29%	1 14.29%	3 42.86%	1 14.29%	1 14.29%	0
GAUTAM BUDDHA NAGAR	5	5.18	29.05	0	0	1 20.00%	2 40.00%	2 40.00%	0
GHAZIABAD	10	4.00	18.05	0	1 10.00%	4 40.00%	5 50.00%	0	0
GHAZIPUR	18	0.52	15.50	2 11.11%	4 22.22%	8 44.44%	4 22.22%	0	0
GONDA	9	2.35	8.26	0	8 88.89%	1 11.11%	0	0	0
GORAKHPUR	6	3.65	7.23	0	4 66.67%	2 33.33%	0	0	0
HAMIRPUR	11	2.30	28.02	0	4 36.36%	2 18.18%	4 36.36%	1 9.09%	0
HARDOI	23	1.32	11.35	1 4.35%	11 47.83%	10 43.48%	1 4.35%	0	0
HATHRAS	8	2.82	18.26	0	1 12.50%	4 50.00%	3 37.50%	0	0
JALAUN	31	2.39	30.35	0	10 32.26%	11 35.48%	6 19.35%	4 12.90%	0

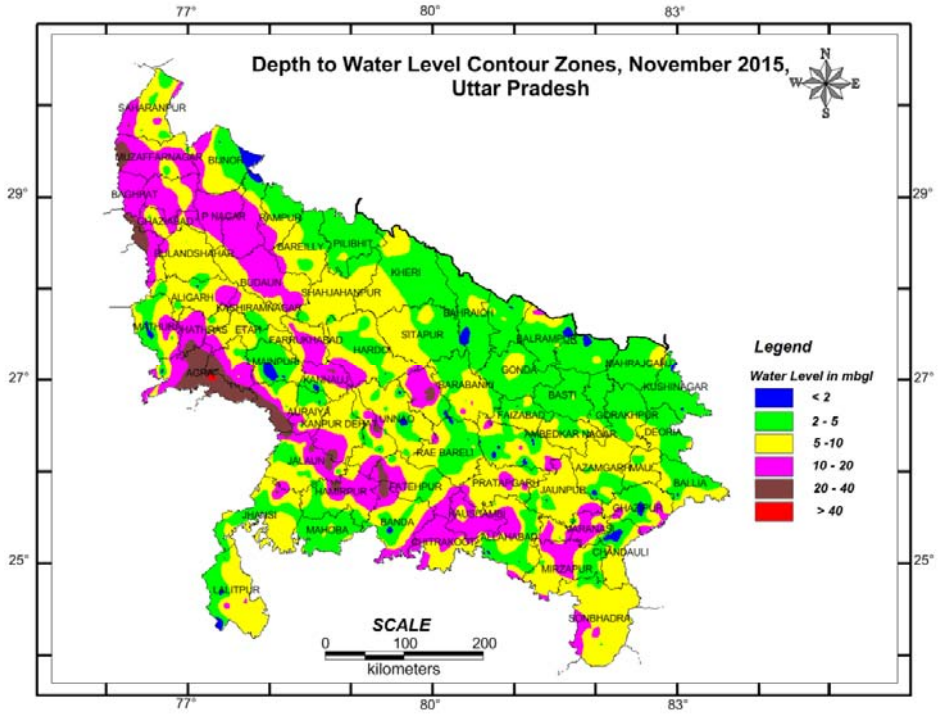
District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
JAUNPUR	18	1.59	15.78	1 5.56%	4 22.22%	11 61.11%	2 11.11%	0	0
JHANSI	19	2.30	23.16	0	8 42.11%	10 52.63%	0	1 5.26%	0
JYOTIBA PHULE NAGAR	9	5.90	14.35	0	0	1 11.11%	8 88.89%	0	0
KANNAUJ	9	0.65	24.60	1 11.11%	1 11.11%	3 33.33%	1 11.11%	3 33.33%	0
KANPUR DEHAT	6	5.33	16.82	0	0	5 83.33%	1 16.67%	0	0
KANPUR NAGAR	15	1.36	30.25	2 13.33%	3 20.00%	4 26.67%	4 26.67%	2 13.33%	0
KAUSHAMBI	7	7.78	21.37	0	0	1 14.29%	5 71.43%	1 14.29%	0
KHERI	9	2.05	8.81	0	7 77.78%	2 22.22%	0	0	0
KUSHINAGAR	8	1.38	4.55	2 25.00%	6 75.00%	0	0	0	0
LALITPUR	17	1.45	12.05	4 23.53%	2 11.76%	9 52.94%	2 11.76%	0	0
LUCKNOW	37	1.70	36.60	3 8.11%	1 2.70%	13 35.14%	14 37.84%	6 16.22%	0
MAHOBA	7	2.43	5.50	0	4 57.14%	3 42.86%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
MAHRAJGANJ	5	2.47	7.15	0	4 80.00%	1 20.00%	0	0	0
MAINPURI	9	0.74	5.68	3 33.33%	4 44.44%	2 22.22%	0	0	0
MATHURA	15	1.49	14.87	2 13.33%	7 46.67%	3 20.00%	3 20.00%	0	0
MAU	7	2.20	8.77	0	1 14.29%	6 85.71%	0	0	0
MEERUT	7	7.05	19.20	0	0	3 42.86%	4 57.14%	0	0
MIRZAPUR	14	2.71	13.40	0	4 28.57%	3 21.43%	7 50.00%	0	0
MORADABAD	16	1.60	16.20	1 6.25%	3 18.75%	0	12 75.00%	0	0
MUZAFFARNAGAR	17	2.60	22.35	0	2 11.76%	4 23.53%	9 52.94%	2 11.76%	0
PILIBHIT	12	2.42	5.52	0	10 83.33%	2 16.67%	0	0	0
PRATAPGARH	26	3.22	13.89	0	2 7.69%	18 69.23%	6 23.08%	0	0
RAE BARELI	23	1.40	11.30	3 13.04%	11 47.83%	8 34.78%	1 4.35%	0	0
RAMPUR	3	4.30	14.10	0	2 66.67%	0	1 33.33%	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
SAHARANPUR	21	2.13	22.30	0	5 23.81%	8 38.10%	7 33.33%	1 4.76%	0
SANT KABIR NAGA	4	2.43	5.32	0	3 75.00%	1 25.00%	0	0	0
SANT RAVIDAS NA	5	4.26	11.67	0	1 20.00%	1 20.00%	3 60.00%	0	0
SHAHJAHANPUR	6	1.69	7.26	1 16.67%	1 16.67%	4 66.67%	0	0	0
SHRAWASTI	14	1.84	8.43	1 7.14%	10 71.43%	3 21.43%	0	0	0
SIDDHARTHNAGAR	10	1.47	5.68	2 20.00%	7 70.00%	1 10.00%	0	0	0
SITAPUR	18	2.25	10.13	0	10 55.56%	7 38.89%	1 5.56%	0	0
SONBHADRA	17	1.67	15.10	1 5.88%	3 17.65%	11 64.71%	2 11.76%	0	0
SULTANPUR	37	0.89	13.35	7 18.92%	13 35.14%	12 32.43%	5 13.51%	0	0
UNNAO	22	0.25	9.97	3 13.64%	5 22.73%	14 63.64%	0	0	0
VARANASI	12	2.36	18.21	0	2 16.67%	2 16.67%	8 66.67%	0	0
Total	**921**	**0.25**	**42.20**	**60**	**304**	**339**	**185**	**32**	**1**

The district wise status of water level during the month has been shown in table -5 and pictorial view is shown in Plate-VI.

Plate-VI



January 2016:

Winter season is the peak season of ground water abstraction for Rabi cultivation. Consequently bulk of ground water storage is depleted during this season which is well reflected in the water level measurement during January 2016.

The depth to water level shows a large variation. The distribution pattern of the various depth ranges is the same only a general deepening in the water level is seen. The water logged area showing depth to water level in the range of 0-2 mbgl has reduced to 2.99%. Water levels in the range of 2–5 and 5-10 mbgl are predominant during this period as reflected at 32.22% and 40.0% of monitored wells respectively. The moderate water level zone remains at 20.82%. The very deep water level occurs in 3.79% wells. Thus there seems to be a balance between the input and output in these areas. The water level in the range of 0 - 2 mbgl is observed as isolated patches in Mathura, Mainpuri, Kannauj, Jalaun, Rae Bareli Kehri, Balrampur, Bahraich and Ghazipur district.

The water level in the range of 2 – 5 mbgl is seen in almost all the districts except in western part; being predominantly concentrated along the northern border (Terai region) eastern and North eastern parts of the state and as scattered patches in central and southern part of the State. The depth to water level of 5 - 10 m.bgl is observed predominantly in the central, western, southern and lower eastern parts of U.P. from Saharanpur to Sonbhadra districts.

The water level in range of 10-20 m.bgl is observed all along Yamuna river and parts of western U.P. This range is observed as patches in Agra, Allahabad, Baghpat, Banda, Bijnor, Chitrakoot, Fatehpur, Gautam Buddha Nagar, Ghaziabad, Ghazipur, Hamirpur, Fatehpur, Jalaun, Lalitpur, Kaushambi, Lucknow, Meerut, Mirzapur, Muzaffar Nagar, Pratapgarh, St. Ravidas Nagar, Sultanpur, Sonbhadra, Jaunpur, Ghazipur and Varanasi districts.

The water level of 20 m bgl and more is present only along Yamuna river in isolated patches in Bagpat, Agra, Etawah, Fatehpur, Hamirpur, Muzaffarnagar districts. This is due to effluent nature of river Yamuna and also due to higher elevations in the area. In the central parts of city area of Lucknow, more than 20 mbgl dwl is observed.

In Gandak and Saryu canal commands water level predominately ranges from 2 to 5 mbgl. Sharda Sahayak canal command shows predominance of DWL between 2 and 10 m.bgl while Ram Ganga canal command shows predominance of 5 - 10 m.bgl water level range.

The district wise status of water level during the month has been shown in Table-6 and the same has been depicted in Plate-VII.

Table -6

DISTRICT- WISE DEPTH TO WATER LEVEL, U.P.

January, 2016

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
AGRA	12	0.72	42.16	1 8.33%	0	2 16.67%	5 41.67%	3 25.00%	1 8.33%
ALIGARH	9	1.49	9.80	1 11.11%	2 22.22%	6 66.67%	0	0	0
ALLAHABAD	29	1.89	19.24	1 3.45%	11 37.93%	11 37.93%	6 20.69%	0	0
AMBEDKAR NAGAR	9	4.19	7.90	0	2 22.22%	7 77.78%	0	0	0
AURAIYA	9	1.90	15.77	1 11.11%	4 44.44%	2 22.22%	2 22.22%	0	0
AZAMGARH	15	1.76	8.33	1 6.67%	4 26.67%	10 66.67%	0	0	0
BAGHPAT	1	23.05	23.05	0	0	0	0	1 100.00%	0
BAHRAICH	11	1.81	9.04	1 9.09%	8 72.73%	2 18.18%	0	0	0
BALLIA	18	2.69	9.98	0	9 50.00%	9 50.00%	0	0	0
BALRAMPUR	15	1.45	10.04	1 6.67%	11 73.33%	2 13.33%	1 6.67%	0	0
BANDA	14	1.96	13.00	1 7.14%	5 35.71%	6 42.86%	2 14.29%	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
BARABANKI	23	3.00	12.10	0	8 34.78%	13 56.52%	2 8.70 %	0	0
BAREILLY	18	2.00	11.23	1 5.56%	5 27.78%	11 61.11%	1 5.56%	0	0
BASTI	9	3.72	5.47	0	8 88.89%	1 11.11%	0	0	0
BIJNOR	9	2.33	18.62	0	4 44.44%	1 11.11%	4 44.44%	0	0
BUDAUN	12	5.12	16.20	0	0	5 41.67%	7 58.33%	0	0
BULANDSHAHR	5	5.46	11.64	0	0	4 80.00%	1 20.00%	0	0
CHANDAULI	11	1.88	14.14	1 9.09%	5 45.45%	3 27.27%	2 18.18%	0	0
CHITRAKOOT	7	8.96	20.78	0	0	1 14.29%	5 71.43%	1 14.29%	0
DEORIA	5	3.63	6.13	0	4 80.00%	1 20.00%	0	0	0
ETAH	13	2.41	11.55	0	3 23.08%	7 53.85%	3 23.08%	0	0
ETAWAH	6	4.01	37.50	0	2 33.33%	1 16.67%	1 16.67%	2 33.33%	0
FAIZABAD	8	2.90	7.40	0	4 50.00%	4 50.00%	0	0	0

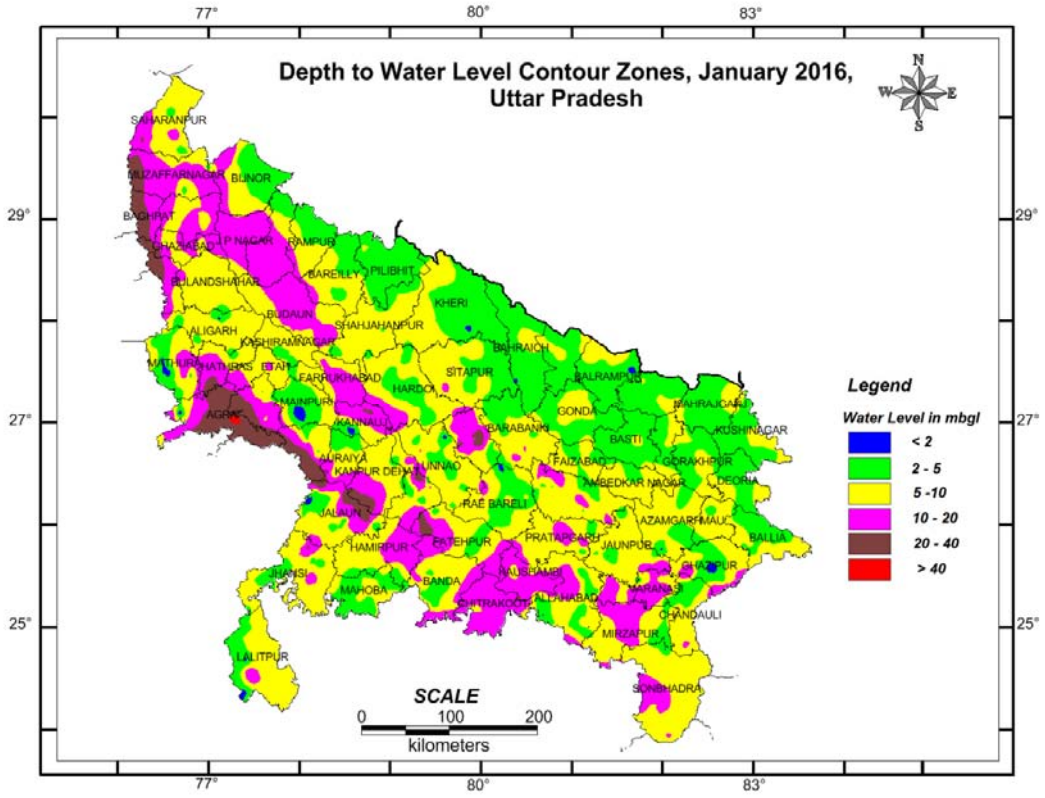
District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
FARRUKHABAD	6	6.35	20.20	0	0	1 16.67%	4 66.67%	1 16.67%	0
FATEHPUR	12	2.70	22.40	0	3 25.00%	3 25.00%	4 33.33%	2 16.67%	0
FIROZABAD	6	1.68	22.77	1 16.67%	1 16.67%	2 33.33%	1 16.67%	1 16.67%	0
GAUTAM BUDDHAR	5	5.38	29.36	0	0	1 20.00%	2 40.00%	2 40.00%	0
GHAZIABAD	12	4.40	19.10	0	2 16.67%	5 41.67%	5 41.67%	0	0
GHAZIPUR	15	0.60	18.50	1 6.67%	5 33.33%	5 33.33%	4 26.67%	0	0
GONDA	8	2.98	7.83	0	5 62.50%	3 37.50%	0	0	0
GORAKHPUR	5	4.31	7.88	0	4 80.00%	1 20.00%	0	0	0
HAMIRPUR	9	4.10	12.57	0	2 22.22%	2 22.22%	5 55.56%	0	0
HARDOI	20	2.57	11.75	0	11 55.00%	8 40.00%	1 5.00%	0	0
HATHRAS	5	2.71	18.41	0	1 20.00%	3 60.00%	1 20.00%	0	0
JALAUN	27	1.06	30.65	1 3.70%	9 33.33%	10 37.04%	3 11.11%	4 14.81%	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
JAUNPUR	18	1.82	15.69	1 5.56%	3 16.67%	12 66.67%	2 11.11%	0	0
JHANSI	19	2.92	22.42	0	7 36.84%	10 52.63%	1 5.26%	1 5.26%	0
JYOTIBA PHULE NAGAR	10	6.03	16.70	0	0	1 10.00%	9 90.00%	0	0
KANNAUJ	8	0.64	24.70	1 12.50%	1 12.50%	2 25.00%	1 12.50%	3 37.50%	0
KANPUR DEHAT	6	5.92	16.90	0	0	5 83.33%	1 16.67%	0	0
KANPUR NAGAR	15	2.13	30.39	0	5 33.33%	4 26.67%	4 26.67%	2 13.33%	0
KAUSHAMBI	7	8.42	21.54	0	0	1 14.29%	5 71.43%	1 14.29%	0
KHERI	13	1.79	9.05	1 7.69%	8 61.54%	4 30.77%	0	0	0
KUSHINAGAR	5	2.07	5.58	0	4 80.00%	1 20.00%	0	0	0
LALITPUR	13	1.66	16.75	2 15.38%	3 23.08%	7 53.85%	1 7.69%	0	0
LUCKNOW	38	2.05	36.70	0	3 7.89%	14 36.84%	15 39.47%	6 15.79%	0
MAHOBA	7	2.88	6.78	0	4 57.14%	3 42.86%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
MAHRAJGANJ	5	3.14	7.63	0	4 80.00%	1 20.00%	0	0	0
MAINPURI	7	1.08	6.15	1 14.29%	4 57.14%	2 28.57%	0	0	0
MATHURA	15	1.59	15.05	2 13.33%	7 46.67%	3 20.00%	3 20.00%	0	0
MAU	6	3.10	9.17	0	1 16.67%	5 83.33%	0	0	0
MEERUT	5	8.30	18.10	0	0	2 40.00%	3 60.00%	0	0
MIRZAPUR	13	4.41	15.20	0	2 15.38%	4 30.77%	7 53.85%	0	0
MORADABAD	15	2.05	16.14	0	4 26.67%	0	11 73.33%	0	0
MUZAFFARNAGAR	16	3.25	23.35	0	2 12.50%	4 25.00%	8 50.00%	2 12.50%	0
PILIBHIT	11	2.52	5.35	0	9 81.82%	2 18.18%	0	0	0
PRATAPGARH	26	2.45	16.96	0	4 15.38%	17 65.38%	5 19.23%	0	0
RAE BARELI	27	1.30	11.48	1 3.70%	11 40.74%	13 48.15%	2 7.41%	0	0
RAMPUR	3	4.65	9.60	0	1 33.33%	2 66.67%	0	0	0

District	No. of Wells Analysed	Depth to Water Table (mbgl)		No. / Percentage of Wells Showing Depth to Water Table (mbgl) in the Range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	>40.0
SAHARANPUR	18	3.30	22.00	0	2 11.11%	8 44.44%	7 38.89%	1 5.56%	0
SANT KABIR NAGA	4	3.26	5.95	0	1 25.00%	3 75.00%	0	0	0
SANT RAVIDAS NA	5	5.66	13.51	0	0	2 40.00%	3 60.00%	0	0
SHAHJAHANPUR	6	1.98	7.36	1 16.67%	1 16.67%	4 66.67%	0	0	0
SHRAWASTI	14	2.69	8.71	0	10 71.43%	4 28.57%	0	0	0
SIDDHARTHNAGAR	11	2.45	7.39	0	8 72.73%	3 27.27%	0	0	0
SITAPUR	23	2.74	11.69	0	11 47.83%	10 43.48%	2 8.70%	0	0
SONBHADRA	19	1.85	17.08	1 5.26%	1 5.26%	12 63.16%	5 26.32%	0	0
SULTANPUR	33	1.40	15.28	1 3.03%	8 24.24%	18 54.55%	6 18.18%	0	0
UNNAO	20	1.29	10.34	1 5.00%	7 35.00%	10 50.00%	2 10.00%	0	0
VARANASI	10	2.84	18.39	0	2 20.00%	2 20.00%	6 60.00%	0	0
Total	**869**	**0.60**	**42.16**	**26**	**280**	**348**	**181**	**33**	**1**

Plate-VII



A summarized status of water level over the state during different seasons of the year 2015–16 is as follows:

DEPTH RANGE (m)	No. and Percentage of wells			
	May'15	***Aug'15***	***Nov'15***	***Jan'16***
0-2	33(3.85%)	146(15.6%)	60(6.51%)	26(2.99%)
2-5	285(33.25%)	305(32.6%)	304(33.0%)	280(32.22%)
5-10	344(40.14%)	308(33.0%)	339 (36.8%)	348(40.0%)
10-20	164(19.13%)	142(15.2%)	185(20.08%)	181(20.82%)
>20	30(3.5%)	31(3.32%)	32(3.47%)	33(3.79%)

From the table it is seen that:-

1. There is a large variation in water logged area, water logging being maximum during August'15, reducing in Nov'15 and in Jan'16.
2. Shallow water level condition (2-5 mbgl) keeps fluctuating in response to the factors such as rainfall recharge and ground water draft.
3. The area having moderate depth to water level between 5-10 is maximum in May'15, reducing considerably in August'15 and again increasing in November'15 and January'16.
4. The deep water level conditions (above 10 m bgl) being maximum in May'15 reduces afterward in August'14 and gets further increases in November'15 & January'2016.
5. The spatial and temporal distribution of deeper water level zones is more or less constant.

The well-wise Depth to Water level of Ground Water Monitoring Wells of the state for May'15, Aug'15, Nov'15 & Jan'16 is given in Annexure-I.

Chapter 6
WATER LEVEL FLUCTUATIONS

Ground water is a dynamic resource and its storage changes in response to many factors such as monsoon rainfall, ground water draft for various purposes, hydrogeological conditions, topography, landuse, cropping pattern, irrigation status – surface and ground water etc. These changes in storage are reflected in form of water level fluctuations. The periodic monitoring of water levels gives an insight into these changes through study of spatial and temporal variations of water level throughout the year. The seasonal, annual and decadal comparisons of the water level data monitored at stations have been done and is analyzed as follows.

6.1 Seasonal Fluctuation during 2015 -16

The fluctuation of the water level in a particular year gives a picture of the response to rainfall and ground water extraction. The water level of May, the pre-monsoon water level, which is the lowest water level after all the inputs and outputs during one year, has been compared with that of Post-monsoon water level i.e. November'2015 and January'2016.

May2015 – November 2015

The difference between the pre and post-monsoon water level of the year, is the most important seasonal fluctuation which gives a clear picture of groundwater potential which could be fruitfully utilized for various uses over the succeeding year. This fluctuation is used to evaluate the dynamic ground water resource through the change in ground water storage. The depth to water level data during pre and post monsoon seasons of the year 2015 has been compiled and computed to estimate the seasonal change in water level. The same has been presented on district level in Table-7 and depicted in Plate-VIII.

Table -7

DISTRICT WISE– SEASONAL WATER LEVEL FLUCTUATION, U.P.

May' 2015 – November'2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	13	0.65	1.36	0.33	3.61	5 38.46%	0	0	7 53.85%	1 7.69%	0	5	8
ALIGARH	9	0.02	0.72	0.18	3.66	5 55.56%	0	0	3 33.33%	1 11.11%	0	5	4
ALLAHABAD	28	0.01	2.29	0.13	3.41	11 39.29%	3 10.71%	0	11 39.29%	2 7.14%	0	14	13
AMBEDKAR NAGAR	10	0.05	2.52	0.24	3.87	5 50.00%	1 10.00%	0	3 30.00%	1 10.00%	0	6	4
AURAIYA	10	0.25	3.39	0.40	1.25	1 10.00%	2 20.00%	0	6 60.00%	0	0	3	6
AZAMGARH	17	0.19	2.13	0.06	1.79	10 58.82%	1 5.88 %	0	6 35.29%	0	0	11	6
BAGHPAT	1	3.53	3.53	-	-	0	1 100.00%	0	0	0	0	1	0
BAHRAICH	11	0.05	1.13	0.26	0.26	10 90.91%	0	0	1 9.09%	0	0	10	1
BALLIA	18	0.41	2.16	-	-	16 88.89%	2 11.11%	0	0	0	0	18	0

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BALRAMPUR	15	0.12	1.28	0.03	1.15	7 46.67%	0	0	7 46.67%	0	0	7	7
BANDA	16	0.14	4.80	0.03	2.80	8 50.00%	1 6.25%	1 6.25%	4 25.00%	1 6.25%	0	10	5
BARABANKI	16	0.05	1.79	0.15	1.39	11 68.75%	0	0	5 31.25%	0	0	11	5
BAREILLY	17	0.22	0.85	0.10	5.50	13 76.47%	0	0	3 17.65%	0	1 5.88%	13	4
BASTI	9	0.16	1.30	0.19	0.35	6 66.67%	0	0	3 33.33%	0	0	6	3
BIJNOR	8	0.27	1.47	-	-	8 100.00%	0	0	0	0	0	8	0
BUDAUN	12	0.09	0.43	0.10	0.70	5 41.67%	0	0	6 50.00%	0	0	5	6
BULANDSHAHR	3	0.19	2.77	2.15	2.15	1 33.33%	1 33.33%	0	0	1 33.33%	0	2	1
CHITRAKOOT	8	0.30	6.10	0.20	1.90	2 25.00%	0	1 12.50%	5 62.50%	0	0	3	5
DEORIA	7	0.15	0.30	0.04	0.75	2 28.57%	0	0	5 71.43%	0	0	2	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAH	13	0.02	0.51	0.03	1.66	8 61.54%	0	0	5 38.46%	0	0	8	5
ETAWAH	5	0.40	2.28	1.78	1.78	2 40.00%	2 40.00%	0	1 20.00%	0	0	4	1
FAIZABAD	11	0.63	2.75	0.17	1.00	5 45.45%	1 9.09%	0	5 45.45%	0	0	6	5
FARRUKHABAD	6	0.01	0.22	0.05	0.40	3 50.00%	0	0	3 50.00%	0	0	3	3
FATEHPUR	12	0.20	0.70	0.45	4.23	9 75.00%	0	0	2 16.67%	0	1 8.33%	9	3
FIROZABAD	6	0.27	1.80	0.90	1.65	4 66.67%	0	0	2 33.33%	0	0	4	2
GAUTAM BUDDHA NAGAR	3	0.85	1.32	0.29	0.29	2 66.67%	0	0	1 33.33%	0	0	2	1
GHAZIABAD	10	0.17	2.41	0.37	0.69	7 70.00%	1 10.00%	0	2 20.00%	0	0	8	2
GHAZIPUR	14	0.19	3.21	0.23	0.39	7 50.00%	5 35.71%	0	2 14.29%	0	0	12	2
GONDA	9	0.07	1.10	0.05	1.17	5 55.56%	0	0	3 33.33%	0	0	5	3

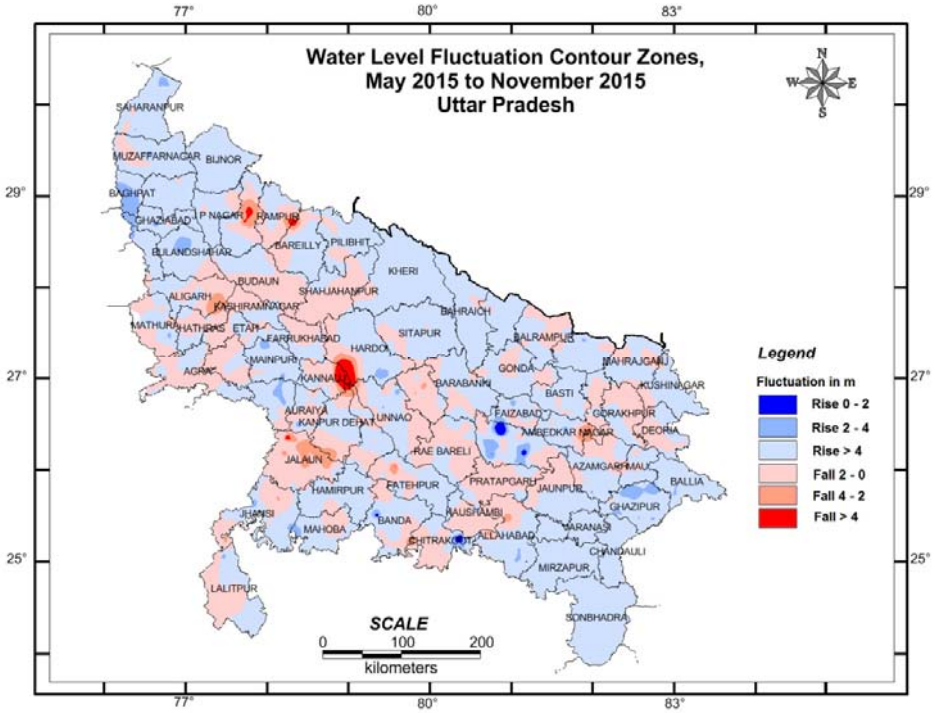
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GORAKHPUR	6	0.04	0.74	0.11	2.09	2 33.33%	0	0	3 50.00%	1 16.67%	0	2	4
HAMIRPUR	11	0.10	1.80	0.10	0.80	9 81.82%	0	0	2 18.18%	0	0	9	2
HARDOI	16	0.35	3.63	0.10	0.48	11 68.75%	1 6.25%	0	4 25.00%	0	0	12	4
HATHRAS	7	0.31	0.84	0.27	0.90	2 28.57%	0	0	5 71.43%	0	0	2	5
JALAUN	25	0.19	0.35	0.30	5.98	4 16.00%	0	0	13 52.00%	6 24.00%	2 8.00%	4	21
JAUNPUR	9	0.04	1.68	0.32	1.91	4 44.44%	0	0	5 55.56%	0	0	4	5
JHANSI	16	0.13	2.45	0.02	2.46	3 18.75%	1 6.25%	0	9 56.25%	2 12.50%	0	4	11
JYOTIBA PHULE NAGAR	7	0.40	0.73	0.20	0.32	4 57.14%	0	0	3 42.86%	0	0	4	3
KANNAUJ	9	0.01	0.11	0.02	25.10	3 33.33%	0	0	5 55.56%	0	1 11.11%	3	6
KANPURDEHAT	6	0.14	1.30	0.50	1.07	3 50.00%	0	0	3 50.00%	0	0	3	3

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPURNAGAR	14	0.20	3.03	0.25	0.51	8 57.14%	1 7.14%	0	5 35.71%	0	0	9	5
KAUSHAMBI	7	2.10	2.10	0.28	1.66	0	1 14.29%	0	6 85.71%	0	0	1	6
KHERI	7	0.15	1.14	0.30	0.30	6 85.71%	0	0	1 14.29%	0	0	6	1
KUSHINAGAR	7	0.23	1.34	-	-	7 100.00%	0	0	0	0	0	7	0
LALITPUR	12	0.15	3.25	0.15	1.52	5 41.67%	1 8.33%	0	6 50.00%	0	0	6	6
LUCKNOW	34	0.10	1.13	0.05	3.93	5 14.71%	0	0	26 76.47%	3 8.82%	0	5	29
MAHOBA	7	0.60	2.64	1.16	1.16	4 57.14%	2 28.57%	0	1 14.29%	0	0	6	1
MAHRAJGANJ	5	0.52	1.50	0.71	2.43	3 60.00%	0	0	1 20.00%	1 20.00%	0	3	2
MAINPURI	6	1.02	2.54	0.07	0.07	3 50.00%	2 33.33%	0	1 16.67%	0	0	5	1
MATHURA	15	0.05	3.61	0.04	1.00	6 40.00%	1 6.67%	0	8 53.33%	0	0	7	8

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MAU	7	0.14	1.68	0.40	0.62	5 71.43%	0	0	2 28.57%	0	0	5	2
MEERUT	5	0.18	0.57	0.15	0.15	4 80.00%	0	0	1 20.00%	0	0	4	1
MORADABAD	16	0.05	1.08	0.01	7.80	7 43.75%	0	0	6 37.50%	1 6.25%	2 12.50%	7	9
MUZAFFAR NAGAR	13	0.01	2.55	0.26	0.86	9 69.23%	1 7.69%	0	3 23.08%	0	0	10	3
PILIBHIT	12	0.16	0.82	0.36	0.70	8 66.67%	0	0	4 33.33%	0	0	8	4
PRATAPGARH	25	0.24	1.62	0.01	2.22	5 20.00%	0	0	19 76.00%	1 4.00%	0	5	20
RAE BARELI	16	0.17	1.20	0.02	2.28	3 18.75%	0	0	12 75.00%	1 6.25%	0	3	13
RAMPUR	1	0.77	0.77	-	-	1 100.00%	0	0	0	0	0	1	0
SAHARANPUR	21	0.07	2.89	0.53	1.53	17 80.95%	2 9.52%	0	2 9.52%	0	0	19	2
SANT KABIR NAGAR	4	0.67	0.67	0.04	1.18	1 25.00%	0	0	3 75.00%	0	0	1	3

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHAHJAHANPUR	4	-	-	0.05	0.72	0	0	0	4 100.0 %	0	0	0	4
SHRAWASTI	14	0.28	1.31	0.42	0.66	12 85.71%	0	0	2 14.29%	0	0	12	2
SIDDHARTH NAGAR	10	0.05	2.28	0.41	0.41	8 80.00%	1 10.00%	0	1 10.00%	0	0	9	1
SITAPUR	18	0.05	2.00	0.28	0.95	14 77.78%	0	0	4 22.22%	0	0	14	4
SULTANPUR	35	0.20	8.10	0.38	1.27	15 42.86%	6 17.14%	3 8.57%	11 31.43%	0	0	24	11
UNNAO	20	0.53	2.60	0.02	1.24	6 30.00%	2 10.00%	0	12 60.00%	0	0	8	12
Total	**764**	**3.53**	**0.11**	**0.00**	**25.10**	**385**	**43**	**5**	**294**	**23**	**7**	**433**	**324**

Plate-VIII



The district wise data indicate a rise in water level in almost 56.67%of the wells indicating monsoon recharge to ground water. There is a general rise in water levels from 0 to 2 m as noticed at 385 (50.39%) wells. This rise is seen in almost all the districts of the state except north Central part of the state. The rise in water levels in the range of 2 - 4 m is observed in 43 wells (5.62%).This range is observed mostly in eastern and parts of central and southern U.P. But their spatial extent is limited to patches and are confined in Jalaun, Hamirpur, Banda, Chitrakoot of Bundelkhand region and Ballia, Faizabad, Ghaziabad, Mau and Pratapgarh districts of Poorvanchal. The rise of more than 4 m is observed in 5wells (0.65%), covering few parts of hard rock areas of Allahabad, Chandauli, Chitrakoot, Fatehpur, Hamirpur, Jalaun, Jhansi, Mirzapur, Pratapgarh, Sonbhadra and Varanasi districts.

During pre-monsoon period, there are 324 wells (42.40%) shows declining in water level. Fall of 0 to 2 m in water level is observed in 294 wells no. (38.48%) in isolated patches. Fall of 2 to 4 m is noticed only in 23 wells(3.0%) and fall of > 4 m is observed only in 7 wells (0.9%).

May 2015 – January 2016:

By January the rainfall infiltration starts dissipating and ground water extraction which had come down during the monsoon also starts building up. But the rise in water level continues though at a lower scale. The water level data during pre monsoon period i.e. May'15 and that of January'2016 have been analysed to estimate the change in water levels. The same has been presented on district level in table-8 and depicted in Plate-IX.

There is a rise in water level in 283 no. of analysed wells (39.0%) and a fall in 437 no. (60.27%) of analysed wells. The rise in water levels in the range of 0–2 m is seen in36.82% wells covering almost all the districts of the state. Rise of 2 – 4 m is observed at 2.2% wells spread throughout the state. Rise of more than 4 m is not observed in the analysed wells. About 53.10% of wells (385 no.) of analysed wells show fall of 0-2 m in patches in few districts and 5.79% of wells (42 no.) show fall of 2-4m and 10 wells show fall of >4m.

The overall picture of change of ground water storage over the entire state during 2015 which emerged from the analysis of pre and post monsoon water level observation and water level fluctuation during May'15 and January'16 has been summarized as follows.

Fluctuation Change of Groundwater Storage in U.P. (2015-16)

Magnitude of Change (m)	May'15 – Nov'15		May'15 – Jan'16	
	Rise (%)	Fall (%)	Rise (%)	Fall (%)
0-2	50.39	38.48	36.82	53.10
2-4	5.62	3.0	2.2	5.79
>4	0.65	0.9	0	1.37

It is evident from analyses that ground water has been recharged in most parts of the state and the quantum of recharge is reflected through a rise in water level to a tune of 0-4 m. Number of wells showing rise of 0-2 m in water level from May'2015 to November'2016 and but from May'2015 to January'2016 decreases from 50.39 to 36.82% respectively. Percentage of analysed wells showing rise of water level in the range of 2-4 m has decreased from 5.62 – 2.2 in May'2015 to November'2015 and to January'2016 respectively and number of wells showing rise of water level of more than 4 m has been reduced from 0.65% to nil.

Table–8

DISTRICT WISE – SEASONAL WATER LEVEL FLUCTUATION, U.P.
May' 2015 – January'2016

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	12	0.61	0.87	0.49	3.97	3 25.00%	0	0	6 50.00%	3 25.00%	0	3	9
ALIGARH	8	0.07	0.77	0.23	3.79	3 37.50%	0	0	3 37.50%	1 12.50%	0	3	4
ALLAHABAD	27	0.12	2.06	0.12	3.48	8 29.63%	1 3.70%	0	16 59.26%	2 7.41%	0	9	18
AMBEDKAR NAGAR	9	0.12	0.69	0.10	0.55	2 22.22%	0	0	6 66.67%	0	0	2	6
AURAIYA	8	0.14	1.50	0.52	1.37	3 37.50%	0	0	5 62.50%	0	0	3	5
AZAMGARH	14	0.21	1.77	0.21	2.45	7 50.00%	0	0	6 42.86%	1 7.14%	0	7	7
BAGHPAT	1	-	-	0.47	0.47	0	0	0	1 100.0 %	0	0	0	1
BAHRAICH	11	0.05	0.59	0.13	0.42	5 45.45%	0	0	5 45.45%	0	0	5	5
BALLIA	18	0.07	1.92	0.30	1.03	12 66.67%	0	0	6 33.33%	0	0	12	6

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BALRAMPUR	14	0.45	0.45	0.18	1.25	1 7.14%	0	0	13 92.86%	0	0	1	13
BANDA	14	0.10	3.00	0.16	3.50	5 35.71%	1 7.14%	0	6 42.86%	2 14.29%	0	6	8
BARABANKI	17	0.05	0.79	0.03	3.04	12 70.59%	0	0	4 23.53%	1 5.88%	0	12	5
BAREILLY	17	0.15	0.89	0.05	5.60	12 70.59%	0	0	4 23.53%	0	1 5.88%	12	5
BASTI	9	0.43	0.48	0.17	0.63	2 22.22%	0	0	7 77.78%	0	0	2	7
BIJNOR	8	0.03	1.22	-	-	8 100.00%	0	0	0	0	0	8	0
BUDAUN	12	0.02	0.39	0.13	0.50	4 33.33%	0	0	8 66.67%	0	0	4	8
BULANDSHAHR	3	2.23	2.23	0.75	2.74	0	1 33.33%	0	1 33.33%	1 33.33%	0	1	2
CHITRAKOOT	7	0.70	0.70	0.40	6.38	1 14.29%	0	0	2 28.57%	3 42.86%	1 14.29%	1	6
DEORIA	4	-	-	0.33	1.00	0	0	0	4 100.0 %	0	0	0	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAH	12	0.08	0.18	0.09	1.79	2 16.67%	0	0	10 83.33%	0	0	2	10
ETAWAH	5	2.03	2.20	0.40	1.94	0	2 40.00%	0	2 40.00%	0	0	2	2
FAIZABAD	7	0.27	0.75	0.20	0.87	5 71.43%	0	0	2 28.57%	0	0	5	2
FARRUKHABAD	6	0.07	0.07	0.20	0.88	1 16.67%	0	0	5 83.33%	0	0	1	5
FATEHPUR	12	0.10	0.70	1.10	4.40	7 58.33%	0	0	4 33.33%	0	1 8.33%	7	5
FIROZABAD	6	0.02	0.67	0.16	1.49	2 33.33%	0	0	4 66.67%	0	0	2	4
GAUTAM BUDDHA NAGAR	3	0.76	1.12	0.32	0.32	2 66.67%	0	0	1 33.33%	0	0	2	1
GHAZIABAD	11	0.42	1.86	0.13	0.78	4 36.36%	0	0	7 63.64%	0	0	4	7
GHAZIPUR	12	0.13	3.54	0.46	0.85	7 58.33%	2 16.67%	0	3 25.00%	0	0	9	3
GONDA	8	-	-	0.18	1.65	0	0	0	8 100.0 %	0	0	0	8

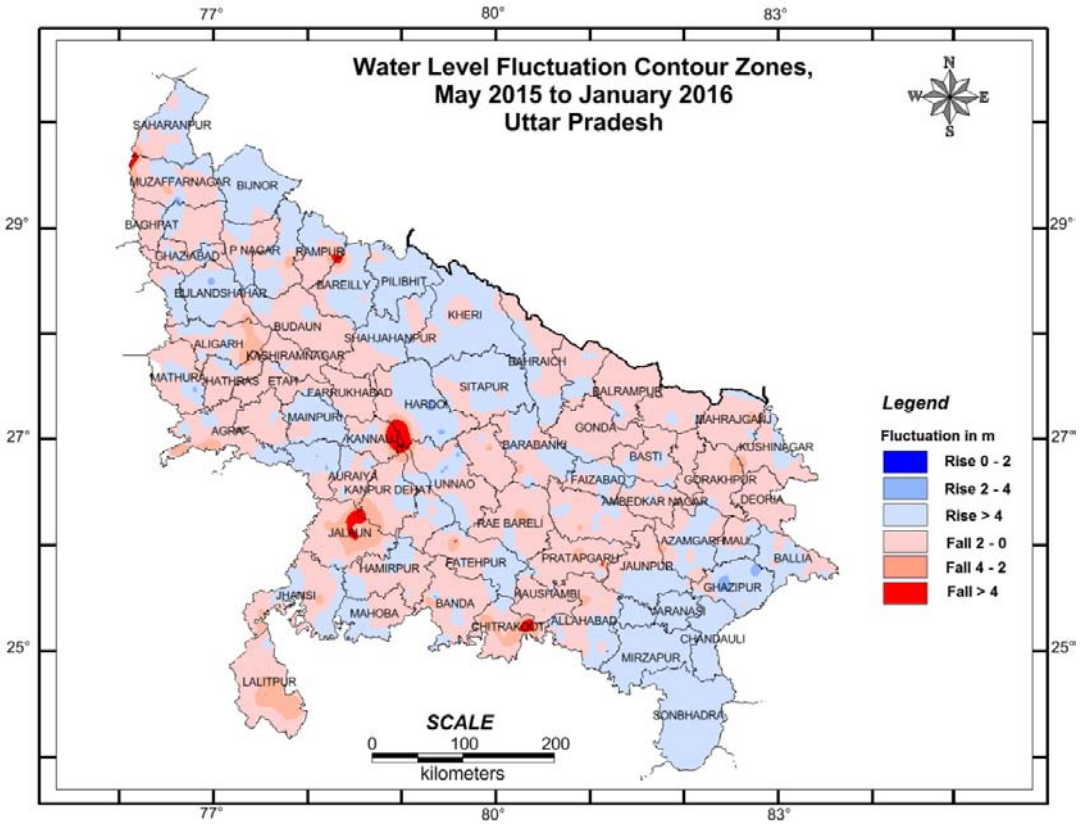
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GORAKHPUR	5	-	-	0.04	2.75	0	0	0	4 80.00%	1 20.00%	0	0	5
HAMIRPUR	9	0.20	1.30	0.40	2.20	5 55.56%	0	0	3 33.33%	1 11.11%	0	5	4
HARDOI	17	0.21	2.89	0.20	0.99	11 64.71%	2 11.76%	0	4 23.53%	0	0	13	4
HATHRAS	5	0.95	0.95	0.08	1.02	1 20.00%	0	0	4 80.00%	0	0	1	4
JALAUN	22	0.02	0.60	0.37	6.50	3 13.64%	0	0	8 36.36%	9 40.91%	2 9.09%	3	19
JAUNPUR	7	1.45	1.45	0.44	2.28	1 14.29%	0	0	5 71.43%	1 14.29%	0	1	6
JHANSI	17	0.98	1.83	0.09	3.06	2 11.76%	0	0	12 70.59%	3 17.65%	0	2	15
JYOTIBA PHULE NAGAR	7	0.07	0.80	0.26	1.60	4 57.14%	0	0	3 42.86%	0	0	4	3
KANNAUJ	8	0.12	0.28	0.13	25.20	3 37.50%	0	0	4 50.00%	0	1 12.50%	3	5
KANPUR DEHAT	6	0.80	0.80	0.29	1.28	1 16.67%	0	0	4 66.67%	0	0	1	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPUR NAGAR	14	0.43	2.62	0.16	1.87	8 57.14%	1 7.14%	0	5 35.71%	0	0	9	5
KAUSHAMBI	7	0.39	0.39	0.45	2.14	1 14.29%	0	0	5 71.43%	1 14.29%	0	1	6
KHERI	9	0.07	1.07	0.30	0.57	7 77.78%	0	0	2 22.22%	0	0	7	2
KUSHINAGAR	4	0.29	0.31	0.63	0.75	2 50.00%	0	0	2 50.00%	0	0	2	2
LALITPUR	10	0.35	0.35	0.27	4.03	1 10.00%	0	0	7 70.00%	1 10.00%	1 10.00%	1	9
LUCKNOW	35	0.13	0.85	0.05	4.33	5 14.29%	0	0	27 77.14%	2 5.71%	1 2.86%	5	30
MAHOBA	7	0.30	1.25	1.90	1.90	6 85.71%	0	0	1 14.29%	0	0	6	1
MAHRAJGANJ	5	0.21	0.57	0.41	2.91	2 40.00%	0	0	2 40.00%	1 20.00%	0	2	3
MAINPURI	6	0.49	1.06	0.41	0.41	5 83.33%	0	0	1 16.67%	0	0	5	1
MATHURA	15	0.04	3.40	0.01	1.12	5 33.33%	1 6.67%	0	9 60.00%	0	0	6	9

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MAU	6	0.04	1.10	0.09	1.00	3 50.00%	0	0	3 50.00%	0	0	3	3
MEERUT	4	-	-	0.25	0.76	0	0	0	4 100.0 %	0	0	0	4
MORADABAD	15	0.02	1.56	0.05	3.20	8 53.33%	0	0	6 40.00%	1 6.67%	0	8	7
MUZAFFAR NAGAR	13	0.52	3.02	0.12	5.94	2 15.38%	2 15.38%	0	7 53.85%	1 7.69%	1 7.69%	4	9
PILIBHIT	11	0.07	0.85	0.78	0.78	10 90.91%	0	0	1 9.09%	0	0	10	1
PRATAPGARH	23	0.26	0.76	0.03	5.29	3 13.04%	0	0	18 78.26%	1 4.35%	1 4.35%	3	20
RAE BARELI	18	0.60	0.60	0.05	3.45	1 5.56%	0	0	14 77.78%	3 16.67%	0	1	17
RAMPUR	1	0.42	0.42	-	-	1 100.00%	0	0	0	0	0	1	0
SAHARANPUR	18	0.02	1.80	0.09	1.23	9 50.00%	0	0	9 50.00%	0	0	9	9
SANT KABIR NAGAR	4	-	-	0.16	1.81	0	0	0	4 100.0 %	0	0	0	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHAHJAHANPUR	4	0.67	0.67	0.15	0.58	1 25.00%	0	0	3 75.00%	0	0	1	3
SHRAWASTI	14	0.02	0.64	0.04	1.01	6 42.86%	0	0	8 57.14%	0	0	6	8
SIDDHARTH NAGAR	11	0.05	0.33	0.12	1.41	4 36.36%	0	0	7 63.64%	0	0	4	7
SITAPUR	22	0.02	1.41	0.15	0.90	16 72.73%	0	0	6 27.27%	0	0	16	6
SULTANPUR	32	0.06	0.60	0.07	2.23	10 31.25%	0	0	20 62.50%	2 6.25%	0	10	22
UNNAO	19	0.38	2.47	0.05	1.54	2 10.53%	3 15.79%	0	14 73.68%	0	0	5	14
Total	**725**	**2.23**	**0.07**	**0.00**	**25.20**	**267**	**16**	**0**	**385**	**42**	**10**	**283**	**437**

Plate – IX


Water Level Fluctuation Contour Zones,
May 2015 to January 2016
Uttar Pradesh
77°
80°
83°
29°
27°
25°
N
W
E
S
SAHARANPUR
MUZAFFARNAGAR
BIJNOR
BAGHPAT
CHAZIABAD
P NAGAR
RAMPUR
BAREILLY
PILIBHIT
BULANDSHAHAR
KHERI
BUDAUN
SHAHJAHANPUR
ALIGARH
KASHIRAMNAGAR
BAHRAICH
MATHURA
HATHRAS
ETAH
FARRUKHABAD
SITAPUR
BALRAMPUR
HARDOI
MAHARAJGANJ
MAINPURI
GONDA
AGRA
KANNAUJ
BARABANKI
KUSHINAGAR
BASTI
AURAIYA
FAIZABAD
GORAKHPUR
KANPUR DEHAT
UNNAO
AMBEDKAR NAGAR
DEORIA
JALAUN
RAE BARELI
AZAMGARH
MAU
HAMIRPUR
FATEHPUR
PRATAPGARH
JAUNPUR
BALLIA
GHAZIPUR
JHANSI
KAUSHAMBI
MAHOBA
BANDA
VARANASI
ALLAHABAD
CHITRAKOOT
CHANDAULI
MIRZAPUR
LALITPUR
SONBHADRA
Legend
Fluctuation in m
Rise 0 - 2
Rise 2 - 4
Rise > 4
Fall 2 - 0
Fall 4 - 2
Fall > 4
SCALE
0
100
200
kilometers

6.2 Annual Fluctuation

Whereas the seasonal fluctuation in the water level occurs due to rainfall and irrigation as the two main factors during different periods of the year it is the annual fluctuation which gives the net result of one whole cycle of recharge and discharge that has taken place during one year. An annual decline indicates that ground water extraction has been in excess of the rainfall recharge in broad terms.

To evaluate the annual change in groundwater levels during 2015-16 as a resultant of different variables and to develop a strategy for future development, the water level of different seasons over the state was compared to that of the same season in the previous year. The out come is discussed subsequently in brief.

May 2014 –15:

The water level data collected during May'2015 has been compared with May'2014 data to evaluate the rise and fall in water levels since last one year. The wells have been categorized depending on rise and fall in water levels.

It is analysed that 243 no. (30.26%) monitoring wells show rise and 553 no.(68.86%) show fall in water level. The fall of 0 - 2 m is observed in 496 (61.76%) monitoring wells in almost all parts of the state. This fall is prominent in Agra, Aligarh, Ambedkar Nagar, Auraiya, Balrampur, Banda, Barabanki, Bareilly, Bijnor, Budaun, Deoria, Etawah, Faizabad, Firozabad, Ghazipur, Gonda, Hathras, Jhansi, Kanpur Nagar, Kannauj, G.B. Nagar, Kheri, Kushinagar, Maharajganj, Mau, Mathura, Pilibhit, Meerut, Raebareli, St. Kabir Nagar, Shahjahanpur, Siddhartha Nagar, Shrawasti, Sitapur, Sultanpur and Unnao districts. Fall of higher magnitude (2 to 4 m in water level) as compared to May'2015 is observed in 49 monitoring wells and only 8 wells shows fall more than 4 m.

A rise of 0 - 2 m in water level is observed as patches in 215 monitoring wells (26.77%) in Rampur, Hathras, Kannauj Jhansi and Barabanki districts. Rise of 2-4 m in water level is observed in 21 Monitoring wells (2.61%) and rise of more than 4 m is seen in Monitoring 7 wells in small patches in Agra, Mathura, Jalaun, Hamirpur, Fatehpur, Mirzapur, and Raebareli districts.

The district wise changes have been shown in Table-9 and the same is depicted in Plate-X.

Table-9

DISTRICT WISE – ANNUAL WATER LEVEL FLUCTUATION, U.P.
May' 2014 -2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	13	0.21	2.33	0.60	7.07	2 15.38%	1 7.69%	0	6 46.15%	3 23.08%	1 7.69%	3	10
ALIGARH	9	0.23	3.64	0.06	1.38	4 44.44%	1 11.11%	0	4 44.44%	0	0	5	4
ALLAHABAD	29	0.01	2.43	0.16	3.62	4 13.79%	1 3.45%	0	17 58.62%	7 24.14%	0	5	24
AMBEDKAR NAGAR	13	0.36	2.58	0.04	1.53	1 7.69%	1 7.69%	0	11 84.62%	0	0	2	11
AURAIYA	10	0.13	0.13	0.02	4.63	1 10.00%	0	0	6 60.00%	2 20.00%	1 10.00%	1	9
AZAMGARH	17	0.17	0.37	0.08	1.38	2 11.76%	0	0	15 88.24%	0	0	2	15
BAHRAICH	13	0.12	1.70	0.24	0.27	11 84.62%	0	0	2 15.38%	0	0	11	2
BALLIA	17	0.16	0.56	0.05	1.39	2 11.76%	0	0	15 88.24%	0	0	2	15
BALRAMPUR	15	0.08	0.92	0.05	1.18	9 60.00%	0	0	5 33.33%	0	0	9	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BANDA	15	0.38	1.75	0.09	2.83	4 26.67%	0	0	8 53.33%	3 20.00%	0	4	11
BARABANKI	17	0.16	5.34	0.03	0.81	8 47.06%	2 11.76%	1 5.88%	6 35.29%	0	0	11	6
BAREILLY	19	0.30	5.73	0.18	1.30	3 15.79%	0	1 5.26%	15 78.95%	0	0	4	15
BASTI	10	0.10	0.50	0.05	2.60	4 40.00%	0	0	5 50.00%	1 10.00%	0	4	6
BIJNOR	9	1.59	1.59	0.23	0.72	1 11.11%	0	0	8 88.89%	0	0	1	8
BUDAUN	17	0.35	2.95	0.13	1.90	1 5.88%	2 11.76%	0	14 82.35%	0	0	3	14
BULANDSHAHR	5	0.21	2.55	2.10	2.10	3 60.00%	1 20.00%	0	0	1 20.00%	0	4	1
CHITRAKOOT	8	-	-	0.71	6.40	0	0	0	3 37.50%	2 25.00%	3 37.50%	0	8
DEORIA	8	0.02	1.72	0.10	0.48	5 62.50%	0	0	3 37.50%	0	0	5	3
ETAH	13	0.41	0.41	0.19	1.36	1 7.69%	0	0	12 92.31%	0	0	1	12

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAWAH	6	1.40	2.30	0.59	1.65	1 16.67%	1 16.67%	0	4 66.67%	0	0	2	4
FAIZABAD	12	0.31	1.05	0.10	1.48	3 25.00%	0	0	9 75.00%	0	0	3	9
FARRUKHABAD	7	-	-	0.29	2.03	0	0	0	6 85.71%	1 14.29%	0	0	7
FATEHPUR	13	0.35	3.06	0.39	4.80	2 15.38%	1 7.69%	0	6 46.15%	3 23.08%	1 7.69%	3	10
FIROZABAD	6	0.04	1.54	0.60	1.39	2 33.33%	0	0	4 66.67%	0	0	2	4
GAUTAM BUDDHA NAGAR	4	1.78	2.03	1.17	1.42	1 25.00%	1 25.00%	0	2 50.00%	0	0	2	2
GHAZIABAD	10	-	-	0.22	2.56	0	0	0	8 80.00%	2 20.00%	0	0	10
GHAZIPUR	15	0.19	0.19	0.08	2.07	1 6.67%	0	0	13 86.67%	1 6.67%	0	1	14
GONDA	9	0.08	0.95	0.25	0.61	4 44.44%	0	0	5 55.56%	0	0	4	5
GORAKHPUR	3	0.48	1.96	-	-	3 100.00%	0	0	0	0	0	3	0

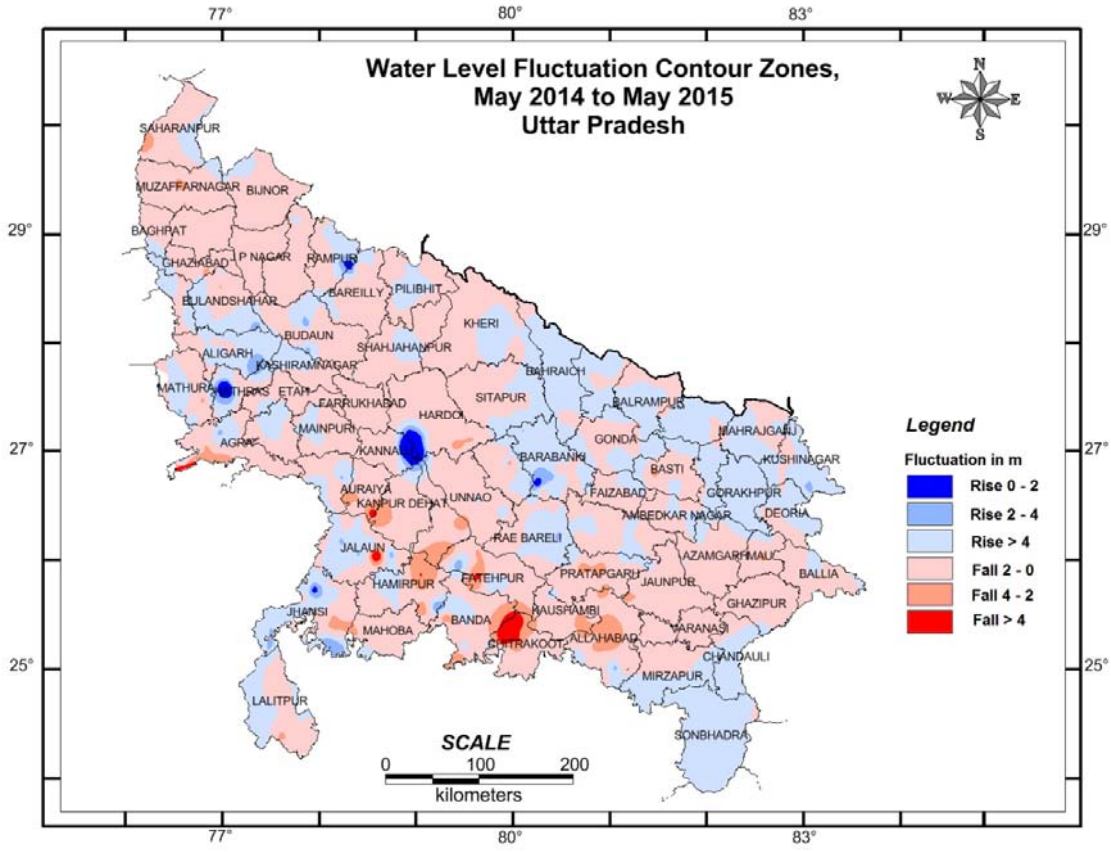
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
HAMIRPUR	11	0.11	3.62	1.12	4.14	3 27.27%	1 9.09%	0	4 36.36%	2 18.18%	1 9.09%	4	7
HARDOI	21	-	-	0.64	2.48	0	0	0	19 90.48%	2 9.52%	0	0	21
HATHRAS	6	0.18	7.64	0.08	1.39	1 16.67%	0	1 16.67%	4 66.67%	0	0	2	4
JALAUN	24	0.19	2.90	0.05	6.35	8 33.33%	3 12.50%	0	12 50.00%	0	1 4.17%	11	13
JAUNPUR	9	0.52	0.52	0.17	2.81	1 11.11%	0	0	7 77.78%	1 11.11%	0	1	8
JHANSI	19	0.17	4.90	0.10	2.85	6 31.58%	2 10.53%	2 10.53%	6 31.58%	2 10.53%	0	10	8
JYOTIBA PHULE NAGAR	9	0.03	0.03	0.34	1.12	1 11.11%	0	0	8 88.89%	0	0	1	8
KANNAUJ	9	5.89	24.69	0.42	1.30	0	0	2 22.22%	6 66.67%	0	0	2	6
KANPURDEHAT	7	-	-	0.55	1.50	0	0	0	7 100.0 %	0	0	0	7
KANPURNAGAR	11	0.12	0.12	0.06	3.14	1 9.09%	0	0	9 81.82%	1 9.09%	0	1	10

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KAUSHAMBI	9	-	-	0.19	2.43	0	0	0	8 88.89%	1 11.11%	0	0	9
KHERI	8	0.25	1.39	0.03	1.20	2 25.00%	0	0	6 75.00%	0	0	2	6
KUSHINAGAR	7	0.13	2.20	0.01	0.25	4 57.14%	1 14.29%	0	2 28.57%	0	0	5	2
LALITPUR	13	0.10	1.73	0.10	2.45	7 53.85%	0	0	5 38.46%	1 7.69%	0	7	6
LUCKNOW	35	0.10	1.70	0.32	3.53	10 28.57%	0	0	24 68.57%	1 2.86%	0	10	25
MAHOBA	7	0.02	0.02	0.09	2.28	1 14.29%	0	0	4 57.14%	2 28.57%	0	1	6
MAHRAJGANJ	6	0.37	1.60	0.33	1.24	3 50.00%	0	0	3 50.00%	0	0	3	3
MAINPURI	6	0.13	0.97	0.67	1.35	3 50.00%	0	0	3 50.00%	0	0	3	3
MATHURA	16	0.28	2.59	0.17	2.80	8 50.00%	1 6.25%	0	6 37.50%	1 6.25%	0	9	7
MAU	7	0.06	1.70	0.16	2.76	2 28.57%	0	0	4 57.14%	1 14.29%	0	2	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MEERUT	4	0.01	0.01	0.16	1.93	1 25.00%	0	0	3 75.00%	0	0	1	3
MORADABAD	18	0.58	0.58	0.23	2.02	1 5.56%	0	0	16 88.89%	1 5.56%	0	1	17
MUZAFFARNAGAR	13	0.43	0.43	0.36	2.97	1 7.69%	0	0	10 76.92%	2 15.38%	0	1	12
PILIBHIT	12	0.04	0.59	0.01	0.47	6 50.00%	0	0	6 50.00%	0	0	6	6
PRATAPGARH	25	0.08	0.50	0.03	2.73	3 12.00%	0	0	18 72.00%	3 12.00%	0	3	21
RAE BARELI	19	0.07	2.76	0.05	1.47	11 57.89%	1 5.26%	0	7 36.84%	0	0	12	7
RAMPUR	1	-	-	1.00	1.00	0	0	0	1 100.0 %	0	0	0	1
SAHARANPUR	14	0.74	0.82	0.08	3.61	2 14.29%	0	0	10 71.43%	2 14.29%	0	2	12
SANT KABIR NAGAR	4	0.13	0.72	-	-	4 100.00%	0	0	0	0	0	4	0
SHAHJAHANPUR	6	0.11	2.00	0.80	1.33	2 33.33%	0	0	4 66.67%	0	0	2	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHRAWASTI	14	0.11	1.72	0.62	0.62	12 85.71%	0	0	1 7.14%	0	0	12	1
SIDDHARTH NAGAR	11	0.15	1.65	0.30	0.70	9 81.82%	0	0	2 18.18%	0	0	9	2
SITAPUR	20	0.03	0.45	0.05	1.25	6 30.00%	0	0	14 70.00%	0	0	6	14
SULTANPUR	37	0.10	1.20	0.12	1.35	10 27.03%	0	0	25 67.57%	0	0	10	25
UNNAO	23	0.04	0.36	0.08	1.78	3 13.04%	0	0	20 86.96%	0	0	3	20
Total	**803**	**5.89**	**0.01**	**0.00**	**7.07**	**215**	**21**	**7**	**496**	**49**	**8**	**243**	**553**

Plate-X



August 2014-15:

The water level data collected during August'2015 has been compared with Aug'2014 data to evaluate the rise and fall in water levels since last one year. The wells have been categorized depending on rise and fall in water levels.

There is fall in water level in 592wells (72.90%) and rise in 216 wells (26.60%). The fall in water level is because the state has received deficient to scanty monsoonal rainfall. A rise of 0 -2 m is observed at 186 monitoring stations (22.90% of the monitored wells) in few eastern and southern districts of the state. A rise of 2-4 m is seen in 21 wells (2.58%) and rise of more than 4 m is seen in 9 wells (1.10%) as scattered patches but largely concentrated in South Central parts of the State.

The fall of 0 -2 m in levels is observed in 457 wells (56.28% of the monitored wells) covering all the districts of western U.P. and most of the districts of central U.P. A fall of 2 - 4m is observed in 110 wells (13.54%) in small parts of districts of Allahabad, Ballia, Pratapgarh, Moradabad, Baghpat, Muzaffarnagar, Saharanpur, and Bundelkhand districts of U.P. The fall in water level of more than 4 m is observed only at 25 wells.

The district wise changes have been shown in Table-10 and the same is depicted in Plate-XI.

Plate-XI

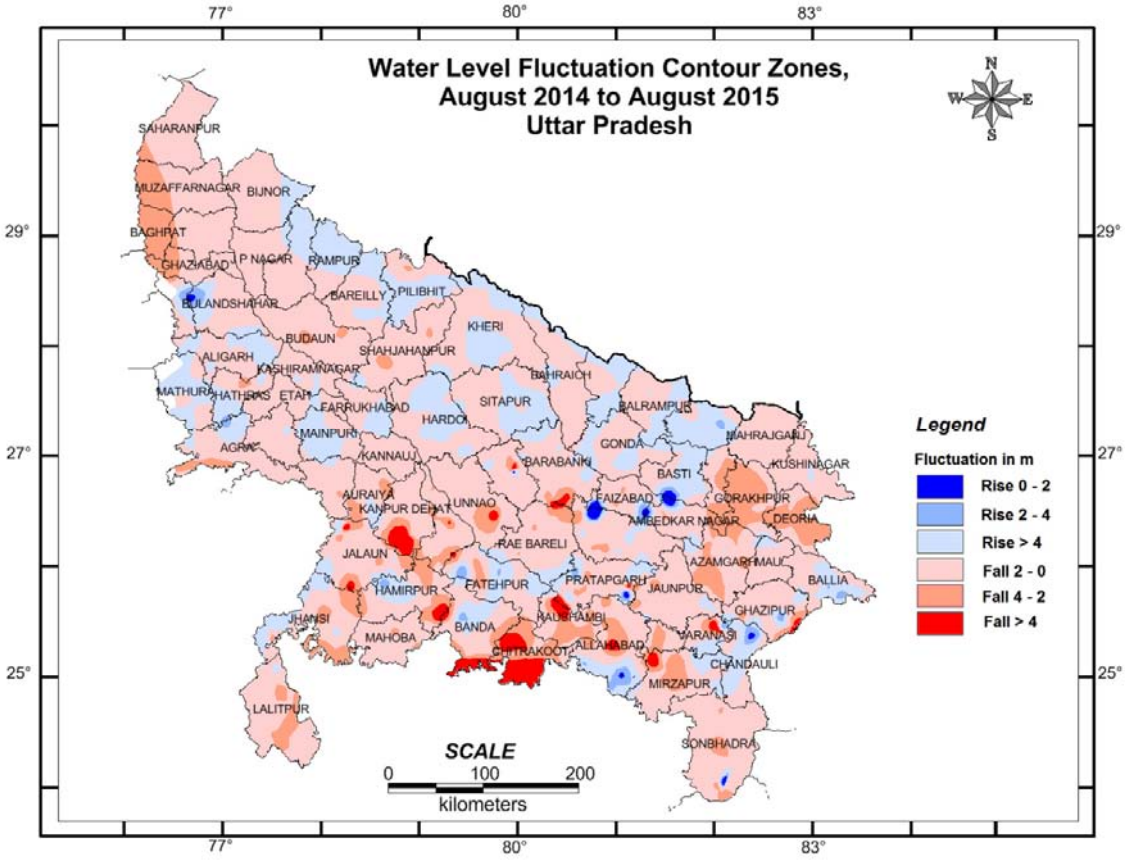

Water Level Fluctuation Contour Zones,
August 2014 to August 2015
Uttar Pradesh
N
W
E
S
77°
80°
83°
29°
27°
25°
SAHARANPUR
MUZAFFARNAGAR
BIJNOR
BAGHPAT
GHAZIABAD
P NAGAR
RAMPUR
BULANDSHAHAR
BAREILLY
PILIBHIT
KHERI
BUDAUN
SHAHJAHANPUR
ALIGARH
KASHIRAMNAGAR
BAHRAICH
MATHURA
HATHRAS
ETAH
FARRUKHABAD
SITAPUR
BALRAMPUR
HARDOI
MAHRAJGANJ
MAINPURI
GONDA
AGRA
KANNAUJ
BARABANKI
KUSHINAGAR
BASTI
AURAIYA
KANPUR DEHAT
UNNAO
FAIZABAD
GORAKHPUR
AMBEDKAR NAGAR
DEORIA
RAE BARELI
JALAUN
AZAMGARH
MAU
HAMIRPUR
FATEHPUR
PRATAPGARH
JAUNPUR
BALLIA
GHAZIPUR
JHANSI
BANDA
KAUSHAMBI
MAHOBA
VARANASI
CHITRAKOOT
ALLAHABAD
CHANDAULI
MIRZAPUR
LALITPUR
SONBHADRA
SCALE
0
100
200
kilometers
Legend
Fluctuation in m
Rise 0 - 2
Rise 2 - 4
Rise > 4
Fall 2 - 0
Fall 4 - 2
Fall > 4

Table-10

DISTRICT WISE – ANNUAL WATER LEVEL FLUCTUATION, U.P.
August' 2014 -2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	14	0.39	2.67	0.01	3.76	1 7.14%	1 7.14%	0	10 71.43%	2 14.29%	0	2	12
ALIGARH	10	0.11	1.02	0.29	2.11	5 50.00%	0	0	4 40.00%	1 10.00%	0	5	5
ALLAHABAD	30	0.23	4.69	0.28	6.17	7 23.33%	3 10.00%	1 3.33%	11 36.67%	5 16.67%	3 10.00%	11	19
AMBEDKAR NAGAR	9	1.20	8.00	0.78	2.30	1 11.11%	0	2 22.22%	4 44.44%	2 22.22%	0	3	6
AURAIYA	10	0.62	1.53	0.69	3.29	2 20.00%	0	0	3 30.00%	5 50.00%	0	2	8
AZAMGARH	19	0.01	0.23	0.21	3.09	3 15.79%	0	0	6 31.58%	10 52.63%	0	3	16
BAHRAICH	14	0.11	0.51	0.24	1.60	3 21.43%	0	0	10 71.43%	0	0	3	10
BALLIA	18	0.10	2.97	0.03	1.50	6 33.33%	2 11.11%	0	10 55.56%	0	0	8	10
BALRAMPUR	13	0.04	0.80	0.13	1.60	5 38.46%	0	0	8 61.54%	0	0	5	8

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BANDA	15	0.05	2.86	0.51	6.73	3 20.00%	1 6.67%	0	10 66.67%	0	1 6.67%	4	11
BARABANKI	0.10		1.53	0.05	4.95	5 19.23%	0	0	16 61.54%	1 3.85%	3 11.54%	5	20
BAREILLY	14	0.13	1.16	0.20	2.04	4 28.57%	0	0	8 57.14%	1 7.14%	0	4	9
BASTI	7	0.10	1.30	0.08	0.79	4 57.14%	0	0	3 42.86%	0	0	4	3
BUDAUN	10	-	-	0.26	2.27	0	0	0	8 80.00%	2 20.00%	0	0	10
BULANDSHAHR	5	0.50	4.76	0.26	1.31	1 20.00%	0	1 20.00%	3 60.00%	0	0	2	3
CHANDAULI	9	0.24	5.10	0.14	0.30	4 44.44%	1 11.11%	1 11.11%	3 33.33%	0	0	6	3
CHITRAKOOT	8	-	-	1.41	7.51	0	0	0	2 25.00%	3 37.50%	3 37.50%	0	8
DEORIA	9	-	-	0.57	3.51	0	0	0	4 44.44%	5 55.56%	0	0	9
ETAH	15	0.06	0.59	0.31	0.91	4 26.67%	0	0	11 73.33%	0	0	4	11

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAWAH	6	0.05	0.25	0.18	2.95	2 33.33%	0	0	3 50.00%	1 16.67%	0	2	4
FAIZABAD	10	-	-	0.60	2.85	0	0	0	8 80.00%	2 20.00%	0	0	10
FARRUKHABAD	5	0.23	1.59	0.07	0.98	2 40.00%	0	0	3 60.00%	0	0	2	3
FATEHPUR	13	1.74	3.77	0.42	4.73	1 7.69%	3 23.08%	0	5 38.46%	3 23.08%	1 7.69%	4	9
FIROZABAD	7	0.40	0.40	0.17	1.29	1 14.29%	0	0	6 85.71%	0	0	1	6
GAUTAM BUDDHA NAGAR	7	0.17	0.26	0.67	2.79	2 28.57%	0	0	3 42.86%	2 28.57%	0	2	5
GHAZIPUR	18	0.03	3.41	0.13	5.05	5 27.78%	1 5.56%	0	10 55.56%	1 5.56%	1 5.56%	6	12
GONDA	8	0.20	0.90	0.15	1.47	5 62.50%	0	0	3 37.50%	0	0	5	3
GORAKHPUR	6	-	-	0.73	3.90	0	0	0	2 33.33%	4 66.67%	0	0	6
HAMIRPUR	11	0.69	2.69	0.68	7.90	2 18.18%	1 9.09%	0	4 36.36%	3 27.27%	1 9.09%	3	8

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
HARDOI	22	0.04	2.03	0.12	2.02	10 45.45%	1 4.55%	0	10 45.45%	1 4.55%	0	11	11
HATHRAS	9	0.18	1.12	0.36	2.89	2 22.22%	0	0	5 55.56%	2 22.22%	0	2	7
JALAUN	27	0.22	1.31	0.04	6.25	3 11.11%	0	0	18 66.67%	4 14.81%	2 7.41%	3	24
JAUNPUR	18	0.27	0.88	0.18	3.36	4 22.22%	0	0	12 66.67%	2 11.11%	0	4	14
JHANSI	18	0.29	1.48	0.12	3.54	5 27.78%	0	0	9 50.00%	4 22.22%	0	5	13
KANNAUJ	9	0.03	0.03	0.24	0.93	1 11.11%	0	0	8 88.89%	0	0	1	8
KANPUR DEHAT	6	-	-	0.67	13.17	0	0	0	3 50.00%	2 33.33%	1 16.67%	0	6
KANPUR NAGAR	15	0.28	0.28	0.14	4.66	1 6.67%	0	0	10 66.67%	2 13.33%	1 6.67%	1	13
KAUSHAMBI	9	0.47	0.47	1.22	10.50	1 11.11%	0	0	4 44.44%	3 33.33%	1 11.11%	1	8
KHERI	13	0.16	0.93	0.03	1.30	4 30.77%	0	0	9 69.23%	0	0	4	9

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KUSHINAGAR	10	0.27	0.27	0.02	1.75	1 10.00%	0	0	9 90.00%	0	0	1	9
LALITPUR	14	0.01	0.21	0.06	3.61	2 14.29%	0	0	7 50.00%	5 35.71%	0	2	12
LUCKNOW	37	0.10	8.80	0.30	10.05	5 13.51%	0	1 2.70%	27 72.97%	3 8.11%	1 2.70%	6	31
MAHOBA	7	0.29	0.29	0.49	2.25	1 14.29%	0	0	4 57.14%	2 28.57%	0	1	6
MAHRAJGANJ	5	-	-	0.67	1.44	0	0	0	5 100.0%	0	0	0	5
MAINPURI	8	0.28	1.47	0.67	1.57	5 62.50%	0	0	3 37.50%	0	0	5	3
MATHURA	15	0.04	1.97	0.03	1.39	11 73.33%	0	0	4 26.67%	0	0	11	4
MAU	6	0.05	1.22	0.80	0.93	3 50.00%	0	0	3 50.00%	0	0	3	3
MIRZAPUR	12	0.15	1.71	0.06	6.62	2 16.67%	0	0	7 58.33%	2 16.67%	1 8.33%	2	10
PILIBHIT	10	0.25	0.86	0.31	2.33	6 60.00%	0	0	3 30.00%	1 10.00%	0	6	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
PRATAPGARH	25	0.31	6.21	0.04	7.88	2 8.00%	4 16.00%	1 4.00%	13 52.00%	3 12.00%	2 8.00%	7	18
RAEBARELI	27	0.15	0.60	0.10	3.33	3 11.11%	0	0	18 66.67%	6 22.22%	0	3	24
SANTKABIR NAGAR	4	-	-	1.00	3.07	0	0	0	1 25.00%	3 75.00%	0	0	4
SANT RAVIDAS	4	-	-	0.65	3.16	0	0	0	2 50.00%	2 50.00%	0	0	4
SHAHJAHANPUR	7	0.09	0.72	0.59	2.59	2 28.57%	0	0	3 42.86%	2 28.57%	0	2	5
SHRAWASTI	11	0.10	1.24	0.69	1.48	6 54.55%	0	0	5 45.45%	0	0	6	5
SIDDHARTH NAGAR	11	0.37	3.02	0.02	0.80	6 54.55%	1 9.09%	0	4 36.36%	0	0	7	4
SITAPUR	25	0.10	1.50	0.11	1.43	13 52.00%	0	0	12 48.00%	0	0	13	12
SONBHADRA	17	6.66	6.66	0.32	2.78	0	0	1 5.88%	12 70.59%	4 23.53%	0	1	16
SULTANPUR	35	0.30	14.22	0.12	3.50	3 8.57%	1 2.86%	1 2.86%	26 74.29%	4 11.43%	0	5	30

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
UNNAO	21	0.03	1.39	0.10	5.32	3 14.29%	0	0	17 80.95%	0	1 4.76%	3	18
VARANASI	9	0.15	3.75	0.30	5.90	3 33.33%	1 11.11%	0	3 33.33%	0	2 22.22%	4	5
Total	**812**	**6.66**	**0.03**	**0.01**	**13.17**	**186**	**21**	**9**	**457**	**110**	**25**	**216**	**592**

November 2014 – 15:

The water level data collected during November'2015 has been compared with November'2014 data to evaluate the rise and fall in water levels since last one year. It is observed that 168 wells (21.21%) show rise and 620 no. (78.28%) wells show fall in water level. Since the state has received deficient to scanty monsoonal rainfall resulting in to decline of groundwater level.

A rise of 0 -2 m, in water levels, is observed at 146 wells (18.43%). Rise of 0 to 2 m is observed in parts of Aligarh, Allahabad, Ambedkar nagar, Auraiya, Banda, Chandauli, Chitrakoot, Fatehpur, Jalaun, Jaunpur, Kaushambi, and Sonbhadra district. Rise of 2 -4 m is observed at only 11 wells (1.38%) and rise of more than 4m is also observed at 11 wells.

The fall of 0 -2 m in levels is observed in 503 wells (63.5%) mostly in districts of Terai region and few parts of western U.P. Most parts of districts- Aligarh, Ambedkar Nagar, Behraich, Ballia, Barabanki, Basti, Bareilly, Bijnor, Budaun, Bulandshahar, Deoria, Etawah, Farrukhabad, Faizabad, Ghaziabad, G.B. Nagar, Ghazipur, Gonda, Hardoi, Jhansi, Kannauj, Kanpur Nagar, Kushinagar, Mathura, Muzaffar Nagar, Pilibhit, Raebareli, St. Kabir Nagar, Shrawasti, Siddhartha Nagar, Shahjahanpur, Sitapur, and Unnao . A fall of 2 - 4m is observed at 110wells (12.75%). Fall in water level > 4 m is found in 16 wells (2.0%).

The district wise changes have been shown in Table-11 and the same is depicted in Plate-XII

Table–11

DISTRICT WISE – ANNUAL WATER LEVEL FLUCTUATION, U.P.
November' 2014 – 2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	13	0.31	2.27	0.14	5.28	2 15.38%	1 7.69%	0	7 53.85%	2 15.38%	1 7.69%	3	10
ALIGARH	9	0.01	5.00	0.01	2.30	3 33.33%	0	1 11.11%	4 44.44%	1 11.11%	0	4	5
ALLAHABAD	25	1.19	8.39	0.24	5.16	2 8.00%	0	2 8.00%	13 52.00%	6 24.00%	2 8.00%	4	21
AMBEDKAR NAGAR	11	0.46	0.46	0.06	2.32	1 9.09%	0	0	9 81.82%	1 9.09%	0	1	10
AURAIYA	11	0.30	0.30	0.05	5.82	1 9.09%	0	0	5 45.45%	4 36.36%	1 9.09%	1	10
AZAMGARH	18	0.79	0.79	0.15	3.97	1 5.56%	0	0	11 61.11%	6 33.33%	0	1	17
BAHRAICH	11	0.16	0.20	0.17	1.50	2 18.18%	0	0	9 81.82%	0	0	2	9
BALLIA	17	0.13	0.27	0.06	1.76	2 11.76%	0	0	15 88.24%	0	0	2	15
BALRAMPUR	16	0.04	0.04	0.11	3.32	1 6.25%	0	0	11 68.75%	4 25.00%	0	1	15

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BANDA	13	3.09	4.75	0.30	5.06	0	1 7.69 %	1 7.69%	9 69.23%	0	2 15.38%	2	11
BARABANKI	23	0.50	0.95	0.10	3.40	2 8.70%	0	0	15 65.22%	5 21.74%	0	2	20
BAREILLY	16	0.02	0.43	0.01	1.01	7 43.75%	0	0	9 56.25%	0	0	7	9
BASTI	8	0.53	0.53	0.46	1.66	1 12.50%	0	0	7 87.50%	0	0	1	7
BIJNOR	8	0.12	1.17	0.01	0.79	4 50.00%	0	0	4 50.00%	0	0	4	4
BUDAUN	12	0.01	0.01	0.03	1.20	1 8.33%	0	0	11 91.67%	0	0	1	11
BULANDSHAHR	4	0.46	2.73	0.14	0.84	1 25.00%	1 25.00 %	0	2 50.00%	0	0	2	2
CHANDAULI	8	0.07	4.17	0.09	1.24	4 50.00%	0	1 12.50%	3 37.50%	0	0	5	3
CHITRAKOOT	8	6.71	6.71	0.30	6.25	0	0	1 12.50%	4 50.00%	1 12.50%	2 25.00%	1	7
DEORIA	8	-	-	0.86	3.73	0	0	0	7 87.50%	1 12.50%	0	0	8

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAH	15	0.07	0.69	0.05	1.33	5 33.33%	0	0	10 66.67%	0	0	5	10
ETAWAH	6	1.50	1.50	0.48	4.67	1 16.67%	0	0	4 66.67%	0	1 16.67%	1	5
FAIZABAD	13	0.20	2.57	0.62	1.74	4 30.77%	1 7.69%	0	8 61.54%	0	0	5	8
FARRUKHABAD	6	0.10	0.70	0.24	0.90	3 50.00%	0	0	3 50.00%	0	0	3	3
FATEHPUR	10	4.83	4.83	0.23	3.37	0	0	1 10.00%	5 50.00%	4 40.00%	0	1	9
FIROZABAD	7	0.41	2.26	1.10	2.81	4 57.14%	1 14.29%	0	1 14.29%	1 14.29%	0	5	2
GAUTAM BUDDHA NAGAR	5	0.26	3.11	1.86	2.71	1 20.00%	1 20.00%	0	1 20.00%	2 40.00%	0	2	3
GHAZIABAD	8	0.78	1.28	0.19	2.20	2 25.00%	0	0	5 62.50%	1 12.50%	0	2	6
GHAZIPUR	18	0.13	1.74	0.02	3.13	2 11.11%	0	0	12 66.67%	3 16.67%	0	2	15
GONDA	9	0.29	0.59	0.05	1.84	2 22.22%	0	0	7 77.78%	0	0	2	7

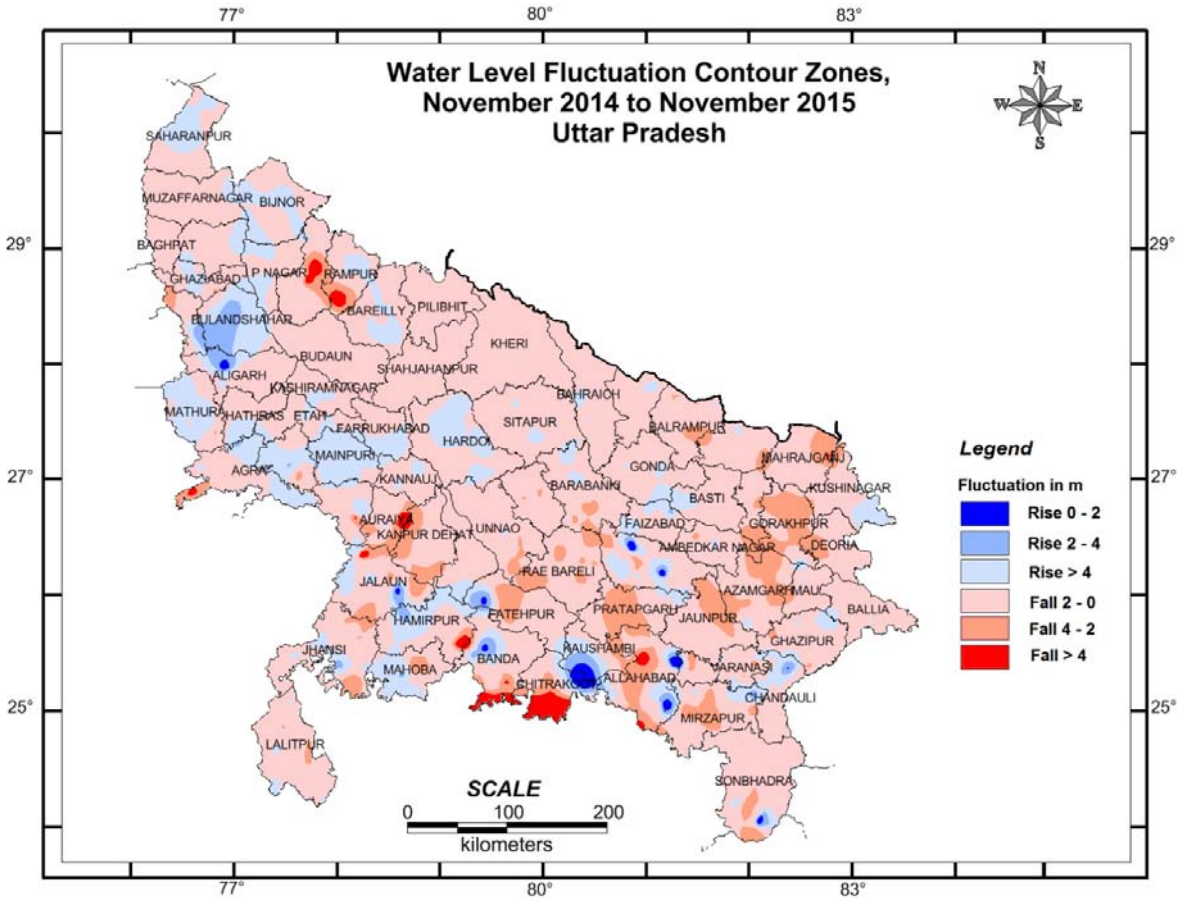
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GORAKHPUR	5	-	-	1.18	3.94	0	0	0	1 20.00%	4 80.00%	0	0	5
HAMIRPUR	10	0.03	2.62	0.20	7.86	3 30.00%	1 10.00%	0	5 50.00%	0	1 10.00%	4	6
HARDOI	20	0.22	1.55	0.10	1.07	8 40.00%	0	0	12 60.00%	0	0	8	12
HATHRAS	7	-	-	0.45	1.91	0	0	0	7 100.0 %	0	0	0	7
JALAUN	26	0.75	4.92	0.17	7.30	3 11.54%	0	1 3.85%	15 57.69%	6 23.08 %	1 3.85%	4	22
JAUNPUR	6	-	-	0.77	3.58	0	0	0	3 50.00%	3 50.00%	0	0	6
JHANSI	16	0.06	2.79	0.04	3.19	2 12.50%	1 6.25%	0	10 62.50%	3 18.75%	0	3	13
JYOTIBA PHULE NAGAR	8	0.03	0.33	0.18	0.57	3 37.50%	0	0	5 62.50%	0	0	3	5
KANNAUJ	9	0.15	0.45	0.03	0.52	2 22.22%	0	0	7 77.78%	0	0	2	7
KANPUR DEHAT	5	-	-	0.26	2.86	0	0	0	4 80.00%	1 20.00%	0	0	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPURNAGAR	13	-	-	0.03	1.57	0	0	0	13 100.0 %	0	0	0	13
KHERI	9	-	-	0.31	1.25	0	0	0	9 100.0 %	0	0	0	9
KUSHINAGAR	8	1.37	1.37	0.35	2.02	1 12.50%	0	0	6 75.00%	1 12.50%	0	1	7
LALITPUR	13	0.09	0.20	0.18	2.28	3 23.08%	0	0	8 61.54%	2 15.38%	0	3	10
LUCKNOW	36	0.22	0.50	0.10	2.60	2 5.56%	0	0	31 86.11%	3 8.33%	0	2	34
MAHOBA	7	0.45	2.25	3.28	3.28	3 42.86%	2 28.57%	0	0	1 14.29%	0	5	1
MAHRAJGANJ	5	-	-	0.79	4.19	0	0	0	4 80.00%	0	1 20.00%	0	5
MAINPURI	8	0.26	1.83	0.93	0.93	7 87.50%	0	0	1 12.50%	0	0	7	1
MATHURA	15	0.14	1.24	0.03	2.21	8 53.33%	0	0	5 33.33%	1 6.67%	0	8	6
MAU	7	0.42	1.31	0.26	2.10	2 28.57%	0	0	4 57.14%	1 14.29%	0	2	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MEERUT	4	0.38	0.38	0.02	0.99	1 25.00%	0	0	3 75.00%	0	0	1	3
MIRZAPUR	11	0.43	3.06	0.43	2.96	1 9.09%	1 9.09%	0	5 45.45%	4 36.36%	0	2	9
MORADABAD	15	0.10	0.20	0.20	7.96	2 13.33%	0	0	9 60.00%	2 13.33%	2 13.33%	2	13
MUZAFFAR NAGAR	9	0.20	0.40	0.20	1.20	3 33.33%	0	0	6 66.67%	0	0	3	6
PILIBHIT	12	-	-	0.07	1.32	0	0	0	12 100.0 %	0	0	0	12
RAE BARELI	23	0.20	0.20	0.14	3.07	1 4.35%	0	0	16 69.57%	6 26.09%	0	1	22
RAMPUR	3	0.11	0.15	5.52	5.52	2 66.67%	0	0	0	0	1 33.33%	2	1
SAHARANPUR	5	0.80	1.16	0.85	1.68	2 40.00%	0	0	3 60.00%	0	0	2	3
SANT KABIR NAGAR	4	-	-	1.69	3.65	0	0	0	2 50.00%	2 50.00%	0	0	4
SANT RAVIDAS NAGAR	4	-	-	0.20	3.08	0	0	0	2 50.00%	2 50.00%	0	0	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHAHJAHANPUR	5	-	-	0.24	1.23	0	0	0	5 100.0 %	0	0	0	5
SHRAWASTI	14	0.05	0.30	0.04	2.06	2 14.29%	0	0	11 78.57%	1 7.14%	0	2	12
SIDDHARTH NAGAR	10	0.05	0.25	0.36	2.59	2 20.00%	0	0	7 70.00%	1 10.00%	0	2	8
SITAPUR	18	0.05	0.30	0.11	1.87	3 16.67%	0	0	15 83.33%	0	0	3	15
SONBHADRA	17	0.72	6.06	0.11	3.57	1 5.88%	0	1 5.88%	11 64.71%	4 23.53%	0	2	15
SULTANPUR	37	0.05	8.10	0.20	3.35	13 35.14%	0	2 5.41%	18 48.65%	4 10.81%	0	15	22
UNNAO	20	0.07	0.36	0.02	2.63	2 10.00%	0	0	12 60.00%	6 30.00%	0	2	18
VARANASI	12	0.02	0.89	0.35	4.63	5 41.67%	0	0	5 41.67%	1 8.33%	1 8.33%	5	7
Total	**792**	**6.71**	**0.01**	**0.01**	**7.96**	**146**	**11**	**11**	**503**	**101**	**16**	**168**	**620**

Plate-XII



January 2015 –16

To evaluate the rise and fall in water level in January'2015 with respect to January'2016, water level data of wells have been analysed. The fluctuation data shows rise of water level in 97 Nos (15.47%) and fall in 528 Nos (84.21%) of the analysed wells. There is annual fall in water level in January'2016 as compared to January'2015 in all parts of the state. Since the state has received deficient to scanty rainfall.

The fluctuation data of the state shows a rise of 0 to 2 m in 91 no. of analysed wells (14.51%) in few parts of Agra, Allahabad, Auraiya, Azamgarh, Bareilly, Jalaun, Ballia, Balrampur, Barabanki Bahraich, Ghazipur, Hardoi, Jhansi, Kannauj, Moradabad, Sitapur and Unnao districts.

A rise of 2 to 4m is observed only in 4 no. wells and rise of > 4 m in only two well.

A fall of 0-2 m in water level is noticed in 442 no. of analysed wells (70.49%). Districts showing major parts of Agra, Allahabad, Auraiya, Ambedkar Nagar ,Azamgarh, Bahraich, Ballia, Balrampur, Barabanki, Bareilly, Basti, Bijnor, Buduan, Bulandsahar, Deoria, Etah, Etawah, Faizabad, Farrukhabad, Fatehpur, Firozabad, Gautam Buddha Nagar, Ghazipur, Gonda, Gorakhpur, Hardoi, Hathras, Jalaun, Kanpur Nagar, Kaushambi, Kheri, Kushi Nagar, Lalitpur, Lucknow, Mahrajganj, Mainpuri, Mau, Moradabad, Pilibhit, Rae Bareli, Sant Kabir Nagar, Sitapur, Siddharthanagar and Unnao districts. Fall of 2 to 4 m is seen only in 75 nos (13.6%) well mainly in the districts of Agra, Allahabad, Azamgarh, Balrampur, Basti, Ghazipur, Jalaun, Lalitpur, Lucknow, Rae Bareli, Siddharth Nagar and Sultanpur and fall of > 4 m is seen only in 11 wells. The district wise changes has been shown in Table-12 and depicted in the Plate-XIII.

Plate -XIII

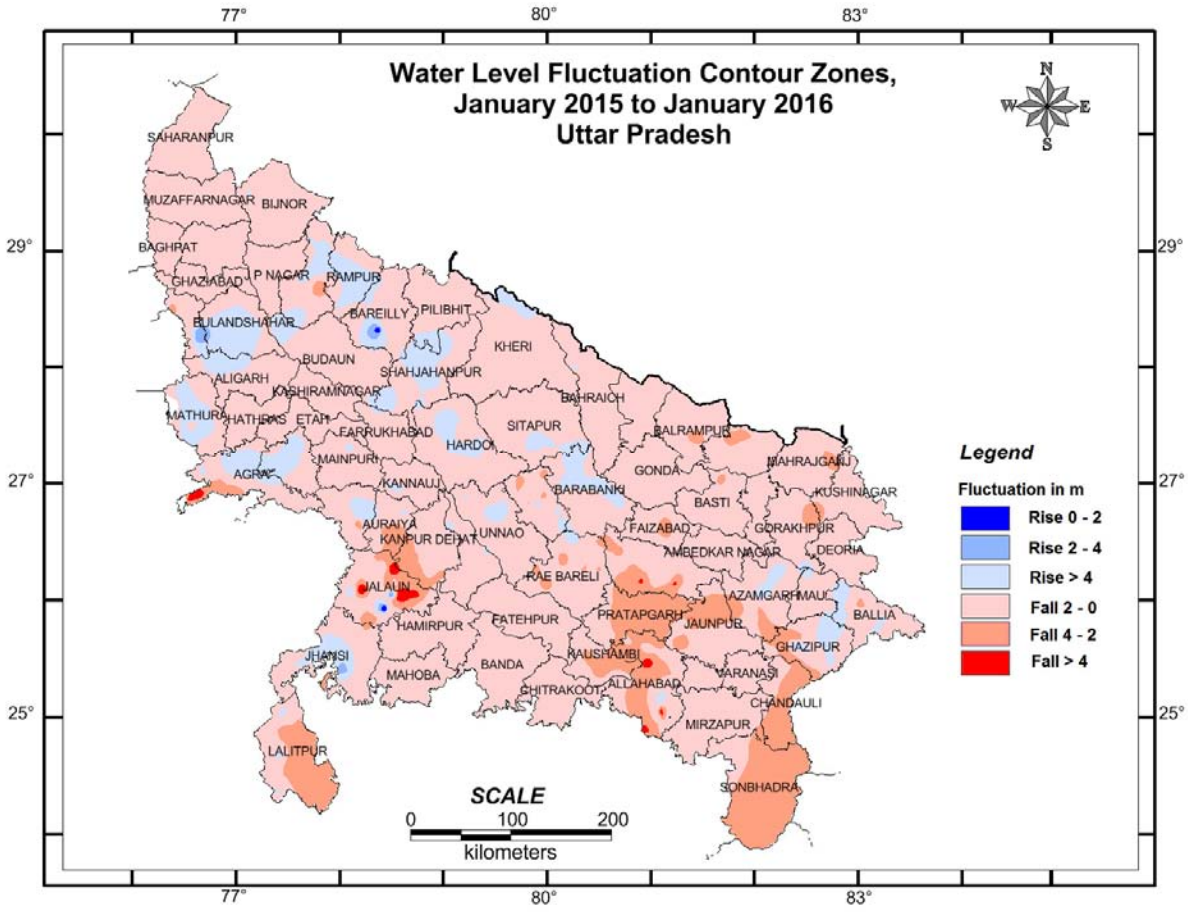

Water Level Fluctuation Contour Zones,
January 2015 to January 2016
Uttar Pradesh
77°
80°
83°
29°
27°
25°
N
W
E
S
SAHARANPUR
MUZAFFARNAGAR
BIJNOR
BAGHPAT
GHAZIABAD
P NAGAR
RAMPUR
BAREILLY
PILIBHIT
BULANDSHAHAR
BUDAUN
KHERI
SHAHJAHANPUR
ALIGARH
KASHIRAMNAGAR
BAHRAICH
MATHURA
HATHRAS
ETAH
FARRUKHABAD
SITAPUR
BALRAMPUR
HARDOI
MAHRAJGANJ
MAINPURI
AGRA
GONDA
KANNAUJ
BARABANKI
KUSHINAGAR
BASTI
AURAIYA
KANPUR DEHAT
UNNAO
FAIZABAD
GORAKHPUR
AMBEDKAR NAGAR
DEORIA
RAE BARELI
JALAUN
AZAMGARH
MAU
PRATAPGARH
BALLIA
HAMIRPUR
FATEHPUR
JAUNPUR
GHAZIPUR
JHANSI
KAUSHAMBI
BANDA
MAHOBA
VARANASI
CHITRAKOOT
ALLAHABAD
CHANDAULI
MIRZAPUR
LALITPUR
SONBHADRA
SCALE
0
100
200
kilometers
Legend
Fluctuation in m
Rise 0 - 2
Rise 2 - 4
Rise > 4
Fall 2 - 0
Fall 4 - 2
Fall > 4

Table -12

DISTRICT WISE – ANNUAL WATER LEVEL FLUCTUATION, U.P.

January' 2015 – 2016

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	11	0.33	1.79	0.17	6.42	3 27.27%	0	0	3 27.27%	4 36.36%	1 9.09%	3	8
ALLAHABAD	26	0.81	0.81	0.49	5.37	1 3.85%	0	0	13 50.00%	9 34.62%	3 11.54%	1	25
AMBEDKAR NAGAR	7	-	-	1.06	1.73	0	0	0	7 100.0 %	0	0	0	7
AURAIYA	8	0.04	0.86	0.27	3.34	2 25.00%	0	0	5 62.50%	1 12.50%	0	2	6
AZAMGARH	13	0.40	0.50	0.06	3.95	2 15.38%	0	0	7 53.85%	4 30.77%	0	2	11
BAHRAICH	11	0.15	0.15	0.38	1.22	1 9.09%	0	0	10 90.91%	0	0	1	10
BALLIA	18	0.30	1.26	0.12	2.64	4 22.22%	0	0	13 72.22%	1 5.56%	0	4	14
BALRAMPUR	15	-	-	0.41	2.55	0	0	0	14 93.33%	1 6.67%	0	0	15
BARABANKI	23	0.10	0.85	0.25	1.60	8 34.78%	0	0	13 56.52%	0	0	8	13

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BAREILLY	16	0.02	5.17	0.05	1.58	5 31.25%	0	1 6.25%	10 62.50%	0	0	6	10
BASTI	8	0.02	0.02	0.09	2.15	1 12.50%	0	0	6 75.00%	1 12.50%	0	1	7
BIJNOR	8	0.10	0.10	0.05	0.75	1 12.50%	0	0	7 87.50%	0	0	1	7
BUDAUN	12	0.15	0.15	0.03	1.14	1 8.33%	0	0	11 91.67%	0	0	1	11
BULANDSHAHR	3	0.02	0.02	0.23	0.98	1 33.33%	0	0	2 66.67%	0	0	1	2
DEORIA	4	-	-	0.98	1.75	0	0	0	4 100.0 %	0	0	0	4
ETAH	12	-	-	0.03	1.90	0	0	0	12 100.0 %	0	0	0	12
ETAWAH	5	1.86	1.86	0.01	3.05	1 20.00%	0	0	3 60.00%	1 20.00%	0	1	4
FAIZABAD	8	-	-	0.70	2.74	0	0	0	7 87.50%	1 12.50%	0	0	8
FARRUKHABAD	6	-	-	0.25	1.33	0	0	0	6 100.0 %	0	0	0	6

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
FIROZABAD	6	0.86	0.86	0.08	1.69	1 16.67%	0	0	5 83.33%	0	0	1	5
GAUTAM BUDDHA NAGAR	5	3.41	3.41	0.27	2.18	0	1 20.00%	0	3 60.00%	1 20.00%	0	1	4
GHAZIPUR	15	0.14	1.96	0.05	3.78	4 26.67%	0	0	7 46.67%	4 26.67%	0	4	11
GONDA	8	-	-	0.35	1.21	0	0	0	8 100.0 %	0	0	0	8
GORAKHPUR	5	-	-	0.53	2.76	0	0	0	4 80.00%	1 20.00%	0	0	5
HARDOI	20	0.07	1.28	0.07	1.25	6 30.00%	0	0	14 70.00%	0	0	6	14
HATHRAS	4	0.03	0.03	0.59	2.04	1 25.00%	0	0	2 50.00%	1 25.00%	0	1	3
JALAUN	25	0.59	6.78	0.29	6.24	1 4.00%	1 4.00%	1 4.00%	13 52.00%	5 20.00%	4 16.00%	3	22
JAUNPUR	9	-	-	0.76	4.10	0	0	0	5 55.56%	3 33.33%	1 11.11%	0	9
JHANSI	15	0.11	3.03	0.25	3.79	3 20.00%	1 6.67%	0	10 66.67%	1 6.67%	0	4	11

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
JYOTIBA PHULE NAGAR	7	0.02	0.02	0.04	1.85	1 14.29%	0	0	6 85.71%	0	0	1	6
KANNAUJ	8	0.08	0.15	0.24	1.65	2 25.00%	0	0	6 75.00%	0	0	2	6
KANPURDEHAT	5	-	-	0.80	2.24	0	0	0	4 80.00%	1 20.00%	0	0	5
KANPURNAGAR	14	0.45	1.94	0.01	1.98	2 14.29%	0	0	12 85.71%	0	0	2	12
KAUSHAMBI	7	-	-	0.35	2.68	0	0	0	4 57.14%	3 42.86%	0	0	7
KHERI	11	0.45	0.45	0.24	1.40	1 9.09%	0	0	10 90.91%	0	0	1	10
KUSHINAGAR	5	-	-	0.22	1.41	0	0	0	5 100.0 %	0	0	0	5
LALITPUR	12	0.10	0.53	0.08	3.88	4 33.33%	0	0	3 25.00%	5 41.67%	0	4	8
LUCKNOW	38	0.15	0.72	0.15	2.85	5 13.16%	0	0	29 76.32%	4 10.53%	0	5	33
MAHRAJGANJ	5	-	-	0.31	3.16	0	0	0	4 80.00%	1 20.00%	0	0	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MAINPURI	7	0.07	0.07	0.21	1.12	1 14.29%	0	0	6 85.71%	0	0	1	6
MATHURA	15	0.15	1.02	0.03	1.67	8 53.33%	0	0	7 46.67%	0	0	8	7
MAU	6	0.41	0.41	0.07	2.14	1 16.67%	0	0	4 66.67%	1 16.67%	0	1	5
MORADABAD	15	0.29	0.66	0.02	3.57	4 26.67%	0	0	10 66.67%	1 6.67%	0	4	11
PILIBHIT	8	0.09	1.00	0.21	0.70	2 25.00%	0	0	6 75.00%	0	0	2	6
PRATAPGARH	1	-	-	2.55	2.55	0	0	0	0	1 100.00%	0	0	1
RAE BARELI	27	0.20	0.80	0.05	2.65	2 7.41%	0	0	19 70.37%	6 22.22%	0	2	25
RAMPUR	2	0.23	0.35	-	-	2 100.00%	0	0	0	0	0	2	0
SANT KABIR NAGAR	4	-	-	0.25	1.68	0	0	0	4 100.0 %	0	0	0	4
SHAHJAHANPUR	6	0.39	1.16	0.05	0.43	2 33.33%	0	0	4 66.67%	0	0	2	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHRAWASTI	14	-	-	0.27	2.13	0	0	0	13 92.86%	1 7.14%	0	0	14
SIDDHARTH NAGAR	11	-	-	0.96	2.46	0	0	0	9 81.82%	2 18.18%	0	0	11
SITAPUR	22	0.04	0.44	0.20	1.80	4 18.18%	0	0	18 81.82%	0	0	4	18
SULTANPUR	32	0.16	0.16	0.43	4.49	1 3.13%	0	0	19 59.38%	10 31.25%	2 6.25%	1	31
UNNAO	19	0.06	2.07	0.02	1.96	2 10.53%	1 5.26%	0	16 84.21%	0	0	3	16
Total	**627**	**3.41**	**0.02**	**0.00**	**6.42**	**91**	**4**	**2**	**442**	**75**	**11**	**97**	**528**

The overall status of annual fluctuation in the state is summarized in following table.

Annual Fluctuation in Water Level During 2015 –16, U.P.

FLUCTUATION RANGE	May 14 - 15		August 14 - 15		November 14 -15		January 15 - 16	
	Rise (%)	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*	*Rise (%)*	*Fall (%)*
0-2	215 (26.77%)	496 (61.76%)	186 (22.90%)	457 (56.28%)	146 (18.4%)	503 (63.5%)	91 (14.51%)	442 (70.49%)
2-4	21 (2.61%)	49 (6.1%)	21 (2.58%)	110 (13.54%)	11 (1.38%)	101 (12.75%)	4 (0.63%)	75 (11.96%)
>4	7 (0.87%)	8 (0.99)	9 (1.10%)	25 (3.0%)	11 (1.38%)	16 (2.0%)	2 (0.31%)	11 (1.75%)
TOTAL	243 (30.3%)	553 (68.86%)	216 (26.60%)	592 (72.90%)	168 (21.2%)	620 (78.28%)	97 (15.47%)	528 (84.2%)

From the analysis of table it is evident that the water level has shown a fall in more than half of the wells in August'15, November'15 and January'16 as compared to previous years. This is due to less monsoon rainfall experienced in almost all parts of the state in 2015.

6.3 Fluctuation from the Decadal Mean during 2015–16

The fluctuations in water level described earlier are very much dependant on the rainfall and give a very short term picture. In order to remove the rainfall anomalies the long term water level is considered as this would normalize the erratic highs and lows. For this the water level of each season has been compared to the mean water level of past 10 years. This has been done to evaluate the status of water level during the year 2015-16 with respect to long term mean. The outcome of the analysis has been compiled on district level and the same has been discussed subsequently for the four seasons of observation.

Mean May (2005- 14) – May 2015

The pre-monsoon water level data for 2015 has been compared to decadal mean (2005-2014) for pre-monsoon periods, and district-wise analysis of Ground Water Monitoring wells has been compiled in Table-13 and fluctuation map has been prepared and given in Plate –XIV. The analysed data show total of 400 no.(47.6%) wells show rise and 437 no.(52.08%) show fall in water level.

Table-13

DISTRICT WISE – DECADAL WATER LEVEL FLUCTUATION, U.P.

Mean May (2005 – 2014) – May, 2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	13	0.16	2.33	0.03	1.72	5 38.46%	1 7.69%	0	7 53.85%	0	0	6	7
ALIGARH	9	0.20	4.16	0.31	0.95	3 33.33%	1 11.11%	1 11.11%	4 44.44%	0	0	5	4
ALLAHABAD	31	0.06	5.37	0.16	3.09	15 48.39%	1 3.23%	1 3.23%	11 35.48%	3 9.68%	0	17	14
AMBEDKAR NAGAR	13	0.09	2.36	0.04	1.53	2 15.38%	1 7.69%	0	10 76.92%	0	0	3	10
AURAIYA	11	0.10	1.11	0.04	4.63	5 45.45%	0	0	3 27.27%	2 18.18%	1 9.09%	5	6
AZAMGARH	17	0.01	1.05	0.07	1.26	11 64.71%	0	0	6 35.29%	0	0	11	6
BAHRAICH	13	0.09	0.96	0.02	0.71	6 46.15%	0	0	7 53.85%	0	0	6	7
BALLIA	18	0.02	1.53	0.01	1.74	12 66.67%	0	0	6 33.33%	0	0	12	6
BALRAMPUR	15	0.02	0.95	0.07	1.08	11 73.33%	0	0	4 26.67%	0	0	11	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BANDA	16	0.35	3.67	0.07	4.12	5 31.25%	6 37.50%	0	4 25.00%	0	1 6.25%	11	5
BARABANKI	18	0.03	4.29	0.00	1.16	9 50.00%	1 5.56%	1 5.56%	7 38.89%	0	0	11	7
BAREILLY	20	0.27	5.47	0.13	1.09	2 10.00%	0	1 5.00%	17 85.00%	0	0	3	17
BASTI	10	.00	1.24	0.05	0.13	6 60.00%	0	0	4 40.00%	0	0	6	4
BIJNOR	9	0.01	1.78	0.16	0.16	8 88.89 %	0	0	1 11.11%	0	0	8	1
BUDAUN	17	1.28	1.90	0.30	2.18	2 11.76%	0	0	14 82.35%	1 5.88%	0	2	15
BULANDSHAHR	6	2.15	2.15	0.07	2.23	0	1 16.67%	0	4 66.67%	1 16.67%	0	1	5
CHITRAKOOT	8	0.89	1.67	0.44	3.25	5 62.50%	0	0	2 25.00%	1 12.50%	0	5	3
DEORIA	8	0.07	1.50	0.12	0.16	6 75.00%	0	0	2 25.00%	0	0	6	2
ETAH	13	0.41	0.69	0.08	1.79	2 15.38%	0	0	11 84.62%	0	0	2	11

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
ETAWAH	6	0.93	0.93	0.17	1.65	1 16.67%	0	0	5 83.33%	0	0	1	5
FAIZABAD	12	0.08	0.31	0.02	1.02	3 25.00%	0	0	9 75.00%	0	0	3	9
FARRUKHABAD	7	0.05	0.05	0.11	2.04	1 14.29%	0	0	5 71.43%	1 14.29%	0	1	6
FATEHPUR	13	0.14	4.24	0.15	1.69	7 53.85%	1 7.69%	1 7.69%	4 30.77%	0	0	9	4
FIROZABAD	6	0.15	2.91	0.14	0.54	2 33.33%	1 16.67%	0	3 50.00%	0	0	3	3
GAUTAM BUDDHA NAGAR	5	0.71	0.71	0.37	1.38	1 20.00%	0	0	4 80.00%	0	0	1	4
GHAZIABAD	10	-	-	0.10	3.04	0	0	0	6 60.00%	4 40.00%	0	0	10
GHAZIPUR	15	0.24	1.46	0.08	2.15	3 20.00%	0	0	11 73.33%	1 6.67%	0	3	12
GONDA	9	0.08	1.56	0.00	0.61	4 44.44%	0	0	5 55.56%	0	0	4	5
GORAKHPUR	7	0.04	2.49	-	-	6 85.71%	1 14.29%	0	0	0	0	7	0

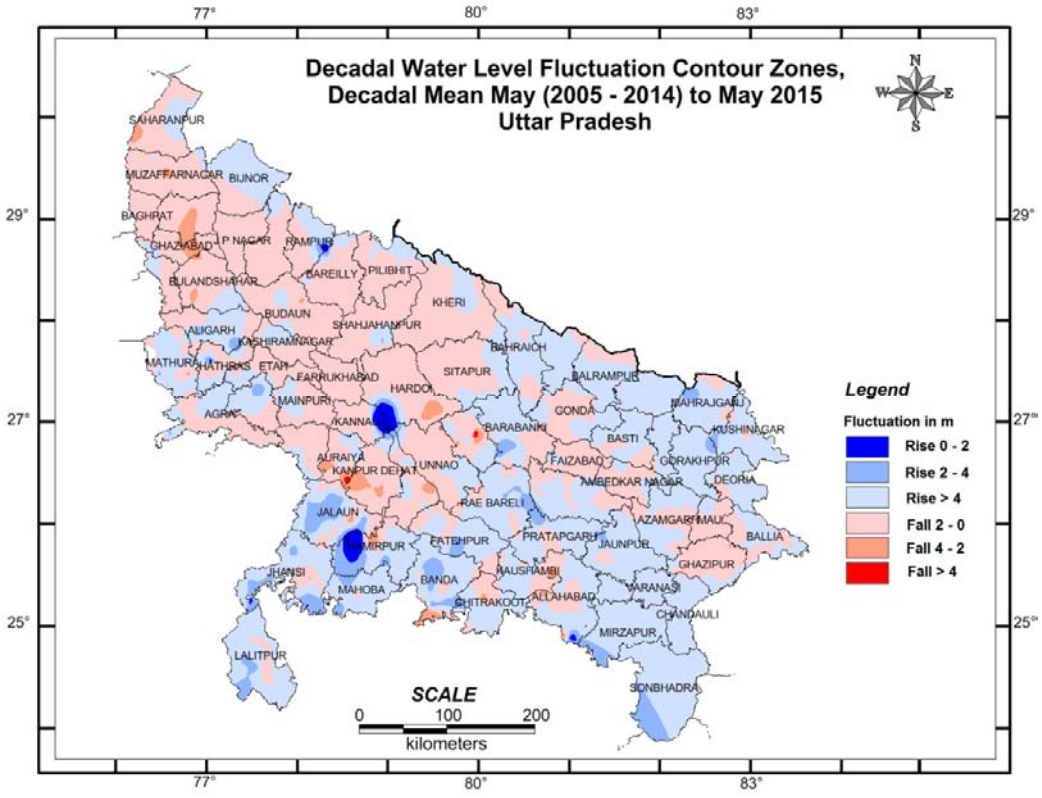
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
HAMIRPUR	11	0.20	10.79	0.05	4.16	5 45.45%	2 18.18%	1 9.09%	2 18.18%	0	1 9.09%	8	3
HARDOI	21	0.84	0.84	0.05	2.50	1 4.76%	0	0	17 80.95%	3 14.29%	0	1	20
HATHRAS	9	0.11	5.31	0.01	2.19	1 11.11%	0	1 11.11%	5 55.56%	2 22.22%	0	2	7
JALAUN	25	0.04	3.58	0.31	3.06	9 36.00%	9 36.00%	0	6 24.00%	1 4.00%	0	18	7
JAUNPUR	10	0.37	2.64	0.20	0.74	6 60.00%	2 20.00%	0	2 20.00%	0	0	8	2
JHANSI	19	0.68	4.40	0.04	2.19	8 42.11%	3 15.79%	2 10.53%	4 21.05%	1 5.26%	0	13	5
JYOTIBA PHULE NAGAR	9	-	-	0.03	1.32	0	0	0	9 100.0 %	0	0	0	9
KANNAUJ	9	0.05	24.69	0.57	1.92	2 22.22%	0	1 11.11%	5 55.56%	0	0	3	5
KANPUR DEHAT	7	-	-	0.16	3.03	0	0	0	6 85.71%	1 14.29%	0	0	7
KANPUR NAGAR	14	0.05	0.73	0.06	3.14	5 35.71%	0	0	7 50.00%	2 14.29%	0	5	9

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KAUSHAMBI	9	0.19	1.26	0.24	1.16	6 66.67%	0	0	3 33.33%	0	0	6	3
KHERI	8	0.25	0.27	0.15	1.26	2 25.00%	0	0	6 75.00%	0	0	2	6
KUSHINAGAR	8	0.26	2.35	0.84	0.84	6 75.00%	1 12.50%	0	1 12.50%	0	0	7	1
LALITPUR	13	0.15	3.22	0.07	0.95	7 53.85%	3 23.08%	0	3 23.08%	0	0	10	3
LUCKNOW	35	0.26	1.02	0.03	6.10	12 34.29%	0	0	17 48.57%	4 11.43%	2 5.71%	12	23
MAHOBA	7	0.03	1.67	0.32	1.01	5 71.43%	0	0	2 28.57%	0	0	5	2
MAHRAJGANJ	6	0.31	2.92	0.59	1.04	3 50.00%	1 16.67%	0	2 33.33%	0	0	4	2
MAINPURI	7	0.13	0.66	0.65	1.35	3 42.86%	0	0	4 57.14%	0	0	3	4
MATHURA	17	0.11	2.25	0.03	2.96	10 58.82%	2 11.76%	0	3 17.65%	2 11.76%	0	12	5
MAU	7	0.73	1.36	0.41	2.19	3 42.86%	0	0	3 42.86%	1 14.29%	0	3	4

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MEERUT	6	0.01	0.01	0.16	2.67	1 16.67%	0	0	3 50.00%	2 33.33%	0	1	5
MORADABAD	18	0.52	0.58	0.01	1.89	2 11.11%	0	0	16 88.89%	0	0	2	16
MUZAFFAR NAGAR	14	0.15	0.32	0.52	2.97	2 14.29%	0	0	10 71.43%	2 14.29%	0	2	12
PILIBHIT	12	0.02	0.08	0.05	0.40	4 33.33%	0	0	8 66.67%	0	0	4	8
PRATAPGARH	25	0.04	3.93	0.01	0.63	19 76.00%	1 4.00%	0	5 20.00%	0	0	20	5
RAE BARELI	20	0.35	2.93	0.30	1.47	9 45.00%	6 30.00%	0	5 25.00%	0	0	15	5
RAMPUR	1	-	-	0.84	0.84	0	0	0	1 100.0 %	0	0	0	1
SAHARANPUR	17	0.37	1.60	0.08	3.61	4 23.53%	0	0	11 64.71%	2 11.76%	0	4	13
SANT KABIR NAGAR	4	0.21	1.18	-	-	4 100.0 %	0	0	0	0	0	4	0
SHAHJAHANPUR	8	0.06	2.30	0.32	1.36	2 25.00%	1 12.50%	0	5 62.50%	0	0	3	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHRAWASTI	14	0.03	1.18	0.04	0.12	12 85.71%	0	0	2 14.29%	0	0	12	2
SIDDHARTH NAGAR	11	0.26	1.37	-	-	11 100.00%	0	0	0	0	0	11	0
SITAPUR	21	0.27	0.57	0.01	1.46	3 14.29%	0	0	18 85.71%	0	0	3	18
SULTANPUR	39	0.05	1.63	0.01	1.90	23 58.97%	0	0	16 41.03%	0	0	23	16
UNNAO	23	0.07	1.02	0.14	1.49	11 47.83%	0	0	12 52.17%	0	0	11	12
Total	**839**	**0.01**	**2.15**	**0.0**	**6.10**	**344**	**46**	**10**	**395**	**37**	**5**	**400**	**437**

Plate –XIV



It is observed that 395 no. Monitoring wells (47.0 %) show a fall of 0-2 m. Fall of higher magnitude is found along Yamuna river. A fall in water levels between 2-4 m is observed in 37 Monitoring wells (4.41%) in major parts of Allahabad, Auraiya, Budaun, Bulandshahr, Chitrakoot, Farrukhabad, Ghaziabad, Ghazipur, Hardoi, Hathras, Jalaun, Jhansi, Kanpurdehat, Kanpur nagar, Lucknow, Mathura, Mau, Meerut, Muzaffar Nagar and Saharanpur, districts. Few patches showing a fall of more than 4m in the water levels, with respect to decadal mean of May, are seen in 5 Monitoring wells.

There is a rise in water level from 0 to 2 m with respect to decadal mean of May in 344(41.0%) Monitoring wells. Rise of 2 - 4 m is observed at only 46 Monitoring wells and rise of more than 4 m is observed in10 Monitoring wells.

Mean August (2005- 2014) – August 2015

The average water level of last 10 years (2005 to 2014) for each well for the month of August has been evaluated and compared with water level data for August'2015. The wells have been categorized depending on rise and fall in water levels and shown in Table-14 and fluctuation map has been given in Plate-XV.

Table-14

DISTRICT WISE – DECADAL WATER LEVEL FLUCTUATION, U.P.

Mean August (2005 – 2014) – August, 2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	14	0.09	2.67	0.50	3.76	2 14.29%	1 7.14%	0	7 50.00%	4 28.57 %	0	3	11
ALIGARH	10	0.24	1.40	0.36	2.11	4 40.00%	0	0	5 50.00%	1 10.00%	0	4	6
ALLAHABAD	34	0.23	2.55	0.12	6.68	12 35.29%	1 2.94%	0	14 41.18%	4 11.76%	3 8.82%	13	21
AMBEDKAR NAGAR	9	0.30	5.25	0.78	2.52	1 11.11%	1 11.11%	2 22.22%	3 33.33%	2 22.22%	0	4	5
AURAIYA	10	1.53	1.53	0.50	2.82	1 10.00%	0	0	6 60.00%	3 30.00%	0	1	9
AZAMGARH	19	0.38	0.38	0.21	3.93	1 5.26%	0	0	10 52.63%	8 42.11%	0	1	18
BAGHPAT	1	-	-	0.85	0.85	0	0	0	1 100.0 %	0	0	0	1
BAHRAICH	15	0.09	0.21	0.14	1.19	2 13.33%	0	0	13 86.67%	0	0	2	13

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BALLIA	18	0.02	1.24	0.16	2.81	5 27.78%	0	0	10 55.56%	3 16.67%	0	5	13
BALRAMPUR	14	0.14	0.46	0.07	2.08	5 35.71%	0	0	8 57.14%	1 7.14%	0	5	9
BANDA	16	0.04	1.28	0.40	6.17	6 37.50%	0	0	7 43.75%	2 12.50%	1 6.25%	6	10
BARABANKI	26	0.19	0.19	0.13	5.34	1 3.85%	0	0	21 80.77%	2 7.69%	2 7.69%	1	25
BAREILLY	17	0.58	0.58	0.14	1.93	1 5.88%	0	0	16 94.12%	0	0	1	16
BASTI	10	-	-	0.10	1.55	0	0	0	10 100.0 %	0	0	0	10
BUDAUN	13	0.30	0.30	0.51	2.21	1 7.69%	0	0	9 69.23%	3 23.08%	0	1	12
BULANDSHAHR	5	0.27	4.10	0.61	1.66	1 20.00%	0	1 20.00%	3 60.00%	0	0	2	3
CHANDAULI	10	0.10	2.34	0.26	3.32	6 60.00%	1 10.00%	0	2 20.00%	1 10.00%	0	7	3
CHITRAKOOT	8	0.13	0.13	0.24	6.98	1 12.50%	0	0	1 12.50%	3 37.50%	3 37.50%	1	7

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
DEORIA	9	-	-	0.47	3.49	0	0	0	6 66.67%	3 33.33%	0	0	9
ETAH	15	0.11	0.17	0.21	2.09	3 20.00%	0	0	10 66.67%	2 13.33%	0	3	12
ETAWAH	8	0.05	0.84	0.18	8.32	4 50.00%	0	0	1 12.50%	2 25.00%	1 12.50%	4	4
FAIZABAD	10	-	-	0.54	3.60	0	0	0	5 50.00%	5 50.00%	0	0	10
FARRUKHABAD	5	-	-	0.01	0.98	0	0	0	5 100.0 %	0	0	0	5
FATEHPUR	13	.00	3.24	0.08	6.92	4 30.77%	2 15.38%	0	4 30.77%	1 7.69 %	2 15.38%	6	7
FIROZABAD	7	0.05	0.64	0.34	2.58	4 57.14%	0	0	2 28.57%	1 14.29%	0	4	3
GAUTAM BUDDHA NAGAR	7	0.27	1.85	1.43	7.41	2 28.57%	0	0	2 28.57%	1 14.29%	2 28.57%	2	5
GHAZIABAD	10	0.18	0.18	0.50	2.71	1 10.00%	0	0	7 70.00%	2 20.00%	0	1	9
GHAZIPUR	18	0.03	1.31	0.76	4.61	4 22.22%	0	0	9 50.00%	4 22.22%	1 5.56%	4	14

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GONDA	8	0.20	0.20	0.23	1.47	1 12.50%	0	0	7 87.50%	0	0	1	7
GORAKHPUR	7	-	-	1.04	3.90	0	0	0	2 28.57%	5 71.43%	0	0	7
HAMIRPUR	11	0.28	6.80	0.97	8.93	5 45.45%	0	1 9.09%	2 18.18%	2 18.18%	1 9.09%	6	5
HARDOI	22	0.45	1.44	0.12	3.12	2 9.09%	0	0	14 63.64%	6 27.27%	0	2	20
HATHRAS	9	0.74	0.74	0.63	3.48	1 11.11%	0	0	4 44.44%	4 44.44%	0	1	8
JALAUN	27	0.20	1.56	0.05	6.25	8 29.63%	0	0	15 55.56%	2 7.41%	2 7.41%	8	19
JAUNPUR	21	0.28	2.95	0.05	2.73	6 28.57%	2 9.52%	0	12 57.14%	1 4.76%	0	8	13
JHANSI	19	0.09	1.52	0.06	4.53	7 36.84%	0	0	8 42.11%	3 15.79%	1 5.26%	7	12
KANNAUJ	9	-	-	0.24	2.43	0	0	0	8 88.89%	1 11.11%	0	0	9
KANPUR DEHAT	7	-	-	2.00	13.17	0	0	0	0	5 71.43%	2 28.57%	0	7

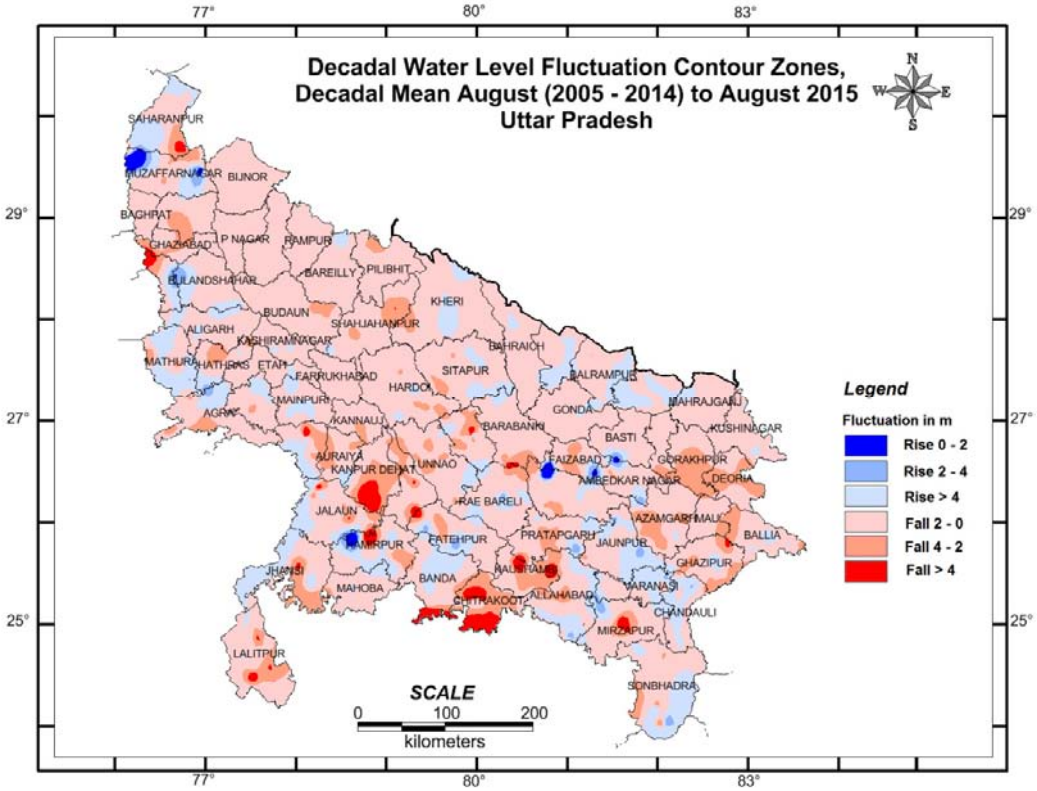
District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPUR NAGAR	15	-	-	0.14	4.66	0	0	0	11 73.33%	3 20.00%	1 6.67%	0	15
KAUSHAMBI	9	-	-	0.19	10.50	0	0	0	6 66.67%	2 22.22%	1 11.11%	0	9
KHERI	13	0.16	0.71	0.03	2.48	3 23.08%	0	0	9 69.23%	1 7.69%	0	3	10
KUSHINAGAR	10	0.07	0.25	0.11	1.29	3 30.00%	0	0	7 70.00%	0	0	3	7
LALITPUR	15	0.02	0.19	0.22	5.69	4 26.67%	0	0	7 46.67%	1 6.67 %	3 20.00%	4	11
LUCKNOW	37	0.21	4.31	0.10	5.84	4 10.81%	0	1 2.70%	16 43.24%	13 35.14 %	3 8.11%	5	32
MAHOBA	7	0.54	0.54	0.47	2.24	1 14.29%	0	0	4 57.14%	2 28.57%	0	1	6
MAHRAJGANJ	6	0.40	0.40	0.14	1.01	1 16.67%	0	0	5 83.33%	0	0	1	5
MAINPURI	9	0.13	0.80	0.25	1.57	4 44.44%	0	0	5 55.56%	0	0	4	5
MATHURA	16	0.04	1.96	0.03	3.73	11 68.75%	0	0	3 18.75%	2 12.50%	0	11	5

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MAU	7	-	-	0.52	3.76	0	0	0	5 71.43%	2 28.57%	0	0	7
MEERUT	5	-	-	0.03	3.10	0	0	0	3 60.00%	2 40.00%	0	0	5
MIRZAPUR	13	0.33	2.99	0.17	6.53	2 15.38 %	1 7.69%	0	8 61.54%	0	2 15.38%	3	10
MUZAFFAR NAGAR	12	1.59	14.56	0.17	3.61	1 8.33 %	0	2 16.67%	6 50.00%	3 25.00%	0	3	9
PILIBHIT	12	0.11	0.11	0.09	3.31	1 8.33 %	0	0	10 83.33%	1 8.33%	0	1	11
PRATAPGARH	26	0.11	3.70	0.23	2.94	5 19.23%	1 3.85%	0	17 65.38%	3 11.54%	0	6	20
RAE BARELI	28	0.02	3.31	0.10	3.41	6 21.43%	1 3.57%	0	19 67.86%	2 7.14%	0	7	21
SAHARANPUR	14	0.20	1.85	0.45	4.70	9 64.29%	0	0	4 28.57%	0	1 7.14%	9	5
SANT KABIR NAGAR	4	-	-	0.58	2.44	0	0	0	3 75.00%	1 25.00 %	0	0	4
SANT RAVIDAS NAGAR	4	2.31	2.31	0.05	1.62	0	1 25.00%	0	3 75.00%	0	0	1	3

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SHAHJAHANPUR	8	0.17	0.62	1.52	4.05	2 25.00%	0	0	3 37.50%	2 25.00%	1 12.50%	2	6
SHRAWASTI	14	0.04	0.66	0.29	2.08	6 42.86%	0	0	7 50.00%	1 7.14%	0	6	8
SIDDHARTH NAGAR	11	0.13	0.77	0.04	0.71	5 45.45%	0	0	6 54.55%	0	0	5	6
SITAPUR	25	0.15	1.50	0.01	3.83	5 20.00%	0	0	16 64.00%	4 16.00%	0	5	20
SONBHADRA	17	0.42	2.79	0.08	3.57	5 29.41%	1 5.88%	0	7 41.18%	4 23.53%	0	6	11
SULTANPUR	37	0.05	13.79	0.15	3.10	2 5.41%	1 2.70%	1 2.70%	26 70.27%	7 18.92%	0	4	33
UNNAO	23	0.16	0.82	0.01	3.39	4 17.39%	0	0	13 56.52%	6 26.09%	0	4	19
VARANASI	10	0.13	2.57	0.32	1.61	4 40.00%	1 10.00%	0	5 50.00%	0	0	5	5
Total	**898**	**0.11**	**2.31**	**0.01**	**13.17**	**190**	**15**	**8**	**503**	**149**	**33**	**213**	**685**

There is rise in water level in 213 wells (23.7%) and fall in 685 (76.28%) wells. There is a rise of 0 to 2 m in water level in patches in 160 wells (21.5% of the monitored wells) in most districts of the state except in western U.P. and few patches in eastern U.P. Rise of 2 -4m and more than 4 m is observed in 15 (1.67%) and 8 wells (0.89%) wells respectively.

Plate-XV

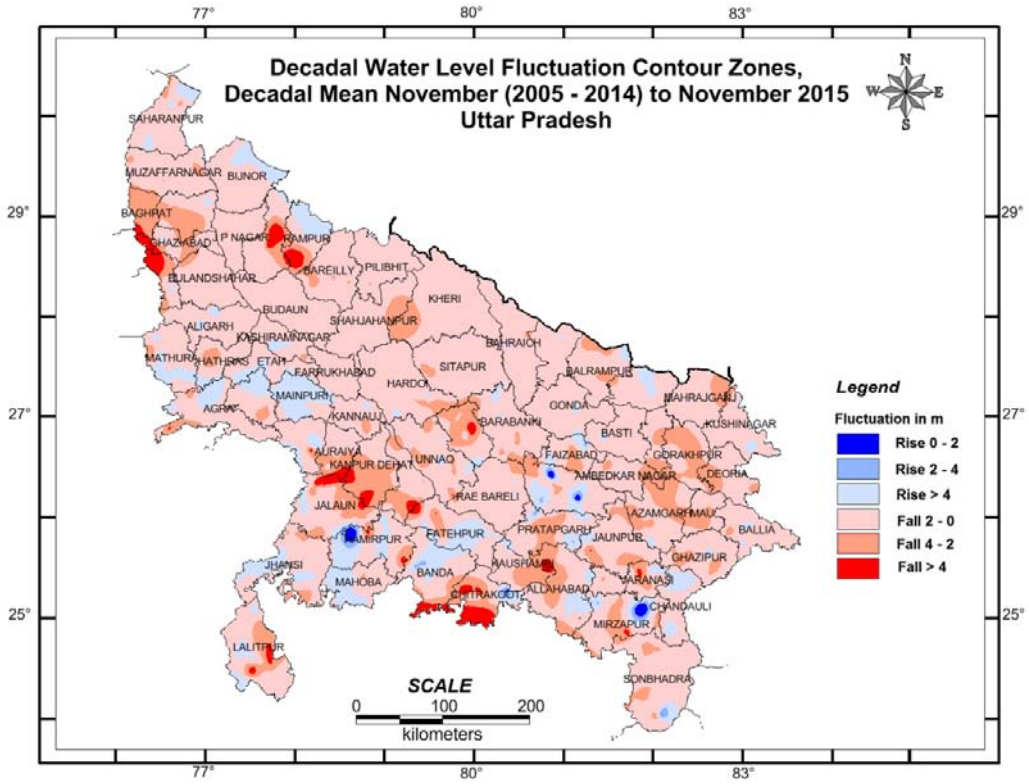


The fall in water level are noticed in 685 wells (76.28% of the monitored wells). Most of the districts of western parts of the state and few in south eastern U.P. show a fall in the range of 0 - 2 m at 503 wells (56.8%). Districts showing major parts under fall in water level of 0-2 m are Agra, Aligarh, Allahabad, Ambedkar Nagar, Auraiya, Azamgarh, Baghpat, Bahraich, Ballia, Balrampur, Banda, Barabanki, Bareilly, Basti, Budaun, Bulandshahr, Chandauli, Chitrakoot, Deoria, Etah, Etawah, Faizabad, Fatehpur, Farrukhabad, Ghaziabad, Ghazipur, Gonda, Hardoi, Jalaun, Jaunpur, Jhansi, Kannauj, Kanpur Nagar, Lucknow, Pilibhit, Rae Bareli and Varanasi districts. The fall of 2 - 4 m is observed in 149 wells (16.59%). Fall of >4m is observed only in 33 no. wells (3.67%). Districts showing major parts under fall of 2-4 m and also having areas showing fall more than 4 m are Allahabad, Banda, Barabanki, Chitrakoot, Fatehpur, Ghazipur, Jhansi, Lucknow and Mirzapur.

Mean November (2005- 14) – November 2015:

The average water level of last 10 years (2005-14) for each hydrograph station for the month of November has been evaluated and compared with water level data for November'15. The wells have been categorized depending on rise and fall in water levels and shown in table-15 and fluctuation map has been given in Plate-XVI.

Plate-XVI



There is a rise in water level in 159 nos. wells (17.54%) and fall in DWL is observed in 747 Nos. of wells(82.45%).Rise in DWL is predominant in parts of most districts of central, western and southern U.P. Fall is observed majority in most districts of Terai region, eastern, south eastern, southern ,western and parts of central U.P.

The rise between 0 and 2 m in water levels is observed in 144 wells (15.89%). This range is mostly observed in parts of Agra, Aligarh, Allahabad, Auraiya, Azamgarh, Ambedkar Nagar, Bahraich, Ballia, Balrampur, Banda, Barabanki, Basti, Chandauli, Etah, Etawah, Faizabad, Farrukhabad, Fatehpur, Firozabad, Ghaziabad, Ghazipur, Gonda, Hamirpur, Hardoi, Jalaun, Jaunpur, Jhansi, Lalitpur, Lucknow, Mahoba, Mainpuri, Mathura, Meerut, Mirzapur, Pratapgarh, Raebareli, Saharanpur, Sultanpur Shahjahanpur, Unnao and Varanasi districts. Rise of 2 -4 m is observed only at 9 wells (0.99%) and rise of more than 4m is noticed only at 6 wells.

Table-15

DISTRICT WISE – DECADAL WATER LEVEL FLUCTUATION, U.P.

Mean November (2005 – 2014) – November, 2015

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	13	0.20	1.18	0.22	4.62	4 30.77%	0	0	5 38.46%	3 23.08%	1 7.69%	4	9
ALIGARH	11	0.45	1.19	0.24	1.76	2 18.18%	0	0	9 81.82%	0	0	2	9
ALLAHABAD	26	0.20	2.13	0.06	5.33	3 11.54%	1 3.85%	0	12 46.15%	9 34.62%	1 3.85%	4	22
AMBEDKAR NAGAR	11	0.33	0.33	0.06	2.65	1 9.09%	0	0	8 72.73%	2 18.18%	0	1	10
AURAIYA	11	0.40	0.40	0.84	4.99	1 9.09%	0	0	6 54.55%	3 27.27%	1 9.09%	1	10
AZAMGARH	19	0.49	0.49	0.61	3.66	1 5.26%	0	0	10 52.63%	8 42.11%	0	1	18
BAGHPAT	1	-	-	4.18	4.18	0	0	0	0	0	1 100.0 %	0	1
BAHRAICH	11	0.03	0.07	0.44	1.45	2 18.18%	0	0	9 81.82%	0	0	2	9
BALLIA	18	0.18	0.58	0.13	3.12	3 16.67%	0	0	14 77.78%	1 5.56%	0	3	15

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BALRAMPUR	16	0.45	0.45	0.05	2.92	1 6.25%	0	0	11 68.75%	4 25.00%	0	1	15
BANDA	16	0.25	2.84	0.08	5.09	3 18.75%	2 12.50%	0	8 50.00%	2 12.50%	1 6.25%	5	11
BARABANKI	24	0.15	0.36	0.08	3.29	2 8.33%	0	0	17 70.83%	5 20.83%	0	2	22
BAREILLY	18	-	-	0.05	2.72	0	0	0	14 77.78%	4 22.22%	0	0	18
BASTI	9	0.51	0.51	0.31	1.79	1 11.11%	0	0	8 88.89%	0	0	1	8
BIJNOR	9	0.23	0.23	0.04	1.53	1 11.11%	0	0	8 88.89%	0	0	1	8
BUDAUN	12	-	-	0.21	2.03	0	0	0	11 91.67%	1 8.33%	0	0	12
BULANDSHAHR	5	-	-	0.20	1.99	0	0	0	5 100.0 %	0	0	0	5
CHANDAULI	10	0.04	1.25	0.66	1.61	7 70.00%	0	0	3 30.00%	0	0	7	3
CHITRAKOOT	8	4.88	4.88	0.96	5.08	0	0	1 12.50%	3 37.50%	1 12.50%	3 37.50%	1	7

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
DEORIA	8	-	-	0.65	3.83	0	0	0	6 75.00%	2 25.00%	0	0	8
ETAH	15	0.07	0.45	0.01	2.29	3 20.00%	0	0	11 73.33%	1 6.67%	0	3	12
ETAWAH	6	0.22	1.50	0.36	5.12	2 33.33%	0	0	3 50.00%	0	1 16.67%	2	4
FAIZABAD	13	0.09	2.57	0.04	2.88	3 23.08%	1 7.69%	0	6 46.15%	3 23.08%	0	4	9
FARRUKHABAD	6	0.39	0.39	0.59	1.66	1 16.67%	0	0	5 83.33%	0	0	1	5
FATEHPUR	12	0.01	1.35	0.72	6.92	6 50.00%	0	0	2 16.67%	2 16.67%	2 16.67%	6	6
FIROZABAD	7	0.09	1.13	0.37	3.78	4 57.14%	0	0	2 28.57%	1 14.29%	0	4	3
GAUTAM BUDDHA NAGAR	5	0.26	0.26	0.13	10.73	1 20.00%	0	0	1 20.00%	1 20.00%	2 40.00%	1	4
GHAZIABAD	10	0.18	0.58	0.38	3.46	2 20.00%	0	0	4 40.00%	4 40.00%	0	2	8
GHAZIPUR	18	0.49	0.49	0.19	3.33	1 5.56%	0	0	12 66.67%	5 27.78%	0	1	17

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GONDA	9	0.59	0.59	0.22	1.84	1 11.11%	0	0	8 88.89%	0	0	1	8
GORAKHPUR	6	-	-	1.28	3.66	0	0	0	2 33.33%	4 66.67%	0	0	6
HAMIRPUR	11	0.19	6.40	0.32	4.87	5 45.45%	0	1 9.09%	3 27.27%	0	2 18.18%	6	5
HARDOI	22	0.24	0.28	0.15	3.25	2 9.09%	0	0	17 77.27%	3 13.64%	0	2	20
HATHRAS	8	-	-	0.89	2.84	0	0	0	6 75.00%	2 25.00%	0	0	8
JALAUN	30	0.17	0.91	0.41	7.30	4 13.33%	0	0	16 53.33%	6 20.00%	4 13.33%	4	26
JAUNPUR	16	0.01	1.06	0.46	4.23	2 12.50%	0	0	10 62.50%	2 12.50%	2 12.50%	2	14
JHANSI	19	0.23	1.04	0.54	2.25	6 31.58%	0	0	8 42.11%	5 26.32%	0	6	13
JYOTIBA PHULE NAGAR	9	-	-	0.04	2.42	0	0	0	8 88.89%	1 11.11%	0	0	9
KANNAUJ	9	0.15	0.45	0.10	2.31	2 22.22%	0	0	6 66.67%	1 11.11%	0	2	7

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPUR DEHAT	6	-	-	1.85	3.85	0	0	0	1 16.67%	5 83.33%	0	0	6
KANPUR NAGAR	15	0.03	0.03	0.13	3.38	1 6.67%	0	0	10 66.67%	4 26.67%	0	1	14
KAUSHAMBI	6	0.06	0.34	0.88	3.28	2 33.33%	0	0	2 33.33%	2 33.33%	0	2	4
KHERI	9	-	-	0.31	3.03	0	0	0	8 88.89%	1 11.11%	0	0	9
KUSHINAGAR	8	0.18	0.28	0.49	1.34	2 25.00%	0	0	6 75.00%	0	0	2	6
LALITPUR	15	0.24	1.29	0.20	5.25	4 26.67%	0	0	8 53.33%	1 6.67%	2 13.33%	4	11
LUCKNOW	37	0.36	0.67	0.14	7.35	2 5.41%	0	0	15 40.54%	15 40.54%	5 13.51%	2	35
MAHOBA	7	0.03	1.80	0.07	2.24	4 57.14%	0	0	2 28.57%	1 14.29%	0	4	3
MAHRAJGANJ	5	-	-	0.25	3.98	0	0	0	4 80.00%	1 20.00%	0	0	5
MAINPURI	9	0.09	1.55	0.09	0.93	7 77.78%	0	0	2 22.22%	0	0	7	2

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MATHURA	15	0.21	1.04	0.14	3.57	7 46.67%	0	0	7 46.67%	1 6.67%	0	7	8
MAU	7	-	-	0.26	3.43	0	0	0	4 57.14%	3 42.86%	0	0	7
MEERUT	7	0.21	0.21	0.77	3.81	1 14.29%	0	0	3 42.86%	3 42.86%	0	1	6
MIRZAPUR	14	0.09	7.39	0.34	5.15	1 7.14%	1 7.14%	1 7.14%	5 35.71%	5 35.71%	1 7.14%	3	11
MORADABAD	16	0.01	0.01	0.37	8.90	2 12.50%	0	0	10 62.50%	2 12.50%	2 12.50%	2	14
MUZAFFAR NAGAR	16	0.21	0.21	0.06	2.58	1 6.25%	0	0	10 62.50%	5 31.25%	0	1	15
PILIBHIT	12	-	-	0.29	2.15	0	0	0	11 91.67%	1 8.33%	0	0	12
PRATAPGARH	24	0.18	2.89	0.17	3.87	5 20.83%	2 8.33%	0	11 45.83%	6 25.00%	0	7	17
RAE BARELI	23	0.32	0.45	0.06	2.29	2 8.70%	0	0	20 86.96%	1 4.35%	0	2	21
RAMPUR	3	1.43	1.43	0.31	6.82	1 33.33%	0	0	1 33.33%	0	1 33.33%	1	2

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SAHARANPUR	21	0.41	2.00	0.03	2.46	3 14.29%	1 4.76%	0	14 66.67%	3 14.29%	0	4	17
SANT KABIR NAGAR	4	-	-	1.01	3.17	0	0	0	2 50.00%	2 50.00%	0	0	4
SANT RAVIDAS NAGAR	5	-	-	0.51	2.10	0	0	0	4 80.00%	1 20.00%	0	0	5
SHAHJAHANPUR	5	0.03	0.03	0.43	1.97	1 20.00%	0	0	4 80.00%	0	0	1	4
SHRAWASTI	14	0.08	0.08	0.18	2.85	1 7.14%	0	0	12 85.71%	1 7.14%	0	1	13
SIDDHARTH NAGAR	10	0.63	1.14	0.02	1.99	2 20.00%	0	0	8 80.00%	0	0	2	8
SITAPUR	18	0.05	0.05	0.30	2.40	1 5.56%	0	0	15 83.33%	2 11.11%	0	1	17
SONBHADRA	17	4.15	4.15	0.19	2.90	0	0	1 5.88%	11 64.71%	5 29.41%	0	1	16
SULTANPUR	37	0.04	7.49	0.01	4.26	11 29.73%	1 2.70%	2 5.41%	14 37.84%	8 21.62%	1 2.70%	14	23
UNNAO	22	0.07	0.74	0.11	4.29	3 13.64%	0	0	13 59.09%	5 22.73%	1 4.55%	3	19

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
VARANASI	12	0.48	1.52	0.19	4.58	3 25.00%	0	0	6 50.00%	2 16.67%	1 8.33%	3	9
Total	906	0.01	4.88	0.01	10.73	144	9	6	540	172	35	159	747

The fall of 0 - 2 m in water levels are noticed in 540 wells (59.60%). Districts showing major parts as decline of 0-2 m are Aligarh, Allahabad, Ambedkar Nagar, Azamgarh, Auraiya, Ballia, Bahraich, Balrampur, Barabanki, Basti, Bijnor, Budaun, Bulandshahar, Chandauli, Chitrakoot, Deoria, Faizabad, Fatehpur, Firozabad, G.B. Nagar, Ghaziabad, Gonda, Gorakhpur, Ghazipur, Hamirpur, Hardoi, Jhansi, J.P. Nagar, Jaunpur, Kannauj, Kheri,, Kaushambi, Kanpur Dehat, Kanpur Nagar, Lalitpur, Lucknow, Maharajganj, Mahoba, Mainpuri, Mau, Meerut, Muzaffarnagar, Pratapgarh, Pilibhit, Rae Bareli, St. Kabir Nagar, Sonbhadra, Sultanpur, Shrawasti, Sitapur, Unnao and Varanasi. The fall of 2 - 4 m is observed in 172 wells (18.98%) mainly in Agra, Allahabad, Ballia, Chitrakoot, G.B. Nagar, Ghaziabad, Ghazipur, Jaunpur, Lalitpur, Pratapgarh, St. Ravidas Nagar, Sultanpur, Meerut, Mirzapur and Varanasi districts. Fall of > 4 m in water level is observed in 35no wells (3.86%) mainly in Agra, Allahabad, Auraiya, Banda, Chitrakoot, Fatehpur, G.B. Nagar, Jalaun, Jaunpur, Lalitpur, Lucknow, Mirzapur, Moradabad, Sultanpur, Unnao and Varanasi districts.

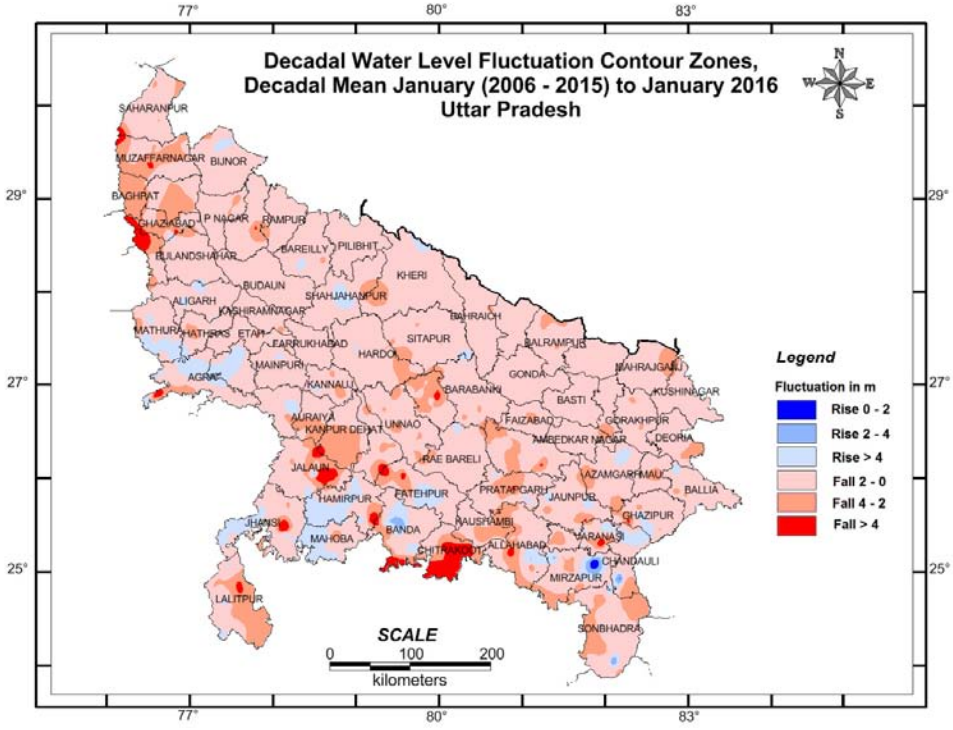
Mean January (2006- 15) – January 2016:

The average water level of last 10 years (2006-15) for each hydrograph Monitoring station for the month of January has been evaluated and compared with water level data for January'2016. The wells have been categorized depending on rise and fall in water levels and shown in Table-16 and map showing this fluctuation is shown in Plate-XVII.

There is a rise in water level in 96 no. of analysed wells (11.20%) and a majority are showing fall in 761 no. (88.79%) of analysed wells. Due to less monsoonal rain fall in all the district resulting in to 11.20% of wells shows rise in water level. About 10.01% of analysed wells (86 no.) show rise of 0 to 2 m in water levels. This rise is observed mainly in major parts of districts of Agra, Aligarh, Allahabad, Azamgarh, Ballia, Banda, Bareilly, Bijnor, Chandauli, Etawah, Fatehpur, Firozabad, Ghaziabad, Ghazipur, Hamirpur, Hardoi, Hathras, Jalaun, Jaunpur, Jhansi, Kannauj, Kanpur Nagar, Lalitpur, Mahoba, Mainpuri, Mathura, Muzaffar Nagar, Pratapgarh, Raebareli, Sitapur and Sultanpur, A rise of 2 to 4 m is noticed only in 7 (0.81%) wells and rise of > 4 mbgl is observed only in 3 wells (0.35%).

A fall of 0 to 2 m is observed in 567 no. wells (about 66.16%) in major parts of the districts in eastern, central and few districts of western U.P. Districts with major parts showing decline of 0-2 m are Agra, Aligarh, Allahabad, Ambedkar Nagar, Auraiya, Azamgarh, Bahraich, Ballia, Balrampur, Banda, Barabanki, Bareilly, Basti, Bijnor, Budaun, Bulandshar, Chandauli, Chitrakoot, Deoria, Etah, Etawah, Faizabad, Farrukhabad, Fatehpur, Firozabad, G.B. Nagar, Ghaziabad, Ghazipur, Gonad, Gorakhpur, Hamirpur, Hardoi, Hathras, Jalaun, Jaunpur, Jhansi, J.P. Nagar, Kannauj, Kanpur Nagar, Kheri, Lucknow, Mainpuri, Mathura, Moradabad, Pilibhit, Pratapgarh, Rae Bareli, Saharanpur, Shrawasti, Sitapur, Sonbhadra, Sultanpur, Unnao and Varanasi. Fall of 2 to 4 m is observed in 162 no. wells (18.90%) in parts of Agra, Allahabad, Auraiya, Ghazipur, Ghaziabad, Shahjahanpur, Kanpur Dehat, Kanpur Nagar, Lalitpur, Ballia, Lucknow, Mirzapur, Pratapgarh, Sitapur, Sonbhadra, Sultanpur, Unnao and Varanasi districts. Fall of more than 4 m fall is encountered in 32 Nos wells (3.73%).

Plate-XVII



DECADAL FLUCTUATION 2015 – 16, U.P.

FLUCTUATION RANGE	Mean May (2005-14) to May'15		Mean August(2005-14) to August'15		Mean Nov(2005-14) to November'15		Mean Jan(2006-15) to January'16	
	Rise (%)	***Fall (%)***	***Rise (%)***	***Fall (%)***	***Rise (%)***	***Fall (%)***	***Rise (%)***	***Fall (%)***
0-2	344 (41.0%)	395 (47.0%)	190 (21.2%)	503 (56.8%)	144 (15.9%)	540 (59.6%)	86 (10.0%)	567 (66.2%)
2-4	46 (5.48%)	37 (4.41%)	15 (1.67%)	149 (16.6%)	9 (0.99%)	172 (18.9%)	7 (0.81%)	162 (18.9%)
>4	10 (1.19%)	5 (0.59%)	8 (0.89%)	33 (3.67%)	6 (0.66%)	35 (3.86%)	3 (0.35%)	32 (3.73%)
Total	400 (47.6%)	437 (52.1%)	213 (23.7%)	685 (76.3%)	159 (17.5%)	747 (82.5%)	96 (11.2%)	761 (88.8%)

Table-16

DISTRICT WISE – DECADAL WATER LEVEL FLUCTUATION, U.P.

Mean January (2006 – 2015) – January, 2016

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
AGRA	11	0.10	1.75	0.17	6.42	4 36.36%	0	0	4 36.36%	2 18.18%	1 9.09%	4	7
ALIGARH	9	0.01	1.65	0.23	1.56	3 33.33%	0	0	6 66.67%	0	0	3	6
ALLAHABAD	29	0.40	2.15	0.15	5.12	1 3.45%	1 3.45%	0	17 58.62%	8 27.59%	2 6.90%	2	27
AMBEDKAR NAGAR	7	-	-	1.06	1.91	0	0	0	7 100.0 %	0	0	0	7
AURAIYA	9	0.17	0.17	0.80	3.36	1 11.11%	0	0	5 55.56%	3 33.33%	0	1	8
AZAMGARH	15	0.81	0.81	0.16	3.45	1 6.67%	0	0	8 53.33%	6 40.00%	0	1	14
BAGHPAT	1	-	-	3.62	3.62	0	0	0	0	1 100.00%	0	0	1
BAHRAICH	11	-	-	0.26	1.11	0	0	0	11 100.0 %	0	0	0	11
BALLIA	18	0.25	0.89	0.03	2.50	2 11.11%	0	0	13 72.22%	3 16.67%	0	2	16

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
BALRAMPUR	15	-	-	0.46	2.44	0	0	0	11 73.33%	4 26.67%	0	0	15
BANDA	14	1.11	3.20	0.05	5.26	2 14.29%	2 14.29%	0	7 50.00%	1 7.14%	2 14.29%	4	10
BARABANKI	23	-	-	0.11	3.07	0	0	0	21 91.30%	2 8.70%	0	0	23
BAREILLY	17	0.03	1.30	0.19	2.22	2 11.76%	0	0	14 82.35%	1 5.88%	0	2	15
BASTI	9	-	-	0.03	1.58	0	0	0	9 100.0 %	0	0	0	9
BIJNOR	9	0.24	0.24	0.02	2.91	1 11.11%	0	0	7 77.78%	1 11.11%	0	1	8
BUDAUN	12	-	-	0.39	1.61	0	0	0	12 100.0 %	0	0	0	12
BULANDSHAHR	5	-	-	0.15	2.93	0	0	0	3 60.00%	2 40.00%	0	0	5
CHANDAULI	11	0.74	4.41	0.70	2.59	3 27.27%	0	1 9.09%	6 54.55%	1 9.09%	0	4	
CHITRAKOOT	7	-	-	1.16	5.59	0	0	0	3 42.86%	1 14.29%	3 42.86%	0	7

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
DEORIA	5	-	-	1.09	2.35	0	0	0	3 60.00%	2 40.00%	0	0	5
ETAH	12	-	-	0.27	2.32	0	0	0	10 83.33%	2 16.67%	0	0	12
ETAWAH	6	1.86	1.86	0.01	4.00	1 16.67%	0	0	4 66.67%	0	1 16.67%	1	5
FAIZABAD	8	-	-	0.67	2.32	0	0	0	6 75.00%	2 25.00%	0	0	8
FARRUKHABAD	6	-	-	0.95	2.05	0	0	0	5 83.33%	1 16.67%	0	0	6
FATEHPUR	12	0.44	2.04	0.03	6.16	1 8.33%	1 8.33%	0	7 58.33%	1 8.33%	2 16.67%	2	10
FIROZABAD	6	0.89	0.89	0.08	1.69	1 16.67%	0	0	5 83.33%	0	0	1	5
GAUTAM BUDDHA NAGAR	5	-	-	0.11	6.65	0	0	0	2 40.00%	1 20.00%	2 40.00%	0	5
GHAZIABAD	12	0.02	0.97	0.63	4.98	2 16.67%	0	0	3 25.00%	6 50.00%	1 8.33%	2	10
GHAZIPUR	15	0.07	0.94	0.32	4.57	4 26.67%	0	0	8 53.33%	2 13.33%	1 6.67%	4	11

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
GONDA	8	-	-	0.75	1.65	0	0	0	8 100.0 %	0	0	0	8
GORAKHPUR	5	-	-	0.53	2.30	0	0	0	3 60.00%	2 40.00%	0	0	5
HAMIRPUR	9	0.23	0.81	1.38	6.31	6 66.67%	0	0	2 22.22%	0	1 11.11%	6	3
HARDOI	20	0.18	0.20	0.02	3.29	2 10.00%	0	0	16 80.00%	2 10.00%	0	2	18
HATHRAS	5	0.10	0.10	1.17	2.66	1 20.00%	0	0	3 60.00%	1 20.00%	0	1	4
JALAUN	27	0.03	2.44	0.36	7.87	3 11.11%	1 3.70%	0	14 51.85%	6 22.22%	3 11.11%	4	23
JAUNPUR	17	1.05	1.21	0.16	4.35	2 11.76%	0	0	13 76.47%	1 5.88%	1 5.88%	2	15
JHANSI	19	0.34	0.97	0.04	7.34	5 26.32%	0	0	10 52.63%	3 15.79%	1 5.26%	5	14
JYOTIBA PHULE NAGAR	9	-	-	0.50	2.41	0	0	0	7 77.78%	2 22.22%	0	0	9
KANNAUJ	8	0.08	0.15	0.77	2.33	2 25.00%	0	0	4 50.00%	2 25.00%	0	2	6

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
KANPUR DEHAT	6	-	-	1.80	3.87	0	0	0	1 16.67%	5 83.33%	0	0	6
KANPUR NAGAR	14	0.45	1.09	0.18	3.34	2 14.29%	0	0	9 64.29%	3 21.43%	0	2	12
KAUSHAMBI	7	-	-	0.53	3.31	0	0	0	5 71.43%	2 28.57%	0	0	7
KHERI	13	0.50	0.50	0.14	2.99	1 7.69%	0	0	11 84.62%	1 7.69%	0	1	12
KUSHINAGAR	5	-	-	0.10	1.75	0	0	0	5 100.0 %	0	0	0	5
LALITPUR	12	0.11	0.42	0.42	4.36	3 25.00%	0	0	4 33.33%	4 33.33%	1 8.33%	3	9
LUCKNOW	38	-	-	0.24	6.14	0	0	0	17 44.74%	18 47.37%	3 7.89%	0	38
MAHOBA	7	0.11	1.47	1.81	2.91	5 71.43%	0	0	1 14.29%	1 14.29%	0	5	2
MAHRAJGANJ	5	-	-	0.66	3.63	0	0	0	4 80.00%	1 20.00%	0	0	5
MAINPURI	7	0.07	0.07	0.00	1.12	1 14.29%	0	0	6 85.71%	0	0	1	6

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
MATHURA	15	0.20	2.00	0.03	3.63	6 40.00%	0	0	8 53.33%	1 6.67%	0	6	9
MAU	6	-	-	0.81	3.82	0	0	0	5 83.33%	1 16.67%	0	0	6
MEERUT	5	-	-	0.45	3.33	0	0	0	2 40.00%	3 60.00%	0	0	5
MIRZAPUR	13	0.33	5.82	0.80	2.72	1 7.69%	1 7.69%	1 7.69%	6 46.15%	4 30.77%	0	3	10
MORADABAD	15	0.18	0.18	0.27	4.21	1 6.67%	0	0	13 86.67%	0	1 6.67%	1	14
MUZAFFAR NAGAR	15	0.16	0.33	0.15	8.02	2 13.33%	0	0	5 33.33%	6 40.00%	2 13.33%	2	13
PILIBHIT	11	-	-	0.23	1.32	0	0	0	11 100.0 %	0	0	0	11
PRATAPGARH	25	0.08	0.87	0.05	4.28	4 16.00%	0	0	16 64.00%	4 16.00%	1 4.00%	4	21
RAE BARELI	27	0.30	0.30	0.08	2.65	1 3.70%	0	0	25 92.59%	1 3.70%	0	1	26
RAMPUR	3	-	-	0.79	1.67	0	0	0	3 100.0 %	0	0	0	3

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
SAHARANPUR	18	0.18	0.18	0.07	2.20	1 5.56%	0	0	15 83.33%	2 11.11%	0	1	17
SANT KABIR NAGAR	4	-	-	0.98	2.95	0	0	0	3 75.00%	1 25.00%	0	0	4
SANT RAVIDAS NAGAR	5	-	-	1.09	3.23	0	0	0	3 60.00%	2 40.00%	0	0	5
SHAHJAHANPUR	6	0.03	2.21	1.33	1.81	1 16.67%	1 16.67%	0	4 66.67%	0	0	2	4
SHRAWASTI	14	-	-	0.36	2.43	0	0	0	13 92.86%	1 7.14%	0	0	14
SIDDHARTH NAGAR	11	-	-	0.33	1.54	0	0	0	11 100.0 %	0	0	0	11
SITAPUR	22	0.40	0.40	0.13	3.92	1 4.55%	0	0	17 77.27%	4 18.18%	0	1	21
SONBHADRA	19	0.22	4.01	0.44	3.19	1 5.26%	0	1 5.26%	10 52.63%	7 36.84%	0	2	17
SULTANPUR	33	0.21	0.21	0.06	4.49	1 3.03%	0	0	19 57.58%	12 36.36%	1 3.03%	1	32
UNNAO	20	-	-	0.10	4.10	0	0	0	15 75.00%	4 20.00%	1 5.00%	0	20

District Name	No. of Wells	Range of Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation						Total No. of Wells	
		Rise		*Fall*		*Rise*			*Fall*			*Rise*	*Fall*
		Min	*Max*	*Min*	*Max*	*0 to 2*	*2 to 4*	*>4*	*0 to 2*	*2 to 4*	*>4*		
VARANASI	10	0.19	1.21	0.27	5.62	4 40.00%	0	0	3 30.00%	2 20.00%	1 10.00%	4	6
Total	**857**	**0.07**	**1.86**	**0.00**	**8.02**	**86**	**7**	**3**	**567**	**162**	**32**	**96**	**761**

From the analysis of table it is evident that the water level has shown a fall in more than half of the wells in Aug'15, Nov'15 and January'16 as compared to mean of last ten years. The changes in water level with respect to mean were confined to a magnitude of 0-2 m. The rise/fall of higher magnitude was limited and isolated in nature.

WATER LEVEL TREND

The seasonal, annual and decadal fluctuation gives an idea of the behavior of the water level but is subjected to many anomalous factors which give a short term picture. To have a true picture where highs and lows are balanced out, the long term trend for ten years 2006 to 2015 has been worked out and analysed on the basis of DWL data of Ground Water Monitoring Wells. The pre monsoon, post monsoon and annual trend for the said period is given in Annexure-II.

The declining trend data during Pre-monsoon for the period 2006-2015 are summarized as follows:

Percentage of wells showing Decline in Pre-monsoon DWL (cm/year)		
0-20cm	**20-40 cm**	**>40 cm**
74.57%	16.38%	9.0%

There is a declining trend in 99.95% of the monitoring wells covering over 10 years period. Decline of 0 – 20 cm/yr is most extensive covering 74.57% wells followed by 20 – 40 cm/yr in 16.38% wells and >40 cm/yr in 9.0%. The low decline is spread all over the state but dominant in eastern and central parts and along Terai belt of the state. Higher decline occurs in most of the districts of western and southern regions.

The declining trend data during Post-monsoon for the period 2006-2015 are summarized as follows:

Percentage of wells showing Decline in Post-monsoon DWL (cm/year)		
0-20cm	**20-40 cm**	**>40 cm**
70.23%	17.31 %	12.45%

There is a declining trend in 99.99% of the monitoring wells over 10 years period. Decline of 0 – 20 cm/yr is most extensive covering 70.23% wells followed by 20 – 40 cm/yr in 17.31% wells and >40 cm/yr also in 12.45% wells. The low decline is spread all over the state but dominant in central, eastern part and along Terai belt of the state. Higher decline occurs in most of the districts of western, north western and southern parts and along Yamuna River.

Chapter 7
GROUND WATER QUALITY
(Based on NHS data 2015-16)

INTRODUCTION:

The availability of fresh water for human consumption, irrigation, agricultural development and other activities is associated with the growing needs of modern living conditions but is decreasing day by day due to increase in population, urbanization, industrialization and erratic behavior of rains. To meet the requirement of fresh water, the dependency on ground water is increasing in comparison to surface water because during summer season most of the surface water bodies do not have sufficient water, while ground water is easily accessible throughout the year.

The quality of groundwater is affected in three ways i.e. physical, chemical and bacteriological, although the procedure is very slow and complex to understand. The quality of ground water in the phreatic aquifer depends on the nature of rocks, contact time, circulation and temperature. It is also dependent on the solubility of the minerals present in the rocks. To some extent the atmospheric precipitation (rain water) is also contributory factor for affecting the quality of ground water as during the rain fall most of the gases such as CO_2, SO_2 and NO_2 present in the atmosphere gets dissolved in the rain water during the course of downward travel and percolate down through the earth surface dissolving mainly calcium and magnesium present in the soil forming calcium bicarbonate. The pH plays an important role in the geochemical reactions as low pH tends to help faster dissolution of the minerals. The quality of ground water is also influenced by the excessive use of fertilizers and pesticides for agricultural production and also industrial activity.

Ground water due to its long standing with minerals and rocks is generally more mineralized than surface water. This was found to be confirmed largely for water in phreatic zones. The chemical quality of ground water in phreatic zones is also affected by anthropogenic sources at the ground surface, whether it is domestic, agriculture or industrial in nature.

METHODOLOGY:

To evaluate the drinking water quality of ground water, 653 water samples were collected from Ground Water Monitoring Stations (GWMS) during the A.A.P. 2015-16. Generally the monitoring stations are open dug wells tapping phreatic aquifer. Ground water samples were collected from hand pumps where dug wells are not in use. All the samples were analysed for the determination of pH, EC, CO_3, HCO_3, Cl, F, NO_3, SO_4, PO_4, SiO_2, T.H., Ca, Mg, Na & K. These water samples were analysed as per standard methods (APHA 2005). Following standard methods (Table 17) have been adopted for the chemical analysis of different constituents in water samples.

Table-17

METHODS USED FOR CHEMICAL ANALYSIS OF GROUND WATER SAMPLES

Sl. No.	Constituents	Method Used
1.	pH	pH Meter
2.	EC	EC Meter
3.	Carbonate	Titrimetric method

Sl. No.	Constituents	Method Used
4.	Bi-carbonate	-do-
5.	Chloride	Mohr's method
6.	Fluoride	Spectrophotometric method
7.	Nitrate	-do-
8.	Sulphate	-do-
9.	Phosphate	-do-
10.	Silica	-do-
11.	Total Hardness	Titrimetric method
12.	Calcium	-do-
13.	Magnesium	Evaluation from TH and Ca
14.	Sodium	Flame emission photometric method
15.	Potassium	-do-

WATER QUALITY NORMS & CRITERIA:

Water quality standards and guidelines have been laid down by WHO (1984), Govt. of India, National High Tech Mission (1986) and BIS (2012) and many other organizations. These guidelines are exhaustive and it becomes very difficult to analyse ground water samples for all the constituents. The water quality is judged by a common man mainly by ENT (Eyes, nose and tongue) tests before using it for domestic purposes. They are-

E (Eyes) : Appearance - turbidity, particles, oily layer, color etc.
N (Nose) : Odor - no smell, rotten egg smell, fishy smell etc.
T (Tongue) : Taste - salinity, pH, temperature, soluble iron chloride etc.

The guidelines/standards laid down by BIS (2012) with regard to some constituents for domestic and potable purposes have been tabulated below in the Table 18:

Table-18

INDIAN STANDARD FOR DRINKING WATER SPECIFICATIONS (BIS 2012)

S. No.	Substance/ Characteristics	Desirable limit	Undesirable effect outside desirable limit	Permissible limit in absence of alternate source
1.	Colour (Hazen Units)	5	Above 5, consumer acceptance decreases	25
2.	Turbidity (NTU)	5	Above 5, consumer acceptance decreases	10
3.	pH value	6.5-8.5	Beyond this range water will effect	No relaxation

S. No.	Substance/ Characteristics	Desirable limit	Undesirable effect outside desirable limit	Permissible limit in absence of alternate source
			mucous membrane.	
4.	Dissolved solids mg/l max	500	Beyond this palatability decreases and may cause gastro intestinal irritation	2000
5.	Alkalinity mg/l max	200	Unpleasant taste	600
6.	Total hardness (as $CaCO_3$) mg/l max	300	Encrustation in water supply structure and adverse effect on domestic use.	600
7.	Chloride (as CI) mg/l max	250	Beyond this limit taste corrosion and palatability are effected	1000
8.	Calcium (as Ca) mg/l max	75	Encrustation in water supply structure and adverse effect on domestic use.	200
9.	Magnesium (as Mg) mg/l max	30	Encrustation in water supply structure and adverse effect on domestic use.	100
10.	Sulphate (as SO_4) mg/l max	200	Beyond this limit gastrointestinal irritation occurs when Magnesium of sodium is present	400
11.	Nitrate (as NO_3) mg/l max	45	Beyond this methemoglobinaemia takes place	45
12.	Fluoride (as F) mg/l max	1.0	Fluoride may be kept as low as possible. High fluoride may cause fluorosis	1.5

CHEMICAL QUALITY OF GROUND WATER IN UTTAR PRADESH

The chemical quality of ground water depends on various factors like source of water such as rainfall, erosion, dry fall out, weathering of rocks and as a result of chemical reactions taking place on and below the surface. Thus, the chemical quality of water is dependent on geological and hydrogeological conditions prevailing in the area, climate, topography, nature of soil, physicochemical characteristics of rocks, nature of plantation and finally the activities of man resulting in environmental pollution. The pollution of ground water may lead to abandonment of wells, so in order to deal with this problem it becomes necessary to assess its suitability for drinking and irrigation purpose before corrective measures are undertaken.

SUITABILITY OF GROUND WATER FOR POTABLE PURPOSES

The suitability of ground water for drinking purposes has been assessed according to the guidelines laid down by BIS (2012), Table – 18 for various analysed parameters. The chemical analysis results for 653 nos. of samples collected from GW monitoring Stations spread in entire Uttar Pradesh have been tabulated in Annexure A.

The minimum, maximum and average values of various constituents determined during chemical analysis have been summarized in following Table 19 below –

Table-I9

SUMMARIZED HYDRO-CHEMICAL DATA OF GROUND WATER IN U.P. (2015-16)

S. No.	Constituents	Minimum	Maximum	Average
1.	pH	7.35	8.7	7.97
2.	EC µS/cm at 25 ºC	271	18520	943
3.	CO_3 mg/l	Nil	108	1.7
4.	HCO_3 mg/l	24	1025	369
5.	Cl mg/l	3.5	3907	77
6.	F mg/l	Nd	6.0	0.58
7.	NO_3 mg/l	Nd	1370	20.6
8.	SO_4 mg/l	0.6	3080	50.8
9.	SiO_2 mg/l	9.0	93	33
10.	PO_4 mg/l	Nd	2.2	0.011
11.	TH (as $CaCO_3$) mg/l	90	1997	282
12.	Ca mg/l	4.0	441	57
13.	Mg mg/l	2.4	378	34
14.	Na mg/l	5.7	3580	91
15.	K mg/l	0	658	7.7

Hydrogen Ion Concentration (pH):

The pH value of ground water in the state of U.P. varies from 7.35 to 8.7 and is generally well within the permissible limit and the water is slightly alkaline in nature. The average pH value has been found to be 7.97.

Carbonate & Bicarbonate (CO_3 & HCO_3):

The Carbonate has been observed to be nil in most of the case however it has been found upto108 mg/l & Bicarbonate has been observed in the range of 24 to 1025 mg/l with average value of 369mg /l.

Electrical Conductivity (EC) :

The Electrical Conductivity is a reflection of the concentration of various chemical constituents in ground water and gives the overall quality of ground water for its various uses like drinking, irrigation and other purposes. In the study area EC ranges from 271 to 18520 µSiemens/cm at 25ºC with average value of 943 µSiemens/cm at 25ºC. In 94.4% of water samples EC values up to a max. of 2250 µS/cm at 25ºC was observed. In 5.1% of samples EC ranges between 2251 to 5000 µS/cm whereas only 0 . 50% samples are found to have EC value more than 5000 µS/cm at 25ºC. The highest value of EC, 18520 µS/cm at 25ºC was observed in ground water from Narkhi block (Ferozabad district). The distribution of EC of the entire districts is shown in plate XVIII. The frequency distribution is shown in the following table 20:

Plate –XVIII

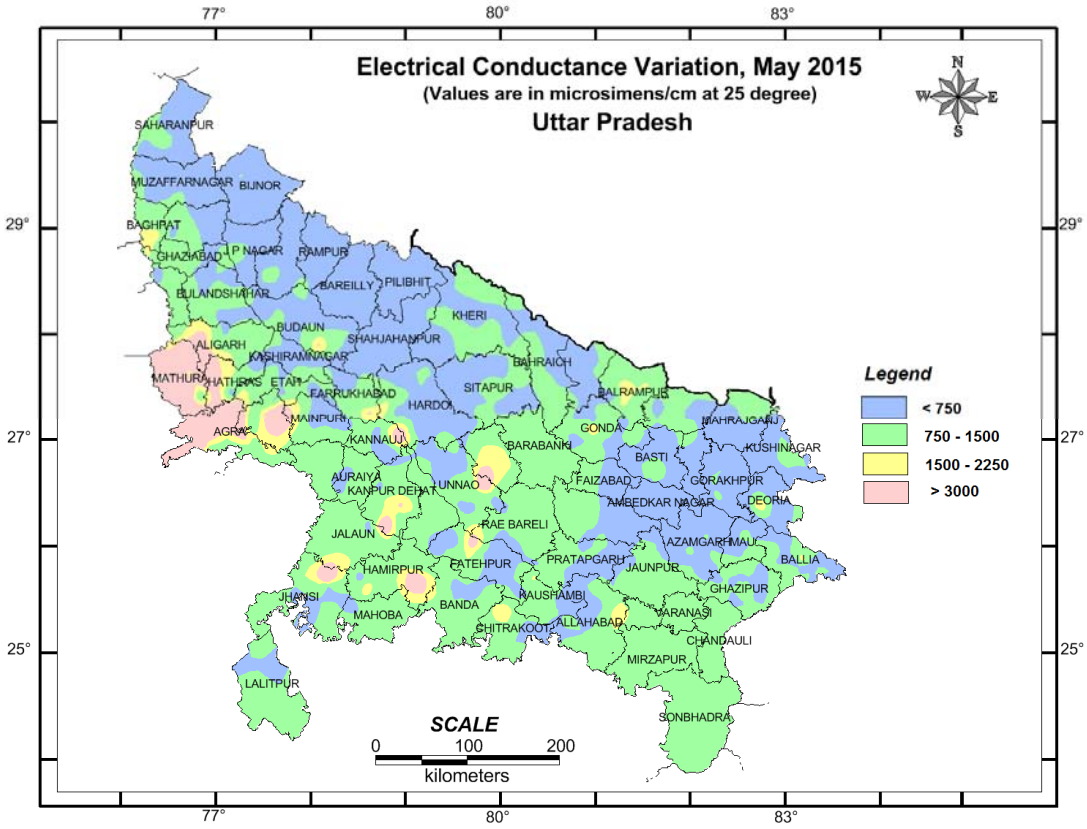


Table-20

FREQUENCY DISTRIBUTION OF ELECTRICAL CONDUCTIVITY (2015 -2016)

EC ranges in µS/cm at 25ºC	0-250	251 - 750	751-2250	2251-5000	>5000
No. of samples	0	359	258	33	3
%	0	54.9	39.5	5.1	0.5

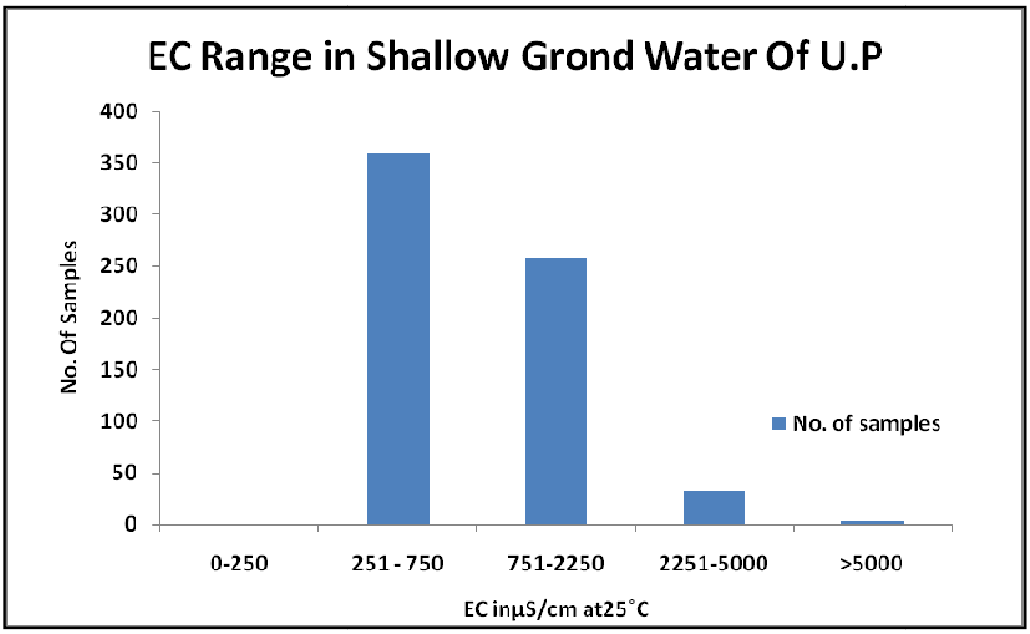


Figure 1: Depicts the range of Electrical Conductivity in shallow ground water of U.P.

The various blocks exhibiting high values of E.C. (>2250 µS/cm at 25°C) are tabulated in following table-21 below-

Table-21

THE BLOCKS EXHIBITING HIGH VALUES OF E.C. (>2250 µS/cm at 25°C µS/cm)

S. No	District	Block	E.C. µS/cm at 25^0C
1	Agra	Achhnera	4350
2	Agra	Akola	4000
3	Agra	Bichpuri	4340
4	Agra	Etmadpur	5340
5	Agra	Fatehabad	2580
6	Agra	Fatehpur Sikari	2400
7	Agra	Jagner	4550
8	Agra	Khandauli	3000
9	Agra	Kheragarh	6450
10	Agra	Agra	4880
11	Aligarh	Gonda	4292
12	Aligarh	Khair	2784
13	Budaun	Quadar chowk	2400
14	Deoria	Bhaluani	2335
15	Farrukhabad	Kamalganj	2410
16	Fatehpur	Malwan	2712
17	Ferozabad	Araon	2590
18	Ferozabad	Jasrana	4435

S. No	District	Block	E.C. µS/cm at 25^0C
19	Ferozabad	Narkhi	18520
20	Ferozabad	Tundla	2620
21	Hamirpur	Maudaha	3194
22	Hathras	Mursan	3165
23	Hathras	Sadabad	2682
24	Jhansi	Bamaur	3530
25	Kannauj	Kannauj	3210
26	Kanpur Dehat	Amraudha	3620
27	Kanpur Dehat	Akbarpur	2400
28	Mathura	Chaumuhan	2482
29	Mathura	Chhata	2338
30	Mathura	Farah	3982
31	Mathura	Mathura	4287
32	Mathura	Nandgaon	2968
33	Mathura	Nohihil	4243
34	Mathura	Raya	2304
35	Unnao	Asoha	3400
36	Unnao	Fatehpur Chaurasi	2350

The comparative statement of four years i.e. (2011-12), (2012-2013), (2013-14) & (2014-15) shows a very slight variation in the water quality as is evident from the following table- 22.

Table–22

COMPARATIVE STATEMENT OF WATER QUALITY AS PER EC FOR FOUR YEARS

EC µS/cm at 25°C	Percentage of Water Samples			
Year	**2012-13**	**2013-14**	**2014-15**	**2015-16**
0-2250	97.2	95.4	95.5	94.4
2251-5000	2.0	3.6	3.6	5.1
>5000	0.8	1.0	0.90	0.5

Chloride (Cl):

The study reveals that concentration of chloride ion ranges from 3.5to 3907 mg/l with an average value of 77 mg/l. From Table 23 it is clear that a total of 93.7% water samples fall within the desirable limit while 99.4% contain chloride within the maximum permissible limit prescribed by BIS (2012). Only 0.6% samples exhibit Chloride values > 1000 mg/l viz. 1030mg/l Achhnera block , distt. Agra ; 3907mg/l from Narkhi block, distt. Ferozabad ; and 1035 &1042 mg/l from Farah block and Mathura blocks resp, distt. Mathura.

Table–23

FREQUENCY DISTRIBUTION OF CHLORIDE IN SHALLOW GROUND WATER OF U.P.

Range of Chloride in mg/l	0-250	251-1000	>1000
No. of samples	612	37	4
%	93.7	5.7	0.6

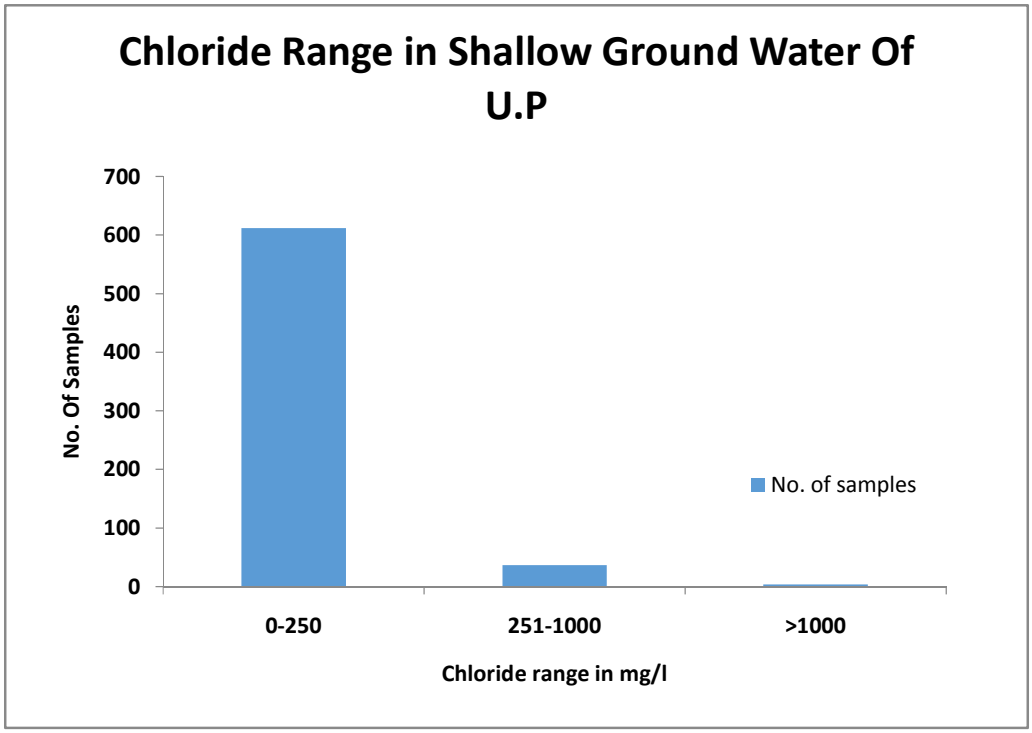


Figure 2: Depicts the range of Chloride in shallow ground water

The various blocks exhibiting high values of Cl (>1000 mg/l) are tabulated in following table 24 below-

Table-24

LIST OF BLOCKS EXHIBITING HIGH VALUES OF Cl (>1000 mg/l)

S. No.	District	Block	Cl >1000 mg/l
1	Agra	Achhnera	1030
2	Ferozabad	Narkhi	3907
3	Mathura	Farah	1035
4	Mathura	Mathura	1042

Nitrate (NO_3) :

The concentration of Nitrate has been found varying widely. It ranges between not detectable to 1370 mg/l with an average value of 20.6 mg/l. 89.1% of water samples fall within the permissible limit of 45 mg/l (BIS 2012) and 10.9% samples have higher level of Nitrate concentration with the highest value 1370 mg/l recorded at Narkhi block (distt.Ferozabad). High Nitrate in found all over the state and does not follow any definite pattern of distribution. The distribution of samples in different concentration ranges are given in following table- 25

Table-25

FREQUENCY DISTRIBUTION OF NITRATE IN SHALLOW GROUNDWATER OF U.P.

Range of Nitrate in mg/l	0-45	>45
No. of Samples	582	71
%	89.1	10.9

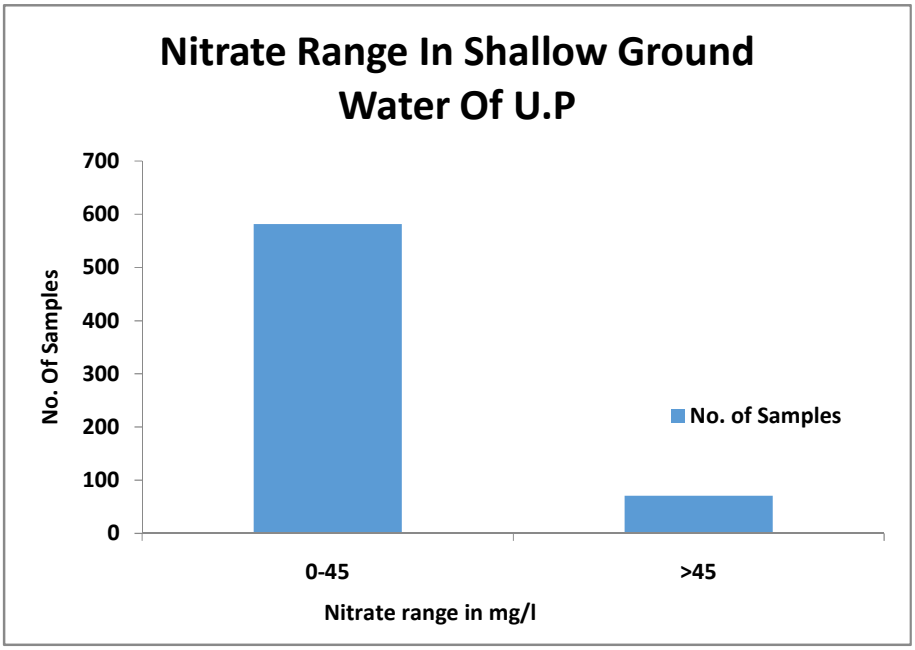


Figure 3: Depicts the nitrate range in shallow ground water of U.P.

The various blocks exhibiting high values of nitrate concentration (>45 mg/l) are tabulated in following table 26:

Table-26

LIST OF BLOCKS ASSOCIATED WITH HIGH VALUES OF NITRATE (>45 mg/l)

S. No.	District	Block	NO3 >45 mg/l
1	Agra	Akola	130
2	Agra	Bah	150
3	Agra	Jagner	74
4	Agra	Agra	215
5	Aligarh	Iglas	91
6	Aligarh	Khair	82
7	Allahabad	Allahabad sadar	49
8	Allahabad	Manda	107
9	Allahabad	Meja	58
10	Auraiya	Auraiya	145
11	Baghpat	Baghpat	175
12	Baghpat	Pilana	46
13	Ballia	Bansdeeh	65
14	Balrampur	Sriduttganj	93
15	Banda	Kamacin	74
16	Basti	Basti Sadar	182
17	Basti	Kaptan Ganj	48
18	Budaun	Usawan	70

S. No.	District	Block	NO3 >45 mg/l
19	Budaun	Gunnaur	47
20	Budaun	Quadar chowk	332
21	Budaun	Asafpur	69
22	Budaun	Ujhani	76
23	Bulandshahar	Jahangirabad	67
24	Chitrakoot	Pahari	361
25	Chitrakoot	Maudaha	65
26	Chitrakoot	Chitrakoot	98
27	Chitrakoot	Chitrakoot	98
28	Etah	Jalesar	58
29	Farrukhabad	Kamalganj	350
30	Fatehpur	Airaw	56
31	Ferozabad	Araon	216
32	Ferozabad	Jasrana	120
33	Ferozabad	Narkhi	1370
34	Ferozabad	Shikohabad	52
35	Ghaziabad	Garh	53
36	Ghaziabad	Simbholi	56
37	Ghaziabad	Ghaziabad	61
38	Gonda	Chhapiya	49
39	Gonda	Jhanjhari	117
40	Hamirpur	Maudaha	151
41	Hamirpur	Rath	98
42	Hamirpur	Hamirpur	48
43	Hathras	Hassain	93
44	Hathras	Mursan	64
45	Jalaun	Rampura	73
46	Jhansi	Bamaur	156
47	Jhansi	Baragaon	59
48	Jhansi	Moth	61
49	Kannauj	Saurikh	110
50	Kanpur Dehat	Amraudha	930
51	Kanpur Dehat	Akbarpur	242
52	Kanpur Dehat	Derapur	84
53	Kanpur Nagar	Bhitargaon	225
54	Kanshiram Nagar	Patiyali	155
55	Kanshiram Nagar	Soron	53
56	Kausambi	Newada	53.6
57	Kausambi	Kara	158
58	Lalitpur	Birdha	64
59	Lalitpur	Jakhaura	57

S. No.	District	Block	NO3 >45 mg/l
60	Lalitpur	Talbehat	47
61	Mahoba	Kabrai	135
62	Mahoba	Mahoba	139
63	Mathura	Nohihil	268
64	Mathura	Raya	129
65	Meerut	Meerut	58
66	Meerut	Sardhana	82
67	Muzaffarnagar	Budhana	49
68	Pratapgarh	Kunda	49
69	Saharanpur	Rampur	190
70	Sitapur	Bisawan	100
71	Sitapur	Sidhauli	55

Fluoride (F) :

Small quantities of Fluoride are beneficial in reducing tooth decay, whereas excess concentration (>1.5 mg/l) is harmful causing staining of tooth enamel and Fluorosis. The value of Fluoride concentration is found to range between not detectable to 6.0 mg/l with 94.2% samples falling within the permissible limit prescribed by BIS (2012). The highest value of 6.0 mg/l, has been recorded in Bichpuri block (distt. Agra). The distribution of samples in different Fluoride ranges has been tabulated in following table 27 below:

Table – 27

FREQUENCY DISTRIBUTION OF FLUORIDE IN SHALLOW GROUND WATER OF U.P

Range of Fluoride in mg/l	0-1.0	>1.0-1.5	>1.5
No. of Samples	592	23	38
%	90.7	3.5	5.8

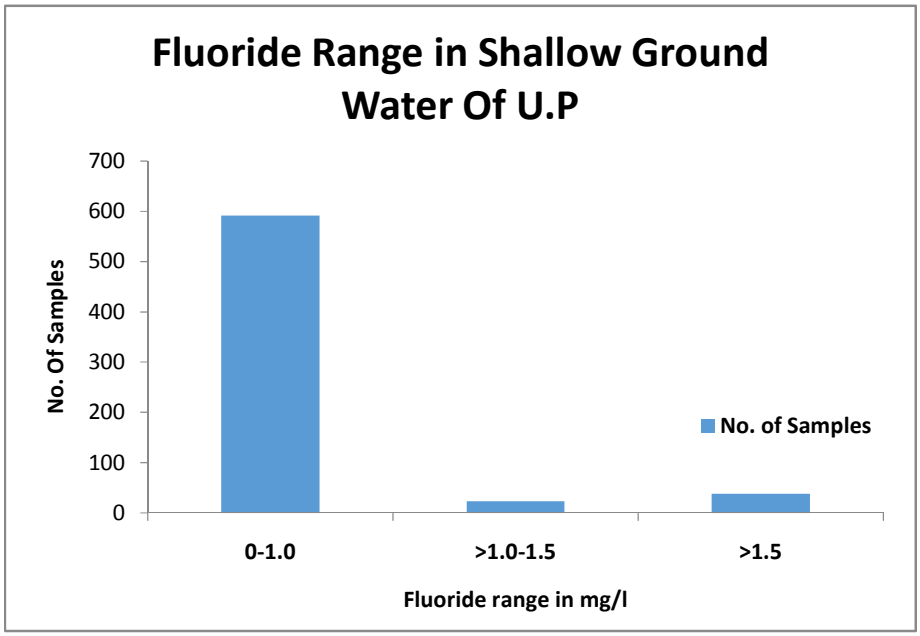


Figure 4: **Depicts the fluoride range in shallow ground water of U.P.**

The various Blocks exhibiting high values of Fluoride concentration (>1.5 mg/l) are tabulated in following table - 28 below

Table – 28

LIST OF BLOCKS ASSOCIATED WITH HIGH VALUES OF FLUORIDE (>1.5 mg/l)

S. No.	District	Block	F (mg/l)
1	Agra	Achhnera	4.45
2	Agra	Bichpuri	6.0
3	Agra	Etmadpur	2.2
4	Agra	Fatehabad	2
5	Agra	Khandauli	2.55
6	Allahabad	Allahabad sadar	2.23
7	Allahabad	Bahariya	2.12
8	Auraiya	Achhalda	2
9	Etawa	Mahewa	1.8
10	Farrukhabad	Rajepur	4.7
11	Fatehpur	Khajuha	1.51
12	Fatehpur	Malwan	3.51
13	Ferozabad	Araon	1.8
14	Ferozabad	Eka	2.2
15	Ferozabad	Firozabad	1.6
16	Ferozabad	Tundla	1.6
17	Ghaziabad	Razapur	2.75
18	Hathras	Hathras	1.61
19	Hathras	Mursan	1.6
20	G.B.Nagar	Dadri	1.57
21	Jaunpur	Machhali sahar	1.79

S. No.	District	Block	F (mg/l)
22	Kannauj	Umarda	3.9
23	Kanpur Nagar	Kakwan	2.5
24	Kanpur Nagar	Sarsaul	1.9
25	Mahoba	Jaitpura	3.57
26	Mainpuri	Karhal	3.0
27	Mainpuri	Kishni	4.3
28	Mainpuri	Kurawali	1.8
29	Mathura	Baldeo	1.61
30	Mathura	Nandgaon	1.64
31	Muzaffarnagar	Shamli	2.20
32	Pratapgarh	Pratapgarh sadar	2.76
33	Pratapgarh	Baba Bhekhtar Nath Dham	2.15
34	Pratapgarh	Bihar	1.57
35	Unnao	Bighapur	2.0
36	Unnao	Nawabganj	3.3
37	Unnao	Purwa	1.7
38	Unnao	Sumerpur	2.3

Total Hardness (T.H.):

The concentration of total hardness has been found to vary widely. It ranges between 90 to 1997 mg/l with 97% of water samples falling within the permissible limit of 600 mg/l (BIS-2012) and 3.0% samples have higher level of Total Hardness concentration with the highest value 1997 mg/l recorded at Narkhi block (distt. Ferozabad). The distribution of samples in different concentration ranges are given in following table - 29:

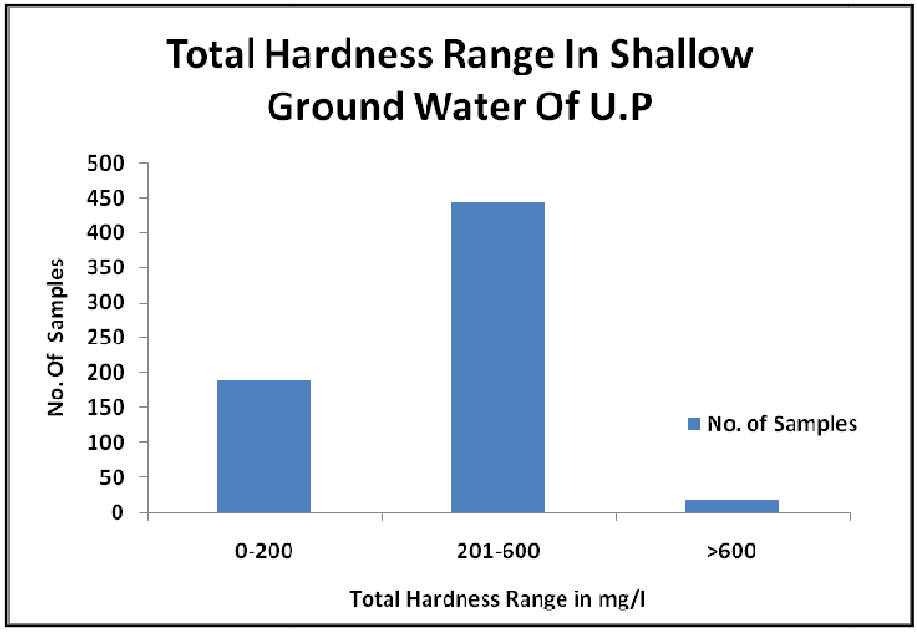


Figure 5: Depicts the T.H. range in shallow ground water of U.P.

Table-29

FREQUENCY DISTRIBUTION OF TOTAL HARDNESS IN SHALLOW GROUND WATER OF U.P.

Range of T.H. in mg/l	**0-200**	**201-600**	**>600**
No. of Samples	190	444	19
%	29	68	3.0

The various Blocks exhibiting high values of T.H. concentration (>600 mg/l) are tabulated in table 30 below-

Table-30

LIST OF BLOCKS EXHIBITING HIGH VALUES OF TOTAL HARDNESS (>600 mg/l)

S. No.	**District**	**Block**	**T.H. (mg/l)**
1	Agra	Achhnera	1025
2	Agra	Akola	950
3	Agra	Khandauli	830
4	Agra	Kheragarh	1400
5	Agra	Agra	750
6	Basti	Basti Sadar	691
7	Budaun	Quadar chowk	691
8	Chitrakoot	Pahari	791
9	Deoria	Bhaluani	1131
10	Ferozabad	Araon	641
11	Ferozabad	Jasrana	701
12	Ferozabad	Narkhi	1997
13	Jhansi	Bamaur	936
14	Kannauj	Kannauj	781
15	Kanpur Dehat	Amraudha	1531
16	Mathura	Chhata	640
17	Mathura	Farah	1310
18	Mathura	Mathura	1140
19	Unnao	Asoha	620

Calcium (Ca) :

The concentration of Calcium has been found varying widely. It ranges between 4.0 mg/l to 737 mg/l with 83.7% of water samples falling within the desirable limit of 75 mg/l (BIS- 2012) and 15.8% samples have higher level of calcium concentration but within maximum permissible limit of 200 mg/l. Only 0.5% water samples exhibited calcium values >200 mg/l with a maximum value of 441 mg/l recorded at Bhaluani block (distt. Deoria). The distribution of samples in different concentration ranges are given in following table 31:

Table-31

FREQUENCY DISTRIBUTION OF CALCIUM IN SHALLOW GROUND WATER OF U.P.

Range of Calcium in mg/l	**0-75**	**>75-200**	**>200**
No. of Samples	547	103	3
%	83.7	15.8	0.5

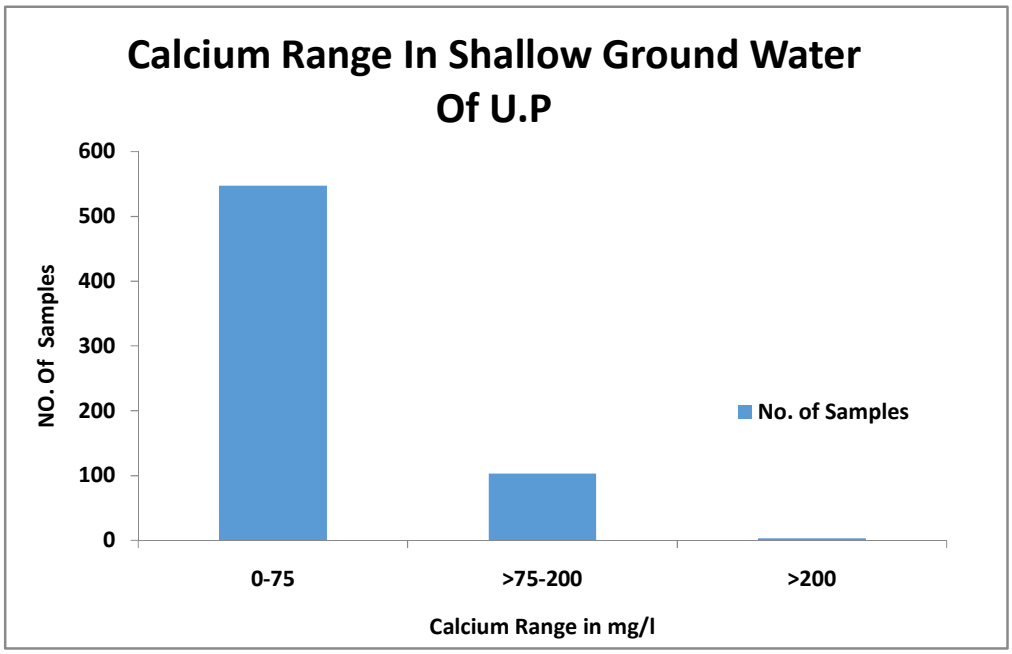


Figure 6: Depicts the Calcium range in shallow ground water of U.P.

The various Blocks exhibiting high values of Calcium concentration (>200 mg/l) are tabulated in following table 32below:

Table-32

LIST OF BLOCKS EXHIBITING HIGH VALUES OF CALCIUM (>200 mg/l)

S. No.	District	Block	Calcium (mg/l)
1	Chitrakoot	Pahari	244
2	Deoria	Bhaluani	441
3	Kanpur Dehat	Amraudha	253

Magnesium (Mg) :

The main sources of magnesium in ground water are (i) rain water, (ii) evaporate deposits & (iii) weathering of magnesium silicate minerals. The source of magnesium in igneous rocks are olivine, pyroxenes, amphiboles, dark coloured micas etc. Among the sedimentary rocks, the sources are chlorite, serpentine biotite, amphiboles, staurolite etc. Mg is one of the constituents responsible for hardness of water. The lower concentration of Mg is not harmful but higher concentration is laxative. The concentration of Magnesium has been found varying widely. It ranges between 2.4 mg/l to 378 mg/l with 57.4% of water samples falling within the desirable limit of 30 mg/l (BIS- 2012) and 39.7% samples have higher level of Mg concentration but within maximum permissible limit of 100 mg/l. Only 2.9% water samples exhibited Mg values >100 mg/l with a maximum value of 378 mg/l recorded at Narkhi block (distt. Ferozabad). The distribution of samples in different concentration ranges are given in following table-33:

Table–33

FREQUENCY DISTRIBUTION OF MAGNESIUM IN SHALLOW GROUND WATER OF U.P

Range of Magnesium in mg/l	**0-30**	**>30-100**	**>100**
No. of Samples	375	259	19
%	57.4	39.7	2.9

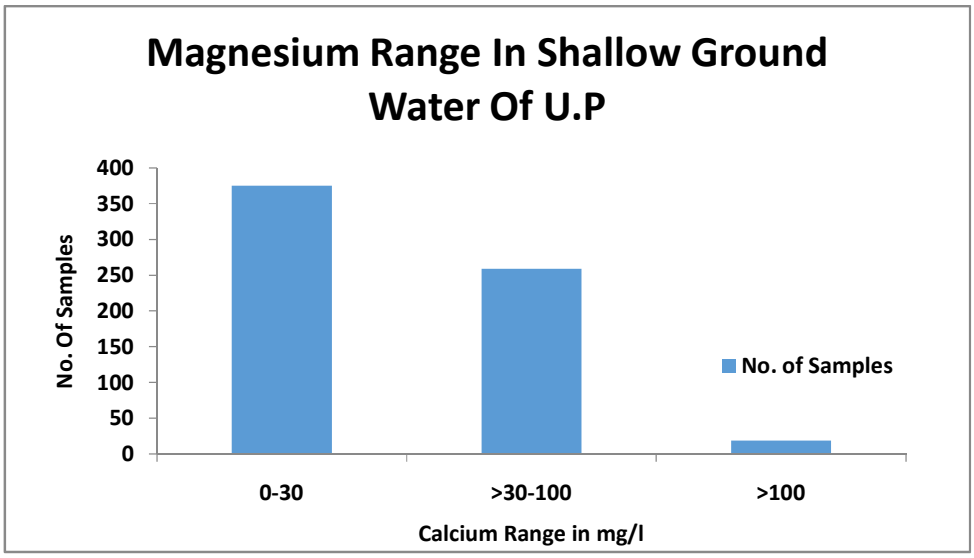


Figure 7: Depicts the Magnesium range in shallow ground water of U.P.

The various Blocks exhibiting high values of Magnesium concentration (>100 mg/l) are tabulated in following table 34below

Table-34

LIST OF BLOCKS EXHIBITING HIGH VALUES OF MAGNESIUM (>100 mg/l)

S. No.	**District**	**Block**	**Magnesium (mg/l)**
1	Agra	Achhnera	164
2	Agra	Akola	163
3	Agra	Khandauli	158
4	Agra	Kheragarh	314
5	Agra	Agra	129
6	Aligarh	Khair	113
7	Auraiya	Auraiya	107
8	Ferozabad	Araon	117
9	Ferozabad	Jasrana	139
10	Ferozabad	Narkhi	378
11	Hathras	Mursan	101
12	Jalaun	Dakore	105
13	Jhansi	Bamaur	128
14	Kannauj	Kannauj	134
15	Kanpur Dehat	Amraudha	219
16	Mathura	Farah	209

S. No.	District	Block	Magnesium (mg/l)
17	Mathura	Mathura	178
18	Mathura	Nohihil	113
19	Unnao	Asoha	107

Sodium (Na):

It is found in varying concentrations in all natural waters. It is found in evaporates and sea water in high concentration. It occurs among silicate minerals in feldspar, mica, amphiboles and pyroxenes. The main sources of sodium in ground water are (i) rain water, (ii) evaporate deposits, (iii) weathering of rock minerals present in the soil, (iv) disposal of sewage and industrial wastes containing sodium. The higher concentration of Na in drinking water is harmful especially to those suffering from cardiac, renal diseases pertaining to circulatory system of the human body.

The analysis result of shallow ground water indicate that sodium ranges between 5.7 mg/l to 3580mg/l with an average value of 91 mg/l. 80.9% of water samples exhibit sodium concentration up to 100 mg/l and 2.3% samples were found to be associated with extremely high levels of Na concentration >500 mg/l with a maximum value of 3580 mg/l recorded at Narkhi block (distt. Ferozabad). The distribution of samples in different concentration ranges are given in following table -35:

Table-35

FREQUENCY DISTRIBUTION OF SODIUM IN SHALLOW GROUND WATER OF U.P.

Range of Sodium in mg/l	0-100	>100-200	>200-500	>500
No. of Samples	528	64	46	15
%	80.9	9.8	7.0	2.3

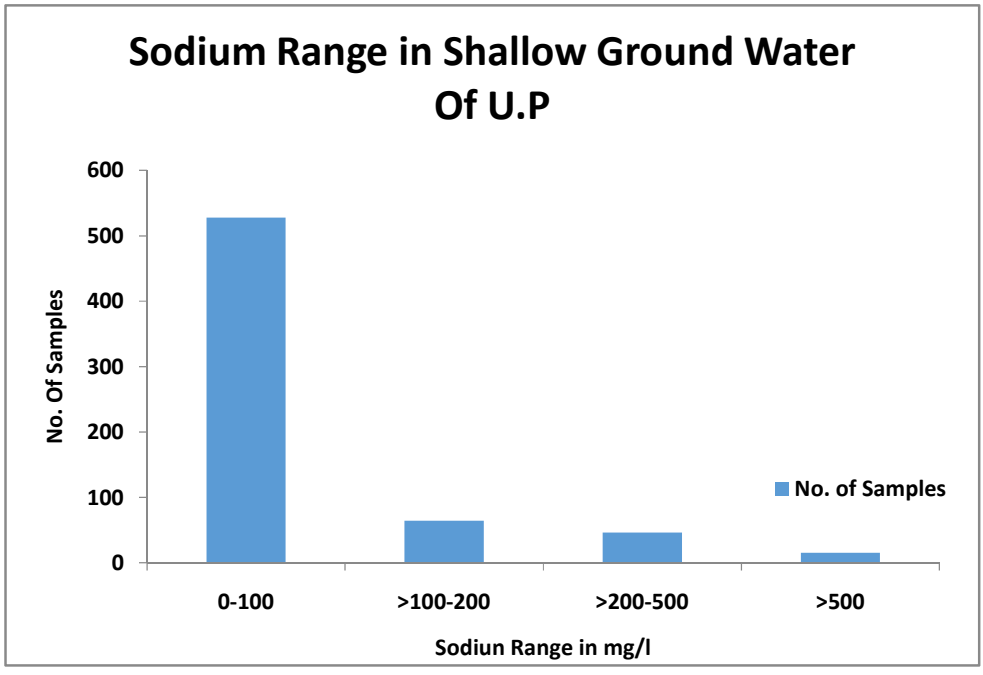


Figure 8: Depicts the Sodium range in shallow ground water of U.P.

The various Blocks exhibiting high values of Sodium concentration (>500 mg/l) are tabulated in following Table-36 below:

Table–36

LIST OF BLOCKS EXHIBITING HIGH VALUES OF SODIUM (>500 mg/l)

S. No.	District	Block	Sodium (mg/l)
1	Agra	Achhnera	520
2	Agra	Bichpuri	840
3	Agra	Etmadpur	960
4	Agra	Fatehabad	520
5	Agra	Jagner	800
6	Agra	Kheragarh	830
7	Agra	Agra	760
8	Aligarh	Gonda	718
9	Fatehpur	Malwan	563
10	Ferozabad	Jasrana	800
11	Ferozabad	Narkhi	3580
12	Hamirpur	Maudaha	602
13	Hathras	Mursan	524
14	Mathura	Mathura	524
15	Unnao	Asoha	503

Potassium (K)

Although potassium is more abundant than sodium in sedimentary rocks, its concentration in natural waters is quite low due to greater resistance to weathering of potassium bearing minerals. The main sources of K in natural waters are (i) rain water, (ii) weathering of Potash silicate minerals, (iii) potash fertilizers. K enters into structure of clay and clay bearing minerals during weathering. In illite K ions are incorporated in spaces between crystal layers where these are not removable by further ion exchange reactions (Buckman & Brady, 1960). Usually the concentration of K in water from natural source is small but high concentration of this ion if present, may be attributed to pollution.

Potassium is an essential plant nutrient. It plays an important role in maintenance of cellular organization and in keeping the protoplasm in a proper degree of hydration by stabilizing the emulsions of highly colloidal particles. K deficiency causes water imbalance. The carbohydrate metabolism is also affected by inadequate supplies of potassium.

The analysis result of shallow ground water indicate that Potassium ranges between 0 to 658mg/l with an average value of 7.7 mg/l. 93.2% of water samples exhibit Potassium concentration up to 10 mg/l and 2.5% samples were found to be associated with extremely high levels of K concentration >30 mg/l with a maximum value of 658 mg/l recorded at Nohjhil block (distt. Mathura). The distribution of samples in different concentration ranges are given in following table37:

Table–37

FREQUENCY DISTRIBUTION OF POTASSIUM IN SHALLOW GROUND WATER OF U.P.

Range of Potassium in mg/l	0-10	>10-20	>20-30	>30
No. of Samples	609	25	3	16
%	93.2	3.8	0.5	2.5

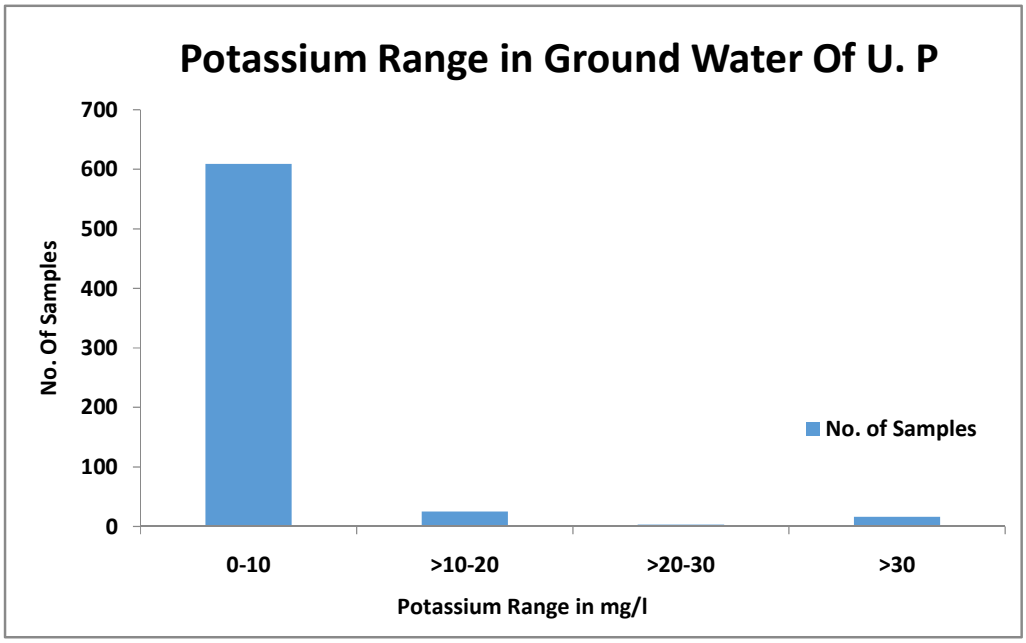


Figure 9: Depicts the Potassium range in shallow ground water of U.P.

The various Blocks exhibiting high values of Potassium concentration (>30 mg/l) are tabulated in following table 38below:

Table–38

LIST OF BLOCKS EXHIBITING HIGH VALUES OF POTASSIUM (>30 mg/l)

S. No.	District	Block	Potassium (mg/l)
1	Aligarh	Khair	32
2	Bahraich	Fakharpur	37
3	Basti	Bhadarpur	31
4	Budaun	Gunnaur	69
5	Budaun	Quadar chowk	85
6	Bulandshahar	Akbarabad	32
7	Gonda	Haldharmau	117
8	Gonda	Jhanjhari	156
9	Gonda	Tarabganj	35
10	Hamirpur	Maudaha	111
11	Kanpur Dehat	Akbarpur	388
12	Kausambi	Kara	70
13	Mathura	Mat	48
14	Mathura	Nohjhil	658
15	Mathura	Raya	46
16	Maunath Bhanjan	Fatehpur madaon	34

Arsenic in shallow Ground water of Uttar Pradesh

Arsenic is a naturally occurring element that is widely distributed in the Earth's crust. Arsenic is classified chemically as a metalloid, having both properties of a metal and a nonmetal; however, it is frequently referred to as a metal. Arsenic is usually found in the environment combined with other elements such as oxygen, chlorine, and sulfur. Arsenic combined with these elements is called inorganic arsenic. Arsenic combined with carbon and hydrogen is referred to as organic arsenic.

Inorganic arsenic occurs naturally in soil and in many kinds of rock, especially in minerals and ores that contain copper or lead. When these ores are heated in smelters, most of the arsenic goes up the stack and enters the air as a fine dust. Smelters may collect this dust and take out the arsenic as a compound called arsenic trioxide (As_2O_3).Presently, about 90% of all arsenic produced is used as a preservative for wood to make it resistant to rotting and decay. The preservative is copper chromated arsenate (CCA).

In the past, inorganic arsenic compounds were predominantly used as pesticides, primarily on cotton fields and in orchards. Inorganic arsenic compounds can no longer be used in agriculture. However, organic arsenic compounds, namely cacodylic acid, disodium methyl¬arsenate (DSMA), and monosodium methy arsenate (MSMA), are still used as pesticides, principally on cotton. Some organic arsenic compounds are used as additives in animal feed. Small quantities of elemental arsenic are added to other metals to form metal mixtures or alloys with improved properties. The greatest use of arsenic in alloys is in lead-acid batteries for automobiles. Another important use of arsenic compounds is in semiconductors and light-emitting diodes.

Effects on Human Health:

Long-term exposure to arsenic in drinking-water is usually related to increased risks of cancer in the skin, lungs, bladder and kidney, as well as other skin changes such as hyperkeratosis and pigmentation changes. Increased risks of lung and bladder cancer and of arsenic-associated skin lesions have been reported to be associated with ingestion of drinking-water at concentrations more than 50 µg arsenic/litre.

The analysis result of shallow ground water indicate that Arsenic ranges between 0 to 48µg/l Arsenic concentration has been reported in the ground water samples collected from Azamgarh, Maunath Bhanjan, Deoria , Kushinagar, Jhansi, Pilibhit ,Kannauj and Gorakhpur districts. 94% of water samples exhibit Arsenic concentration up to 10 µg/l and 6% samples were found to be associated with Arsenic concentration >10 µg/l with a maximum value of 48 mg/l recorded at Thekma block (distt. Azamgarh). The distribution of samples in different concentration ranges are given in following table 39 and block wise distribution is given in table 40:

Table-39

FREQUENCY DISTRIBUTION OF ARSENIC IN SHALLOW GROUND WATER OF U.P.

Range of Arsenic in µg/l	**0-10**	**>10**
No. of Samples	734	46
%	94	6

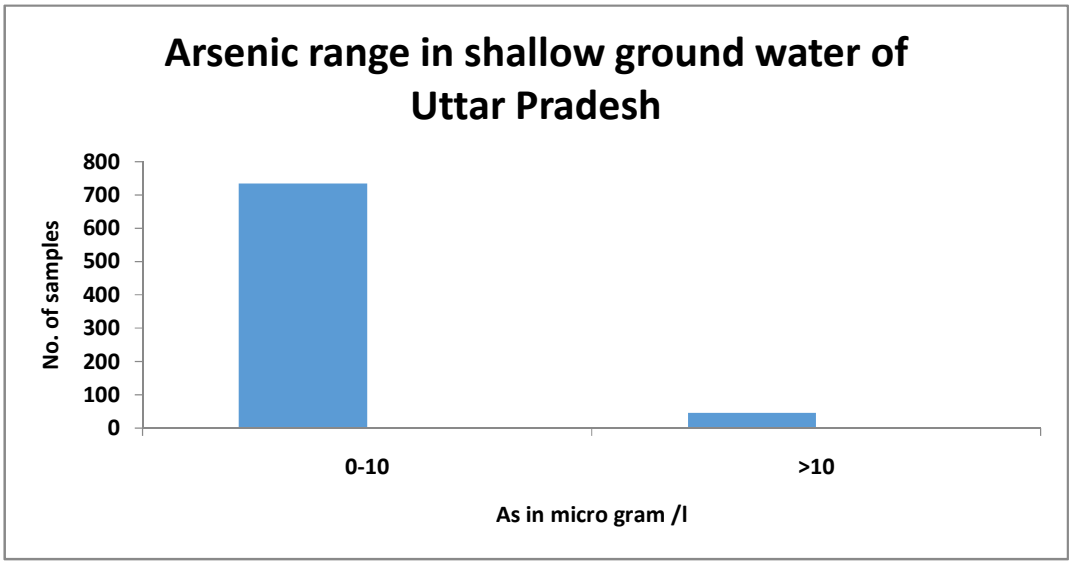


Figure 10: Depicts the Arsenic range in shallow ground water of U.P.

Table–40

LIST OF BLOCKS EXHIBITING HIGH VALUES OF ARSENIC (>10 µg/l)

S. No.	District	Block	Arsenic (µg/l)
1	Gorakhpur	Compierganj	25
2	Gorakhpur	Jungle Kauria	17
3	Gorakhpur	Chargaon	31
4	Gorakhpur	Pipraich	21
5	Gorakhpur	Sardar Nagar	20
6	Gorakhpur	Bramhpur	31
7	Gorakhpur	Gorakhpur(Hq)	41
8	Gorakhpur	Khorabar	26
9	Gorakhpur	Sahjanwa	35
10	Gorakhpur	Kauri Ram	19
11	Gorakhpur	Khajni	11
12	Gorakhpur	Belghat	23
13	Gorakhpur	Urwa Bazar	24
14	Gorakhpur	Gagaha	13
15	Kushinagar	Nebua Naurangia	15
16	Kushinagar	Khadda	20
17	Kushinagar	Padrauna	23
18	Kushinagar	Bishnupura	13
19	Kushinagar	Seorahi	29
20	Kushinagar	Tamkuhi Raj	12
21	Kushinagar	Fazil Nagar	15
22	Deoria	Rudrapur	19
23	Deoria	Bhaluani	29
24	Deoria	Barhaj	21

S. No.	District	Block	Arsenic (µg/l)
25	Deoria	Bankata	20
26	Deoria	Bhatpar Rani	12
27	Deoria	Salempur	19
28	Azamgarh	Azmatgarh	35
29	Azamgarh	Palhana	18
30	Azamgarh	Palhani	35
31	Azamgarh	Pawai	38
32	Azamgarh	Phoolpur	11
33	Azamgarh	Rani Ki Sarai	37
34	Azamgarh	Sathiaon	34
35	Azamgarh	Tahabarpur	32
36	Azamgarh	Tarwa	36
37	Azamgarh	Thekma	48
38	Maunath Bhanjan	Badrao	38
39	Maunath Bhanjan	Dohrighat	45
40	Maunath Bhanjan	Fatehpurmadaon	36
41	Maunath Bhanjan	Ghosi	45
42	Maunath Bhanjan	Kopaganj	42
43	Maunath Bhanjan	Mohammadabad	44
44	Jhansi	Bamaur	16
45	Pilibhit	Marauri	11
46	Kannauj	Gugrapur	13

Suitability of Ground Water For Irrigation Purpose:

The chemical quality of water is an important factor to be considered in evaluating its usefulness for irrigation purposes. Plants grown by irrigation absorb and transpire the water but leave nearly all the salts behind in the soil, where they accumulate and eventually prevent plant growth. Excessive concentrations of solute interfere with the osmotic process by which plant root membranes are able to assimilate water and nutrients. $CaCO_3$ has low solubility, it may precipitate harmlessly but the bulk of residual solutes present a disposal problem that must be solved effectively to maintain productivity of the irrigated soil. In areas where natural drainage is inadequate, the irrigation water infiltrating the root zone will cause water table to rise excessively. The crop productivity depends on the quality of the water used for irrigation. Water suitability for irrigation needs to be evaluated on the basis of hazards it can create in the soil, affecting yield & quality of crops.

In addition to problems caused by excessive concentration of dissolved solids (TDS), certain constituents in irrigation water are especially undesirable and some may be damaging even when present in small concentrations viz. Sodium Adsorption Ratio (SAR) & Residual Sodium Carbonate (RSC) (Annexure-A). The potential hazards to crop growth are salinity, sodicity, alkalinity & toxicity.

Electrical Conductivity (EC):

The Electrical Conductivity is a reflection of the concentration of various chemical constituents in ground water and gives the overall quality of ground water for its various uses like irrigation**.** The Electrical Conductivity data reveals that the majority of the samples belong to C1, C2 class as per USSL classification table 41.

Table -41

FREQUENCY DISTRIBUTION OF ELECTRICAL CONDUCTIVITY AS PER USSL CLASSIFICATION

EC ranges in µS/cm at 25ºC	0-250 (C1)	251 – 750 (C2)	751-2250 (C3)	>2250 (C4)
No. of samples	0	359	258	36
Percentage	0	54.9	39.5	5.6

Total Dissolved Solids (TDS):

The total load of dissolved solids in water is determined theoretically by taking into account the EC of that particular water body.

Thus , **TDS = EC * .67 mg/l** where EC is in µS/cm at 25º C

TDS is responsible for the mineralization of water and gives its degree of salinity.The perusal of the analysis data of U.P. shows that the Total Dissolved Solids in the area ranges from a minimum of 176 mg/l to a maximum of12038 mg/l at Narkhi block (distt. Ferozabad) with an average value of 615 mg/l. The Frequency Distribution of T.D.S. in NH Stations of U.P. is shown in table 42.

Table-42

FREQUENCY DISTRIBUTION OF T.D.S. IN SHALLOW GROUND WATER OF U.P.

Salinity as per T.D.S. range	No. of Samples	Percentage
Fresh, non saline (0-1000 mg/l)	590	90.4
Slightly saline (1001-3000 mg/l)	59	9.0
Moderately saline (3001-5000 mg/l)	3	0.45
Highly saline (>5000 mg/l)	1	0.15

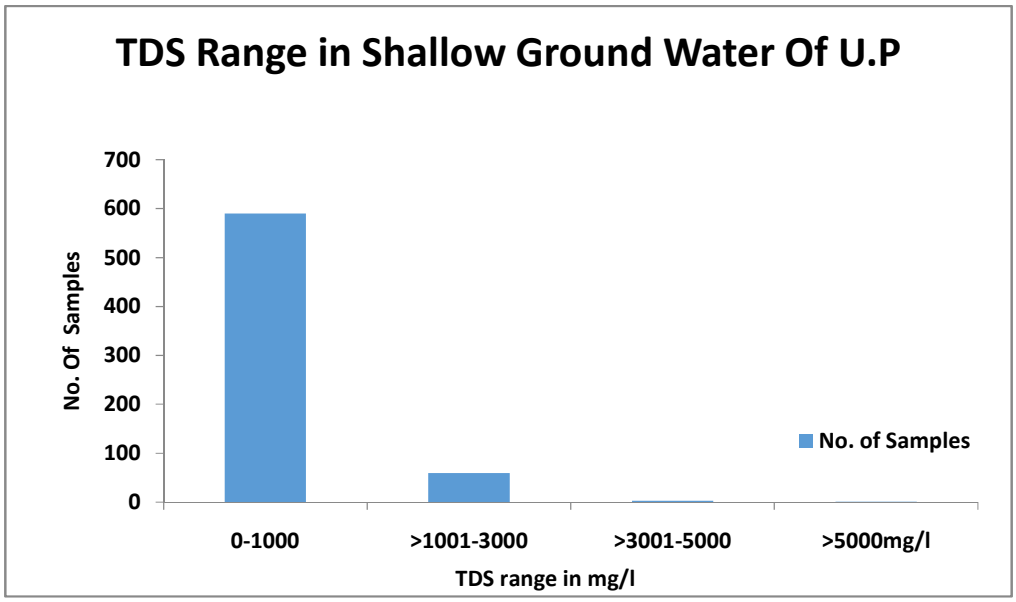


Figure 11: depicts the T.D.S. range in shallow ground water of U.P

Alkalinity Hazard or Residual Sodium Carbonate (RSC) :

When carbonate or bicarbonate concentration in irrigation water is relatively higher than the alkaline earth metals, there is tendency for calcium and magnesium ions to precipitate as carbonates in the soil, thereby reducing the level of calcium and magnesium ions and increasing the relative levels of sodium in the soil. The highly soluble sodium carbonate (black alkali) known as residual sodium carbonate (RSC) is defined as –

$$\mathbf{RSC = (HCO_3 + CO_3) - (Ca + Mg)}$$

Where concentrations are expressed in meq/l.

The perusal of the analysed data of U.P. shows that the Residual Sodium Carbonate in the area ranges from a minimum of -32.2 meq /l to a maximum of 10 meq /l with an average value of 0.578 meq/l. The Frequency Distribution of R.S.C. in NH Stations of U.P.is given in table 43.

Table-43

FREQUENCY DISTRIBUTION OF R.S.C. IN SHALLOW GROUND WATER OF U.P.

RSC range (meq/l)	No. of samples	Percentage
<1.25 (Very safe water)	428	65.5
1.25-2.5 (Marginally safe water)	133	20.4
>2.5 (Unsuitable water)	92	14.1

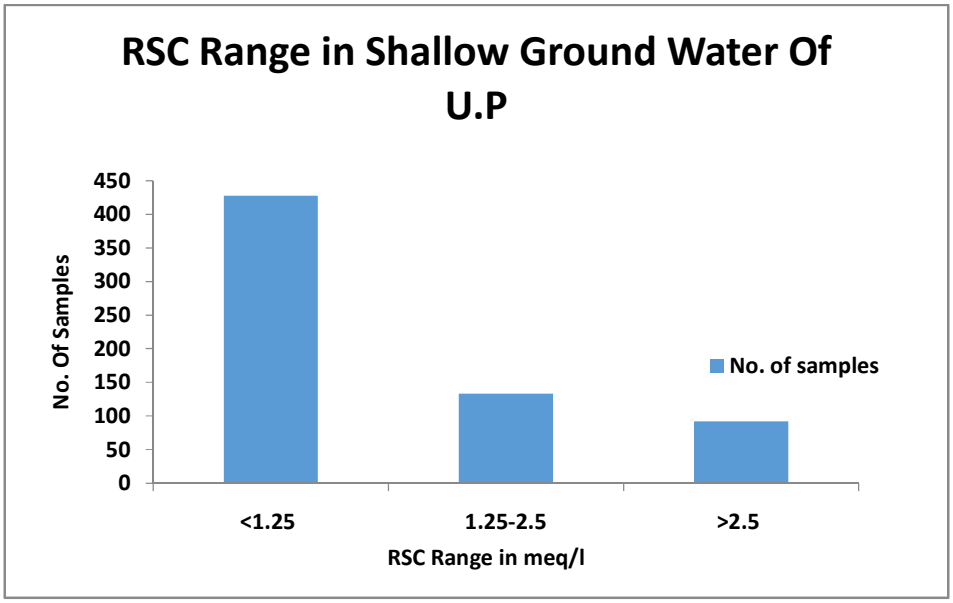


Figure 12: Depicts the R.S.C. range in shallow ground water of U.P.

Sodium Adsorption Ratio:

Sodium Adsorption Ratio (SAR) is an estimate of the degree to which Sodium will be absorbed by soil from water. Sodium in irrigation, wasters adversely affects soil structure and permissibility by replacing Ca and Mg ions.

$$SAR = \frac{Na^{+}}{\left[Ca^{+2} + Mg^{+2} / 2\right]^{1/2}}$$

Where: Na^{+}, Ca^{+2} and Mg^{+2} are expressed in meq/l

Table-44

CLASSIFICATION OF SHALLOW GROUND WATER OF U.P. AS PER SOLUBLE SODIUM PERCENTAGE

S. No.	Range of SAR	No. of Samples % of Samples	% of Samples	Quality of Water
1.	<10	636	97.4%	Low Na hazard good quality
2.	10-18	14	2.15%	Medium Na hazard medium quality
3.	>18-26	2	0.3%	High Na hazard bad quality
4.	<26	1	0.15%	V. High Na hazard V. bad quality

Table 44 - shows that the quality of water samples as per SAR is good as 97.4% wells have SAR value below 10.

Conclusion:

By and large, the chemical quality of ground water of phreatic zone in Uttar Pradesh is found to be suitable for drinking purposes as per available analysed chemical parameter data (as per BIS 2012). Presence of some constituents beyond the permissible limit at some locations renders the water unfit for public water supply.

Considering the parameters responsible for suitability of ground water of Uttar Pradesh it is observed that it is generally fit for irrigation purposes as per Electrical conductivity, Residual Sodium Carbonate, Sodium Adsorption Ratio except at few places where corrective measures are to be taken before agricultural usage.

CHANGE IN CHEMICAL QUALITY OF GROUND WATER FROM THE YEAR (2014-15)

The Table 19 and 45 show that there is not much variation in the maximum ,minimum and average values of pH, Electrical conductivity **,** CO_3, HCO_3, Cl ,F, NO_3, SO_4, SiO_2 ,PO_4, TH, Ca, Mg, Na and K.

Table-45

HYDRO-CHEMICAL DATA OF GROUND WATER IN UTTAR PRADESH (AN OVERVIEW) 2014-15

S. No.	**Constituents**	**Minimum**	**Maximum**	**Average**
1.	pH	7.0	9.1	8.04
2.	EC µS/cm at 25 ºC	149	33530	987
3.	CO_3 mg/l	Nil	132	4.67
4.	HCO_3 mg/l	85	1244	328
5.	Cl mg/l	3.5	9397	104
6.	F mg/l	Nd	5.0	0.58
7.	NO_3 mg/l	Nd	1269	22
8.	SO_4 mg/l	0.55	4659	66
9.	SiO_2 mg/l	3.0	107	30
10.	PO_4 mg/l	Nd	0.57	0.003
11.	TH (as $CaCO_3$) mg/l	50	6255	280
12.	Ca mg/l	4.0	737	44
13.	Mg mg/l	2.4	1073	41
14.	Na mg/l	3.9	5060	101
15.	K mg/l	0.13	709	8.7

Annexure - I

DEPTH TO WATER LEVEL OF GROUND WATER MONITORING WELLS (GWMW), U.P.

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
1	**Agra**	Achhanera Pz-GWD	6.42	6.53	6.75	6.97
2		Bah Pz-GWD	34.2	33.3	33.2	33.38
3		Dabar Pz-GWD	13.77	13.63	14.15	14.26
4		Fatehabad Pz-GWD	41.6	41.73	42.2	42.16
5		Gangapur Basai	7.73	6.84	11.34	8.23
6		Jagner Pz-GWD	8.15	7.04	9.39	12.12
7		Kagraul	13.95	14.15	14.3	14.5
8		Khundauli Pz-GWD	28.45	26.14	27.48	
9		Mewli (bhara)	10.23	6.73	8.87	12.44
10		Paitikhera Bagh	13.82	14.23	14.63	
11		Saiyan Pz-GWD	25	24.86	26.38	27.88
12		Shahganj Prithvi Nath	18.27	18.09	17.62	17.66
13		Undera	1.59	0.12	0.79	0.72
14	**Aligarh**	Andla	7.25	8.81	8.25	8.65
15		Bhikampur		12.85	14.05	
16		Gonda	3.31	2.09	2.79	2.9
17		Gopi	2.25		5.91	
18		Harduaganj	4.88	4.56	4.18	
19		Jawan	1.26	0.65	1.44	1.49
20		Khair	8.65	8.74	8.63	8.65
21		Palachand		5.29	5.57	5.7
22		Safedpur	7.02	4.91	6.3	6.25
23		Sudiyal	9.47	9.41	9.86	9.8
24		Taquipur(new)	3.97	1.03	3.5	3.9
25	**Allahabad**	Aandwa	18.21	17.68	18.65	18.54
26		Akodha	7.8	5.74	7.46	6.97
27		Atrampur	6.14	6.73	7.46	7.68
28		Bairi	2.49	0.54	1.65	1.89
29		Bara	3.54	3.29	3.54	3.66
30		Baraut1	2.47	1.27	2.2	2.21
31		Barokhar	12.02	7.61	11.26	11.56
32		Barwarikalaan	3.46	1.04	2.81	3.07
33		Chilla	11.16	11.8	13.78	
34		Gadwa Fort	3.64	3.49	3.77	3.79
35		Gauhania	7.39	5.01	5.7	6.54
36		Ghoose	2.42	1.88		33.38

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
37		Handia	2.56	1.36	2.38	2.91
38		Holagarh	4.12	4.16	4.81	5.15
39		Imamganj		3.73	6.21	7.67
40		Iradat nagar	17.32	16.09	17.58	18
41		Kasarua	15.76	17.67	19.17	19.24
42		Khaptia kheri	4.29	2.68	4.09	4.82
43		Koraon	4.11	0.69	1.85	2.63
44		Ladiri bazar	3.66	1.68	3.65	5.35
45		Lalpur	4.22	3.03	3.26	3.27
46		Malka Harhar	14.78	15.69	15.7	14.26
47		Mallhan	5.58	4.82	6.22	6.97
48		Mau-Aima	6.58	7.14	7.38	7.85
49		Meja	5.44	3.9	3.37	3.38
50		Meja road	14.03	13.15		
51		Naini	13.18	10.99		13.55
52		Naribari	1.99	0.6	2.23	2.39
53		Pasna	5.53	1.27	3.24	7.64
54		Phulpur2	3.27	2.17	3.25	3.15
55		Rampur tulapur		5.32	6.16	6.58
56		Saraon	5.92	5.82	6.45	42.16
57		Sikandra1	10.44	10.74	10.91	11.18
58	**Ambedkar Nagar**	Akbarpur PzII-GWD	6.45	6.28		6.45
59		Akbarpur1	5.8	4.75	5.2	5.9
60		Alanpur	6.32			
61		Baskhari Pz-GWD	4.34	3.4	4.58	4.88
62		Bhiti-New	7		7.25	7.55
63		Jalalpur Pz-GWD	7.6	7.2	7.5	7.9
64		Jalalpur1			7.25	
65		Katehari	5.83	4.75	6.07	8.23
66		Kesharpur	4.31	1.79	1.79	4.19
67		Mahrua gola-New	7.07	5.35	5.75	7.55
68		Neori1	0.9		4.77	
69		Nevada	6.75	2.4	6.7	
70		Ram Nagar Pz-GWD	5.58			
71		Tanda Pz-GWD	6.95	5.78	6	6.26
72	**Auraiya**	Achhalda	5.12		4.87	4.98
73		Airwakatra	7.11	7.63		
74		Ajitmal-Q	13.44			12.12

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
75		Atsu	14.4	14.88	15.65	15.77
76		Bandhamau	3.19	2.09	3.59	3.71
77		Bhaupur	11.2	5.6	11.2	
78		Chapta	15.57	15.68	16.2	
79		Dinamau	7.36	7.73	8.07	8.53
80		Hasulia	5.8	4.11	2.41	4.63
81		Phaphund	4.22	4.1	4.68	4.96
82		Pz GWD Ajitmal		14	14.09	14.51
83		Sahar	3.4	3.93	1.16	1.9
84		Sahayal	5.93	6.23	6.41	14.5
85	**Azamgarh**	Ahraula	7.25	7	7.6	8.33
86		Badihari	6.14	5.33	6.2	4.37
87		Bahrapur	4.1	3.96	3.9	4.9
88		Bairadih	8.58	8.21	8.38	7.93
89		Belwana	4.8	4.63	5.62	
90		Bibipur Khatauli		4.17	6.86	
91		Captainganj	5.89	4.1	6.3	
92		Deogaon	2.8	2.48	0.67	1.76
93		Karsandia kalan	3.35	3.1	5.14	
94		Kharihani	6.69	5.75	6.5	12.44
95		Lohra	6.13	5.73	7.43	
96		Madayan	7.01	6.82	5.87	27.88
97		Mukusudia	6.96	6.31	6.49	17.66
98		Nizamabad	6.84	6.35	5.35	0.72
99		Phulpur			5.83	
100		Rahul nagar	4.06	1.02	3.21	8.65
101		Sageri	6.31	5.7	5.65	
102		Saraimir	6.17	6.03	4.25	2.9
103		Sidhauna	3.88	3.72	3.05	12.44
104	**Baghpat**	Khekhra Pz	22.58	22.07	19.05	23.05
105	**Bahraich**	Baisanpurwa	2.32	1.77	1.84	2.74
106		Bhakraulikapurw	3.84	2.88	3.49	3.25
107		Bhopatpur	7.87	7.31	8.13	7.87
108		Gaighat	3.56	1.35	3.1	3.69
109		Jarwal1	3.54	3.55		
110		Kapurpur	2.43	1.8	1.94	2.38
111		Katarniaghat	2.52	1.2	2.32	

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
112		Maraucha	3.34	3.51	2.97	3.69
113		Motipur	10.28	9.43		
114		Nanpara	8.89	8.85	8.84	9.04
115		Razichauraha	2.12	0.87	1.46	1.81
116		Sablapur	3.4	1.79	2.27	3.03
117		Tapri godh	3.96	2.83	3.48	3.59
118	**Ballia**	Babhnauli	5.64	2.8	5.03	4.44
119		Bairia	6.41	4.25	5.5	6.78
120		Ballia	6.69	5.8	5.57	27.88
121		Chilkhar	5.68	4.49	3.95	6.65
122		Chitbargaon	3.72	1.15	1.56	2.69
123		Dalan chapra	7.76	6.03	6.88	7.08
124		Garwar	4.15	2.65	2.06	3.13
125		Haldi	7.8	6.33	6.82	8.1
126		Jahangrapur	4.35	3.03	3.75	4.27
127		Jaiprakashnagar	6.84	5.35	6.42	7.5
128		Kharsanda	4.73	3.32	3.4	4.09
129		Kureji	3.54	2.28	2	2.73
130		Manihar	6.8	4.67	6.37	17.66
131		Nasirabad	10.05	5.78	8.97	9.98
132		Pur	3.53	2.08	2.53	4.56
133		Rasra	8.95	7.59	8.2	8.5
134		Rewati	4.07	2.36	3.66	4.55
135		Ubhavan	5.17	4	4.41	3.25
136	**Balrampur**	Balrampur1	4.35	3.45	4.6	4.57
137		Bankatwa	9.73	9.85	10.67	10.04
138		Bhainsa Baba	3.28	2.37		
139		Chandanpur		1.45	2.72	0.72
140		Deoria1	4	1.83	3.65	4.19
141		Gainsari	2.4	0.76	2.43	2.85
142		Gangnar	3.85	2.1	3.64	4.17
143		Gaura crossing	3.4		4.55	4.65
144		Harriaya bazar	5.1	4	4.85	5.89
145		Jarwa	8.7	7.6	9.3	9.48
146		Pachperwa	1.07		0.95	1.45
147		Semri1	4.36		5.34	
148		Sipahia village	3.33	1.35	2.8	3.57
149		Sonpur	3.7	1.75	2.42	

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
150		Sridutganj1	3.51	0.8	3.1	3.69
151		Tulsipur (Devipatan)	3.8	3.64	3.8	4.53
152		Utraula	3.5	2.5	3.59	4.05
153	**Banda**	Aliha	5.63	5.28	5.49	5.43
154		Atarra	5.8	2.43	3.92	5.17
155		Baberu1	4.45	3.55	4.45	5.75
156		Badausa	9.8	8.5	9.83	9.61
157		Badehan	13.2	11.6	12.2	12.45
158		Banda	9.5	7.7	7.43	8.65
159		Bargaini	3.7	2.8	3.1	4.4
160		Bisanda	4.1	3.65	3.9	4
161		Girwan	2.55	2.3	2.8	3.35
162		Jamnipurwa	6.1	4.54	5.62	8.24
163		Khhurand	1.55	0.35	1.3	1.96
164		Mataundh	3.8	2.3	3.2	3.96
165		Pailani	21.8	22.1	22.7	
166		Pangara	2.25	2.15	2.85	3.85
167		Roli kalyanpur	9.5	11.7	12.3	
168		Sukulkuan	8.3	8.6	3.5	
169	**Barabanki**	Baba ki kuti	3.28	1.69	3.68	3.74
170		Barabanki(New)	6.25	5.05	5.55	5.85
171		Bariu bagh	6.52	6.24		
172		Bhanmau		2.98	4.53	5.58
173		Bhiwal	2.41	1.2	3.8	5.45
174		Chaubisi		6	5.8	
175		Daryabad	4.12	1.89		3.49
176		Datauli chanda		12.2	11.9	12.1
177		Dewa	2.97	1.85	2.45	2.9
178		Fatehpur (new)		2.2	2.25	3.5
179		Gutauna	5.79	4.9	5.2	5.4
180		Kaisarganj			9.43	9.73
181		Kalkeshwar temp		9.79	10.39	10.39
182		Kitlupur	3.6	2.06	2.8	3.16
183		Kotwa sarai	9.36	9.34	9.04	9.14
184		Masauli chaurah	5.59	3.83	3.8	5.53
185		Purwa amarsingh	3.19	2.79	3.14	3.14
186		Ramnagar		5.67	6.07	
187		Rani katra	6.12	6.67	6.27	

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
188		Rasauli	3.62	1.47	3.82	
189		Sarai barai	6	4.42	4.65	1.49
190		Sidhaur	4.16	4.36	4.66	8.65
191		Subeha		9.07	7.86	5.7
192		Sundhia mau	5.79	4.9	4.35	6.25
193		Tikaitnagar	7.17	5.75	6.92	9.8
194		Trivediganj	7.19	5.38	5.58	3.9
195	**Bareilly**	Aliganj	7.2	6.88	8.05	18.54
196		Aonla	12.26			
197		Baheri	2.7	1.25	2.8	2
198		Bareilly Pz GWD	11.45	11	11.2	11.23
199		Bareilly1	6.32	6	6.1	6.5
200		Bhitora Pz GWD	6.3	5.87	6.06	6.15
201		Bhojipura Pz GWD	4	2.92	3.5	3.57
202		Bhuta	5.85	5.2	5.58	5.9
203		Dhaneli purwi	6.78			
204		Fatehganj East Pz GWD	6.55	5.78	6.19	6.3
205		Itaura Sukhdevpur Pz GWD	5	3.66	4.34	4.53
206		Izzat Nagar Pz GWD	9.68	9.14	9.23	1.49
207		Kandharpur Pz GWD	3.95	2.76	3.43	3.52
208		Manpur Pz GWD	6.7			
209		Mirganj Pz GWD	6.9	6.73	6.07	7.06
210		Mohammadpur Jatan Pz GWD	3.8	1.37	2.95	3.1
211		Nawabganj1	4.52	3.58	4.16	3.63
212		Ramnagar2	8.4	9.63	10	9.83
213		Shahi Pz GWD	5.9	5.03	5.31	5.34
214		Shishgarh	-0.3	4.7	5.2	5.3
215		Siroli Pz GWD		7.56	7.92	8.05
						8.65
216	**Basti**	Basti	5.9	4.47	5.2	5.47
217		Bhanpur	4	1.34	3.1	4.46
218		Bhikamjot	3.74	2.44	3.04	3.95
219		Captainganj1	3.78	3.57	4.13	4.41
220		Haraiya	4.2	3.8	2.9	3.72
221		Jagdishpur	3.85	3.3	3.69	4.02
222		Kalwari	3.55	2.63	3.75	4.05
223		Kharauan jat	3.43	1.58	2.87	3.8
224		Mathauli1	3.47	2.96	3.66	3.84
225		Rudauli	3.75	1.22		5.7

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
226	**Bijnor**	Bijnor Pz GWD	12.1		11.58	11.71
227		Chandok	18.47		17.57	18.17
228		Kaziwala	2.69		2.34	2.52
229		Milak Beniram	4.74		3.27	3.52
230		Najibabad New	2.53		1.95	2.33
231		Ratanpur Riyaya Pz GWD	11.89		11.49	11.67
232		Sarakthal	4.94		4.67	4.91
233		Shahzadpur Or Nagal			18.1	18.62
234		Sneh Rd.rly.stn.	9.7			6.25
235		Swaheri Khurd	10.08		9.45	9.65
236	**Budaun**	Asafpur Pz GWD	11.45	11.36	11.16	11.58
237		Badaun Pz GWD	16	15.98	16.15	16.2
238		Binawar Pz-GWD	8	8.06	8	8.36
239		Bisauli Pz GWD	13.5			
240		Dabthara Shyam Pz GWD	5.45	4.91	5.13	5.27
241		Daharpur Pz GWD	7.55	7.86	7.84	7.78
242		Dhanari Railway Station Pz GWD	3.75			
243		Dudhauni	10.05			9.8
244		Gunnaur1	5.42	4.67	5.01	5.12
245		Kachla	2.71			
246		Kolhai Pz GWD	10.4	10.32	10.5	10.67
247		Mansa Nagla Pz GWD	15.05	15.16	15.38	15.5
248		Parhali bajhara	6.5	6.4		
249		Qadar Chowk Pz GWD	8.15	7.56	8.06	8.13
250		Sarauriya Pz GWD	14.1	12.23	14.55	14.6
251		Ujhani Pz GWD	14.4	14.28	15.1	14.62
252		Wazirganj Pz GWD	14.85	14.18	14.42	14.46
						3.9
253	**Bulandshahr**	Batli	8.37	8.08	8.18	9.12
254		Daulatpur Khurd EW/Pz		9.22	9.15	9.2
255		Gulauthi	9.52			
256		Jargawan	6.6			
257		Khurja Pz	8.85			
258		Lakhaothi Pz	7.69	5.26	4.92	5.46
259		Nandpur	3.21	4.14	5.36	5.95
260		Sikandrabad 1		5.7	11.6	11.64

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
261	**Chandauli**	Baburi		5.36	7.21	
262		Chahania		2.31	3.08	3.39
263		Chakia		3.08	5.03	6.26
264		Chandauli		0.74	1.02	2.25
265		Chandraprabha			7.74	9.19
266		Dhanpur		1.56	2.14	3.33
267		Kamalpur		2.2	2.25	2.86
268		Marufpur xing		12.13	12.56	14.14
269		Mugal sarai		0.43	0.77	1.88
270		Sakaldiha		2.04	1.8	2.18
						18.54
271	**Chitrakoot**	Bhaunri	8.3	7.74	9.1	10.67
272		Chakrajafar	15.05	15.85	16.55	18.15
273		Harison pura	18.43	16.73	17.13	17.73
274		Jorwara	11.25	10.4	10.95	11.65
275		Karwi	7	6.3	7.2	8.96
276		Manikpur	9	8.3	9.6	11.1
277		Mau	14.4	14.6	8.3	20.78
278		Raipura	10.9	11.08	12.8	
279	**Deoria**	Baitalpur	2.55	2.25	2.4	6.97
280		Deoria2	4.37	3.92	4.58	7.68
281		Desai deoria	3.62	1.38		1.89
282		Gauri bazar	2.87	2.84	3.33	3.66
283		Lar road	3.67	3.11	3.72	2.21
284		Pathardewa(Narayanpur Kothi)		5.51	3.24	11.56
285		Rampur garh	2.69	2.59	2.39	3.07
286		Ratasia kothi	5.13	4.39	5.17	
287		Rudrapur1	7	6.79	7.75	3.79
						6.54
288	**Etah**	Amanpur Pz-GWD	3.3	3.04	2.85	7.68
289		Bhagwala1	4.62	5.1	5.1	5.89
290		Daryaganj	8.3	8.11	8.23	8.78
291		Dhumri1		1.74	2.17	2.41
292		Etah Pz-GWD	10.76	10.46	10.25	10.85
293		Ganjdundwara Pz-GWD	5.57	5.39	5.55	5.81
294		Jaisukhpur		5.75	5.6	
295		Jaithra Pz-GWD	7.6	7.72	7.63	7.84
296		Jalesar Pz- GWD	10.66	10.52	11.3	11.55
297		Kasganj Pz-GWD	7.68	9.02	9.34	9.47

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
298		Locha	10.59	10.88	10.11	1.89
299		Marahchi Pz-GWD	7.97	7.86	7.7	7.89
300		Sakit (new)	6.81	6.49	6.93	
301		Sakit Pz-GWD	5.85	5.19	5.79	7.1
302		Sidhpura Pz-GWD	4.85	4.75	4.78	4.97
303	**Etawah**	Bakewar	5.74	5.43	7.52	7.68
304		Barecha	37.1	35.6	36.6	37.5
305		Bareshar-Q	9.35			
306		Bharthana2	6.7	6.88		
307		Patya Chaturpur	6.93	2.22	4.65	3.66
308		Pz GWD Bareshar		9.44	9.99	10.06
309		Sabdalpur	28.9	27.6	28.5	28.9
310		Ujhayani	6.04	3.48	3.9	4.01
311	**Faizabad**	Amaniganj	6.05	4.4	4.65	5.78
312		Bakarganj	3.2	0.85	3.37	2.9
313		Chaure bazar	6.95	6.25	7.15	
314		Faizabad Pz-CGWB		7.3	6.7	7.4
315		Gosaiganj Pz-GWD	5.75	3.7	4.3	5
316		Gosaiganj-new	5.4	4.05	4.77	2.21
317		Khajurahat	8.35			
318		Madhopur	5.9	2.8	4.39	5.25
319		Meethagaon	5.6	6.4	6.07	
320		Milkipur	4.72	5.15	3.53	5.59
321		Naokua	4.5	3.25	1.75	4.15
322		Paraspur Sakara	6.9	7.8	7.9	
323		Sakhupura	4.35	3.95	4.59	4.55
324		Sarai Rasi		5.95	4.03	
325	**Farrukhabad**	Kaimganj2	8.93			11.56
326		Kampil	10.36	9.93	10.41	10.29
327		Pz Barhpura	20		19.99	20.2
328		Pz Dabhau	10.37	10.59	10.68	11.25
329		Pz Fatehgarh	13.9	12.95	13.68	14.18
330		Pz GWD Shukrullahpur	11	10.74	11.4	11.88
331		Rajepur	5.66	5.28	5.6	6.35
332	**Fatehpur**	Asother	3	2.2	2.3	2.7
333		Bahua	13.3	12.4	12.75	12.6

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
334		Barwa	21.2	20.7	21	3.07
335		Bela	4.25	3.2	3.55	3.9
336		Bindki1	7.55	11.46	11.78	11.95
337		Fatehpur2	9.22	7.72		
338		Gazipur	6.7	6.7	7.15	7.8
339		Jahanabad	20.6	21.68	22.4	22.1
340		Lalauli	10.52	9.77	10.27	11.81
341		Musfha	8.59	7.54	7.99	8.39
342		Ramapur	11.32	10.56	10.72	11.1
343		Sarain bakewar	3.65	2.6	2.98	3.35
344		Umradipur	8.17	7.52	7.77	
345	**Firozabad**	Araon Pz GWD	22.22	21.9	21.95	22.77
346		Bhura Ka Pul		10.29	9.39	
347		Jasrana Pz GWD	7.38	5.68	5.58	6.71
348		Kusiari	1.52	0.43	0.99	1.68
349		Madanpur Pz-GWD	7.66	7.56	9.31	8.69
350		Mustafabad	3.35	5.01	4.25	4.84
351		Shikohabad Pz-GWD	15.7	15.54	15.1	15.68
352	**Gautam Buddha Nagar**	Chauki Pz	6.5	3.93	5.18	3.79
353		Dhankaur	16.55	15.84	15.7	15.79
354		Jewar- Pz	14.1	13.87	14.39	14.42
355		Jewar(new)	15.75	16.6		
356		Sector- 62 A Pz		28.61	29.05	29.36
357		Sector-72 Pz		27.16	27.66	27.62
358		Sector-92 Pz	8.35	11.04		
359	**Ghaziabad**	Azad Nagar-Pz	10.67	8.52	10.5	11.3
360		Badauli-Hapur-Pz	14.33	13.29	15.02	14.77
361		Bhojpur-Pz	8.45	8.25	8.25	6.54
362		Dhaulana-Pz	4.77	3.84		4.9
363		Garhmukteshwar-Pz	13.71	13.6	13.25	14.35
364		Hapur-Pz	16.28	16.43	16.65	15.85
365		Modi Nagar-Pz II	6.12		5.5	6.3
366		Morta Pz GWD	18.32	17.6	18.05	19.1
367		Muradnagar	4.82	4.4	4	4.4
368		Pilkuha-Pz	8.01	7.53	5.6	7.5
369		Upheda-Pz	9.66	9.1	8.6	7.8
370	**Ghazipur**	Ajaipur	7.84	5.01	5.42	33.38

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
371		Baresar	12.08	11.33	11.58	2.91
372		Bhadaura	4.46	2.96		5.15
373		Bhole Nagar Chatti	18.04	16.61	15.5	7.67
374		Deoria	4.49	3.29	2.32	18
375		Dildar nagar	4.02	2.95	4.25	19.24
376		Gahmar	11.86	10.43	11.08	4.82
377		Ghazipur (Urban)	1.23	0.01	0.52	2.63
378		Karimuddinpur		7.32	7.75	5.35
379		Kasimabad	9.62	8.9	7.02	3.27
380		Kathgarha	6.3	5.47	6.11	2.91
381		Manihari			4.57	6.27
382		Mohammadabad2	12.47	11.43	11.96	
383		Nandganj		5.68	9.92	
384		Orulari	5.18	1.7	1.97	3.55
385		Pyrepur	4.98	3.89	5.37	5.83
386		Sadikapur		1.64	2.69	3.91
387		Saidpur 1	10.43	7.45	8.9	10.28
388		Tanda Bairakh	6.9	6.07	5.04	
389	**Gonda**	Baleshwar ganj	2.35	1.4	2.35	5.15
390		Bhauriganj	4.05	2.63	3.93	4.38
391		Birpur katra	3.72	2.4	3.63	4.08
392		Chapiya	2.75		3.92	3.76
393		Colonelganj	3.6	2.4	3.65	
394		Gonda (Urban)	7.31	7.37	8.26	7.83
395		Kazi Dewar	4.85	3.27	3.75	6.5
396		Mankapur	4.85	4.18	4.78	5.03
397		Parsa gondri	3.7	3.55	2.8	4.11
398	**Gorakhpur**	Belipar	4.71	4.7	5.35	7.67
399		Dubauli	4.33	3.6	4.29	4.84
400		Geruababu	4.67	4.4	3.93	4.71
401		Jagdishpur1	1.56	2.47	3.65	4.31
402		Kauriram	6.14	6.13	7.23	7.88
403		Rampur	4.37	4.25	4.48	5
404		Urwabazar	2.93	3.3		
405	**Hamirpur**	Bewar	11.46	9.82	10.23	11.16
406		Dhagwan	2.84	1.49	2.3	
407		Jalalpur	27.92	28.17	28.02	18

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
408		Kapsa	10.25	9.05	10.15	11.45
409		Khanna	4.3	4.36	3.7	4.1
410		Kharela	2.35	2.05	3.15	4.15
411		Kunetha	8.98	8.58	8.48	11.18
412		Kurara	8.7	7.4	6.9	7.4
413		Lalpura	12.87	11.82	11.62	12.57
414		Maudaha	11.15	11.02	10.85	11.55
415		Rath	5.25	4.9	4.6	5.05
416	**Hardoi**	Ahrori	6.04	2		19.24
417		Atrauli1	7.8	7.8	7.9	8
418		Barganwar	6.9	5.48	5.44	6.21
419		Barkhani Pz-GWD	7.02	7.07	7.3	7.5
420		Bawan Pz-GWD	3.8	2.27	3.1	3.2
421		Bhadaial	3.97	2.28	2.7	2.95
422		Dalel nagar rly	7.55	5.75	6.63	
423		Del panderwa	5.17	2.89		4.03
424		Dhobia	7.24		6.19	
425		Gangau	4.95	1.5	1.32	2.57
426		Gokul behta		3.4	4.55	4.82
427		Gopamau	8.35	7.44	7.66	7.76
428		Harpalpur PZ-GWD	5.96	6.03	6.3	6.95
429		Kachauna	5.15	4.2	4.6	4.9
430		Kothawan		6.05	5.75	
431		Mallawan	10.87	11.1	11.35	11.75
432		Manjila	4.26	3.54		4.05
433		Marhia	4.54	3.04	4	3.9
434		Mohammadpur	7.7	6.52	6.92	7.42
435		Pali			4.9	
436		Panch deora		2.8	3.7	2.63
437		Pihani	5.25	2.8	3.75	4.45
438		Quasimpur			3.76	
439		Rasulpur	3.6			
440		Rasulpur-New	3.62			
441		Sahabadpur		4.21	4.28	5.61
442		Sandila		3.09	4.54	
443		Shahabad Pz-GWD	7.5	6.87	7.15	7.1
444	**Hathras**	Bhatikra	7.83	6.91		
445		Hasyan	4.8	5	5.24	5.35

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
446		Hathras jn.	17	16.96	17.39	
447		Hathras(New)	10.2			
448		Iglas	8.32	8.09	8.01	8.4
449		Mitai	17.75	18.07	18.26	18.41
450		Purdil Nagar	4.79	2.57	5.69	5.81
451		Rattika nagla	3.66	3.08	2.82	2.71
452		Sikandara Rao		4.53	5.26	
453		Thulai	13.25	15.44	13.52	
454	**Jalaun**	Ait2		5.3	6.46	3.27
455		Ata	11.65	10.75	11.95	14.76
456		Babina-New	2.88	2.64	2.58	2.68
457		Chhota Rampur	17.6	17.6	18.92	18.4
458		Churkhi	10	12.55	11.2	9.98
459		Damras	20.3	20.3	23.9	26.8
460		Dekor	5.8	5.45	6.32	6.26
461		Gohan	3.6	2.2	4	4.1
462		Gopalpura1	0.66	1.34	2.64	1.06
463		Hadrukh	4.9		7.21	
464		Hardoi Gujar			5.5	14.26
465		Jagmanpur	29.4	28.63	30.35	6.97
466		Jalaun	3.4	3.2	3.05	7.85
467		Kailaiya	7.17	5.57	6.98	3.38
468		Kalpi	23.45	21.95	27.36	
469		Kamsaira	1.1	2.2	3.41	13.55
470		Kanasi			5.62	2.39
471		Keolari-New	3.4	3.16	4.84	7.64
472		Kishora mauza	9	7.58	8.76	3.15
473		Konch(New)	5.09	5.51	6.44	6.58
474		Kukargaon	5.8	4.6	7.75	6.97
475		Kukartaal	22.5	23.1	25.4	26.5
476		Kusumilia	4.75	5.48	6.32	7.7
477		Madhogarh		4.8	5.1	
478		Mahewa	14.07	13.87	16.5	
479		Marora		2.4	4.22	3.5
480		Musaria	11.85	11.42	16.07	17.95
481		Orai	1.8	2.3	3.4	4.5
482		Rajpura	1.8	1.41	2.39	2.75
483		Sirsakalar		3.55	4.9	4.55
484		Umri	4.6	9.51	10.58	7.85
485	**Jaunpur**	Barai par	7.29	5.9	7.14	

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
486		Barji Kalan			3.13	4
487		Belwa Tarpatti			2.84	
488		Chandwak		13.9	15.78	15.69
489		Dhiuraha		5.83	11.15	
490		Hasanpur		4.94	5.49	6.06
491		Honipur	7.62	8.48	7.94	8.06
492		Itaili (muftiganj)		1.91	8.07	9.15
493		Janghai	5.71	3.13	5.59	3.38
494		Machhalishahr	3.27	1.25	1.59	1.82
495		Maharajganj2	4.87	4.01	6.78	7.15
496		Maheshganj	6.08	2.82	6.74	7.2
497		Marihun		3.04	4.82	5.43
498		Mungra Badshahpur	6.85	8.14		7.72
499		Narar(jamnipur)	4.34	2.37	4.3	
500		Raja bazar	5.52	5.36	6.29	6.83
501		Rampur1			6.81	7.97
502		Sigra mau	5.34	4.49	6.03	6.35
503		Tarti		6.11	9.95	
504	**Jhansi**	Ajneri Madhopura	3.6	3.11	4.19	3.96
505		Auldan-New	8.2	7.15	8.22	8.65
506		Babina1	2.42	2.12	4.88	5.48
507		Badagaon	3.9		2.3	2.92
508		Bamaur		5.05	6.47	7.47
509		Barua sagar	2.25			4.02
510		Eairach	21.22	21.72	23.16	22.42
511		Farida	3.1	3.78	5.25	4.07
512		Ghugawa	8.7	8.01	8.8	13.55
513		Jhansi1	3.33	2.5	3.39	3.42
514		Khailara	5.75	4.77	7.61	8.7
515		Khillawari	4	7	4.3	4.97
516		Kuangaon	8.35	7.98		
517		Mauranipur Rajpaharia		8.1	8.91	
518		Moth	0.68	0.94	2.36	
519		Pandhawa	10.9			13.81
520		Punch	5.65	4.65	6.8	7.06
521		Raksa	4.9	3.45	4.9	5.66
522		Rewan	8.45	6.75	7.75	2.39
523		Sakrar 1		6.15	6.8	8.21
524		Samthar	6.13	4.44	6	6.49

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
525		Semri	6.6	3.99	4.15	4.77
526	**Jyotiba Phule Nagar**	Amroha Pz CGWB	12.44		12.76	14.04
527		Bagadpur Pz GWD	13.8		13.4	13.7
528		Daurala Pz GWD	6.32		5.9	6.03
529		Dhanaura Pz CGWB	11.18		10.45	10.38
530		Gajraula Pz CGWB	7.89			
531		Gajraula Pz GWD	12.5		12.7	7.64
532		Hasanpur Pz GWD	13.75		13.3	13.68
533		Jalalpur Kalan Pz GWD	15.73			
534		Jogipura Pz GWD	13.56		13.81	13.82
535		Joya Pz GWD			14.35	14.43
536		Matlabpur Pz GWD			11.92	12.07
537	**Kannauj**	Chibramau Pz-GWD	15.76	15.77	16.1	16.22
538		Gurshaiganj1	20.81		20.83	20.69
539		Haseran Pz-GWD	0.76	0.75	0.65	0.64
540		Jalalabad Pz-GWD	20.97	19.69	21.25	3.15
541		Kannauj Pz-GWD	-0.5	24.62	24.6	24.7
542		Kannauj1	6.21	6.47	6.34	6.55
543		Kharni Pz-GWD	2.76	2.95	2.75	2.48
544		Ram ashram	8.5	7.74	8.45	
545		Tirwaganj	9.6	9.48	9.68	9.83
546	**Kanpur Dehat**	Akbarpur	9.72	8.88	8.54	8.92
547		Baghpur	5.06	5.54	5.64	5.92
548		Kadari	5.93	6.18	7	7.21
549		Kainjari	5.89	5.57	5.75	6.58
550		Muhammadpur	16.32	16.62	16.82	16.9
551		Pukhrayan1	15.97	19.43		
552		Roura	6.63	6.24	5.33	6.63
553	**Kanpur Nagar**	Babupurwa Pz GWD	29.5	28.6	29.75	30.06
554		Baradari	8.03	8.78	8.41	9.9
555		Bhaisana	4.9	4.26	4.25	3.75
556		Bidhnu	3.57	2.5	2.72	3.03
557		Bithoor-Nganj	11.19	10.25	10.39	10.13
558		Chaubepur1	13.1	13.26	12.9	42.16
559		Chitra Degree College Pz GWD	12.97	15.28	11.45	11.18

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
560		Fazalganj Pz GWD	29.75	29.5	30.25	
561		Kulgaon	11.32	10.03	10.12	6.45
562		Motipura	4.83	1.9	1.8	5.9
563		Narmau(new)	6.92	7.1	7.2	
564		Niwada dhamni	6.01	7.58	6.52	4.88
565		Ramsari		7.23	7.93	7.55
566		Sachendi	4.58	3.95	3.63	7.9
567		Sarh	2.86	1.46	1.36	
						11.18
568	**Kaushambi**	Kailashpuri	21.09	21.17	21.37	21.54
569		Kasia	14.12	23.67	15.13	15.35
570		Kushambhi	11.84	11.82	12.23	12.53
571		Lehdari	15.17	12.78	13.07	14.78
572		Mahgaon	17.11			
573		Pulia Sandalpur	8.96	9.15		
574		Sallahpur	17.53	17.91	18.43	18.75
575		Sarai akil	14.28	14.68	15.94	16.42
576		Usargaura	7.24	6.33	7.78	8.42
577	**Kheri**	Asogapur	4.83	3.81	4.13	4.13
578		Bijua	3.05	1.95	2.6	3.62
579		Chamlapur	2.66	1.31		1.79
580		Chandan chowki	4.31	1.99	3.99	3.24
581		Chauapur		1.68	2.05	2.1
582		Dharmapur	7.5	7.15	7.8	7.8
583		Dhaurehra-1		3.4	4	4
584		Dudhwa f.r.h.	9.95	7.76	8.81	9.05
585		Ishanagar	3.72	2.36		3.65
586		Jhandi Raj	3.75	2.77	3.6	6.45
587		Mailani	5.95	3.83	4.85	5.2
588	**Kushinagar**	Belwa	5.89	3.71	4.55	5.58
589		Captanganj1	1.94	1.11		
590		Chittauni	2.36	0.65	1.38	2.07
591		Fazil nagar	3.03	1.23	1.91	
592		Kasia1	2.7	1.48	2.18	
593		Mansurganj		2.14	3.08	2.83
594		Mathauli	2.96	1.86	2.54	
595		Naurangia	3.68	2.26	3.45	5.9
596		Rambar	3.55	2.07	2.71	4.3

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
597	**Lalitpur**	Amjhara ghati	0.85	1.32	1.45	1.75
598		Bansi	7.5	3.85	6.2	8.81
599		Bar		7.68	8.4	9.71
600		Betna		8.55	9.15	
601		Birdha Pz-GWD		13.92	12.05	16.75
602		Digwar	6.69	4.94	6.39	6.96
603		Hisar kalan	6.67	5.72	5.92	6.32
604		Jakhaura1		2.81	4.2	
605		Jakhlaun	3.15	3.1	3.4	3.9
606		Khitwans	5	3.5	5.52	9.03
607		Lalitpur	0.95	0.85	1.45	1.66
608		Mahroni 1		8.15	10.15	
609		Saidpur	7.45	5.1	6.27	9.71
610		Silawan	8.3	8.3	9.82	
611		Talbhet-III	5.05		1.8	5.9
612		Talbhet-IV	5.45	4.75	5.3	
613		Talbhet-New	1.75	1.2	1.9	2.12
614		Udaipura	6.95	4.8		4.88
615	**Lucknow**	Aat Garhi Sonra	11.43	11.52	12.1	12.65
616		Arya Nagar	19.15	18.75	18.8	19
617		Bakshi Ka Talab	13.15	13.5	13.85	13.95
617		Bakshi ka talab	13.23	13.5	14.08	13.95
618		Bani1	6.8	6.85	7.3	7.55
619		Behta Bazar	7.08	7.2	8.05	8.25
620		Bhatoiya	9.17	9.05	9.45	9.6
621		Bijnor	10.23	10.15	10.85	11
622		Cantt	26.33	26.6	26.05	7.55
623		Fatehganj	12.34	13.24	14.5	13.95
624		Gondauli	7.5	8	8	8.4
625		Gopamau			14.4	14.86
626		Gosaiganj1	1.8	0.65	1.7	2.65
627		Gulistan Colony	36.17	36.13	36.6	36.7
628		Itaunja	12.7	12.55	13.3	13.44
628		Itaunja	10.4	12.55	12.6	13.44
629		Kathwara	14.4	13	13.6	13.55
630		Khawas khera		1	2	2.05
631		Kumrahawan	5.02	4.75	6.85	7.9
632		Lu New Campus	13.72	19.1	17.65	18.05

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
633		Lu Old Campus	31.85	32.35	32.51	32.95
634		Mal	11.12	10.95	12	12.55
635		Malihabad	11.95	9.3	12.8	12.95
636		Mohanlalganj	5.91	6.3	7.45	7.65
636		Mohanlalganj	6.8	6.3	6.85	7.65
637		Munshiganj	5.53	3.55	4.4	6.4
638		Nagram		0.71	1.91	2.31
639		New Hyderabad	29	19.7	30.8	30.1
640		Nigohan1	8.78	8.8	9.15	
641		Rahimabad	5.98	5.67	6.25	6.3
642		Rakabganj Crossing	7.75	7.55	9.1	7.5
643		Rehman Khera	10.01	9.8		10.45
644		Rehta	8.2	7.45	8.5	8.75
645		River Bank Colony	26.01	27.6	26.6	25.45
646		Sarojininagar	12.7	12.85	13.25	13.4
647		Sisandi1	8.87	8.25	9.3	9.3
648		Tejkishan Khera	5.87	5.55	6.6	7.25
649		Vikasnagar	33.53	32.85	33.6	33.4
						8.23
650	**Mahoba**	Bela tal	4.22	3.8	2.82	4.19
651		Charkhari	4.2	3.6	5.36	7.55
652		Kashipura	8.02	7.86	5.38	
653		Kulpahar1	4.08	2.58	2.43	
654		Kulpahar2	7.1	5.86	5.5	
655		Pipramauf	3.69	3.6	3.09	6.26
656		Teiya1	6.1	5.1	3.95	
						4.98
657	**Mahrajganj**	Ghughali	4.93	2.06	3.43	
658		Koluhi	1.92	1.31	2.63	4.19
659		Kukesar	3.35	2.01	2.47	3.14
660		Maharajganj2	3.17	1.97	2.65	3.58
661		Partawal	2.7	1.59		
662		Siswa bazar	4.72	3.06	7.15	7.63
663	**Mainpuri**	BewarPz-GWD	6.3	5.9	5.28	5.81
664		Ghirore	5.62	4.33	4.03	4.8
665		Karhal Pz-GWD	4.8			
666		Katra Saman	4	0.62	1.88	2.94
667		Kishni Pz-GWD		5.25	5.68	7.55
668		Kuraoli Pz-GWD	5.31	2.5	2.77	4.6

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
669		Majhaula		1.3	1.75	
670		Nagal bhujia	0.67	0.08	0.74	1.08
671		Nagla rampichha		1.29	2.7	
672		Sultanganj Pz-GWD	4.91	3.87	3.14	4.25
673	**Mathura**	Baldeo	6.3	4.55	5.94	5.99
674		Barsana	8.84	8.77	9.03	9.9
675		Chhata New	2.8	1.77	2.64	2.5
676		Jachoda	1.06	1.03	1.55	
677		Jamunapar Thana	13	11.38	12.12	12.3
678		Jhinga nagla	1.94	0.37	2.3	2.44
679		Kariri Gaon	5.23			
680		Kharab	6.72	1.58	3.11	3.32
681		Kosi	2.52	1.76	3	3.05
682		Mat	15.09	14.68	14.87	15.05
683		Nagra Chhitar Singh	2.47	1.88	3.47	3.59
684		Paintha (Govardhan)	1.32	1.23	2.32	2.15
685		Pirsua	10.4	10.31	11.07	11.2
686		Sahar1	2.2	0.48	1.49	
687		Saunkh	3.53	2.54	3.48	3.54
688		Surir (new)	8.08	7.66	8.12	8.42
689		Vridavan	10.8	11.3		
690	**Mau**	Amila	5.06	4.04	5.68	
691		Dhorighat	5.65	4.93	5.35	6.65
692		Ghosi	3.01	2.37	2.2	3.1
693		Jejawali	6.09	4.32	5.95	6.05
694		Kapaganj	8.37	7.46	8.77	9.17
695		Mau (Urban)	7.12	6.4	6.72	
696		Ratanpura	7.31	5.87	5.63	6.21
697	**Meerut**	Behsuma Pz 1	10		10.15	
698		Chota Mawana Pz	9.47	9	8.9	10.2
699		Hastinapur 1	10.7	11	10.14	10.95
700		Kaili Pz	17.78	18.14	17.6	18.1
701		Meerut Pz		18.64	19.2	
702		Parikshat Garh Pz			8	8.8
703		Sakoti Tanda Pz	7.54	7.13	7.05	8.3
704		Timikia Kothi Pz I	9.18	8.03		6.26
705		Timikia Kothi Pz II	9.55	7.95		

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
706		Timikia Kothi Pz III	7.28	6.05		
707	**Mirzapur**	Adalhat		1.17	2.71	4.93
708		Ahraura		2.99	5.06	
709		Baghura		3.29	3.86	5.16
710		Barhanchuan		2.16	5.07	4.41
711		Chunar			4.3	5.81
712		Gaipura		10.04	11.16	11.78
713		Gopalpur		11.43	13.07	
714		Halia		7.14	7.37	7.83
715		Kalwari		3.44	12.05	13.32
716		Kunabimar		12.27	13.16	14.09
717		Lalganj		2.82	4.52	5.26
718		Marihan		13.03	13.4	13.47
719		Mirzapur		11.3	12	12.88
720		Purjagir			13.35	15.2
721	**Moradabad**	Asmauli Pz GWD	14.74		14.75	15
722		Bahjoi Pz GWD	12.75		12.02	4.98
723		Chandausi-PZ	14.4		14.35	14.45
724		Dingarpur Pz GWD	11.9		16.2	11.22
725		Fatehulla Ganj Pz GWD	13.64		13.94	13.97
726		Fauladpur	3.4		3	3.2
727		Gumsaini Pz GWD	14		13.45	12.44
728		Karanpur Pz GWD	4.1		3.35	3.83
729		Kundarki Pz GWD	11.46		13.96	14.66
730		Mahmudpurmafi Pz GWD	13.25		13.45	13.23
731		Maukather Pz GWD	13.13		12.92	13.47
732		Moradabad Pz GWD	11.3		13.1	
733		Moradabad-Pz	5.6		13.4	
734		Painapur	3.5		4.65	3.62
735		Ratanpur Kalan Pz GWD	13.1			
736		Sahapura Sirpura-Pz	15.91		16.03	16.14
737		Sambhal Pz	16.18			
738		Thakurdwara	2.68		1.6	2.05
739	**Muzaffarnagar**	Baghra			11	
740		Baghra Pz	14.25		11.7	11.8
741		Barla		6.05	5.25	12.12
742		Chartawal	8.26	9.15	8.25	15.77

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
743		Chartawal Pz	9.33	8.35	8.35	3.71
744		Inchauli(Ratanpuri) Pz GWD	13.92	13.37	13.18	
745		Kairana Pz	23.27	22.23		
746		Kamalpur Pz	11.46	10.97	11.4	8.53
747		Khatauli 1			5.45	4.63
748		Khatauli PZ (GWD)	3.43	2.77	2.6	4.96
749		Kukra-Sadar Pz	12.42	11.25	12.3	14.51
750		Morna Pz	17.4	11	16.5	1.9
751		Paldi Pz GWD	16.84	17.96	17.1	15.77
752		Shamli PZ GWD	19.19		20.05	19.6
753		Shikarpur Pz GWD			15.6	16.6
754		Sukratal	3.77	3.68	3.1	3.25
755		Thana Bhawan Pz	11.93	10.13	11	10.7
756		Un Pz	21.76	6.61	22.35	23.35
757	**Pilibhit**	Baldeopur	5.1	4.68	5.52	5.01
758		Bargad chauraha	4.03	3.28	3.78	
759		Bhamora	3.71	4.91	3.55	3.46
760		Bilaspur Pz GWD	5.05	3.8	4.52	3.71
761		Bilsanda1	4.4	3.11	4.2	3.55
762		Faradia	4.57	3.85	4.93	5.35
763		Gajraula1	3.62	2.75	3.32	3.34
764		Jahanabad1	5.36	3.43	4.54	4.83
765		Jeora kalyanpur	4.32	3	5.02	4.25
766		Madho Tanda Pz GWD	3.5	1.88	2.89	3.03
767		Pilibhit Pz GWD	3.9	2.81	4.3	3.4
768		Puranpur Pz GWD	3.05	1.68	2.42	2.52
769	**Pratapgarh**	Arjunpur	8.06	8.79	8.99	
770		Ateha		5.95	6.93	7.01
771		Bhusar	4.43	2.08	3.41	4.17
772		Bishahia	6.26	4.84	5.76	5.88
773		Delhupur	6.16	6.05	6.17	6.28
774		Dih balri	5.71	6.1	6.72	6.85
775		Ganaidih	9.25	8.91		
776		Garhi Manikpur	11.23	10.5	11.32	
777		Gaura	4.84	1.15	3.22	4.08
778		Gorai1	10.37	9.55	10.91	11.41
779		Gutni	11.28	10.73	11.04	
780		Jamtoli	11.67	12.48	13.89	16.96

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
781		Jathwara	5.49	5.39	6.26	
782		Kohdaur	7.51	6.74	7.53	7.94
783		Kunda	7.34	6.01	6.8	7.37
784		Lalganj2	6.09	5.83	6.92	7.09
785		Lalgopalganj	5.56	4.92	6.07	6.36
786		Maddupur	3.78	3.53		
787		Mandhata	6.98	7.08	8.01	7.58
788		Mohanganj	12.16	12.36	13.37	15.08
789		Nanasukul purwa	5.82	6.23	6.44	8.53
790		Narainpur	4.32	4	5.08	5.26
791		Rampur batauli	5.19	1.62	5.47	5.25
792		Raniganj	6.66	6.06	6.88	7.23
793		Sangipur	7.58	7.69	8.29	8.37
794		Sangramgarh	5.69	6.34	6.29	6.43
795		Udai shahpur	6.71	6	7.46	7.92
796		Vishvanath ganj	10.78	11.69	11.83	11.91
797	**Rae Bareli**	Ahraura bhawani	5.66	4.73		
798		Bhawanigarh		0.85	1.4	4.63
799		Binjh	10.85	11.2	11.3	11.48
800		Chauraha dusti	1.75	1.45	2.55	2.7
801		Cheek daadar	2.6	1		6.05
802		Dalmau-1	5.85	4.4	5.5	6
803		Dhonda ka purwa		2.08	4.8	5.05
804		Domapur	9.4	9.36	9.8	10.5
805		Fursatganj	2.86	2.02	3.67	5.12
806		Gopalipur	5.37	5.47	5.8	6.37
807		Harchandpur		6.05	7.05	6.85
808		Hunsepur	7.27	7.4	7.65	4.96
809		Jagatpur	2.48	2	2.7	2.7
810		Jais	2.07	1.95	3.6	3.8
811		Kachunda		2.39	2.7	2.75
812		Katghar	3.56	2.36	2.36	2.96
813		Ketanpurwa		5.7	6.2	6.45
814		Kumbhi ka purwa		3.05	2.95	3.2
815		Laxmanganjbazar		2.37	4.8	4.9
816		Matrwa	2.02	1.9	1.85	2.55
817		Mau garbi	2.23	2	2.25	2.85
818		Mazzamganj ngr	4.32	2.7	6.6	14.51
819		Mohanganj1	1.29	1.1	1.75	2.65

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
820		Nigohan1	2.27	1.72	2.82	3.02
821		Raja Fatehpur-New	5.05	5.25		
822		Simrauta(ii)	4.96	4.26	5.3	5.01
823		Suchi	5.85	5.7		6.3
824	**Rampur**	Bilaspur Pz CGWB			4.94	
825		Pahari Dis	5.07		4.3	4.65
826		Shahabad Pz GWD			14.1	9.6
						1.9
827	**Saharanpur**	Babail Buzurg	6.24	5.7	4.25	6.15
828		Bagh colony	6.05	2.76	5.79	5.77
829		Chandrapal Kheri	17.14	17.46	17.67	17.5
830		Deoband 1	5.35	4.9	3.46	3.55
831		Dhaula Kuan	7.29	4.5	6.98	6.35
832		Gangoh	20.77	21.08	22.3	22
833		Ghuna	3.71	3.45	2.72	3.3
834		Haraiti	7.62	6.5	7.5	
835		Lundi Pz GWD	8.86	7.9	8.75	9.1
836		Mainpura Pz GWD	17.17	16.27	16	14.5
837		Mohand	9.68	6.25		
838		Nagal Pz GWD	14.81	14.65	14.2	8.33
839		Nakur Pz GWD	16.51	16.77	16.05	4.37
840		Nanauta Pz GWD	5.73	3.76	4.7	4.9
841		Rampur Pz GWD	7.12	5.75	6.65	7.93
842		Sadauli Quadim	8.91	6.8	7.6	
843		Sarsawan Pz GWD	10.62	10.35	10.55	
844		Shakhambari	5.02	2.88	2.13	
845		Siriska Pz GWD	15.88	15.56	14.3	1.76
846		Sunderpur1	11.82	9.6	11.4	
847		Tikrol Pz GWD	7.57	7.25	5.4	7.9
848		Tilhari Buzurg	10.61	9.93	9.8	10.7
849	**Sant Kabir Nagar**	Dhanghata	4.14	4.3	5.32	5.95
850		Khalilabad	4.15	3.55	4.95	5.15
851		Maidawal	4.69	3.8	4.73	5.2
852		Nathnagar	3.1	1.48	2.43	3.26
853	**Sant Ravidas Nagar**	Aurai		4.71	4.26	5.66
854		Bhadohi			8.23	8.33
855		Koirauna		7.57	10.58	12.58

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
856		Pali1		11.23	11.67	13.51
857		Suriyawan		7.94	10.19	11.19
858	**Shahjahanpur**	Banda2(Pasyapur)	4.8	4.4	4.98	5.15
859		Gurgaon	7.44			
860		Jalalabad 3		5.49	5.42	5.6
861		Jalalpur2	5			
862		Kalan Pz GWD	1.4	0.67	1.69	1.98
863		Madnapur	5.57	5.75		4.37
864		Pawayan	8.19	8.04		
865		Sehramau	7.21	7.03	7.26	7.36
866		Shahjahanpur1	5.5	6.31	6.22	4.83
867		Sidhauli		6.04	6	6.1
868	**Shrawasti**	Badla village	5.58	5.68	6	6.09
869		Bhagwanpur	3.39	0.26	2.21	2.75
870		Bhujanga	3.59	1.34	3.12	3.87
871		Dikauli	3.18	1.64	2.6	3.3
872		Lachmanpur	7.77	7.21	8.43	4.9
873		Laxman nagar	5.82	5.2	5.3	6.39
874		Madora chowki	3.18	0.38	2.1	2.69
875		Pakaria	3.99	2.24	3.1	3.67
876		Parpatganj	4.97	3.37	4.49	5.98
877		Pratapur	2.73	1.88	2.45	2.99
878		Ratanpur	3.15	0.83	1.84	2.99
879		Shrawasti	2.86	0.46	2.13	2.81
880		Sirsia1	4.79	2.8	3.89	4.77
881		Tulsipur2	4.56	3.64	3.69	4.6
						7.93
882	**Siddharthnagar**	Badhni	3.2	1.68	2.9	3.33
883		Bansi1	3.8	0.95	2.65	3.47
884		Basti(naugarh)	2.5	0.8		2.45
885		Belwa laghunahi	3.6	1.91	3.55	4.51
886		Birdpur	3.21	2.38	3.62	3.78
887		Chilihia	2.75	0.58	2	2.69
888		Dumariaganj	3.46	1.1	2.23	3.58
889		Kajhai	6.33	3.97	5.68	7.39
890		Parsa	3.75	0.83	1.47	4.54
891		Ramnagara	3.9	2	3.25	
892		Uska	6.2	0.95	4.85	6.02

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
893	**Sitapur**	Behta	3.83	3.44		3.8
894		Biswan2	4.87	3.95	4.4	4.5
895		Biutmani	2.86	1.94	3.14	2.74
896		Deokalia	6.7	6.55		7.25
897		Dhoudhi	4.65	1.24	3.18	3.38
898		Hargaon	5.95	4.9	4.8	5.55
899		Jahangirabad	3	1.71	2.45	2.75
900		Karauna	10.93	10.79		
901		Khamaria	4.25	1.51	2.25	2.84
902		Kutub nagar	8.59	8.89	9.54	9.49
903		Laharpur Pz-GWD	9.07	7.85	8.25	8.35
904		MachchretaPz-GWD	7.65	7.42	8.05	8.25
905		Madnapur	3.27	1.63	2.8	2.8
906		Maholi Pz-GWD	9.62	8.52	9.2	8.95
907		Manpur chowki	4.96	2.98	3.81	4.31
908		Misrikh1	6.35	5.38	6.3	6.5
909		Piswan	7.74	7.85	8.1	8.15
910		Purwara gosai	3.85	2.5	3.35	
911		Rampur Mathura Pz-GWD	4.35	2.52	3.6	2.95
912		Sanda	4.15	2.52		3.85
913		Sidhauli2	8.1	6.45	6.9	
914		Sikandrabad	8.6	8.15		8.2
915		Sitapur	10.23	9.93	10.13	10.21
916	**Sonbhadra**	Anpara		15.39	15.1	17.08
917		Babhani		6.82	9.81	10.43
918		Bairpan		5.4	6.8	7.66
919		Bhagwan nagar		6.48	9.23	1.76
920		Chopan		6.84	7.9	7.65
921		Dhrtidand1		3.69	8.54	10.31
922		Dudhi		4.52	6.43	7.28
923		Gara		10.27	12.1	13.36
924		Ghorawal1		3.01	4.6	5.53
925		Hatinala		4.89	5.94	6
926		Jarha		4.83	7.36	8.66
927		Kakrahi		1.12	1.67	1.85
928		Markundi		6.35	6.91	7.18
929		Muirpur		2.87	4.63	
930		Robertsganj1		5.61	6.25	12.44

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
931		Shahganj		3.48	7.36	
932		Son barsa		2.78	3.54	27.88
						17.66
933	**Sultanpur**	Abhiya Kalan	9.45	10.6		0.72
934		Babuganj	2.92	2.8	3.77	
935		Badgaon	7.82		8.95	8.65
936		Bahurawa			2.8	
937		Bhadar	7.68	5.98	5.88	2.9
938		Bhadayian Pz-GWD	11	11.68	5.85	12.44
939		Bhatgaon	5.82	3.85	3.7	
940		Bhim pashim	4.75	6	4.1	23.05
941		Chanda Pz-GWD	8.74			
942		Dariyan ka purw	4.8	2.6	1.65	2.74
943		Gauriganj-New	4.83	2.9		3.25
944		Goriabad	2	0.9	1.35	7.87
945		Haliapur-New	14.3	-0.45		3.69
946		Jagdishpur2	9.05	8.85	10.2	
947		Jaisinghpur		2.64	1.74	2.38
948		Jamon1	5.54	4.3	3.75	
949		Janapur	4.98	3.03	3.72	3.69
950		Kadipur	9.5	9.55	10.07	
951		Khaluhat1	4.96	3.34	4.34	9.04
952		Khutahna	4.73	3.65	5.3	1.81
953		Kotra Khurd	6.85	7.25		3.03
954		Kurebhar1	4.38	3.6	4.14	3.59
955		Kurwar	5.11	5.26	4.33	
956		Kusitali	5.02	4.9	0.89	4.44
957		Kutta	6.25	5.1	5.84	6.78
958		Lambua Pz-GWD	4.97	1.1	5.7	27.88
959		Mahona	6.77	4.87	6.57	6.65
960		Maniari aliganj	3.88	3.45	5	2.69
961		Mardanpur	5.27	4.82	5.7	7.08
962		Mundawa	5.97	4.35	5.4	3.13
963		Munshiganj1	5.45	6.25	4	8.1
964		Musafirkhana	5.12	2.9	3.65	4.27
965		Naghipur bajhan	3.45	-0.45	1.73	7.5
966		Piparpur	7.02	4.97	6.31	4.09
967		Pratushmanik	5.02	4.2	6	2.73
968		Ramgarh1	4.85	2	1.55	17.66
969		Sagardeh	10.97	12.6	11.35	9.98

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
970		Sathin	12.08	12.23	13.35	4.56
971		Shivgarh	4.22	3.32	1.22	8.5
972		Sikrabad (Para)	13.18	14.03	5.08	4.55
973		Sultanpur2	13.45	12.5	11.4	3.25
974		Trisundi	5.5	3.2	3.15	
						4.57
975	**Unnao**	Auras	6.2	5.74	7.06	10.04
976		Azmatnagar	8.15	8.01	7.46	
977		Baksar	7.52	4.93	6.87	0.72
978		Bangarmau(new)	7.35	7.43	7.37	4.19
979		Bhagwant nagar	6.41	6.13	7.65	2.85
980		Bichhia	1.29		0.25	4.17
981		Chakalvanshi	2.26	1.43		4.65
982		Hasanganj1			7.66	5.89
983		Hasewan	3.92	3.9		9.48
984		Kali mitti		3.32	3.55	1.45
985		Kantha	4.16	4.74	5.12	
986		Makur	3.42	3.6		3.57
987		Malauna	1.95	1.44	2.69	
988		Maurawan	6.81	6.81	7	3.69
989		Methi Tikur	5.7	2.68	3.38	4.53
990		Pariyar	8.82	8.78	9.7	4.05
991		Pinjra	6.05	5.9	6.58	
992		Purwa	5.72	5.69	6.2	5.43
993		Safipur1	10	9.45	9.47	5.17
994		Santakhera	3.94	4.08	4.29	5.75
995		Sumerpur	9.43	9.15	9.51	9.61
996		Thaura	2.32	1.34	1.4	12.45
997		Tonda	3.66	0.68	1.06	8.65
998		Unchagaon1	5.36	3.94	3.51	4.4
999		Unnao	9.35	9.83	9.97	4
						3.35
1000	**Varanasi**	Anai		2.23	2.36	8.24
1001		Babatpur		6.77	12.8	1.96
1002		Barwaon		10.16	11.93	3.96
1003		Chobepur		4.4	6.02	
1004		Cholapur1		7.5	7.1	3.85
1005		Jikhan(narsara)		10.48	10.21	
1006		Kakrahwan		15.99	18.21	
1007		Rajatalab1			13.7	

Sl. No.	District	Well	DWL (m bgl)			
			May, 2015	Aug - 2015	Nov - 2015	Jan - 2016
1008		Rustampur		14.38	15.98	3.74
1009		Tahipur			2.95	5.85
1010		Thatra		15.1	17.43	
1011		Varanasi		9.4	12.2	5.58

Annexure –II

DEPTH TO WATER LEVEL TREND OF GROUND WATER MONITORING WELLS (GWMW) FOR THE PERIOD 2005 -2016, U.P.

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
1	AGRA	Gangapur Basai	0.5184		0.8669	
2	AGRA	Kagraul	0.0050			0.0228
3	AGRA	Mewli (bhara)	0.4251		0.2704	
4	AGRA	Natauli		0.5636		0.6217
5	AGRA	Paitikhera Bagh		0.1612		0.4169
6	AGRA	Shahganj Prithvi Nath	0.3719		0.3225	
7	AGRA	Tehra		0.6958		0.6832
1	ALIGARH	Andla	0.4507		0.1043	
2	ALIGARH	Bhikampur	0.0334			0.1320
3	ALIGARH	Gonda	0.0542			0.0266
4	ALIGARH	Gopi	0.3143		0.0373	
5	ALIGARH	Hardanaganj		0.0953		
6	ALIGARH	Jawan	0.0882		0.0453	
7	ALIGARH	Khair	0.0048			0.2824
8	ALIGARH	Palachand	0.1020			0.0428
9	ALIGARH	Safedpur		0.0751		0.1475
10	ALIGARH	Sudiyal	0.1535		0.1381	
11	ALIGARH	Taquipur(new)		0.1097		0.0731
1	ALLAHABAD	Aandwa	0.0996		0.3416	
2	ALLAHABAD	Akodha		0.0696		0.2751
3	ALLAHABAD	Allahabad		0.1085	0.4305	
4	ALLAHABAD	Atrampur		0.0108		0.1615
5	ALLAHABAD	Bairi		0.0757		0.0406
6	ALLAHABAD	Bara	0.0651			0.0696
7	ALLAHABAD	Baraut1	0.5015		0.2554	
8	ALLAHABAD	Barokhar			0.1548	
9	ALLAHABAD	Barwarikalaan	0.1643			0.0596
10	ALLAHABAD	Ghoose			0.9377	
11	ALLAHABAD	Handia	0.0251			0.0212
12	ALLAHABAD	Holagarh		0.0553		0.2076
13	ALLAHABAD	Imamganj	0.1275			0.1687
14	ALLAHABAD	Iradat nagar	0.1629		0.0912	
15	ALLAHABAD	Karchhana	0.2048		0.4447	
16	ALLAHABAD	Kasarua	0.2452		0.4732	
17	ALLAHABAD	Khaptia kheri	0.1877		0.0737	
18	ALLAHABAD	Koraon	0.2459			0.0112
19	ALLAHABAD	Ladiri bazar	0.2897			0.0036

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
20	ALLAHABAD	Malka Harhar		0.4662		0.5142
21	ALLAHABAD	Mallhan	0.1960		0.2081	
22	ALLAHABAD	Mau-Aima	0.0422		0.1249	
23	ALLAHABAD	Meja	0.0811		0.1237	
24	ALLAHABAD	Meja road	0.0796			0.0468
25	ALLAHABAD	Naini	0.0567		0.3573	
26	ALLAHABAD	Naribari	0.0595		0.0051	
27	ALLAHABAD	Pasna	0.4231		0.1270	
28	ALLAHABAD	Phulpur2	0.2004		0.1816	
29	ALLAHABAD	Rampur tulapur				0.4007
30	ALLAHABAD	Saraon	0.0704			0.0449
31	ALLAHABAD	Sikandra1		0.0243	0.0620	
1	AMBEDKAR NAGAR	Akbarpur1	0.0030		0.0060	
2	AMBEDKAR NAGAR	Alanpur	0.0779			0.0146
3	AMBEDKAR NAGAR	Bhiti-New				0.0008
4	AMBEDKAR NAGAR	Jalalpur1	0.1088		0.2318	
5	AMBEDKAR NAGAR	Katehari		0.0718		0.3900
6	AMBEDKAR NAGAR	Kesharpur		0.1124	0.0253	
7	AMBEDKAR NAGAR	Mahrua gola-New	0.1171			0.0078
8	AMBEDKAR NAGAR	Neori1				0.4962
9	AMBEDKAR NAGAR	Nevada			0.1414	
1	AURAIYA	Achhalda	0.0126			0.0513
2	AURAIYA	Airwakatra		0.0990		0.0297
3	AURAIYA	Bandhamau	0.2263		0.1538	
4	AURAIYA	Basundhara	0.0356		0.0353	
5	AURAIYA	Dinamau	0.0104			0.0889
6	AURAIYA	Hasulia		0.0523	0.0350	
7	AURAIYA	Phaphund	0.0848			0.2174
8	AURAIYA	Sahar	0.0891		0.1418	
9	AURAIYA	Sahayal	0.1886		0.3159	
1	AZAMGARH	Ahraula		0.0874		0.0696
2	AZAMGARH	Azamgarh				0.2050
3	AZAMGARH	Badihari	0.0124		0.1075	
4	AZAMGARH	Bahrapur	0.0461			0.0065
5	AZAMGARH	Bairadih	0.0052			0.2064
6	AZAMGARH	Bazidpur		0.0719	0.1431	
7	AZAMGARH	Belwana	0.1937		0.0582	
8	AZAMGARH	Bibipur Khatauli		0.0830		0.2966
9	AZAMGARH	Captainganj		0.0202		0.0894

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
10	AZAMGARH	Deogaon	0.0101		0.0081	
11	AZAMGARH	Karsandia kalan	0.0786			0.0482
12	AZAMGARH	Lohra		0.1723		0.3179
13	AZAMGARH	Madayan	0.0361			0.1376
14	AZAMGARH	Mukusudia	0.0697			0.2484
15	AZAMGARH	Nizamabad		0.0782		0.0613
16	AZAMGARH	Phulpur	0.0150			0.1295
17	AZAMGARH	Rahul nagar		0.0311	0.1680	
18	AZAMGARH	Sageri		0.0975		0.0952
19	AZAMGARH	Saraimir		0.0387		0.1070
20	AZAMGARH	Sidhauna		0.0007		0.0343
1	BAGHPAT	Pilana Pz		1.0419		0.3154
1	BAHRAICH	Baisanpurwa	0.0139			0.0142
2	BAHRAICH	Bhakraulikapurw		0.0442		0.0443
3	BAHRAICH	Bhopatpur	0.0987			0.1487
4	BAHRAICH	Dhanauli		0.1317		0.0077
5	BAHRAICH	Fakharpur		0.1510		0.0171
6	BAHRAICH	Gaighat	0.0160			0.0352
7	BAHRAICH	Kapurpur		0.0459		0.0526
8	BAHRAICH	Katarniaghat		0.0501		0.1065
9	BAHRAICH	Maraucha		0.0236		0.0371
10	BAHRAICH	Motipur		0.0265		0.0192
11	BAHRAICH	Murthia(jalia)		0.2489		0.0238
12	BAHRAICH	Nanpara		0.0208		0.0962
13	BAHRAICH	Phulwari		0.0324		0.0319
14	BAHRAICH	Razichauraha		0.0228		0.0582
15	BAHRAICH	Sablapur		0.0278		0.0560
16	BAHRAICH	Tapri godh		0.0250		0.0653
1	BALLIA	Babhnauli	0.0149			0.0756
2	BALLIA	Bairia		0.0111		0.0602
3	BALLIA	Ballia		0.4686		0.3089
4	BALLIA	Bansdih		0.2836		
5	BALLIA	Chilkhar	0.0061		0.0032	
6	BALLIA	Chitbargaon		0.1570		0.0188
7	BALLIA	Dalan chapra	0.2177			0.0312
8	BALLIA	Garwar	0.0817			0.0021
9	BALLIA	Haldi	0.0329		0.0068	
10	BALLIA	Jahangrapur	0.0573		0.0245	
11	BALLIA	Jaiprakashnagar	0.0556			0.0606

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
12	BALLIA	Kharsanda	0.2028		0.0664	
13	BALLIA	Kureji	0.1021			0.1268
14	BALLIA	Manihar	0.0441			0.0322
15	BALLIA	Narla	0.1991		0.0625	
16	BALLIA	Nasirabad		0.0684	0.0296	
17	BALLIA	Pur		0.0171		0.0118
18	BALLIA	Rasra		0.2598		0.8527
19	BALLIA	Ubhavan	0.1346			0.1166
1	BALRAMPUR	Bankatwa	0.1091			0.2342
2	BALRAMPUR	Chandanpur		0.0054	0.0695	
3	BALRAMPUR	Deoria1	0.0090			0.0413
4	BALRAMPUR	Gainsari	0.0824			0.0382
5	BALRAMPUR	Gangnar	0.0480			0.0254
6	BALRAMPUR	Gaura crossing	0.0072			0.1511
7	BALRAMPUR	Harriaya bazar		0.0293		0.1517
8	BALRAMPUR	Jarwa	0.3941		0.1047	
9	BALRAMPUR	Pachperwa	0.1665		0.0713	
10	BALRAMPUR	Semri1		0.0488		0.1775
11	BALRAMPUR	Sipahia village		0.0079		0.0499
12	BALRAMPUR	Sonpur	0.0294			0.0295
13	BALRAMPUR	Sridutganj1		0.0154		0.0604
14	BALRAMPUR	Utraula	0.0431			0.0776
1	BANDA	Aliha	0.1735		0.0318	
2	BANDA	Atarra	0.0273			0.0191
3	BANDA	Baberu1	0.1561		0.2869	
4	BANDA	Badausa	0.6000		0.6207	
5	BANDA	Badehan		1.0249		0.1682
6	BANDA	Banda	0.5072			0.0529
7	BANDA	Bargaini	0.0934		0.0428	
8	BANDA	Chilla			0.1125	
9	BANDA	Girwan	0.0393			0.0434
10	BANDA	Jamnipurwa	0.1856			0.0211
11	BANDA	Khhurand	0.5865		0.2315	
12	BANDA	Mataundh	0.1840			0.0369
13	BANDA	Pailani	0.1736		0.0306	
14	BANDA	Pangara	0.5066		0.0990	
15	BANDA	Roli kalyanpur	0.5116			0.0120
16	BANDA	Sukulkuan		0.2190	0.2061	
1	BARABANKI	Baba ki kuti		0.1078		0.2339

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
2	BARABANKI	Barabanki(New)		0.0516	0.2191	
3	BARABANKI	Bariu bagh		0.0564	0.0046	
4	BARABANKI	Bhanmau		0.0898		0.1195
5	BARABANKI	Bhiwal	0.2026		0.0431	
6	BARABANKI	Chaubisi		0.0800		0.1517
7	BARABANKI	Daryabad		0.0137		0.1478
8	BARABANKI	Datauli chanda		0.0987		0.0350
9	BARABANKI	Dewa		0.0787		0.0027
10	BARABANKI	Fatehpur (new)		0.0133		0.0100
11	BARABANKI	Gutauna	0.0409		0.0160	
12	BARABANKI	Kabulpur			0.0168	
13	BARABANKI	Kaisarganj	0.2289		0.2604	
14	BARABANKI	Kalkeshwar temp	0.0230		0.0266	
15	BARABANKI	Kitlupur	0.0333			0.0177
16	BARABANKI	Kotwa sarai	0.0112			0.1075
17	BARABANKI	Masauli chaurah		0.0344	0.0031	
18	BARABANKI	Purwa amarsingh		0.0269		0.0886
19	BARABANKI	Ramnagar	0.0283			0.0107
20	BARABANKI	Rani katra	0.0369			0.0587
21	BARABANKI	Rasauli		0.0167		0.1024
22	BARABANKI	Rudauli1	0.0166			
23	BARABANKI	Sarai barai		0.2130		0.1477
24	BARABANKI	Sidhaur	0.1229		0.1091	
25	BARABANKI	Subeha	0.0928			0.0559
26	BARABANKI	Sundhia mau	0.0033			0.0494
27	BARABANKI	Tikaitnagar				0.0865
28	BARABANKI	Trivediganj		0.0902		0.1909
1	BAREILLY	Aliganj		0.0484		0.1368
2	BAREILLY	Aonla		0.2342		0.4901
3	BAREILLY	Bareilly1		0.0053		0.0573
4	BAREILLY	Bhuta		0.0953		0.2008
5	BAREILLY	Dhaneli purwi		0.0555		0.0186
6	BAREILLY	Faridpur1	0.0429			
7	BAREILLY	Nawabganj1		0.0670		0.0999
8	BAREILLY	Shishgarh		0.0092		0.0624
1	BASTI	Basti	0.1116		0.0926	
2	BASTI	Bhanpur	0.2058		0.0484	
3	BASTI	Bhikamjot		0.0492		0.0631
4	BASTI	Captainganj1	0.0139			0.0608

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
5	BASTI	Haraiya	0.1317		0.0185	
6	BASTI	Jagdishpur	0.0188			0.1085
7	BASTI	Kalwari	0.0078			0.0493
8	BASTI	Kharauan jat		0.0140	0.0203	
9	BASTI	Mathauli1	0.0383			0.0439
10	BASTI	Rudauli	0.0092		0.0005	
1	BIJNOR	Chandok	0.0886			0.1028
2	BIJNOR	Dhampur	0.0300		0.2446	
3	BIJNOR	Kaziwala	0.0540			0.0487
4	BIJNOR	Milak Beniram	0.0208			0.0440
5	BIJNOR	Najibabad New	0.4775		0.1644	
6	BIJNOR	Puraini	0.2239			
7	BIJNOR	Sarakthal	0.0214			0.0348
8	BIJNOR	Shahzadpur Or Nagal				0.4320
9	BIJNOR	Sneh Rd.rly.stn.	0.1189		0.0968	
10	BIJNOR	Swaheri Khurd	0.3298		0.0263	
1	BUDAUN	Dudhauni	0.0067			
2	BUDAUN	Gunnaur1		0.0039		0.1077
3	BUDAUN	Kachla	0.0063			0.0017
4	BUDAUN	Parhali bajhara		0.0542		0.0938
5	BUDAUN	Pupupur		0.1650		0.4537
1	BULANDSHAHR	Bara ferozpur				0.4117
2	BULANDSHAHR	Batli		0.3530		0.3526
3	BULANDSHAHR	Gulauthi		0.1797		0.1571
4	BULANDSHAHR	Jargawan		0.0744		0.3136
5	BULANDSHAHR	Khurja Pz		0.1943		
6	BULANDSHAHR	Lakhaothi Pz		0.1994		0.4516
7	BULANDSHAHR	Nandpur	0.1030			0.1143
8	BULANDSHAHR	Sikandrabad 1		0.0333		0.1407
9	BULANDSHAHR	Ugrasan nagla		0.2080	0.0380	
1	CHANDAULI	Baburi		0.0183	0.2327	
2	CHANDAULI	Chahania	0.3165		0.2202	
3	CHANDAULI	Chakia	0.1874			0.0963
4	CHANDAULI	Chandauli		0.0754		0.0388
5	CHANDAULI	Dhanpur	0.0434			0.0707
6	CHANDAULI	Kamalpur		0.0473		0.0603
7	CHANDAULI	Marufpur xing		0.2581		0.2387
8	CHANDAULI	Mugal sarai	0.4057		0.0560	
9	CHANDAULI	Sakaldiha		0.1541		0.0170

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
1	CHITRAKOOT	Bhaunri	0.2210		0.5040	
2	CHITRAKOOT	Chakrajafar	0.3150			0.4128
3	CHITRAKOOT	Chiwalaha	0.2251		0.6147	
4	CHITRAKOOT	Deval	0.5204		0.7587	
5	CHITRAKOOT	Harison pura	0.0653		0.2069	
6	CHITRAKOOT	Jorwara		0.2042		0.2406
7	CHITRAKOOT	Karwi	0.1641		0.2099	
8	CHITRAKOOT	Manikpur	0.4457		0.5081	
9	CHITRAKOOT	Mau		0.0495	0.2883	
10	CHITRAKOOT	Raipura		0.0326		0.0080
1	DEORIA	Baitalpur	0.2101		0.0153	
2	DEORIA	Deoria2	0.0215			0.0501
3	DEORIA	Desai deoria	0.0167		0.0601	
4	DEORIA	Gauri bazar	0.0833			0.0447
5	DEORIA	Lar road	0.0648			0.0266
6	DEORIA	Pathardewa (Narayanpur Kothi)		0.0154		0.0775
7	DEORIA	Rampur garh	0.0747		0.0372	
8	DEORIA	Ratasia kothi	0.1228			0.1157
9	DEORIA	Rudrapur1	0.0886			0.2723
10	DEORIA	Sirsia		0.0784	0.0309	
1	ETAH	Awagarh1			0.5184	
2	ETAH	Bhagwala1	0.0006			0.1264
3	ETAH	Daryaganj		0.0369		0.2843
4	ETAH	Jaisukhpur	0.0389			0.0958
5	ETAH	Locha	0.3265		0.1432	
6	ETAH	Sakit (new)		0.0262		0.0782
1	ETAWAH	Bakewar	0.0791			0.2219
2	ETAWAH	Barecha	0.0395		0.1423	
3	ETAWAH	Bharthana2		0.2855		0.2130
1	FAIZABAD	Bakarganj		0.0680		0.0658
2	FAIZABAD	Chaure bazar	0.0784			0.3979
3	FAIZABAD	Madhopur		0.2022		0.4675
4	FAIZABAD	Meethagaon		0.0199	0.0034	
5	FAIZABAD	Milkipur	0.0453		0.0211	
6	FAIZABAD	Naokua		0.0931		0.0171
7	FAIZABAD	Sakhupura		0.1371		0.2033
1	FARRUKHABAD	Kaimganj2		0.1046		0.2152
2	FARRUKHABAD	Kampil		0.0333		0.0867

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
3	FARRUKHABAD	Rajepur	0.0392			0.1326
1	FATEHPUR	Asother	0.2372		0.3019	
2	FATEHPUR	Bahua	0.1259		0.2236	
3	FATEHPUR	Barwa	0.3944		0.1365	
4	FATEHPUR	Bela	0.1215		0.2566	
5	FATEHPUR	Bindki1	0.1367			0.0555
6	FATEHPUR	Deori(choti)	0.3974			0.1451
7	FATEHPUR	Fatehpur2		0.1109		0.0854
8	FATEHPUR	Jahanabad				0.6045
9	FATEHPUR	Lalauli	0.2061		0.5061	
10	FATEHPUR	Musfha	0.8213			0.1238
11	FATEHPUR	Naubasta	0.1451		0.6349	
12	FATEHPUR	Ramapur	0.0101		0.3269	
13	FATEHPUR	Sarain bakewar	0.0590		0.0372	
14	FATEHPUR	Umradipur	0.2107		0.3833	
1	FIROZABAD	Bhura Ka Pul		0.5777		0.5263
2	FIROZABAD	Kusiari	0.0434		0.0454	
3	FIROZABAD	Mustafabad	0.1975		0.1960	
1	GAUTAM BUDDHA NAGAR	Dhankaur	0.2140		0.0059	
2	GAUTAM BUDDHA NAGAR	Jewar- Pz				0.5838
3	GAUTAM BUDDHA NAGAR	Jewar(new)		0.1962		0.2819
4	GAUTAM BUDDHA NAGAR	Sector- 62 A Pz				2.3123
5	GAUTAM BUDDHA NAGAR	Sector-72 Pz		1.7124		1.9592
6	GAUTAM BUDDHA NAGAR	Sector-92 Pz		0.4138		0.5143
1	GHAZIABAD	Abdullahpur mandi-II-Pz		0.1595		0.1440
2	GHAZIABAD	Azad Nagar-Pz		0.3666		0.3715
3	GHAZIABAD	Badauli-Hapur-Pz		0.3972		0.3328
4	GHAZIABAD	Bhojpur-Pz		0.0986		0.1375
5	GHAZIABAD	Charauri-Pz		0.3977		0.5129
6	GHAZIABAD	Dhaulana-Pz		0.1395	0.0983	
7	GHAZIABAD	Garhmukteshwar-Pz		0.0021		0.1070
8	GHAZIABAD	Hafizpur-Hapur Pz				0.5815

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
9	GHAZIABAD	Hapur-Pz		0.3376		0.3808
10	GHAZIABAD	Modi Nagar-Pz I		0.0800		0.0738
11	GHAZIABAD	Modi Nagar-Pz II		0.0526		0.1539
12	GHAZIABAD	Muradnagar	0.1088		0.2100	
13	GHAZIABAD	Neknampur Nanai -Pz		0.2884		
14	GHAZIABAD	Pilkuha-Pz		0.1215		0.1432
15	GHAZIABAD	Upheda-Pz		0.2086		0.2024
1	GHAZIPUR	Ajaipur		0.2903		0.4809
2	GHAZIPUR	Baresar	0.1615		0.1076	
3	GHAZIPUR	Bhadaura		0.0370	0.0432	
4	GHAZIPUR	Birnon			0.1315	
5	GHAZIPUR	Deoria		0.0434		0.0849
6	GHAZIPUR	Dildar nagar		0.0056		0.1785
7	GHAZIPUR	Gahmar	0.0587			0.0123
8	GHAZIPUR	Karimuddinpur	0.1277			0.1017
9	GHAZIPUR	Kasimabad		0.3964		0.6334
10	GHAZIPUR	Kathgarha		0.2854		0.3309
11	GHAZIPUR	Mainpur	0.1400			
12	GHAZIPUR	Manihari		0.2430		0.0937
13	GHAZIPUR	Mohammadabad2		0.1243		0.2075
14	GHAZIPUR	Nandganj		0.3955		0.6528
15	GHAZIPUR	Orulari		0.0584		0.0798
16	GHAZIPUR	Pyrepur		0.0203		0.1806
17	GHAZIPUR	Reotipur		0.6407		
18	GHAZIPUR	Sadikapur	0.0130			0.0507
19	GHAZIPUR	Saidpur				0.6215
20	GHAZIPUR	Sidhagarghat		0.2464		
1	GONDA	Baleshwar ganj	0.0093			0.0323
2	GONDA	Bhauriganj	0.0072		0.0077	
3	GONDA	Birpur katra		0.0131		0.0238
4	GONDA	Chapiya	0.1656			0.0410
5	GONDA	Colonelganj		0.0434		0.0263
6	GONDA	Mankapur	0.0432			0.0091
7	GONDA	Parsa gondri	0.0345		0.0490	
8	GONDA	Umri begamganj		0.0505		0.0427
1	GORAKHPUR	Jagdishpur1	0.2390			0.0066
2	GORAKHPUR	Kauriram	0.0250			0.1030
3	GORAKHPUR	Ramgarh			0.0451	
4	GORAKHPUR	Rampur		0.0150		0.1783

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
5	GORAKHPUR	Urwabazar	0.1213			0.0020
1	HAMIRPUR	Bewar		0.2373		0.1094
2	HAMIRPUR	Dhagwan	1.8476		1.6122	
3	HAMIRPUR	Jalalpur		2.0787		1.8325
4	HAMIRPUR	Kapsa	0.7239		0.8139	
5	HAMIRPUR	Khanna	0.2907		0.2842	
6	HAMIRPUR	Kharela	0.4143			
7	HAMIRPUR	Kunetha	0.3653		0.4615	
8	HAMIRPUR	Kurara	0.0918		0.2438	
9	HAMIRPUR	Lalpura	0.1865		0.3265	
10	HAMIRPUR	Maudaha		0.2320		0.0417
11	HAMIRPUR	Rath	0.7995		0.3708	
12	HAMIRPUR	Terha	0.0121			
1	HARDOI	Atrauli1	0.0050			0.1116
2	HARDOI	Barganwar		0.1602		0.2318
3	HARDOI	Bhadaial		0.1224		0.0517
4	HARDOI	Dalel nagar rly		0.1858		0.2972
5	HARDOI	Del panderwa		0.1815		0.1278
6	HARDOI	Dhobia	0.0278			0.0574
7	HARDOI	Gangau		0.2660		0.1137
8	HARDOI	Gokul behta		0.0654		0.1263
9	HARDOI	Gopamau		0.0706		0.1806
10	HARDOI	Kachauna		0.0940		0.1451
11	HARDOI	Mallawan	0.2840		0.2316	
12	HARDOI	Manjila		0.0231		0.0578
13	HARDOI	Marhia		0.1773		0.2710
14	HARDOI	Mohammadpur		0.1653		0.4108
15	HARDOI	Pali		0.0024		0.0768
16	HARDOI	Panch deora				0.0272
17	HARDOI	Pihani		0.1330		0.2271
18	HARDOI	Quasimpur		0.0570		0.0480
19	HARDOI	Rasulpur		0.1086		0.0727
20	HARDOI	Sahabadpur		0.1254		0.1790
21	HARDOI	Sandila	0.0384			0.2061
21	HARDOI	Shahabad2	0.0935			
1	HATHRAS	Agsauli		0.3626		0.5856
2	HATHRAS	Bhatikra		0.1005		0.0719
3	HATHRAS	Hasyan			0.1625	
4	HATHRAS	Hathras jn.		0.3438		0.3447

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
5	HATHRAS	Hathras(New)	0.0171			0.5135
6	HATHRAS	Iglas		0.2446		0.1219
7	HATHRAS	Mitai		0.4352		0.5669
8	HATHRAS	Mursan		0.7809		0.8751
9	HATHRAS	Purdil Nagar	0.0073			0.1295
10	HATHRAS	Rattika nagla	0.0067			0.0404
11	HATHRAS	Thulai	0.0768		0.2133	
1	JALAUN	Ata		0.0268		0.3105
2	JALAUN	Babina-New		0.0109		0.0856
3	JALAUN	Chhota Rampur	0.0567			2.2824
4	JALAUN	Churkhi	0.3223		0.3258	
5	JALAUN	Damras	0.1298			0.0738
6	JALAUN	Dekor	0.4721		0.5269	
7	JALAUN	Gohan	0.2174			0.0418
8	JALAUN	Gopalpura1	0.5604		0.4122	
9	JALAUN	Hadrukh	0.3150		0.1951	
10	JALAUN	Itaura		0.0879	0.0010	
11	JALAUN	Jagmanpur	0.1127		0.0277	
12	JALAUN	Jalaun	0.3438		0.1508	
13	JALAUN	Kailaiya	0.1141			0.0558
14	JALAUN	Kalpi		0.2180		0.3337
15	JALAUN	Kanasi	0.4417		0.2119	
16	JALAUN	Keolari-New	0.6677		0.1714	
17	JALAUN	Kishora mauza	0.1073		0.0347	
18	JALAUN	Konch(New)	0.6286		0.0060	
19	JALAUN	Mahewa		0.0812		0.2465
20	JALAUN	Musaria		0.0774		0.3002
21	JALAUN	Orai	0.0166			0.1439
22	JALAUN	Rajpura	0.0584			0.0617
1	JAUNPUR	Bandhwa	0.0325		0.1380	
2	JAUNPUR	Barai par			0.3908	
3	JAUNPUR	Chandwak		0.0092		0.0839
4	JAUNPUR	Dhiuraha	0.2271		0.0308	
5	JAUNPUR	Hasanpur			0.1014	
6	JAUNPUR	Honipur	0.1423		0.3915	
7	JAUNPUR	Itaili (muftiganj)		0.1319	0.2616	
8	JAUNPUR	Janghai	0.0873		0.0324	
9	JAUNPUR	Kheta sarai1	0.1015		0.2355	
10	JAUNPUR	Machhalishahr		0.1156		0.0428

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
11	JAUNPUR	Maharajganj2	0.3578		0.1564	
12	JAUNPUR	Maheshganj	0.2233			
13	JAUNPUR	Marihun		0.1017		0.0973
14	JAUNPUR	Mehreon1	0.2140		0.0860	
15	JAUNPUR	Mungra Badshahpur	0.1811		0.3235	
16	JAUNPUR	Narar(jamnipur)	0.2730		0.1638	
17	JAUNPUR	Pisara	0.1359		0.0708	
18	JAUNPUR	Raja bazar	0.3870		0.2989	
19	JAUNPUR	Rampur1		0.1454		0.0929
20	JAUNPUR	Sarpatha		0.3210		0.1581
21	JAUNPUR	Shahganj1		0.0067		0.0603
22	JAUNPUR	Sigra mau	0.0530		0.1299	
23	JAUNPUR	Tarti				0.7617
1	JHANSI	Ajneri Madhopura	0.2934		0.1301	
2	JHANSI	Auldan-New	0.1000			
3	JHANSI	Babina1	0.2560		0.2369	
4	JHANSI	Barua sagar	0.6673		0.8254	
5	JHANSI	Eairach		0.1682		0.2153
6	JHANSI	Farida	0.1108			0.0755
7	JHANSI	Jhansi1	0.2267		0.2053	
8	JHANSI	Khailara	0.2533		0.0353	
9	JHANSI	Mauranipur Rajpaharia			0.6784	
10	JHANSI	Moth	0.1586			0.0148
11	JHANSI	Punch	0.1828		0.0719	
12	JHANSI	Raksa	0.3993		0.2633	
13	JHANSI	Rewan	0.6130		0.4305	
14	JHANSI	Samthar	0.2530		0.0187	
15	JHANSI	Semri	0.1711		0.1738	
1	JYOTIBA PHULE NAGAR	Amroha Pz CGWB	0.0349			0.2084
2	JYOTIBA PHULE NAGAR	Dhanaura Pz CGWB		0.2211		0.2763
1	KANNAUJ	Gurshaiganj1		0.1994		0.2550
2	KANNAUJ	Harharpur			0.5764	
3	KANNAUJ	Indergarh		0.0294		0.0869
4	KANNAUJ	Kannauj1		0.1335		0.0594
5	KANNAUJ	Ram ashram	0.0409			0.0680
6	KANNAUJ	Tirwaganj		0.2983		0.3781
1	KANPUR DEHAT	Akbarpur		0.1875		0.3444

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
2	KANPUR DEHAT	Baghpur	0.0728		0.0259	
3	KANPUR DEHAT	Jaunra		0.1535		0.0177
4	KANPUR DEHAT	Kainjari	0.0455			0.0097
5	KANPUR DEHAT	Muhammadpur		0.5111		0.5206
6	KANPUR DEHAT	Roura		0.1842		0.2755
7	KANPUR DEHAT	Shahjahanpur		0.0979		0.2151
1	KANPUR NAGAR	Bidhnu	0.2679		0.1733	
2	KANPUR NAGAR	Bithoor-Nganj	0.1484			0.0777
3	KANPUR NAGAR	Chaubepur1		0.1134	0.0184	
4	KANPUR NAGAR	Motipura		0.2898		
5	KANPUR NAGAR	Narmau(new)		0.1504		0.3772
6	KANPUR NAGAR	Niwada dhamni	0.0683			0.1546
7	KANPUR NAGAR	Patara		0.3828		0.4936
8	KANPUR NAGAR	Sachendi	0.0952		0.1207	
9	KANPUR NAGAR	Sarh	0.0845		0.0135	
10	KANPUR NAGAR	Sheoli			0.4447	
1	KAUSHAMBI	Kailashpuri	0.2705			0.1243
2	KAUSHAMBI	Kushambhi	0.1964		0.1665	
3	KAUSHAMBI	Lehdari	0.1018		0.0027	
4	KAUSHAMBI	Mahgaon	0.1402			
5	KAUSHAMBI	Mandari	0.4774		0.8293	
6	KAUSHAMBI	Perai	0.1678			
7	KAUSHAMBI	Sallahpur		0.1325		0.2809
8	KAUSHAMBI	Sarai akil	0.0797			0.2555
9	KAUSHAMBI	Usargaura	0.1396			0.0689
1	KHERI	Asogapur		0.1186		0.1488
2	KHERI	Behjam			0.9899	
3	KHERI	Chamlapur		0.1699		0.0036
4	KHERI	Chandan chowki	0.0324		0.0073	
5	KHERI	Chauapur		0.0927		0.0375
6	KHERI	Dharmapur		0.1026		0.2872
7	KHERI	Dudhwa f.r.h.		0.0529		0.0383
8	KHERI	Gomti_east bank		0.0420		
9	KHERI	Gularia		0.1084		0.3525
10	KHERI	Khajanchi purwa			0.0853	
11	KHERI	Mailani		0.0843		0.1700
1	KUSHINAGAR	Belwa		0.3266	0.0338	
2	KUSHINAGAR	Bisunpura		0.0112	0.0230	
3	KUSHINAGAR	Captanganj1	0.2012		0.1309	

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
4	KUSHINAGAR	Chittauni	0.0834		0.0531	
5	KUSHINAGAR	Fazil nagar		0.0739		0.1269
6	KUSHINAGAR	Kasia1		0.0714	0.0437	
7	KUSHINAGAR	Khadda		0.0442	0.0486	
8	KUSHINAGAR	Mansurganj	0.0600			0.0014
9	KUSHINAGAR	Mathauli	0.0298		0.0699	
10	KUSHINAGAR	Naurangia	0.0069		0.0151	
11	KUSHINAGAR	Rambar	0.1089		0.0957	
1	LALITPUR	Amjhara ghati	0.4672		0.0947	
2	LALITPUR	Bansi	0.2724		0.1659	
3	LALITPUR	Digwar	0.2523		0.0412	
4	LALITPUR	Hisar kalan	0.0524			0.0173
5	LALITPUR	Jakhlaun	0.0476			0.0621
6	LALITPUR	Khitwans	0.1809		0.0237	
7	LALITPUR	Lalitpur	0.4013		0.0094	
8	LALITPUR	Talbhet-New		0.0706	0.0299	
9	LALITPUR	Udaipura	0.1170		0.2505	
1	LUCKNOW	Aat Garhi Sonra	0.0527			0.1733
2	LUCKNOW	Arjunganj	0.0740			0.1352
3	LUCKNOW	Arya Nagar	0.3187		0.2230	
4	LUCKNOW	Bakshi ka talab		0.0093		0.1860
5	LUCKNOW	Bakshi Ka Talab		0.0519		0.3550
6	LUCKNOW	Bani1	0.1122		0.1125	
7	LUCKNOW	Behta Bazar	0.0591			0.3934
8	LUCKNOW	Bhatoiya	0.3822		0.2111	
9	LUCKNOW	Bhujal Bhawan		0.4819		0.3648
10	LUCKNOW	Bijnor	0.0249			0.2224
11	LUCKNOW	CAMPBELL ROAD	0.2176		0.3516	
12	LUCKNOW	Cantt		0.5746		0.5872
13	LUCKNOW	Dilkusha	1.4080			
14	LUCKNOW	Fatehganj	0.1501			0.0908
15	LUCKNOW	Gangaganj	0.3132			
16	LUCKNOW	Gopamau	0.1097			0.1842
17	LUCKNOW	Gosaiganj1		0.0872		0.0690
18	LUCKNOW	Gulistan Colony		0.4984		0.5184
19	LUCKNOW	Itaunja		0.0121		0.3569
20	LUCKNOW	ITAUNJA		0.1894		0.4374
21	LUCKNOW	Kathwara		0.1731		0.1287
22	LUCKNOW	Khawas khera		0.1764		0.0410

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
23	LUCKNOW	Kumrahawan		0.0090		0.4784
24	LUCKNOW	Lu New Campus		0.2046		0.5082
25	LUCKNOW	Lu Old Campus		0.4181		0.5927
26	LUCKNOW	Mahanagar H Park		0.5339		0.6430
27	LUCKNOW	Mal	0.1942			0.1611
28	LUCKNOW	MALIHABAD	0.5563		0.1041	
29	LUCKNOW	Mohanlalganj	0.0564			0.0392
30	LUCKNOW	Mohanlalganj	0.2097			0.1457
31	LUCKNOW	Munshiganj		0.0718		0.0220
32	LUCKNOW	Nagram		0.1740		0.0827
33	LUCKNOW	Narhi		0.7767		
34	LUCKNOW	New Hyderabad		0.8622		1.1013
35	LUCKNOW	Nigohan1	0.1651		0.1959	
36	LUCKNOW	RAHIMABAD	0.0629			0.0955
37	LUCKNOW	Rajajipuram		0.2835		
38	LUCKNOW	Rakabganj Crossing	0.0768			0.2091
39	LUCKNOW	Rehman Khera	0.1194		0.2802	
40	LUCKNOW	Rehmat Nagar		0.0111		0.0250
41	LUCKNOW	Rehta	0.6605			0.4054
42	LUCKNOW	River Bank Colony		0.3974		0.5940
43	LUCKNOW	Sarojininagar	0.0316			0.2190
44	LUCKNOW	Sisandi1		0.0060	0.0927	
45	LUCKNOW	Tejkishan Khera	0.2969			
46	LUCKNOW	Vikasnagar		0.7278		0.9448
1	MAHOBA	Bela tal	0.2959		0.3219	
2	MAHOBA	Charkhari	0.2191		0.3268	
3	MAHOBA	Kashipura	0.2186		0.1954	
4	MAHOBA	Kulpahar1	0.2471		0.2251	
5	MAHOBA	Kulpahar2		0.0633	0.0435	
6	MAHOBA	Pipramauf	0.2897		0.3029	
7	MAHOBA	Srinagar	0.6091		0.3010	
8	MAHOBA	Teiya1	0.7353		0.7676	
1	MAHRAJGANJ	Campierganj	0.0217		0.0137	
2	MAHRAJGANJ	Ghughali	0.0059			0.1089
3	MAHRAJGANJ	Koluhi	0.2238			0.0854
4	MAHRAJGANJ	Kukesar	0.0799			0.0002
5	MAHRAJGANJ	Maharajganj2	0.2589		0.1653	
6	MAHRAJGANJ	Partawal	0.0828		0.3770	
7	MAHRAJGANJ	Siswa bazar		0.0793		0.1617

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
8	MAHRAJGANJ	Thakulwa		0.3757	0.1099	
1	MAINPURI	Ghirore		0.0888		0.0443
2	MAINPURI	Katra Saman		0.0728		0.0572
3	MAINPURI	Madhan		0.1833		
4	MAINPURI	Majhaula	0.0996			0.0637
5	MAINPURI	Nagal bhujia	0.0657		0.0235	
6	MAINPURI	Nagla rampichha				0.0256
1	MATHURA	Baldeo	0.2032		0.3665	
2	MATHURA	Barsana		0.1857		0.3865
3	MATHURA	Chhata New		0.0839		0.0015
4	MATHURA	Jachoda	0.0695		0.0225	
5	MATHURA	Jhinga nagla	0.1346		0.0473	
6	MATHURA	Kosi	0.1512		0.0166	
7	MATHURA	Mat	0.0728			0.0000
8	MATHURA	Nagra Chhitar Singh	0.0075			0.0316
9	MATHURA	Paintha (Govardhan)	0.2929		0.1546	
10	MATHURA	Sahar1		0.0458	0.0163	
11	MATHURA	Saunkh	0.2860		0.1850	
12	MATHURA	Surir (new)	0.2024		0.0674	
13	MATHURA	Vridavan	0.1046		0.3280	
1	MAU	Amila		0.0463		0.0522
2	MAU	Dhorighat	0.1280			0.0899
3	MAU	Ghinahapur		0.1951		0.0927
4	MAU	Ghosi	0.0040			0.0012
5	MAU	Jejawali		0.0641		0.0182
6	MAU	Kamal sagar				0.1795
7	MAU	Kapaganj				0.5342
8	MAU	Kora-uli				0.0366
9	MAU	Paharipur				0.0597
1	MEERUT	Chota Mawana Pz				0.2287
2	MEERUT	Hastinapur 1	0.0132		0.0134	
3	MEERUT	Kaili Pz		0.3624		0.2729
4	MEERUT	Machhara Shallowpz		0.5722		0.4861
5	MEERUT	Meerut Pz		0.5441		0.6170
6	MEERUT	Parikshat Garh Pz		0.3550		0.4039
7	MEERUT	Shatabdi Nagar (SHALLOW)PZ		0.4763		0.5564
1	MIRZAPUR	Adalhat	0.0195			0.1940
2	MIRZAPUR	Ahraura	0.1428			0.0434

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
3	MIRZAPUR	Baghura		0.2540		0.1501
4	MIRZAPUR	Barhanchuan	0.0517			0.1314
5	MIRZAPUR	Barhpura1				0.5981
6	MIRZAPUR	Chunar	0.8336		1.3518	
7	MIRZAPUR	Gaipura	0.1967		0.3388	
8	MIRZAPUR	Gopalpur		0.2689		0.1256
9	MIRZAPUR	Halia	0.1759			0.0498
10	MIRZAPUR	Kalwari	0.3503			0.3752
11	MIRZAPUR	Kunabimar	0.5050		0.3325	
12	MIRZAPUR	Lalganj	0.7537		0.0240	
13	MIRZAPUR	Lohangpur	0.2822		0.0958	
14	MIRZAPUR	Marihan			0.2370	
15	MIRZAPUR	Mirzapur		0.1117		0.1656
16	MIRZAPUR	Purjagir		0.4681		0.0065
1	MORADABAD	Chandausi-PZ				0.4953
2	MORADABAD	Fauladpur	0.0778			0.0916
3	MORADABAD	Mundha pande	0.3534			0.2672
4	MORADABAD	Painapur	0.0143		0.2618	
5	MORADABAD	Sahapura Sirpura-Pz				0.6249
6	MORADABAD	Thakurdwara		0.0066	0.1795	
1	MUZAFFARNAGAR	Baghra		0.3993		0.3886
2	MUZAFFARNAGAR	Baghra Pz		0.5443		0.4151
3	MUZAFFARNAGAR	Barla		0.2072		0.2323
4	MUZAFFARNAGAR	Chartawal		0.0582		0.1429
5	MUZAFFARNAGAR	Chartawal Pz		0.1999		0.2470
6	MUZAFFARNAGAR	Jansath2				0.2017
7	MUZAFFARNAGAR	Kairana Pz		0.2650		
8	MUZAFFARNAGAR	Kamalpur Pz		0.1552		
9	MUZAFFARNAGAR	Kukra-Sadar Pz		0.3506		0.4365
10	MUZAFFARNAGAR	Morna Pz		0.1864		0.6663
11	MUZAFFARNAGAR	Sukratal		0.0114	0.0378	
12	MUZAFFARNAGAR	Thana Bhawan Pz			0.1002	
13	MUZAFFARNAGAR	Un Pz		0.3548		0.6581
1	PILIBHIT	Baldeopur	0.0110			0.1108
2	PILIBHIT	Bargad chauraha		0.0259		0.0563
3	PILIBHIT	Bhamora		0.0464		0.0913
4	PILIBHIT	Faradia		0.0931		0.1686
5	PILIBHIT	Gajraula1		0.0796		0.0537
6	PILIBHIT	Jahanabad1		0.1412		0.1518

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
7	PILIBHIT	Jeora kalyanpur		0.1032		0.1619
1	PRATAPGARH	Arjunpur	0.1444		0.0105	
2	PRATAPGARH	Ateha	0.1993		0.0106	
3	PRATAPGARH	Bhusar	0.3178		0.1512	
4	PRATAPGARH	Bishahia	0.0770		0.0074	
5	PRATAPGARH	Delhupur	0.1249			0.0531
6	PRATAPGARH	Dih balri	0.2450		0.0784	
7	PRATAPGARH	Gaura	0.2280			
8	PRATAPGARH	Gorai1	0.2348			0.0139
9	PRATAPGARH	Gutni	0.2069		0.0817	
10	PRATAPGARH	Jamtoli	0.1380		0.0517	
11	PRATAPGARH	Jathwara		0.0237		0.1560
12	PRATAPGARH	Kohdaur	0.0703			0.1504
13	PRATAPGARH	Kunda		0.0231		0.1075
14	PRATAPGARH	Lalganj2	0.1547			0.1372
15	PRATAPGARH	Lalgopalganj	0.2223		0.0328	
16	PRATAPGARH	Maddupur	0.0050		0.1763	
17	PRATAPGARH	Mandhata		0.0755		0.1921
18	PRATAPGARH	Mohanganj	0.2832			0.0779
19	PRATAPGARH	Nanasukul purwa	0.1875		0.1305	
20	PRATAPGARH	Rampur batauli	0.1137			0.4075
21	PRATAPGARH	Raniganj	0.2601		0.1012	
22	PRATAPGARH	Sangipur	0.4119		0.7759	
23	PRATAPGARH	Sangramgarh	0.1425		0.0957	
24	PRATAPGARH	Udai shahpur	0.3098			
25	PRATAPGARH	Vishvanath ganj	0.1027			0.0726
1	RAE BARELI	Ahraura bhawani		0.0375		0.0647
2	RAE BARELI	Bhagwantnagar		0.3061		
3	RAE BARELI	Bhawanigarh	0.0103			0.0470
4	RAE BARELI	Chauraha dusti	0.1780		0.0038	
5	RAE BARELI	Cheek daadar	0.2476		0.4513	
6	RAE BARELI	Dalmau	0.0780			
7	RAE BARELI	Dhonda ka purwa	0.1406		0.3753	
8	RAE BARELI	Dih		0.0459		
9	RAE BARELI	Fursatganj	0.1738			0.0023
10	RAE BARELI	Gopalipur	0.2299		0.3733	
11	RAE BARELI	Harchandpur	0.3310		0.3585	
12	RAE BARELI	Inchauli1	0.1462		0.4269	
13	RAE BARELI	Jagatpur	0.1086			0.0047

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
14	RAE BARELI	Jais	0.4192		0.2572	
15	RAE BARELI	Kachunda		0.0243		0.0487
16	RAE BARELI	Katghar	0.1161		0.1464	
17	RAE BARELI	Koni		0.1890		
18	RAE BARELI	Kumbhi ka purwa		0.0191		0.0203
19	RAE BARELI	Laxmanganjbazar	0.3825		0.4548	
20	RAE BARELI	Matrwa	0.0933		0.0402	
21	RAE BARELI	Mau garbi	0.2719		0.0474	
22	RAE BARELI	Mazzamganj ngr	0.1636		0.0555	
23	RAE BARELI	Mohanganj1	0.2717			0.0903
24	RAE BARELI	Nigohan1	0.1387			0.0200
25	RAE BARELI	Rae bareli		0.1045	0.0352	
26	RAE BARELI	Raja Fatehpur-New	0.0665		0.0424	
27	RAE BARELI	Rani khera		0.0318		
28	RAE BARELI	Rawalpur	0.0906			
29	RAE BARELI	Salon	0.2557		0.3100	
30	RAE BARELI	Shivratan ganj		0.0189		
31	RAE BARELI	Simrauta	0.0609		0.0710	
32	RAE BARELI	Simrauta(ii)	0.0087			0.0250
33	RAE BARELI	Suchi	0.0010		0.1178	
1	RAMPUR	Tanda	0.0011			0.0115
2	RAMPUR	Thunapur				0.0475
1	SAHARANPUR	Babail Buzurg	0.2390		0.3537	
2	SAHARANPUR	Bagh colony	0.0728			0.0583
3	SAHARANPUR	Mohand	0.0378		0.0537	
4	SAHARANPUR	Shakhambari	0.0075		0.2266	
5	SAHARANPUR	Sunderpur1	0.0868		0.1641	
1	SANT KABIR NAGAR	Dhanghata	0.0079			0.0960
2	SANT KABIR NAGAR	Khalilabad	0.0349			0.0947
3	SANT KABIR NAGAR	Maidawal		0.0026		0.0671
4	SANT KABIR NAGAR	Nathnagar	0.0478			0.0001
5	SANT KABIR NAGAR	Pipra first			0.2141	
1	SANT RAVIDAS NAGAR	Aurai		0.1904		0.2040
2	SANT RAVIDAS NAGAR	Bhadohi				0.1912
3	SANT RAVIDAS NAGAR	Kawalpur			0.7114	
4	SANT RAVIDAS	Koirauna	0.2834		0.0915	

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	***Fall***	***Rise***	***Fall***
	NAGAR					
5	SANT RAVIDAS NAGAR	Pali1	0.1005		0.0387	
6	SANT RAVIDAS NAGAR	Suriyawan	0.1598		0.1217	
1	SHAHJAHANPUR	Gurgaon	0.0225		0.2187	
2	SHAHJAHANPUR	Jalalpur2	0.4791		0.2024	
3	SHAHJAHANPUR	Pawayan		0.0912		0.0059
4	SHAHJAHANPUR	Sehramau	0.0274			0.1711
5	SHAHJAHANPUR	Shahjahanpur1		0.4631		0.2954
6	SHAHJAHANPUR	Sidhauli		0.1411		0.1668
1	SHRAWASTI	Badla village	0.0434			0.0715
2	SHRAWASTI	Bhagwanpur	0.0103			0.0505
3	SHRAWASTI	Bhujanga	0.0646			0.0315
4	SHRAWASTI	Dikauli	0.0258			0.1063
5	SHRAWASTI	Lachmanpur		0.0051		0.1962
6	SHRAWASTI	Laxman nagar	0.0206			0.0783
7	SHRAWASTI	Madora chowki		0.0069		0.0361
8	SHRAWASTI	Pakaria	0.0150			0.1080
9	SHRAWASTI	Parpatganj	0.0194			
10	SHRAWASTI	Pratapur	0.0115		0.0662	
11	SHRAWASTI	Ratanpur		0.0168		0.0464
12	SHRAWASTI	Shrawasti	0.0013			0.0224
13	SHRAWASTI	Sirsia1	0.0548			0.1248
14	SHRAWASTI	Tulsipur2	0.0216			0.1210
1	SIDDHARTHNAGAR	Badhni	0.0551			0.0076
2	SIDDHARTHNAGAR	Bansi1	0.0172			0.0148
3	SIDDHARTHNAGAR	Basti(naugarh)	0.2239		0.1294	
4	SIDDHARTHNAGAR	Belwa laghunahi	0.0511		0.0180	
5	SIDDHARTHNAGAR	Birdpur	0.0036			0.0642
6	SIDDHARTHNAGAR	Chilihia	0.1170			0.0129
7	SIDDHARTHNAGAR	Dumariaganj	0.0380			0.0069
8	SIDDHARTHNAGAR	Kajhai	0.0401		0.0269	
9	SIDDHARTHNAGAR	Parsa	0.1373		0.1954	
10	SIDDHARTHNAGAR	Ramnagara	0.0590		0.0614	
11	SIDDHARTHNAGAR	Uska	0.0220		0.0366	
1	SITAPUR	Biswan2		0.2180		0.2664
2	SITAPUR	Biutmani		0.0318		0.0774
3	SITAPUR	Deokalia	0.0196			0.0659

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
4	SITAPUR	Dhoudhi		0.0751		0.1754
5	SITAPUR	Dularpur		0.0895		0.2669
6	SITAPUR	Hargaon		0.0729		0.2111
7	SITAPUR	Jahangirabad		0.0302		0.0798
8	SITAPUR	Karauna		0.0217		0.5170
9	SITAPUR	Khamaria		0.0606		0.1198
10	SITAPUR	Kutub nagar		0.0121		0.1681
11	SITAPUR	Madnapur		0.0195		0.0949
12	SITAPUR	Manpur chowki		0.0247		0.1417
13	SITAPUR	Purwara gosai		0.0652		0.0398
14	SITAPUR	Sitapur	0.0020			0.1374
15	SITAPUR	Thawai				0.1860
1	SONBHADRA	Anpara		0.0499		0.1156
2	SONBHADRA	Babhani	0.0365		0.0750	
3	SONBHADRA	Bairpan		0.0805		0.2591
4	SONBHADRA	Bhagwan nagar	0.1421			0.0699
5	SONBHADRA	Chopan		0.1616		0.1426
6	SONBHADRA	Dhrtidand1	0.0815		0.2761	
7	SONBHADRA	Dudhi	0.2408		0.0872	
8	SONBHADRA	Gara		0.1071		0.1017
9	SONBHADRA	Ghorawal1	0.3465		0.1467	
10	SONBHADRA	Hatinala	0.4005		0.5529	
11	SONBHADRA	Jarha	0.1120		0.1168	
12	SONBHADRA	Kakrahi	0.1330			0.0023
13	SONBHADRA	Markundi		0.0683		0.1076
14	SONBHADRA	Muirpur	0.1257			0.0134
15	SONBHADRA	Robertsganj1		0.0214		0.2362
16	SONBHADRA	Shahganj		0.1624		0.0945
17	SONBHADRA	Son barsa		0.0453		0.0483
1	SULTANPUR	Amethi-NEW	0.4217		0.3182	
2	SULTANPUR	Babuganj	0.0683		0.0031	
3	SULTANPUR	Badgaon	0.0017		0.0641	
4	SULTANPUR	Bahurawa		0.2443		0.0718
5	SULTANPUR	Bazar Sukul 1		0.1861	0.5970	
6	SULTANPUR	Bhadar		0.0056		0.0350
7	SULTANPUR	Bhatgaon		0.1019		0.0048
8	SULTANPUR	Bhim pashim	0.0327		0.1089	
9	SULTANPUR	Dariyan ka purw	0.1467		0.2484	
10	SULTANPUR	Goriabad		0.1449		0.0449

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
11	SULTANPUR	Haliapur-New		0.1132		
12	SULTANPUR	Jagdishpur2	0.0414		0.0848	
13	SULTANPUR	Jaisinghpur	0.0775		0.0904	
14	SULTANPUR	Jamon1	0.0418		0.1723	
15	SULTANPUR	Janapur		0.0315		0.0602
16	SULTANPUR	Kadipur		0.0827		0.0812
17	SULTANPUR	Khaluhat1		0.0364		0.1029
18	SULTANPUR	Khutahna		0.0112		0.1407
19	SULTANPUR	Kurebhar1	0.0513			0.0705
20	SULTANPUR	Kurwar		0.0309		0.0962
21	SULTANPUR	Kusitali	0.0837		0.3567	
22	SULTANPUR	Kutta	0.0042			0.0955
23	SULTANPUR	Mahona		0.1257		0.2124
24	SULTANPUR	Maniari aliganj	0.1678		0.0288	
25	SULTANPUR	Mardanpur		0.0305		0.2197
26	SULTANPUR	Mundawa		0.0399		0.0525
27	SULTANPUR	Munshiganj1	0.1564		0.2286	
28	SULTANPUR	Musafirkhana	0.0186		0.0048	
29	SULTANPUR	Naghipur bajhan		0.0126	0.0565	
30	SULTANPUR	Piparpur	0.0357		0.0633	
31	SULTANPUR	Pratushmanik	0.0246		0.0205	
32	SULTANPUR	Ramgarh1	0.0093		0.0467	
33	SULTANPUR	Rampur hanumang	0.0221			0.2898
34	SULTANPUR	Sagardeh	0.0056		0.0516	
35	SULTANPUR	Sathin		0.2413		0.4365
36	SULTANPUR	Shivgarh	0.0559		0.2443	
37	SULTANPUR	Sikrabad (Para)	0.0130		0.3345	
38	SULTANPUR	Sultanpur2	0.1251			0.0136
39	SULTANPUR	Trisundi	0.0481		0.1933	
1	UNNAO	Auras		0.1259		0.2055
2	UNNAO	Azmatnagar		0.2865		0.1769
3	UNNAO	Baksar	0.0322			0.0353
4	UNNAO	Bangarmau(new)	0.0670			0.0790
5	UNNAO	Behta majawar		0.0916		0.1322
6	UNNAO	Bhagwant nagar		0.0395		0.3244
7	UNNAO	Bichhia	0.1692		0.0614	
8	UNNAO	Bighapur	0.1021		0.4393	
9	UNNAO	Chakalvanshi		0.0272		0.0215
10	UNNAO	Ganj moradabad		0.1288		0.1523

Sl. No.	District	Well	Pre-monsoon Trend (m/Year)		Post-monsoon Trend (m/Year)	
			Rise	*Fall*	*Rise*	*Fall*
11	UNNAO	Hasanganj1	0.0150			0.0397
12	UNNAO	Hasewan	0.0665		0.1316	
13	UNNAO	Kali mitti	0.2346			0.0297
14	UNNAO	Kantha	0.2201			0.0009
15	UNNAO	Makur		0.0338		0.0471
16	UNNAO	Malauna	0.1735		0.0547	
17	UNNAO	Maurawan	0.0783		0.0824	
18	UNNAO	Methi Tikur		0.0815		0.0483
19	UNNAO	Miyanganj	0.0634		0.0253	
20	UNNAO	Newalganj	0.2674		0.2867	
21	UNNAO	Pariyar	0.0066			0.0684
22	UNNAO	Pinjra	0.0381			0.0928
23	UNNAO	Purwa	0.0088			0.0181
24	UNNAO	Safipur1		0.0814		0.2062
25	UNNAO	Santakhera	0.0738			0.1903
26	UNNAO	Sikanderpur1		0.0451		0.2013
27	UNNAO	Sumerpur	0.1754		0.1241	
28	UNNAO	Thaura	0.1281			0.0138
29	UNNAO	Tonda		0.1577	0.0052	
30	UNNAO	Unchagaon kila		0.0183		0.1365
31	UNNAO	Unchagaon1	0.0415		0.1458	
32	UNNAO	Unnao		0.1679		0.2724
1	VARANASI	Anai		0.1354	0.1445	
2	VARANASI	Babatpur		0.4418		0.3953
3	VARANASI	Babatpur chaura		0.2746		
4	VARANASI	Barwaon		0.8468		0.5167
5	VARANASI	Chobepur		0.5495		0.2216
6	VARANASI	Cholapur1	0.3956		0.5896	
7	VARANASI	Jikhan (narsara)		0.2499		0.0522
8	VARANASI	Kakrahwan		0.2373		0.1902
9	VARANASI	Rajatalab1		0.8551		0.5757
10	VARANASI	Rustampur		0.0108		0.0088
11	VARANASI	Tahipur		0.1147		0.1179
12	VARANASI	Thatra		0.1459	0.0674	
13	VARANASI	Varanasi		0.0761		0.0984

Annexure –III

CHEMICALS ANALYSIS DATA OF SAMPLES COLLECTED FROM GROUND WATER MONITORING WELLS IN UTTAR PRADESH 2005 -2016

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
1	Agra	Achhnera	8.1	4350	nil	366	1030	4.45	16	320	1025	140	164	520	6.5	33	nd	2827.5	-14.38	7.06
2	Agra	Akola	7.7	4000	nil	549	710	0.40	130	360	950	112	163	470	10	36	nd	2600	-9.84	6.63
3	Agra	Bah	8.1	1720	nil	598	121	0.45	150	38	450	60	73	180	3.7	36	nd	1118	0.97	3.69
4	Agra	Barauli Ahir	8.4	1425	60	220	220	0.40	16	90	370	56	56	140	6.4	25	nd	926.25	-1.73	3.17
5	Agra	Bichpuri	8.2	4340	nil	939	518	6.00	7.6	560	325	28	62	840	5.0	33	nd	2821	9.16	20.27
6	Agra	Etmadpur	8.1	5340	nil	415	689	2.20	0.8	1240	560	68	95	960	6.8	27	nd	3471	-4.28	17.65
7	Agra	Fatehabad	8.4	2580	84	549	284	2.00	25	230	150	28	19	520	2.0	31	nd	1677	8.95	18.47
8	Agra	Fatehpur Sikari	8.1	2400	nil	549	284	0.35	10	280	200	52	17	450	6.2	41	nd	1560	5.15	13.84
9	Agra	Jagner	8.4	4550	108	439	880	0.55	74	404	470	28	97	800	2.7	34	nd	2957.5	1.53	16.05
10	Agra	Jaitpur Kalan	7.8	970	nil	500	21	0.20	12	13	320	68	36	70	3.3	43	nd	630.5	1.94	1.70
11	Agra	Khandauli	7.7	3000	nil	634	504	2.55	42	167	830	72	158	300	6.5	36	nd	1950	-6.02	4.53
12	Agra	Kheragarh	8.2	6450	nil	756	859	0.30	0.2	1220	1400	44	314	830	4.5	27	nd	4192.5	-15.37	9.65
13	Agra	Pinhat	8.2	900	nil	354	50	1.05	6	70	290	60	34	60	4.5	36	nd	585	0.10	1.53
14	Agra	Saiyan	8.4	1400	96	390	50	0.55	3.3	110	230	32	36	210	1.4	33	nd	910	5.11	6.02
15	Agra	Shamsabad	8.2	1480	nil	598	99	1.15	17	60	350	20	73	170	4.7	34	nd	962	2.97	3.95
16	Agra	Agra	8.2	4880	nil	683	582	0.55	215	780	750	88	129	760	17	36	nd	3172	-3.60	12.07
17	Aligarh	Bijauli	7.9	1150	nil	573	50	0.62	0.4	20	330	60	43	117	8.5	29	nd	747.5	2.95	2.80

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
18	Aligarh	Dhanipur	7.9	1436	nil	366	184	0.43	42	53	260	48	34	213	6.7	33	nd	933.4	0.90	5.75
19	Aligarh	Gangiri	7.9	992	nil	415	71	0.42	21	27	240	36	36	130	6.5	26	nd	644.8	2.12	3.65
20	Aligarh	Gonda	7.8	4292	nil	549	801	0.99	43	161	460	24	96	718	15	24	nd	2789.8	-0.04	14.56
21	Aligarh	Iglas	8.0	1941	nil	488	184	0.44	91	103	570	88	84	196	7.2	26	nd	1261.65	-3.26	3.57
22	Aligarh	Jawan	7.8	670	nil	354	14	0.8	3	44	250	48	18	73	5.7	27	nd	435.5	0.90	2.01
23	Aligarh	Khair	8.0	2784	nil	671	390	0.72	82	150	490	48	113	317	32	32	nd	1809.6	1.39	6.23
24	Aligarh	Lodha	8.0	1081	nil	537	64	0.51	17	30	300	44	46	117	17	49	nd	702.65	2.95	2.94
25	Aligarh	Tappal	7.7	1292	nil	415	163	1.14	13	115	265	40	37	200	5.9	36	nd	839.8	1.62	5.34
26	Allahabad	Allahabad sadar	8.2	1095	nil	476	85	2.23	49	63	310	92	19	134	3.8	27	nd	711.75	1.73	3.30
27	Allahabad	Jasra	8.2	893	nil	464	50	0.88	6.3	31	310	60	39	83	1.9	31	nd	580.45	1.53	2.05
28	Allahabad	Chaka	8.2	956	nil	451	57	0.52	15.9	17	300	104	10	81	3.4	36	nd	621.4	1.52	2.04
29	Allahabad	Shankar garh	8.0	398	nil	183	21	0.34	2.9	13	130	44	4.9	30	2.9	18	nd	258.7	0.45	1.16
30	Allahabad	Kaudhiyara	8.1	741	nil	415	28	0.63	7.9	12	305	60	38	46	2.1	30	nd	481.65	0.81	1.15
31	Allahabad	Uruwa	8.1	502	nil	281	14	0.48	14	4	185	68	3.6	38	2	29	nd	326.3	0.98	1.22
32	Allahabad	Manda	7.9	1195	nil	293	163	0.31	107	56	490	120	46	63	1.9	34	nd	776.75	-4.92	1.24
33	Allahabad	Meja	8.0	917	nil	268	113	0.27	58	30	280	88	15	84	0.7	25	nd	596.05	-1.13	2.17
34	Allahabad	Koraon	7.9	660	nil	403	14	0.38	1.4	6.7	260	52	32	46	2.4	28	nd	429	1.51	1.23
35	Allahabad	Karchhaua	8.2	619	nil	348	21	0.43	4.9	2.8	250	68	19	31	2.8	37	nd	402.35	0.79	0.86
36	Allahabad	Manima	8.1	716	nil	451	7.1	0.52	0.4	4.6	120	36	7.3	125	2.3	22	nd	465.4	5.12	4.98
37	Allahabad	Soraon	8.0	706	nil	378	35	0.95	12	11	240	52	27	67	4.4	27	nd	458.9	1.50	1.88

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
38	Allahabad	Holagarh	8.1	660	nil	390	14	0.78	6.4	8.4	210	48	22	66	6.9	32	nd	429	2.31	1.99
39	Allahabad	Bahariya	8.2	687	nil	390	21	2.12	3.2	15	240	48	29	62	4.6	30	nd	446.55	1.71	1.74
40	Allahabad	Handia	8.1	1826	nil	708	206	0.65	20	99	390	32	75	282	7.5	23	nd	1186.9	3.99	6.21
41	Allahabad	Kaurihar	8.0	731	nil	378	35	0.71	6.6	4.2	260	48	34	48	4.2	30	nd	475.15	1.10	1.29
42	Allahabad	Bahadurpur	7.9	498	nil	244	28	0.22	2.6	8.5	230	60	19	9	2.1	33	nd	323.7	-0.53	0.25
43	Allahabad	Pratappur	8.1	902	nil	549	14	0.35	7.2	7.4	310	52	44	79	8.4	33	nd	586.3	2.95	1.96
44	Allahabad	Saidabad	8.0	880	nil	451	50	0.15	20	13	260	72	19	98	3.7	35	nd	572	2.32	2.65
45	Allahabad	Phoolpur	8.2	981	nil	482	71	0.81	0.7	28	300	64	34	103	3.9	30	nd	637.65	2.03	2.58
46	Auraiya	Achhalda	8.2	600	nil	329	7	2.00	0.36	3.6	160	36	17	65	2.2	30	nd	390	2.29	2.23
47	Auraiya	Ajitmal	8.2	640	nil	342	14	0.86	6.4	15	160	36	17	79	3	38	nd	416	2.49	2.72
48	Auraiya	Auraiya	8.1	1497	nil	427	156	0.84	145	82	580	56	107	72	2.3	36	nd	973.05	-4.48	1.30
49	Auraiya	Bhagya Nagar	8.2	712	nil	390	14	0.64	6.3	7.9	230	40	32	63	3.2	36	nd	462.8	1.91	1.81
50	Auraiya	Bidhuna	7.8	1167	nil	573	35	0.85	4.9	51	390	60	58	96	8.1	35	nd	758.55	1.76	2.11
51	Auraiya	Sahar	7.8	1105	nil	500	64	0.99	7.8	34	330	56	46	100	6.7	34	nd	718.25	1.74	2.39
52	Auraiya	Airwa Katra	8.2	895	nil	403	28	0.91	4.0	57	200	40	24	111	11.8	34	nd	581.75	2.71	3.41
53	Azamgarh	Ahiraula	8.0	443	nil	256	7	0.71	2.9	2.27	180	56	9.6	20	2.4	36	nd	287.95	0.67	0.65
54	Azamgarh	Atraulia	7.8	510	nil	317	14	0.41	0.15	1.38	170	48	12	47	4.5	36	nd	331.5	1.89	1.57
55	Azamgarh	Azmatgarh	7.8	696	nil	281	57	0.24	26	11.4	260	92	7.2	37	2.7	39	nd	452.4	-0.51	1.00
56	Azamgarh	Bilariyaganj	8.0	610	nil	329	28	0.48	0.92	3.1	240	80	9.6	31	4.5	37	nd	396.5	0.69	0.87
57	Azamgarh	Harraiya	8.0	830	nil	427	35	0.76	26	15	280	88	14	73	3.1	34	nd	539.5	1.52	1.90

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
58	Azamgarh	Jahanaganj	8.0	803	nil	427	35	0.41	11	5.1	270	76	19	64	5.1	36	nd	521.95	1.72	1.69
59	Azamgarh	Koyalsa	8.1	750	nil	396	21	0.42	1.6	5.2	260	84	12	46	3.2	36	nd	487.5	1.40	1.24
60	Azamgarh	Lalganj	7.9	835	nil	403	50	0.36	14	32	250	80	12	83	8.4	34	nd	542.75	1.72	2.28
61	Azamgarh	Maharajganj	7.8	410	nil	232	14	nd	1.4	1.4	170	48	12	17	3.3	33	nd	266.5	0.47	0.57
62	Azamgarh	Marteenganj	8.0	639	nil	378	14	0.42	3.2	39	190	60	9.6	83	6.2	31	nd	415.35	2.50	2.62
63	Azamgarh	Mehnagar	8.0	604	nil	378	14	0.52	0.13	4.6	230	76	9.6	45	5.7	33	nd	392.6	1.70	1.29
64	Azamgarh	Mirzapur	8.0	615	nil	378	14	0.41	6.1	4.1	240	68	17	41	4.7	36	nd	399.75	1.50	1.15
65	Azamgarh	Muhammadpur	7.9	820	nil	415	43	0.51	29	60	270	76	19	100	3.6	28	nd	533	1.52	2.65
66	Azamgarh	Palhana	8.1	1020	nil	354	57	0.86	0.62	11	180	40	19	160	3.1	30	nd	663	2.30	5.19
67	Azamgarh	Palhani	7.9	736	nil	329	57	0.27	5.6	7.3	285	84	18	34	5.0	36	nd	478.4	-0.21	0.88
68	Azamgarh	Pawai	7.9	573	nil	317	21	0.66	4.1	3.7	245	64	31	22	4.1	34	nd	372.45	0.39	0.61
69	Azamgarh	Phoolpur	8.0	1008	nil	488	43	0.38	n.d	5.6	360	64	36	52	3.3	33	nd	655.2	0.94	1.19
70	Azamgarh	Rani Ki Sarai	8.0	527	nil	122	35	0.55	5.7	2.6	280	68	41	34	5.9	32	nd	342.55	-3.56	0.88
71	Azamgarh	Sathiaon	8.0	452	nil	293	7	0.54	n.d	3.1	200	56	22	21	3.4	35	nd	293.8	0.89	0.65
72	Azamgarh	Tahabarpur	8.0	548	nil	317	14	0.35	3.5	4.8	210	64	38	34	3.3	36	nd	356.2	1.09	1.02
73	Azamgarh	Tarwa	7.9	593	nil	342	21	0.76	2.9	2.4	220	48	38	42	4.3	36	nd	385.45	1.30	1.23
74	Azamgarh	Thekma	7.9	700	nil	403	21	0.45	4.1	21	250	68	38	58	5.5	34	nd	455	1.72	1.60
75	Azamgarh	Azamgarh-Hq	8.0	813	nil	415	35	0.27	20	5.6	210	52	19	89	4.6	35	nd	528.45	2.72	2.67
76	Baghpat	Baghpat	7.7	1583	nil	342	177	0.47	175	150	430	68	63	162	8.0	24	nd	1028.95	-2.91	3.40
77	Baghpat	Baraut	7.9	946	nil	464	28	0.5	4.7	51	140	28	17	162	5.1	31	nd	614.9	4.93	5.95

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
78	Baghpat	Binauli	7.7	950	nil	378	64	0.39	24	58	210	56	17	122	5.5	34	nd	617.5	2.10	3.66
79	Baghpat	Chaprauli	7.8	780	nil	403	21	0.66	2	34	230	44	29	73	5.8	31	nd	507	2.11	2.09
80	Baghpat	Khekra	7.8	905	nil	427	43	0.44	7.7	60	300	44	46	68	7.5	30	nd	588.25	1.12	1.71
81	Baghpat	Pilana	7.7	1660	nil	561	99	0.17	46	180	400	40	73	204	12	34	nd	1079	1.35	4.43
82	Bahraich	Balha	7.5	725	nil	366	28	0.83	0.04	8.7	310	88	22	12	4.7	40	nd	471.25	-0.10	0.30
83	Bahraich	Bisheshwarganj	7.8	500	nil	268	14	0.5	0.2	2.4	210	64	12	9.8	3.3	40	nd	325	0.28	0.29
84	Bahraich	Chittaura	7.9	675	nil	342	21	0.21	0.04	12	300	88	19	9.5	4.4	39	nd	438.75	-0.30	0.24
85	Bahraich	Fakharpur	7.8	1250	nil	573	85	0.1	0.9	25	410	96	41	66	37	34	nd	812.5	1.36	1.42
86	Bahraich	Huzurpur	7.8	900	nil	464	36	0.45	2.5	7	370	112	22	23	9.2	35	nd	585	0.33	0.52
87	Bahraich	Jarwal	7.7	1390	nil	525	107	nd	3.6	100	460	124	36	85	19	30	nd	903.5	-0.45	1.72
88	Bahraich	Kaisarganj	7.8	945	nil	366	78	0.17	8.3	35	340	68	41	55	2.2	38	nd	614.25	-0.70	1.30
89	Bahraich	Mahasi	7.8	790	nil	439	14	0.08	2.7	2.3	330	84	29	17	5.6	34	nd	513.5	0.72	0.41
90	Bahraich	Mihipurwa	7.8	740	nil	415	14	0.42	0.1	0.6	290	56	36	25	3.5	39	nd	481	1.12	0.64
91	Bahraich	Nawabganj	8.0	540	nil	305	7.1	0.50	nd	1.7	225	60	18	13	3.4	41	nd	351	0.59	0.38
92	Bahraich	Payagpur	8.0	590	nil	305	21	0.41	nd	4.4	260	72	19	6	3.6	38	nd	383.5	-0.11	0.16
93	Bahraich	Risiya	7.7	680	nil	378	14	0.15	nd	2.5	280	64	29	17	3.4	39	nd	442	0.71	0.44
94	Ballia	Bairya	7.9	925	nil	525	28	nd	3.7	5	295	104	31	81	5.2	34	nd	601.25	2.85	2.05
95	Ballia	Bansdeeh	8.0	1786	nil	720	220	0.10	65	87	350	116	14	317	3.4	39	nd	1160.9	5.00	7.37
96	Ballia	Belhari	8.0	594	nil	317	21	nd	1.0	3.4	250	76	14	20	3.9	34	nd	386.1	0.29	0.55
97	Ballia	Beruwarbari	8.1	526	nil	329	14	0.17	0.2	17	230	68	14	33	4.7	35	nd	341.9	0.89	0.95

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
98	Ballia	Chilkahar	8.0	715	nil	390	21	0.62	4.4	1.8	260	76	36	44	4.4	34	nd	464.75	1.30	1.19
99	Ballia	Dubahar	8.0	523	nil	268	35	nd	0.6	28	200	52	29	37	16	26	nd	339.95	0.47	1.14
100	Ballia	Garwar	8.0	572	nil	366	14	0.52	nd	1.5	240	64	34	34	4.5	33	nd	371.8	1.30	0.95
101	Ballia	Hanumanganj	8.0	935	nil	378	142	0.12	3.45	15	400	116	26	56	3.2	35	nd	607.75	-1.69	1.22
102	Ballia	Maniyar	7.8	1234	nil	500	121	nd	22	82	310	88	34	142	4.4	37	nd	802.1	2.14	3.51
103	Ballia	Murali Chhapara	8.0	622	nil	342	21	nd	0.77	3.7	280	88	14	12	4.8	33	nd	404.3	0.10	0.31
104	Ballia	Nawa Nagar	8.0	451	nil	207	14	nd	nd	11	170	60	4.8	13	3.2	32	nd	293.15	0.05	0.43
105	Ballia	Negara	8.1	964	nil	317	128	nd	0.28	50	290	60	34	90	7.3	38	nd	626.6	-0.51	2.30
106	Ballia	Pandoh	8.0	642	nil	439	7	0.14	nd	2.6	260	80	14	46	4.9	37	nd	417.3	2.12	1.24
107	Ballia	Rasara	8.0	819	nil	366	39	0.69	0.92	13	260	56	29	48	2.4	29	nd	532.35	0.90	1.29
108	Ballia	Reoti	8.0	594	nil	305	28	nd	13	1.3	260	96	4.8	18	2.7	30	nd	386.1	-0.11	0.49
109	Ballia	Siyar	7.8	440	nil	390	7	0.28	0.1	2.2	200	64	9.6	27	3.2	34	nd	286	2.50	0.83
110	Ballia	Sohaon	8.0	1017	nil	415	99	nd	35	48	310	84	24	112	3.2	38	nd	661.05	0.72	2.77
111	Balrampur	Balrampur	8.0	550	nil	293	14	0.46	0.01	4.9	230	60	19	14	2.7	42	nd	357.5	0.28	0.40
112	Balrampur	Gaisadi	7.4	1560	nil	610	156	0.77	2.7	46	550	72	90	92	1.7	34	nd	1014	-0.83	1.71
113	Balrampur	Harraiya Satgharwa	7.8	840	nil	464	14	0.39	1.8	8.8	290	68	29	49	3.2	30	nd	546	1.93	1.25
114	Balrampur	Pachperva	8.1	1050	nil	586	21	0.98	0.07	1.7	320	48	49	84	1.0	34	nd	682.5	3.36	2.04
115	Balrampur	Rehra Bazar	8.4	570	36	268	14	0.34	0.27	0.8	210	48	22	27	4.9	40	nd	370.5	1.48	0.81
116	Balrampur	Sriduttganj	7.6	1675	nil	647	114	0.48	93	56	600	132	66	93	0.9	44	nd	1088.75	-1.22	1.65
117	Balrampur	Tulsipur	7.5	1740	nil	732	135	0.46	5.4	66	480	76	71	168	2.6	25	nd	1131	2.61	3.34

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
118	Balrampur	Utraula	8.0	1120	nil	488	57	0.80	27	38	390	60	58	69	6.1	38	nd	728	0.34	1.52
119	Banda	Khurd	7.9	1016	nil	549	50	0.92	8.9	21	190	16	36	170	1.8	30	nd	660.4	5.35	5.37
120	Banda	Jaspura	8.0	524	nil	293	21	0.29	3.6	5.7	140	24	19	66	2.4	35	nd	340.6	2.08	2.42
121	Banda	Tindawari	8.0	613	nil	317	35	0.50	17	8.8	160	36	17	81	1.3	34	nd	398.45	2.09	2.79
122	Banda	Mahua	8.1	843	nil	488	28	0.57	12	13	140	16	24	150	1.3	36	nd	547.95	5.33	5.49
123	Banda	Bisanda	8.0	967	nil	403	113	0.83	7.7	23	340	44	56	87	1.1	30	nd	628.55	-0.09	2.06
124	Banda	Kamacin	7.9	1093	nil	403	113	0.65	74	22	270	16	56	145	0.9	34	nd	710.45	1.31	3.83
125	Banda	Banda	7.7	1009	nil	549	50	0.91	5	20	205	16	40	161	1.8	28	nd	655.85	5.05	4.89
126	Banda	Banda	7.7	1010	nil	549	50	0.92	4.7	20	205	16	40	161	1.9	28	nd	656.5	5.05	4.89
127	Banda	Baberu	8.0	630	nil	354	21	0.46	9.1	19	130	12	24	99	1.3	37	nd	409.5	3.30	3.79
128	Bareilly	Ramnagar	8.0	280	nil	134	7.1	0.43	16	2.2	100	28	7.3	14	2.0	22	nd	182	0.24	0.61
129	Bareilly	Fatehganj	8.4	486	6	275	7.1	0.25	0.65	11	100	32	4.9	74	2.4	24	0.2	315.9	2.77	3.22
130	Bareilly	Meerganj	7.7	685	nil	378	21	0.19	0.73	38	270	64	27	48	3.0	25	nd	445.25	0.90	1.27
131	Bareilly	Faridpur	8.5	333	6	159	21	0.36	0.36	13	140	40	10	11	2.7	24	0.16	216.45	0.04	0.40
132	Bareilly	Bhojipura	8.0	545	nil	268	7.1	0.10	0.82	21	230	52	24	30	5.1	25	nd	354.25	-0.13	0.86
133	Bareilly	Majhgawan	8.0	616	nil	293	35	0.31	0.43	56	120	36	7.3	95	2.4	24	0.15	400.4	2.48	3.77
134	Bareilly	Baheri	8.4	685	18	311	28	0.24	0.42	38	260	60	27	54	2.3	25	nd	445.25	0.58	1.46
135	Bareilly	Nawabganj	8.7	350	12	159	35	0.40	0.46	7.4	100	16	15	37	2.9	23	nd	227.5	1.04	1.61
136	Bareilly	Richha	8.0	385	12	201	14	0.43	0.15	31	100	24	10	49	2.1	21	nd	250.25	1.75	2.13
137	Bareilly	Kiara	7.8	467	nil	244	7.1	0.21	0.2	22	195	52	16	27	3.9	25	nd	303.55	0.17	0.84

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
138	Bareilly	Bithrichainpur	8.0	562	nil	317	21	0.17	0.27	15	200	56	15	41	16	22	nd	365.3	1.29	1.26
139	Basti	Bhadarpur	8.2	873	nil	439.272	78	0.72	3.1	7.2	300	76	27	58	31	23	1.4	567.45	1.32	1.46
140	Basti	Bankati	8.2	355	nil	201.333	3.5	0.23	0.14	10	160	44	12	9.1	2.9	27	nd	230.75	0.15	0.31
141	Basti	Basti Sadar	7.7	1585	nil	280.646	319	0.39	182	19	691	148	78	55	2.4	33	nd	1030.25	-9.12	0.91
142	Basti	Harrariya	7.8	435	nil	244.04	21	0.33	0.25	8.8	200	52	17	17	2.5	29	nd	282.75	0.07	0.52
143	Basti	Kaptan Ganj	7.4	935	nil	427.07	50	0.62	48	42	420	100	41	45	0.6	35	nd	607.75	-1.28	0.95
144	Basti	Kudraha	7.8	445	nil	262.343	14	0.48	0.3	1.4	210	60	15	7.5	3.2	29	nd	289.25	0.17	0.23
145	Basti	Parasrampur	7.9	632	nil	378.262	14	0.23	1.5	19	270	68	24	29	5.7	21	nd	410.8	0.90	0.77
146	Basti	Ramnagar	7.8	566	nil	353.858	14	0.63	0.07	2.7	260	40	39	18	3.9	29	nd	367.9	0.70	0.49
147	Basti	Rudauli	7.5	698	nil	378.262	43	0.7	0.22	15	290	64	32	40	3.7	32	nd	453.7	0.50	1.02
148	Basti	Saltaua	8.0	596	nil	366.06	18	0.63	0.15	2.8	250	60	24	28	3.4	30	nd	387.4	1.10	0.77
149	Basti	Vikramjot	8.1	590	nil	366.06	14	0.12	0.46	6.1	285	72	26	10	5.7	30	nd	383.5	0.40	0.26
150	Bijnor	Afzalgarh	8.0	462	nil	238	7.1	nd	nd	26	110	40	2.4	56	2.0	29	nd	300.3	1.77	2.32
151	Bijnor	Aku(Nehtaur)	8.0	359	nil	207	7.1	nd	nd	14	155	52	6.4	15	4.0	34	nd	233.35	0.35	0.52
152	Bijnor	Alhepur(Dhampur)	8.0	454	nil	244	21	nd	nd	5	125	40	6.4	47	3.2	30	nd	295.1	1.57	1.83
153	Bijnor	Budhanpur(Seohara)	8.0	366	nil	195	21	nd	nd	nd	140	36	12	22	3.5	33	nd	237.9	0.45	0.81
154	Bijnor	Jaleelpur	8.0	292	nil	159	7.1	nd	nd	nd	115	40	3.6	11	4.1	31	nd	189.8	0.35	0.45
155	Bijnor	Khari Jhalu	8.1	418	nil	244	14	nd	nd	10	190	56	12	17	6.0	32	nd	271.7	0.27	0.54
156	Bijnor	Kiratpur	8.1	775	nil	287	135	nd	nd	1.9	350	28	67	29	9.7	30	nd	503.75	-2.21	0.67

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
157	Bijnor	Kotwali	8.0	424	nil	226	14	nd	nd	33	120	40	4.8	44	2.9	34	nd	275.6	1.37	1.75
158	Bijnor	MohammadpurDeomal	8.1	633	nil	244	57	nd	nd	7.2	185	44	18	46	15	23	nd	411.45	0.37	1.47
159	Bijnor	Najibabad	8.0	469	nil	232	28	nd	nd	71	150	48	7.2	47	1.6	26	nd	304.85	0.87	1.67
160	Bijnor	Noorpur	8.0	411	nil	220	14	nd	nd	8.2	195	60	11	21	5.5	31	nd	267.15	-0.23	0.65
161	Budaun	Salarpur	8.1	695	nil	305	64	nd	2	26	260	76	17	47	7.9	28	nd	451.75	-0.12	1.27
162	Budaun	Bisauli	8.1	740	nil	336	46	0.02	18	51	280	52	36	46	11	17	nd	481	-0.01	1.20
163	Budaun	Usawan	8.0	651	nil	183	64	0.28	70	44	250	68	19	42	5.8	31	nd	423.15	-1.95	1.15
164	Budaun	Dahigawan	8.0	970	nil	354	28	0.28	0.67	172	290	80	22	99	11	34	nd	630.5	0.10	2.53
165	Budaun	Dataganj	7.7	752	nil	342	14	0.15	0.26	15	210	44	24	47	4.5	29	nd	488.8	1.49	1.41
166	Budaun	Budaun	8.2	652	nil	281	57	0.09	0.54	31	225	56	21	54	5.7	32	nd	423.8	0.18	1.57
167	Budaun	Junawai	7.7	585	nil	329	14	0.23	0.62	32	260	56	29	25	5.2	28	nd	380.25	0.29	0.67
168	Budaun	Wazirganj	7.7	745	nil	439	28	0.73	0.41	11	240	64	19	69	6.7	27	nd	484.25	2.52	1.94
169	Budaun	Miaon	7.9	910	nil	415	57	0.15	11	47	350	88	32	40	20	21	nd	591.5	-0.09	0.93
170	Budaun	Gunnaur	7.9	1150	nil	439	71	0.25	47	96	330	68	39	79	69	24	nd	747.5	0.72	1.89
171	Budaun	Islamnagar	8.1	420	nil	244	7.1	1.00	0.32	8.1	120	28	12	45	3.6	27	nd	273	1.67	1.79
172	Budaun	Quadar chowk	7.6	2400	nil	415	291	0.19	332	248	691	160	71	225	85	30	nd	1560	-6.89	3.72
173	Budaun	Asafpur	7.6	1139	nil	403	85	0.08	69	75	460	104	49	56	10	23	nd	740.35	-2.49	1.14
174	Budaun	Ujhani	7.8	1038	nil	317	113	0.16	76	65	370	100	29	68	7.5	28	nd	674.7	-2.11	1.54
175	Budaun	Sahaswan	8.1	389	nil	195	11	0.35	0.22	7.6	130	28	15	22	3.0	24	nd	252.85	0.65	0.84
176	Bulandshahar	Anupshahar	7.8	1067	nil	366	64	0.70	30	61	440	60	70	57	7.81	30	nd	693.55	-2.69	1.18

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
177	Bulandshahar	B.B.Nagar	8.0	599	nil	305	14	0.26	1.2	8.4	200	48	19	41	7.07	32	nd	389.35	1.09	1.26
178	Bulandshahar	Bulandshahar	7.9	583	nil	195	42	0.23	29	27	270	60	29	17	3.78	17	nd	378.95	-2.15	0.45
179	Bulandshahar	Danpur	7.9	614	nil	281	35	0.43	4.5	20	215	68	11	53	4.99	19	nd	399.1	0.39	1.57
180	Bulandshahar	Debai	8.0	607	nil	317	28	0.8	0.27	13	180	48	14	68	5.71	20	nd	394.55	1.69	2.20
181	Bulandshahar	Guloathi	8.1	688	nil	250	42	1.14	4.4	43	290	64	31	40	4.23	24	nd	447.2	-1.63	1.02
182	Bulandshahar	Jahangirabad	8.0	1384	nil	464	120	0.32	67	54	250	44	34	224	7.85	23	nd	899.6	2.74	6.16
183	Bulandshahar	Khuria	7.9	1200	nil	262	71	0.97	23	125	410	72	55	111	6.97	20	nd	780	-3.83	2.38
184	Bulandshahar	Lakhoti	7.9	690	nil	262	21	0.11	1.25	46	220	56	19	64	7.45	19	nd	448.5	-0.03	1.88
185	Bulandshahar	Pahasu	8.0	490	nil	207	14	0.60	8.8	26	220	56	19	20	4.6	31	nd	318.5	-0.95	0.59
186	Bulandshahar	Shikarpur	8.0	944	nil	268	106	0.16	9.7	56	200	56	14	145	7.12	28	nd	613.6	0.47	4.46
187	Bulandshahar	Sikandrabad	8.0	1464	nil	366	220	0.18	22	47	270	72	22	216	7.36	24	nd	951.6	0.70	5.72
188	Bulandshahar	Siyana	8.0	835	nil	256	57	0.14	40	42	260	72	19	75	8.01	30	nd	542.75	-0.93	2.02
189	Bulandshahar	Unchgaon	8.0	411	nil	195	14	0..14	2.2	18	210	60	14	5.8	3.75	18	nd	267.15	-0.95	0.17
190	Bulandshahar	Akbarabad	7.7	866	nil	244	71	0.58	40	50	220	44	26	94	32	17	nd	562.9	-0.33	2.76
191	Bulandshahar	Atrauli	7.8	745	nil	366	28	1.09	1.9	8.6	210	52	19	69	7.86	34	nd	484.25	1.90	2.07
192	Chitrakoot	Pahari	8.0	1874	nil	146	262	0.89	361	157	791	244	44	73	2.9	68	nd	1218.1	-13.36	1.13
193	Chitrakoot	Ram Nagar	7.9	590	nil	268	43	0.48	12	7.9	215	36	30	40	1.2	23	nd	383.5	0.17	1.17
194	Chitrakoot	Maudaha	8.0	698	nil	317	43	0.57	65	8.6	230	48	27	72	1.2	22	nd	453.7	0.69	2.05
195	Chitrakoot	Manikpur	7.8	791	nil	195	106	0.32	44	52	250	92	5	59	20	19	nd	514.15	-1.75	1.61
196	Chitrakoot	Chitrakoot	7.9	1162	nil	354	135	0.52	98	51	420	60	66	87	1.0	35	nd	755.3	-2.49	1.85

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
197	Chitrakoot	Chitrakoot	7.9	1160	nil	354	135	0.5	98	51	420	60	66	87	1.0	35	nd	754	-2.50	1.84
198	Deoria	Rudrapur	8.2	430	nil	256	7.1	0.36	nd	5.9	170	44	15	20	3.0	35	nd	279.5	0.87	0.67
199	Deoria	Bhaluani	8.1	2335	nil	24	808	0.26	0.35	31	1131	441	7.3	30	5.7	13	nd	1517.75	-22.19	0.38
200	Deoria	Barhaj	8.1	809	nil	354	50	0.38	nd	41	260	84	12	56	3.7	35	nd	525.85	0.70	1.51
201	Deoria	Bhagalpur	8.2	618	nil	354	21	0.19	nd	6.3	220	68	12	40	3.5	35	nd	401.7	1.50	1.17
202	Deoria	Lar	8.1	398	nil	220	7.1	0.33	nd	2.9	160	40	15	10	2.4	36	nd	258.7	0.46	0.34
203	Deoria	Bankata	8.1	1050	nil	415	14	0.23	nd	165	280	104	4.9	102	3.9	34	nd	682.5	1.31	2.65
204	Deoria	Bhatpar Rani	8.1	541	nil	293	14	0.15	10	13	210	52	19	26	3.0	36	nd	351.65	0.68	0.78
205	Deoria	Salempur	8.1	433	nil	232	14	0.5	5.8	3.6	140	40	9.7	32	2.3	34	nd	281.45	1.06	1.18
206	Deoria	Bhatni	8.1	494	nil	281	7.1	0.43	6.6	2.4	170	40	17	33	3.2	36	nd	321.1	1.28	1.09
207	Deoria	Deoria	8.2	757	nil	329	64	0.12	7	18	270	68	24	48	4.0	38	nd	492.05	0.09	1.26
208	Deoria	Rampur Karkhana	8.2	377	nil	195	7.1	0.28	6.5	20	170	52	9.7	7	3.1	34	nd	245.05	-0.15	0.23
209	Deoria	Tarkulwa	7.9	810	nil	207	156	0.13	0.31	36	320	76	32	38	5.0	30	nd	526.5	-2.94	0.93
210	Deoria	Pathardewa	8.2	299	nil	159	7.1	0.24	4.3	9.4	130	36	9.7	7	2.0	32	nd	194.35	0.04	0.27
211	Deoria	Desai Deoria	8.1	425	nil	250	7.1	0.35	nd	9.4	180	44	17	14	3.4	35	nd	276.25	0.57	0.45
212	Deoria	Baitalpur	8.2	386	nil	134	35	0.10	nd	30	140	44	7.3	22	4.1	31	nd	250.9	-0.56	0.79
213	Deoria	Gouri Bazar	8.2	529	nil	268	21	0.07	0.06	14	170	48	12	37	3.3	38	nd	343.85	1.07	1.23
214	Etah	Aliganj	8.0	780	nil	415	14	0.90	7	7.2	220	32	34	70	5.3	36	nd	507	2.52	2.05
215	Etah	Awagarh	7.9	1140	nil	427	107	0.25	3.3	42	390	52	63	75	6.1	39	nd	741	-0.68	1.65
216	Etah	Jaithara	8.2	460	nil	207	28	0.20	5	3.5	170	40	17	18	2.8	40	nd	299	0.06	0.60

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
217	Etah	Jalesar	8.5	2060	84	427	185	1.15	58	180	250	32	41	350	8.2	29	nd	1339	4.92	9.63
218	Etah	Marhara	8.1	780	nil	403	21	0.45	nd	4	260	32	44	50	6.1	37	nd	507	1.51	1.35
219	Etah	Nidholi Kalan	8.5	1130	96	329	43	0.40	3.2	59	230	36	34	140	6.4	34	nd	734.5	4.09	4.02
220	Etah	Sakeet	8.2	730	nil	366	21	0.50	0.13	14	210	44	24	66	4.4	31	nd	474.5	1.90	1.98
221	Etah	Sheetalpur	8.1	725	nil	354	28	0.05	nd	19	180	24	29	73	6.2	35	nd	471.25	2.30	2.37
222	Etah	Etah	8.3	950	nil	415	50	0.80	3	46	260	24	49	92	6.2	36	nd	617.5	1.72	2.48
223	Etawa	Barhpura	8.4	898	48	232	99	0.30	40	4.3	280	56	34	69	3.1	41	nd	583.7	-0.14	1.79
224	Etawa	Basrehar	8.2	755	nil	342	35	0.66	8.7	40	250	28	44	62	5.2	37	nd	490.75	0.69	1.70
225	Etawa	Bhartana	8.2	950	nil	512	28	0.77	1.5	8.4	250	48	32	104	4.3	32	nd	617.5	3.54	2.86
226	Etawa	Chakkar Nagar	7.9	875	nil	500	14	0.70	21	3	230	60	19	95	3.4	37	nd	568.75	3.74	2.72
227	Etawa	Jaswant Nagar	8.1	880	nil	390	50	0.57	17	29	280	36	46	77	3.9	37	nd	572	0.91	2.00
228	Etawa	Mahewa	8.1	730	nil	390	7.0	1.80	0.06	19	220	48	24	65	6.7	37	nd	474.5	2.11	1.91
229	Etawa	Saifai	8.5	650	60	220	14	0.78	11	20	240	40	34	43	3.9	35	nd	422.5	0.86	1.21
230	Farrukhabad	Barhpur	8.2	745	nil	390.464	35	0.93	16	28	290	56	36	50	4.0	32	nd	484.25	0.71	1.28
231	Farrukhabad	Kamalganj	8.2	2410	nil	170.828	482	0.06	350	154	540	136	49	360	7.8	31	nd	1566.5	-7.95	6.74
232	Farrukhabad	Kayamganj	8.2	540	nil	268.444	7.1	0.58	15	17	180	36	22	34	4.2	29	nd	351	0.87	1.10
233	Farrukhabad	Mohammdabad	8.0	1132	nil	427.07	142	0.95	42	31	460	56	78	64	3.4	32	nd	735.8	-2.08	1.30
234	Farrukhabad	Nawabganj	8.2	490	nil	292.848	7.1	0.67	3.3	6.7	180	36	22	38	4.3	25	nd	318.5	1.28	1.23
235	Farrukhabad	Rajepur	8.2	1210	nil	561.292	50	4.70	0.86	124	110	24	12	253	5.5	24	nd	786.5	7.15	10.49
236	Farrukhabad	Shamsabad	7.9	633	nil	317.252	35	0.46	17	22	250	68	19	38	4.6	31	nd	411.45	0.29	1.04

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
237	Farrukhabad	Fatehgarh	8.5	373	30	146.424	14	1.20	0.54	15	180	36	22	8.7	3.4	26	nd	242.45	-0.16	0.28
238	Fatehpur	Airaw	8.1	1147	nil	317	177	0.93	56	58	380	60	56	96	9.9	33	nd	745.55	-2.31	2.15
239	Fatehpur	Amauli	8.0	621	nil	293	43	0.29	1.3	36	220	36	32	50	3.9	25	nd	403.65	0.48	1.45
240	Fatehpur	Asother	7.9	585	nil	305	28	0.85	0.2	18	220	28	36	38	13	34	nd	380.25	0.68	1.10
241	Fatehpur	Bakua	7.8	1459	nil	281	255	0.12	39	128	450	48	80	142	6.0	40	nd	948.35	-4.32	2.91
242	Fatehpur	Bhitaura	8.0	602.9	nil	305	28	0.83	6.9	7.8	210	24	36	44	6.5	36	nd	391.885	0.88	1.31
243	Fatehpur	Dewmai	8.1	720	nil	305	64	0.77	1.2	45	300	24	58	45	2.0	36	nd	468	-0.92	1.12
244	Fatehpur	Dhata	8.2	575	nil	317	21	0.75	6.6	7.1	180	28	27	60	2.4	37	nd	373.75	1.69	1.94
245	Fatehpur	Haswa	8.0	456	nil	268	14	0.85	0.3	5.6	170	28	24	35	5.8	35	nd	296.4	1.07	1.16
246	Fatehpur	Hathgawn	7.9	667	nil	317	57	0.82	0.4	28	300	52	41	22	14	35	nd	433.55	-0.71	0.56
247	Fatehpur	Khajuha	7.8	498	nil	244	43	1.51	0.3	2.9	210	28	34	25	4.2	31	nd	323.7	-0.13	0.76
248	Fatehpur	Malwan	8.0	2712	nil	427	213	3.51	21	753	270	32	46	563	4.1	24	nd	1762.8	1.72	14.90
249	Fatehpur	Telyani	8.1	766	nil	464	14	0.99	1.7	11	190	12	39	99	5.8	29	nd	497.9	3.93	3.14
250	Fatehpur	Vijaipur	8.2	538	nil	293	21	1.00	4.4	16	245	40	35	22	2.5	32	nd	349.7	-0.02	0.61
251	Fatehpur	Fatehpur	8.1	895	nil	366	78	0.13	11	69	210	48	22	129	4.6	35	nd	581.75	1.90	3.86
252	Ferozabad	Araon	8.1	2590	nil	488.08	128	1.8	216	650	641	64	117	339	28	21	nd	1683.5	-4.67	5.83
253	Ferozabad	Eka	8.4	735	18	293	32	2.2	35	43	180	24	29	99	4.8	22	nd	477.75	1.88	3.21
254	Ferozabad	Firozabad	8.5	805	24	414.868	21	1.6	9.8	22	100	12	17	158	1.5	19	nd	523.25	5.71	6.87
255	Ferozabad	Jasrana	8.0	4435	nil	976.16	553	0.78	120	690	701	52	139	800	7.3	27	nd	2882.75	2.27	13.15
256	Ferozabad	Khairgarh (hathwant)	8.3	820	nil	244.04	106	0.33	20	56	300	52	41	49	6.1	28	nd	533	-1.93	1.23

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
257	Ferozabad	Madanpur	8.1	833	nil	463.676	43	1.40	4.7	15	350	40	61	45	5.1	27	nd	541.45	0.73	1.05
258	Ferozabad	Narkhi	7.8	18520	nil	463.676	3907	0.60	1370	3080	1997	176	378	3580	11.4	21	nd	12038	-32.17	34.85
259	Ferozabad	Shikohabad	7.9	722	nil	366.06	14	0.78	52	26	180	18	33	89	3.8	27	nd	469.3	2.50	2.88
260	Ferozabad	Tundla	8.0	2620	nil	915.15	277	1.60	40	219	440	18	96	456	5.9	28	nd	1703	6.45	9.45
261	G.B.Nagar	Bisrakh	7.8	602	nil	274	14	0.66	9.3	5.6	120	32	9.6	80	5.01	26	nd	391.3	2.17	3.18
262	G.B.Nagar	Dadri	8.0	711	nil	244	28	1.57	9.8	43	180	36	22	83	7.1	24	nd	462.15	0.47	2.69
263	G.B.Nagar	Dankaur	8.0	1554	nil	476	78	1.30	7.1	115	140	4	31	320	5.92	20	nd	1010.1	5.13	11.76
264	G.B.Nagar	Jewar	8.0	1910	nil	464	262	1.38	14	108	320	60	41	332	4.86	20	nd	1241.5	1.34	8.07
265	Ghaziabad	Bhojpur	7.8	955	nil	537	7.1	0.76	21	20	220	56	19	114	6.3	32	nd	620.75	4.55	3.34
266	Ghaziabad	Dholana	7.9	1102	nil	525	35	0.65	3.1	53	190	48	17	168	6.3	33	nd	716.3	4.94	5.30
267	Ghaziabad	Garh	7.9	976	nil	403	50	0.37	53	49	350	52	54	55	5.7	35	nd	634.4	-0.29	1.28
268	Ghaziabad	Hapur	7.9	825	nil	476	14	0.45	3.5	13	200	52	17	100	6.2	36	nd	536.25	3.93	3.07
269	Ghaziabad	Loni	7.7	1610	nil	305	262	0.30	44	150	350	76	39	204	19	31	nd	1046.5	-1.92	4.74
270	Ghaziabad	Muradnagar	8.0	940	nil	390	71	0.82	11	37	290	52	39	87	6.1	30	nd	611	0.71	2.22
271	Ghaziabad	Razapur	8.0	1002	nil	476	35	2.75	0.59	45	150	40	12	165	6.3	31	nd	651.3	4.93	5.86
272	Ghaziabad	Simbholi	7.8	912	nil	390	14	0.48	56	90	330	44	54	55	6.3	29	nd	592.8	-0.09	1.32
273	Ghaziabad	Ghaziabad	7.6	1282	nil	488	92	0.40	61	51	270	48	36	174	6.6	34	nd	833.3	2.73	4.60
274	Ghazipur	Barachawar	8.0	648	nil	329	14	0.17	6.9	21	210	76	4.8	47	4.6	36	nd	421.2	1.29	1.41
275	Ghazipur	Bhadaura	8.0	759	nil	342	57	0.10	1.56	23	240	80	9.6	64	3.5	32	nd	493.35	0.90	1.80
276	Ghazipur	Bhawarkol	8.1	817	nil	464	14	nd	1	5.8	240	80	9.6	74	4.6	31	nd	531.05	2.94	2.08

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
277	Ghazipur	Birno	7.8	612	nil	378	21	0.30	1.1	1.7	270	72	22	32	2.5	35	nd	397.8	0.90	0.85
278	Ghazipur	Deokali	7.8	895	nil	439	35	0.93	0.1	56	390	48	65	104	4.1	32	nd	581.75	-0.48	2.29
279	Ghazipur	Ghazipur	8.0	1102	nil	598	43	0.87	11	25	280	56	34	139	4.3	31	nd	716.3	4.37	3.61
280	Ghazipur	Jakhaniya	8.0	812	nil	415	28	0.58	3.7	108	340	44	55	68	5.9	32	nd	527.8	0.12	1.60
281	Ghazipur	Jamania	8.0	792	nil	427	21	nd	3.3	3.1	310	68	34	32	2.9	32	nd	514.8	0.92	0.79
282	Ghazipur	Karanda	8.0	626	nil	354	14	0.66	6.4	1.7	250	76	14	30	3.3	36	nd	406.9	0.90	0.83
283	Ghazipur	Kasimabad	7.9	682	nil	427	21	0.45	1.46	2.9	270	44	38	52	3.8	32	nd	443.3	1.72	1.38
284	Ghazipur	Manihari	8.1	695	nil	378	21	0.18	3.4	4.1	200	68	7.2	65	3.3	36	nd	451.75	2.30	2.00
285	Ghazipur	Mardah	8.1	1157	nil	549	92	0.75	26	57	420	76	55	109	5.3	32	nd	752.05	0.76	2.31
286	Ghazipur	Muhammadabad	8.0	633	nil	366	21	0.21	0.3	5.2	240	68	17	41	4.9	36	nd	411.45	1.30	1.15
287	Ghazipur	Reotipur	8.0	679	nil	390	21	nd	0.6	9.6	250	80	12	48	3.8	31	nd	441.35	1.50	1.32
288	Ghazipur	Sadat	8.0	687	nil	366	28	0.48	0.35	1.8	250	68	43	41	5.8	36	nd	446.55	1.10	1.13
289	Ghazipur	Saidpur	7.8	1222	nil	464	199	0.66	4.8	16	250	48	55	196	3.6	30	nd	794.3	2.74	5.39
290	Ghazipur	Barchawar-Block	8.0	580	nil	281	21	0.15	22	18	230	28	38	29	2.7	35	nd	377	0.09	0.83
291	Gonda	Belsar	7.4	780	nil	427	21	0.22	nd	2.6	320	76	32	23	5	46	nd	507	0.72	0.56
292	Gonda	Chhapiya	7.5	930	nil	439	28	0.85	49	12	420	76	56	13	0.67	52	nd	604.5	-1.07	0.28
293	Gonda	Colonelganj	7.6	840	nil	451	14	0.41	0.16	22	340	88	29	28	4.7	44	nd	546	0.73	0.66
294	Gonda	Haldharmau	7.7	1460	nil	647	71	0.25	43	44	420	104	39	70	117	54	2.2	949	2.38	1.49
295	Gonda	Itiyathok	7.9	820	nil	439	7.1	0.5	5	14	330	80	32	30	1.7	64	nd	533	0.72	0.72
296	Gonda	Jhanjhari	7.5	1960	nil	659	185	0.44	117	48	370	104	27	185	156	62	1.7	1274	3.58	4.18

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
297	Gonda	Katra Bazar	8.0	645	nil	342	21	0.23	1.7	1.5	230	64	17	29	8.7	37	nd	419.25	1.10	0.83
298	Gonda	Mankapur	7.6	660	nil	342	21	0.37	0.07	10	270	76	19	18	4.1	39	nd	429	0.30	0.48
299	Gonda	Mujehna	7.4	1450	nil	512	178	0.32	8.1	40	450	96	51	110	6.9	35	nd	942.5	-0.45	2.26
300	Gonda	Padri Kripal	7.9	620	nil	354	7.1	0.11	0.44	2.2	270	60	29	9.7	2.2	40	nd	403	0.50	0.26
301	Gonda	Paraspur	7.6	600	nil	281	28	0.03	11.3	12	230	76	10	19	12	26	nd	390	0.08	0.54
302	Gonda	Tarabganj	7.6	1220	nil	488	85	0.34	44	46	390	56	61	71	35	27	nd	793	0.34	1.56
303	Gonda	Wazir Ganj	8.0	480	nil	256	14	0.29	nd	1.5	190	40	22	14	3.6	31	nd	312	0.47	0.44
304	Gorakhpur	Compierganj	7.5	840	nil	427	36	0.29	0.03	1.5	330	64	41	35	4.9	47	nd	546	0.52	0.84
305	Gorakhpur	Jungle Kauria	7.9	530	nil	268	14	0.18	0.01	4.7	210	56	17	18	2.7	47	nd	344.5	0.28	0.54
306	Gorakhpur	Chargaon	7.9	600	nil	256	43	0.34	0.15	16	240	56	24	22	3.6	47	nd	390	-0.53	0.62
307	Gorakhpur	Bhathat	8.0	320	nil	159	14	0.21	0.03	4.2	130	36	10	7	3.4	43	nd	208	0.04	0.27
308	Gorakhpur	Pipraich	7.8	500	nil	256	14	0.35	0.04	1.4	190	48	17	20	4.2	42	nd	325	0.47	0.63
309	Gorakhpur	Sardar Nagar	7.9	430	nil	207	14	0.48	0.08	11	180	52	12	9	3.3	46	nd	279.5	-0.14	0.29
310	Gorakhpur	Bramhpur	8.2	480	nil	268	7.1	0.40	0.18	1.9	200	40	24	10	3	41	nd	312	0.48	0.31
311	Gorakhpur	Gorakhpur(Hq)	7.6	1200	nil	427	92	0.23	0.64	100	380	104	29	92	5.9	42	nd	780	-0.48	2.05
312	Gorakhpur	Khorabar	7.6	520	nil	207	36	0.25	21	13	200	64	10	19	1.4	49	nd	338	-0.54	0.58
313	Gorakhpur	Piprauli	7.8	760	nil	366	36	1.50	2.1	9.4	300	72	29	32	1.7	43	nd	494	0.10	0.80
314	Gorakhpur	Sahjanwa	8.1	480	nil	256	14	0.18	0.03	1.8	200	56	15	11	2	42	nd	312	0.27	0.34
315	Gorakhpur	Pali	7.7	800	nil	415	14	0.40	0.14	17	300	56	39	40	2.2	42	nd	520	0.92	1.00
316	Gorakhpur	Kauri Ram	7.8	410	nil	207	14	0.60	nd	1.6	160	44	12	12	2.6	43	nd	266.5	0.26	0.41

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
317	Gorakhpur	Bansgaon	7.7	800	nil	427	21	0.23	0.29	10	300	72	29	35	3.0	39	nd	520	1.12	0.88
318	Gorakhpur	Khajni	7.7	790	nil	415	21	0.31	0.04	5	280	60	32	45	3.7	48	nd	513.5	1.32	1.17
319	Gorakhpur	Belghat	7.8	600	nil	293	14	0.11	18	1.9	260	52	32	10	2.6	44	nd	390	-0.32	0.27
320	Gorakhpur	Urwa Bazar	7.8	800	nil	439	14	0.40	0.02	1.4	290	64	32	38	3.7	43	nd	520	1.52	0.97
321	Gorakhpur	Gola Bazar	7.7	500	nil	256	14	0.44	1.8	6.9	210	48	22	8.4	2.0	42	nd	325	0.07	0.25
322	Gorakhpur	Barhalganj	7.7	730	nil	390	14	0.41	0.02	7.8	310	48	46	20	3.8	42	nd	474.5	0.31	0.49
323	Gorakhpur	Gagaha	7.6	550	nil	305	7.1	0.33	0.17	1.7	230	52	24	14	3.2	44	nd	357.5	0.49	0.40
324	Hamirpur	Muskura	7.8	985	nil	512	43	0.89	35	18	340	36	61	92	2.2	29	nd	640.25	1.74	2.17
325	Hamirpur	Maudaha	7.9	3194	nil	927	372	1.45	151	321	310	28	58	602	111	26	nd	2076.1	9.25	14.86
326	Hamirpur	Gohand	7.7	553	nil	305	25	0.53	11	9	180	28	27	58	0.90	33	nd	359.45	1.48	1.86
327	Hamirpur	Rath	7.9	1740	nil	488	113	0.57	98	286	210	16	41	342	1.3	39	nd	1131	3.93	10.25
328	Hamirpur	Sarila	8.0	1440	nil	342	248	0.36	29	64	540	68	90	90	4.1	30	nd	936	-5.11	1.68
329	Hamirpur	Sumerpur	8.1	965	nil	390	92	0.61	17	33	190	28	29	146	1.6	30	nd	627.25	2.71	4.60
330	Hamirpur	Hamirpur	8.2	1012	nil	342	113	0.18	48	58	250	36	39	137	3.1	27	nd	657.8	0.69	3.77
331	Hardoi	Hardoi	7.9	650	nil	354	14	0.42	0.09	3.3	250	60	24	22	4.6	41	nd	422.5	0.90	0.61
332	Hardoi	Bilgram	8.2	730	nil	390	14	0.99	0.53	7	270	52	34	36	6.2	41	nd	474.5	1.11	0.95
333	Hardoi	Bavan	8.0	750	nil	317	43	0.27	0.2	43	200	56	15	69	4.9	36	nd	487.5	1.29	2.12
334	Hardoi	Behdar Khurd	8.1	920	nil	476	21	0.44	0.3	26	240	28	41	90	4.7	33	nd	598	3.13	2.53
335	Hardoi	Bharawan	8.4	690	24	317	14	0.75	1.8	7	250	56	27	29	4.5	40	nd	448.5	1.09	0.80
336	Hardoi	Bharkhani	8.0	800	nil	378	21	0.26	0.3	42	280	68	27	43	4.8	41	nd	520	0.71	1.12

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
337	Hardoi	Harpalpur	7.9	1570	nil	366	107	0.38	0.3	290	200	40	24	260	4.2	38	nd	1020.5	2.10	8.00
338	Hardoi	Hariyawan	7.9	750	nil	378	28	0.55	0.13	9.5	300	64	34	26	5.0	44	nd	487.5	0.31	0.65
339	Hardoi	Kachhauna	8.0	565	nil	305	14	0.34	1.6	2	230	72	12	15	6.1	41	nd	367.25	0.49	0.43
340	Hardoi	Kothawan	8.3	380	nil	171	14	1.07	0.13	15	160	32	19	5.8	4.0	36	nd	247	-0.35	0.20
341	Hardoi	Mallawan	7.8	585	nil	268	28	0.75	4	10	210	56	17	28	4.2	43	nd	380.25	0.28	0.84
342	Hardoi	Madhavganj	8.4	525	36	183	21	0.61	2.3	8	170	32	22	38	4.7	37	nd	341.25	0.85	1.27
343	Hardoi	Pihani	7.9	790	nil	390	36	0.46	3	10	290	56	36	40	7.8	42	nd	513.5	0.71	1.02
344	Hardoi	Shahabad	8.0	630	nil	268	28	0.34	0.12	43	240	60	22	28	5.8	33	nd	409.5	-0.32	0.79
345	Hardoi	Sursa	8.0	600	nil	317	14	0.44	0.17	1.3	210	44	24	31	5.7	42	nd	390	1.09	0.93
346	Hardoi	Sandi	8.2	480	nil	244	14	0.39	3.3	2.2	170	36	19	26	3.3	40	nd	312	0.67	0.87
347	Hardoi	Sandila	8.0	650	nil	342	21	0.79	0.4	2.6	250	56	27	28	4.7	42	nd	422.5	0.70	0.77
348	Hardoi	Tadiyawan	8.0	720	nil	342	28	0.37	0.17	27	260	52	32	38	4.9	41	nd	468	0.50	1.03
349	Hardoi	Todarpur	7.7	735	nil	390	21	0.38	0.02	3.7	270	52	34	36	6.3	41	nd	477.75	1.11	0.95
350	Hardoi	Ahirori	7.9	590	nil	317	7.1	0.42	0.09	7.1	230	52	24	20	6.7	44	nd	383.5	0.69	0.57
351	Hathras	Hassain	7.9	1113	nil	354	163	0.40	93	31	420	96	43	93	6.3	33	nd	723.45	-2.49	1.97
352	Hathras	Hathras	7.8	1686	nil	695	149	1.61	9.3	26	230	24	41	267	5.3	28	nd	1095.9	6.99	7.66
353	Hathras	Mursan	7.7	3165	nil	872	518	1.60	64	167	520	40	101	524	9.0	20	nd	2057.25	4.14	9.99
354	Hathras	Sadabad	8.0	2682	nil	842	312	0.80	32	138	330	32	60	444	5.3	31	nd	1743.3	7.44	10.63
355	Hathras	Sahpau	8.0	460	nil	244	7.1	0.90	5.7	6.6	190	40	22	16	3.6	19	nd	299	0.27	0.50
356	Hathras	Sasni	7.7	1750	nil	750	199	1.00	40	5.7	370	84	38	261	6.6	24	nd	1137.5	5.10	5.90

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
357	Hathras	Sikandar Rao	8.0	457	nil	171	14	0.60	2.8	25	150	36	14	34	4.94	32	nd	297.05	-0.15	1.21
358	J. P. Nagar	Amroha	8.0	692	nil	354	43	nd	nd	16	225	52	23	62	7.8	90	nd	449.8	1.40	1.80
359	J. P. Nagar	Dhanaura	8.0	356	nil	98	21	nd	nd	67	150	52	4.8	9.8	4.2	28	nd	231.4	-1.36	0.35
360	J. P. Nagar	Gajraula	8.0	773	nil	195	85	nd	nd	115	330	40	55	31	5.5	34	nd	502.45	-3.35	0.74
361	J. P. Nagar	Ganeshwari	8.0	442	nil	232	14	nd	nd	19	130	40	7.2	43	4.1	30	nd	287.3	1.27	1.64
362	J. P. Nagar	Hasanpur	8.1	755	nil	305	64	nd	0.87	7.1	300	84	22	40	4.7	39	nd	490.75	-0.91	1.00
363	J. P. Nagar	Joya	8.0	702	nil	378	28	nd	nd	35	230	68	14	67	8.5	33	nd	456.3	1.70	1.92
364	Jalaun	Dakore	7.6	1493	nil	628.403	170	0.62	43	17	530	40	105	115	1.4	24	nd	970.45	-0.13	2.17
365	Jalaun	Jalaun	7.8	1186	nil	494.181	121	0.85	36	22	490	68	78	58	2.5	25	nd	770.9	-1.57	1.14
366	Jalaun	Kadaura	8.0	990	nil	597.898	14	0.50	4.6	3.1	200	36	27	142	1.6	25	nd	643.5	5.96	4.37
367	Jalaun	Konch	7.6	1108	nil	634.504	43	0.34	24	12	280	40	44	152	1.9	30	nd	720.2	4.97	3.95
368	Jalaun	Kuthond	7.8	752	nil	451.474	21	0.43	11	3.1	230	36	34	82	2.8	26	nd	488.8	2.92	2.35
369	Jalaun	Madhogarh	7.5	1174	nil	549.09	78	0.33	33	26	480	92	61	55	2.4	33	nd	763.1	-0.45	1.09
370	Jalaun	Mahewa	8.0	703	nil	439.272	11	0.58	4.3	3.6	230	56	22	63	2.2	30	nd	456.95	2.72	1.81
371	Jalaun	Nadigaon	7.8	850	nil	524.686	21	0.42	4.9	2.8	280	40	44	82	1.8	28	nd	552.5	3.14	2.13
372	Jalaun	Rampura	7.9	936	nil	427.07	50	0.35	73	18	330	80	32	74	2.3	30	nd	608.4	0.52	1.77
373	Jaunpur	Buxa	8.1	611	nil	329	21	0.49	5	5	260	52	32	25	3.0	33	nd	397.15	0.29	0.68
374	Jaunpur	Badlapur	8.2	920	nil	525	14	0.41	0	51	290	40	46	98	3.4	26	nd	598	2.94	2.51
375	Jaunpur	Machhali sahar	8.2	1419	nil	659	85	1.79	0.3	107	210	20	39	263	2.1	22	nd	922.35	6.78	7.90
376	Jaunpur	Sujanganj	8.1	752	nil	476	7.1	0.44	0	3.8	240	36	36	78	4.7	26	nd	488.8	3.13	2.19

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
377	Jaunpur	Mugra Badsahpur	8.1	735	nil	464	7.1	0.93	0	3.3	225	40	30	81	3.9	27	nd	477.75	3.23	2.36
378	Jaunpur	Maharajganj	8.0	562	nil	342	14	0.78	0.9	2.6	225	36	33	37	4.3	32	nd	365.3	1.19	1.07
379	Jaunpur	Sikrara	8.1	995	nil	622	14	0.47	0	14	370	68	49	81	2.3	32	nd	646.75	2.97	1.82
380	Jhansi	Babina	7.6	1119	nil	512.484	99	0.54	1.1	15	390	68	54	84	1.3	27	nd	727.35	0.74	1.85
381	Jhansi	Bamaur	7.7	3530	nil	597.898	701.91	0.79	156	230	936	164	127.68	380	3.0	28	nd	2294.5	-8.74	5.40
382	Jhansi	Bangra	7.8	604	nil	341.656	21	0.60	12	7.5	230	68	15	39	0.89	28	nd	392.6	1.09	1.12
383	Jhansi	Baragaon	7.6	1140	nil	329.454	163.07	0.38	59	41	450	136	27	58	0.95	36	nd	741	-3.51	1.19
384	Jhansi	Chirgaon	7.8	552	nil	244.04	35	0.52	31	16	230	68	15	26	0.97	38	nd	358.8	-0.53	0.75
385	Jhansi	Gursarai	7.5	697	nil	317.252	50	0.33	18	32	260	60	27	37	20	48	0.16	453.05	0.09	1.00
386	Jhansi	Mauranipur	8.2	1097	nil	634.504	28	1.10	16	8.8	170	20	29	186	2.0	23	nd	713.05	7.17	6.20
387	Jhansi	Moth	7.6	1538	nil	512.484	191.43	0.26	61	59	475	56	81	144	3.8	27	nd	999.7	-0.96	2.87
388	Kannauj	Chhibramau	8.0	898	nil	451.474	50	0.72	9.3	49	280	44	41	91	5.0	35	nd	583.7	1.92	2.36
389	Kannauj	Gugrapur	8.0	445	nil	256.242	7.1	1.10	nd	19	170	36	19	27	7.7	29	nd	289.25	0.87	0.90
390	Kannauj	Haseran	8.0	673	nil	378.262	14	1.20	19	13	275	36	45	39	5.5	33	nd	437.45	0.80	1.02
391	Kannauj	Jalalabad	7.6	1370	nil	293	206	0.21	0.12	145	530	124	54	68	7.6	32	nd	890.5	-5.72	1.28
392	Kannauj	Kannauj	7.7	3210	nil	781	369	0.86	10	550	781	92	134	437	7.2	37	nd	2086.5	-2.59	6.80
393	Kannauj	Saurikh	7.9	1335	nil	464	103	0.69	110	59	440	56	73	99	7.0	34	nd	867.75	-1.07	2.05
394	Kannauj	Talgram	8.1	576	nil	268	28	0.28	23	19	205	48	21	46	2.6	40	nd	374.4	0.37	1.40
395	Kannauj	Umarda	8.3	320	nil	171	7.1	3.90	nd	16	110	28	10	24	3.0	25	nd	208	0.65	0.99

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
396	Kanpur Dehat	Amraudha	7.5	3620	nil	390	468	0.40	930	120	1531	253	219	106	8.0	35	nd	2353	-24.09	1.18
397	Kanpur Dehat	Akbarpur	7.9	2400	nil	610	220	0.64	242	220	450	24	95	110	388	29	nd	1560	1.17	2.25
398	Kanpur Dehat	Derapur	7.8	1580	nil	512	135	0.51	84	76	320	16	68	215	3.8	37	nd	1027	2.14	5.23
399	Kanpur Dehat	Jhinjhak	7.9	644	nil	366	21	0.66	3.6	11	190	24	32	64	3.3	36	nd	418.6	2.30	2.02
400	Kanpur Dehat	Maitha	8.1	950	nil	488	50	0.41	1.9	6.6	120	12	22	169	1.1	31	nd	617.5	5.73	6.71
401	Kanpur Dehat	Malasa	7.8	990	nil	476	71	0.67	6	20	290	24	56	90	6.4	38	nd	643.5	2.13	2.30
402	Kanpur Dehat	Rajpur	8.1	788	nil	415	21	0.93	15	18	250	24	46	66	3.9	33	nd	512.2	1.91	1.81
403	Kanpur Dehat	Rasoolabad	7.8	907	nil	451	57	0.77	12	17	320	28	61	59	6.9	35	nd	589.55	1.12	1.43
404	Kanpur Nagar	Bhitargaon	8.2	2000	nil	512	220	0.88	225	79	490	64	80	253	2.5	34	nd	1300	-1.26	4.97
405	Kanpur Nagar	Bidhnoo	8.0	996	nil	390	85	0.62	38	29	410	64	61	45	6.4	36	nd	647.4	-1.69	0.97
406	Kanpur Nagar	Bilhaur	7.9	697	nil	378	14	0.77	4.7	7.2	250	60	24	45	4.4	40	nd	453.05	1.30	1.24
407	Kanpur Nagar	Chaubepur	8.1	810	nil	464	14	0.84	2.3	4.8	250	44	34	77	5.9	40	nd	526.5	2.73	2.12
408	Kanpur Nagar	Ghatampur	8.2	880	nil	415	14	0.53	10.2	60	340	96	24	50	3.2	43	nd	572	0.11	1.18
409	Kanpur Nagar	Kakwan	8.0	660	nil	317	7	2.50	1.3	41	180	52	12	68	6.2	34	nd	429	1.69	2.20
410	Kanpur Nagar	Kalyanpur	8.2	970	nil	390	64	0.70	42	35	310	68	34	82	6.5	37	nd	630.5	0.31	2.02
411	Kanpur Nagar	Patara	7.6	900	nil	378	85	0.57	12	13	350	40	61	56	4.6	41	nd	585	-0.70	1.30

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
412	Kanpur Nagar	Sarsaul	8.4	1010	60	293	71	1.90	35	30	350	96	27	78	5.0	36	nd	656.5	-0.12	1.81
413	Kanpur Nagar	Shivrajpur	8.4	1164	36	220	206	0.81	30	32	490	100	58	39	19	37	nd	756.6	-4.94	0.77
414	Kanshiram Nagar	Amanpur	8.0	462	nil	268	21	0.75	nd	5.1	190	44	19	22	5.7	33	nd	300.3	0.67	0.69
415	Kanshiram Nagar	Ganj dundwara	8.1	435	nil	244	7.1	0.44	nd	24	205	56	16	6.9	6.0	24	nd	282.75	-0.03	0.21
416	Kanshiram Nagar	Kasganj	8.1	548	nil	281	14	0.64	38	15	235	52	26	29	4.6	33	nd	356.2	-0.02	0.82
417	Kanshiram Nagar	Patiyali	7.9	1095	nil	317	96	0.24	155	75	420	76	56	69	20	33	nd	711.75	-3.11	1.46
418	Kanshiram Nagar	Sahawar	8.2	419	nil	207	14	0.64	2.8	17	170	40	17	14	4.3	31	nd	272.35	0.06	0.47
419	Kanshiram Nagar	Sidhpura	8.2	1173	nil	439	156	0.73	4.9	63	330	60	44	133	20	30	nd	762.45	0.72	3.18
420	Kanshiram Nagar	Soron	8.0	788	nil	268	78	1.30	53	58	290	48	41	64	4.8	31	nd	512.2	-1.33	1.63
421	Kausambi	Kausambi	8.0	978	nil	537	43	0.98	2.9	17	330	36	58	90	3.6	30	nd	635.7	2.35	2.17
422	Kausambi	Chayal	8.0	698	nil	342	35	0.61	6.1	7.9	270	92	10	35	2.6	31	nd	453.7	0.29	0.94
423	Kausambi	Newada	7.9	836	nil	390	50	0.76	53.6	13	360	88	34	36	4.0	33	nd	543.4	-0.69	0.81
424	Kausambi	Sarsawan	8.2	1161	nil	683	35	0.93	1.3	26	420	40	78	96	12	30	nd	754.65	2.99	2.04
425	Kausambi	Muratganj	8.1	759	nil	403	28	0.89	4.4	20	260	40	39	65	1.9	33	nd	493.35	1.51	1.75
426	Kausambi	Sirathu	8.0	1017	nil	525	57	0.81	9.6	24	380	60	56	78	1.9	34	nd	661.05	1.14	1.74
427	Kausambi	Kara	8.0	1605	nil	549	113	0.82	158	127	390	56	61	186	70	29	nd	1043.25	1.35	4.10

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
428	Kausambi	Manjhanpur	8.2	876	nil	451	28	0.64	25	16	335	56	47	52	7.5	32	nd	569.4	0.82	1.24
429	Kushinagar	Captanganj	8.1	602	nil	268	43	0.35	nd	26	250	60	24	18	3.9	13	nd	391.3	-0.53	0.49
430	Kushinagar	Nebua Naurangia	8.2	902	nil	403	57	0.06	0.86	54	370	76	44	23	23	28	0.19	586.3	-0.69	0.53
431	Kushinagar	Khadda	8.1	510	nil	268	7.1	0.09	0.01	37	230	64	17	7	8.9	26	nd	331.5	-0.13	0.20
432	Kushinagar	Padrauna	8.2	1205	nil	390	121	0.13	0.07	118	450	136	27	60	5.2	45	nd	783.25	-2.49	1.23
433	Kushinagar	Dudahi	8.0	836	nil	439	35	0.10	1.1	22	330	72	36	36	7.6	39	nd	543.4	0.72	0.86
434	Kushinagar	Bishnupura	7.9	815	nil	439	28	0.15	2.1	26	350	68	44	22	9.7	38	0.21	529.75	0.32	0.51
435	Kushinagar	Seorahi	8.0	551	nil	281	14	0.09	0.44	26	220	56	19	18	6.0	31	nd	358.15	0.28	0.53
436	Kushinagar	Tamkuhi Raj	8.0	592	nil	342	14	0.39	nd	6.5	250	44	34	18	3.8	35	nd	384.8	0.69	0.49
437	Kushinagar	Fazil Nagar	8.0	560	nil	256	43	0.05	0.16	16	190	72	2.4	37	2.8	36	nd	364	0.47	1.17
438	Kushinagar	Kasia	8.2	626	nil	256	50	0.10	0.02	43	230	76	9.7	35	3.6	42	nd	406.9	-0.33	1.00
439	Kushinagar	Ramkola	8.1	536	nil	293	14	0.38	nd	19	220	48	24	19	4.4	35	nd	348.4	0.48	0.56
440	Kushinagar	Moti Chuk	8.0	495	nil	244	21	0.36	nd	11	180	56	9.7	22	2.8	37	nd	321.75	0.47	0.71
441	Kushinagar	Hata	8.1	590	nil	305	21	0.54	nd	7.6	210	52	19	28	3.9	39	nd	383.5	0.88	0.84
442	Kushinagar	Sukarauli	8.1	565	nil	220	57	0.50	nd	27	210	64	12	28	4.0	39	nd	367.25	-0.54	0.84
443	Lakhimpur Kheri	Bankeyganj	7.6	1140	nil	366	50	0.27	30	160	410	76	54	58	7.7	40	nd	741	-2.09	1.25
444	Lakhimpur Kheri	Behjam	7.8	970	nil	488	43	0.39	0.3	12	350	56	51	50	6.1	44	nd	630.5	1.14	1.16
445	Lakhimpur Kheri	Bijua	8.3	400	nil	207	7.1	0.28	0.3	4	160	32	19	11	3.5	39	nd	260	0.26	0.38
446	Lakhimpur	Dhaurahra	7.7	640	nil	354	14	0.10	1	3	270	64	27	15	5.0	40	nd	416	0.50	0.40

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
	Kheri																			
447	Lakhimpur Kheri	Gola	8.2	400	nil	195	14	0.25	0.17	6.4	170	32	22	7.2	3.4	39	nd	260	-0.14	0.24
448	Lakhimpur Kheri	Ishanagasr	7.8	1080	nil	610	14	0.18	1.8	8.7	300	68	32	95	7.7	38	0.3	702	4.17	2.39
449	Lakhimpur Kheri	Khiri	7.9	780	nil	415	21	0.55	0.12	5.8	320	64	39	19	5.6	41	nd	507	0.52	0.46
450	Lakhimpur Kheri	Mohammadi	8.2	430	nil	220	7.1	0.21	0.17	6.3	180	40	19	7.2	4.5	35	nd	279.5	0.06	0.23
451	Lakhimpur Kheri	Mitauli	7.9	550	nil	281	21	0.26	0.1	5.8	230	56	22	13	4.7	41	nd	357.5	0.08	0.37
452	Lakhimpur Kheri	Nakaha	7.6	1090	nil	500	43	0.27	2.6	60	410	116	29	50	5.1	40	nd	708.5	0.14	1.07
453	Lakhimpur Kheri	Nighasan	7.8	720	nil	403	7.1	0.19	1.8	8.5	320	76	32	9	6.5	33	nd	468	0.31	0.22
454	Lakhimpur Kheri	Pasgawan	8.0	380	nil	171	14	0.34	0.1	22	160	32	19	9	2.4	36	nd	247	-0.35	0.31
455	Lakhimpur Kheri	Palia Kalan	7.7	900	nil	427	36	0.17	1.8	35	380	52	61	17	7.0	37	nd	585	-0.48	0.38
456	Lakhimpur Kheri	Ramaiyabehar	7.7	730	nil	403	14	0.15	1.3	5	310	72	32	14	5.2	40	nd	474.5	0.51	0.35
457	Lalitpur	Bar	7.8	631	nil	305.05	35	0.98	3.7	30	225	56	21	46	0.77	26	nd	410.15	0.58	1.33
458	Lalitpur	Birdha	7.9	1244	nil	500.282	113.44	0.98	64	20	450	64	71	82	0.69	44	nd	808.6	-0.66	1.68
459	Lalitpur	Jakhaura	7.6	672	nil	280.646	50	0.47	57	23	295	60	35	29	0.73	44	nd	436.8	-1.22	0.73
460	Lalitpur	Madaora	7.7	848	nil	378.262	50	0.33	38	27	300	112	5	57	2.6	33	nd	551.2	0.30	1.43

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
461	Lalitpur	Mehrauni	7.9	785	nil	439.272	28	0.41	17	6.9	240	56	24	76	2.1	28	nd	510.25	2.52	2.13
462	Lalitpur	Talbehat	7.6	882	nil	427.07	50	0.47	47	29	340	52	51	62	1.4	35	nd	573.3	0.32	1.46
463	Maharajganj	Partawal	8.2	271	nil	134	14	0.22	0.14	16	120	36	7.3	8	2.5	31	nd	176.15	-0.16	0.32
464	Maharajganj	Paniyara	8.2	366	nil	220	7.1	0.28	nd	3.1	170	48	12	9	3.1	34	nd	237.9	0.26	0.30
465	Maharajganj	Ghugali	8.1	754	nil	354	50	0.08	0.71	37	220	76	7.3	72	4.3	41	nd	490.1	1.50	2.11
466	Maharajganj	Siswa Bazar	8.2	440	nil	256	7.1	0.15	nd	4.4	190	60	9.7	11	3.7	38	nd	286	0.47	0.34
467	Maharajganj	Mithaura	8.1	277	nil	134	7.1	0.12	nd	28	130	48	2.4	5.7	2.3	28	nd	180.05	-0.36	0.22
468	Maharajganj	Maharajganj	8.2	724	nil	354	43	0.01	0.19	16	190	60	9.7	70	8.2	40	nd	470.6	2.10	2.21
469	Maharajganj	Nichlaul	8.0	1211	nil	439	163	0.03	0.31	56	420	144	15	89	4.2	33	nd	787.15	-1.08	1.89
470	Maharajganj	Nautanwa	8.1	933	nil	390	99	0.46	0.08	23	310	60	39	72	3.4	23	nd	606.45	0.31	1.77
471	Maharajganj	Lachhamipur	8.0	400	nil	244	7.1	0.68	nd	3.8	160	36	17	24	1.8	33	nd	260	0.87	0.84
472	Maharajganj	Brijmanganj	8.1	701	nil	329	43	0.26	14	21	270	64	27	37	4.0	39	nd	455.65	0.09	0.98
473	Maharajganj	Dhani	8.1	402	nil	244	7.1	0.42	0.12	3.2	160	40	15	26	2.3	31	nd	261.3	0.87	0.88
474	Maharajganj	Farenda	8.2	506	nil	281	21	0.25	nd	7.3	200	44	22	24	2.9	37	nd	328.9	0.68	0.74
475	Mahoba	Panwari	8.0	592	nil	305	21	0.80	12	25	150	20	24	81	1.1	37	nd	384.8	2.08	2.86
476	Mahoba	Jaitpura	7.8	1154	nil	220	191	3.57	3.1	148	150	24	22	219	2.2	23	nd	750.1	0.66	7.78
477	Mahoba	Kabrai	7.9	1102	nil	159	177	0.73	135	64	450	132	29	51	0.4	60	nd	716.3	-6.36	1.04
478	Mahoba	Mahoba	7.7	1140	nil	171	184	0.63	139	63	480	132	36	51	0.4	64	nd	741	-6.75	1.01
479	Mainpuri	Barnahal	7.9	1378	nil	427	252	0.52	1	50	560	64	97	88	7.0	30	nd	895.7	-4.08	1.62
480	Mainpuri	Bewar	8.0	472	nil	256	11	1.00	nd	14	170	36	19	31	3.8	32	nd	306.8	0.87	1.03

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
481	Mainpuri	Jageer (alau)	8.2	380	nil	207	7.1	1.00	nd	17	165	32	21	15	3.4	23	nd	247	0.16	0.51
482	Mainpuri	Karhal	8.0	758	nil	415	18	3.00	6.8	46	200	36	27	93	5.7	31	nd	492.7	2.91	2.86
483	Mainpuri	Kishni	8.1	1412	nil	567	71	4.30	6.5	200	180	20	32	264	6.9	23	nd	917.8	5.85	8.56
484	Mainpuri	Kurawali	8.0	1315	nil	610	64	1.80	nd	105	240	40	34	215	6.6	30	nd	854.75	5.37	6.03
485	Mainpuri	Mainpuri	8.0	670	nil	281	43	0.41	25	36	250	52	29	48	5.7	31	nd	435.5	-0.32	1.32
486	Mainpuri	Sultanganj	7.9	543	nil	329	11	0.51	nd	7.5	180	44	17	51	4.6	30	nd	352.95	1.89	1.65
487	Mathura	Baldeo	8.0	821	nil	415	21	1.61	7	42	100	4	22	149	1.2	27	nd	533.65	4.92	6.48
488	Mathura	Chaumuhan	8.0	2482	nil	415	532	1.31	5	98	430	56	62	368	1.4	30	nd	1613.3	-1.68	7.72
489	Mathura	Chhata	8.0	2338	nil	476	461	0.57	24	181	640	16	100	325	5.2	22	nd	1519.7	-4.86	5.59
490	Mathura	Farah	8.0	3982	nil	464	1035	0.77	24	185	1310	176	209	342	2.1	18	nd	2588.3	-18.45	4.11
491	Mathura	Goverdhan	7.9	2124	nil	518	418	0.89	15	115	400	88	31	365	4.11	19	nd	1380.6	0.64	7.94
492	Mathura	Mat	8.1	2125	nil	537	346	0.64	19	144	410	72	41	334	48	31	nd	1381.25	0.76	7.17
493	Mathura	Mathura	8.1	4287	nil	817	1042	0.44	25	121.6	1140	160	178	524	7.1	26	nd	2786.55	-9.17	6.75
494	Mathura	Nandgaon	8.0	2968	nil	695	546	1.64	5.4	178	550	60	72	497	3.6	24	nd	1929.2	0.59	9.22
495	Mathura	Nohihil	7.8	4243	nil	1025	794	0.46	268	145	510	16	113	447	658	32	nd	2757.95	6.89	8.61
496	Mathura	Raya	8.0	2304	nil	366	390	1.02	129	115	500	56	62	364	46	35	nd	1497.6	-3.89	7.08
497	Maunath Bhanjan	Badrao	8.0	555	nil	293	14	0.37	6.2	3.1	190	68	17	32	5.94	37	nd	360.75	1.09	1.01
498	Maunath Bhanjan	Dohrighat	8.0	576	nil	342	14	0.24	n.d	7.5	230	72	24	33	4.82	38	nd	374.4	1.10	0.95
499	Maunath Bhanjan	Fatehpurmadaon	8.0	547	nil	305	43	0.20	n.d	9.7	240	76	12	18	34	55	nd	355.55	0.29	0.51

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
500	Maunath Bhanjan	Ghosi	8.0	1020	nil	488	43	0.45	17	45	500	108	55	67	4.6	39	nd	663	-1.86	1.30
501	Maunath Bhanjan	Kopaganj	7.9	642	nil	342	35	nd	6.5	10	280	68	26	30	3.9	36	nd	417.3	0.10	0.78
502	Maunath Bhanjan	Mohammadabad	7.9	632	nil	342	43	0.75	0.33	1.9	230	48	26	56	2.6	31	nd	410.8	1.10	1.61
503	Maunath Bhanjan	Pardhana	8.0	694	nil	403	7	0.47	0.11	4.9	190	48	17	74	3.0	31	nd	451.1	2.92	2.34
504	Maunath Bhanjan	Ranipur	8.0	767	nil	421	43	0.74	3.1	20	200	44	22	105	2.8	31	nd	498.55	3.02	3.23
505	Maunath Bhanjan	Ratanpura	8.1	1154	nil	622	28	0.34	35	9.6	460	92	55	56	5.5	35	nd	750.1	1.17	1.14
506	Meerut	Daurala	7.8	786	nil	427	14	0.26	0.3	36	270	52	34	52	7.2	34	nd	510.9	1.72	1.38
507	Meerut	Hastinapur	7.8	480	nil	244	7.1	0.15	7	18	200	40	24	12	5.0	32	nd	312	0.07	0.37
508	Meerut	Janikhurd	7.8	612	nil	305	14	0.19	14	30	230	44	29	30	5.0	32	nd	397.8	0.48	0.86
509	Meerut	Kharkhoda	7.8	1400	nil	598	92	0.59	31	55	250	76	15	220	7.5	30	nd	910	4.96	6.05
510	Meerut	Machhra	8.2	570	nil	281	21	0.22	0.18	17	220	48	24	26	5.7	29	nd	370.5	0.28	0.76
511	Meerut	Mawana	8.0	455	nil	220	14	0.68	0.24	42	180	44	17	22	5.6	29	nd	295.75	0.06	0.71
512	Meerut	Meerut	8.1	1300	nil	476	78	0.64	58	110	310	72	32	157	7.7	29	nd	845	1.73	3.88
513	Meerut	Parichhat Garh	7.9	481	nil	207	14	0.30	0.08	38	180	48	15	16	5.0	29	nd	312.65	-0.14	0.52
514	Meerut	Rajpur	7.8	706	nil	415	7.1	0.38	3.6	16	190	52	15	72	5.8	32	nd	458.9	3.11	2.27
515	Meerut	Rohta	7.8	734	nil	439	14	0.50	0.87	15	250	64	22	55	7.2	33	nd	477.1	2.32	1.51
516	Meerut	Sardhana	7.9	1130	nil	366	113	0.69	82	48	310	52	44	103	27	30	nd	734.5	-0.10	2.54

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
517	Meerut	Saroorpur	7.7	710	nil	378	14	0.64	1.3	21	330	68	39	16	6.1	32	nd	461.5	-0.30	0.38
518	Moradabad	Asmoli	8.1	343	nil	171	28	nd	nd	0.7	110	36	4.8	30	4.4	30	nd	222.95	0.65	1.24
519	Moradabad	Bahjoi	8.0	556	nil	329	28	nd	nd	9.8	205	60	13	49	6.8	30	nd	361.4	1.39	1.49
520	Moradabad	Baniakhera	8.1	418	nil	238	14	nd	nd	7.9	190	64	7.2	14	5.8	93	nd	271.7	0.17	0.44
521	Moradabad	Bilari	8.0	462	nil	244	28	nd	nd	12	190	36	24	27	5.7	32	nd	300.3	0.27	0.85
522	Moradabad	Chhajlet	7.9	391	nil	195	21	nd	nd	7.8	160	52	7.2	17	4.1	30	nd	254.15	0.05	0.58
523	Moradabad	Deengarpur	8.0	647	nil	268	64	nd	nd	60	280	56	34	35	12	28	nd	420.55	-1.13	0.91
524	Moradabad	Dilari	8.0	408	nil	256	14	nd	nd	2.5	120	40	4.8	50	1.8	26	nd	265.2	1.87	1.99
525	Moradabad	Moondhapandey	8.1	383	nil	232	14	nd	nd	12	150	48	7.2	31	3.6	28	nd	248.95	0.87	1.10
526	Moradabad	Moradabad	8.0	457	nil	244	28	nd	nd	11	200	64	9.6	21	4.3	36	nd	297.05	0.07	0.65
527	Moradabad	Anwasa	8.0	587	nil	293	28	nd	0.53	44	270	48	36	34	6.4	32	nd	381.55	-0.51	0.90
528	Moradabad	Sambhal	8.1	1052	nil	433	121	nd	0.87	13	370	56	55	94	9.1	75	nd	683.8	-0.18	2.13
529	Moradabad	Thaurdwara	8.0	593	nil	293	14	nd	nd	80	160	36	17	84	1.5	26	nd	385.45	1.69	2.89
530	Muzaffarnagar	Bhaghara	8.1	403	nil	207	3.5	0.57	0.93	28	175	56	8.5	7.6	4.0	30	nd	261.95	-0.04	0.25
531	Muzaffarnagar	Budhana	7.8	871	nil	354	28	0.63	49	43	290	68	29	62	6.4	28	nd	566.15	0.10	1.58
532	Muzaffarnagar	Charthawal	7.8	490	nil	256	14	0.81	0.18	26	180	44	17	30	4.2	29	nd	318.5	0.67	0.97
533	Muzaffarnagar	Jansath	7.9	590	nil	317	14	0.55	nd	18	230	48	27	25	6.4	28	nd	383.5	0.69	0.72
534	Muzaffarnagar	Kairana	7.8	900	nil	451	21	0.51	4.2	50	180	64	5	116	5.5	33	nd	585	3.92	3.76
535	Muzaffarnagar	Kandhala	8.0	587	nil	329	7.1	0.45	0.08	10	190	36	24	50	5.1	33	nd	381.55	1.69	1.58
536	Muzaffarnagar	Khatauli	8.0	494	nil	244	21	0.17	0.04	21	170	48	12	30	5.5	27	nd	321.1	0.67	1.00

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
537	Muzaffarnagar	Morna	8.0	462	nil	195	14	0.03	28	37	210	48	22	7.5	3.1	28	nd	300.3	-0.95	0.23
538	Muzaffarnagar	Muzaffar Nagar	8.0	386	nil	195	7.1	0.74	nd	24	170	40	17	9.7	3.8	30	nd	250.9	-0.15	0.32
539	Muzaffarnagar	Purkaji	7.9	425	nil	244	7.1	0.07	nd	10	190	48	17	6.5	5.2	26	nd	276.25	0.27	0.21
540	Muzaffarnagar	Shahpur	7.9	377	nil	195	7.1	0.42	0.36	24	160	32	19	12	3.7	27	nd	245.05	0.05	0.41
541	Muzaffarnagar	Shamli	8.0	380	nil	171	7.1	2.2	0.07	43	160	36	17	12	4.3	24	nd	247	-0.35	0.41
542	Muzaffarnagar	Thana Bhawan	8.0	530	nil	317	14	0.36	0.19	5.7	180	40	19	41	5.0	28	nd	344.5	1.69	1.33
543	Muzaffarnagar	Un	7.8	632	nil	329	21	0.59	0.11	15	210	60	15	43	5.1	32	nd	410.8	1.29	1.29
544	Pilibhit	Marori	8.7	408	18	189	14	0.46	0.23	4.8	130	20	19	36	4.9	25	nd	265.2	1.15	1.37
545	Pilibhit	Barakhera	8.2	465	nil	281	7.1	0.38	nd	17	210	48	22	18	3.9	25	nd	302.25	0.48	0.54
546	Pilibhit	Lalauri khera	8.5	487	12	226	21	0.22	nd	28	190	24	32	33	5.1	28	nd	316.55	0.36	1.04
547	Pilibhit	Bisalpur	8.2	392	nil	232	7.1	0.29	0.04	4.8	175	48	13	9.8	3.0	25	nd	254.8	0.36	0.32
548	Pilibhit	Puranpur	8.2	328	nil	177	11	0.49	nd	15	130	24	17	17	3.1	20	nd	213.2	0.35	0.65
549	Pilibhit	Bilsanda	8.3	458	nil	275	11	0.34	nd	12	220	48	24	9.7	4.7	28	nd	297.7	0.17	0.28
550	Pratapgarh	Pratapgarh sadar	8.0	792	nil	500	7.1	2.76	0.7	3	140	28	17	135	3.4	23	nd	514.8	5.54	4.98
551	Pratapgarh	Laxmanpur	7.9	893	nil	537	28	0.81	0	6	370	52	58	54	6.2	30	nd	580.45	1.55	1.23
552	Pratapgarh	AspurDeosara	8.0	710	nil	439	14	0.54	0.60	4	270	28	49	55	2.6	30	nd	461.5	1.92	1.46
553	Pratapgarh	Baba Bhekhtar Nath Dham	8.2	1620	nil	781	57	2.15	2.80	142	150	24	22	340	4.5	26	nd	1053	10.01	12.07
554	Pratapgarh	Babaganj	8.1	673	nil	366	21	0.8	14	13	180	32	24	83	5.1	26	nd	437.45	2.50	2.68
555	Pratapgarh	Magraura	8.1	788	nil	500	7.1	0.3	7.00	7	280	48	39	69	5.3	33	nd	512.2	2.74	1.78
556	Pratapgarh	Kala kankar	8.0	713	nil	439	7.1	0.88	0.20	14	240	48	29	69	2.6	9	nd	463.45	2.52	1.92

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
557	Pratapgarh	Patti	8.2	543	nil	329	14	0.04	0.90	7.4	210	40	27	38	5.6	31	nd	352.95	1.29	1.15
558	Pratapgarh	Gaura	8.0	577	nil	354	14	0.54	0.10	3.2	210	32	32	46	4.7	33	nd	375.05	1.70	1.39
559	Pratapgarh	Sandwa Chandrika	8.2	683	nil	427	7.1	0.76	4.10	2.5	265	40	40	48	5.0	30	nd	443.95	1.82	1.29
560	Pratapgarh	Kunda	8.0	1242	nil	586	78	0.84	49	38	290	52	39	179	4.3	30	nd	807.3	3.96	4.58
561	Pratapgarh	Shivgarh	8.1	626	nil	378	7.1	0.92	4.1	3.3	280	40	44	19	5.6	31	nd	406.9	0.70	0.49
562	Pratapgarh	Bihar	8.0	693	nil	366	14	1.57	2.8	46	220	44	27	72	5.5	27	nd	450.45	1.70	2.10
563	Pratapgarh	Mandhata	7.9	629	nil	390	7.1	0.86	1.7	6	230	48	27	52	3.7	31	nd	408.85	1.91	1.50
564	Pratapgarh	Rampur	8.0	1158	nil	683	21	0.87	0.3	31	90	12	15	250	2.4	21	nd	752.7	9.59	11.46
565	Rampur	Bilaspur	7.9	446	nil	268	7	nd	nd	21	130	8	26	56	2.7	28	nd	289.9	1.87	2.14
566	Rampur	Chamraula	8.0	533	nil	256	21	nd	nd	49	195	52	16	45	1.7	30	nd	346.45	0.37	1.40
567	Rampur	Milak	8.0	470	nil	244	21	nd	nd	15	180	60	7.2	28	4.5	34	nd	305.5	0.47	0.91
568	Rampur	Shahbad	7.9	631	nil	329	28	nd	nd	27	220	56	22	52	6.7	27	nd	410.15	1.09	1.52
569	Rampur	Swar	8.0	532	nil	232	35	nd	nd	20	165	56	6	42	5.7	33	nd	345.8	0.57	1.42
570	Rampur	Rampur	8.1	506	nil	268	14	nd	nd	37	220	52	22	27	2.3	31	nd	328.9	0.07	0.79
571	Saharanpur	Baliakheri	7.7	445	nil	244	7.1	0.43	nd	20	170	44	15	21	4.8	25	nd	289.25	0.67	0.70
572	Saharanpur	Deoband	8.0	547	nil	232	43	0.64	5.2	28	200	60	12	28	10	31	nd	355.55	-0.14	0.86
573	Saharanpur	Gangoh	8.1	550	nil	305	14	0.52	0.19	16	210	40	27	29	5.3	32	nd	357.5	0.88	0.87
574	Saharanpur	Muzafarabad	7.8	490	nil	256	14	0.19	1.4	12	170	56	7.3	28	1.9	25	nd	318.5	0.87	0.93
575	Saharanpur	Nagal	8.1	401	nil	232	7.1	0.22	0.02	5.3	160	48	10	15	3.8	29	nd	260.65	0.66	0.52
576	Saharanpur	Nakur	7.5	1302	nil	488	135	0.17	0.45	55	330	56	46	130	8.0	28	nd	846.3	1.53	3.11

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
577	Saharanpur	Nanauta	7.9	558	nil	244	14	0.61	0.02	44	200	40	24	22	5.9	27	nd	362.7	0.07	0.68
578	Saharanpur	Puwarka	7.9	438	nil	232	7.1	0.45	nd	26	180	44	17	15	4.1	25	nd	284.7	0.26	0.49
579	Saharanpur	Rampur	7.5	1300	nil	342	78	0.32	190	113	450	72	66	82	2.4	30	nd	845	-3.31	1.68
580	Saharanpur	Sadauli Qudim	7.8	632	nil	354	7.1	0.01	4.2	14	250	64	22	25	1.5	20	nd	410.8	0.90	0.69
581	Saharanpur	Sarsawa	7.9	705	nil	366	35	0.27	0.33	13	250	68	19	43	5.3	27	nd	458.25	1.10	1.18
582	Sant Kabir Nagar	Semeriaon	8.1	705	nil	378	35	0.44	nd	7.8	280	60	32	32	3.4	34	nd	458.25	0.70	0.83
583	Sant Kabir Nagar	Belhar	8.2	520	nil	317	7.1	0.4	nd	3.3	220	52	22	20	3.0	34	nd	338	0.89	0.58
584	Sant Kabir Nagar	Santha	8.2	300	nil	159	14	0.23	nd	15	140	36	12	7.4	1.8	28	nd	195	-0.16	0.27
585	Sant Kabir Nagar	Maindawal	8.2	496	nil	256	28	0.25	nd	8.4	170	56	7.3	34	3.7	31	nd	322.4	0.87	1.13
586	Sant Kabir Nagar	Baghauli	8.2	393	nil	232	7.1	0.37	nd	6.5	180	44	17	9.2	2.3	31	nd	255.45	0.26	0.30
587	Sant Kabir Nagar	Khalilabad	8.2	644	nil	366	14	0.5	nd	2.3	260	44	36	21	2.9	34	nd	418.6	0.90	0.57
588	Sant Kabir Nagar	Nathnagar	8.2	587	nil	354	7.1	0.08	0.09	3.4	190	24	32	44	3.1	29	nd	381.55	2.10	1.39
589	Sant Kabir Nagar	Pauli	7.8	438	nil	268	7.1	0.11	0.63	3.4	200	48	19	9	3.5	28	nd	284.7	0.47	0.28
590	Sant Kabir Nagar	Hainsar Bazar	8.1	425	nil	220	7.1	0.33	14	16	200	48	19	6.7	2.9	27	nd	276.25	-0.34	0.21
591	Shahjahanpur	Banda	8.3	377	nil	195	11	0.29	nd	22	165	40	16	9	4.9	26	nd	245.05	-0.05	0.30
592	Shahjahanpur	Jalalabad	8.2	357	nil	220	7.1	0.36	nd	6.7	150	44	10	18	3.5	29	nd	232.05	0.66	0.64

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
593	Shahjahanpur	Madnapur	8.0	675	nil	305	46	0.31	0.3	49	260	60	27	48	5.5	24	nd	438.75	-0.12	1.29
594	Shahjahanpur	Sindhauli	8.1	515	nil	311	11	0.33	2.1	8.9	220	52	22	23	4.5	28	nd	334.75	0.78	0.67
595	Shahjahanpur	Tilhar	8.1	510	nil	299	14	0.42	nd	15	230	64	17	16	6.5	27	nd	331.5	0.38	0.46
596	Shahjahanpur	Jaitipur	7.8	455	nil	256	7.1	0.29	0.32	15	210	52	19	13	2.9	26	nd	295.75	0.07	0.39
597	Shahjahanpur	Kanth	8.1	475	nil	232	11	0.43	nd	55	230	52	24	11	3.4	26	nd	308.75	-0.74	0.32
598	Shahjahanpur	Payawan	8.3	535	nil	317	18	0.38	nd	9.6	240	52	27	17	5.4	29	nd	347.75	0.49	0.48
599	Shahjahanpur	Khutar	8.2	824	nil	439	43	0.33	0.29	29	350	68	44	45	6.6	28	nd	535.6	0.32	1.05
600	Shahjahanpur	Bhawalkherda	8.2	592	nil	378	7.1	0.37	nd	7	280	32	49	14	4.7	25	nd	384.8	0.70	0.36
601	Shahjahanpur	Dadraul	8.0	574	nil	329	14	0.51	nd	23	125	28	13	86	2.7	22	0.26	373.1	2.99	3.34
602	Shahjahanpur	Kalan	7.8	635	nil	305	50	0.34	0.11	30	200	40	24	65	4.0	24	nd	412.75	1.08	2.00
603	Shrawasti	Gilaula	8.2	445	nil	274.545	11	0.66	0.21	1.7	200	40	24	14	2.5	31	nd	289.25	0.57	0.43
604	Shrawasti	Hariharpur Rani	7.8	720	nil	439.272	21	0.70	0.19	8.1	260	52	32	58	1.9	27	nd	468	2.12	1.56
605	Shrawasti	Ikauna	8.0	550	nil	335.555	14	0.20	0.08	3.2	230	56	22	25	3.4	30	nd	357.5	0.99	0.72
606	Shrawasti	Jamunaha	7.8	674	nil	439.272	7.1	0.5	0.18	2.3	290	56	36	33	2.8	27	nd	438.1	1.52	0.84
607	Shrawasti	Sirsiya	8.0	736	nil	463.676	14	0.52	0.09	8	280	36	46	56	0.89	26	nd	478.4	2.13	1.46
608	Siddharth Nagar	Bansi	7.7	772	nil	451.474	28	0.43	0.23	4.9	350	68	44	33	3.6	34	nd	501.8	0.52	0.77
609	Siddharth Nagar	Bardpur	7.9	674	nil	390.464	7.1	0.88	0.15	27	200	48	19	76	2.0	28	nd	438.1	2.51	2.34
610	Siddharth Nagar	Barhani	7.6	1145	nil	549.09	106	0.56	0.53	33	450	124	34	78	1.5	27	nd	744.25	0.15	1.60
611	Siddharth	Bhanwapur	8.2	425	nil	268.444	7.1	0.56	0.13	1.8	180	32	24	24	2.1	31	nd	276.25	0.87	0.78

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
	Nagar																			
612	Siddharth Nagar	Dumariyaganj	7.5	775	nil	403	43	1.2	7.4	21	320	64	39	48	1.1	34	nd	503.75	0.31	1.17
613	Siddharth Nagar	Itwa	8.0	452	nil	268.444	18	0.25	0.08	1.6	210	48	22	11	3.1	30	nd	293.8	0.27	0.33
614	Siddharth Nagar	Jogiya	7.6	640	nil	402.666	7.1	0.83	0.92	1.7	250	52	29	46	2.2	26	nd	416	1.71	1.26
615	Siddharth Nagar	Khesraha	7.8	1055	nil	475.878	92	0.54	40	24	360	72	44	89	3.6	33	nd	685.75	0.73	2.04
616	Siddharth Nagar	Mithawal	7.9	872	nil	512.484	28	1	0.39	13	150	36	15	150	2.4	25	nd	566.8	5.54	5.32
617	Siddharth Nagar	Naugarh	8.0	672	nil	378.262	35	1	0.13	6.3	290	56	36	35	2.6	29	nd	436.8	0.50	0.89
618	Siddharth Nagar	Shoharatgarh	7.7	732	nil	451.474	21	0.78	0.32	3.8	330	56	46	32	2.4	31	nd	475.8	0.92	0.77
619	Siddharth Nagar	Uska Bazar	7.7	548	nil	323.353	18	1.1	0.11	3.4	250	56	27	14	3.1	35	nd	356.2	0.39	0.38
620	Sitapur	Behta	7.8	760	nil	342	28	0.18	0.50	40	210	60	15	70	9.2	33	nd	494	1.50	2.10
621	Sitapur	Bisawan	7.4	1540	nil	439	149	0.44	100	100	520	68	85	96	4.7	45	nd	1001	-3.07	1.83
622	Sitapur	Godalamau	8.1	620	nil	305	7.1	0.37	0.60	24	220	40	29	27	4.6	37	nd	403	0.69	0.79
623	Sitapur	Hargaon	7.9	700	nil	329	28	0.63	6.40	19	290	56	36	14	4.9	39	nd	455	-0.31	0.36
624	Sitapur	Kasmanda	7.9	630	nil	305	14	0.49	1.80	26	270	52	34	6	4.8	37	nd	409.5	-0.31	0.16
625	Sitapur	Khairabad	7.8	690	nil	366	7.1	1.09	0.20	18	290	52	39	13	4.7	38	nd	448.5	0.30	0.33
626	Sitapur	Laharpur	8.0	480	nil	256	7.1	0.11	0.13	6.4	200	60	12	6.7	3.8	39	nd	312	0.27	0.21

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
627	Sitapur	Machharehta	8.2	760	nil	317	50	0.23	3.00	29	240	32	39	57	4.9	39	nd	494	0.49	1.60
628	Sitapur	Mahmoodabad	7.9	600	nil	293	21	0.28	0.26	14	230	56	22	21	5.2	34	nd	390	0.28	0.60
629	Sitapur	Misrikh	8.4	500	24	207	21	0.46	0.10	1.6	200	32	29	15	4.2	40	nd	325	0.26	0.46
630	Sitapur	Moholi	7.9	700	nil	366	21	0.48	0.17	1.9	280	44	41	18	4.4	38	nd	455	0.50	0.47
631	Sitapur	Pahla	8.4	480	24	195	14	0.3	0.14	2.5	210	52	19	7	3.4	39	nd	312	-0.14	0.21
632	Sitapur	Parsendi	7.9	720	nil	403	14	0.62	0.20	1.4	270	56	32	30	4.5	40	nd	468	1.31	0.79
633	Sitapur	Pisawan	8.0	570	nil	293	14	0.28	0.18	7.6	200	44	22	30	4.5	38	nd	370.5	0.88	0.92
634	Sitapur	Rampur Mathura	8.5	560	36	207	14	0.31	2.40	15	220	52	22	18	3.1	34	nd	364	0.26	0.53
635	Sitapur	Rewsa	7.7	800	nil	427	21	0.30	0.70	6.2	260	72	19	51	4.3	37	nd	520	1.92	1.38
636	Sitapur	Sakaran	8.1	750	nil	378	21	0.33	0.30	12	250	40	36	48	5.1	41	nd	487.5	1.31	1.32
637	Sitapur	Sidhauli	7.9	1320	nil	525	99	0.38	55	29	520	136	44	45	5.6	43	nd	858	-1.65	0.86
638	Sitapur	Sitapur	7.9	710	nil	390	14	0.57	0.90	1.4	280	52	36	24	5.0	34	nd	461.5	0.91	0.62
639	Unnao	Asoha	8.1	3400	nil	427	475	0.60	0.57	670	620	72	107	503	13	37	nd	2210	-5.28	8.78
640	Unnao	Auras	8.2	842	nil	366	43	0.64	0.11	64	240	40	34	89	3.3	37	nd	547.3	1.30	2.50
641	Unnao	Bighapur	8.2	550	nil	329	7	2.00	0.22	2.3	190	32	27	47	4.1	36	nd	357.5	1.69	1.48
642	Unnao	Bichia	8.1	725	nil	354	43	0.66	0.1	5.5	280	64	29	40	6.7	39	nd	471.25	0.30	1.04
643	Unnao	Fatehpur Chaurasi	8.1	2350	nil	207	269	0.38	0.005	570	540	160	34	297	6.7	39	nd	1527.5	-7.34	5.56
644	Unnao	Ganj Muradabad	8.1	570	nil	268	21	0.36	9.8	15	220	44	27	27	2.5	39	nd	370.5	0.07	0.79
645	Unnao	Hasanganj	8.1	600	nil	293	28	0.97	0.59	13	230	44	29	33	3.33	34	nd	390	0.28	0.95
646	Unnao	Hilauli	8.2	705	nil	378	14	0.78	2.6	19	190	40	22	77	5.77	36	nd	458.25	2.50	2.43

Sl. No	District	Block	pH	E.C.µ S/cm at25˚C	CO_3	HCO_3	Cl	F	NO_3	SO_4	TH	Ca	Mg	Na	K	SiO_2	PO_4	TDS	RSC	SAR
					----------mg/l----------															
647	Unnao	Miyaganj	8.2	530	nil	281	21	0.54	0.37	11	200	44	22	35	5.64	35	nd	344.5	0.68	1.08
648	Unnao	Nawabganj	8.5	1000	60	329	50	3.30	17	41	230	24	41	118	4.4	31	nd	650	2.89	3.38
649	Unnao	Purwa	8.2	900	nil	439	21	1.70	23	35	260	40	39	94	2.0	39	nd	585	2.12	2.53
650	Unnao	Safipur	8.2	654	nil	244	50	0.82	43	27	270	40	41	31	4.7	35	nd	425.1	-1.33	0.82
651	Unnao	Sikanderpur Karan (Achalganj)	8.0	630	nil	354	14	0.68	2.8	5.8	210	56	17	52	4.6	38	nd	409.5	1.70	1.56
652	Unnao	Sikanderpur Sirausi (Mainikhera)	8.2	760	nil	366	14	1.00	2.2	48	230	56	22	69	3.3	37	nd	494	1.50	1.98
653	Unnao	Sumerpur	8.2	1140	nil	635	21	2.30	4.0	19	140	20	22	207	3.8	31	nd	741	7.77	7.61