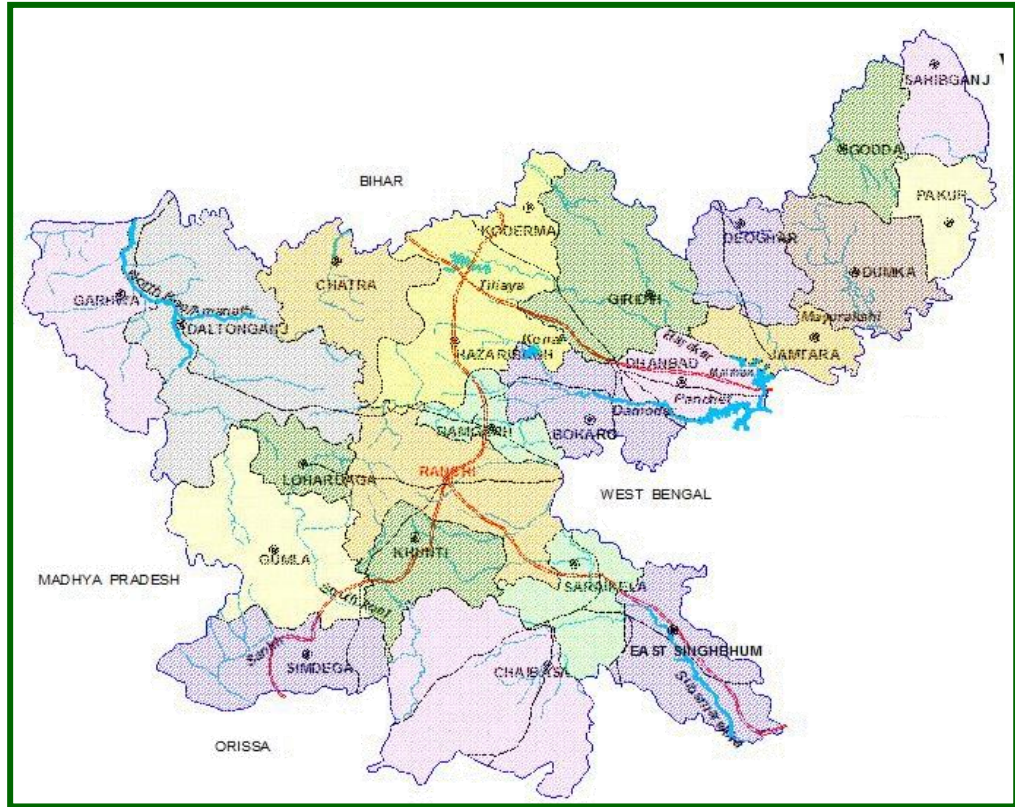




वार्षिक भूजल पुस्तिका  
झारखण्ड  
(2019 - 2020)

**GROUND WATER YEAR BOOK**

**JHARKHAND**  
(2019 - 2020)



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MARCH, 2021

भारत सरकार  
जलशक्ति मंत्रालय  
जल संसाधन, नदी विकास व गंगा संरक्षण विभाग  
केंद्रीय भूमिजल बोर्ड

**Government of India  
Ministry of Jalshakti,  
Department of River Development & Ganga Rejuvenation  
Central Ground Water Board**

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**Central Ground Water Board  
Mid-Eastern Region, Patna  
State Unit Office, Ranchi  
March 2021**

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## **FOREWORD**

To understand the groundwater situations in diverse hydrogeological environments, changes in various facets of ground water, like variation in water level and water quality are to be monitored. A regular monitoring of ground water regime through a network of observation wells i.e. Ground water Monitoring Well (GWMW) is being carried out by Central Ground Water Board, MER Patna for the state of Jharkhand. Initially the task was taken up with the help of a few GWMW but gradually the numbers of stations were increased, which is now totals 474 GWMW (as on March 2020) which represents all 24 districts and almost all blocks of the state.

This is an attempt to make a presentation in the form of a report for Jharkhand State where the scenarios of water levels for the year 2019-2020 has been produced. The comparisons with decadal mean, seasonal & annual fluctuations, chemical quality of ground water, different maps along with data have been incorporated.

Periodic water level measurements were taken 4 times in a year in 2019-2020, (i.e. in the months of May, 2019, August, 2019, November, 2019 and January, 2020). Water samples from the GWMW were collected during the month of May-2017 to study the changes in hydrochemical regime.

The scientific officers and technical personnel of the state unit office Ranchi of Jharkhand, systematically collected field data from the GWMW as required for monitoring purposes and collected water samples during the pre-monsoon period which were analysed in the chemical lab of this region.

The compilation and analyzing data, its retrieval, evaluation, preparation of suitable maps and their reproduction in the form of present report has been carried out by Dr. Anukaran Kujur, Scientist-B, supervised by Shri G.K. Roy, Scientist-D & Dr Sudhanshu Shekhar, Scientist-D

It is sincerely hoped that the appended write up, maps and basic information in this report would be very useful to the Planners and concerned beneficiaries in Jharkhand State

**(A.K. Agrawal)**  
**Regional Director**

## EXECUTIVE SUMMARY

In Jharkhand state ground water levels of 474 Ground Water Monitoring Wells (GWMW) were monitored four times in the year 2019-2020 as a part of regime monitoring of phreatic aquifer in different hydrogeological and agro-climatic zones. The water level monitoring was carried out in the months of May'19, August'19, November'19 and January'2020 and ground water samples were collected in pre-monsoon period (May, 2019) for chemical analysis. In the state the phreatic aquifer consists of weathered mantle and saprolite zone. Over 78% area of the state is underlain by rocks of Chotanagpur Granitic Gneissic Complex (CGGC) . Hence, most of the GWMW represented water level in weathered CGGC. A few GWMW represented water level of phreatic aquifer of Gondwana Super Group, Basalts, Limestones, Tertiary Formation and recent alluvium.

The observed water level data had been grouped into four categories viz. 0 -2m, 2-5m, 5-10m and >10m. Thematic maps depicting ground water levels measured in different periods have been prepared. The water levels have been further analysed to study its change with respect to measurement of pre-monsoon period of the same year, previous year water level data of corresponding period, and decadal mean water level data of the corresponding period. The fluctuations have been shown under rise and fall categories. In each category there are three groups viz. 0-2 m, 2-4 m and >4 m. Thematic maps have been prepared for each category.

The depth to water level data of all the Ground Water Monitoring Wells collected during the four measurements are also presented along with the general well information. The water samples were collected during May, 2019 chemical analysis report is under progress.

During pre-monsoon 2019-20, the water level in the state ranges between 0.85 to 16.25 mbgl. The minimum and the maximum depth to water levels during pre-monsoon period have been recorded as 0.85 m bgl and 16.25 m bgl at Saraikela-Kharsawan and East Singhbhum respectively. In general the water level throughout the State varies in the range of 5 – 10 m bgl. During Post-monsoon season minimum and the maximum depth to water levels have been recorded as 0.35 mbgl and 15.00 m bgl in Pakur and East singhbhum district respectively and in general the water level throughout the State varies in the range of 2 – 5 m bgl.

Fluctuation in water level for November, 2019 compared with May, 2019 shows rise in water level (97%) for the entire state of Jharkhand. Out of 284 wells analysed, in the tune of 0.00 - 2.00 m (12%), 2.00 - 4.00 m (35%) and above 4 m (13%) during the period, which is a normal phenomenon due to recharge of ground water, as a result of onset of monsoon and rapid recharge due to moderate to steep slope in undulating tracts. A fall in water level is recorded in 3 wells out of 284 wells of the state which is mainly due to temporal withdrawal of ground water in those areas.

The fluctuation of water level of May, 2019 with respect to decadal mean water level of May 2019 indicate that the fall (46%) as well as rise (30%) in water level in the range of 0 – 2 m shows variation in almost the entire state. However the higher magnitude (>4m) of fall also recorded in 10wells in 10 districts which may be due to temporal higher withdrawal of ground water on that area.

The fluctuation of water level of November 2019 with respect to decadal mean water level of November 2018 indicate the fall (10%) as well as rise (63%) in water level in the range of 0 – 2 m. However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

## GROUND WATER YEAR BOOK OF JHARKHAND

2019 – 2020

### JHARKHAND AT A GLANCE

|  |   |
|--|---|
| Geographical Area (sq. km.)                                    | 79714   |
| Population (Census 2011)                                       | 3,29,66,238   |
| Population density( Persons/Sqkm)                              | 413   |
| Male Population(Million)                                       | 16.93   |
| Female Population(Million)                                     | 16.03   |
| Decadal Growth (2001-2011)                                     | 22.3%   |
| Literacy Rate  | 67.63%  |
| Sex ratio  | 947 females to 1000 males   |
| No. of Districts   | 24  |
| No. of Blocks  | 260   |
| Normal Annual Rainfall (mm)                                    | 1251.2  |
| Net sown area ( in hectare)-2014-15                            | 13,84515  |
| Area under forest (in hectare) -2014-15                        | 2339481   |
| Barren and uncultivated area (in hectare)-2014-15              | 568009  |
| Cultivable waste land (in hectare)-2014-15                     | 352871  |
| Cropping intensity( %) – 2011                                  | 114 %   |
| Annual Replenishable Ground Water Resource in BCM (2017)       | 6.21  |
| Net ground water availability in BCM (2017)                    | 5.69  |
| Annual Ground Water Draft For Domestic & Industrial use in BCM | 0.78  |
| Gross annual ground water draft in BCM (2017)                  | 1.58  |
| Stage of ground water development ( in % ) (2017)              | 27.73   |
| Number of over-exploited blocks ( As on 2017)                  | 3   |
| Number of critical blocks ( As on 2017)                        | 2   |
| Number of semi critical blocks ( As on 2017)                   | 10  |
| Number of Safe block ( As on March-2017)                       | 245   |
| Ground Water Quality   | In general chemical Constituents are within permissible limit except fluoride Contamination in parts of Palamu, Garhwa, Koderma, Pakur Districts and Arsenic contamination in parts of Sahebganj district |



# GROUND WATER YEAR BOOK OF JHARKHAND

2019 – 2020

## 1.0 INTRODUCTION:

Jharkhand state, was created on 15<sup>th</sup> November, 2000, consists of districts falling on Chotanagpur Plateau of erstwhile Bihar on the birthday of legendary tribal freedom fighter Birsa Munda. Presently it consists of 24 districts and 260 administrative blocks. The capital of the state is Ranchi. The state spreads over 79714 sq km, between Latitude 21° 55' 00" and 25° 15' 00" and Longitude 83° 15' 00" and 87° 55' 00". The state is bounded by Bihar in the north and by West Bengal in the east. The other two sides, west and south, are bounded by Chhattisgarh and Orissa states respectively (Plate-I).

The population of the state as per 2011 census is 03.30 crore. The population density is 414 person/km<sup>2</sup>. The urban population is 7.912 million and the rural population is 25.05 million. The tribal population constitutes about 28% of total population. The state is moderately urbanized with Ranchi as its capital city. Nearly 24% of total population of the state lives in urban areas. Important urban centers are in the state are Jamshedpur, Dhanbad, Hazaribagh, Daltonganj, Dumka and Deoghar.

To acquire a detailed knowledge vis-a-vis scenario of ground water level with respect to behaviour, availability and quality, Ground Water monitoring is essential in time and space. Thus, the data so collected during monitoring gives an important input for ground water management. Periodical monitoring of ground water regime covering different geomorphic, hydrogeological units is an effort to get information on the behaviour of ground water levels and chemical quality of formation water through representative sampling. Monitoring of ground water regime includes:

- (a) Monitoring of ground water levels
- (b) Monitoring of ground water quality and
- (c) Temperature of ground water.

Monitoring is being carried out by establishing suitable *Ground Water Monitoring Well* (GWMW) based on Geomorphology, Geology, Hydrogeology and status of ground water resource of the area with a view to observe the trend of water level and change of chemical quality with time and space. It is also very useful to estimate the dynamic ground water resources and to demarcate the water logged as well as drought prone areas.

## 2.0 BACKGROUND:

The Central Ground Water Board, State Unit office, Ranchi, is at present monitoring 474 GWMW (Ground water monitoring wells) to delineate the behaviour of ground water level with time and space covering 24 districts in the State of Jharkhand (Plate-I) four times a year, viz January (from 1<sup>st</sup> to 10<sup>th</sup>), May (from 20<sup>th</sup> to 30<sup>th</sup>), August (from 20<sup>th</sup> to 30<sup>th</sup>) and November (from 1<sup>st</sup> to 10<sup>th</sup>). The locations of GWMW are shown in Plate - II.

The district-wise status of GWMW in Jharkhand during the period from May, 2019 to January, 2020 is given in Table 1. The district-wise water level data of GWMW for the period May, 2019, August, 2019, November, 2019 and January, 2020 are given in Annexure- I. The Trend of ground water level data (2010 to 2019) is presented in Annexure-II. The results of chemical analysis of water samples collected during May, 2019 and analytical data is under progress.

## 3.0 GEOLOGY AND HYDROGEOLOGY:

The generalized geological succession of Jharkhand state is given Table 1 - Generalized geological succession of Jharkhand state.

| <i>Age</i>                   | <i>Formation</i>  | <i>Broad Lithology</i>   |
|------------------------------|---|--|
| Quaternary                   | Alluvial deposits   | Sand, clay, silt and occasional gravels.   |
| Tertiary                     | Dhalbhumgarh Formation  | Boulder, pebbly grits, sand, and mottled clay  |
| L-Cretaceous -<br>U-Jurassic | Rajmahal Trap   | Basalt flows with inter-trappean sedimentary beds  |
| Cretaceous-<br>Carboniferous | Gondwana Super group  | Sandstone, shale, clay conglomerate and coal beds.   |
| L-Cambrian-<br>Proterozoic   | Vindhyan Super group  | Sandstone, quartzite, shale, limestone etc.  |
| Proterozoic                  | Younger Granite, Granophyre and Soda Granite.<br>Chhotanagpur Granite Gneissic Complex.<br>Kolhan Group,<br>Singhbhum Group,<br>Gangpur Group. Mahakosal Group.<br>Volcano-Sedimentary Sequence.<br>Iron Ore Group.<br>Singhbhum Granite. | Granites,<br>granite gneiss, schists,<br>phyllites,<br>dolomites, basic lavas,<br>amphibolites, gabbro anorthosite |
| Archean                      | Older Metamorphics Gneiss, Older Metamorphic Tonalite Gneiss  | Gneiss, amphibolites, schists, arenites  |

## **GRANITE - GNEISS, SCHIST, PHYLLITE, AND OTHER ROCKS BELONGING TO CGGC**

It covers nearly 85 % of the geographical area of the state. The phreatic aquifer in this formation consists of weathered mantle and underlying secondary porosities like fractures, joints and fissures. In general, the thickness of weathered zone varies between 10 and 25 m, however in localized patches it is > 35 m. The weathered zone is the main repository of ground water. Exploratory wells of CGWB reveal that the fractures underlying the weathered zones form the potential aquifer. The fracture zones (generally beyond 100 m depth) are exploited particularly in urban areas. In general 2-5 sets of fractures have been encountered within 150 m bgl. In a few wells, fractures have been encountered beyond 150 m depth. The ground water occurs under semi-confined to confined condition in the fractures situated at a deeper level. In this formation discharge from negligible to 30 lps has been recorded from the bore wells.

## **VINDHYAN SUPERGROUP**

The rocks of this group are exposed in Palamu and Garhwa districts over a limited aerial extent, in the south of the river Son. The sandstones are hard and compact. The ground water occurs within the secondary porosities like fractures and joints. The fractured sandstone has good ground water potential in comparison to the shale. The ground water occurs under unconfined condition in weathered zone. The yield potential of sandstone is poorer than granite gneiss.

## **VOLCANIC ROCKS**

The volcanic rocks occur mainly in the northeastern part of the state in Sahebganj, Pakur, Dumka and Godda districts, and in southeastern part of the state in East & West Singhbhum, and Saraikela districts. The Rajmahal trap is a series of flows horizontally disposed. In an individual flow, the lower part is massive and the upper part is vesicular. In some cases, vesicles are filled with secondary material. Partially filled interconnected vesicles form the potential aquifers. Thin inter-trappean beds are also observed between the flows. The ground water occurs under unconfined conditions in upper vesicular flows, which are exposed generally at the ground level. In the vesicular layers disposed at deeper levels the ground water occurs under semi-confined to confined condition.

## **GONDWANA SUPERGROUP**

The Gondwana Super Group ranging in age from Upper Carboniferous to Cretaceous is considered as semi-consolidated formation. Ground water occurs within inter-granular space as well as within the secondary porosities like fractures and joints. Rocks of this unit are exposed as patches in the districts of Hazaribagh, Dhanbad, Giridih, Bokaro, Ranchi, Dumka, Jamtara, Latehar, Godda and Garhwa districts. The sandstones form repository of ground water. The exploratory drilling of CGWB and other agencies indicate that ground water occur in semi-confined to confined condition

in aquifers situated at deeper level, and under unconfined condition at shallow level. At few places, the piezometric head rises above the ground level to give rise to auto flow condition.

### **LATERITES AND TERTIARY SEDIMENTS**

The Dhalbhumgarh Formation of Tertiary age occur in Chakulia- Bahragora-Dhalbhumgarh tract of East Singhbhum district. Exploration to a depth of 120 m indicates presence of 2 to 4 sedimentary layers. Laterite formations also occur as cappings in some parts of the state. These sedimentary layers are repository of ground water, which occurs under unconfined condition in aquifers disposed at shallow level and under confined to semi-confined condition in aquifers situated at deeper levels.

### **YOUNGER ALLUVIUM**

The Younger Alluvium deposits are confined mainly to the bordering area of the state and occur in patches in the districts of Godda, Sahebganj and Pakur in the northeast and in Latehar, Palamu, Deoghar and Garhwa districts. In the bordering areas alluvial patches is extension of the Gangetic Plain. There is a patch of alluvial deposit in Ranchi district also. The ground water occurs under unconfined condition in aquifer disposed at shallow level. The depth of dug wells ranges between 10 –15 m in general while the depth of shallow tube well ranges between 20 - 30 m. The hydrogeological map & Geological map of Jharkhand is given in Plate III & IV.

## **4.0 GROUND WATER SCENARIO**

### **4.1 DEPTH TO WATER LEVELS IN JHARKHAND DURING 2019 - 2020**

#### **May 2019**

Water levels during May, 2019 were monitored from 306 wells (out of 474 existing wells). The district-wise status of distribution of Ground Water Monitoring Wells with different ranges of depth to water level is presented in *Table-2*

The minimum and the maximum depth to water levels have been recorded as 0.85 m bgl in Saraikela-Kharsawan district and 16.25 m bgl in Hazaribagh district. In general the water level throughout the State varies in the range of 5 – 10 m bgl and has been observed in the 194 wells (63%) out of 306 analysed wells. Secondly, water level >10 m bgl has been observed in the 66 wells (21%). The water level in the range of 2– 5 m bgl has been observed in the 41 wells (14%). The water level below 2 m has been observed only in 5 wells, out of which 2 wells located in East-Singhbhum 1 well in Saraikela-Kharsawan 1 well in Ranchi and 1 well is in Sahebganj districts.

As depicted in Plate V, the entire state shows water level varying between 5 and 10 m bgl except few patches where water level is more than 10 m bgl. Including few patches in the State, an area covering the parts of East singhbhum, Saraikela, Dumka and W Singhbhum has shown water level less than 2 m bgl.

### **August 2019**

Water levels during August, 2019 were monitored from 318 Dug wells. The district-wise status of distribution of Ground Water Monitoring Wells with different ranges of depth to water level is presented in Table 3.

The minimum and the maximum depth to water levels have been recorded as 0.50 m bgl in Hazaribagh district and 13.00m bgl in Palamu district. About 29% of wells have water level ranging between 0-2 mbgl. In general the water level throughout the State varies in the range of 2 – 5 (40%) m bgl out of 318 analysed wells. Secondly, the water level in the range of 5 – 10 m bgl has been observed in the 26 % of the wells. Water level >10m bgl has been observed only in 14 wells (4%) 2 wells in Giridih, 2 wells in palamu, 2 wells in Dhanbad, 1 well in Bokaro, Chatra, Dumka, Latehar, Hazaribag, West-Singhbhum, and Godda district.

As depicted in Plate VI, major part of the State shows water level varying 2 - 5 mbgl. Water level above 5 mbgl is observed mainly in northern and north eastern part of the state whereas the water level less than 2 m bgl has been observed in southern, central, eastern and western part.

### **November 2019**

A total of 318 GWMW has been monitored during post-monsoon period in November 2019. Five groupings were made based on the range of water level data viz. 0-2, 2-5, 5-10, 10-20 and 20-40 m bgl. The district-wise status of distribution of network hydrograph stations with different ranges of depth to water level is presented in Table 4.

Minimum and the maximum depth to water levels have been recorded as 0.35 m bgl and 15.00 m bgl in Pakur and Palamau district respectively. Out of 317 wells 178 (56%) of GWMW, water level ranges 2 - 5 m bgl which covers almost entire Jharkhand State. The water level in the range of 5-10 m bgl has been observed in the 49 wells (16%). Ground water level of 0 – 2 m bgl depth range has been observed only in 84 wells (26%) at different locations. Only 6 wells (2%) have shown water level more than 10 m bgl. (Plate VII).

### **January 2020**

To study the water levels of recession period data were collected during January, 2019 from 312 wells. The district-wise status of distribution of network hydrograph stations with different ranges of depth to water level is presented in Table 5.

The minimum and the maximum depth to water levels in the State have been recorded 0.50 m bgl in Hazaribag district and 14.10 m bgl in Purbi-Singhbhum district. The water level in the range of 2 - 5 m bgl has been observed in the 149 wells (48%) covered almost entire State. In few patches 07 wells about 2% of water level range from 10 to 20 m bgl has been observed. 125 wells about 40 % of the wells analysed has shown water level in the range of 5-10 m bgl. The water level below 2 m has been observed in 31 wells Plate VIII.

#### **4.2 SCENARIO OF ANNUAL FLUCTUATIONS IN JHARKHAND DURING 2018-19 TO 2019-20**

The annual fluctuation in water levels for the periods of (1) May 2018 and May 2019, (2) August 2018 and August 2019, (3) November 2018 and November 2019 and (4) January 2019 and January 2020 have been analysed to study the net status of ground water conditions during the previous and current year.

##### **May 2018 & May 2019**

The annual fluctuation in water level between May, 2018 and May, 2019 indicates the net status of ground water condition during the previous year and current pre-monsoon measurement and the same is presented in Plate IX. The district wise statement of frequency of distribution of ground water monitoring wells falling in different ranges of water level fluctuation is presented in *Table-6*.

The major part of the state shows general rise in water level (30%) and general fall in water level (68%) and (2%) no change. Total 63 wells (24%) out of 258 analysed wells, comes under 0-2 m rise zone category, on the other hand 137 wells (53%) show fall within 2 m, which may indicate that the regional fluctuation of the state (77%) is mainly restricted within 2 m. The next higher magnitude of fluctuation is of 2 -4 mbgl rises in water level in the state 4% is observed and 11% fall in some part of the state. The highest magnitude of >4 mbgl rise has been observed in only 1% of wells and fall in 4% wells.

Overall the entire State is covered under rising and falling zone category (77 and 176 wells respectively out of 258 analysed well), which may indicate the slightly moderate rainfall (2019).

##### **August 2018 and August 2019**

The annual fluctuation in water level between Aug, 2018 and Aug, 2019 indicates the status of ground water condition during the previous year and current monsoon measurement and the same is presented in Plate X. The district wise statement of frequency of distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in Table 7.

A general fall in water level (67%) has been found in major part of the State whereas rise in (33%). Water level rise is recorded in 27% of wells and fall in 46% within 2 m, 5% rise and 15% fall within 2-4m and 1% rise and 5% fall has been observed in >4 mbgl.

Overall the entire State is covered under the category of 33% rise and 67 % fall which may be due to less rainfall in respect to during previous year.

### **November 2018 And November 2019**

The Annual fluctuation in water level between November 2018 and November 2019 indicates the net status of ground water conditions during the previous and current post-monsoon year and the same is presented in Plate XI. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in *Table 8*.

The comparison of fluctuation in water level between November 2018 and November 2019 shows fall in 13% GWMW as well as rise in 87% GWMW of the total 279 analysed wells during the period. The major part of the state shows a general fall in water level within 2.00 m. Out of 279 wells fall of water levels are observed, 34 wells (12%) water level ranges 0 - 2m, 2 wells (1%) 2 – 4 m and 0 wells > 4 m. 154 wells (87%) wells are observed rise in water level. In which 154 wells (55%) ranges 0-2m, 67 wells (24%) 2-4 m and 21 wells > 4m during the period.

### **January 2019 And January 2020**

The annual fluctuation in water level between January, 2019 and January, 2020 indicates the status of ground water condition during the previous year and current measurement and the same is presented in Plate XII. The district wise statement of frequency of distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in *Table 9*.

The major part of the state shows general fall (18%) and rise (80%) and no change in 2%. in water level. Out of 273 well 151 wells (55%) are observed water level rise 0 - 2 m, 54 wells (20%) 2-4m and 13 well more than 4m. Fall of water level range is observed in 46 wells (17%) 0-2m, 1 well 4m and only 3 wells (1%)

### **4.3 SCENARIO OF SEASONAL FLUCTUATIONS IN JHARKHAND DURING THE GROUND WATER YEAR 2019 – 2020:**

An attempt has been made to compare the pre-monsoon water levels of May, 2019 with water levels of August 2019, November 2019 and January 2020 to delineate the impact of rainfall as well as ground water development on ground water regime in the state during the above period.

### **May 2019 and August 2019**

The fluctuation in water level between May 2019 and August 2019 indicates the change in water level from pre-monsoon measurement to monsoon measurement and the same is presented in Plate XIII. Fluctuation in water level map for May 2019 and August 2019 has been prepared from 284 analyzed wells. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in *Table 10*.

During this period the entire state of Jharkhand shows a general rise in water level, which is mainly due to recharging of ground water on onset of monsoon from June 2019. However 3 wells show fall

in water level which may be mainly due to temporal withdrawal of ground water and less rainfall in those areas.

#### **May 2019 and November 2019**

The seasonal fluctuation in water level between May 2018 and November 2018 indicates the change in water level from pre-monsoon measurement to post-monsoon measurement and the same is presented in Plate XIV. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in *Table 11*.

Fluctuation in water level for November 2019 compared with May 2019 shows rise in water level (97%) for the entire state of Jharkhand. Out of 284 wells analysed, in the tune of 0.00 - 2.00 m (12%), 2.00 - 4.00 m (25%) and above 4 m (60%) during the period, which is a normal phenomenon due to recharge of ground water, as a result of onset of monsoon and rapid recharge due to moderate to steep slope in undulating tracts. A fall in water level is recorded in 3 wells out of 284 wells of the state which is mainly due to temporal withdrawal of ground water in those areas.

#### **May 2019 and January 2020**

The fluctuation in water level between May 2019 and January 2020 indicates the change in water level from pre-monsoon measurement to January measurement and the same is presented in Plate XV. Fluctuation in water level maps for May 2019 and January 2020 have been retrieved from 274 analyzed wells. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in *Table 12*.

During the period the entire state of Jharkhand shows a general rise (256 wells) in water level, in the range of 0.00 to 2.00 m (22%), 2.00 to 4.00 m (42%) and > 4 mbgl (29%) which is mainly due to recharge on ground water for onset monsoon from June 2019 and rainfall during July - October 2019. However, 15 wells of the state shows fall in water level which may be due to temporal withdrawal of ground water at that area.

### **4.4 SCENARIO OF DECADAL WATER LEVEL FLUCTUATIONS WITH THE GROUND WATER YEAR 2019 – 2020**

#### **Decadal Mean and May 2019**

Water level fluctuation map (Plate XVI) has been prepared by comparing the water level data of 305 wells for May Mean (2009-2018) with the depth to water level data May 2019. The district wise statement of frequency distribution of ground water monitoring wells falling in different ranges of water level fluctuation is presented in *Table 13*.



The fall (46%) as well as rise (30%) in water level in the range of 0 – 2 m shows variation in almost the entire state. However the higher magnitude (>4m) of fall also recorded in 10 wells in 10 districts which may be due to temporal higher withdrawal of ground water on that area.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

### **Decadal Mean and August 2019**

Water level fluctuation map (*Plate XVII*) has been prepared by comparing the water level data (315wells) for August Mean (2009-2018) with the depth to water level data August 2019. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in *Table 14*.

The rise (35%) as well and fall (41%) in water level in the range of 0 – 2 m shows variation almost in the entire state. Rise in water level in the range of 2 – 4 m bgl is recorded in 6% wells and for > 4 m in 2% . Fall in water level in the range of 2 – 4 m bgl is recorded in 12% wells and for > 4 m in 4% through entire state.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well. Fall > 2 mbgl may be due to irregularities of rainfall during last 3 to 4 years.

### **Decadal Mean and November 2019**

The fluctuation map of water level between November Mean and November 2019 (*Plate XVIII*) has been prepared on the basis of available Mean water level data (310 wells) of November for last 10 years (2009-2018) with the present water level data for Jharkhand. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in *Table 15*.

The fluctuation of water level of November 2019 with respect to decadal mean water level of November, 2018 indicate the fall (10%) as well as rise (63%) in water level in the range of 0 – 2 m. Fluctuation in water level 2-4 m has been recorded fall in 2 % of the wells and rise in 20 % of the wells. Fluctuation more than 4m fall 1% wells and 4% rise in water level of wells are recorded.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

## **Decadal Mean and January 2020**

Water level fluctuation map (Plate XIX) has been prepared by comparing the water level data (304 wells) for January Mean (2010-2019) with the depth to water level data January, 2020. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in *Table 16*.

The fluctuation of water level of January, 2020 with respect to decadal mean water level of January, 2019 indicates 20 % fall and 60% rise in the range of 0 – 2 m has been observed in almost entire state. Out of 304 wells analysed 2 % wells have shown fall and 14% wells rise in water level in the range of 2-4m, where as in 2 wells fall and in 10 wells rise have been shown > 4 mbgl.

However, overall (85%) regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

### **4.5 TREND OF GROUND WATER LEVEL**

The Trend of ground water level data is presented in **Annexure-II**.

The observation shows the rising trend of ground water level in 139 wells and falling trend in 54 wells. The trend of ground water level of the entire state is mainly restricted within 0.5 m only which is normal phenomenon and no abnormal rise or fall in water level is observed in the well of the state.

### **5.0 HYDROCHEMISTRY:**

The chemical quality of groundwater is dependent on the source of water and on the course over which it flow. Ground water carries a higher mineral content than surface water due to the slow circulation and longer period of contact with the rocks formation. Depending on the dissolved salts, the quality of ground water in Jharkhand has been depicted with the help of Iso-Conductance and Iso-Chloride map in Plate XIX and XX. In order to assess the chemical quality of ground water of phreatic aquifers of Jharkhand state ground water samples have been analysed for major 15 parameters viz. EC, pH, HCO<sub>3</sub>, CO<sub>3</sub>, Cl, TH, Ca, Mg, K, Na, F, SiO<sub>2</sub>, PO<sub>4</sub> and NO<sub>3</sub>. The chemical analysis data of ground water samples collected (390) during the period May 2017.

Ground water samples throughout the state found to be slightly alkaline in nature as the pH mostly varies between 6.20-8.60. The quality of ground water in most of part of the state is potable with low mineral contents having electrical conductance varying from 84.20 (recorded at Kudri, Khunti) to 2450 (at Chandankiyari, Bokaro)  $\mu\text{S}/\text{cm}$  at 25<sup>0</sup>c. The samples found to be suitable for drinking and irrigation purposes. Only 3 samples are having electrical conductivity greater than 2000  $\mu\text{S}/\text{cm}$ , which can be treated as brackish water. Spatially in major part of the state EC rested in the

range of 400-1000  $\mu\text{S}/\text{cm}$ . In most of the samples the concentration of chloride is within the desirable limit of drinking water (250 mg/l). Concentration of chloride in ground water >250 mg/l is recorded in 14 number of samples in Dumka, Giridih, Sahibganj, Jamtara, Khunti, Saraikela, Dhanbad, palamau, Hazaribagh, Pakur West singhbhum districts.

Thus it is observed that the quality of ground water in shallow aquifers in the entire state is suitable for drinking, irrigation and industrial purposes except in arsenic & fluoride infested areas.

Table - 1

**DISTRICT-WISE STATUS OF NHNS FOR THE STATE OF JHARKHAND FOR 2019 – 2020**

| Sl. No. | District               | No. of GWMW as on |           |            | No. of GWMW                    |          |           | No. of GWMW                      |          |           | No. of GWMW as on |           |            |
|---------|------------------------|-------------------|-----------|------------|--------------------------------|----------|-----------|----------------------------------|----------|-----------|-------------------|-----------|------------|
|         |                        | March 31.03.2018  |           |            | abandoned during the year 2018 |          |           | established during the year 2018 |          |           | 31.03. 2020       |           |            |
|         |                        | DW                | PZ        | Total      | DW                             | PZ       | Total     | DW                               | PZ       | Total     | DW                | PZ        | Total      |
| 1       | Bokaro                 | 22                | -         | 22         | 3                              | -        | -         | -                                | -        | -         | 19                | -         | 19         |
| 2       | Chatra                 | 10                | -         | 10         | -                              | -        | -         | 1                                | -        | -         | 11                | -         | 11         |
| 3       | Deoghar                | 11                | -         | 11         | -                              | -        | -         | -                                | -        | -         | 11                | -         | 11         |
| 4       | Dhanbad                | 24                | -         | 24         | -                              | -        | -         | -                                | -        | -         | 24                | -         | 24         |
| 5       | Dumka                  | 16                | -         | 16         | -                              | -        | -         | -                                | -        | -         | 17                | -         | 17         |
| 6       | Garhwa                 | 10                | -         | 10         | -                              | -        | -         | -                                | -        | -         | 11                | -         | 11         |
| 7       | Giridih                | 17                | -         | 17         | -                              | -        | -         | -                                | -        | -         | 17                | -         | 17         |
| 8       | Godda                  | 17                | -         | 17         | -                              | -        | -         | 2                                | -        | -         | 17                | -         | 12         |
| 9       | Gumla                  | 15                | -         | 15         | -                              | -        | -         | -                                | -        | -         | 15                | -         | 15         |
| 10      | Hazaribag              | 30                | -         | 30         | 1                              | -        | -         | -                                | -        | -         | 29                | -         | 29         |
| 11      | Jamtara                | 10                | -         | 10         | -                              | -        | -         | -                                | -        | -         | 10                | -         | 10         |
| 12      | Khunti                 | 36                | 1         | 36         | -                              | -        | -         | -                                | -        | -         | 36                | 1         | 36         |
| 13      | Kodarma                | 7                 | -         | 7          | -                              | -        | -         | -                                | -        | -         | 7                 | -         | 8          |
| 14      | Latehar                | 11                | -         | 11         | -                              | -        | -         | 1                                | -        | -         | 12                | -         | 12         |
| 15      | Lohardaga              | 11                | -         | 11         | -                              | -        | -         | -                                | -        | -         | 11                | -         | 11         |
| 16      | Pakaur                 | 13                | -         | 13         | -                              | -        | -         | 1                                | -        | -         | 14                | -         | 14         |
| 17      | Palamu                 | 19                | -         | 19         | -                              | -        | -         | -                                | -        | -         | 19                | -         | 19         |
| 18      | W<br>Singhbhum         | 18                | -         | 18         | -                              | -        | -         | -                                | -        | -         | 18                | -         | 18         |
| 19      | E<br>Singhbhum         | 31                | -         | 31         | -                              | -        | -         | -                                | -        | -         | 31                | -         | 31         |
| 20      | Ramgarh                | 17                | 4         | 21         | -                              | -        | -         | -                                | -        | -         | 17                | 4         | 21         |
| 21      | Ranchi                 | 56                | 17        | 73         | -                              | 3        | 3         | -                                | -        | -         | 56                | 16        | 72         |
| 22      | Sahebganj              | 19                | -         | 19         | -                              | -        | -         | 6                                | -        | -         | 24                | -         | 25         |
| 23      | Saraikela-<br>Kharswan | 12                | -         | 12         | -                              | -        | -         | -                                | -        | -         | 12                | -         | 12         |
| 24      | Simdega                | 15                | -         | 15         | -                              | -        | -         | -                                | -        | -         | 15                | -         | 15         |
|         | <b>Total</b>           | <b>447</b>        | <b>22</b> | <b>468</b> | <b>13</b>                      | <b>-</b> | <b>17</b> | <b>18</b>                        | <b>0</b> | <b>13</b> | <b>453</b>        | <b>21</b> | <b>474</b> |

**Table 2: District wise categorisation of depth to water level - May, 2019**

| Sl. No.      | District Name       | No. of Wells | Depth to water level (m bgl) |              | No./Percentage of wells Showing Depth to Water Level in the Range of |       |           |       |            |       |           |       |          |          |
|--------------|---------------------|--------------|------------------------------|--------------|--|-------|-----------|-------|------------|-------|-----------|-------|----------|----------|
|              |                     |              |                              |              | 0 to 2   |       | 2 to 5    |       | 5 to 10    |       | 10 to 20  |       | 20 to 40 |          |
|              |                     |              |                              |              | Min  | Max   | No.       | %     | No.        | %     | No.       | %     | No.      | %        |
| 1            | BOKARO              | 13           | 2.89                         | 12.65        | 0  |       | 3         | 23.08 | 6          | 46.16 | 4         | 30.77 | 0        | 0        |
| 2            | CHATRA              | 8            | 5.10                         | 15.75        | 0  |       | 0         | 0     | 3          | 37.50 | 5         | 62.50 | 0        | 0        |
| 3            | DEOGHAR             | 8            | 7.30                         | 11.30        | 0  |       | 0         | 0     | 7          | 87.50 | 1         | 12.50 | 0        | 0        |
| 4            | DHANBAD             | 12           | 2.20                         | 14.40        | 0  |       | 4         | 33.33 | 7          | 58.33 | 1         | 8.33  | 0        | 0        |
| 5            | DUMKA               | 12           | 2.95                         | 11.00        | 0  |       | 2         | 16.67 | 9          | 75    | 1         | 8.33  | 0        | 0        |
| 6            | JAMTARA             | 9            | 5.19                         | 10.11        | 0  |       | 0         | 0     | 7          | 77.77 | 2         | 22.23 | 0        | 0        |
| 7            | GARHWA              | 7            | 6.90                         | 11.10        | 0  |       | 0         | 0     | 6          | 85.71 | 1         | 14.29 | 0        | 0        |
| 8            | GIRIDIH             | 17           | 5.15                         | 13.03        | 0  |       | 0         | 0     | 11         | 64.71 | 6         | 35.29 | 0        | 0        |
| 9            | GODDA               | 11           | 4.85                         | 13.24        | 0  |       | 2         | 18.18 | 8          | 72.73 | 1         | 9.09  | 0        | 0        |
| 10           | GUMLA               | 11           | 2.10                         | 10.65        | 0  |       | 2         | 18.18 | 8          | 72.72 | 1         | 9.09  | 0        | 0        |
| 11           | SIMDEGA             | 9            | 4.10                         | 9.30         | 0  |       | 2         | 22.22 | 7          | 77.78 | 0         | 0     | 0        | 0        |
| 12           | HAZARIBAG           | 21           | 5.80                         | 16.25        | 0  |       | 0         | 0     | 10         | 47.61 | 11        | 52.38 | 0        | 0        |
| 13           | RAMGARH             | 10           | 3.57                         | 8.60         | 0  |       | 1         | 10    | 9          | 90    | 0         | 0     | 0        | 0        |
| 14           | KODARMA             | 5            | 5.05                         | 12.50        | 0  |       | 0         | 0     | 3          | 60    | 2         | 40    | 0        | 0        |
| 15           | LOHARDAGA           | 11           | 6.50                         | 12.70        | 0  |       | 0         | 0     | 10         | 90.91 | 1         | 9.09  | 0        | 0        |
| 16           | PAKUR               | 8            | 2.19                         | 13.15        | 0  |       | 4         | 50    | 3          | 37.50 | 1         | 12.50 | 0        | 0        |
| 17           | PALAMU              | 15           | 6.40                         | 15.00        | 0  |       | 0         | 0     | 7          | 46.67 | 8         | 53.33 | 0        | 0        |
| 18           | LATEHAR             | 9            | 5.85                         | 13.20        | 0  |       | 0         | 0     | 4          | 44.44 | 5         | 55.56 | 0        | 0        |
| 19           | PASHCHIMI SINGHBHUM | 14           | 2.78                         | 13.90        | 0  |       | 2         | 14.28 | 9          | 64.30 | 3         | 21.42 | 0        | 0        |
| 20           | SARAIKELA-KHARSAWAN | 9            | 0.85                         | 11.61        | 1  | 11.11 | 1         | 11.11 | 6          | 66.67 | 1         | 11.11 | 0        | 0        |
| 21           | PURBI SINGHBHUM     | 16           | 1.50                         | 15.61        | 2  | 12.50 | 7         | 43.75 | 4          | 25    | 3         | 18.75 | 0        | 0        |
| 22           | RANCHI              | 45           | 1.70                         | 12.80        | 1  | 2.22  | 7         | 15.56 | 30         | 66.67 | 6         | 13.13 | 0        | 0        |
| 23           | KHUNTI              | 9            | 3.75                         | 9.10         | 0  | 0     | 1         | 11.11 | 8          | 88.89 | 0         | 0     | 0        | 0        |
| 24           | SAHIBGANJ           | 17           | 1.70                         | 12.00        | 1  | 5.88  | 3         | 17.65 | 11         | 64.71 | 2         | 11.76 | 0        | 0        |
| <b>Total</b> |                     | <b>306</b>   | <b>0.85</b>                  | <b>16.25</b> | <b>5</b>   |       | <b>41</b> |       | <b>194</b> |       | <b>66</b> |       | <b>0</b> | <b>0</b> |

**Table 3: District wise categorisation of depth to water level – August, 2019**

| Sl. No. | District Name       | No. of Wells | Depth to water level (m bgl) |       | No./Percentage of wells Showing Depth to Water Level in the Range of |       |            |       |           |       |           |       |          |          |
|---------|---------------------|--------------|------------------------------|-------|--|-------|------------|-------|-----------|-------|-----------|-------|----------|----------|
|         |                     |              |                              |       | 0 to 2   |       | 2 to 5     |       | 5 to 10   |       | 10 to 20  |       | 20 to 40 |          |
|         |                     |              |                              |       | No.  | %     | No.        | %     | No.       | %     | No.       | %     | No.      | %        |
|         |                     |              | Min                          | Max   |  |       |            |       |           |       |           |       |          |          |
| 1       | BOKARO              | 11           | 1.00                         | 12.65 | 5  | 45.45 | 3          | 27.27 | 2         | 18.18 | 1         | 9.09  | 0        | 0        |
| 2       | CHATRA              | 8            | 4.60                         | 12.80 | 0  | 0     | 1          | 12.50 | 6         | 75    | 1         | 12.50 | 0        | 0        |
| 3       | DEOGHAR             | 5            | 3.80                         | 7.95  | 0  | 0     | 2          | 40    | 3         | 60    | 0         | 0     | 0        | 0        |
| 4       | DHANBAD             | 11           | 1.13                         | 10.86 | 2  | 18.18 | 6          | 54.55 | 1         | 9.09  | 2         | 18.18 | 0        | 0        |
| 5       | DUMKA               | 17           | 1.15                         | 10.60 | 2  | 11.76 | 10         | 58.83 | 4         | 23.52 | 1         | 5.88  | 0        | 0        |
| 6       | Jamtara             | 9            | 1.50                         | 6.70  | 2  | 22.22 | 5          | 55.56 | 2         | 22.22 | 0         | 0     | 0        | 0        |
| 7       | GARHWA              | 7            | 0.90                         | 5.60  | 2  | 28.57 | 3          | 42.86 | 2         | 28.57 | 0         | 0     | 0        | 0        |
| 8       | GIRIDIH             | 16           | 2.20                         | 12.01 | 0  | 0     | 10         | 62.50 | 3         | 18.75 | 3         | 18.75 | 0        | 0        |
| 9       | GODDA               | 14           | 1.90                         | 11.54 | 1  | 7.14  | 4          | 28.57 | 8         | 57.14 | 1         | 7.14  | 0        | 0        |
| 10      | GUMLA               | 14           | 0.55                         | 7.70  | 3  | 21.45 | 5          | 35.72 | 6         | 42.86 | 0         | 0     | 0        | 0        |
| 11      | Simdega             | 9            | 0.65                         | 4.45  | 6  | 66.67 | 3          | 33.33 | 0         | 0     | 0         | 0     | 0        | 0        |
| 12      | HAZARIBAG           | 23           | 0.50                         | 10.05 | 2  | 8.70  | 10         | 43.48 | 10        | 43.48 | 1         | 4.02  | 0        | 0        |
| 13      | Ramgarh             | 13           | 0.51                         | 6.51  | 4  | 30.76 | 5          | 38.18 | 4         | 30.76 | 0         | 0     | 0        | 0        |
| 14      | KODARMA             | 5            | 1.00                         | 6.10  | 1  | 20    | 1          | 20    | 3         | 60    | 0         | 0     | 0        | 0        |
| 15      | LOHARDAGA           | 11           | 1.50                         | 8.00  | 1  | 9.09  | 4          | 36.36 | 6         | 54.55 | 0         | 0     | 0        | 0        |
| 16      | PAKUR               | 11           | 0.55                         | 7.15  | 5  | 45.45 | 4          | 36.36 | 2         | 18.18 | 0         | 0     | 0        | 0        |
| 17      | PALAMU              | 17           | 1.40                         | 13.00 | 1  | 5.88  | 10         | 58.82 | 4         | 23.53 | 2         | 11.77 | 0        | 0        |
| 18      | Latehar             | 8            | 2.00                         | 10.35 | 2  | 25    | 1          | 12.50 | 4         | 50    | 1         | 12.50 | 0        | 0        |
| 19      | PASHCHIMI SINGHBHUM | 15           | 0.95                         | 11.10 | 8  | 53.33 | 5          | 33.33 | 1         | 6.67  | 1         | 6.67  | 0        | 0        |
| 20      | Saraikele-Kharsawan | 9            | 0.75                         | 3.50  | 7  | 77.78 | 2          | 22.22 | 0         | 0     | 0         | 0     | 0        | 0        |
| 21      | PURBI SINGHBHUM     | 18           | 0.90                         | 9.50  | 10   | 55.56 | 7          | 38.89 | 1         | 5.56  | 0         | 0     | 0        | 0        |
| 22      | RANCHI              | 39           | 0.80                         | 7.84  | 17   | 43.59 | 17         | 43.59 | 5         | 12.82 | 0         | 0     | 0        | 0        |
| 23      | Khunti              | 10           | 1.80                         | 6.20  | 2  | 20    | 4          | 40    | 4         | 40    | 0         | 0     | 0        | 0        |
| 24      | SAHIBGANJ           | 18           | 1.30                         | 6.61  | 8  | 44.44 | 8          | 44.44 | 2         | 11.11 | 0         | 0     | 0        | 0        |
|         | <b>TOTAL</b>        | <b>318</b>   |                              |       | <b>91</b>  |       | <b>130</b> |       | <b>83</b> |       | <b>14</b> |       | <b>0</b> | <b>0</b> |

**Table 4: District wise categorisation of depth to water level – November, 2019**

| Sl. No. | District Name       | No. of Wells | Depth to water level (m bgl) |       | No./Percentage of wells Showing Depth to Water Level in the Range of |       |            |       |           |       |          |       |          |          |
|---------|---------------------|--------------|------------------------------|-------|--|-------|------------|-------|-----------|-------|----------|-------|----------|----------|
|         |                     |              |                              |       | 0 to 2   |       | 2 to 5     |       | 5 to 10   |       | 10 to 20 |       | 20 to 40 |          |
|         |                     |              |                              |       | No.  | %     | No.        | %     | No.       | %     | No.      | %     | No.      | %        |
| 1       | BOKARO              | 11           | 0.87                         | 9.59  | 4  | 36.36 | 4          | 36.36 | 3         | 27.27 | 0        | 0     | 0        | 0        |
| 2       | CHATRA              | 8            | 2.10                         | 10.00 | 0  | 0     | 3          | 37.50 | 5         | 62.50 | 0        | 0     | 0        | 0        |
| 3       | DEOGHAR             | 5            | 2.20                         | 3.54  | 0  | 0     | 5          | 100   | 0         | 0     | 0        | 0     | 0        | 0        |
| 4       | DHANBAD             | 11           | 1.51                         | 8.02  | 4  | 36.36 | 5          | 45.45 | 2         | 18.18 | 0        | 0     | 0        | 0        |
| 5       | DUMKA               | 16           | 1.20                         | 7.25  | 4  | 25    | 9          | 56.25 | 3         | 18.75 | 0        | 0     | 0        | 0        |
| 6       | Jamtara             | 9            | 1.86                         | 5.48  | 1  | 11.11 | 7          | 77.78 | 1         | 11.11 | 0        | 0     | 0        | 0        |
| 7       | GARHWA              | 7            | 1.03                         | 6.25  | 1  | 14.29 | 5          | 71.43 | 1         | 14.29 | 0        | 0     | 0        | 0        |
| 8       | GIRIDIH             | 16           | 1.10                         | 7.70  | 9  | 56.25 | 5          | 31.25 | 2         | 12.50 | 0        | 0     | 0        | 0        |
| 9       | GODDA               | 11           | 1.55                         | 7.54  | 3  | 27.27 | 5          | 45.45 | 3         | 27.27 | 0        | 0     | 0        | 0        |
| 10      | GUMLA               | 14           | 0.79                         | 5.10  | 5  | 35.72 | 8          | 57.14 | 1         | 7.14  | 0        | 0     | 0        | 0        |
| 11      | SIMDEGA             | 9            | 0.95                         | 3.50  | 5  | 55.55 | 4          | 44.45 | 0         | 0     | 0        | 0     | 0        | 0        |
| 12      | HAZARIBAG           | 19           | 1.90                         | 11.80 | 1  | 5.26  | 9          | 47.37 | 7         | 36.84 | 2        | 10.52 | 0        | 0        |
| 13      | RAMGARH             | 15           | 0.35                         | 4.37  | 4  | 26.67 | 11         | 73.33 | 0         | 0     | 0        | 0     | 0        | 0        |
| 14      | KODARMA             | 5            | 1.22                         | 12.00 | 2  | 40    | 1          | 20    | 1         | 20    | 1        | 20    | 0        | 0        |
| 15      | LOHARDAGA           | 11           | 1.70                         | 7.70  | 2  | 18.18 | 4          | 36.36 | 5         | 45.45 | 0        | 0     | 0        | 0        |
| 16      | PAKUR               | 10           | 0.35                         | 6.08  | 5  | 50    | 4          | 40    | 1         | 10    | 0        | 0     | 0        | 0        |
| 17      | PALAMU              | 15           | 2.55                         | 15.00 | 0  | 0     | 10         | 66.67 | 2         | 13.33 | 3        | 20    | 0        | 0        |
| 18      | LATEHAR             | 9            | 2.30                         | 9.09  | 0  | 0     | 5          | 55.56 | 4         | 44.44 | 0        | 0     | 0        | 0        |
| 19      | PASHCHIMI SINGHBHUM | 16           | 1.10                         | 8.10  | 5  | 31.25 | 10         | 62.50 | 1         | 6.25  | 0        | 0     | 0        | 0        |
| 20      | SARAIKELA-KHARSAWAN | 7            | 1.10                         | 4.70  | 2  | 28.57 | 5          | 71.43 | 0         | 0     | 0        | 0     | 0        | 0        |
| 21      | PURBI SINGHBHUM     | 23           | 0.95                         | 5.90  | 10   | 43.48 | 10         | 43.48 | 3         | 13.04 | 0        | 0     | 0        | 0        |
| 22      | RANCHI              | 45           | 0.80                         | 6.10  | 9  | 20    | 33         | 73.33 | 3         | 6.67  | 0        | 0     | 0        | 0        |
| 23      | KHUNTI              | 9            | 1.20                         | 4.80  | 3  | 33.33 | 6          | 66.67 | 0         | 0     | 0        | 0     | 0        | 0        |
| 24      | SAHIBGANJ           | 16           | 1.40                         | 6.51  | 5  | 24.07 | 10         | 70.37 | 1         | 5.56  | 0        | 0     | 0        | 0        |
|         | <b>TOTAL</b>        | <b>317</b>   |                              |       | <b>84</b>  |       | <b>178</b> |       | <b>49</b> |       | <b>6</b> |       | <b>0</b> | <b>0</b> |

**Table 5: District wise categorisation of depth to water level – January, 2020**

| Sl. No. | District Name       | No. of Wells | Depth to water level (m bgl) |             | No./Percentage of wells Showing Depth to Water Level in the Range of |       |            |       |            |       |          |       |          |   |
|---------|---------------------|--------------|------------------------------|-------------|--|-------|------------|-------|------------|-------|----------|-------|----------|---|
|         |                     |              |                              |             | 0 to 2   |       | 2 to 5     |       | 5 to 10    |       | 10 to 20 |       | 20 to 40 |   |
|         |                     |              |                              |             | No.  | %     | No.        | %     | No.        | %     | No.      | %     | No.      | % |
|         |                     |              | Min                          | Max         |  |       |            |       |            |       |          |       |          |   |
| 1       | BOKARO              | 8            | 2.31                         | 8.51        | 0  | 0     | 5          | 62.50 | 3          | 37.50 | 0        | 0     | 0        | 0 |
| 2       | CHATRA              | 8            | 1.80                         | 10.45       | 1  | 12.50 | 3          | 37.50 | 3          | 37.50 | 1        | 12.5  | 0        | 0 |
| 3       | DEOGHAR             | 6            | 3.85                         | 5.79        | 0  | 0     | 4          | 66.67 | 2          | 33.33 | 0        | 0     | 0        | 0 |
| 4       | DHANBAD             | 11           | 1.90                         | 9.52        | 1  | 9.09  | 7          | 63.64 | 3          | 27.27 | 0        | 0     | 0        | 0 |
| 5       | DUMKA               | 16           | 1.30                         | 9.40        | 2  | 12.50 | 5          | 31.25 | 9          | 56.25 | 0        | 0     | 0        | 0 |
| 6       | Jamtara             | 9            | 2.95                         | 7.14        | 0  | 0     | 4          | 44.45 | 5          | 55.55 | 0        | 0     | 0        | 0 |
| 7       | GARHWA              | 6            | 3.80                         | 8.44        | 0  | 0     | 5          | 83.33 | 1          | 16.67 | 0        | 0     | 0        | 0 |
| 8       | GIRIDIH             | 17           | 2.22                         | 8.94        | 0  | 0     | 9          | 52.94 | 8          | 47.06 | 0        | 0     | 0        | 0 |
| 9       | GODDA               | 13           | 2.82                         | 11.24       | 0  | 0     | 7          | 53.85 | 5          | 38.46 | 1        | 7.69  | 0        | 0 |
| 10      | GUMLA               | 14           | 0.97                         | 6.10        | 2  | 14.28 | 7          | 50    | 5          | 35.71 | 0        | 0     | 0        | 0 |
| 11      | SIMDEGA             | 9            | 1.75                         | 6.80        | 2  | 22.22 | 5          | 55.56 | 2          | 22.22 | 0        | 0     | 0        | 0 |
| 12      | HAZARIBAG           | 17           | 0.50                         | 10.70       | 1  | 5.88  | 4          | 23.53 | 11         | 64.70 | 1        | 5.88  | 0        | 0 |
| 13      | RAMGARH             | 15           | 1.52                         | 7.63        | 1  | 6.67  | 9          | 60    | 5          | 33.33 | 0        | 0     | 0        | 0 |
| 14      | KODARMA             | 4            | 2.30                         | 7.60        | 0  | 0     | 2          | 50    | 2          | 50    | 0        | 0     | 0        | 0 |
| 15      | LOHARDAGA           | 11           | 2.90                         | 7.90        | 0  | 0     | 5          | 45.45 | 6          | 54.55 | 0        | 0     | 0        | 0 |
| 16      | PAKUR               | 10           | 1.45                         | 9.15        | 1  | 10    | 4          | 40    | 5          | 50    | 0        | 0     | 0        | 0 |
| 17      | PALAMU              | 14           | 2.95                         | 12.60       | 0  | 0     | 7          | 50    | 6          | 42.86 | 1        | 7.14  | 0        | 0 |
| 18      | LATEHAR             | 9            | 3.25                         | 10.45       | 0  | 0     | 3          | 33.33 | 5          | 55.56 | 1        | 11.11 | 0        | 0 |
| 19      | PASHCHIMI SINGHBHUM | 16           | 1.10                         | 6.30        | 2  | 12.50 | 9          | 56.25 | 5          | 31.25 | 0        | 0     | 0        | 0 |
| 20      | SARAIKELA-KHARSAWAN | 9            | 1.10                         | 8.30        | 3  | 33.33 | 4          | 44.45 | 2          | 22.22 | 0        | 0     | 0        | 0 |
| 21      | PURBI SINGHBHUM     | 19           | 1.10                         | 14.10       | 10   | 52.63 | 5          | 26.32 | 2          | 10.53 | 2        | 10.53 | 0        | 0 |
| 22      | RANCHI              | 46           | 0.85                         | 8.40        | 4  | 8.70  | 21         | 45.65 | 21         | 45.65 | 0        | 0     | 0        | 0 |
| 23      | KHUNTI              | 9            | 2.00                         | 6.45        | 1  | 11.11 | 6          | 66.67 | 2          | 22.22 | 0        | 0     | 0        | 0 |
| 24      | SAHIBGANJ           | 16           | 2.32                         | 7.98        | 0  | 0     | 9          | 56.25 | 7          | 43.75 | 0        | 0     | 0        | 0 |
|         | <b>Total</b>        | <b>312</b>   | <b>0.5</b>                   | <b>14.1</b> | <b>31</b>  |       | <b>149</b> |       | <b>125</b> |       | <b>7</b> |       |          |   |

**Table 6: District wise categorisation of fluctuation (Annual) in water level and frequency  
Distribution between May, 2018 – May, 2019**

| Sl. No. | 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          |                    |      |
| 1       | Bokaro                                   | 13           | 0.03                     | 0.45 | 0.1  | 6.47 | 5<br>38.46%                                 | 0           | 0           | 7<br>53.84%  | 0           | 1<br>7.69%  | 5                  | 8    |
| 2       | Chatra                                   | 8            | 2.2                      | 2.2  | 0.87 | 4.9  | 0   | 1<br>12.50% | 0           | 1<br>12.50%  | 4<br>50%    | 1<br>12.50% | 1                  | 6    |
| 3       | Deoghar                                  | 7            | 0.4                      | 0.4  | 0.2  | 4.1  | 1<br>14.29%                                 | 0           | 0           | 4<br>57.14%  | 0           | 1<br>14.29% | 1                  | 5    |
| 4       | Dhanbad                                  | 12           | 0.04                     | 5.63 | 0.57 | 3.3  | 4<br>33.33%                                 | 0           | 1<br>8.33%  | 4<br>33.33%  | 3<br>25%    | 0           | 5                  | 7    |
| 5       | Dumka & Jamtara                          | 21           | 0.18                     | 3.7  | 0.04 | 2.44 | 4<br>19.05%                                 | 1<br>4.76%  | 0           | 15<br>71.43% | 1<br>4.76%  | 0           | 5                  | 16   |
| 6       | Garhwa                                   | 7            | 9.04                     | 9.04 | 0.72 | 4.6  | 0   | 0           | 1<br>14.29% | 4<br>57.14%  | 1<br>14.29% | 1<br>14.29% | 1                  | 6    |
| 7       | Giridih                                  | 17           | 0.14                     | 4.68 | 0.05 | 3.53 | 6<br>35.29%                                 | 2<br>11.76% | 1<br>5.88%  | 4<br>23.54%  | 4<br>23.54% | 0           | 9                  | 8    |
| 8       | Godda                                    | 11           | 0.04                     | 1.9  | 0.05 | 1.21 | 4<br>36.36%                                 | 0           | 0           | 7<br>63.64%  | 0           | 0           | 4                  | 7    |
| 9       | Gumla & Simdega                          | 19           | 0.05                     | 0.9  | 0.1  | 2.85 | 5<br>26.32%                                 | 0           | 0           | 10<br>52.63% | 2<br>10.53% | 0           | 5                  | 12   |
| 10      | Hazaribag & Ramgarh                      | 29           | 0.09                     | 1.84 | 0.26 | 3.06 | 3<br>10.34%                                 | 0           | 0           | 20<br>68.97% | 6<br>20.69% | 0           | 3                  | 26   |
| 11      | Kodarma                                  | 5            | 2.73                     | 2.73 | 1.45 | 4.59 | 0   | 1<br>20%    | 0           | 1<br>20%     | 1<br>20%    | 2<br>40%    | 1                  | 4    |
| 12      | Lohardaga                                | 10           | 0.35                     | 0.5  | 0.3  | 1.92 | 3<br>30%                                    | 0           | 0           | 7<br>70%     | 0           | 0           | 3                  | 7    |
| 13      | Pakaur                                   | 6            | 0.18                     | 0.89 | 0.47 | 2.67 | 2<br>33.33%                                 | 0           | 0           | 2<br>33.33%  | 2<br>33.33% | 0           | 2                  | 4    |
| 14      | Palamu & Latehar                         | 21           | 0.3                      | 2.03 | 0.35 | 7.22 | 3<br>14.29%                                 | 1<br>4.76%  | 0           | 12<br>57.14% | 2<br>9.52%  | 3<br>14.29% | 4                  | 17   |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 20           | 0.07                     | 3.87 | 0.05 | 8.74 | 7<br>35%                                    | 1<br>5%     | 0           | 8<br>40%     | 3<br>15%    | 1<br>5%     | 8                  | 12   |
| 16      | Purbi singhbhum                          | 15           | 0.14                     | 3.31 | 0.05 | 1.3  | 6<br>40%                                    | 2<br>13.33% | 0           | 7<br>46.67%  | 0           | 0           | 8                  | 7    |
| 17      | Ranchi & Khunti                          | 20           | 0.4                      | 3.45 | 0.25 | 1.84 | 4<br>20%                                    | 1<br>5%     | 0           | 15<br>75%    | 0           | 0           | 5                  | 15   |
| 18      | Sahibganj                                | 17           | 0.15                     | 2.38 | 0.37 | 2    | 6<br>35.29%                                 | 1<br>5.88%  | 0           | 9<br>52.94%  | 0           | 0           | 7                  | 9    |
|         | <b>Total</b>                             | 258          | 0.03                     | 9.04 | 0.04 | 8.74 | 63  | 11          | 3           | 137          | 29          | 10          | 77                 | 176  |



**Table 7: District wise categorisation of fluctuation (Annual) in water level and frequency  
Distribution between August, 2018 – August, 2019**

| Sl. No. | 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       |                    |      |
| 1       | Bokaro                                   | 10           | 0.02                     | 0.99 | 0.14 | 3.4   | 4 40%                                       | 0        | 0       | 4 40%     | 2 20%     | 0        | 4                  | 6    |
| 2       | Chatra                                   | 8            | -                        | -    | 0.95 | 5.93  | 0   | 0        | 0       | 2 25%     | 5 62.50%  | 1 12.50% | 0                  | 8    |
| 3       | Deoghar                                  | 5            | 0.45                     | 0.89 | 0.1  | 3.19  | 2 40%                                       | 0        | 0       | 2 40%     | 1 20%     | 0        | 2                  | 3    |
| 4       | Dhanbad                                  | 8            | 1.74                     | 3.45 | 0.37 | 8.34  | 1 12.50%                                    | 1 12.50% | 0       | 4 50%     | 1 12.50%  | 1 12.50% | 2                  | 6    |
| 5       | Dumka & Jamtara                          | 24           | 0.13                     | 3.31 | 0.33 | 2.01  | 11 45.83%                                   | 4 16.67% | 0       | 8 33.33%  | 1 4.17%   | 0        | 15                 | 9    |
| 6       | Garhwa                                   | 6            | 0.01                     | 3.16 | 0.42 | 3.51  | 2 33.33%                                    | 1 16.67% | 0       | 1 16.67%  | 2 33.33%  | 0        | 3                  | 3    |
| 7       | Giridih                                  | 16           | 1.46                     | 6.31 | 0.1  | 10.19 | 1 6.25%                                     | 1 6.25%  | 1 6.25% | 8 50%     | 1 6.25%   | 4 25%    | 3                  | 13   |
| 8       | Godda                                    | 12           | 0.77                     | 0.77 | 0.02 | 3.58  | 1 8.33%                                     | 0        | 0       | 5 41.67%  | 6 50%     | 0        | 1                  | 11   |
| 9       | Gumla & Simdega                          | 20           | 0.25                     | 4.5  | 0.05 | 2.55  | 10 50%                                      | 3 15%    | 1 5%    | 5 25%     | 1 5%      | 0        | 14                 | 6    |
| 10      | Hazaribag & Ramgarh                      | 33           | 0.07                     | 5.81 | 0.23 | 6.82  | 5 15.15%                                    | 2 6.06%  | 1 3.03% | 13 39.39% | 10 30.30% | 2 6.06%  | 8                  | 25   |
| 11      | Kodarma                                  | 5            | 0.54                     | 3.2  | 0.35 | 4.29  | 2 40%                                       | 1 20%    | 0       | 1 20%     | 0         | 1 20%    | 3                  | 2    |
| 12      | Lohardaga                                | 11           | 0.15                     | 0.98 | 0.2  | 2.1   | 3 27.27%                                    | 0        | 0       | 6 54.55%  | 2 18.18%  | 0        | 3                  | 8    |
| 13      | Pakaur                                   | 10           | 0.01                     | 1.85 | 0.66 | 3.67  | 7 70%                                       | 0        | 0       | 1 10%     | 2 20%     | 0        | 7                  | 3    |
| 14      | Palamu & Latehar                         | 21           | 0.1                      | 3.36 | 0.09 | 8.96  | 1 4.76%                                     | 1 4.76%  | 0       | 11 52.38% | 2 9.52%   | 6 28.57% | 2                  | 19   |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 20           | 0.05                     | 1.73 | 0.02 | 3.01  | 6 30%                                       | 0        | 0       | 12 60%    | 2 10%     | 0        | 6                  | 14   |
| 16      | Purbi singhbhum                          | 14           | -                        | -    | 0.05 | 1.4   | 0   | 0        | 0       | 14 100%   | 0         | 0        | 0                  | 14   |
| 17      | Ranchi & Khunti                          | 37           | 0.05                     | 1.15 | 0.05 | 3.5   | 12 32.43%                                   | 0        | 0       | 23 62.16% | 2 5.41%   | 0        | 12                 | 25   |
| 18      | Sahibganj                                | 17           | 0.03                     | 1.88 | 0.08 | 3.86  | 7 41.18%                                    | 0        | 0       | 8 47.06%  | 2 11.76%  | 0        | 7                  | 10   |
|         |  | 277          | 0.01                     | 6.31 | 0.02 | 10.19 | 75  | 14       | 3       | 128       | 42        | 15       | 92                 | 185  |

**Table 8: District wise categorisation of fluctuation (Annual) in water level and frequency  
Distribution between November, 2018 – November,2019**

| Sl. No. | 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        |                    |          |            |            |
| 1       | Bokaro                                   | 10           | 0.5                      | 3.64      | -           | -           | 7   | 70%    | 3         | 30%    | 0         | 0         | 0                  | 0        | 10         | 0          |
| 2       | Chatra                                   | 8            | 0.2                      | 1.65      | 0.17        | 0.31        | 6   | 75%    | 0         | 0      | 2         | 25%       | 0                  | 0        | 6          | 2          |
| 3       | Deoghar                                  | 5            | 1.64                     | 6.35      | -           | -           | 1   | 20%    | 3         | 60%    | 1         | 20%       | 0                  | 0        | 5          | 0          |
| 4       | Dhanbad                                  | 10           | 0.08                     | 2.53      | 0.75        | 0.75        | 7   | 70%    | 2         | 20%    | 0         | 1         | 10%                | 0        | 9          | 1          |
| 5       | Dumka & Jamtara                          | 21           | 0.4                      | 4.48      | 0.93        | 0.93        | 15  | 71.43% | 4         | 19.05% | 1         | 4.76%     | 1                  | 4.76%    | 20         | 1          |
| 6       | Garhwa                                   | 7            | 0.15                     | 3.67      | -           | -           | 4   | 57.14% | 3         | 42.86% | 0         | 0         | 0                  | 0        | 7          | 0          |
| 7       | Giridih                                  | 13           | 1.08                     | 7.34      | 0.74        | 0.74        | 6   | 46.15% | 2         | 15.38% | 4         | 30.77%    | 1                  | 7.69%    | 12         | 1          |
| 8       | Godda                                    | 9            | 0.54                     | 2.79      | 0.23        | 0.7         | 5   | 55.56% | 1         | 11.11% | 0         | 3         | 33.33%             | 0        | 6          | 3          |
| 9       | Gumla & Simdega                          | 20           | 0.05                     | 4.35      | -           | -           | 10  | 50%    | 8         | 40%    | 2         | 10%       | 0                  | 0        | 20         | 0          |
| 10      | Hazaribag & Ramgarh                      | 28           | 0.02                     | 4.63      | 0.42        | 3.52        | 14  | 50%    | 9         | 32.14% | 1         | 3.57%     | 2                  | 7.14%    | 2          | 7.14%      |
| 11      | Kodarma                                  | 4            | 1.17                     | 5.5       | -           | -           | 2   | 50%    | 1         | 25%    | 1         | 25%       | 0                  | 0        | 4          | 0          |
| 12      | Lohardaga                                | 11           | 1                        | 2.7       | 0.2         | 1.42        | 3   | 27.27% | 2         | 18.18% | 0         | 6         | 54.55%             | 0        | 5          | 6          |
| 13      | Pakaur                                   | 9            | 0.09                     | 3.09      | -           | -           | 7   | 77.78% | 2         | 22.22% | 0         | 0         | 0                  | 0        | 9          | 0          |
| 14      | Palamu & Latehar                         | 22           | 0.04                     | 2.31      | 0.35        | 1.98        | 13  | 59.09% | 1         | 4.55%  | 0         | 7         | 31.82%             | 0        | 14         | 7          |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 19           | 0.05                     | 5.05      | -           | -           | 8   | 42.11% | 10        | 52.63% | 1         | 5.26%     | 0                  | 0        | 19         | 0          |
| 16      | Purbi singhbhum                          | 16           | 0.1                      | 10        | 0.1         | 1.4         | 9   | 56.25% | 1         | 6.25%  | 3         | 18.75%    | 3                  | 18.75%   | 13         | 3          |
| 17      | Ranchi & Khunti                          | 52           | 0.01                     | 5.25      | 0.01        | 1.4         | 27  | 51.92% | 11        | 21.15% | 7         | 13.46%    | 7                  | 13.46%   | 45         | 7          |
| 18      | Sahibganj                                | 15           | 0.33                     | 2.6       | 0.43        | 0.43        | 10  | 66.67% | 4         | 26.67% | 0         | 1         | 6.67%              | 0        | 14         | 1          |
|         | <b>Total</b>                             | <b>279</b>   | <b>0.01</b>              | <b>10</b> | <b>0.01</b> | <b>3.52</b> | <b>154</b>                                  |        | <b>67</b> |        | <b>21</b> | <b>34</b> | <b>2</b>           | <b>0</b> | <b>242</b> | <b>154</b> |

**Table 9: District wise categorisation of fluctuation (Annual) in water level and frequency  
Distribution between January, 2019– January, 2020**

| Sl. No. | 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         |                    |           |
| 1       | Bokaro                                   | 8            | 0.48                     | 3.6         | 0.69        | 0.69        | 5<br>62.50%                                 | 2<br>25%    | 0           | 1<br>12.50% | 0        | 0          | 7                  | 1         |
| 2       | Chatra                                   | 7            | 0.32                     | 3.12        | -           | -           | 5<br>71.43%                                 | 2<br>28.57% | 0           | 0           | 0        | 0          | 7                  | 0         |
| 3       | Deoghar                                  | 6            | 2.06                     | 5.87        | -           | -           | 0   | 5<br>83.33% | 1<br>16.67% | 0           | 0        | 0          | 6                  | 0         |
| 4       | Dhanbad                                  | 10           | 0.25                     | 2.88        | -           | -           | 7<br>70%                                    | 3<br>30%    | 0           | 0           | 0        | 0          | 10                 | 0         |
| 5       | Dumka & Jamtara                          | 23           | 0.25                     | 3.64        | -           | -           | 18<br>78.26%                                | 4<br>17.39% | 0           | 0           | 0        | 0          | 22                 | 0         |
| 6       | Garhwa                                   | 6            | 0.43                     | 2.05        | 0.37        | 0.37        | 4<br>66.67%                                 | 1<br>16.67% | 0           | 1<br>16.67% | 0        | 0          | 5                  | 1         |
| 7       | Giridih                                  | 17           | 0.56                     | 7.77        | 0.29        | 1.7         | 2<br>11.76%                                 | 9<br>52.94% | 4<br>23.53% | 2<br>11.76% | 0        | 0          | 15                 | 2         |
| 8       | Godda                                    | 11           | 0.05                     | 0.1         | 0.05        | 0.15        | 3<br>27.27%                                 | 0           | 0           | 7<br>63.64% | 0        | 0          | 3                  | 7         |
| 9       | Gumla & Simdega                          | 22           | 0.35                     | 3.85        | 0.05        | 0.05        | 14<br>63.64%                                | 7<br>31.82% | 0           | 1<br>4.55%  | 0        | 0          | 21                 | 1         |
| 10      | Hazaribag & Ramgarh                      | 18           | 0.48                     | 5.75        | 0.01        | 4.18        | 11<br>61.11%                                | 3<br>16.67% | 2<br>11.11% | 1<br>5.56%  | 0        | 1<br>5.56% | 16                 | 2         |
| 11      | Kodarma                                  | 3            | 0.85                     | 2.42        | -           | -           | 1<br>33.33%                                 | 2<br>66.67% | 0           | 0           | 0        | 0          | 3                  | 0         |
| 12      | Lohardaga                                | 11           | 0.28                     | 2.38        | 0.2         | 0.3         | 6<br>54.55%                                 | 2<br>18.18% | 0           | 3<br>27.27% | 0        | 0          | 8                  | 3         |
| 13      | Pakaur                                   | 10           | 0.05                     | 0.5         | 0.05        | 5           | 2<br>20%                                    | 0           | 0           | 6<br>60%    | 1<br>10% | 1<br>10%   | 2                  | 8         |
| 14      | Palamu & Latehar                         | 22           | 0.22                     | 4.79        | 0.06        | 5.32        | 13<br>59.09%                                | 0           | 3<br>13.64% | 5<br>22.73% | 0        | 1<br>4.55% | 16                 | 6         |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 20           | 0.12                     | 4.7         | 0.15        | 0.75        | 8<br>40%                                    | 4<br>20%    | 2<br>10%    | 6<br>30%    | 0        | 0          | 14                 | 6         |
| 16      | Purbi singhbhum                          | 14           | 0.34                     | 6.85        | 0.02        | 0.65        | 4<br>28.57%                                 | 1<br>7.14%  | 1<br>7.14%  | 5<br>35.71% | 0        | 0          | 6                  | 5         |
| 17      | Ranchi & Khunti                          | 49           | 0.01                     | 3.65        | 0.1         | 1.45        | 34<br>69.39%                                | 7<br>14.29% | 0           | 8<br>16.33% | 0        | 0          | 41                 | 8         |
| 18      | Sahibganj                                | 16           | 0.15                     | 2.58        | -           | -           | 14<br>87.50%                                | 2<br>12.50% | 0           | 0           | 0        | 0          | 16                 | 0         |
|         | <b>Total</b>                             | <b>273</b>   | <b>0.01</b>              | <b>7.77</b> | <b>0.01</b> | <b>5.32</b> | <b>151</b>                                  | <b>54</b>   | <b>13</b>   | <b>46</b>   | <b>1</b> | <b>3</b>   | <b>218</b>         | <b>50</b> |

**Table 10: District wise categorisation of fluctuation (Seasonal) in water level and frequency Distribution, May, 2019 - August, 2019**

| Sl. No. | 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       |                    |          |
| 1       | Bokaro                                   | 11           | 1.18                     | 6.67        | -          | -           | 2<br>18.18%                                 | 4<br>36.36%  | 4<br>36.36%  | 0           | 0        | 0        | 10                 | 0        |
| 2       | Chatra                                   | 8            | 1.7                      | 5.1         | 0.6        | 0.6         | 2 25%                                       | 2 25%        | 3<br>37.50%  | 1<br>12.50% | 0        | 0        | 7                  | 1        |
| 3       | Deoghar                                  | 5            | 1.3                      | 5.1         | -          | -           | 3 60%                                       | 1 20%        | 1 20%        | 0           | 0        | 0        | 5                  | 0        |
| 4       | Dhanbad                                  | 11           | 1.07                     | 5.61        | 1.63       | 1.63        | 2<br>18.18%                                 | 5<br>45.45%  | 3<br>27.27%  | 1<br>9.09%  | 0        | 0        | 10                 | 1        |
| 5       | Dumka & Jamtara                          | 21           | 0.46                     | 6.07        | -          | -           | 6<br>28.57%                                 | 7<br>33.33%  | 8<br>38.10%  | 0           | 0        | 0        | 21                 | 0        |
| 6       | Garhwa                                   | 7            | 2.7                      | 10.2        | -          | -           | 0   | 3<br>42.86%  | 4<br>57.14%  | 0           | 0        | 0        | 7                  | 0        |
| 7       | Giridih                                  | 16           | 1.02                     | 5.74        | -          | -           | 3<br>18.75%                                 | 3<br>18.75%  | 10<br>62.50% | 0           | 0        | 0        | 16                 | 0        |
| 8       | Godda                                    | 10           | 0.15                     | 2.95        | -          | -           | 7 70%                                       | 3 30%        | 0            | 0           | 0        | 0        | 10                 | 0        |
| 9       | Gumla & Simdega                          | 20           | 0.85                     | 7.3         | -          | -           | 3 15%                                       | 8 40%        | 9 45%        | 0           | 0        | 0        | 20                 | 0        |
| 10      | Hazaribag & Ramgarh                      | 30           | 0.75                     | 9.29        | -          | -           | 2<br>6.67%                                  | 14<br>46.67% | 13<br>43.33% | 0           | 0        | 0        | 29                 | 0        |
| 11      | Kodarma                                  | 5            | 0.3                      | 6.4         | -          | -           | 1 20%                                       | 1 20%        | 3 60%        | 0           | 0        | 0        | 5                  | 0        |
| 12      | Lohardaga                                | 11           | 1.3                      | 6.8         | -          | -           | 2<br>18.18%                                 | 4<br>36.36%  | 5<br>45.45%  | 0           | 0        | 0        | 11                 | 0        |
| 13      | Pakaur                                   | 8            | 1.4                      | 8.4         | -          | -           | 2 25%                                       | 3<br>37.50%  | 3<br>37.50%  | 0           | 0        | 0        | 8                  | 0        |
| 14      | Palamu & Latehar                         | 23           | 0.09                     | 12.8        | 1.05       | 1.05        | 2 8.70%                                     | 5<br>21.74%  | 13<br>56.52% | 1<br>4.35%  | 0        | 0        | 20                 | 1        |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 21           | 0.01                     | 9.61        | -          | -           | 3<br>14.29%                                 | 6<br>28.57%  | 12<br>57.14% | 0           | 0        | 0        | 21                 | 0        |
| 16      | Purbi singhbhum                          | 15           | 0.45                     | 9.05        | -          | -           | 6 40%                                       | 4<br>26.67%  | 5<br>33.33%  | 0           | 0        | 0        | 15                 | 0        |
| 17      | Ranchi & Khunti                          | 45           | 0.15                     | 10.4        | -          | -           | 11<br>24.44%                                | 15<br>33.33% | 19<br>42.22% | 0           | 0        | 0        | 45                 | 0        |
| 18      | Sahibganj                                | 17           | 0.4                      | 8.5         | -          | -           | 4<br>24.53%                                 | 6<br>25.29%  | 7<br>41.18%  | 0           | 0        | 0        | 17                 | 0        |
|         | <b>Total</b>                             | <b>284</b>   | <b>0.01</b>              | <b>12.8</b> | <b>0.6</b> | <b>1.63</b> | <b>61</b>                                   | <b>94</b>    | <b>122</b>   | <b>3</b>    | <b>0</b> | <b>0</b> | <b>277</b>         | <b>3</b> |

**Table 11: District wise categorisation of fluctuation (Seasonal) in water level and frequency Distribution, May, 2019 - November, 2019**

| Sl. No. | 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       |                    |          |
| 1       | Bokaro                                   | 11           | 1.97                     | 6.28         | -          | -           | 1<br>9.09%                                  | 4<br>36.36%  | 6<br>54.55%  | 0           | 0        | 0        | 11                 | 0        |
| 2       | Chatra                                   | 8            | 3.92                     | 7            | 0.6        | 0.6         | 0   | 1<br>12.50%  | 6<br>75%     | 1<br>12.50% | 0        | 0        | 7                  | 1        |
| 3       | Deoghar                                  | 5            | 4.05                     | 7.41         | -          | -           | 0   | 0            | 5<br>100%    | 0           | 0        | 0        | 5                  | 0        |
| 4       | Dhanbad                                  | 11           | 0.43                     | 6.56         | -          | -           | 3<br>27.27%                                 | 2<br>18.18%  | 6<br>54.55%  | 0           | 0        | 0        | 11                 | 0        |
| 5       | Dumka & Jamtara                          | 20           | 1.36                     | 6.4          | -          | -           | 2<br>10%                                    | 7<br>35%     | 11<br>55%    | 0           | 0        | 0        | 20                 | 0        |
| 6       | Garhwa                                   | 7            | 0.65                     | 8.52         | -          | -           | 1<br>14.29%                                 | 0            | 6<br>85.71%  | 0           | 0        | 0        | 7                  | 0        |
| 7       | Giridih                                  | 16           | 3.5                      | 8.31         | -          | -           | 0   | 2<br>12.50%  | 14<br>87.50% | 0           | 0        | 0        | 16                 | 0        |
| 8       | Godda                                    | 8            | 2.05                     | 5.7          | -          | -           | 0   | 6<br>75%     | 2<br>25%     | 0           | 0        | 0        | 8                  | 0        |
| 9       | Gumla & Simdega                          | 20           | 1.3                      | 7.7          | -          | -           | 2<br>10%                                    | 4<br>20%     | 14<br>70%    | 0           | 0        | 0        | 20                 | 0        |
| 10      | Hazaribag & Ramgarh                      | 29           | 1.57                     | 13.17        | -          | -           | 1<br>3.45%                                  | 5<br>17.24%  | 21<br>72.41% | 0           | 0        | 0        | 27                 | 0        |
| 11      | Kodarma                                  | 5            | 0.85                     | 7.3          | -          | -           | 1<br>20%                                    | 0            | 3<br>60%     | 0           | 0        | 0        | 4                  | 0        |
| 12      | Lohardaga                                | 11           | 1.5                      | 5.7          | -          | -           | 2<br>18.18%                                 | 4<br>36.36%  | 5<br>45.45%  | 0           | 0        | 0        | 11                 | 0        |
| 13      | Pakaur                                   | 8            | 1.2                      | 9.1          | -          | -           | 1<br>12.50%                                 | 4<br>50%     | 3<br>37.50%  | 0           | 0        | 0        | 8                  | 0        |
| 14      | Palamu & Latehar                         | 23           | 0.25                     | 7.8          | -          | -           | 2<br>8.70%                                  | 5<br>21.74%  | 14<br>60.87% | 0           | 0        | 0        | 21                 | 0        |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 20           | 0.2                      | 8.5          | 0.5        | 0.5         | 3<br>15%                                    | 4<br>20%     | 12<br>60%    | 1<br>5%     | 0        | 0        | 19                 | 1        |
| 16      | Purbi singhbhum                          | 15           | 0.45                     | 9.71         | -          | -           | 6<br>40%                                    | 3<br>20%     | 6<br>40%     | 0           | 0        | 0        | 15                 | 0        |
| 17      | Ranchi & Khunti                          | 51           | 0.45                     | 10.7         | 1.45       | 1.45        | 7<br>13.73%                                 | 16<br>31.37% | 27<br>52.94% | 1<br>1.96%  | 0        | 0        | 50                 | 1        |
| 18      | Sahibganj                                | 16           | 0.2                      | 8.4          | -          | -           | 3<br>18.75%                                 | 5<br>31.25%  | 8<br>50%     | 0           | 0        | 0        | 16                 | 0        |
|         | <b>Total</b>                             | <b>284</b>   | <b>0.2</b>               | <b>13.17</b> | <b>0.5</b> | <b>1.45</b> | <b>35</b>                                   | <b>72</b>    | <b>169</b>   | <b>3</b>    | <b>0</b> | <b>0</b> | <b>276</b>         | <b>3</b> |

**Table 12: District wise categorisation of fluctuation (Seasonal) in water level and frequency Distribution, May, 2019 - January, 2020**

| Sl. No. | 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          |                    |      |
| 1       | Bokaro                                   | 8            | 1.31                     | 4.93  | 0.32 | 0.32 | 2<br>25%                                    | 3<br>37.50% | 2<br>25%     | 1<br>12.50% | 0      | 0           | 7                  | 1    |
| 2       | Chatra                                   | 8            | 3.25                     | 7.3   | 0.9  | 0.9  | 0   | 1<br>12.50% | 6<br>75%     | 1<br>12.50% | 0      | 0           | 7                  | 1    |
| 3       | Deoghar                                  | 6            | 2.6                      | 6.01  | -    | -    | 0   | 3<br>50%    | 3<br>50%     | 0           | 0      | 0           | 6                  | 0    |
| 4       | Dhanbad                                  | 10           | 0.13                     | 4.94  | -    | -    | 3<br>30%                                    | 5<br>50%    | 2<br>20%     | 0           | 0      | 0           | 10                 | 0    |
| 5       | Dumka & Jamtara                          | 20           | 0.15                     | 4.81  | -    | -    | 9<br>45%                                    | 9<br>45%    | 2<br>10%     | 0           | 0      | 0           | 20                 | 0    |
| 6       | Garhwa                                   | 6            | 3.9                      | 7.3   | 1.54 | 1.54 | 0   | 2<br>33.33% | 3<br>50%     | 1<br>16.67% | 0      | 0           | 5                  | 1    |
| 7       | Giridih                                  | 17           | 2.11                     | 5.56  | -    | -    | 0   | 5<br>29.41% | 12<br>70.59% | 0           | 0      | 0           | 17                 | 0    |
| 8       | Godda                                    | 9            | 0.45                     | 3.29  | -    | -    | 5<br>55.56%                                 | 4<br>44.44% | 0            | 0           | 0      | 0           | 9                  | 0    |
| 9       | Gumla & Simdega                          | 20           | 0.85                     | 7.65  | -    | -    | 3<br>15%                                    | 12<br>60%   | 5<br>25%     | 0           | 0      | 0           | 20                 | 0    |
| 10      | Hazaribag & Ramgarh                      | 25           | 0.44                     | 16.75 | 0.4  | 0.4  | 5<br>20%                                    | 11<br>44%   | 8<br>32%     | 1<br>4%     | 0      | 0           | 24                 | 1    |
| 11      | Kodarma                                  | 4            | 4.1                      | 4.9   | 0.15 | 0.15 | 0   | 0           | 3<br>75%     | 1<br>25%    | 0      | 0           | 3                  | 1    |
| 12      | Lohardaga                                | 11           | 1.12                     | 5.9   | -    | -    | 2<br>18.18%                                 | 7<br>63.64% | 2<br>18.18%  | 0           | 0      | 0           | 11                 | 0    |
| 13      | Pakaur                                   | 8            | 0.25                     | 4     | 5    | 5    | 5<br>62.50%                                 | 2<br>25%    | 0            | 0           | 0      | 1<br>12.50% | 7                  | 1    |
| 14      | Palamu & Latehar                         | 22           | 0.4                      | 7.96  | 1.25 | 1.25 | 2<br>9.09%                                  | 7<br>31.82% | 12<br>54.55% | 1<br>4.55%  | 0      | 0           | 21                 | 1    |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 22           | 0.2                      | 7.3   | 0.25 | 0.25 | 4<br>18.18%                                 | 11<br>50%   | 5<br>22.73%  | 1<br>4.55%  | 0      | 0           | 20                 | 1    |
| 16      | Purbi singhbhum                          | 13           | 0.75                     | 7.79  | -    | -    | 5<br>38.46%                                 | 5<br>38.46% | 1<br>7.69%   | 0           | 0      | 0           | 11                 | 0    |
| 17      | Ranchi & Khunti                          | 50           | 0.01                     | 6.2   | 0.1  | 4.35 | 11<br>22%                                   | 21<br>42%   | 14<br>28%    | 3<br>6%     | 0      | 1<br>2%     | 46                 | 4    |
| 18      | Sahibganj                                | 15           | 0.65                     | 3.35  | 0.25 | 1.3  | 5<br>33.33%                                 | 7<br>46.67% | 0            | 3<br>20%    | 0      | 0           | 12                 | 3    |
|         | Total                                    | 274          | 0.01                     | 16.75 | 0.1  | 5    | 61  | 115         | 80           | 13          | 0      | 2           | 256                | 15   |

**Table 13: District wise categorisation of fluctuation (Decadal) in water level and frequency  
Distribution between May (2009-2018 mean) - May, 2019**

| Sl. No. | 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          |                    |            |
| 1       | Bokaro                                   | 13           | 0.24                     | 3.94        | 0.06       | 4.34       | 5<br>38.46%                                 | 1<br>7.69%  | 0           | 6<br>46.15%  | 0            | 1<br>7.69%  | 6                  | 7          |
| 2       | Chatra                                   | 8            | 3.31                     | 3.31        | 0.23       | 4.89       | 0   | 1<br>12.50% | 0           | 3<br>37.50%  | 3<br>37.50%  | 1<br>12.50% | 1                  | 7          |
| 3       | Deoghar                                  | 8            | 1.47                     | 1.6         | 0.37       | 3.81       | 2 25%                                       | 0           | 0           | 4 50%        | 2 25%        | 0           | 2                  | 6          |
| 4       | Dhanbad                                  | 12           | 0.13                     | 2.07        | 0.02       | 4.11       | 3 25%                                       | 1<br>8.33%  | 0           | 6 50%        | 0            | 1<br>8.33%  | 4                  | 7          |
| 5       | Dumka & Jamtara                          | 21           | 0.13                     | 2.09        | 0.13       | 2.31       | 6<br>28.57%                                 | 2<br>9.52%  | 0           | 12<br>57.14% | 1<br>4.76%   | 0           | 8                  | 13         |
| 6       | Garhwa                                   | 7            | 0.07                     | 5.78        | 1.12       | 4.7        | 1<br>14.29%                                 | 0           | 1<br>14.29% | 3<br>42.86%  | 1<br>14.29%  | 1<br>14.29% | 2                  | 5          |
| 7       | Giridih                                  | 17           | 0.46                     | 1.62        | 0.05       | 4.87       | 5<br>29.41%                                 | 0           | 0           | 10<br>58.82% | 1<br>5.88%   | 1<br>5.88%  | 5                  | 12         |
| 8       | Godda                                    | 11           | 0.03                     | 1.9         | 0.25       | 1.52       | 7<br>63.64%                                 | 0           | 0           | 4<br>36.36%  | 0            | 0           | 7                  | 4          |
| 9       | Gumla & Simdega                          | 20           | 0.06                     | 1.09        | 0.08       | 3.29       | 7 35%                                       | 0           | 0           | 11<br>55%    | 2 10%        | 0           | 7                  | 13         |
| 10      | Hazaribag & Ramgarh                      | 31           | 0.42                     | 0.78        | 0.42       | 9.6        | 4<br>12.90%                                 | 0           | 0           | 19<br>61.29% | 6<br>19.35%  | 2<br>6.45%  | 4                  | 27         |
| 11      | Kodarma                                  | 5            | 2.73                     | 2.73        | 0.79       | 4.46       | 0   | 1 20%       | 0           | 2 40%        | 0            | 2 40%       | 1                  | 4          |
| 12      | Lohardaga                                | 11           | 0.49                     | 0.68        | 0.15       | 1.49       | 3<br>27.27%                                 | 0           | 0           | 8<br>72.73%  | 0            | 0           | 3                  | 8          |
| 13      | Pakaur                                   | 8            | 0.27                     | 2.44        | 0.85       | 2.08       | 3<br>37.50%                                 | 1<br>12.50% | 0           | 3<br>37.50%  | 1<br>12.50%  | 0           | 4                  | 4          |
| 14      | Palamu & Latehar                         | 24           | 1.26                     | 2.59        | 0.31       | 3.96       | 2<br>8.33%                                  | 2<br>8.33%  | 0           | 10<br>41.67% | 10<br>41.67% | 0           | 4                  | 20         |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 22           | 0.09                     | 4.67        | 0.18       | 5.23       | 8<br>36.36%                                 | 5<br>22.73% | 1<br>4.55%  | 5<br>22.73%  | 2<br>9.09%   | 1<br>4.55%  | 14                 | 8          |
| 16      | Purbi singhbhum                          | 16           | 0.13                     | 2.94        | 0.23       | 0.23       | 13<br>81.25%                                | 2<br>12.50% | 0           | 1<br>6.25%   | 0            | 0           | 15                 | 1          |
| 17      | Ranchi & Khunti                          | 54           | 0.01                     | 4.95        | 0.1        | 2.85       | 17<br>31.48%                                | 5<br>9.26%  | 1<br>1.85%  | 27<br>50%    | 4<br>7.41%   | 0           | 23                 | 31         |
| 18      | Sahibganj                                | 17           | 0.14                     | 3.99        | 0.34       | 3.7        | 7<br>41.18%                                 | 2<br>11.76% | 0           | 7<br>41.18%  | 1<br>5.88%   | 0           | 9                  | 8          |
|         | <b>Total</b>                             | <b>305</b>   | <b>0.01</b>              | <b>5.78</b> | <b>.02</b> | <b>9.6</b> | <b>93</b>                                   | <b>23</b>   | <b>3</b>    | <b>141</b>   | <b>34</b>    | <b>10</b>   | <b>119</b>         | <b>185</b> |

**Table 14: District wise categorisation of fluctuation (Decadal) in water level and frequency  
Distribution between August (2009-2018 mean) - August, 2019**

| Sl. No. | 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          |                    |            |
| 1       | Bokaro                                   | 11           | 0.42                     | 1.01        | 0.08        | 3.33        | 4<br>36.36%                                 | 0           | 0           | 4<br>36.36%  | 3<br>27.27% | 0           | 4                  | 7          |
| 2       | Chatra                                   | 8            | -                        | -           | 1.36        | 3.57        | 0   | 0           | 0           | 3<br>37.50%  | 5<br>62.50% | 0           | 0                  | 8          |
| 3       | Deoghar                                  | 5            | 0.65                     | 1.8         | 1.8         | 2.9         | 3<br>60%                                    | 0           | 0           | 1<br>20%     | 1<br>20%    | 0           | 3                  | 2          |
| 4       | Dhanbad                                  | 11           | 0.32                     | 4.77        | 0.2         | 7.11        | 2<br>18.18%                                 | 0           | 2<br>18.18% | 6<br>54.55%  | 0           | 1<br>9.09%  | 4                  | 7          |
| 5       | Dumka & Jamtara                          | 26           | 0.11                     | 2.53        | 0.06        | 3.17        | 9<br>34.62%                                 | 2<br>7.69%  | 0           | 12<br>46.15% | 3<br>11.54% | 0           | 11                 | 15         |
| 6       | Garhwa                                   | 7            | 0.24                     | 3.1         | 0.21        | 1.41        | 3<br>42.86%                                 | 2<br>28.57% | 0           | 2<br>28.57%  | 0           | 0           | 5                  | 2          |
| 7       | Giridih                                  | 16           | 0.09                     | 2.19        | 0.15        | 7.98        | 4<br>25%                                    | 1<br>6.25%  | 0           | 6<br>37.50%  | 2<br>12.50% | 3<br>18.75% | 5                  | 11         |
| 8       | Godda                                    | 14           | 0.12                     | 1.07        | 0.36        | 3.75        | 3<br>21.43%                                 | 0           | 0           | 5<br>35.71%  | 6<br>42.46% | 0           | 3                  | 11         |
| 9       | Gumla & Simdega                          | 23           | 0.38                     | 20.72       | 0.01        | 3.18        | 7<br>30.43%                                 | 1<br>4.35%  | 1<br>4.35%  | 12<br>52.17% | 2<br>8.70%  | 0           | 9                  | 14         |
| 10      | Hazaribag & Ramgarh                      | 35           | 0.51                     | 4.87        | 0.06        | 5.76        | 5<br>14.29%                                 | 3<br>8.57%  | 1<br>2.86%  | 15<br>42.86% | 8<br>22.86% | 3<br>8.57%  | 9                  | 26         |
| 11      | Kodarma                                  | 5            | 0.34                     | 0.58        | 1.94        | 4.59        | 3<br>60%                                    | 0           | 0           | 1<br>20%     | 0           | 1<br>20%    | 3                  | 2          |
| 12      | Lohardaga                                | 11           | 1.97                     | 1.97        | 0.09        | 3.91        | 1<br>9.09%                                  | 0           | 0           | 9<br>81.82%  | 1<br>9.09%  | 0           | 1                  | 10         |
| 13      | Pakaur                                   | 11           | 0.01                     | 0.63        | 0.65        | 1.78        | 6<br>54.55%                                 | 0           | 0           | 5<br>45.45%  | 0           | 0           | 6                  | 5          |
| 14      | Palamu & Latehar                         | 25           | 0.04                     | 5.78        | 0.2         | 6.53        | 12<br>48%                                   | 1<br>4%     | 1<br>4%     | 6<br>24%     | 2<br>8%     | 3<br>12%    | 14                 | 11         |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 22           | 0.14                     | 2.93        | 0.03        | 4.4         | 10<br>45.45%                                | 2<br>9.09%  | 0           | 8<br>36.36%  | 1<br>4.55%  | 1<br>4.55%  | 12                 | 10         |
| 16      | Purbi singhbhum                          | 18           | 0.21                     | 1.58        | 0.15        | 1.16        | 11<br>61.11%                                | 0           | 0           | 7<br>38.89%  | 0           | 0           | 11                 | 7          |
| 17      | Ranchi & Khunti                          | 49           | 0.03                     | 4.9         | 0.03        | 4.7         | 19<br>38.78%                                | 6<br>12.24% | 1<br>2.04%  | 17<br>34.69% | 5<br>10.20% | 1<br>2.04%  | 26                 | 23         |
| 18      | Sahibganj                                | 18           | 0.14                     | 2.01        | 0.25        | 1.81        | 8<br>44.44%                                 | 1<br>5.56%  | 0           | 9<br>50%     | 0           | 0           | 9                  | 9          |
|         | <b>Total</b>                             | <b>315</b>   | <b>0.01</b>              | <b>5.78</b> | <b>0.01</b> | <b>7.98</b> | <b>110</b>                                  | <b>19</b>   | <b>6</b>    | <b>128</b>   | <b>39</b>   | <b>13</b>   | <b>135</b>         | <b>180</b> |



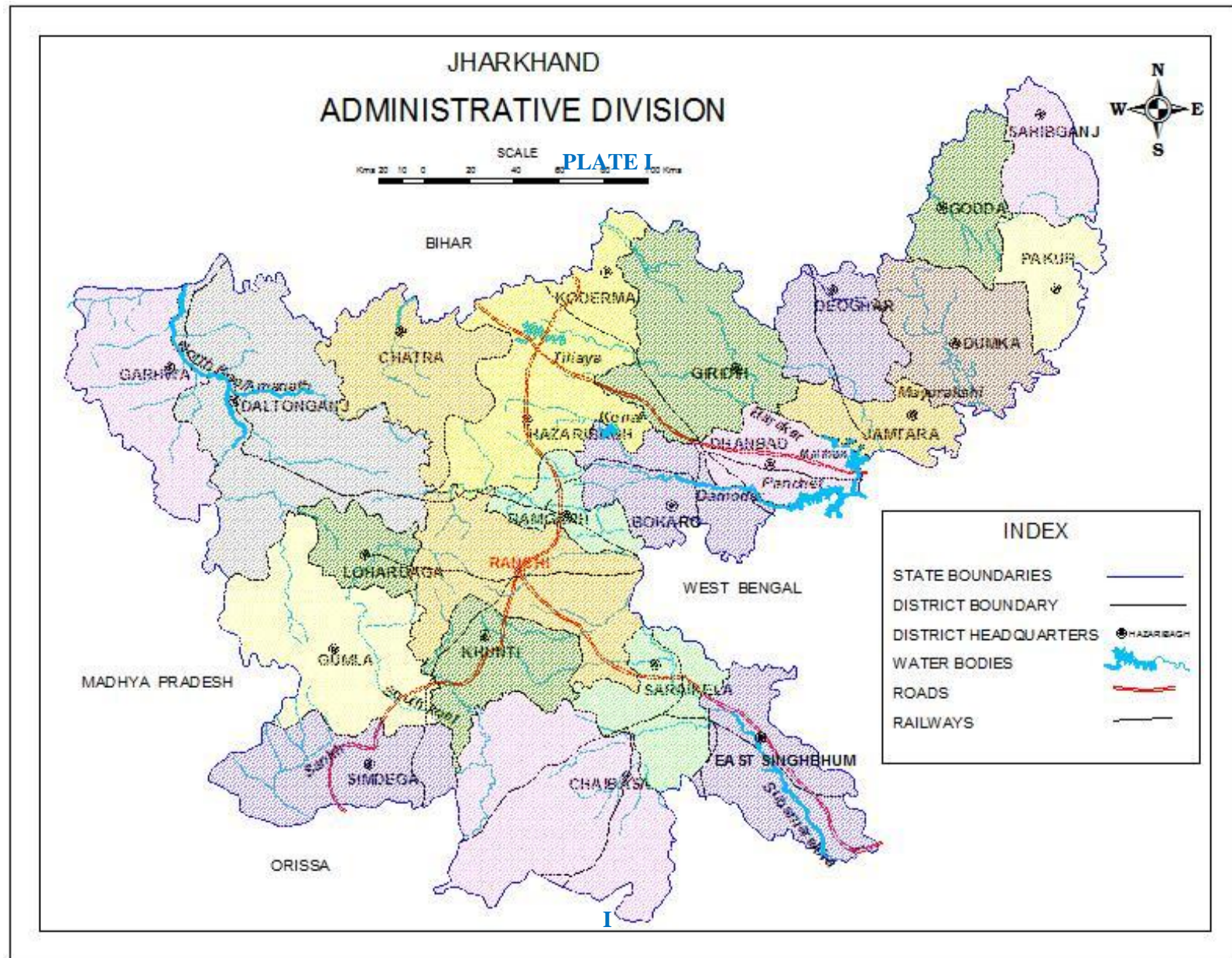
**Table 15: District wise categorisation of fluctuation (Decadal) in water level and frequency  
Distribution between November (2009-2018 mean) - November, 2019**

| Sl. No. | 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         |                    |      |
| 1       | Bokaro                                   | 11           | 0.14                     | 2.65 | 0.08 | 0.08 | 8<br>72.73%                                 | 2<br>18.18%  | 0           | 1<br>9.09%  | 0          | 0          | 10                 | 1    |
| 2       | Chatra                                   | 8            | 0.49                     | 1.49 | 0.16 | 1.01 | 5<br>62.50%                                 | 0            | 0           | 3<br>37.50% | 0          | 0          | 5                  | 3    |
| 3       | Deoghar                                  | 5            | 1.93                     | 4.89 | -    | -    | 2 40%                                       | 2 40%        | 1 20%       | 0           | 0          | 0          | 5                  | 0    |
| 4       | Dhanbad                                  | 11           | 0.13                     | 1.54 | 0.28 | 0.28 | 10<br>90.91%                                | 0            | 0           | 1<br>9.09%  | 0          | 0          | 10                 | 1    |
| 5       | Dumka & Jamtara                          | 24           | 0.39                     | 3.52 | 0.32 | 0.32 | 15<br>62.50%                                | 8<br>33.33%  | 0           | 1<br>4.17%  | 0          | 0          | 23                 | 1    |
| 6       | Garhwa                                   | 7            | 0.99                     | 4.8  | -    | -    | 4<br>57.14%                                 | 2<br>28.57%  | 1<br>14.29% | 0           | 0          | 0          | 7                  | 0    |
| 7       | Giridih                                  | 16           | 0.21                     | 4.75 | 0.48 | 0.57 | 8 50%                                       | 5<br>31.25%  | 1<br>6.25%  | 2<br>12.50% | 0          | 0          | 14                 | 2    |
| 8       | Godda                                    | 10           | 0.34                     | 2.36 | 0.02 | 0.49 | 6 60%                                       | 1 10%        | 0           | 3 30%       | 0          | 0          | 7                  | 3    |
| 9       | Gumla & Simdega                          | 22           | 0.05                     | 2.9  | 0.03 | 0.03 | 16<br>72.73%                                | 5<br>22.73%  | 0           | 1<br>4.55%  | 0          | 0          | 21                 | 1    |
| 10      | Hazaribag & Ramgarh                      | 33           | 0.1                      | 4.4  | 0.14 | 4.6  | 17<br>51.52%                                | 8<br>24.24%  | 1<br>3.03%  | 3<br>9.09%  | 3<br>9.09% | 1<br>3.03% | 26                 | 7    |
| 11      | Kodarma                                  | 5            | 0.48                     | 1.98 | 6.88 | 6.88 | 4 80%                                       | 0            | 0           | 0           | 0          | 1 20%      | 4                  | 1    |
| 12      | Lohardaga                                | 11           | 0.16                     | 2.24 | 0.56 | 1.7  | 4<br>36.36%                                 | 2<br>18.18%  | 0           | 5<br>45.45% | 0          | 0          | 6                  | 5    |
| 13      | Pakaur                                   | 10           | 0.09                     | 2.87 | -    | -    | 8 80%                                       | 2 20%        | 0           | 0           | 0          | 0          | 10                 | 0    |
| 14      | Palamu & Latehar                         | 24           | 0.22                     | 2.47 | 0.05 | 6.91 | 15<br>62.50%                                | 1<br>4.17%   | 0           | 5<br>20.83% | 2<br>8.33% | 1<br>4.17% | 16                 | 8    |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 20           | 0.2                      | 3.93 | 0.29 | 2.14 | 11<br>55%                                   | 5 25%        | 0           | 3 15%       | 1 5%       | 0          | 16                 | 4    |
| 16      | Purbi singhbhum                          | 23           | -                        | 9.23 | 2.4  | 2.4  | 16<br>69.57%                                | 4<br>17.39%  | 2<br>8.70%  | 0           | 1<br>4.35% | 0          | 22                 | 1    |
| 17      | Ranchi & Khunti                          | 54           | 0.01                     | 4.91 | 0    | 0.78 | 34<br>62.96%                                | 13<br>24.07% | 4<br>7.41%  | 3<br>5.56%  | 0          | 0          | 51                 | 3    |
| 18      | Sahibganj                                | 16           | 0.25                     | 4.24 | -    | -    | 13<br>81.25%                                | 2<br>12.50%  | 1<br>6.25%  | 0           | 0          | 0          | 16                 | 0    |
|         | <b>Total</b>                             | 310          | .01                      | 9.23 | .02  | 6.91 | 196   | 62           | 11          | 31          | 7          | 3          | 269                | 41   |

**Table 16: District wise categorisation of fluctuation (Decadal) in water level and frequency  
Distribution between January (2010-2019 mean) - January, 2020**

| Sl. No. | 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       |                    |           |
| 1       | Bokaro                                   | 8            | 0.25                     | 2.04        | 0.25        | 0.62        | 4 50%                                       | 1 12.50%  | 0         | 3 37.50%  | 0        | 0        | 5                  | 3         |
| 2       | Chatra                                   | 8            | 0.08                     | 3.4         | 0.38        | 0.38        | 5 62.50%                                    | 2 25%     | 0         | 1 12.50%  | 0        | 0        | 7                  | 1         |
| 3       | Deoghar                                  | 6            | 0.4                      | 4.68        | -           | -           | 2 33.33%                                    | 3 50%     | 1 16.67%  | 0         | 0        | 0        | 6                  | 0         |
| 4       | Dhanbad                                  | 11           | 0.24                     | 2.1         | 0.45        | 0.45        | 9 81.82%                                    | 1 9.09%   | 0         | 1 9.09%   | 0        | 0        | 10                 | 1         |
| 5       | Dumka & Jamtara                          | 24           | 0.37                     | 3.66        | 0.03        | 1.94        | 12 50%                                      | 5 20.83%  | 0         | 7 29.17%  | 0        | 0        | 17                 | 7         |
| 6       | Garhwa                                   | 6            | 0.45                     | 1.93        | 0.54        | 0.54        | 5 83.33%                                    | 0         | 0         | 1 16.67%  | 0        | 0        | 5                  | 1         |
| 7       | Giridih                                  | 17           | 0.73                     | 4.18        | 0.23        | 3.1         | 8 47.06%                                    | 2 11.76%  | 2 11.76%  | 4 23.53%  | 1 5.88%  | 0        | 12                 | 5         |
| 8       | Godda                                    | 12           | 0.04                     | 1.14        | 0.01        | 1.16        | 7 58.33%                                    | 0         | 0         | 5 41.67%  | 0        | 0        | 7                  | 5         |
| 9       | Gumla & Simdega                          | 23           | 0.05                     | 2.87        | 0.15        | 0.84        | 18 78.26%                                   | 2 8.70%   | 0         | 3 13.04%  | 0        | 0        | 20                 | 3         |
| 10      | Hazaribag & Ramgarh                      | 32           | 0.07                     | 6.86        | 0.01        | 4.32        | 13 40.63%                                   | 8 25%     | 2 6.25%   | 7 21.88%  | 1 3.13%  | 1 3.13%  | 23                 | 9         |
| 11      | Kodarma                                  | 4            | 0.69                     | 2.18        | 2.5         | 2.5         | 2 50%                                       | 1 25%     | 0         | 0         | 1 25%    | 0        | 3                  | 1         |
| 12      | Lohardaga                                | 11           | 0.14                     | 2.24        | 1.03        | 1.52        | 8 72.73%                                    | 1 9.09%   | 0         | 2 18.18%  | 0        | 0        | 9                  | 2         |
| 13      | Pakaur                                   | 10           | 0.31                     | 0.83        | 0.24        | 4.1         | 3 30%                                       | 0         | 0         | 5 50%     | 1 10%    | 1 10%    | 3                  | 7         |
| 14      | Palamu & Latehar                         | 23           | 0.34                     | 4.38        | 0.4         | 3.28        | 13 56.62%                                   | 2 8.70%   | 1 4.35%   | 6 26.09%  | 1 4.35%  | 0        | 16                 | 7         |
| 15      | Pashchimi singhbhum & Saraikel-Kharsawan | 22           | 0.11                     | 4.39        | 0.13        | 2.94        | 12 54.55%                                   | 5 22.73%  | 1 4.55%   | 3 13.64%  | 1 4.55%  | 0        | 18                 | 4         |
| 16      | Purbi singhbhum                          | 19           | 0.17                     | 6.84        | 0.1         | 0.1         | 14 73.68%                                   | 2 10.53%  | 2 10.53%  | 1 5.26%   | 0        | 0        | 18                 | 1         |
| 17      | Ranchi & Khunti                          | 52           | 0.03                     | 4.77        | 0.11        | 1.45        | 36 69.23%                                   | 7 13.46%  | 1 1.92%   | 8 15.38%  | 0        | 0        | 44                 | 8         |
| 18      | Sahibganj                                | 16           | 0.13                     | 2.39        | 0.51        | 1.55        | 10 62.50%                                   | 1 6.25%   | 0         | 5 31.25%  | 0        | 0        | 11                 | 5         |
|         | <b>Total</b>                             | <b>304</b>   | <b>0.03</b>              | <b>6.86</b> | <b>0.01</b> | <b>4.32</b> | <b>181</b>                                  | <b>43</b> | <b>10</b> | <b>62</b> | <b>6</b> | <b>2</b> | <b>234</b>         | <b>70</b> |

PLATE I



## PLATE II

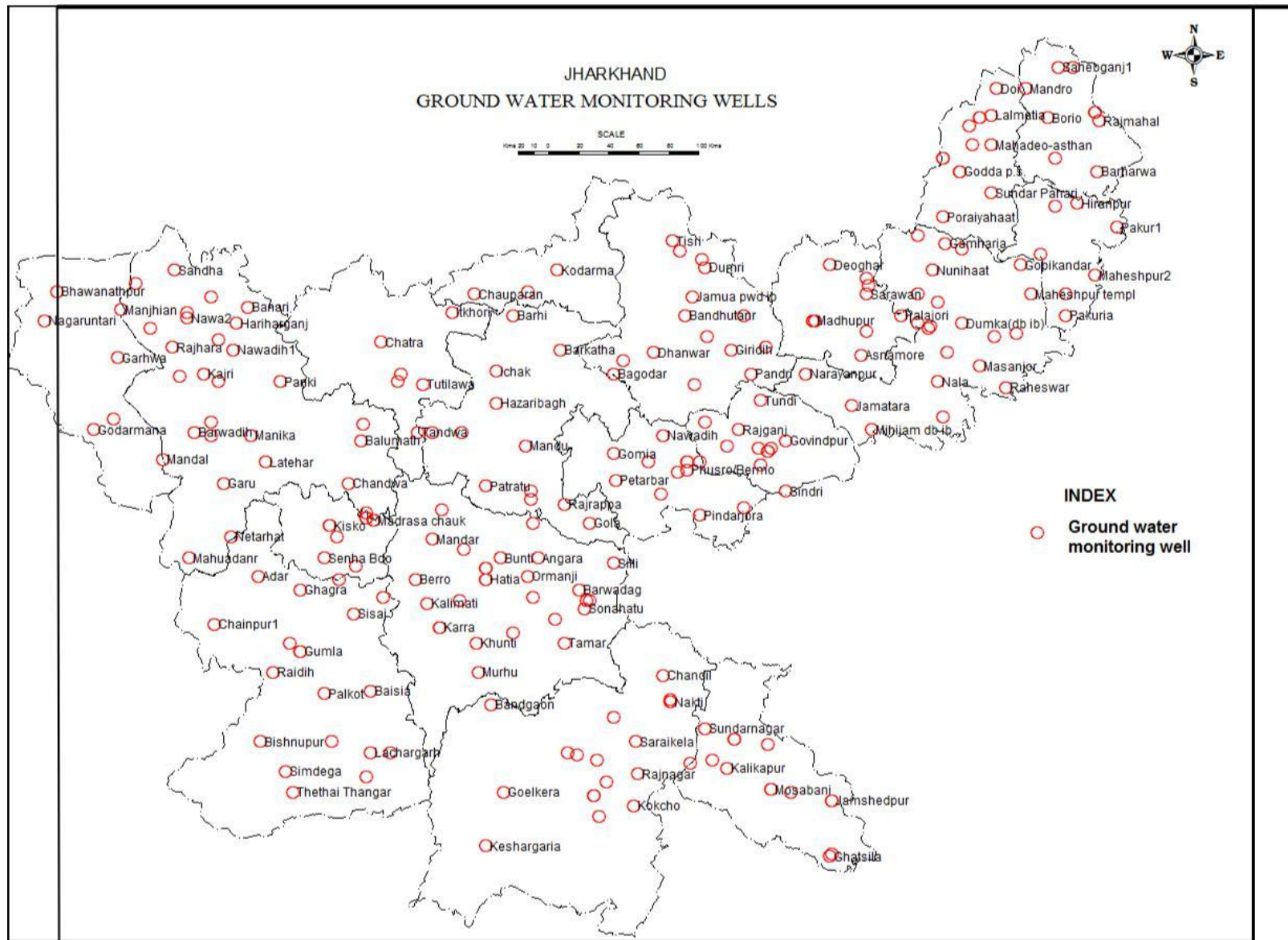
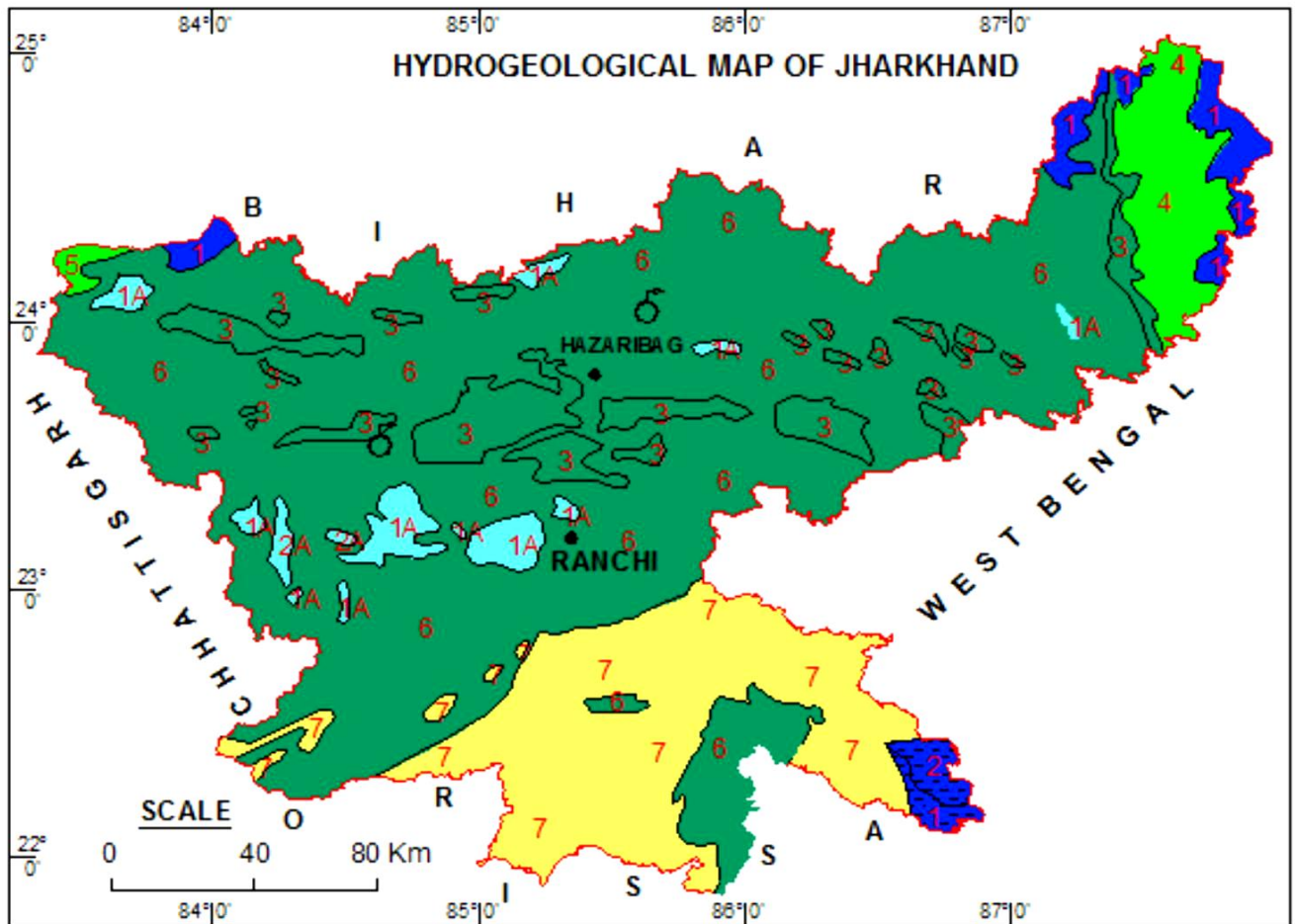




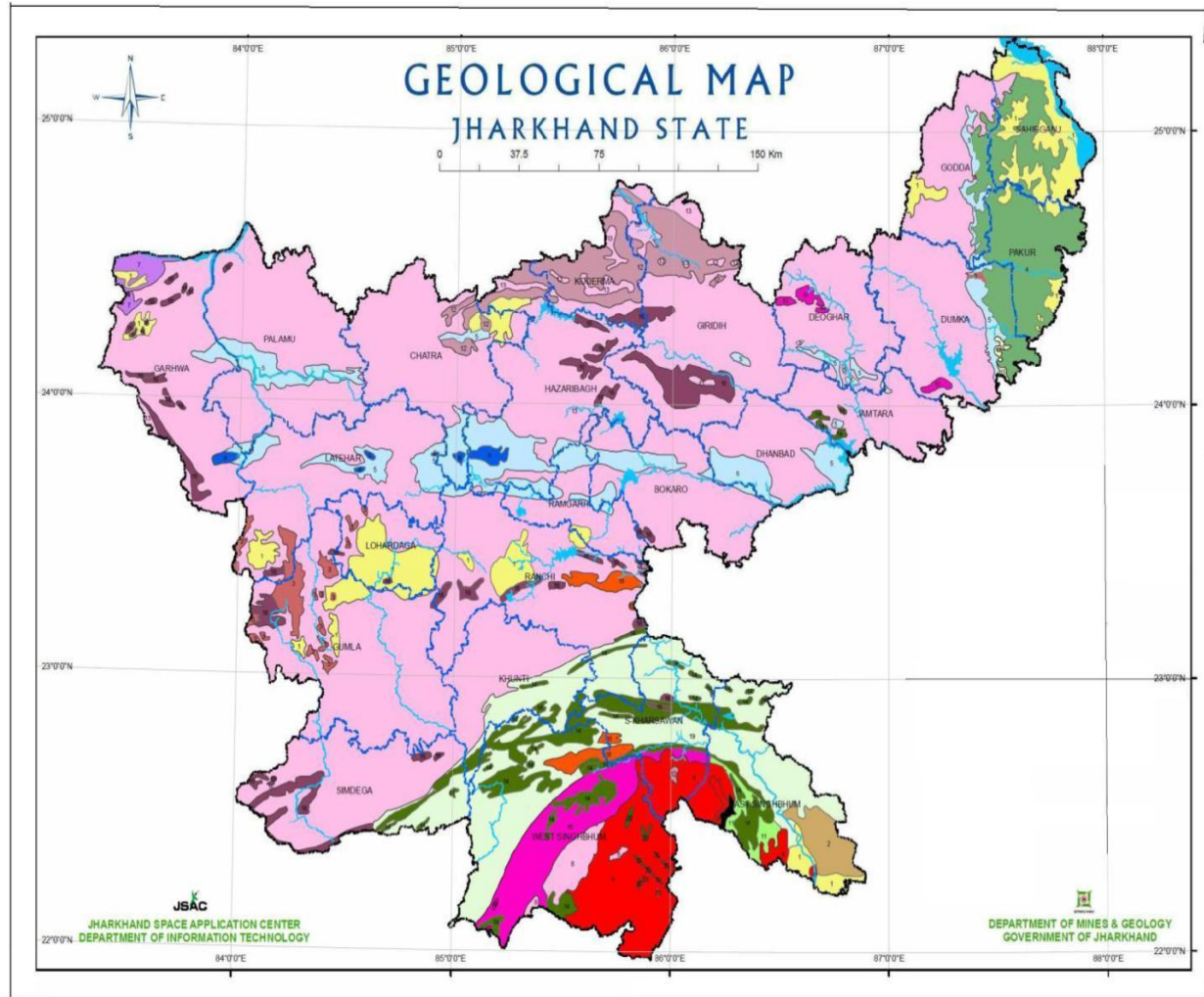
PLATE III



## FISSURED & SEMI-CONSOLIDATED FORMATIONS

| UNITS | AGE GROUP                 | FORMATION                   | COLOUR | LITHOLOGY   | GROUN WATER POTENTIAL    |
|-------|---------------------------|-----------------------------|--------|---|--------------------------|
| 1     | QUATERNARY                | ALLUVIUM                    |        | CLAY, SILT, GRAVEL, PEBBLES & CALC                | >40 m <sup>3</sup> /hr   |
| 1A    | QUATERNARY                | ALLUVIUM                    |        | CLAY, SILT & SAND                                 | 1-10 m <sup>3</sup> /hr  |
| 2     | PLEISTOCENE TERTIARY      | LATERITES                   |        | LATERITES & LITHOMARGE                            | 1-10 m <sup>3</sup> /hr  |
| 2A    | PLEISTOCENE TERTIARY      | TERTIARY                    |        | SAND, SILT, CLAY, PABLE & GRAVEL                  | 10-40 m <sup>3</sup> /hr |
| 3     | CARBONIFEROUS ECRETACEOUS | GONDWANA                    |        | CLAY, SILT, GRIT, SANDSTONE & SHALE               | 1->25 m <sup>3</sup> /hr |
| 4     | LIJURASSIC ECRETACEOUS    | RAJMAHAL BASALT             |        | BASALT FLOWS WITH INTERTRAPPEANS                  | 1-25 m <sup>3</sup> /hr  |
| 5     | PROTEROZOIC E CAMBRIAN    | VINDHYAN                    |        | QUARTZITE, LIMESTONE, SANDSTONE, DOLOMITE & SHALE | 1-25 m <sup>3</sup> /hr  |
| 6     | PROTEROZOIC ARCHEAN       | CHHOTNAGPUR GNEISSC COMPLEX |        | GNEISSES & GRANITES                               | 1->25 m <sup>3</sup> /hr |
| 7     | PROTEROZOIC ARCHEAN       | VOLCANO-SEDIMENTARY         |        | SCHISTS, PHYLITES, BASIC & ACIDIC INTRUSIVES      | 1-15 m <sup>3</sup> /hr  |

PLATE IV



INDEX























- |   |   |   |   |
|---|---|---|---|
|  | 1, Alluvium, Soil/Boulder Conglomerate, Older Alluvium & Laterite |  | 11, Dhanjori Quartzite and Conglomerate                         |
|  | 2, Tertiary Gravels   |  | 12, Micaschist, Phyllite, Quartzite/Metamorphic of Chhotanagpur |
|  | 3, Laterite   |  | 13, Chhotanagpur Gneiss & Granophyre                            |
|  | 4, Rajmahal Trap/Intertrappean Beds/Trap Dykes                    |  | 14, Dhanjori Lava/Dalma Lava/ Basic rocks                       |
|  | 5, Lower Gondwana System/Carbonaceous Shale/Sandstone/Coal Seams  |  | 15, Sandstone, Shale (Dubrajpur Formation)                      |
|  | 6, Upper Godwana System/Sandstone/Red Clay                        |  | 16, Basic & Ultrabasic  |
|  | 7, Lower Vindhyan System/Limestone/Shale                          |  | 17, Gabbro - Anorthosite  |
|  | 8, Kolhan Series/Limestone/Sandstone/Quartzite                    |  | 18, Granite   |
|  | 9, Singhbhum Granite  |  | 19, Volcanogenic Meta-sediments and Metasedimentary rocks       |
|  | 10, BHQ/BHJ/Metavolcanics/Metasedimentary                         |  | 20, Newer Dolerite  |
|   |   |  | River/Water Body  |
|   |   |  | District Boundary   |
|   |   |  | State Boundary  |

PLATE V

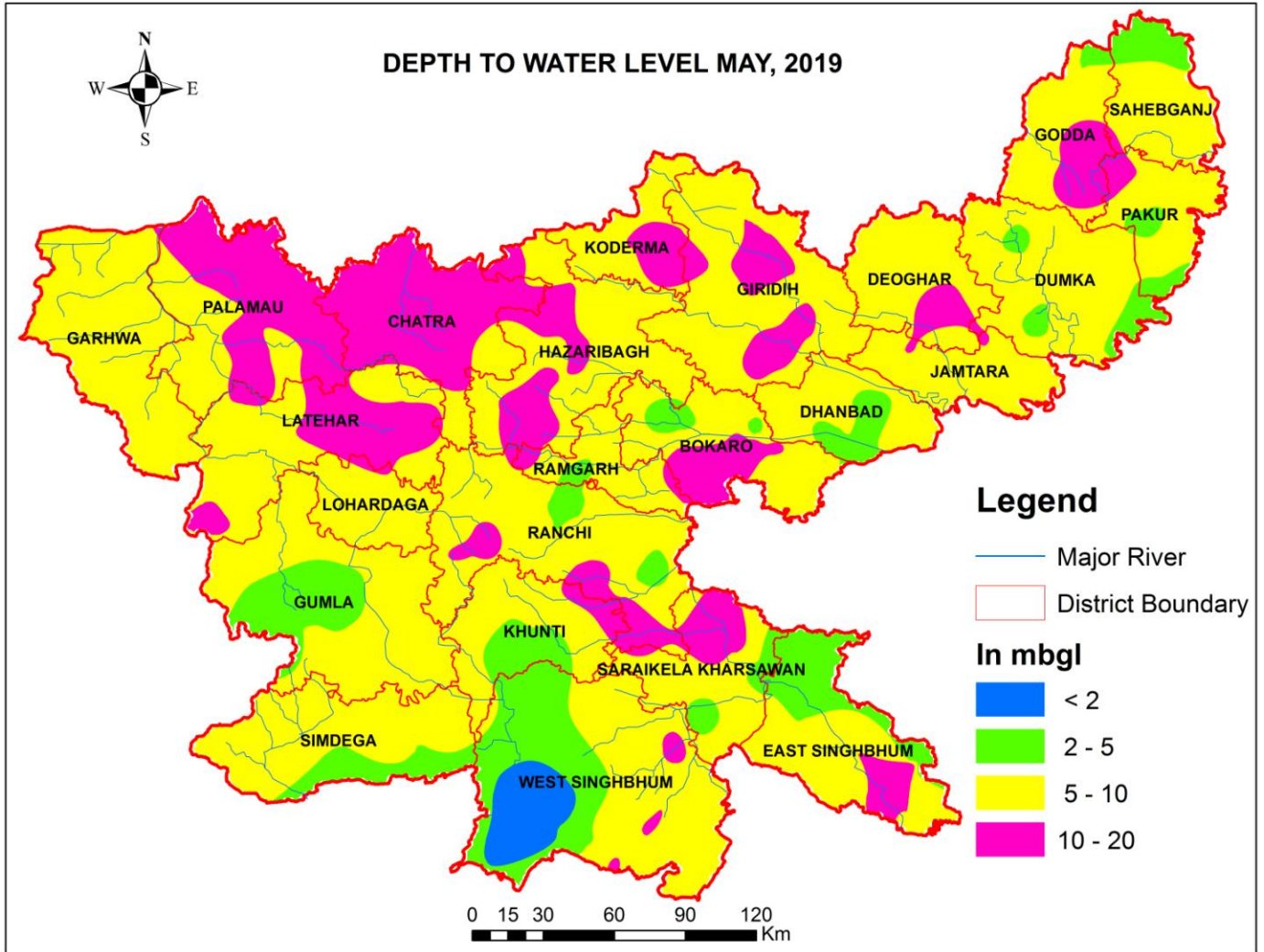




PLATE VI

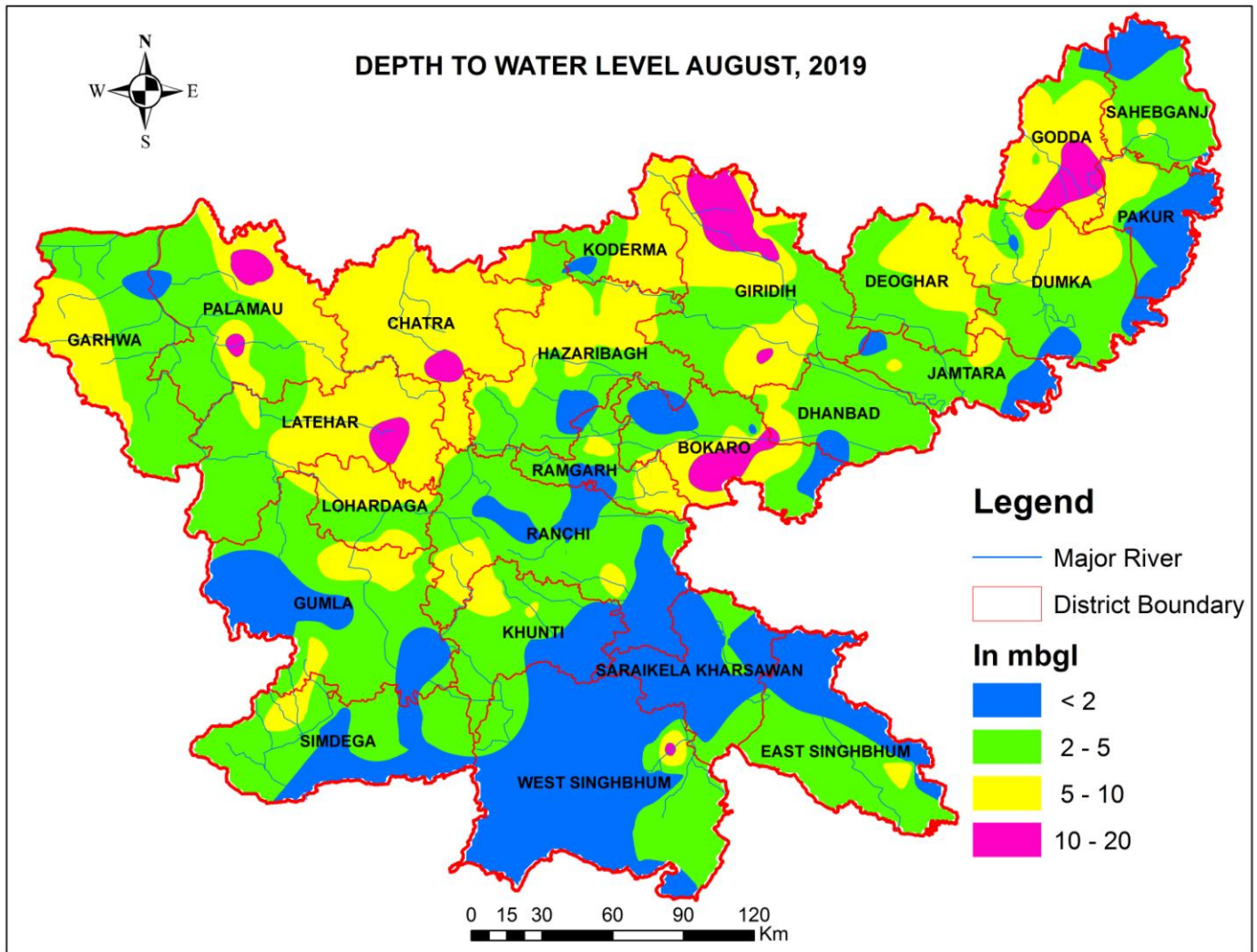




PLATE VII

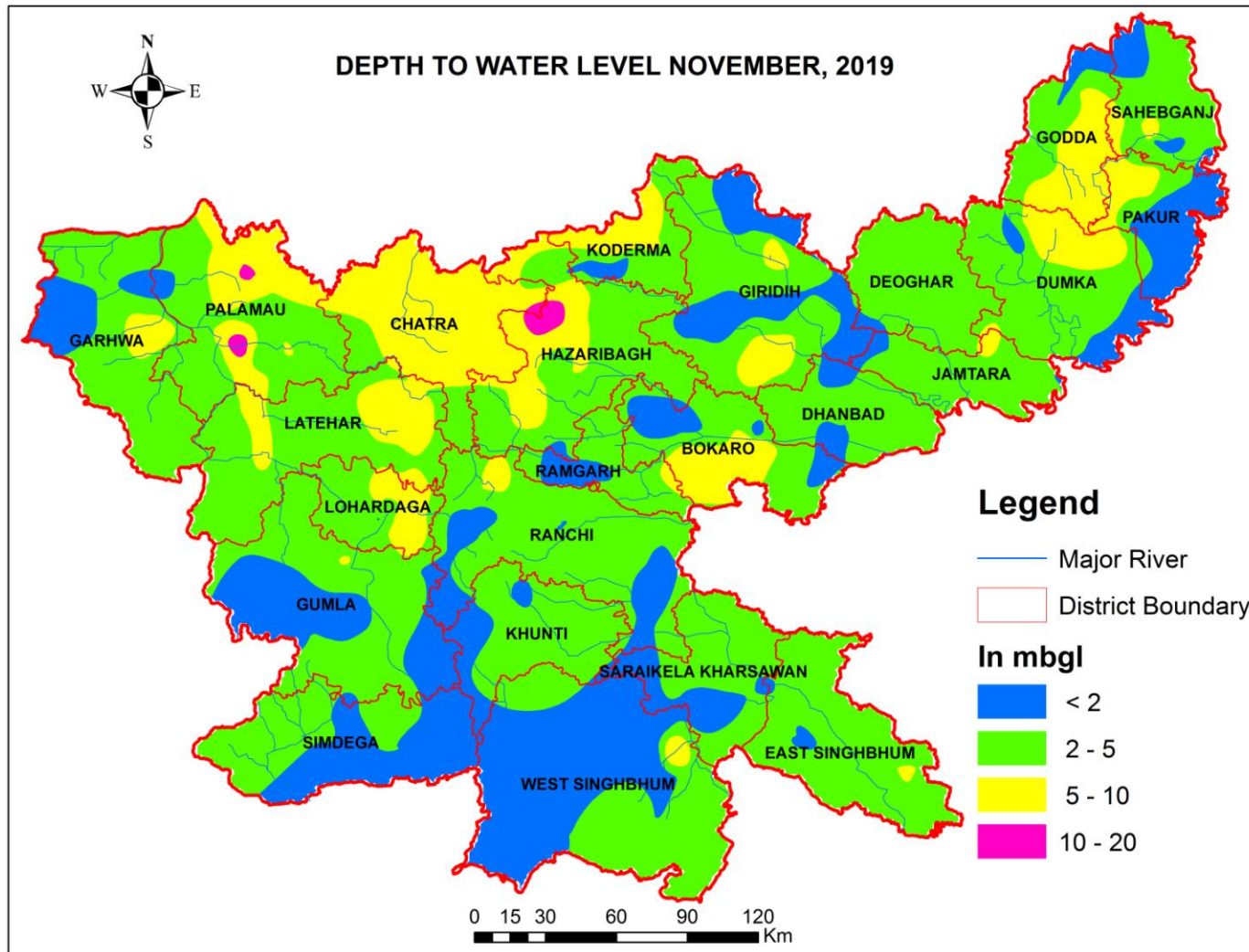


PLATE-VIII

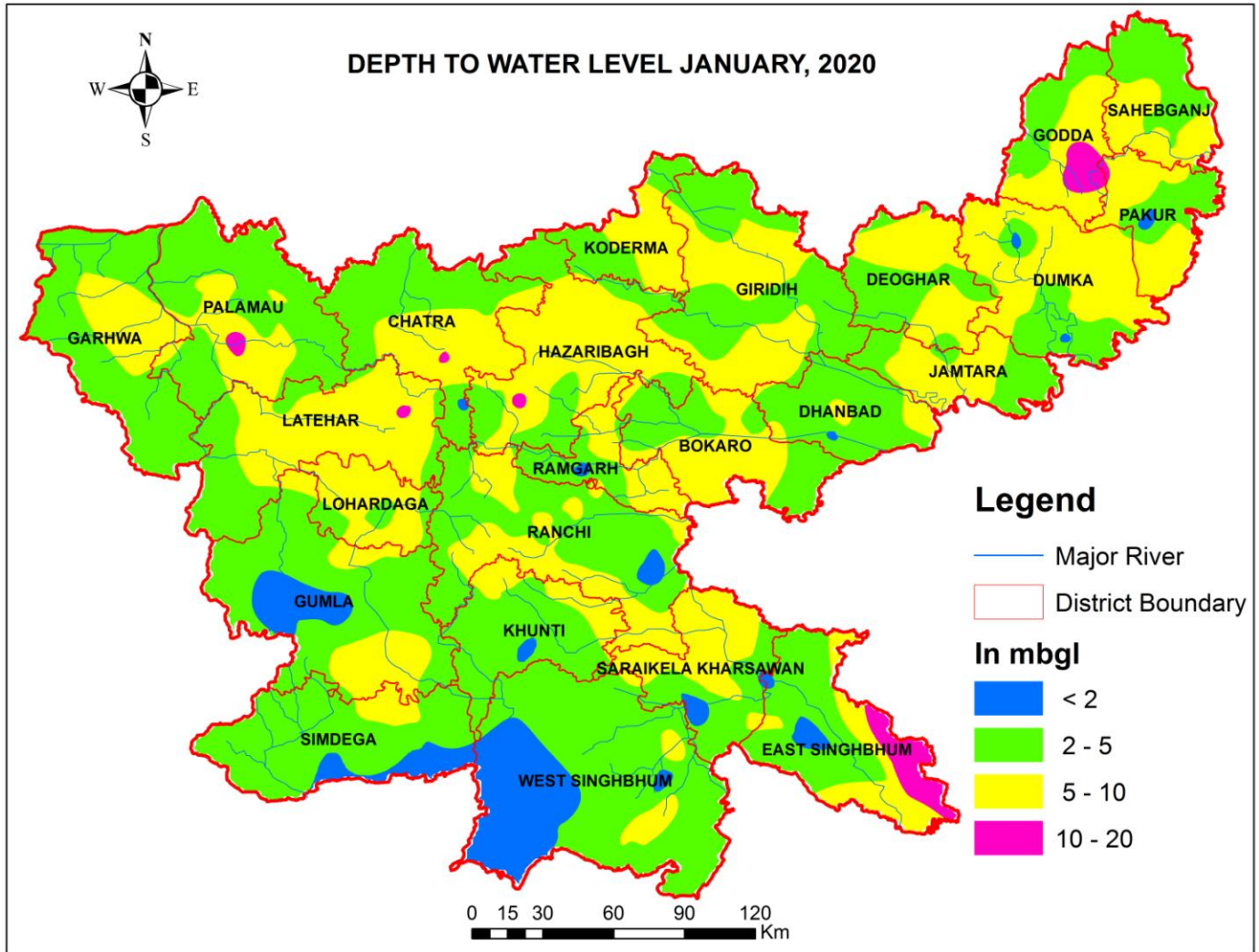


PLATE IX

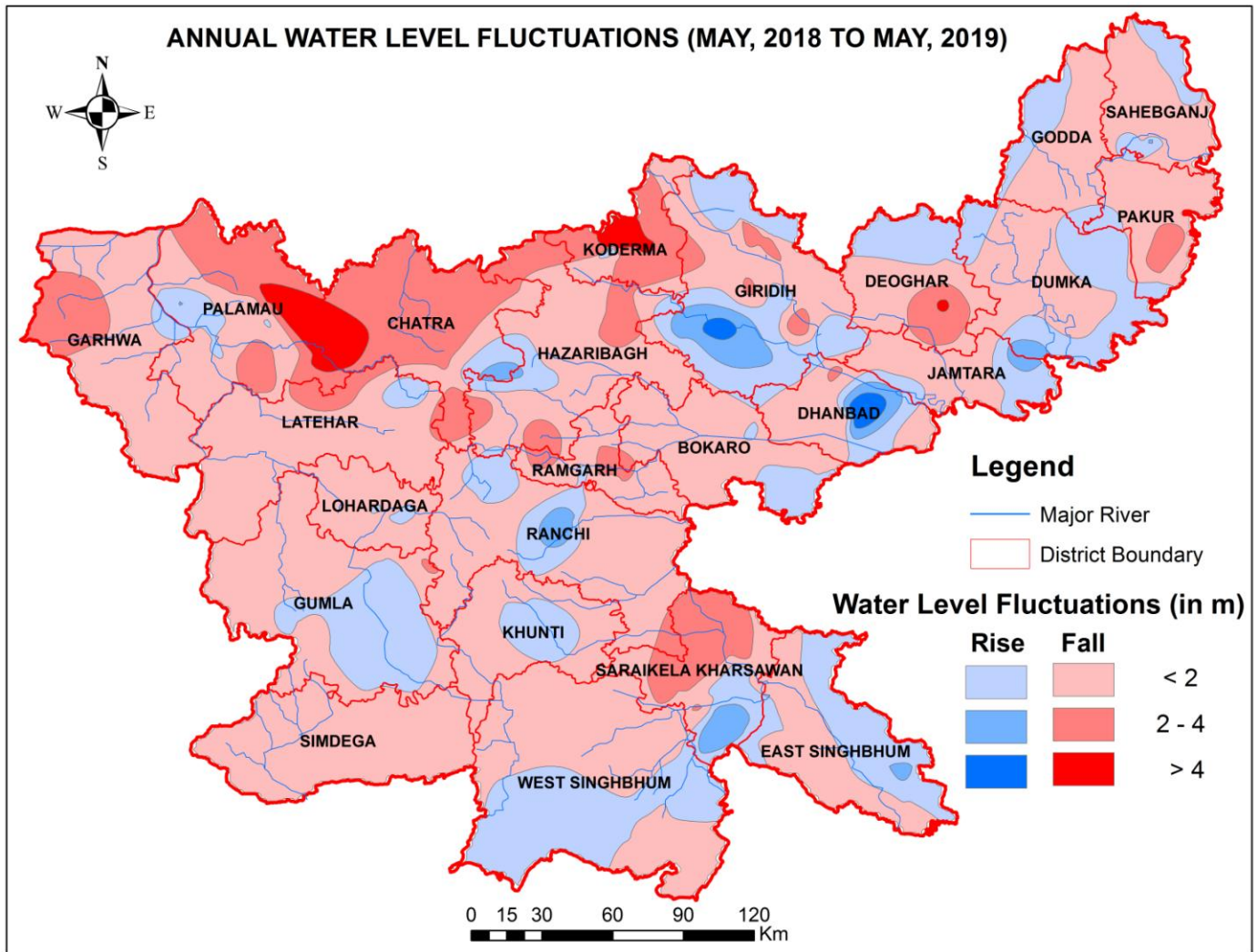




PLATE X

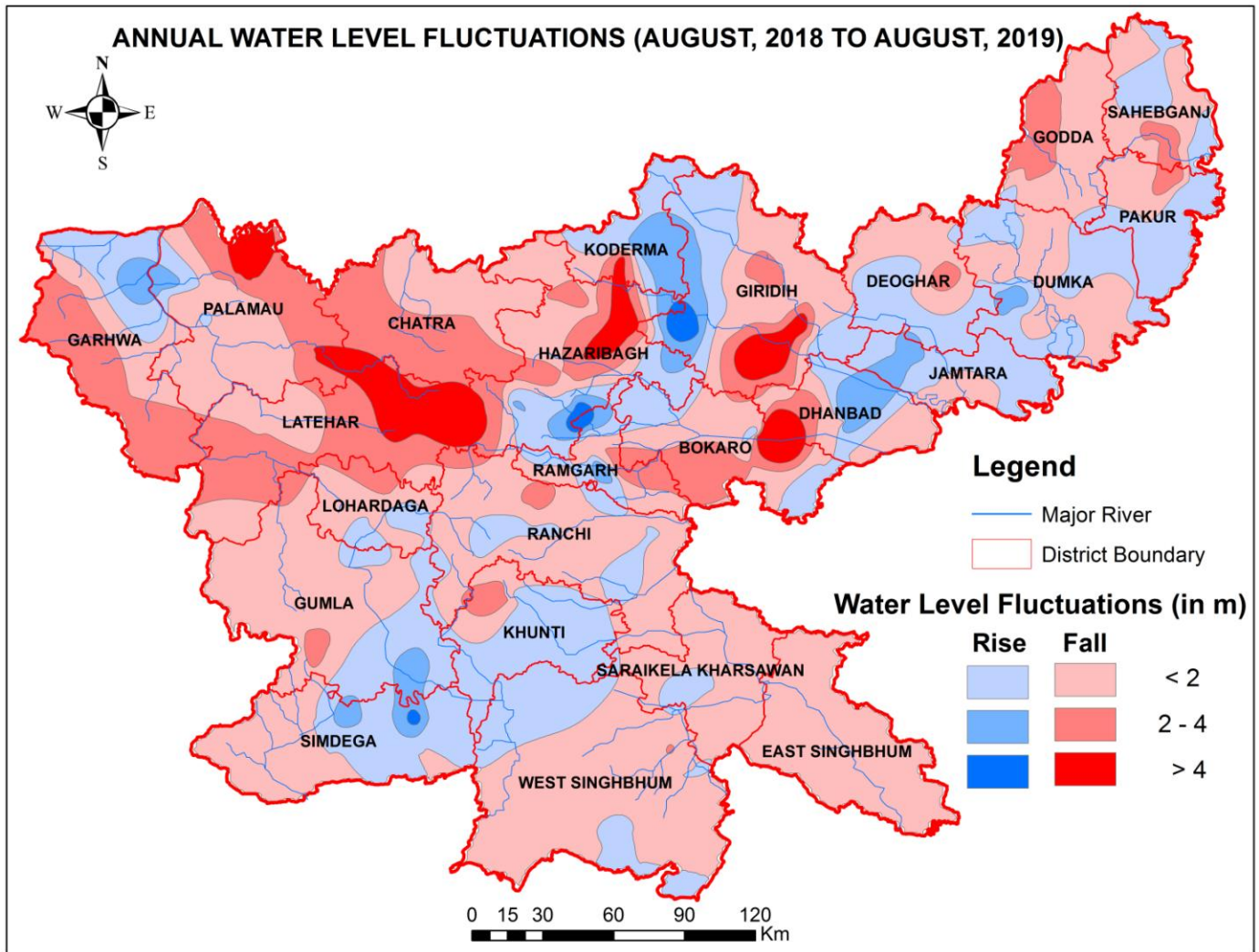


PLATE XI

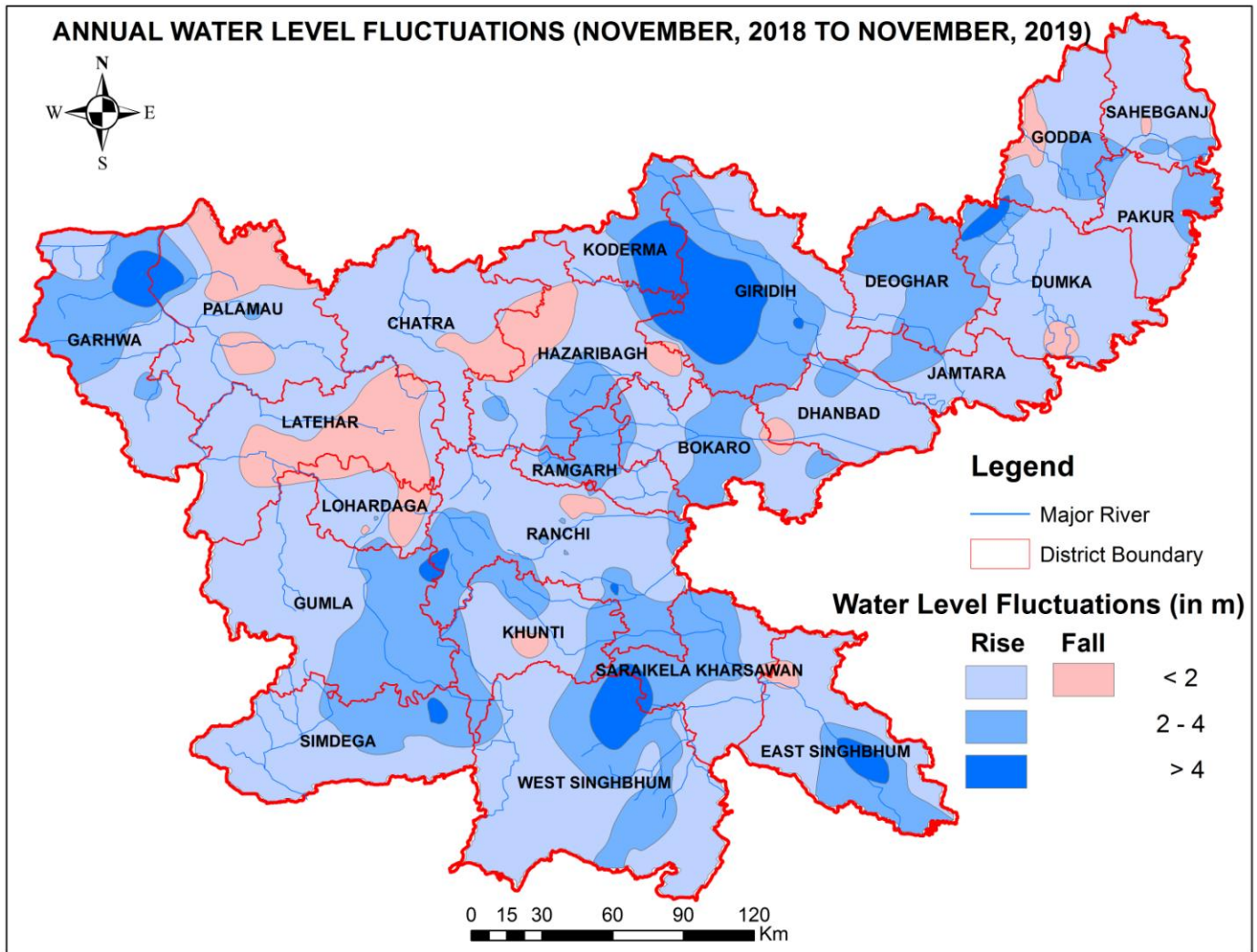


PLATE XII

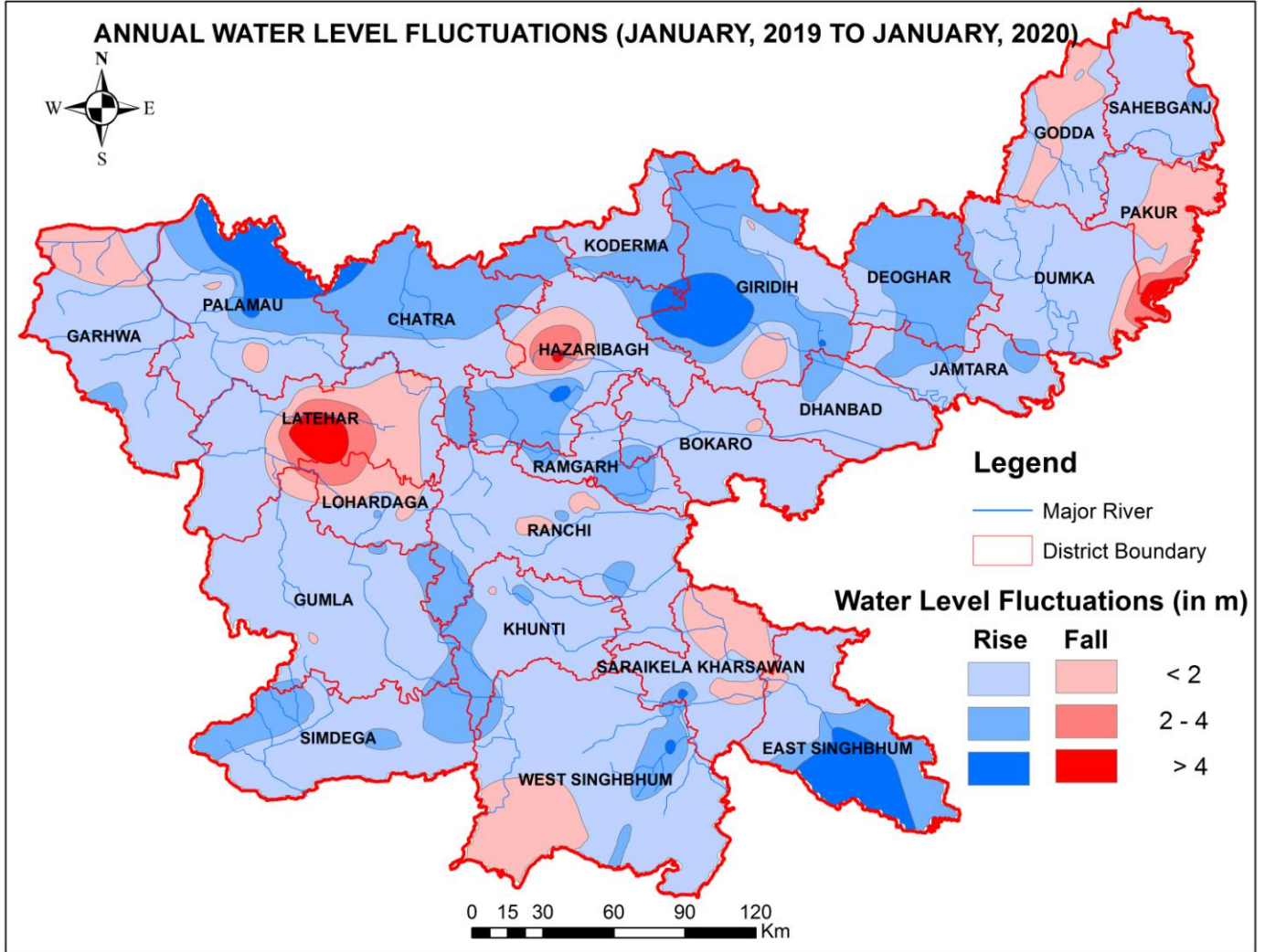




PLATE XIII

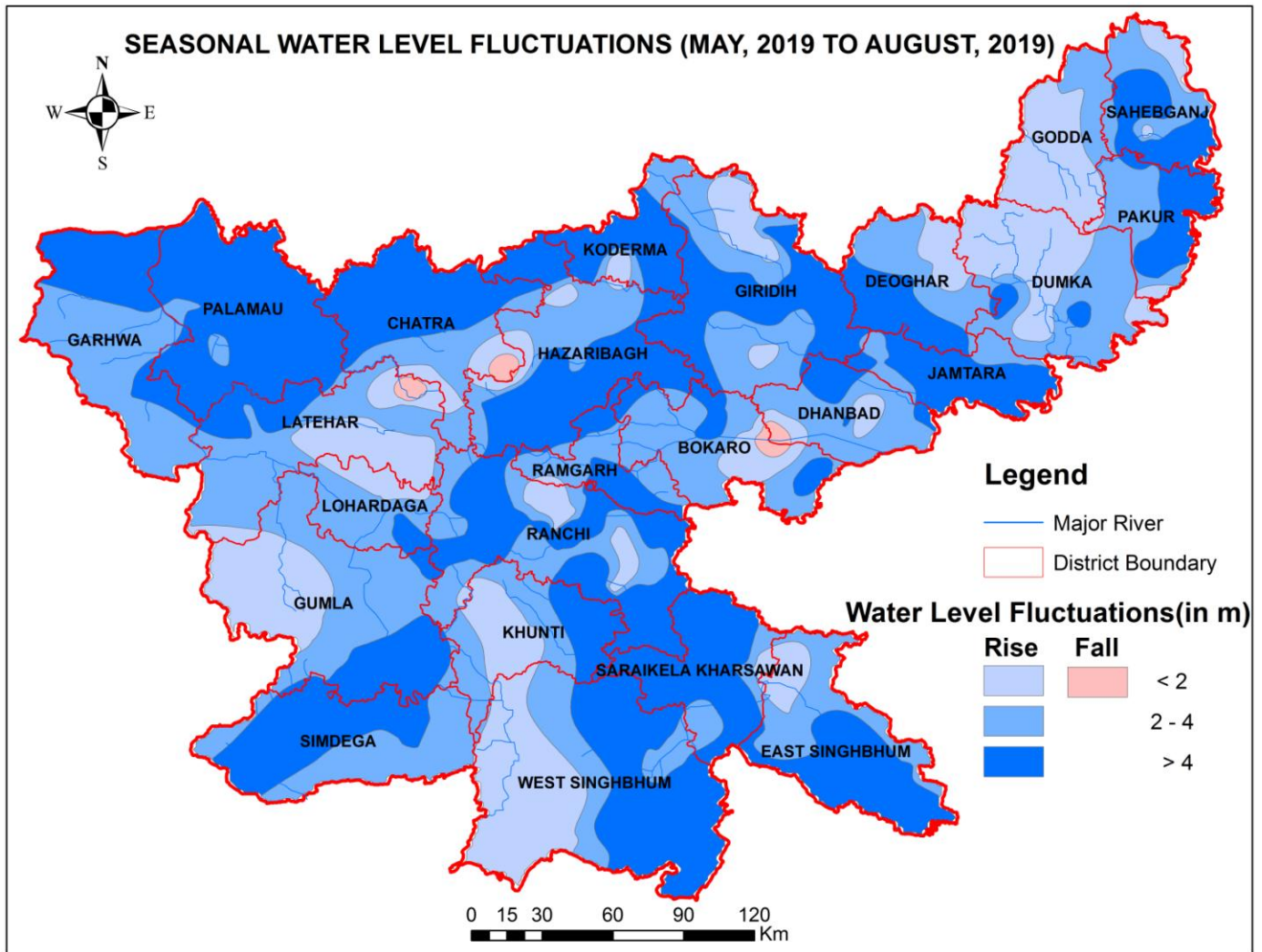


PLATE XIV

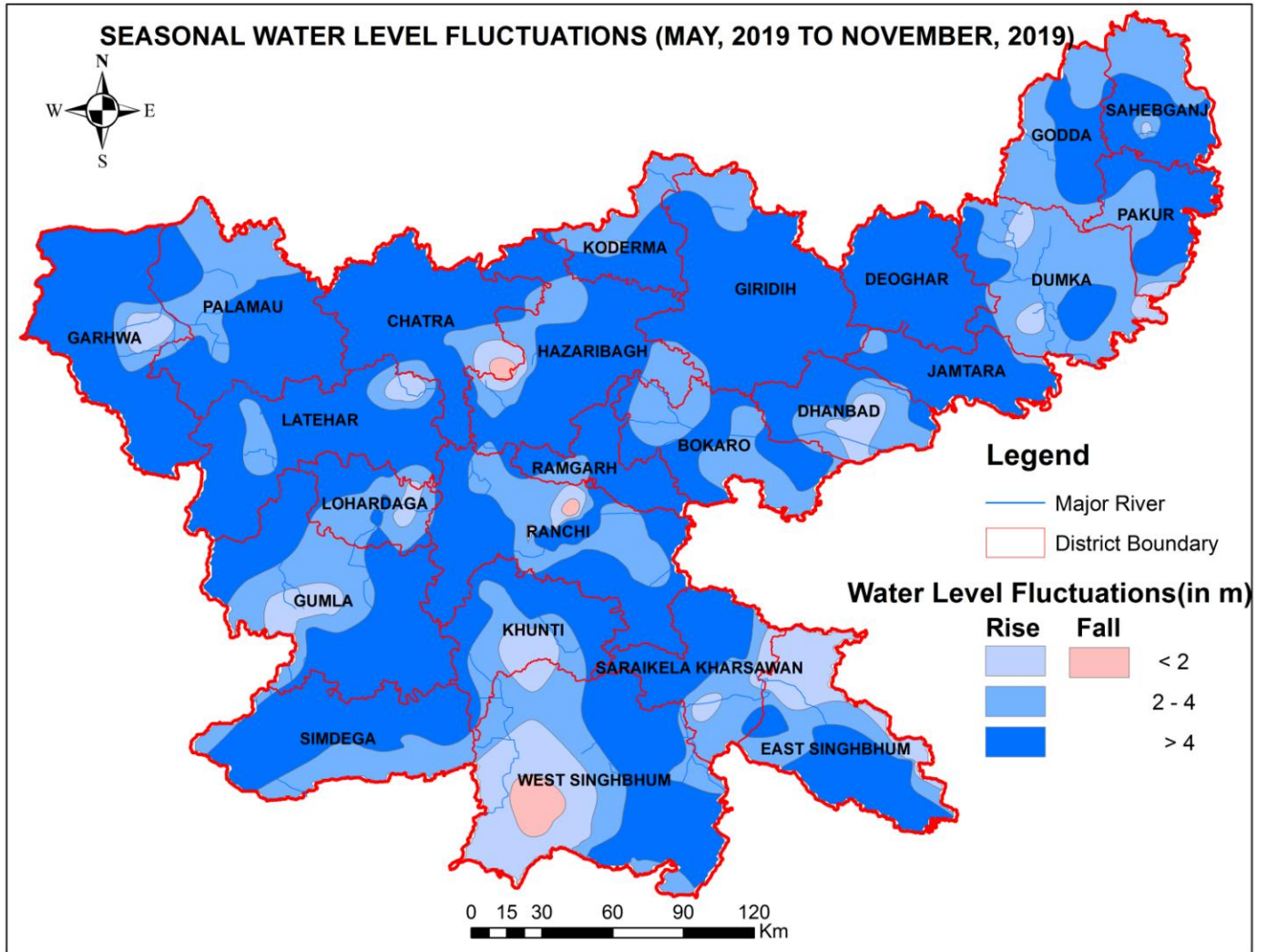




PLATE XV

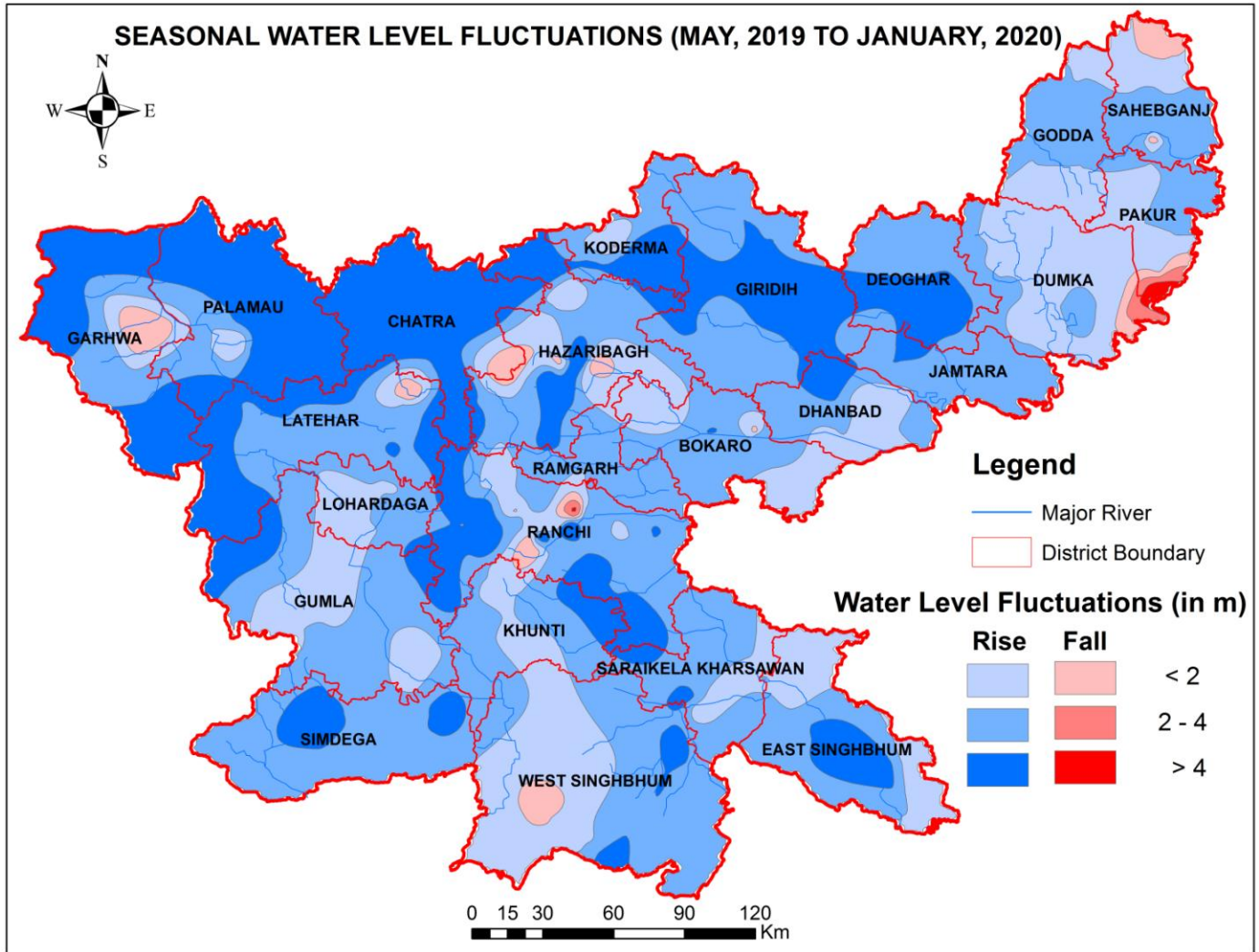


PLATE XVI

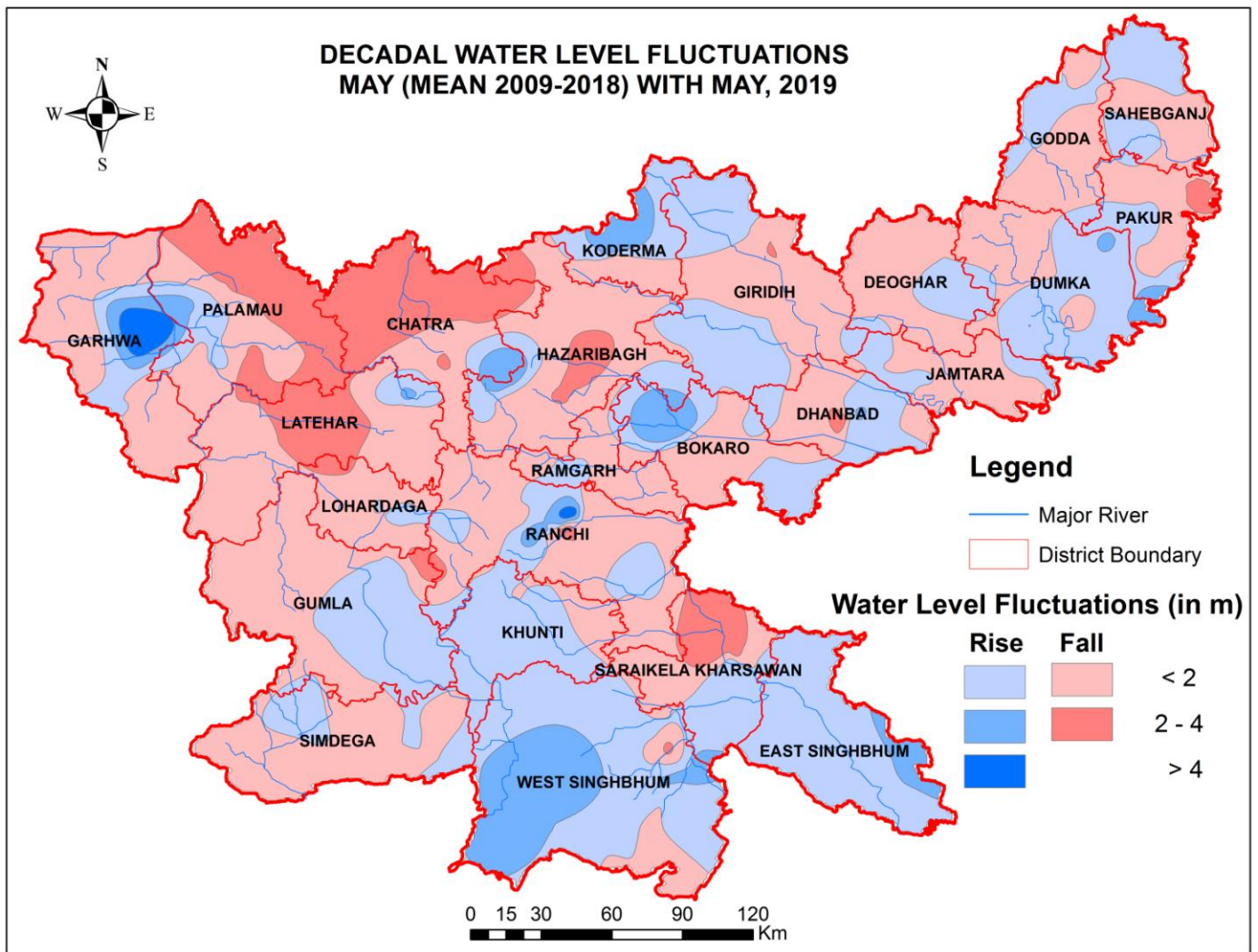


PLATE XVII

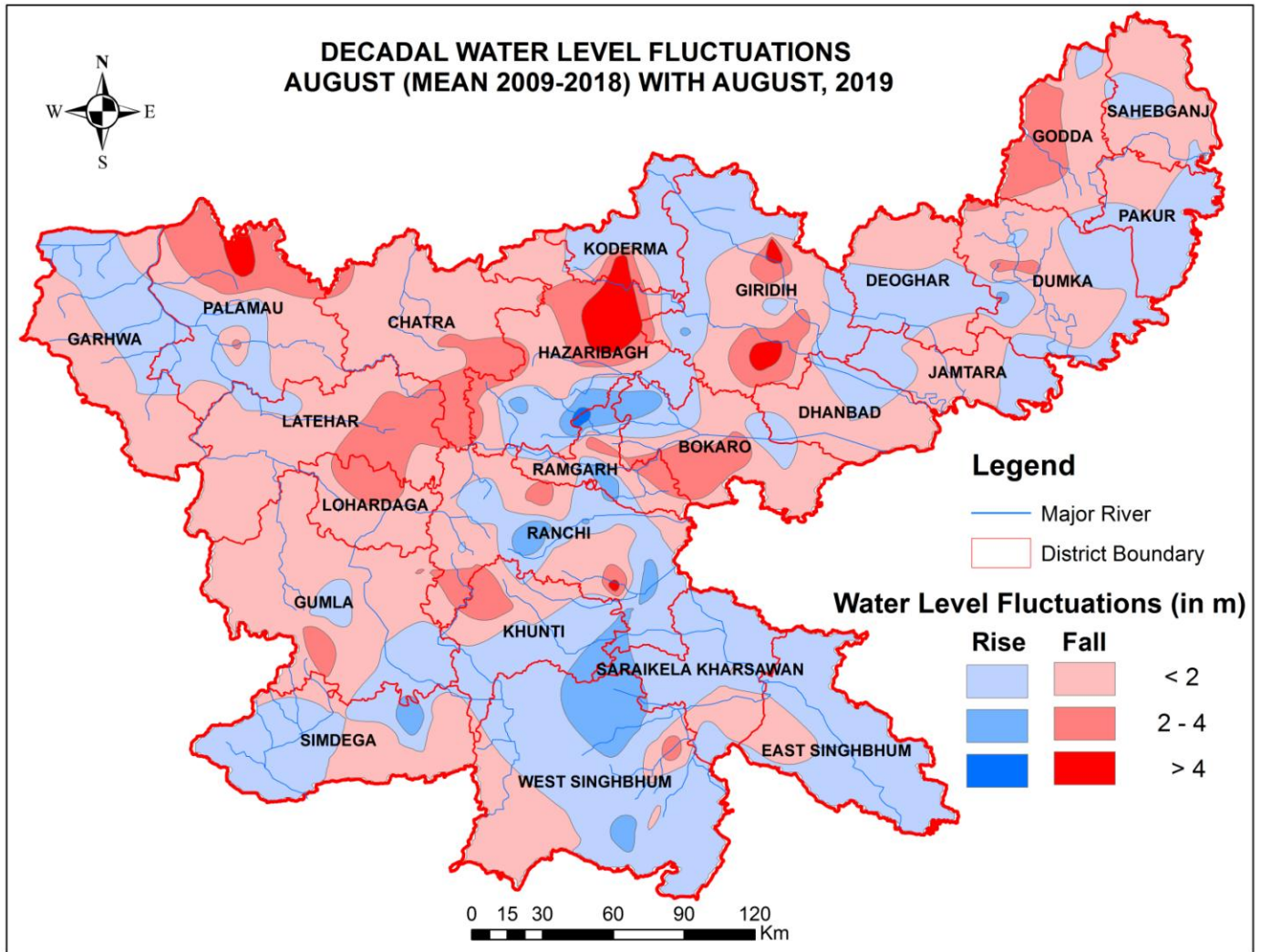




PLATE-XVIII

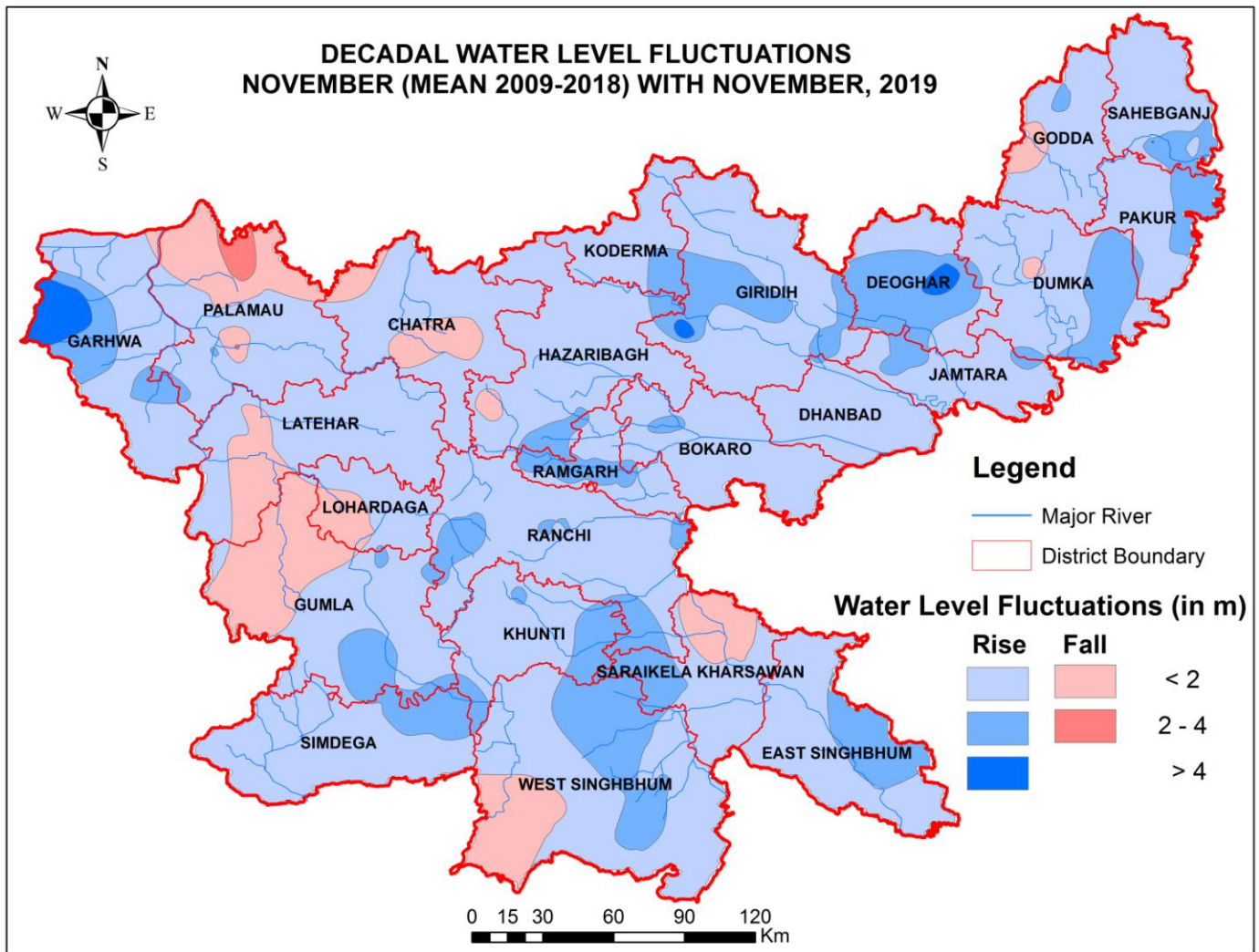


PLATE-XIX

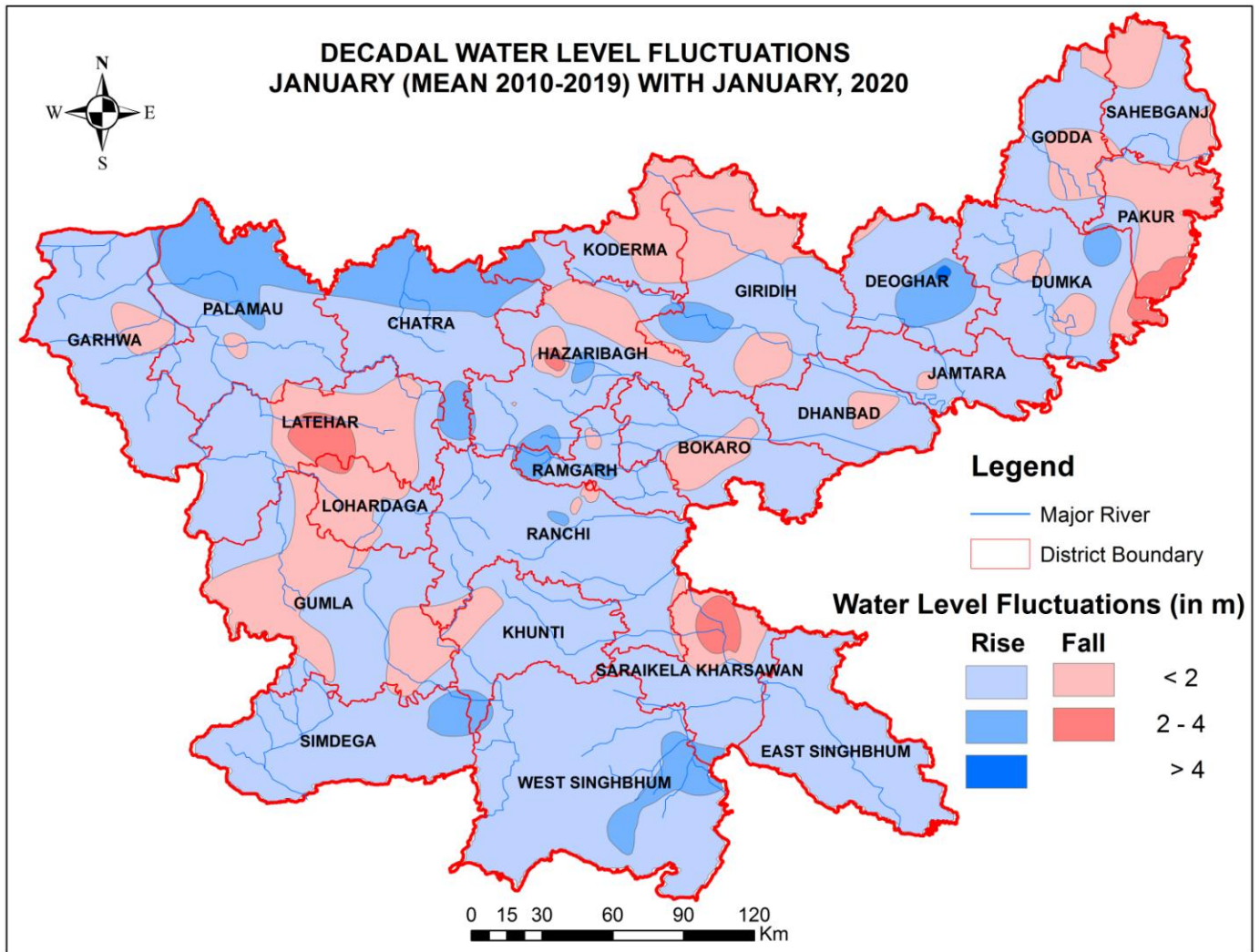


PLATE-XX

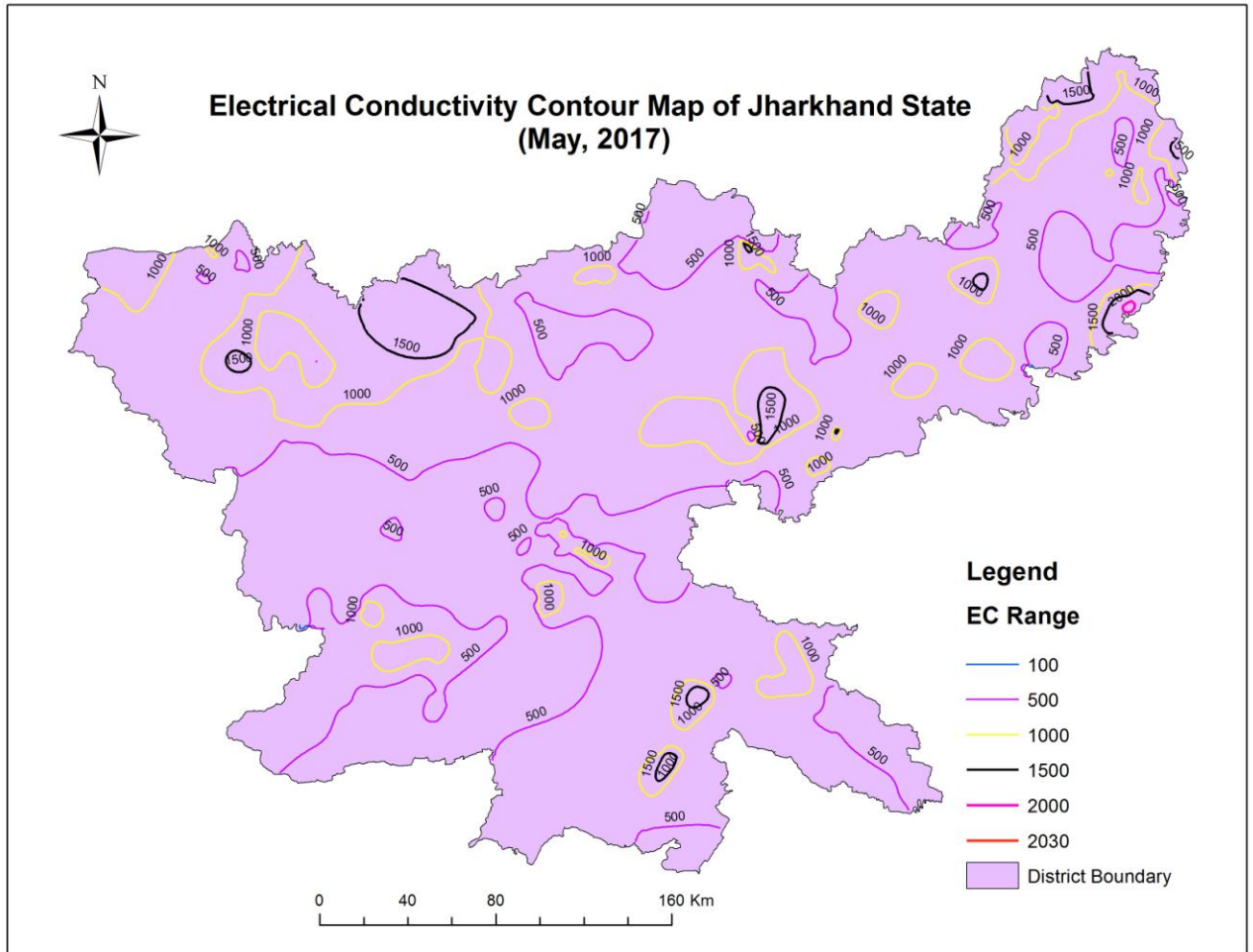
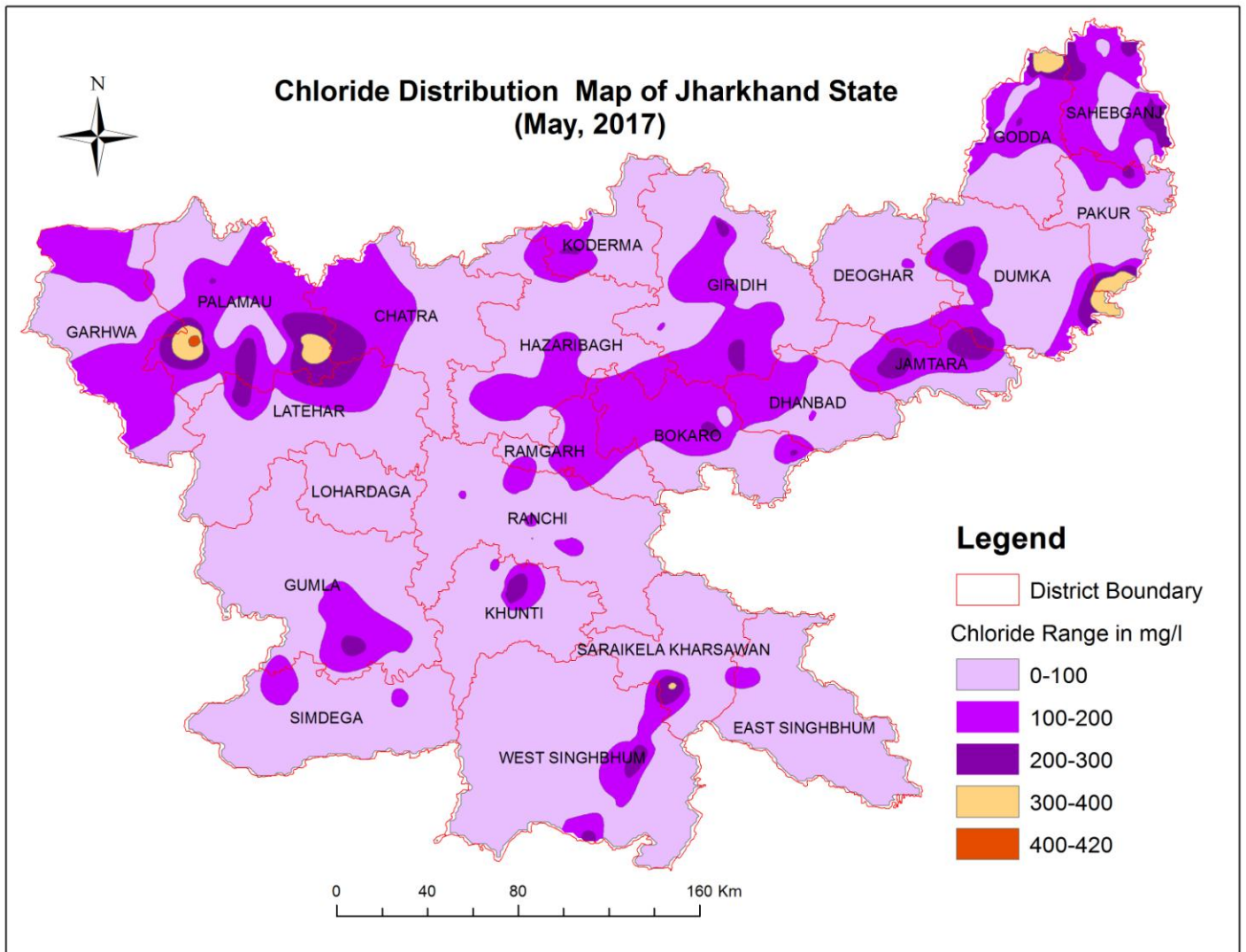


PLATE-XXI



**WATER LEVEL DATA OF NETWORK STATIONS MEASURED BY CGWB, SUO, RANCHI,  
JHARKHAND**

| <b>Bokaro District</b>  |                 |                      |                      |                      |                      |
|-------------------------|-----------------|----------------------|----------------------|----------------------|----------------------|
| <b>SI No.</b>           | <b>Location</b> | <b>May 19 (mbgl)</b> | <b>Aug 19 (mbgl)</b> | <b>Nov 19 (mbgl)</b> | <b>Jan 20 (mbgl)</b> |
| 1                       | Baramasia       | 6.07                 | 2.94                 | 3.00                 | 4.76                 |
| 2                       | Chandankiyari   | 6.65                 | 1.21                 | 1.70                 |                      |
| 3                       | Chandrapura     | 2.89                 | 1.00                 | 0.92                 | 3.21                 |
| 4                       | Chas            | 12.65                | 12.65                | 9.59                 |                      |
| 5                       | Gomia           | 4.17                 | 1.04                 | 1.27                 | 2.31                 |
| 6                       | Jaina More      | 11.10                | 9.92                 | 7.53                 | 8.51                 |
| 7                       | Laghla          | 5.66                 | 1.00                 | 0.87                 |                      |
| 8                       | Nawadih         | 8.56                 | 4.59                 | 4.44                 | 5.68                 |
| 9                       | Petarbar        | 10.17                | 7.98                 | 5.67                 | 7.74                 |
| 10                      | Phusro_Bermo    | 10.13                |                      |                      |                      |
| 11                      | Pindarjora new  | 8.63                 | 1.96                 | 2.35                 | 3.70                 |
| 12                      | Pupunki         | 4.92                 |                      |                      |                      |
| 13                      | Tenughat        | 7.70                 | 3.00                 | 2.70                 | 3.63                 |
| <b>Chatra District</b>  |                 |                      |                      |                      |                      |
| 14                      | Bagra           | 15.75                | 12.80                | 10.00                | 10.45                |
| 15                      | Birhu           | 5.10                 | 5.70                 | 5.70                 | 6.00                 |
| 16                      | Chatra1         | 11.20                | 6.10                 | 4.85                 | 4.99                 |
| 17                      | Itkhor1         | 10.80                | 9.10                 | 6.50                 | 7.55                 |
| 18                      | Pitij           | 11.20                | 6.70                 | 5.88                 | 4.40                 |
| 19                      | Simaria         | 12.72                | 8.90                 | 8.80                 | 8.08                 |
| 20                      | Tandwa          | 9.10                 | 7.10                 | 2.10                 | 1.80                 |
| 21                      | Tutilawa1       | 9.10                 | 4.60                 | 4.90                 | 5.00                 |
| <b>Deoghar District</b> |                 |                      |                      |                      |                      |
| 22                      | Deoghar         | 7.80                 |                      |                      |                      |
| 23                      | Deoghar new     | 7.60                 |                      |                      |                      |
| 24                      | Ghormara        | 8.39                 | 6.86                 | 3.54                 | 5.79                 |
| 25                      | Jasidih         | 8.90                 | 3.80                 | 2.20                 | 4.45                 |
| 26                      | Madhupur1       | 9.86                 | 7.95                 | 2.45                 | 3.85                 |
| 27                      | Palajori        | 7.30                 | 4.80                 | 3.25                 | 4.35                 |
| 28                      | Sarath          | 11.30                |                      |                      | 5.41                 |
| 29                      | Sarawan         | 8.80                 | 7.50                 | 3.25                 | 4.90                 |
| <b>Dhanbad District</b> |                 |                      |                      |                      |                      |
| 30                      | Baghmaranew     | 14.40                | 10.86                | 8.02                 | 9.52                 |
| 31                      | Balajee mandir  | 9.93                 | 4.50                 | 6.20                 | 7.52                 |
| 32                      | Dhanbad New     | 6.62                 | 2.17                 | 1.54                 | 3.16                 |
| 33                      | Govindpur       | 3.37                 | 2.05                 | 2.35                 | 3.24                 |
| 34                      | Jharia          | 3.64                 | 1.30                 | 1.51                 | 1.90                 |
| 35                      | Mahuda          | 9.23                 | 10.86                | 4.56                 | 5.64                 |
| 36                      | Nirsa p.s.      | 2.20                 | 1.13                 | 1.77                 |                      |
| 37                      | Nirsa ecl l.qtr |                      | 2.02                 |                      | 2.02                 |
| 38                      | Pkroy College   | 7.38                 | 4.97                 |                      |                      |



|                  |                  |       |       |      |      |
|------------------|------------------|-------|-------|------|------|
| 39               | Rajganj          | 4.46  | 2.12  | 2.83 | 4.07 |
| 40               | Sindri Gosalmore | 8.07  | 5.17  | 2.59 | 2.89 |
| 41               | Topchanchi       | 8.34  | 2.73  | 2.99 | 4.47 |
| 42               | Tundi            |       |       | 1.78 | 3.40 |
| Dumka District   |                  |       |       |      |      |
| 50               | Chapodia         | 6.49  | 4.79  |      |      |
| 51               | Chikania         |       | 3.55  |      | 7.03 |
| 52               | Dumka(db ib)     | 5.20  | 4.15  | 3.05 | 3.95 |
| 53               | Gamharia         |       | 10.60 | 7.25 |      |
| 54               | Gopikandar       | 7.90  | 5.85  | 5.85 | 6.40 |
| 55               | Hansdiha pwdib   |       | 4.70  | 2.00 | 7.15 |
| 56               | Jarmundi db.ib   | 8.35  | 7.02  | 4.00 | 6.70 |
| 57               | Kathikund        | 7.66  | 2.25  | 4.15 | 5.03 |
| 58               | Masalia          | 4.41  | 3.95  | 3.05 | 4.26 |
| 59               | Masanjor         |       | 1.31  | 2.41 | 1.91 |
| 60               | Nunihaat         | 2.95  | 1.15  | 1.20 | 1.30 |
| 61               | Parapalashi      | 8.20  | 7.00  | 4.85 | 6.62 |
| 62               | Patabari         | 8.99  | 4.19  | 2.59 | 5.99 |
| 63               | Ramgarh          |       | 3.85  | 1.90 | 3.65 |
| 64               | Raneswar         | 5.05  | 2.40  | 1.65 | 3.40 |
| 65               | Sikaripara       | 6.80  | 4.05  | 2.40 | 5.40 |
| Jamtara District |                  |       |       |      |      |
| 66               | Basti Palajori   | 7.82  | 2.96  | 3.02 | 4.55 |
| 67               | Fatehpur         | 10.11 | 6.70  | 5.48 | 7.14 |
| 68               | Jama1            | 11.00 | 7.90  | 5.05 | 9.40 |
| 69               | Jamatara         | 8.52  | 4.06  | 3.72 | 6.30 |
| 70               | Jasaydih         | 10.05 | 3.98  | 3.68 | 5.24 |
| 71               | Kundahit         | 6.67  | 1.52  | 2.14 | 3.96 |
| 72               | Mihijam New      | 9.21  | 4.54  | 3.98 | 6.58 |
| 73               | Mohanpur         | 9.35  | 5.27  | 3.54 | 5.32 |
| 74               | Nala             | 6.10  | 2.42  | 2.26 | 3.42 |
| 75               | Narayanpur       | 5.19  | 1.50  | 1.86 | 2.95 |
| Garhwa District  |                  |       |       |      |      |
| 76               | Bhawanathpur     | 9.20  | 3.90  | 4.05 | 4.95 |
| 77               | Garhwa           | 6.90  | 4.20  | 6.25 | 8.44 |
| 78               | Godarmana        | 7.90  | 5.10  | 3.05 | 4.00 |
| 79               | Manjhian         | 8.50  | 1.10  | 0.72 |      |
| 80               | Nagaruntari      | 9.55  | 5.60  | 1.03 | 4.90 |
| 81               | Ramna1           | 11.10 | 0.90  | 2.65 | 3.80 |
| 82               | Ranka            | 8.10  | 2.80  | 2.21 | 4.18 |
| Giridih District |                  |       |       |      |      |
| 83               | Bagodar          | 8.25  | 3.62  | 4.46 | 5.82 |
| 84               | Bandhutanr       | 10.55 | 5.33  | 2.24 | 6.10 |
| 85               | Bengabad         | 8.94  | 3.38  | 1.95 | 4.12 |
| 86               | Birini           | 7.95  | 2.33  | 1.40 | 3.68 |
| 87               | Chirki (pirtanr) | 11.95 | 10.28 | 7.47 | 8.94 |
| 88               | Dewri            | 7.42  | 2.40  | 1.39 | 5.07 |
| 89               | Dhanidih         | 8.29  | 3.07  | 1.10 | 3.17 |
| 90               | Dhanwar          | 5.52  | 2.20  | 1.35 | 2.22 |

|                  |               |       |       |      |       |
|------------------|---------------|-------|-------|------|-------|
| 91               | Dumri         | 13.03 | 12.01 | 7.70 | 8.89  |
| 92               | Gandey1       | 9.65  | 4.45  | 1.80 | 4.55  |
| 93               | Giridih       | 12.03 | 9.29  | 4.20 | 6.47  |
| 94               | Jamua pwd ib  | 11.20 | 8.84  | 4.70 | 7.18  |
| 95               | Khijri        | 12.58 | 11.52 |      | 7.85  |
| 96               | Maheshmunda1  | 8.39  | 2.67  | 2.03 | 4.00  |
| 97               | Pandri        | 8.30  | 3.80  | 1.95 | 4.05  |
| 98               | Saraiya new   | 8.78  | 3.04  | 1.96 | 4.70  |
| 99               | Tisri         | 5.15  |       | 1.65 | 3.04  |
| Godda District   |               |       |       |      |       |
| 100              | Bara borijore | 6.85  | 4.95  | 1.90 | 3.56  |
| 101              | Bisaha        | 6.00  | 5.80  | 3.80 | 3.10  |
| 102              | Chamudih      | 8.00  | 7.25  |      | 7.55  |
| 103              | Doi           | 4.85  | 1.90  | 1.95 | 3.65  |
| 104              | Gobra         |       | 2.67  | 2.17 | 2.82  |
| 105              | Godda1        |       |       |      | 4.75  |
| 106              | Jainipaharpur | 7.00  | 6.35  | 3.55 | 5.65  |
| 107              | Kumardih      | 4.93  | 4.78  | 2.88 | 2.83  |
| 108              | Lalmatia      | 8.83  | 6.88  | 5.18 | 6.44  |
| 109              | Mahagama1     | 5.45  | 4.45  |      | 6.26  |
| 110              | Maheshpur2    | 7.15  | 5.05  | 1.55 | 3.28  |
| 111              | Pathargama    |       | 6.35  |      |       |
| 112              | Poraiyahaat   |       | 8.50  | 5.85 |       |
| 113              | Raghunathpur  | 8.28  | 6.03  | 4.68 | 6.33  |
| 114              | Sundar Pahari | 13.24 | 11.54 | 7.54 | 11.24 |
| Gumla District   |               |       |       |      |       |
| 115              | Adar          |       | 2.50  | 2.35 | 2.95  |
| 116              | Anjam gram    | 2.60  | 0.55  | 0.79 | 0.97  |
| 117              | Baghma        | 10.65 | 3.45  | 2.95 | 3.00  |
| 118              | Baisia        | 6.30  | 1.10  | 1.80 | 5.30  |
| 119              | Bharno bdo    | 9.27  | 4.95  | 1.75 | 3.35  |
| 120              | Bishnupur     |       | 5.40  | 4.00 | 4.80  |
| 121              | Chainpur1     | 5.30  | 3.85  | 2.00 | 3.20  |
| 122              | Ghagra        |       | 7.70  | 5.10 | 5.56  |
| 123              | Gumla1        | 9.00  | 6.00  | 4.60 | 5.75  |
| 124              | Kasir         | 2.10  | 1.25  | 0.80 | 1.25  |
| 125              | Nagfeni       | 8.35  | 5.90  | 2.50 | 5.20  |
| 126              | Palkot        | 8.90  | 4.50  | 2.70 | 6.10  |
| 127              | Raidih        | 7.15  | 5.15  | 2.20 | 4.55  |
| 128              | Sisai         | 7.20  | 5.18  | 2.60 | 4.25  |
| Simdega District |               |       |       |      |       |
| 127              | Bano          | 7.40  | 4.45  | 1.78 | 2.85  |
| 128              | Bari Biringa  | 4.80  | 1.25  | 1.30 | 1.75  |
| 129              | Biru          | 6.55  | 3.56  | 2.10 | 3.10  |
| 130              | Jaldega       | 5.15  | 0.65  | 1.50 | 3.15  |
| 131              | Kolebira      | 9.30  | 2.80  | 3.50 | 6.80  |
| 132              | Lachargarh    | 8.20  | 0.90  | 2.00 | 5.35  |
| 133              | Simdega       | 8.30  | 1.35  | 2.45 | 3.10  |
| 134              | Tengratuku    | 8.30  | 1.90  | 1.30 | 4.30  |

|                     |                  |       |       |       |       |
|---------------------|------------------|-------|-------|-------|-------|
| 135                 | Thethai Thangar  | 4.10  | 1.40  | 0.95  | 1.95  |
| 136                 | Bano             | 7.40  | 4.45  | 1.78  | 2.85  |
| Hazaribagh District |                  |       |       |       |       |
| 137                 | Amritnagar       | 13.38 | 4.10  | 5.46  | 5.66  |
| 138                 | Barhi            | 10.40 | 9.05  | 8.38  | 9.45  |
| 139                 | Barkagaon        | 13.00 | 5.10  | 9.05  | 10.70 |
| 140                 | Barkatha         | 9.20  | 9.20  | 4.68  | 5.90  |
| 141                 | Daru             | 7.90  | 3.10  | 2.15  | 8.30  |
| 142                 | Garrikalan       |       | 4.10  | 2.90  | 3.50  |
| 143                 | Habib nagar      | 12.70 | 6.90  |       |       |
| 144                 | Hatyari          | 7.70  | 1.80  | 2.05  | 2.50  |
| 145                 | Hazaribagh       | 11.90 | 4.90  | 3.85  | 7.15  |
| 146                 | Hirabag          | 10.25 | 9.50  | 8.68  | 8.88  |
| 147                 | Ichak more       | 8.40  | 5.80  |       | 5.80  |
| 148                 | Kanhari Road     | 10.08 | 6.90  | 5.45  |       |
| 149                 | Kanjgi           | 7.79  | 5.57  | 2.41  | 3.48  |
| 150                 | Keradari         | 7.20  | 3.20  | 3.70  | 4.04  |
| 151                 | Korraha Chowk    | 10.80 | 3.90  | 10.80 | 9.28  |
| 152                 | Masipiri         |       | 6.40  | 6.90  | 7.60  |
| 153                 | Meru(Silwar)     | 13.40 | 10.05 | 6.90  | 6.05  |
| 154                 | Padma            | 11.80 | 9.50  | 11.80 | 9.80  |
| 155                 | Simra Rest House | 6.60  | 0.50  | 1.90  |       |
| 156                 | Sindur           | 9.24  | 5.40  | 3.35  | 4.56  |
| 157                 | Tatijharia       | 5.80  | 2.40  | 2.50  |       |
| 158                 | Urimari          | 16.25 |       | 3.08  | 0.50  |
| Ramgarh District    |                  |       |       |       |       |
| 159                 | Barkachumba      | 7.52  | 3.90  | 3.48  | 4.67  |
| 160                 | Barkakhana       | 3.57  | 0.60  | 0.48  | 1.52  |
| 161                 | Barlong          |       | 2.45  | 2.57  | 4.96  |
| 162                 | Chitarpur        | 8.40  | 4.13  | 2.78  | 5.02  |
| 163                 | Gola             |       | 6.51  | 4.37  | 6.90  |
| 164                 | Kaitha           | 7.17  | 0.51  | 0.35  | 3.89  |
| 165                 | Kuju             | 8.60  | 6.12  | 3.37  | 5.56  |
| 166                 | Kusumbha         | 7.92  | 1.86  | 2.46  | 4.40  |
| 167                 | Mandu            | 8.49  | -0.80 | 2.75  | 5.66  |
| 168                 | Patratu          |       |       |       | 4.09  |
| 169                 | Ramgarh2         | 7.59  | 5.03  | 3.01  | 4.98  |
| 170                 | Sakrej           | 8.20  | 4.90  | 3.65  |       |
| 171                 | Sayal            | 6.32  | 2.26  | 1.24  | 2.25  |
| 172                 | Sirka            | 8.07  | 4.50  | 2.35  | 7.63  |
| 173                 | Thakur Gora      |       | 2.83  | 1.91  | 2.68  |
| Kodarma District    |                  |       |       |       |       |
| 174                 | Chandwara        | 6.90  | 1.00  | 1.22  | 2.70  |
| 175                 | Domchanch        | 12.50 | 6.10  | 5.20  | 7.60  |
| 176                 | Kanobigha        | 5.05  | 2.80  | 4.20  | 5.20  |
| 177                 | Kodarma          | 12.00 | 5.90  | 12.00 |       |
| 178                 | Pathaldiha       | 6.40  | 6.10  | 1.80  | 2.30  |
| Lohardaga District  |                  |       |       |       |       |
| 179                 | Barwatoli Chowk  | 6.80  | 4.60  | 1.85  | 3.20  |

|                  |                       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|
| 180              | Bhandara              | 10.00 | 5.70  | 7.70  | 6.45  |
| 181              | Hesal                 | 9.60  | 8.00  | 6.10  | 7.90  |
| 182              | Hinjla                | 7.50  | 6.20  | 5.90  | 5.10  |
| 183              | Irgaon                | 7.40  | 3.20  | 5.90  | 5.35  |
| 184              | Kisko1                | 12.70 | 6.55  | 7.50  | 6.80  |
| 185              | Kuru1                 | 8.30  | 1.50  | 3.00  | 4.90  |
| 186              | Lohardaga(Patra Toli) | 7.40  | 5.10  | 1.70  | 2.90  |
| 187              | Lohardaga(pwdib)      | 6.80  | 2.70  | 3.50  | 4.60  |
| 188              | Rudh1                 | 8.45  | 5.80  | 2.95  | 4.98  |
| 189              | Senha Bdo             | 6.50  | 3.55  | 3.20  | 5.38  |
| Pakur District   |                       |       |       |       |       |
| 190              | Amrapara              | 3.04  | 0.74  | 0.99  | 2.34  |
| 191              | Hiranpur              |       | 4.90  | 4.25  | 6.13  |
| 192              | Kariodih              |       | 3.44  | 3.04  | 4.84  |
| 193              | Litipara              | 9.83  | 6.18  | 6.08  | 8.08  |
| 194              | Litipara 2            | 4.55  | 2.55  | 2.25  | 4.30  |
| 195              | Maheshpur2            |       | 7.15  |       |       |
| 196              | Pakur1                | 13.15 | 4.75  | 4.05  | 9.15  |
| 197              | Pakuria               | 2.19  | 0.79  | 0.99  | 7.19  |
| 198              | Pochaibera            | 3.45  | 0.55  | 0.55  | 1.45  |
| 199              | Salgapara             | 8.30  | 2.00  | 1.80  | 7.15  |
| 200              | Vikrampur             | 7.30  | 0.75  | 0.35  | 3.90  |
| Palamu District  |                       |       |       |       |       |
| 201              | Baraw                 | 7.10  | 2.10  | 2.55  | 4.00  |
| 202              | Bishrampur            | 6.40  | 2.90  | 2.65  | 3.93  |
| 203              | Chhatarpur            | 12.40 | 12.40 | 10.40 | 4.44  |
| 204              | Daltenganj            | 6.40  | 3.80  | 3.45  | 4.75  |
| 205              | Haidernagar           | 8.45  | 1.40  | 2.85  | 2.95  |
| 206              | Hariharganj           | 11.90 | 6.10  | 4.75  | 5.05  |
| 207              | Japla                 | 13.40 | 5.30  |       |       |
| 208              | Kajri                 | 13.00 | 13.00 | 13.00 | 12.60 |
| 209              | Kanda                 |       | 4.20  |       | 5.72  |
| 210              | Lesliganj             | 10.50 | 3.10  | 3.83  | 5.75  |
| 211              | Nawadih1              | 15.00 | 2.20  | 15.00 |       |
| 212              | Panki                 | 10.60 | 6.00  | 3.18  | 3.35  |
| 213              | Patan                 | 10.15 | 3.10  | 3.30  | 3.60  |
| 214              | Rajhara               | 7.50  | 2.55  | 4.58  | 5.30  |
| 215              | Sagalim               | 9.50  | 3.50  | 5.08  | 5.40  |
| 216              | Sandha                |       | 4.40  | 4.85  |       |
| 217              | Satbarwa              | 9.80  | 6.10  | 7.28  | 5.98  |
| Latehar District |                       |       |       |       |       |
| 218              | Balumath              | 13.20 | 9.80  | 9.09  | 10.45 |
| 219              | Barjatu               | 5.85  | 6.90  | 5.60  | 7.10  |
| 220              | Barwadih              | 9.55  | 2.00  | 2.32  | 4.50  |
| 221              | Betla                 | 13.00 | 7.50  | 7.52  | 8.42  |
| 222              | Chandwa               | 10.44 | 10.35 | 4.44  | 6.34  |
| 223              | Garu                  | 8.20  | 4.60  | 5.35  | 5.80  |
| 224              | Latehar               | 10.10 | 8.55  | 2.34  | 7.84  |
| 225              | Mahuadanr             | 10.10 |       | 2.30  | 3.25  |

|                              |                    |       |       |      |      |
|------------------------------|--------------------|-------|-------|------|------|
| 226                          | Manika             | 9.40  | 2.00  | 2.57 | 4.62 |
| Paschimi Singhbhum           |                    |       |       |      |      |
| 227                          | Bandgaonnew        | 10.35 | 7.85  | 2.90 | 4.80 |
| 228                          | Barajamda          | 2.78  | 0.98  | 1.20 | 1.90 |
| 229                          | Barananda          |       | 2.45  | 4.10 | 4.30 |
| 230                          | Chaibasa           | 13.90 | 11.10 | 8.10 | 6.60 |
| 231                          | Chakradharpur      | 7.20  | 1.00  | 1.60 | 4.80 |
| 232                          | Hat Gamhariya      | 10.60 | 3.10  | 2.10 | 6.80 |
| 233                          | Hesadih            | 6.05  | 2.45  | 1.60 | 3.40 |
| 234                          | Jagannathpur       | 9.08  | 1.80  | 4.90 | 5.10 |
| 235                          | Jaitgarh           | 6.70  | 1.85  | 3.10 | 3.20 |
| 236                          | Jhinkpani          | 5.20  | 1.20  | 1.10 | 1.10 |
| 237                          | Kerekela           | 6.10  | 1.10  | 3.15 | 5.90 |
| 238                          | Khuntpani          | 7.80  | 0.95  | 1.60 | 4.70 |
| 239                          | Kokcho             | 6.75  | 2.10  | 3.60 | 3.90 |
| 240                          | Noamundi           | 3.10  | 1.30  | 2.90 | 3.10 |
| 241                          | Pandrasalai        |       |       | 4.90 | 5.10 |
| 242                          | Putida             | 8.70  | 2.10  | 2.70 | 3.10 |
| Saraikela Kharsawan District |                    |       |       |      |      |
| 243                          | Chandil            | 11.61 | 2.00  | 4.70 | 8.30 |
| 244                          | Dugani             | 7.31  | 0.80  |      | 5.60 |
| 245                          | Harison            | 8.18  | 0.80  |      | 1.90 |
| 246                          | Kandra             | 6.40  | 3.50  | 3.60 | 2.90 |
| 247                          | Keshargaria        | 0.85  | 0.84  | 1.35 | 1.10 |
| 248                          | Kharsawan          | 8.42  | 1.98  | 2.10 | 4.80 |
| 249                          | Nabibera           | 6.48  |       |      |      |
| 250                          | Nimdih_Jamdih      | 6.19  | 2.45  | 2.10 | 3.40 |
| 251                          | Saraikela          | 2.84  | 0.75  | 1.10 | 1.20 |
| Purbi Singhbhum              |                    |       |       |      |      |
| 252                          | Amar J Sch Mango   |       |       | 5.4  | 6.1  |
| 253                          | Bagun Nagar        | 4.1   | 2.55  | 1.9  | 1.8  |
| 254                          | Baharagora         | 13.15 | 4.1   | 5.1  | 11.1 |
| 255                          | Baridih            | 2.85  |       | 2.4  | 2.1  |
| 256                          | Burmamines Thana   | 2.1   | 1.6   | 1.6  | 1.1  |
| 257                          | Chakulia           | 15.61 | 9.5   | 5.9  | 14.1 |
| 258                          | Dhalbhumgarh       | 10.29 | 2.94  | 3.1  | 2.5  |
| 259                          | Garhabasha Jua     |       |       | 1.2  | 1.1  |
| 260                          | Ghatsila           | 6.7   | 1.78  | 2.4  | 4.8  |
| 261                          | Golmuri            |       |       |      | 2.1  |
| 262                          | Jabirdiha          |       | 0.95  |      |      |
| 263                          | Jugsalai Thana Jua | 2.65  | 1.6   |      | 1.8  |
| 264                          | Kalikapur          | 5.15  | 2.1   | 1.8  | 1.8  |
| 265                          | Matigora           |       | 2.4   |      |      |
| 266                          | Mosabani1          | 1.8   | 0.95  | 0.95 | 1.8  |
| 267                          | Pipla              |       |       | 4.1  | 4.2  |
| 268                          | Pithajudi          | 4.1   | 1.35  | 3.1  |      |
| 269                          | Potka              | 8.4   | 4.6   | 3.4  | 5.2  |

|                 |                           |       |      |      |      |
|-----------------|---------------------------|-------|------|------|------|
| 270             | Ramgarh1                  |       |      | 2.6  |      |
| 271             | Rankini Madir Jua         |       |      |      | 1.7  |
| 272             | Shitla Mandir Sackchi     | 3.9   | 1.2  | 1.8  | 1.6  |
| 273             | Shiv Mandir<br>Barmamines | 2.1   | 1.65 | 1.6  |      |
| 274             | Shree Maria Mandir        |       | 1.1  |      |      |
| 275             | Sundarnagar1              | 9.8   | 4.35 | 4.6  |      |
| 276             | Telco Zone                | 1.5   | 0.9  | 1.05 | 1.5  |
| Ranchi District |                           |       |      |      |      |
| 277             | AG Office                 | 9.10  | 3.47 | 6.10 |      |
| 278             | Angara1                   | 8.95  | 4.87 | 4.90 | 5.80 |
| 279             | Bajra                     | 4.51  | 1.35 | 3.10 | 4.50 |
| 280             | Barwadag                  | 5.85  |      | 2.90 | 3.10 |
| 281             | Berro                     | 11.00 | 5.80 | 2.10 | 6.80 |
| 282             | Bidge Frord Sch           | 7.20  |      | 3.60 | 5.20 |
| 283             | Bijupara Tangar           | 7.20  | 2.45 | 2.30 | 2.90 |
| 284             | Bishakhatanga             | 6.40  | 2.78 | 1.05 | 2.40 |
| 285             | Bit More                  | 2.35  | 1.89 | 1.90 | 2.10 |
| 286             | Bundu                     | 9.00  | 7.84 | 3.20 | 5.40 |
| 287             | Bunti                     | 2.35  | 1.45 | 1.80 | 2.10 |
| 288             | Burmoo                    | 8.10  |      | 5.50 | 6.80 |
| 289             | Chachgura                 | 12.80 | 5.10 | 2.10 | 6.90 |
| 290             | Chutupalu                 | 8.90  | 0.98 | 3.20 | 5.80 |
| 291             | Gondlipokhar              | 7.40  | 1.25 | 2.50 | 4.10 |
| 292             | Harmu                     | 9.40  | 3.10 | 5.10 | 8.40 |
| 293             | Hatia1                    | 12.12 | 2.86 | 4.10 | 7.50 |
| 294             | Hombai                    | 3.35  | 1.55 | 4.80 | 7.70 |
| 295             | Hurhuri                   | 5.10  |      | 2.40 | 5.20 |
| 296             | Itki NAM                  | 10.96 | 7.45 | 3.10 | 7.10 |
| 297             | Jonha                     | 5.60  | 3.90 | 3.40 | 3.80 |
| 298             | Kanke1                    | 3.40  | 1.50 | 2.10 | 1.10 |
| 299             | Kantitanr                 | 6.26  | 0.97 | 2.50 | 3.20 |
| 300             | Kharsidag                 | 7.80  | 4.50 | 3.90 | 5.10 |
| 301             | Kita                      | 6.88  | 1.00 | 2.60 | 2.80 |
| 302             | Lalganj                   | 9.95  | 1.20 | 3.10 | 4.30 |
| 303             | Mandar                    | 8.20  | 1.60 | 1.80 | 3.10 |
| 304             | Morhabadi                 |       | 3.00 | 2.80 | 6.90 |
| 305             | Namkom Bz Chowk           | 4.50  | 2.10 |      |      |
| 306             | Ormanji                   | 7.50  | 4.20 | 3.70 | 3.90 |
| 307             | Patrahatu                 | 1.70  | 0.95 | 1.20 | 2.00 |
| 308             | Pithoria                  | 5.40  | 4.40 | 2.10 | 2.10 |
| 309             | Rampur                    | 5.60  | 2.00 | 2.20 | 3.10 |
| 310             | Rangamati                 | 10.00 | 4.10 | 1.90 | 5.80 |
| 311             | Sani Mandir               | 8.10  | 2.45 | 1.90 | 1.90 |
| 312             | Silli                     | 7.21  | 3.70 | 3.70 | 4.80 |
| 313             | Siramtoli                 | 9.10  |      | 2.10 | 3.90 |
| 314             | Sithipokhartoli           | 5.40  |      | 3.40 | 6.70 |

|                    |                  |       |      |      |      |
|--------------------|------------------|-------|------|------|------|
| 315                | Sonahatu1        | 7.02  | 0.85 | 1.10 | 2.90 |
| 316                | Sonsbazar        | 8.10  |      | 3.05 | 3.25 |
| 317                | Taimara          | 12.80 | 2.65 | 4.80 | 6.80 |
| 318                | Tamar            | 11.35 | 0.95 | 2.10 | 6.20 |
| 319                | Tatilsilwai EEF  | 7.02  | 3.10 | 3.80 | 5.20 |
| 320                | Ukrid            | 5.20  | 1.50 | 3.70 | 3.80 |
| Khunti District    |                  |       |      |      |      |
| 321                | Dumardagga       | 5.90  | 2.85 | 1.30 | 3.85 |
| 322                | Gobidpur         | 7.85  |      | 1.20 | 3.85 |
| 323                | Jaltanda         | 6.18  |      |      |      |
| 324                | Kakriya          | 9.10  | 6.20 | 4.80 | 6.45 |
| 325                | Kalimati         | 7.20  | 5.60 | 2.00 | 4.10 |
| 326                | Karapurti        |       | 3.90 | 2.45 | 4.10 |
| 327                | Karra1           |       | 7.00 |      |      |
| 328                | Khunti           | 7.70  | 5.40 | 2.40 | 4.60 |
| 329                | Lodma1           | 5.05  | 1.80 | 1.80 | 4.15 |
| 330                | Lowadih          | 9.00  | 4.20 | 4.30 | 5.80 |
| 331                | Masmano          | 6.35  | 6.20 | 3.40 | 5.20 |
| 332                | Murhu            | 3.75  | 2.00 | 2.50 | 2.00 |
| 333                | Seringathu       | 3.20  | 0.80 | 0.80 | 0.85 |
| Sahebganj District |                  |       |      |      |      |
| 334                | Baramasia        | 6.68  | 2.08 | 1.63 | 7.98 |
| 335                | Barhait          | 7.26  | 6.61 | 6.51 | 4.71 |
| 336                | Barharwa         | 10.35 | 4.55 | 3.75 | 7.00 |
| 337                | Borio            | 12.00 | 3.50 | 3.60 |      |
| 338                | Chota Kadma      | 8.92  | 3.67 | 3.47 | 6.17 |
| 339                | Ghat Selumpur    | 5.70  | 1.95 | 2.30 | 5.95 |
| 340                | Harinchara Chowk | 3.63  | 1.53 | 2.97 | 2.98 |
| 341                | Kotalpokhar      | 5.60  | 1.60 | 1.45 | 4.73 |
| 342                | Mandro           | 5.00  | 1.50 | 1.40 | 4.30 |
| 343                | Mangalhat        | 5.50  | 3.80 | 3.40 | 4.00 |
| 344                | Maricho          | 7.47  | 1.53 | 3.57 | 5.32 |
| 345                | Rajmahal         | 6.42  | 4.32 | 3.02 | 3.17 |
| 346                | Ranga            | 8.10  | 3.60 | 1.70 | 4.90 |
| 347                | Sahebganj1       | 9.50  | 5.80 | 4.75 | 7.30 |
| 348                | Sakrigali        | 3.67  | 1.87 |      | 4.07 |
| 349                | Taljhari         |       | 1.67 |      | 2.32 |
| 350                | Taljhari1        | 1.70  | 1.30 | 1.50 |      |
| 351                | Udvababutala     | 8.20  | 3.00 | 2.65 | 6.20 |

## Trend of Water Level for last ten years (2010 to 2019)

| <b>BOKARO</b>  |                 |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|----------------|-----------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
|                |                 |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 1              | Gomia           | 10                 | 0.8115               |                      | 10                 | 0.4121               |                      | 38                 | 0.558                |                      |
| 2              | Nawadih         | 7                  |                      | 0.331                | 9                  |                      | 0.2107               | 34                 |                      | 0.2944               |
| 3              | Pindarjora new  | 3                  |                      |                      | 6                  | 0.3759               |                      | 21                 |                      |                      |
| 4              | Chandankiyari   | 6                  | 0.1828               |                      | 7                  |                      | 0.0387               | 25                 | 0.0403               |                      |
| 5              | Chas            | 10                 | 0.071                |                      | 9                  |                      | 0.1256               | 37                 |                      | 0.1093               |
| 6              | Petarbar        | 10                 |                      | 0.1016               | 10                 |                      | 0.0493               | 39                 |                      | 0.03                 |
| 7              | Pupunki         | 5                  |                      |                      | 6                  |                      | 0.0839               | 22                 |                      |                      |
| 8              | Jaina More      | 10                 |                      | 0.0412               | 9                  |                      | 0.0867               | 38                 |                      | 0.0465               |
| 9              | Phusro_Bermo    | 8                  |                      | 0.3084               | 8                  | 0.2706               |                      | 28                 | 0.0277               |                      |
| 10             | Tenughat        | 9                  |                      | 0.1985               | 10                 | 0.0152               |                      | 38                 |                      | 0.0735               |
| 11             | Chandrapura     | 9                  |                      | 0.0352               | 10                 | 0.1299               |                      | 39                 | 0.0677               |                      |
| <b>CHATRA</b>  |                 |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                 |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 12             | Itkhoril        | 5                  |                      |                      | 7                  |                      | 0.2351               | 25                 |                      | 0.28                 |
| 13             | Tandwa          | 7                  | 0.4556               |                      | 6                  |                      | 0.1291               | 25                 | 0.3821               |                      |
| 14             | Birhu           | 6                  | 0.9138               |                      | 7                  | 0.5703               |                      | 26                 | 0.4746               |                      |
| 15             | Bagra           | 9                  |                      | 0.0047               | 10                 | 0.1658               |                      | 39                 | 0.1112               |                      |
| 16             | Tutilawal       | 5                  |                      |                      | 6                  |                      | 0.094                | 23                 |                      |                      |
| 17             | Simaria         | 9                  |                      | 0.1309               | 9                  |                      | 0.0863               | 36                 | 0.1027               |                      |
| 18             | Chatra1         | 5                  |                      |                      | 7                  | 0.0338               |                      | 24                 |                      | 0.1688               |
| 19             | Pitij           | 6                  |                      | 0.6315               | 6                  | 0.0186               |                      | 25                 |                      | 0.0739               |
| <b>DEOGHAR</b> |                 |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                 |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 20             | Palajori        | 10                 | 0.3189               |                      | 9                  | 0.2803               |                      | 39                 | 0.341                |                      |
| 21             | Sarawan         | 10                 | 0.4725               |                      | 9                  | 0.6986               |                      | 39                 | 0.5912               |                      |
| 22             | Ghormara        | 10                 |                      | 0.0762               | 8                  |                      | 0.0927               | 38                 |                      | 0.0341               |
| 23             | Sarath          | 10                 |                      | 0.2373               | 8                  |                      | 0.2499               | 37                 |                      | 0.1945               |
| 24             | Jasidih         | 10                 | 0.1108               |                      | 9                  | 0.4131               |                      | 39                 | 0.2707               |                      |
| 25             | Madhupur1       | 8                  | 0.0031               |                      | 9                  | 0.0449               |                      | 34                 |                      | 0.1058               |
| <b>DHANBAD</b> |                 |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                 |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |



| Sl No.        | Location        | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) |
|---------------|-----------------|-------------|-------------------|---------------|-------------|-------------------|---------------|-------------|---------------|---------------|
| 26            | Nirsa ecl l.qtr | 8           | 0.144             |               | 7           | 0.1637            |               | 31          | 0.0942        |               |
| 27            | Pkroy College   | 6           |                   | 0.4356        | 4           |                   |               | 19          |               |               |
| 28            | Dhanbad New     | 6           | 0.1132            |               | 5           |                   |               | 23          |               |               |
| 29            | Baghmaranew     | 5           |                   |               | 6           | 0.372             |               | 21          |               |               |
| 30            | Govindpur       | 9           |                   | 0.5074        | 9           |                   | 0.0057        | 32          |               | 0.1819        |
| 31            | Mahuda          | 5           |                   |               | 5           |                   |               | 24          | 0.0859        |               |
| 32            | Rajganj         | 10          |                   | 0.0619        | 10          | 0.0254            |               | 40          |               | 0.0008        |
| 33            | Topchanchi      | 9           | 0.0489            |               | 10          | 0.1153            |               | 39          | 0.0948        |               |
| 34            | Tundi           | 8           |                   | 0.1414        | 10          | 0.0698            |               | 37          |               | 0.0617        |
| 35            | Jharia          | 7           |                   | 0.1573        | 6           | 0.0146            |               | 23          |               |               |
| 36            | Bagha_Jharia    | 2           |                   |               | 2           |                   |               | 9           |               |               |
| <b>DUMKA</b>  |                 |             |                   |               |             |                   |               |             |               |               |
|               |                 |             | <b>PreMonsoon</b> |               |             | <b>PreMonsoon</b> |               |             | <b>Annual</b> |               |
| Sl No.        | Location        | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) |
| 37            | JamaI           | 10          |                   | 0.1623        | 9           | 0.042             |               | 39          | 0.0246        |               |
| 38            | Jarmundi db.ib  | 10          | 0.1002            |               | 9           | 0.239             |               | 39          | 0.1781        |               |
| 39            | Nunihaat        | 8           | 0.042             |               | 9           | 0.0001            |               | 37          | 0.0184        |               |
| 40            | Gopikandar      | 10          | 0.5588            |               | 9           | 0.2035            |               | 39          | 0.3775        |               |
| 41            | Gamharia        | 7           |                   | 0.118         | 6           |                   | 0.3996        | 22          |               |               |
| 42            | Hansdiha pwdib  | 9           | 0.04              |               | 9           | 0.1184            |               | 36          | 0.1146        |               |
| 43            | Mihijam New     | 5           |                   |               | 6           |                   | 0.0707        | 23          |               |               |
| 44            | Kundahit        | 10          |                   | 0.0241        | 8           |                   | 0.0164        | 35          | 0.0867        |               |
| 45            | Jamatar         | 10          | 0.0603            |               | 8           | 0.0744            |               | 38          | 0.0602        |               |
| 46            | Raneswar        | 10          | 0.0224            |               | 9           | 0.2098            |               | 39          | 0.114         |               |
| 47            | Nala            | 10          |                   | 0.0516        | 9           |                   | 0.0129        | 38          |               | 0.0065        |
| 48            | Masanjor        | 9           | 0.0496            |               | 9           | 0.1549            |               | 38          | 0.0885        |               |
| 49            | Masalia         | 10          | 0.2038            |               | 9           |                   | 0.0497        | 39          | 0.1008        |               |
| 50            | Patabari        | 10          | 0.0182            |               | 8           | 0.1139            |               | 37          | 0.0438        |               |
| 51            | Sikaripara      | 6           | 0.0779            |               | 8           | 0.2715            |               | 29          | 0.1012        |               |
| 52            | Chikania        | 7           | 0.0637            |               | 7           |                   | 0.0082        | 34          | 0.1635        |               |
| 53            | Kathikund       | 10          | 0.1766            |               | 9           | 0.1565            |               | 39          | 0.1922        |               |
| 54            | Dumka(db ib)    | 10          | 0.7089            |               | 9           | 0.3217            |               | 37          | 0.4254        |               |
| <b>GARHWA</b> |                 |             |                   |               |             |                   |               |             |               |               |
|               |                 |             | <b>PreMonsoon</b> |               |             | <b>PreMonsoon</b> |               |             | <b>Annual</b> |               |
| Sl No.        | Location        | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year)     | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) |
| 55            | Manjhian        | 7           |                   | 0.8699        | 7           |                   | 0.4706        | 28          |               | 0.2305        |
| 56            | Bhawanathpur    | 9           |                   | 0.0361        | 8           | 0.1402            |               | 33          | 0.0954        |               |
| 57            | Godarmana       | 3           |                   |               | 4           |                   |               | 16          |               |               |
| 58            | Ranka           | 6           |                   | 0.1546        | 7           | 0.339             |               | 29          | 0.1185        |               |
| 59            | Garhwa          | 10          |                   | 0.3197        | 10          |                   | 0.0015        | 38          |               | 0.032         |

|                |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|----------------|------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
| 60             | Ramnal           | 6                  |                      | 0.6512               | 7                  | 0.5315               |                      | 25                 | 0.3623               |                      |
| 61             | Nagaruntari      | 9                  | 0.1565               |                      | 10                 | 0.327                |                      | 38                 | 0.1978               |                      |
| <b>GIRIDIH</b> |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                  |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b>  | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 62             | Bandhutanr       | 10                 | 0.0898               |                      | 9                  | 0.0696               |                      | 39                 | 0.1318               |                      |
| 63             | Jamua pwd ib     | 10                 |                      | 0.1193               | 10                 | 0.0289               |                      | 40                 | 0.0137               |                      |
| 64             | Dumri            | 10                 |                      | 0.0025               | 9                  | 0.0847               |                      | 39                 | 0.0859               |                      |
| 65             | Dewri            | 8                  |                      | 0.2157               | 9                  | 0.1817               |                      | 32                 | 0.05                 |                      |
| 66             | Khijri           | 8                  |                      | 0.5925               | 8                  | 0.2159               |                      | 31                 |                      | 0.3032               |
| 67             | Tisri            | 8                  |                      | 0.2452               | 8                  | 0.074                |                      | 29                 |                      | 0.0745               |
| 68             | Chirki (pirtanr) | 7                  |                      | 0.2898               | 4                  |                      |                      | 24                 | 0.0936               |                      |
| 69             | Pandri           | 10                 |                      | 0.2979               | 10                 | 0.398                |                      | 38                 |                      | 0.0097               |
| 70             | Bagodar          | 10                 |                      | 0.01                 | 10                 |                      | 0.0479               | 40                 |                      | 0.053                |
| 71             | Birini           | 10                 | 0.0152               |                      | 9                  | 0.2694               |                      | 35                 | 0.1742               |                      |
| 72             | Dhanwar          | 10                 |                      | 0.5166               | 9                  | 0.0541               |                      | 38                 |                      | 0.1986               |
| 73             | Gandey1          | 5                  |                      |                      | 6                  | 0.302                |                      | 22                 |                      |                      |
| 74             | Giridih          | 10                 | 0.3822               |                      | 10                 | 0.2637               |                      | 39                 | 0.3692               |                      |
| 75             | Saraiya new      | 6                  |                      | 0.3551               | 6                  |                      | 0.1777               | 23                 |                      |                      |
| 76             | Gande            | 1                  |                      |                      | 0                  |                      |                      | 1                  |                      |                      |
| 77             | Maheshmunda1     | 6                  |                      | 0.4433               | 7                  | 0.1214               |                      | 24                 |                      | 0.0822               |
| 78             | Dhanidih         | 10                 |                      | 0.1754               | 10                 | 0.1538               |                      | 40                 | 0.1084               |                      |
| 79             | Bengabad         | 10                 |                      | 0.0468               | 10                 | 0.1319               |                      | 40                 | 0.0516               |                      |
| <b>GODDA</b>   |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                  |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b>  | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 80             | Sundar Pahari    | 10                 |                      | 0.3231               | 9                  |                      | 0.2194               | 37                 |                      | 0.1969               |
| 81             | Godda1           | 8                  | 0.0498               |                      | 8                  | 0.1265               |                      | 35                 | 0.0802               |                      |
| 82             | Jainipaharpur    | 6                  |                      | 0.2554               | 6                  | 0.3962               |                      | 24                 |                      | 0.0987               |
| 83             | Maheshpur2       | 8                  | 0.0282               |                      | 6                  |                      | 0.1865               | 29                 |                      | 0.0715               |
| 84             | Pathargama       | 9                  |                      | 0.0055               | 8                  |                      | 0.2775               | 35                 |                      | 0.1186               |
| 85             | Bara borijore    | 6                  |                      | 0.0125               | 8                  | 0.3476               |                      | 28                 | 0.1738               |                      |
| 86             | Mahagama1        | 6                  |                      | 0.0827               | 8                  |                      | 0.3938               | 32                 | 0.0498               |                      |
| 87             | Lalmatia         | 9                  | 0.1616               |                      | 9                  | 0.1612               |                      | 38                 | 0.1146               |                      |
| 88             | Doi              | 8                  | 0.0938               |                      | 9                  | 0.1334               |                      | 36                 | 0.0757               |                      |
|                |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
| <b>GUMLA</b>   |                  |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                |                  |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>  | <b>Location</b>  | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 89             | Bharno bdo       | 9                  |                      | 0.252                | 10                 |                      | 0.1039               | 37                 |                      | 0.1839               |

|     |                 |    |        |        |    |        |        |    |        |        |
|-----|-----------------|----|--------|--------|----|--------|--------|----|--------|--------|
| 90  | Ghagra          | 8  | 0.2573 |        | 10 | 0.0395 |        | 37 | 0.1873 |        |
| 91  | Nagfeni         | 10 |        | 0.0345 | 10 | 0.0862 |        | 39 | 1.9917 |        |
| 92  | Adar            | 4  |        |        | 6  | 0.2843 |        | 19 |        |        |
| 93  | Thethai Thangar | 10 |        | 0.1271 | 10 | 0.1035 |        | 39 | 0.0369 |        |
| 94  | Biru            | 6  |        | 0.1763 | 7  |        | 0.0181 | 25 |        | 0.0046 |
| 95  | Jaldega         | 10 | 0.1438 |        | 10 | 0.1852 |        | 39 | 0.2054 |        |
| 96  | Simdega         | 9  | 0.0212 |        | 10 | 0.0419 |        | 38 | 0.0424 |        |
| 97  | Lachargarh      | 9  | 0.153  |        | 10 | 0.2157 |        | 38 | 0.2354 |        |
| 98  | Bano            | 9  | 0.1289 |        | 9  | 0.2487 |        | 36 | 0.2197 |        |
| 99  | Tengratuku      | 5  |        |        | 7  |        |        | 24 |        | 0.0557 |
| 100 | Bishnupur       | 9  | 0.1985 |        | 9  | 0.1989 |        | 37 | 0.1749 |        |
| 101 | Kolebira        | 9  | 0.0824 |        | 10 | 0.0904 |        | 38 | 0.1451 |        |
| 102 | Palkot          | 10 |        | 0.0528 | 10 | 0.1154 |        | 40 | 0.025  |        |
| 103 | Baisia          | 10 | 0.229  |        | 10 | 0.0836 |        | 40 | 0.1012 |        |
| 104 | Baghma          | 5  |        |        | 6  | 0.1599 |        | 24 |        | 0.1722 |
| 105 | Raidih          | 9  |        | 0.0386 | 10 | 0.0861 |        | 39 |        | 0.0257 |
| 106 | Gumla1          | 5  |        |        | 6  | 0.3827 |        | 24 | 0.118  |        |
| 107 | Kasir           | 6  |        | 0.1538 | 7  |        | 0.013  | 25 |        | 0.1021 |
| 108 | Anjam gram      | 9  | 0.0342 |        | 9  | 0.2177 |        | 34 | 0.084  |        |
| 109 | Chainpur1       | 9  |        | 0.1418 | 9  | 0.0511 |        | 37 |        | 0.0689 |
| 110 | Sisai           | 10 |        | 0.0168 | 9  |        | 0.1435 | 38 |        | 0.0874 |

#### HAZARIBAG

| Sl No. | Location     | Data Points | PreMonsoon    |               | Data Points | PreMonsoon    |               | Data Points | Annual        |               |
|--------|--------------|-------------|---------------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|
|        |              |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |
| 111    | Barhi        | 10          |               | 0.044         | 8           |               | 0.0854        | 38          |               | 0.0371        |
| 112    | Mandu        | 9           |               | 0.0594        | 10          | 0.1255        |               | 37          | 0.001         |               |
| 113    | Barkagaon    | 5           |               |               | 6           |               | 0.1621        | 23          |               |               |
| 114    | Keradari     | 6           |               | 0.1701        | 5           |               |               | 23          |               |               |
| 115    | Hazaribagh   | 10          |               | 0.0355        | 8           | 0.4808        |               | 36          | 0.3465        |               |
| 116    | Meru(Silwar) | 5           |               |               | 6           |               | 0.4059        | 23          |               |               |
| 117    | Barkatha     | 10          | 0.1362        |               | 7           |               | 0.1035        | 36          |               | 0.0492        |
| 118    | Gola         | 7           | 0.2314        |               | 8           | 0.2814        |               | 34          | 0.214         |               |
| 119    | Chitarpur    | 6           | 0.0969        |               | 6           | 0.3726        |               | 23          |               |               |
| 120    | Barkakhana   | 10          | 0.093         |               | 9           | 0.0883        |               | 37          | 0.1173        |               |
| 121    | Sirka        | 5           |               |               | 6           | 0.5888        |               | 23          |               |               |
| 122    | Kanjgi       | 5           |               |               | 6           | 0.3405        |               | 20          |               |               |
| 123    | Sayal        | 6           | 0.1321        |               | 7           | 0.4446        |               | 25          | 0.3254        |               |
| 124    | Urimari      | 4           |               |               | 6           | 0.4858        |               | 19          |               |               |
| 125    | Kuju         | 6           |               | 0.4551        | 7           |               | 0.0711        | 24          |               | 0.2299        |

#### KODARMA

| Sl No. | Location       | Data Points | PreMonsoon    |               | Data Points | PreMonsoon    |               | Data Points | Annual        |               |
|--------|----------------|-------------|---------------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|
|        |                |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |
| 126    | Chandwara      | 5           |               |               | 7           |               | 0.4963        | 26          |               | 0.3605        |
| 127    | Jhumri Tilaiya | 6           |               | 0.0324        | 6           |               |               | 0.0927      | 25            | 0.1353        |

|                  |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|------------------|-----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
| 128              | Kodarma               | 6                  |                      | 0.5894               | 6                  |                      |                      | 1.2738             | 23                   |                      |
| 129              | Domchanch             | 4                  |                      |                      | 5                  |                      |                      |                    | 16                   |                      |
| <b>LOHARDAGA</b> |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                  |                       |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>    | <b>Location</b>       | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 130              | Bhandara              | 9                  |                      | 0.003                | 9                  |                      | 0.1875               | 38                 |                      | 0.0573               |
| 131              | Senha Bdo             | 10                 | 0.1779               |                      | 8                  | 0.0092               |                      | 38                 | 0.0821               |                      |
| 132              | Irgaon                | 4                  |                      |                      | 6                  | 0.2292               |                      | 21                 |                      |                      |
| 133              | Lohardaga(pwdib       | 10                 | 0.0641               |                      | 9                  | 0.1601               |                      | 39                 | 0.0992               |                      |
| 134              | Lohardaga(Patra Toli) | 4                  |                      |                      | 7                  | 0.2418               |                      | 23                 |                      |                      |
| 135              | Hesal                 | 2                  |                      |                      | 6                  | 0.0081               |                      | 20                 |                      |                      |
| 136              | Hinjla                | 10                 |                      | 0.1187               | 10                 | 0.0548               |                      | 39                 | 0.026                |                      |
| 137              | Kuru I                | 10                 |                      | 0.0118               | 10                 | 0.3915               |                      | 40                 | 0.274                |                      |
| 138              | Rudh I                | 4                  |                      |                      | 7                  | 0.4402               |                      | 24                 | 0.2263               |                      |
| 139              | Rudh                  | 2                  |                      |                      | 0                  |                      |                      | 2                  |                      |                      |
| <b>PAKAUR</b>    |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                  |                       |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>    | <b>Location</b>       | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 140              | Pakuria               | 8                  | 0.4489               |                      | 9                  | 0.1185               |                      | 36                 | 0.0969               |                      |
| 141              | Salgapara             | 9                  | 0.1596               |                      | 8                  | 0.1785               |                      | 36                 | 0.0596               |                      |
| 142              | Maheshpur2            | 7                  | 0.0721               |                      | 3                  |                      |                      | 24                 |                      | 0.0173               |
| 143              | Amrapara              | 8                  | 0.2152               |                      | 9                  | 0.2152               |                      | 36                 | 0.1834               |                      |
| 144              | Pakur I               | 9                  |                      | 0.0321               | 9                  | 0.2087               |                      | 38                 | 0.0801               |                      |
| 145              | Litipara              | 10                 |                      | 0.024                | 8                  | 0.0347               |                      | 38                 |                      | 0.0226               |
| 146              | Hiranpur              | 9                  | 0.1883               |                      | 9                  | 0.0455               |                      | 38                 | 0.1267               |                      |
| <b>PALAMU</b>    |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|                  |                       |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b>    | <b>Location</b>       | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 147              | Kanda                 | 9                  | 0.0262               |                      | 9                  | 0.0724               |                      | 37                 | 0.092                |                      |
| 148              | Chhatarpur            | 10                 | 0.1545               |                      | 10                 | 0.0221               |                      | 40                 | 0.1559               |                      |
| 149              | Japla                 | 7                  |                      | 0.0206               | 3                  |                      |                      | 20                 |                      |                      |
| 150              | Sandha                | 7                  | 0.1529               |                      | 7                  | 0.2035               |                      | 29                 | 0.259                |                      |
| 151              | Balumath              | 9                  |                      | 0.0506               | 10                 | 0.1059               |                      | 39                 | 0.1509               |                      |
| 152              | Satbarwa              | 9                  |                      | 0.0383               | 10                 | 0.0389               |                      | 39                 | 0.0869               |                      |
| 153              | Manika                | 10                 |                      | 0.0444               | 10                 | 0.0165               |                      | 39                 | 0.0495               |                      |
| 154              | Barwadih              | 9                  | 0.1178               |                      | 6                  | 0.2896               |                      | 30                 | 0.2898               |                      |
| 155              | Barjatu               | 8                  | 0.3598               |                      | 9                  | 0.1897               |                      | 37                 | 0.2613               |                      |
| 156              | Betla                 | 7                  |                      | 0.3455               | 7                  | 0.2941               |                      | 30                 | 0.1812               |                      |
| 157              | Lesliganj             | 9                  | 0.246                |                      | 9                  | 0.36                 |                      | 37                 | 0.3247               |                      |
| 158              | Panki                 | 8                  |                      | 0.6067               | 8                  | 0.2051               |                      | 32                 | 0.0005               |                      |

|     |             |    |        |        |    |        |        |    |        |        |
|-----|-------------|----|--------|--------|----|--------|--------|----|--------|--------|
| 159 | Sagalim     | 5  |        |        | 6  | 0.2616 |        | 24 | 0.1968 |        |
| 160 | Daltenganj  | 10 | 0.3337 |        | 9  | 0.504  |        | 37 | 0.4411 |        |
| 161 | Baraw       | 6  | 0.0479 |        | 5  |        |        | 24 | 0.23   |        |
| 162 | Kajri       | 9  | 0.0899 |        | 9  |        | 0.0227 | 35 |        | 0.0119 |
| 163 | Nawadihl    | 8  |        | 0.0743 | 6  |        | 0.3388 | 23 |        |        |
| 164 | Rajhara     | 9  | 0.2226 |        | 9  | 0.0152 |        | 37 | 0.1551 |        |
| 165 | Patan       | 7  |        | 0.1211 | 6  | 0.071  |        | 26 | 0.2502 |        |
| 166 | Bishrampur  | 8  | 0.1898 |        | 10 | 0.2175 |        | 37 | 0.2091 |        |
| 167 | Hariharganj | 8  |        | 0.0711 | 9  | 0.1148 |        | 33 | 0.1025 |        |
| 168 | Garu        | 6  | 0.0281 |        | 6  | 0.0128 |        | 24 | 0.1176 |        |
| 169 | Chandwa     | 10 | 0.243  |        | 10 | 0.0362 |        | 38 | 0.1557 |        |
| 170 | Latehar     | 10 | 0.0153 |        | 10 | 0.3206 |        | 38 | 0.1444 |        |

**PASHCHIMI SINGHBHUM**

| SI No. | Location      | PreMonsoon  |               |               | PreMonsoon  |               |               | Annual      |               |               |
|--------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|
|        |               | Data Points | Rise (m/year) | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) |
| 171    | Jaitgarh      | 6           |               | 0.1169        | 6           | 0.3675        |               | 25          | 0.244         |               |
| 172    | Bandgaonnew   | 4           |               |               | 6           |               | 0.0011        | 21          |               |               |
| 173    | Noamundi      | 5           |               |               | 6           | 0.1259        |               | 22          |               |               |
| 174    | Jagannathpur  | 6           | 0.1028        |               | 6           | 0.5863        |               | 25          | 0.5312        |               |
| 175    | Hat Gamhariya | 5           |               |               | 6           | 0.3996        |               | 24          |               | 0.0214        |
| 176    | Keshargaria   | 8           | 0.7343        |               | 8           |               | 0.0981        | 33          | 0.2169        |               |
| 177    | Jhinkpani     | 9           | 0.0725        |               | 9           |               | 0.0286        | 35          | 0.0545        |               |
| 178    | Kokcho        | 10          | 0.0821        |               | 10          |               | 0.117         | 40          | 0.1061        |               |
| 179    | Hesadih       | 10          | 0.0165        |               | 9           | 0.0645        |               | 38          | 0.0589        |               |
| 180    | Chaibasa      | 10          |               | 0.2538        | 10          |               | 0.2021        | 40          |               | 0.1116        |
| 181    | Rajnagar      | 6           | 0.0999        |               | 4           |               |               | 19          |               |               |
| 182    | Khuntpani     | 5           |               |               | 6           | 0.4675        |               | 24          | 0.197         |               |
| 183    | Pandrasalai   | 6           | 0.0841        |               | 6           |               | 0.1997        | 24          |               | 0.15          |
| 184    | Chakradharpur | 10          | 0.2647        |               | 10          | 0.4192        |               | 39          | 0.3791        |               |
| 185    | Saraikela     | 10          | 0.4422        |               | 10          | 0.0603        |               | 39          | 0.1577        |               |
| 186    | Kharsawan     | 10          | 0.0359        |               | 9           | 0.053         |               | 38          | 0.1256        |               |
| 187    | Bandgaon      | 8           |               | 0.091         | 8           | 0.1001        |               | 34          |               | 0.0319        |
| 188    | Kereikela     | 10          | 0.475         |               | 10          | 0.087         |               | 39          | 0.273         |               |
| 189    | Kandra        | 10          | 0.0802        |               | 9           | 0.1318        |               | 37          | 0.1598        |               |
| 190    | Chandil       | 10          |               | 0.0888        | 10          |               | 0.3348        | 40          |               | 0.1114        |

**PURBI SINGHBHUM**

| SI No. | Location     | PreMonsoon  |               |               | PreMonsoon  |               |               | Annual      |               |               |
|--------|--------------|-------------|---------------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|
|        |              | Data Points | Rise (m/year) | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) | Data Points | Rise (m/year) | Fall (m/year) |
| 191    | Ghatsila     | 10          | 0.108         |               | 10          | 0.0905        |               | 40          | 0.1548        |               |
| 192    | Baharagora   | 10          | 0.1342        |               | 9           | 0.2012        |               | 37          | 0.2406        |               |
| 193    | Chakulia     | 9           | 0.2153        |               | 8           | 0.6104        |               | 36          | 0.2681        |               |
| 194    | Pithajudi    | 6           | 0.0087        |               | 4           |               |               | 21          |               |               |
| 195    | Dhalbhumgarh | 10          |               | 0.025         | 9           |               | 0.0161        | 39          | 0.1804        |               |
| 196    | Mosabani1    | 5           |               |               | 7           | 0.0693        |               | 24          | 0.1063        |               |

|               |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|---------------|-----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
| 197           | Kalikapur             | 10                 | 0.2327               |                      | 9                  |                      | 0.1365               | 39                 | 0.0951               |                      |
| 198           | Potka                 | 9                  | 0.0646               |                      | 10                 | 0.1078               |                      | 37                 | 0.0976               |                      |
| 199           | Galudih               | 8                  | 0.5097               |                      | 9                  |                      | 0.0237               | 32                 | 0.2118               |                      |
| 200           | Ramgarh1              | 8                  | 0.0187               |                      | 7                  | 0.2777               |                      | 26                 | 0.0799               |                      |
| 201           | Sundarnagar           | 6                  | 0.2961               |                      | 4                  |                      |                      | 17                 |                      |                      |
| 202           | Bagun Nagar           | 6                  | 0.7997               |                      | 3                  |                      |                      | 18                 |                      |                      |
| 203           | Telco Zone            | 6                  | 0.6258               |                      | 2                  |                      |                      | 18                 |                      |                      |
| 204           | Burmamines Thana      | 6                  | 0.0411               |                      | 3                  |                      |                      | 18                 |                      |                      |
| 205           | Shitla Mandir Sackchi | 6                  |                      | 0.0323               | 4                  |                      |                      | 18                 |                      |                      |
| 206           | Jugsalai Thana Jua    | 6                  | 0.3396               |                      | 2                  |                      |                      | 18                 |                      |                      |
| <b>RANCHI</b> |                       |                    |                      |                      |                    |                      |                      |                    |                      |                      |
|               |                       |                    | <b>PreMonsoon</b>    |                      |                    | <b>PreMonsoon</b>    |                      |                    | <b>Annual</b>        |                      |
| <b>Sl No.</b> | <b>Location</b>       | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> | <b>Data Points</b> | <b>Rise (m/year)</b> | <b>Fall (m/year)</b> |
| 207           | Kakriya               | 4                  |                      |                      | 6                  | 0.2301               |                      | 22                 |                      |                      |
| 208           | Nawatoli              | 3                  |                      |                      | 6                  | 0.2934               |                      | 20                 |                      |                      |
| 209           | Kalimati              | 8                  | 0.1381               |                      | 10                 | 0.0889               |                      | 38                 | 0.0354               |                      |
| 210           | Lodma                 | 8                  | 0.2754               |                      | 7                  | 0.0968               |                      | 29                 | 0.177                |                      |
| 211           | Kharsidag             | 4                  |                      |                      | 6                  | 0.1281               |                      | 17                 |                      |                      |
| 212           | Barwadag              | 10                 | 0.0188               |                      | 8                  | 0.1161               |                      | 34                 | 0.0625               |                      |
| 213           | Berro                 | 10                 | 0.1395               |                      | 9                  | 0.3417               |                      | 37                 | 0.2069               |                      |
| 214           | Hatia1                | 6                  |                      | 0.0892               | 8                  |                      | 0.3158               | 29                 |                      | 0.003                |
| 215           | Ormanji               | 8                  |                      | 0.1483               | 7                  |                      | 0.0216               | 29                 |                      | 0.0854               |
| 216           | Chachgura             | 6                  |                      | 0.4917               | 6                  | 0.4013               |                      | 24                 | 0.041                |                      |
| 217           | Ranchi1               | 6                  | 0.1333               |                      | 5                  |                      |                      | 20                 |                      |                      |
| 218           | Lowadih               | 4                  |                      |                      | 6                  | 0.1478               |                      | 16                 |                      |                      |
| 219           | Silli                 | 9                  |                      | 0.1813               | 8                  | 0.0452               |                      | 33                 | 0.0314               |                      |
| 220           | Jonha                 | 6                  |                      | 0.047                | 6                  | 0.0725               |                      | 25                 | 0.0302               |                      |
| 221           | Bunti                 | 8                  |                      | 0.022                | 7                  | 0.0062               |                      | 29                 |                      | 0.0043               |
| 222           | Angara1               | 5                  |                      |                      | 6                  |                      | 0.0648               | 24                 |                      | 0.0306               |
| 223           | Gondlipokhar          | 5                  |                      |                      | 7                  |                      | 0.0215               | 22                 |                      |                      |
| 224           | Kanke1                | 5                  |                      |                      | 6                  | 0.0907               |                      | 21                 |                      |                      |
| 225           | Bit More              | 5                  |                      |                      | 6                  | 0.1725               |                      | 20                 |                      |                      |
| 226           | Mandar                | 9                  | 0.0004               |                      | 8                  | 0.2729               |                      | 33                 | 0.2315               |                      |
| 227           | Chutupalu             | 9                  | 0.0168               |                      | 7                  | 0.349                |                      | 32                 | 0.124                |                      |
| 228           | Burmoo                | 6                  | 0.1392               |                      | 7                  | 0.3111               |                      | 25                 | 0.2479               |                      |
| 229           | Murhu                 | 8                  | 0.1399               |                      | 8                  | 0.1247               |                      | 31                 | 0.144                |                      |
| 230           | Khunti                | 8                  | 0.1524               |                      | 8                  | 0.1453               |                      | 31                 | 0.0607               |                      |
| 231           | Tamar                 | 9                  | 0.2665               |                      | 9                  | 0.3792               |                      | 34                 | 0.4984               |                      |
| 232           | Gobidpur              | 4                  |                      |                      | 6                  | 0.835                |                      | 18                 |                      |                      |
| 233           | Karra1                | 6                  | 0.204                |                      | 5                  |                      |                      | 22                 |                      |                      |
| 234           | Masmano               | 4                  |                      |                      | 6                  | 0.352                |                      | 21                 |                      |                      |
| 235           | Guitjora              | 4                  |                      |                      | 4                  |                      |                      | 16                 |                      |                      |
| 236           | Bundu                 | 10                 | 0.0735               |                      | 9                  | 0.051                |                      | 39                 | 0.0094               |                      |
| 237           | Taimara               | 6                  |                      | 0.3664               | 6                  |                      | 0.0669               | 22                 |                      |                      |

| SAHIBGANJ |               |             |               |               |             |               |               |             |               |               |
|-----------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|-------------|---------------|---------------|
| Sl No.    | Location      | Data Points | PreMonsoon    |               | Data Points | PreMonsoon    |               | Data Points | Annual        |               |
|           |               |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |             | Rise (m/year) | Fall (m/year) |
| 138       | Barharwa      | 10          |               | 0.0075        | 7           | 0.1272        |               | 30          | 0.2671        |               |
| 139       | Ranga         | 5           |               |               | 6           | 0.4165        |               | 23          |               |               |
| 140       | Barhait       | 9           | 0.2648        |               | 8           | 0.2386        |               | 29          | 0.3153        |               |
| 141       | Rajmahal      | 10          |               | 0.0098        | 8           |               | 0.1142        | 37          | 0.0214        |               |
| 142       | Borio         | 9           |               | 0.8216        | 9           | 0.0464        |               | 36          |               | 0.1777        |
| 143       | Ghat Selumpur | 6           | 0.396         |               | 6           | 0.1566        |               | 25          | 0.2532        |               |
| 144       | Taljhari I    | 9           | 0.9218        |               | 7           | 0.0345        |               | 31          | 0.402         |               |
| 145       | Mandro        | 8           | 0.198         |               | 7           | 0.4246        |               | 32          | 0.1128        |               |
| 146       | Sahebganj I   | 10          | 0.0505        |               | 8           | 0.209         |               | 37          | 0.1548        |               |
| 147       | Sakrigali     | 9           | 0.314         |               | 8           | 0.0777        |               | 35          | 0.1834        |               |

## Chemical Quality of Ground Water May, 2017

| Sl.No | Location          | Block          | District | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-   | F-    | N03- | SO42- | TH   | Ca2+     | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|-------------------|----------------|----------|--------------------------------|--------|------|--------|--------|-------|-------|------|-------|------|----------|--------|--------|-------|------|------|------|
|       |                   |                |          |                                |        |      |        |        |       |       |      |       |      | as CaCO3 |        |        |       |      |      |      |
|       |                   |                |          |                                | mg/l   | mg/l | mg/l   | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l | mg/l     | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 1     | Radhagaram        | Chas           | Bokaro   | 1303                           | 846.95 | 7.88 | 0      | 252.15 | 216   | 0.362 | 118  | 78.27 | 550  | 110      | 66.82  | 76.16  | 6.72  | NA   | 0    |      |
| 2     | JainaM ore        | Chas           | Bokaro   | 1329                           | 863.85 | 7.78 | 0      | 270.6  | 214   | 0.35  | 135  | 77.33 | 605  | 116      | 76.545 | 78.52  | 6.78  | NA   | 0    |      |
| 3     | Pindraj ora       | Chas           | Bokaro   | 366                            | 237.9  | 8.19 | 0      | 190.65 | 7.02  | 0.928 | 3.02 | 16.22 | 170  | 40       | 17.131 | 9.73   | 5.57  | NA   | 0    |      |
| 4     | Pupunki           | Chas           | Bokaro   | 730                            | 474.5  | 7.93 | 0      | 196.8  | 63.81 | 0.813 | 164  | 72.92 | 345  | 110      | 24.3   | 23.51  | 7.21  | NA   | 0    |      |
| 5     | Chandan kiyari    | Chandanki yari | Bokaro   | 781                            | 507.65 | 8    | 0      | 190.65 | 93.4  | 0.657 | 70.9 | 65.95 | 225  | 80       | 6.075  | 83.92  | 7.28  | NA   | 0    |      |
| 6     | Laghla            | Chandanki yari | Bokaro   | 1237                           | 804.05 | 7.78 | 0      | 202.95 | 211   | 0.903 | 201  | 75.16 | 505  | 182      | 12.15  | 56.87  | 8.03  | NA   | 0    |      |
| 7     | Nutandi h         | Chandanki yari | Bokaro   | 2450                           | 1592.5 | 7.56 | 0      | 246    | 714   | 0.293 | 58.2 | 85.09 | 1110 | 286      | 95.985 | 45.28  | 9.84  | NA   | 0    |      |
| 8     | Barama sia        | Chandanki yari | Bokaro   | 494                            | 321.1  | 7.79 | 0      | 122    | 71.24 | 0.174 | 96.4 | 36.16 | 130  | 36       | 9.72   | 54.46  | 19.56 | NA   | 0    |      |
| 9     | Chandra           | Chandanki yari | Bokaro   | 2115                           | 1374.8 | 7.63 | 0      | 492.4  | 365   | 1.52  | 134  | 106.5 | 320  | 106      | 13.365 | 374.94 | 27.94 | NA   | 0.12 |      |
| 10    | Chandra pura      | Petarbar       | Bokaro   | 335                            | 217.75 | 7.9  | 0      | 86.1   | 25    | 1.12  | 1.98 | 76.76 | 135  | 38       | 9.72   | 4.86   | 17.97 | NA   | 0.3  |      |
| 11    | Gomia             | Gomia          | Bokaro   | 1206                           | 783.9  | 8.01 | 0      | 460.02 | 157   | 1.01  | 8.52 | 52.76 | 200  | 70       | 6.075  | 158.41 | 8.61  | NA   | 0    |      |
| 12    | Nawadi h          | Nawadih        | Bokaro   | 997                            | 648.05 | 8.25 | 0      | 276.75 | 156   | 0.599 | 68.8 | 73.51 | 375  | 120      | 18.225 | 62     | 5.18  | NA   | 0    |      |
| 13    | Petarba r         | Petarbar       | Bokaro   | 776                            | 504.4  | 7.63 | 0      | 178.49 | 101   | 0.246 | 104  | 64.02 | 350  | 60       | 48.6   | 33.5   | 6.76  | NA   | 0    |      |
| 14    | Bermo/ Phusro     | Bermo          | Bokaro   | 1218                           | 791.7  | 7.78 | 0      | 455.1  | 123   | 0.439 | 8.76 | 72.11 | 425  | 84       | 52.245 | 58.2   | 5.13  | NA   | 0    |      |
| 15    | Deogha r          | Deoghar        | Deoghar  | 683                            | 443.95 | 8.22 | 0      | 295.2  | 24.7  | 0.683 | 35.6 | 36.67 | 315  | 80       | 27.945 | 23.98  | 7.19  | NA   | 0    |      |
| 16    | Ghorm ara         | Mohanpur       | Deoghar  | 903                            | 586.95 | 8.24 | 0      | 319.8  | 62.1  | 0.795 | 146  | 59.72 | 325  | 90       | 24.3   | 77.13  | 5.05  | NA   | 0    |      |
| 17    | Jasidih           | Deoghar        | Deoghar  | 1095                           | 711.75 | 7.95 | 0      | 319.8  | 120   | 0.43  | 139  | 66.89 | 420  | 102      | 40.095 | 74.07  | 6.35  | NA   | 0    |      |
| 18    | Madhu pur         | Madhupur       | Deoghar  | 1170                           | 760.5  | 7.8  | 0      | 473.5  | 70.9  | 0.691 | 86   | 67.91 | 265  | 66       | 24.3   | 137.06 | 5.23  | NA   | 0    |      |
| 19    | Palajori          | Palajori       | Deoghar  | 841                            | 546.65 | 8.05 | 0      | 301.35 | 67.5  | 0.547 | 47.5 | 45.22 | 290  | 74       | 25.515 | 77.53  | 6.76  | NA   | 0    |      |
| 20    | Sarath            | Sarath         | Deoghar  | 551                            | 358.15 | 8.24 | 0      | 196.8  | 40.6  | 0.473 | 22   | 36.19 | 250  | 60       | 24.3   | 15.89  | 5.72  | NA   | 0    |      |
| 21    | Sarawa n          | Sarwan         | Deoghar  | 680                            | 442    | 8.12 | 0      | 221.4  | 104   | 0.512 | 47.5 | 43.88 | 290  | 100      | 9.72   | 28.47  | 6.69  | NA   | 0.54 |      |
| 22    | Khamar bad(New)   | Palajori       | Deoghar  | 1025                           | 666.25 | 7.88 | 0      | 258.3  | 130   | 1.16  | 182  | 68.67 | 350  | 78       | 37.665 | 97.62  | 5.31  | NA   | 0    |      |
| 23    | Matiyar a(New)    | Sarath         | Deoghar  | 379                            | 246.35 | 7.93 | 0      | 135.3  | 51.3  | 1.02  | 51.2 | 20.33 | 120  | 40       | 4.86   | 37.24  | 6.18  | NA   | 0    |      |
| 24    | Bada Nawad a(New) | Sarath         | Deoghar  | 462                            | 300.3  | 8.26 | 0      | 239.85 | 6.95  | 1.17  | 1.04 | 23.5  | 170  | 32       | 21.87  | 15.01  | 8.96  | NA   | 0    |      |
| 25    | Baghm ara         | Baghmara       | Dhanbad  | 1121                           | 728.65 | 7.73 | 0      | 369    | 110   | 0.74  | 8.72 | 88.16 | 435  | 72       | 61.965 | 72.08  | 5.35  | NA   | 0    |      |
| 26    | Basude opur       | Dhanbad        | Dhanbad  | 1160                           | 754    | 7.91 | 0      | 399.75 | 69.9  | 0.731 | 15.2 | 97.97 | 375  | 96       | 32.71  | 62.36  | 100   | NA   | 0    |      |
| 27    | Dhaiya lsm        | Dhanbad        | Dhanbad  | 532                            | 345.8  | 8.05 | 0      | 147.6  | 44.4  | 0.828 | 8.29 | 75.35 | 180  | 44       | 17.01  | 31.09  | 30.63 | NA   | 0    |      |
| 28    | Dhanba d(New)     | Dhanbad        | Dhanbad  | 714                            | 464.1  | 8.11 | 0      | 190.65 | 105   | 0.539 | 8.08 | 39.65 | 305  | 46       | 46.17  | 35.88  | 4.63  | NA   | 0    |      |
| 29    | Dhansa            | Jharia         | Dhanbad  | 654                            | 425.1  | 7.9  | 27     | 104.55 | 67    | 0.394 | 121  | 71.62 | 245  | 78       | 12.15  | 46.24  | 4.75  | NA   | 0    |      |



| Sl.No | Location            | Block           | District | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-  | F-    | N03- | SO42 - | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |       |
|-------|---------------------|-----------------|----------|--------------------------------|--------|------|--------|--------|------|-------|------|--------|----------|------|--------|--------|-------|------|------|-------|
|       |                     |                 |          |                                |        |      |        |        |      |       |      |        | as CaCO3 |      |        |        |       |      |      |       |
|       |                     |                 |          |                                | mg/l   | mg/l | mg /l  | mg/l   | mg/l | mg/l  | mg/l | mg/l   | mg /l    | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg /l |
|       | r MRS               |                 |          |                                |        |      |        |        |      |       |      |        |          |      |        |        |       |      |      |       |
| 30    | Godhar Basti        | Dhanbad         | Dhanbad  | 589                            | 382.85 | 8.02 | 0      | 270.6  | 7.9  | 1.67  | 54.5 | 49.8   | 185      | 32   | 25.515 | 62     | 5.57  | NA   | 0    |       |
| 31    | Gobind pur          | Govindpur       | Dhanbad  | 720                            | 468    | 8.09 | 0      | 270.6  | 58.3 | 1.83  | 56.4 | 50     | 215      | 24   | 37.665 | 81.84  | 5.57  | NA   | 0    |       |
| 32    | Jharia              | Jharia          | Dhanbad  | 678                            | 440.7  | 8.06 | 0      | 270.6  | 47.3 | 0.928 | 10.3 | 71.82  | 200      | 48   | 19.44  | 42.37  | 32.37 | NA   | 0    |       |
| 33    | Kandra Mandal Basti | Jharia          | Dhanbad  | 1079                           | 701.35 | 8.05 | 0      | 375.15 | 85   | 0.578 | 37.1 | 96.25  | 255      | 40   | 37.66  | 147.27 | 9.99  | NA   | 0    |       |
| 34    | Mahuda              | BAGHMARA        | Dhanbad  | 1966                           | 1277.9 | 8    | 24     | 282.9  | 177  | 0.495 | 353  | 91.4   | 600      | 100  | 85.05  | 206.96 | 6.91  | NA   | 0    |       |
| 35    | Matkuri             | DHANBAD         | Dhanbad  | 662                            | 430.3  | 8.27 | 0      | 295.2  | 30.8 | 0.777 | 4.06 | 40.42  | 235      | 22   | 43.74  | 51.3   | 6.72  | NA   | 0    |       |
| 36    | Nirsa               | NIRSA           | Dhanbad  | 270                            | 175.5  | 8.25 | 0      | 147.6  | 5.85 | 1.86  | 1.17 | 10.91  | 110      | 22   | 13.365 | 5.14   | 5.48  | NA   | 0    |       |
| 37    | Pkroy College       | DHANBAD         | Dhanbad  | 1968                           | 1279.2 | 8.1  | 0      | 295.2  | 186  | 0.566 | 365  | 92.34  | 565      | 106  | 72.9   | 238.76 | 6.99  | NA   | 0    |       |
| 38    | Purandih Jorapokhar | DHANBAD         | Dhanbad  | 1733                           | 1126.5 | 8.1  | 0      | 319.8  | 169  | 0.544 | 262  | 94.1   | 390      | 54   | 61.96  | 255.52 | 8.43  | NA   | 0    |       |
| 39    | Rajganj             | RAJGANJ         | Dhanbad  | 1153                           | 749.45 | 8.03 | 0      | 270.6  | 169  | 0.44  | 75.3 | 75.82  | 326      | 56   | 45.198 | 91.28  | 5.44  | NA   | 0    |       |
| 40    | Sindri Gosala More  | JHARIA          | Dhanbad  | 734                            | 477.1  | 8.02 | 0      | 190.65 | 80.6 | 0.755 | 5.79 | 62.72  | 300      | 70   | 30.375 | 44.33  | 7.28  | NA   | 0    |       |
| 41    | Topchanchi          | TOPCHANCHI      | Dhanbad  | 1685                           | 1095.3 | 8.14 | 0      | 442.5  | 198  | 0.51  | 39.4 | 96.05  | 459      | 84   | 60.57  | 202.14 | 6.95  | NA   | 0    |       |
| 42    | Tundi               | TUNDI           | Dhanbad  | 765                            | 497.25 | 8.25 | 0      | 196.8  | 104  | 0.388 | 20.7 | 68.99  | 295      | 86   | 19.44  | 45.55  | 5.69  | NA   | 0    |       |
| 43    | Bagodar             | BAGODAR         | Giridih  | 737                            | 479.05 | 8.31 | 6      | 221.4  | 92   | 0.831 | 87.3 | 65.96  | 300      | 56   | 38.86  | 46.04  | 6.08  | NA   | 0    |       |
| 44    | Bandhanr            | GIRIDIH         | Giridih  | 906                            | 588.9  | 8.28 | 0      | 172.2  | 156  | 0.351 | 0.82 | 51.74  | 255      | 68   | 20.655 | 99.29  | 5.44  | NA   | 0    |       |
| 45    | Bengabad            | BENGABAD        | Giridih  | 324                            | 210.6  | 8.5  | 12     | 104.55 | 33.6 | 0.306 | 4.73 | 24.19  | 100      | 16   | 14.58  | 27.1   | 6.7   | NA   | 0    |       |
| 46    | Birini              | BIRNI           | Giridih  | 725                            | 471.25 | 8.18 | 0      | 196.8  | 104  | 0.601 | 76.6 | 62.01  | 285      | 52   | 37.665 | 44.35  | 5.02  | NA   | 0    |       |
| 47    | Dewri               | DEWRI           | Giridih  | 486                            | 315.9  | 8.44 | 12     | 264.45 | 1.6  | 1.04  | 0.81 | 24.87  | 190      | 30   | 27.945 | 13.09  | 9     | NA   | 0    |       |
| 48    | Dhanayadh           | GIRIDIH         | Giridih  | 556                            | 361.4  | 8.18 | 21     | 116.85 | 90.7 | 0.74  | 63.3 | 42.95  | 160      | 46   | 10.935 | 58.36  | 7.23  | NA   | 0    |       |
| 49    | Dumri               | DUMRI           | Giridih  | 1142                           | 742.3  | 8.47 | 15     | 338.25 | 110  | 0.544 | 108  | 74.27  | 430      | 84   | 53.46  | 43.22  | 6.1   | NA   | 0    |       |
| 50    | Gandey              | GANDEY          | Giridih  | 305                            | 198.25 | 8.6  | 18     | 129.15 | 15.7 | 0.708 | 9.08 | 6.17   | 135      | 46   | 4.86   | 9.05   | 4.37  | NA   | 0    |       |
| 51    | Giridih             | GIRIDIH         | Giridih  | 918                            | 596.7  | 8.12 | 0      | 153.75 | 149  | 0.211 | 72.4 | 77.79  | 310      | 28   | 58.32  | 80.81  | 7.08  | NA   | 0    |       |
| 52    | Jamua               | JAMUA           | Giridih  | 429                            | 278.85 | 8.36 | 12     | 166.05 | 34   | 1.12  | 24.2 | 23.61  | 135      | 44   | 6.05   | 42.65  | 4.89  | NA   | 0    |       |
| 53    | Khijri              | JAMUA           | Giridih  | 1620                           | 1053   | 8.03 | 0      | 319.8  | 271  | 1.56  | 58   | 82.7   | 305      | 70   | 31.59  | 265.1  | 14.44 | NA   | 0    |       |
| 54    | Maheshmunda         | GANDEY          | Giridih  | 222                            | 144.3  | 8.27 | 0      | 141.45 | 1.39 | 0.988 | 1.17 | 4.79   | 75       | 18   | 7.29   | 16.32  | 4.18  | NA   | 0    |       |
| 55    | Pandri              | GANDEY          | Giridih  | 477                            | 310.05 | 8.1  | 0      | 104.55 | 40.7 | 0.575 | 91.1 | 30.33  | 205      | 64   | 10.935 | 23.51  | 4.42  | NA   | 0    |       |
| 56    | Saraiya             | SARIYA          | Giridih  | 594                            | 386.1  | 8.19 | 0      | 215.25 | 91.8 | 0.542 | 10.1 | 34.57  | 215      | 58   | 17.01  | 35.6   | 4.62  | NA   | 0    |       |
| 57    | Tisri               | TISRI           | Giridih  | 477                            | 310.05 | 8.29 | 0      | 227.55 | 35.1 | 2.66  | 0.84 | 21.58  | 140      | 40   | 9.72   | 39.2   | 4.92  | NA   | 0    |       |
| 58    | Dhanawar            | Dhawar          | Giridih  | 512                            | 332.8  | 8.2  | 0      | 202.95 | 41.1 | 0.392 | 1    | 56.64  | 130      | 38   | 8.505  | 61.92  | 5.71  | NA   | 0    |       |
| 59    | Chirki(Pirtand)     | Chirki(Pirtand) | Giridih  | 1202                           | 781.3  | 7.95 | 0      | 215.25 | 206  | 0.699 | 161  | 85.94  | 420      | 96   | 43.74  | 100.41 | 5.96  | NA   | 0    |       |

| Sl.No | Location   | Block     | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-  | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na    | K     | SiO2 | P04  |      |
|-------|------------|-----------|-----------|--------------------------------|--------|------|--------|--------|------|-------|------|-------|----------|------|--------|-------|-------|------|------|------|
|       |            |           |           |                                |        |      |        |        |      |       |      |       | as CaCO3 |      |        |       |       |      |      |      |
|       |            |           |           |                                | mg/l   | mg/l | mg/l   | mg/l   | mg/l | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l  | mg/l  | mg/l | mg/l | mg/l |
| 60    | dorma      | Torpa     | Khunti    | 258                            | 167.7  | 7.8  | 0      | 104.55 | 13.9 | 0.47  | 3.55 | 17.27 | 65       | 24   | 1.215  | 29.1  | 2.22  | NA   | 0    |      |
| 61    | Kakariya   | Lapung    | Khunti    | 488                            | 317.2  | 7.9  | 0      | 178.35 | 37.7 | 0.167 | 39.3 | 27.52 | 190      | 36   | 24.3   | 31.87 | 7.29  | NA   | 0.35 |      |
| 62    | Kalamati   | Khunti    | Khunti    | 145.7                          | 94.705 | 7.48 | 0      | 55.35  | 10.4 | 0.185 | 5.38 | 11.39 | 50       | 10   | 6.075  | 10.93 | 2.52  | NA   | 0    |      |
| 63    | Nawatoli   | Karra     | Khunti    | 241                            | 156.65 | 7.6  | 0      | 92.25  | 29.3 | 0.337 | 6.85 | 4.53  | 80       | 14   | 10.935 | 23.62 | 1.19  | NA   | 0    |      |
| 64    | Pokta      | Karra     | Khunti    | 204.6                          | 132.99 | 7.77 | 0      | 110.7  | 5.36 | 0.396 | 3.4  | 9.93  | 75       | 10   | 12.15  | 14.78 | 0.61  | NA   | 0    |      |
| 65    | Barwadag   | Karra     | Khunti    | 420                            | 273    | 7.87 | 0      | 98.4   | 50.9 | 0.203 | 49.4 | 15    | 160      | 24   | 24.3   | 21.03 | 3.68  | NA   | 0    |      |
| 66    | Govindpur  | Karra     | Khunti    | 302                            | 196.3  | 8.27 | 0      | 166.05 | 10   | 0.782 | 1.02 | 12.37 | 110      | 16   | 17.01  | 22.8  | 2.04  | NA   | 0    |      |
| 67    | Jariya     | Karra     | Khunti    | 129                            | 83.85  | 7.71 | 0      | 61.5   | 3.52 | 0.257 | 4.57 | 7.18  | 50       | 6    | 8.505  | 8.92  | 1.46  | NA   | 0    |      |
| 68    | Raloguta   | Karra     | Khunti    | 142.4                          | 92.56  | 7.77 | 0      | 67.65  | 7.36 | 0.334 | 6.32 | 4.82  | 45       | 6    | 7.29   | 13.18 | 1.19  | NA   | 0    |      |
| 69    | Malgo      | Karra     | Khunti    | 139                            | 90.35  | 7.14 | 0      | 67.65  | 1.9  | 0.107 | 12.3 | 6.97  | 50       | 8    | 7.29   | 7.14  | 2.78  | NA   | 0.3  |      |
| 70    | Masamano   | Karra     | Khunti    | 400                            | 260    | 7.43 | 0      | 129.19 | 68.5 | 0.118 | 9.28 | 4.16  | 120      | 20   | 17.01  | 38.49 | 3.87  | NA   | 0    |      |
| 71    | Kasir      | Karra     | Khunti    | 325                            | 211.25 | 7.68 | 0      | 86.1   | 38.9 | 0.128 | 26   | 20.17 | 95       | 16   | 13.365 | 32.96 | 2.13  | NA   | 0    |      |
| 72    | Jobra      | Karra     | Khunti    | 475                            | 308.75 | 7.77 | 0      | 166.05 | 50.3 | 0.55  | 20   | 26.8  | 190      | 28   | 29.16  | 22    | 2.07  | NA   | 0    |      |
| 73    | satiya     | Karra     | Khunti    | 186                            | 120.9  | 7.81 | 0      | 92.25  | 5.75 | 0.347 | 9.33 | 8.02  | 70       | 8    | 12.15  | 12.3  | 1.09  | NA   | 0    |      |
| 74    | Bala       | Torpa     | Khunti    | 251                            | 163.15 | 7.67 | 0      | 135.3  | 11.8 | 0.694 | 6.41 | 4.24  | 100      | 12   | 17.01  | 9.36  | 12.11 | NA   | 0    |      |
| 75    | Kudri      | Karra     | Khunti    | 84.2                           | 54.73  | 7.52 | 0      | 24.6   | 1.95 | 0     | 12.3 | 8.89  | 40       | 4    | 7.29   | 0.88  | 2.83  | NA   | 0    |      |
| 76    | Jumu       | Torpa     | Khunti    | 576                            | 374.4  | 7.63 | 0      | 196.8  | 70.9 | 0.301 | 19.4 | 37.68 | 240      | 38   | 35.235 | 21.48 | 2.06  | NA   | 0    |      |
| 77    | Lodhma     | Karra     | Khunti    | 276                            | 179.4  | 7.92 | 0      | 129.15 | 12.6 | 0.305 | 12.9 | 11.2  | 110      | 20   | 14.58  | 12.25 | 3.02  | NA   | 0    |      |
| 78    | Sirka      | Karra     | Khunti    | 232                            | 150.8  | 7.8  | 0      | 86.1   | 23.9 | 0.654 | 9.01 | 7.6   | 85       | 12   | 13.365 | 15.14 | 2.21  | NA   | 0    |      |
| 79    | Bingau     | Karra     | Khunti    | 189.3                          | 123.05 | 7.86 | 0      | 79.95  | 16.6 | 0.245 | 5.76 | 9.51  | 85       | 16   | 10.94  | 5.084 | 4.42  | NA   | 0    |      |
| 80    | Ghunsuli   | Karra     | Khunti    | 881                            | 572.65 | 8.21 | 0      | 209.1  | 148  | 0.172 | 53.6 | 47.98 | 255      | 34   | 41.31  | 41.28 | 75.39 | NA   | 0    |      |
| 81    | Guitjora   | Khunti    | Khunti    | 1033                           | 671.45 | 7.74 | 0      | 362.85 | 19.7 | 0.194 | 90.5 | 72.29 | 260      | 56   | 29.16  | 61.45 | 85.36 | NA   | 0    |      |
| 82    | Jaltaande  | Khunti    | Khunti    | 169.7                          | 110.31 | 8.07 | 0      | 49.2   | 24.2 | 0     | 8.91 | 4.75  | 65       | 8    | 10.94  | 11.21 | 1.91  | NA   | 0    |      |
| 83    | dumardaga  | Khunti    | Khunti    | 131.5                          | 85.475 | 7.69 | 0      | 36.9   | 3.4  | 0.138 | 27.2 | 7.26  | 20       | 6    | 1.215  | 17.41 | 3.73  | NA   | 0    |      |
| 84    | Rewa       | Khunti    | Khunti    | 118                            | 76.7   | 7.38 | 0      | 36.9   | 6.99 | 0.294 | 19.8 | 3.92  | 49       | 16   | 2.3    | 0.59  | 3.65  | NA   | 0    |      |
| 85    | Amjora     | Khunti    | Khunti    | 213.9                          | 139.04 | 7.6  | 0      | 92.25  | 12.4 | 0.532 | 7.2  | 12.46 | 85       | 8    | 15.795 | 8.58  | 2.7   | NA   | 0    |      |
| 86    | Jara Toli  | Karra     | Khunti    | 116.1                          | 75.465 | 7.84 | 0      | 49.2   | 5.45 | 0.172 | 7.87 | 3.45  | 35       | 6    | 4.86   | 12.29 | 0.71  | NA   | 0    |      |
| 87    | Kunjala    | Khunti    | Khunti    | 280                            | 182    | 7.47 | 0      | 61.5   | 53.2 | 0.186 | 12.1 | 14.66 | 95       | 16   | 13.365 | 19.5  | 3.8   | NA   | 0    |      |
| 88    | Pelaul     | Khunti    | Khunti    | 322                            | 209.3  | 7.61 | 0      | 67.65  | 75.3 | 0.18  | 10.6 | 4.37  | 130      | 38   | 8.505  | 12.28 | 2.5   | NA   | 0    |      |
| 89    | Serenghatu | Arki      | Khunti    | 353                            | 229.45 | 7.83 | 0      | 172.2  | 15.3 | 0.362 | 4.53 | 21.35 | 130      | 22   | 18.225 | 18.02 | 1.9   | NA   | 0    |      |
| 90    | Kurapurti  | Murhu     | Khunti    | 1209                           | 785.85 | 7.9  | 0      | 418.2  | 147  | 0.225 | 75.4 | 22.75 | 500      | 70   | 78.975 | 32.62 | 3.43  | NA   | 0    |      |
| 91    | Khunti     | Khunti    | Khunti    | 1489                           | 967.85 | 8    | 0      | 381.3  | 289  | 0.825 | 37.6 | 69.67 | 505      | 82   | 72.9   | 110.4 | 3.61  | NA   | 0    |      |
| 92    | Murhu      | Murhu     | Khunti    | 458                            | 297.7  | 8    | 0      | 147.6  | 50.3 | 0.544 | 23.5 | 37.85 | 130      | 38   | 8.505  | 35.12 | 17.5  | NA   | 0    |      |
| 93    | Barwatoli  | Lohardaga | Lohardaga | 488                            | 317.2  | 8.18 | 0      | 166.05 | 53.2 | 0.703 | 20.4 | 36.08 | 180      | 34   | 23.085 | 26.67 | 3.9   | NA   | 0    |      |

| Sl.No | Location           | Block      | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na    | K     | SiO2 | P04  |      |
|-------|--------------------|------------|-----------|--------------------------------|--------|------|-------|--------|-------|-------|------|-------|----------|------|--------|-------|-------|------|------|------|
|       |                    |            |           |                                |        |      |       |        |       |       |      |       | as CaCO3 |      |        |       |       |      |      |      |
|       |                    |            |           |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l  | mg/l  | mg/l | mg/l | mg/l |
|       | Chowk              |            |           |                                |        |      |       |        |       |       |      |       |          |      |        |       |       |      |      |      |
| 94    | Bhandra            | Bhandra    | Lohardaga | 270                            | 175.5  | 7.62 | 0     | 49.2   | 61.9  | 0.227 | 18.8 | 5.6   | 90       | 16   | 12.15  | 21.5  | 1.63  | NA   | 0    |      |
| 95    | Hesal              | Lohardaga  | Lohardaga | 369                            | 239.85 | 7.91 | 0     | 116.85 | 51.1  | 0.307 | 19.3 | 13.64 | 135      | 32   | 13.365 | 20.16 | 1.89  | NA   | 0    |      |
| 96    | Hinjila            | Kuru       | Lohardaga | 178.5                          | 116.03 | 6.2  | 0     | 49.2   | 14    | 0.171 | 31.6 | 9.15  | 65       | 10   | 9.72   | 10.06 | 2.88  | NA   | 0    |      |
| 97    | Irgaon             | Lohardaga  | Lohardaga | 221                            | 143.65 | 7.5  | 0     | 79.95  | 16.2  | 0.103 | 15.9 | 14.43 | 70       | 12   | 9.72   | 18.12 | 1.21  | NA   | 0    |      |
| 98    | Kisko 1            | Kisko      | Lohardaga | 260                            | 169    | 7.4  | 0     | 61.5   | 51.9  | 0.14  | 18   | 2.85  | 85       | 14   | 12.15  | 16.52 | 2.64  | NA   | 0    |      |
| 99    | Kuru 1             | Kuru       | Lohardaga | 524                            | 340.6  | 7.5  | 0     | 135.3  | 96.2  | 0.195 | 34.9 | 12.69 | 205      | 38   | 26.73  | 17.94 | 2.48  | NA   | 0    |      |
| 100   | Patra Toli         | Lohardaga  | Lohardaga | 590                            | 383.5  | 7.7  | 0     | 116.85 | 105   | 0.23  | 52.7 | 26.58 | 200      | 32   | 29.16  | 40.09 | 2.44  | NA   | 0    |      |
| 101   | Lohardaga (pwd ib) | Lohardaga  | Lohardaga | 220                            | 143    | 7.73 | 0     | 116.85 | 4.8   | 0.445 | 6.37 | 9.39  | 80       | 10   | 13.365 | 13.32 | 0.27  | NA   | 0    |      |
| 102   | Rudh 1             | Kuru       | Lohardaga | 272                            | 176.8  | 7.31 | 0     | 36.9   | 37    | 0.174 | 75.1 | 3.54  | 80       | 16   | 9.72   | 21.45 | 5.47  | NA   | 0    |      |
| 103   | Senha              | Senha      | Lohardaga | 559                            | 363.35 | 7.61 | 0     | 135.3  | 85.9  | 0.145 | 54.4 | 22.5  | 180      | 38   | 20.655 | 38.83 | 1.43  | NA   | 0    |      |
| 104   | Adar               | Ghaghara   | Gulma     | 485                            | 315.25 | 7.83 | 0     | 196.8  | 43.6  | 0.569 | 20   | 26.69 | 190      | 32   | 26.73  | 25.59 | 1.86  | NA   | 0    |      |
| 105   | Anjan Gram         | Gumla      | Gulma     | 192                            | 124.8  | 7.7  | 0     | 92.25  | 13.3  | 0.536 | 2.9  | 5.3   | 65       | 16   | 6.075  | 14.54 | 1.41  | NA   | 0    |      |
| 106   | Bagham             | Palkot     | Gulma     | 887                            | 576.55 | 8.01 | 0     | 172.2  | 144   | 0.32  | 98   | 39.06 | 305      | 60   | 37.665 | 58.46 | 2.45  | NA   | 0    |      |
| 107   | Basia              | Basia      | Gulma     | 1086                           | 705.9  | 8.05 | 0     | 387.45 | 107   | 0.327 | 67.3 | 49.51 | 285      | 70   | 26.73  | 76.5  | 88.33 | NA   | 0    |      |
| 108   | Bano               | Bano       | Simdega   | 229                            | 148.85 | 7.75 | 0     | 98.4   | 16.3  | 0.171 | 11.3 | 10.63 | 80       | 20   | 7.29   | 15.82 | 0.81  | NA   | 0    |      |
| 109   | Bharno bdo         | Bharno bdo | Gulma     | 101                            | 65.65  | 7.57 | 0     | 55.35  | 2.11  | 0.177 | 2.92 | 3.92  | 35       | 8    | 3.645  | 7.85  | 0.74  | NA   | 0    |      |
| 110   | Biru               | Simdega    | Simdega   | 415                            | 269.75 | 8.14 | 0     | 209.1  | 20.3  | 0.237 | 2.82 | 16.71 | 85       | 24   | 6.075  | 11.89 | 91.49 | NA   | 0    |      |
| 111   | Bishunpur          | Bishunpur  | Gulma     | 797                            | 518.05 | 8.18 | 0     | 202.95 | 109   | 0.219 | 9.8  | 44.9  | 272      | 92   | 10.225 | 42.65 | 1.95  | NA   | 0    |      |
| 112   | Chainpur 1         | Chainpur 1 | Gulma     | 269                            | 174.85 | 7.9  | 0     | 67.65  | 33.9  | 0.435 | 23.4 | 16.49 | 85       | 24   | 6.075  | 19.64 | 1.64  | NA   | 0    |      |
| 113   | Ghaghra            | Ghaghra    | Gulma     | 214.3                          | 139.3  | 7.66 | 0     | 79.95  | 14.7  | 0.249 | 19.1 | 9.84  | 80       | 20   | 7.29   | 11.39 | 1.37  | NA   | 0    |      |
| 114   | gumla              | gumla      | Gulma     | 1218                           | 791.7  | 7.98 | 0     | 362.85 | 179   | 0.223 | 66.7 | 62.61 | 364      | 110  | 21.87  | 110.8 | 4.9   | NA   | 0    |      |
| 115   | Jaldega            | Jaldega    | Simdega   | 459                            | 298.35 | 7.93 | 0     | 153.75 | 47.2  | 0.359 | 46.3 | 17.26 | 175      | 42   | 17.01  | 21.54 | 2.72  | NA   | 0.14 |      |
| 116   | Kasir              | Raidih     | Gulma     | 568                            | 369.2  | 7.92 | 0     | 178.35 | 77.3  | 0.306 | 35.4 | 25.46 | 220      | 56   | 19.44  | 27.56 | 3.01  | NA   | 0    |      |
| 117   | Kharke             | Gumla      | Gulma     | 142                            | 92.3   | 7.58 | 0     | 43.05  | 11.9  | 0.113 | 19.5 | 8.4   | 40       | 10   | 3.645  | 12.55 | 1.98  | NA   | 0    |      |
| 118   | Kolebira           | Kolebira   | Simdega   | 321                            | 208.65 | 7.92 | 0     | 153.75 | 21.3  | 3.12  | 11.1 | 3.46  | 80       | 24   | 4.86   | 38.25 | 0.75  | NA   | 0    |      |
| 119   | Lachragarh         | Lachragarh | Simdega   | 847                            | 550.55 | 7.96 | 0     | 215.25 | 149   | 0.265 | 43.2 | 43.23 | 285      | 72   | 25.515 | 55.04 | 2.36  | NA   | 0    |      |
| 120   | Nagfeni            | Bharno     | Gulma     | 481                            | 312.65 | 7.82 | 0     | 135.3  | 71.9  | 0.339 | 37.8 | 18.53 | 150      | 52   | 4.86   | 40.29 | 2.83  | NA   | 0    |      |
| 121   | Palkot             | Palkot     | Gulma     | 1282                           | 833.3  | 7.25 | 0     | 246    | 230.4 | 0.817 | 55   | 55.48 | 494      | 144  | 32.805 | 48.01 | 3.8   | NA   | 0    |      |
| 122   | Puthri Toli        | Kolebira   | Simdega   | 203                            | 131.95 | 7.58 | 0     | 55.35  | 23.7  | 0.31  | 28.7 | 5.21  | 60       | 16   | 4.86   | 19    | 0.76  | NA   | 0    |      |
| 123   | Raidih             | Raidih     | Gulma     | 526                            | 341.9  | 7.79 | 0     | 209.1  | 46.9  | 0.142 | 4.37 | 17.43 | 200      | 46   | 20.655 | 28.03 | 9.68  | NA   | 0    |      |
| 124   | Simdega            | Simdega    | Simdega   | 196.1                          | 127.47 | 7.65 | 0     | 55.03  | 30.9  | 0.135 | 11.8 | 5.84  | 55       | 16   | 3.645  | 21.01 | 2.67  | NA   | 0    |      |
| 125   | Sisai              | Sisai      | Gulma     | 303                            | 196.95 | 7.37 | 0     | 55.35  | 38.4  | 0.174 | 36.3 | 21.32 | 70       | 18   | 6.075  | 37.08 | 0.77  | NA   | 0    |      |

| Sl.No | Location              | Block          | District     | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|-----------------------|----------------|--------------|--------------------------------|--------|------|--------|--------|-------|-------|------|-------|----------|------|--------|--------|-------|------|------|------|
|       |                       |                |              |                                |        |      |        |        |       |       |      |       | as CaCO3 |      |        |        |       |      |      |      |
|       |                       |                |              |                                | mg/l   | mg/l | mg/l   | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 126   | Tengara Tuku          | Jaldega        | Simdega      | 378                            | 245.7  | 7.7  | 0      | 141.45 | 47.2  | 0.264 | 5.11 | 19.37 | 120      | 32   | 9.72   | 31.34  | 2.72  | NA   | 0    |      |
| 127   | Thethai Tangar        | Thethai Tangar | Simdega      | 401                            | 260.65 | 7.77 | 0      | 116.85 | 35.45 | 1.81  | 3.08 | 66.05 | 115      | 34   | 7.29   | 36.09  | 2.05  | NA   | 0    |      |
| 128   | Bari Biringa          | Jaldega        | Simdega      | 293                            | 190.45 | 7.57 | 0      | 86.1   | 38.8  | 0.203 | 20.6 | 22.65 | 95       | 28   | 6.075  | 19.35  | 3.6   | NA   | 0    |      |
| 129   | Lomboi                | Jaldega        | Simdega      | 240                            | 156    | 7.68 | 0      | 110.7  | 22    | 0.211 | 4.17 | 5.82  | 70       | 22   | 3.645  | 24.11  | 1.24  | NA   | 0    |      |
| 130   | Bolba                 | <b>Bolba</b>   | Simdega      | 448                            | 291.2  | 7.71 | 0      | 172.2  | 47.3  | 0.703 | 6.79 | 31.09 | 145      | 44   | 8.505  | 35.53  | 1.54  | NA   | 0    |      |
| 131   | Kerio                 | Kerio          | Simdega      | 280                            | 182    | 7.72 | 0      | 116.85 | 23.7  | 0.577 | 11   | 10.92 | 70       | 20   | 4.86   | 34.03  | 3.36  | NA   | 0    |      |
| 132   | Pardhi                | Jugsalai       | E. Singhbhum | 748                            | 486.2  | 7.71 | 0      | 289.05 | 41.7  | 0.198 | 5.45 | 41.69 | 305      | 90   | 19.44  | 28.09  | 0.46  | NA   | 0    |      |
| 133   | Bagnu nagar           | Jugsalai       | E. Singhbhum | 868                            | 564.2  | 7.44 | 0      | 209.1  | 57.2  | 0.324 | 84.4 | 79.43 | 275      | 88   | 13.365 | 75.31  | 2.25  | NA   | 0    |      |
| 134   | Bahara gora           | Jugsalai       | E. Singhbhum | 375                            | 243.75 | 7.58 | 0      | 215.25 | 1.22  | 0.361 | 3.66 | 3.87  | 160      | 46   | 10.935 | 17.66  | 1.91  | NA   | 0    |      |
| 135   | Baridih               | Jugsalai       | E. Singhbhum | 314                            | 204.1  | 7.68 | 0      | 141.45 | 14    | 0.167 | 13.5 | 9.05  | 145      | 36   | 13.365 | 9.79   | 1.66  | NA   | 0    |      |
| 136   | Barma mines Thana     | Jugsalai       | E. Singhbhum | 590                            | 383.5  | 7.65 | 0      | 196.8  | 21.2  | 0.31  | 53.6 | 44.63 | 220      | 62   | 15.795 | 35.65  | 8.72  | NA   | 0    |      |
| 137   | Chakulia              | Chakulia       | E. Singhbhum | 236                            | 153.4  | 6.31 | 0      | 24.6   | 26.7  | 0     | 56.8 | 5.51  | 60       | 12   | 7.29   | 25.3   | 3.54  | NA   | 0    |      |
| 138   | Telco                 | Jugsalai       | E. Singhbhum | 710                            | 461.5  | 7.61 | 0      | 350.55 | 10.4  | 0.903 | 17.8 | 7.67  | 265      | 66   | 24.3   | 41.15  | 1.59  | NA   | 0    |      |
| 139   | Dhalbh umgarh         | Dalbh umgarh   | E. Singhbhum | 355                            | 230.75 | 7.06 | 0      | 110.7  | 33.4  | 0     | 45.7 | 5.53  | 125      | 30   | 12.15  | 30.22  | 1.42  | NA   | 0    |      |
| 140   | Galudih               | Ghatsila       | E. Singhbhum | 412                            | 267.8  | 7.69 | 0      | 153.75 | 35.7  | 0     | 8.52 | 5.25  | 115      | 44   | 1.215  | 35.62  | 13.1  | NA   | 0    |      |
| 141   | Garhab asa            | Jugsalai       | E. Singhbhum | 865                            | 562.25 | 8.02 | 0      | 319.8  | 49.7  | 0.365 | 73.1 | 4.27  | 295      | 82   | 21.87  | 62.49  | 1.62  | NA   | 0    |      |
| 142   | Ghatsila              | Ghatsila       | E. Singhbhum | 812                            | 527.8  | 7.49 | 0      | 282.9  | 88.5  | 0.437 | 8.88 | 4.74  | 305      | 72   | 30.375 | 41.69  | 2     | NA   | 0    |      |
| 143   | golmuri               | Jugsalai       | E. Singhbhum | 767                            | 498.55 | 8.06 | 0      | 362.85 | 16    | 0.398 | 33.5 | 5.01  | 270      | 80   | 17.01  | 32.23  | 40.6  | NA   | 0    |      |
| 144   | Hata-tiring           | Potka          | E. Singhbhum | 1238                           | 804.7  | 7.5  | 0      | 399.75 | 136   | 0.501 | 61.9 | 5.44  | 389      | 126  | 18.225 | 78.73  | 4.47  | NA   | 0    |      |
| 145   | Jugsalai Thana        | Jugsalai       | E. Singhbhum | 894                            | 581.1  | 7.9  | 0      | 350.55 | 67.35 | 0.848 | 26   | 4.38  | 285      | 54   | 36.45  | 78.83  | 11.67 | NA   | 0    |      |
| 146   | Kala Pathar           | Chakulia       | E. Singhbhum | 490                            | 318.5  | 7.4  | 0      | 141.45 | 44.9  | 0.113 | 46.7 | 6.27  | 115      | 36   | 6.075  | 35.86  | 40.27 | NA   | 0    |      |
| 147   | Mosabani              | Mosabani       | E. Singhbhum | 580                            | 377    | 7.95 | 0      | 215.45 | 35.45 | 0.311 | 13.7 | 24.67 | 215      | 42   | 26.73  | 32.74  | 22.03 | NA   | 0    |      |
| 148   | Pithajudi             | Chakulia       | E. Singhbhum | 331                            | 215.15 | 7.8  | 0      | 129.15 | 14.2  | 0.213 | 52.2 | 4.69  | 100      | 32   | 4.86   | 22.84  | 2.3   | NA   | 0    |      |
| 149   | Potka                 | Potka          | E. Singhbhum | 828                            | 538.2  | 7.87 | 0      | 350.55 | 50.6  | 0.254 | 18   | 3.32  | 375      | 76   | 44.955 | 17.5   | 0.3   | NA   | 0    |      |
| 150   | Rankini Mandir Jadugo | Potka          | E. Singhbhum | 258                            | 167.7  | 7.91 | 0      | 123    | 17.72 | 0.352 | 6.2  | 3.77  | 100      | 24   | 9.72   | 16.75  | 2.72  | NA   | 0.13 |      |
| 151   | shitla Mandir Sakchi  | Jugsalai       | E. Singhbhum | 560                            | 364    | 7.72 | 0      | 221.4  | 48.3  | 0.287 | 5.82 | 3.67  | 190      | 42   | 20.655 | 29.69  | 2.14  | NA   | 0    |      |
| 152   | Barama mines          | Jugsalai       | E. Singhbhum | 1354                           | 880.1  | 7.67 | 0      | 448.95 | 145.3 | 0.539 | 49.8 | 4.54  | 305      | 80   | 25.51  | 163.05 | 3.09  | NA   | 0    |      |
| 153   | Sunda magari 1        | Jamshedpur     | E. Singhbhum | 1143                           | 742.95 | 7.97 | 0      | 356.7  | 134.7 | 0.598 | 43   | 3.44  | 369      | 122  | 12.15  | 80.3   | 24.1  | NA   | 0    |      |
| 154   | Piplia                | Jamshedpur     | E. Singhbhum | 1238                           | 804.7  | 7.98 | 0      | 553.5  | 64.8  | 2.21  | 24.7 | 3.06  | 180      | 42   | 18.225 | 204.65 | 1.24  | NA   | 0    |      |
| 155   | Andhari a             | Chakulia       | E. Singhbhum | 290                            | 188.5  | 7.87 | 0      | 104.55 | 12.6  | 0.165 | 30.3 | 5.73  | 110      | 22   | 13.365 | 13.54  | 4.78  | NA   | 0    |      |

| Sl.No | Location               | Block                 | District     | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|------------------------|-----------------------|--------------|--------------------------------|--------|------|-------|--------|-------|-------|------|-------|----------|------|--------|--------|-------|------|------|------|
|       |                        |                       |              |                                |        |      |       |        |       |       |      |       | as CaCO3 |      |        |        |       |      |      |      |
|       |                        |                       |              |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 156   | Jabirdiha              | Chakulia              | E. Singhbhum | 358                            | 232.7  | 7.65 | 0     | 153.75 | 37    | 0     | 16.7 | 4.61  | 95       | 30   | 4.86   | 40.56  | 1.97  | NA   | 0    |      |
| 157   | Kendadih               | Ghatsila              | E. Singhbhum | 198                            | 128.7  | 7.31 | 0     | 49.2   | 19.5  | 0     | 21.5 | 4.66  | 55       | 14   | 4.86   | 9.68   | 15.76 | NA   | 0    |      |
| 158   | Matigora               | Potka                 | E. Singhbhum | 788                            | 512.2  | 7.25 | 0     | 252.15 | 96.2  | 0.263 | 10.8 | 5.04  | 305      | 84   | 23.085 | 33.89  | 1.39  | NA   | 0    |      |
| 159   | Gitilata               | Hata                  | E. Singhbhum | 810                            | 526.5  | 8.01 | 0     | 264.45 | 98.8  | 0.353 | 32.8 | 4.26  | 320      | 78   | 30.375 | 42.15  | 1.9   | NA   | 0    |      |
| 160   | Birsa Nagar Zone 11    | Jamshedpur            | E. Singhbhum | 641                            | 416.65 | 7.94 | 0     | 307.5  | 21.2  | 0.739 | 8.17 | 4.78  | 227      | 49   | 25.51  | 32.09  | 0.62  | NA   | 0    |      |
| 161   | Mariyama temple Nildih | Jamshedpur            | E. Singhbhum | 788                            | 512.2  | 7.95 | 0     | 350.55 | 44.1  | 0.441 | 7.77 | 4.33  | 265      | 84   | 13.365 | 56.83  | 0.95  | NA   | 0    |      |
| 162   | Lodhliol               | Chakulia              | E. Singhbhum | 266                            | 172.9  | 6.57 | 0     | 18.45  | 34.1  | 0     | 74.7 | 2.06  | 90       | 28   | 4.86   | 10.23  | 8.16  | NA   | 0    |      |
| 163   | Bhandgaon              | Noamundi              | W. Singhbhum | 251                            | 163.15 | 7.55 | 0     | 86.1   | 8.77  | 0     | 48.6 | 3.39  | 115      | 28   | 10.935 | 9.84   | 1.9   | NA   | 0    |      |
| 164   | Bandgaon               | Bandgaon              | W. Singhbhum | 1001                           | 650.65 | 7.47 | 0     | 98.4   | 222   | 0     | 82   | 1.71  | 295      | 68   | 30.375 | 94.15  | 5.76  | NA   | 0    |      |
| 165   | Barajamda              | Noamundi              | W. Singhbhum | 445                            | 289.25 | 7.94 | 0     | 190.65 | 21.7  | 0.162 | 18.2 | 3.28  | 135      | 34   | 12.15  | 28.34  | 4.83  | NA   | 0    |      |
| 166   | Chaiyabasa             | Chaiyabasa            | W. Singhbhum | 1009                           | 655.85 | 7.35 | 0     | 202.95 | 120   | 0.382 | 128  | 1.18  | 325      | 86   | 26.73  | 79.76  | 0.29  | NA   | 0    |      |
| 167   | CKP (ulidih)           | Chakradharpur         | W. Singhbhum | 835                            | 542.75 | 7.87 | 0     | 381.3  | 38.4  | 0.409 | 6.64 | 7.8   | 230      | 68   | 14.58  | 83.06  | 1.44  | NA   | 0    |      |
| 168   | Hat Gamhariya          | Hatgamhariya          | W. Singhbhum | 850                            | 552.5  | 7.78 | 0     | 196.8  | 111   | 0.517 | 81.9 | 2.56  | 280      | 76   | 21.87  | 66.06  | 1.03  | NA   | 0    |      |
| 169   | Hesadih                | Bandgaon              | W. Singhbhum | 598                            | 388.7  | 7.61 | 0     | 178.35 | 77.8  | 0.402 | 15.8 | 2.55  | 195      | 58   | 12.15  | 56.37  | 1     | NA   | 0    |      |
| 170   | Jagannathpur           | Jagannathpur          | W. Singhbhum | 814                            | 529.1  | 7.89 | 0     | 227.55 | 89.9  | 0.408 | 70.2 | 1.41  | 330      | 60   | 43.74  | 35.33  | 0.59  | NA   | 0    |      |
| 171   | Jaitgarh               | Jagannathpur          | W. Singhbhum | 352                            | 228.8  | 8.26 | 0     | 172.2  | 17.2  | 0.205 | 6.07 | 1.92  | 115      | 32   | 8.505  | 21.82  | 1.14  | NA   | 0    |      |
| 172   | Jhinkpani              | Jhinkpani             | W. Singhbhum | 1910                           | 1241.5 | 8.08 | 0     | 448.95 | 283.6 | 0.256 | 98.4 | 25.51 | 394      | 96   | 37.665 | 206.65 | 25    | NA   | 0    |      |
| 173   | kereikela              | Kereikela             | W. Singhbhum | 944                            | 613.6  | 8.05 | 0     | 313.65 | 97.1  | 0.367 | 32.2 | 22.57 | 350      | 88   | 31.59  | 49.32  | 4.59  | NA   | 0    |      |
| 174   | Khunta pani            | Khuntpani             | W. Singhbhum | 934                            | 607.1  | 8.07 | 0     | 325.95 | 59.9  | 0.309 | 90   | 18.57 | 385      | 84   | 42.525 | 41.93  | 0.61  | NA   | 0    |      |
| 175   | Noamundi               | Noamundi              | W. Singhbhum | 811                            | 527.15 | 8.42 | 9     | 221.4  | 78.9  | 0.778 | 28.2 | 38.81 | 275      | 72   | 23.085 | 56.46  | 6.05  | NA   | 0    |      |
| 176   | Kokcho                 | Tantnagar             | W. Singhbhum | 521                            | 338.65 | 8.03 | 0     | 246    | 3.61  | 0.342 | 11.4 | 37.14 | 170      | 62   | 3.645  | 28.63  | 5.98  | NA   | 0    |      |
| 177   | Putida                 | Chaiyabasa            | W. Singhbhum | 115.1                          | 74.815 | 7.49 | 0     | 36.9   | 4.56  | 0.247 | 18.6 | 2.31  | 30       | 10   | 1.21   | 10.41  | 0.12  | NA   | 0    |      |
| 178   | Barananda              | Jagannathpur          | W. Singhbhum | 178                            | 115.7  | 7.7  | 0     | 43.05  | 19.7  | 0.14  | 21.4 | 3.09  | 72       | 12   | 10.206 | 7.99   | 0.89  | NA   | 0    |      |
| 179   | Toretopa               | Noamundi              | W. Singhbhum | 460                            | 299    | 7.95 | 0     | 215.25 | 19.26 | 0.12  | 5.76 | 1.9   | 180      | 32   | 24.3   | 21.72  | 2.47  | NA   | 1.24 |      |
| 180   | Talaburu               | Hatgamhariya          | W. Singhbhum | 309                            | 200.85 | 8.25 | 0     | 184.5  | 1.26  | 0.24  | 4.09 | 1.03  | 145      | 26   | 19.44  | 11.77  | 0.09  | NA   | 0    |      |
| 181   | Kandra                 | Gamhariya / adityapur | Saraikela    | 780                            | 507    | 7.84 | 0     | 221.4  | 56.6  | 0.372 | 113  | 1.81  | 310      | 82   | 25.51  | 35.67  | 1.34  | NA   | 0    |      |
| 182   | Kharsawan              | Kharsawan             | Saraikela    | 850                            | 552.5  | 8.22 | 0     | 344.4  | 64    | 0.393 | 15.3 | 1.65  | 210      | 54   | 18.225 | 69.82  | 38    | NA   | 0    |      |
| 183   | jamdih                 | Nimdih                | Saraikela    | 861                            | 559.65 | 8.04 | 0     | 301.35 | 92.4  | 0.374 | 14.2 | 3.18  | 275      | 66   | 26.73  | 78.37  | 1.69  | NA   | 0    |      |
| 184   | Saraikela              | Saraikela             | Saraikela    | 1770                           | 1150.5 | 7.66 | 0     | 405.9  | 310   | 0.394 | 14   | 22.98 | 450      | 68   | 68.04  | 161.9  | 13.19 | NA   | 0    |      |
| 185   | Lupungdih              | Nimdih                | Saraikela    | 524                            | 340.6  | 8.07 | 0     | 153.75 | 46.9  | 0.317 | 33.5 | 19.51 | 170      | 48   | 12.15  | 41.5   | 3.76  | NA   | 0    |      |

| Sl.No | Location                | Block           | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na    | K    | SiO2 | P04  |      |
|-------|-------------------------|-----------------|-----------|--------------------------------|--------|------|-------|--------|-------|-------|------|-------|----------|------|--------|-------|------|------|------|------|
|       |                         |                 |           |                                |        |      |       |        |       |       |      |       | as CaCO3 |      |        |       |      |      |      |      |
|       |                         |                 |           |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l  | mg/l | mg/l | mg/l | mg/l |
| 186   | bhaludih                | Chandil         | Saraikela | 983                            | 638.95 | 8.26 | 0     | 332.1  | 77.4  | 0.3   | 10.5 | 15.51 | 349      | 62   | 47.19  | 39.83 | 2.27 | NA   | 0    |      |
| 187   | Kesharagaria            | Rajnaragar      | Saraikela | 773                            | 502.45 | 8.28 | 0     | 276.75 | 55.5  | 0.271 | 52.1 | 6.37  | 295      | 60   | 35.235 | 51.25 | 4.3  | NA   | 0    |      |
| 188   | Bagra Sai               | Rajnaragar      | Saraikela | 377                            | 245.05 | 8.39 | 6     | 190.65 | 4.98  | 0.614 | 4.69 | 4.35  | 140      | 32   | 14.58  | 27.78 | 0.68 | NA   | 0    |      |
| 189   | Dugni                   | Saraikela       | Saraikela | 431                            | 280.15 | 8.14 | 0     | 178.35 | 30.6  | 0.312 | 6.99 | 2     | 160      | 44   | 12.15  | 21.6  | 1.86 | NA   | 0    |      |
| 190   | Nabibera                | Rajnaragar      | Saraikela | 654                            | 425.1  | 7.96 | 0     | 178.35 | 78.7  | 0.274 | 33.5 | 12.29 | 235      | 66   | 17.01  | 31.29 | 0.64 | NA   | 0    |      |
| 191   | Jonha                   | Angara          | Ranchi    | 258                            | 167.7  | 8.11 | 0     | 209.1  | 7.08  | 0.541 | 6.39 | 11.41 | 135      | 32   | 13.365 | 21    | 3.33 | 25   | 0    |      |
| 192   | Hinoo                   | Namkum          | Ranchi    | 338                            | 219.7  | 8.12 | 0     | 147.6  | 20.9  | 1.43  | 7.04 | 27.95 | 110      | 30   | 8.505  | 28.32 | 4.17 | 7    | 0    |      |
| 193   | Bajra                   | Ratu            | Ranchi    | 544                            | 353.6  | 7.84 | 0     | 98.4   | 68.4  | 0.327 | 58.6 | 45.23 | 195      | 46   | 19.44  | 36.1  | 1.19 | 15   | 0    |      |
| 194   | Bandhe                  | Nagri           | Ranchi    | 547                            | 355.55 | 7.97 | 0     | 196.8  | 41.9  | 0.505 | 4.14 | 35.56 | 220      | 44   | 26.73  | 38    | 0.3  | 6    | 0    |      |
| 195   | Barwadag                | Angara          | Ranchi    | 589                            | 382.85 | 8.19 | 0     | 172.2  | 37.7  | 0.903 | 26.3 | 61.24 | 250      | 40   | 36.45  | 24.39 | 1.82 | 23   | 0    |      |
| 196   | Berro                   | Berro           | Ranchi    | 284                            | 184.6  | 8.05 | 0     | 141.45 | 8.76  | 0.543 | 18   | 26.05 | 125      | 28   | 13.365 | 17    | 1.67 | 27   | 1.07 |      |
| 197   | Chanho                  | Bijupara Tangar | Ranchi    | 649                            | 421.85 | 7.9  | 0     | 147.6  | 77.6  | 0.535 | 46.8 | 32.27 | 165      | 40   | 15.795 | 59    | 2.65 | 22   | 0    |      |
| 198   | Bishakhatanga           | Mandar          | Ranchi    | 215                            | 139.75 | 7.83 | 0     | 104.55 | 7.05  | 0.454 | 33.8 | 9.92  | 120      | 18   | 18.225 | 12    | 1.7  | 17   | 0    |      |
| 199   | BIT more                | Kanke           | Ranchi    | 352                            | 228.8  | 7.77 | 0     | 98.4   | 53.17 | 0.245 | 15.2 | 22.07 | 90       | 20   | 9.72   | 44    | 0.8  | 15   | 0    |      |
| 200   | Boreya, phed            | Kanke           | Ranchi    | 344                            | 223.6  | 8.17 | 0     | 94.09  | 31.9  | 1.03  | 5.09 | 40.13 | 90       | 18   | 10.935 | 30    | 1.38 | 11   | 0    |      |
| 201   | Brambey                 | Ratu            | Ranchi    | 112.6                          | 73.19  | 7.84 | 0     | 55.35  | 3.1   | 0.516 | 6.77 | 9.25  | 55       | 8    | 8.505  | 6     | 0.7  | 10   | 0    |      |
| 202   | Bukru                   | Kanke           | Ranchi    | 373                            | 242.45 | 7.64 | 0     | 75.64  | 50.5  | 0.253 | 50.2 | 12.58 | 130      | 32   | 12.15  | 18    | 0.9  | 10.4 | 0    |      |
| 203   | Bundu                   | Bundu           | Ranchi    | 611                            | 397.15 | 7.97 | 0     | 166.05 | 45.6  | 0.497 | 17.7 | 75.6  | 240      | 46   | 30.375 | 35    | 0.81 | 22.9 | 0    |      |
| 204   | Buti                    | Kanke           | Ranchi    | 563                            | 365.95 | 8.05 | 0     | 129.15 | 75.5  | 0.343 | 22.5 | 57.84 | 195      | 36   | 25.515 | 41.4  | 1.12 | 25   | 0    |      |
| 205   | Burmo                   | Burmoo          | Ranchi    | 155.5                          | 101.08 | 7.9  | 0     | 67.65  | 0.592 | 0.375 | 21.1 | 8.85  | 55       | 14   | 4.86   | 9     | 1.3  | 13   | 0    |      |
| 206   | Itki                    | Chhahgura       | Ranchi    | 283                            | 183.95 | 7.16 | 0     | 55.35  | 49.63 | 0.32  | 31.5 | 10.37 | 90       | 18   | 10.935 | 27    | 0.46 | 29   | 0    |      |
| 207   | Chutupalu               | Ormanjhi        | Ranchi    | 924                            | 600.6  | 8.23 | 0     | 178.35 | 128   | 0.606 | 64   | 66.38 | 325      | 80   | 30.375 | 49    | 1.2  | 22   | 0    |      |
| 208   | Gondipokhar             | Angarha         | Ranchi    | 253                            | 164.45 | 7.9  | 0     | 73.8   | 32.9  | 0.724 | 12.5 | 11.42 | 90       | 24   | 7.29   | 17    | 2.24 | 18.1 | 0    |      |
| 209   | Itki                    | Itki            | Ranchi    | 136.4                          | 88.66  | 7.69 | 0     | 49.2   | 10.63 | 0.291 | 1.46 | 8.6   | 50       | 14   | 3.64   | 6     | 0.3  | 15.3 | 0    |      |
| 210   | Jonha                   | Angarha         | Ranchi    | 276                            | 179.4  | 8.1  | 0     | 135.3  | 8.49  | 0.597 | 15.2 | 10.36 | 80       | 22   | 6.07   | 24.2  | 1.8  | 21.4 | 0    |      |
| 211   | Kanka1                  | Kanka           | Ranchi    | 489                            | 317.85 | 8.1  | 0     | 98.4   | 75    | 0.392 | 12.2 | 41.97 | 170      | 40   | 17.01  | 33.45 | 1.36 | 27.3 | 0    |      |
| 212   | Khatitana               | Ratu            | Ranchi    | 457                            | 297.05 | 8.05 | 0     | 110.7  | 54    | 0.474 | 42.7 | 23.23 | 180      | 48   | 14.58  | 24.5  | 0.62 | 22.9 | 0    |      |
| 213   | Kharsidag               | Namkum          | Ranchi    | 201                            | 130.65 | 7.78 | 0     | 55.35  | 19.3  | 0.461 | 22.9 | 17    | 75       | 28   | 1.215  | 17.28 | 0.95 | 18.5 | 0    |      |
| 214   | Silli                   | Kita            | Ranchi    | 302                            | 196.3  | 8.04 | 0     | 129.15 | 23.6  | 0.621 | 4.76 | 25.02 | 130      | 28   | 14.58  | 12    | 3.8  | 22   | 0    |      |
| 215   | Kurgi                   | Itki            | Ranchi    | 265                            | 172.25 | 7.77 | 0     | 116.85 | 7.44  | 0.431 | 5.3  | 14.85 | 90       | 22   | 8.5    | 19.2  | 0.46 | 13.7 | 0    |      |
| 216   | Lowadih                 | Namkom          | Ranchi    | 1124                           | 730.6  | 7.84 | 0     | 258.3  | 156   | 0.329 | 68.2 | 71.69 | 285      | 68   | 27.945 | 116.6 | 8.82 | 34.2 | 0    |      |
| 217   | Mahilong Forest Nursery | Namkom          | Ranchi    | 294                            | 191.1  | 7.94 | 0     | 73.8   | 35.45 | 0.962 | 42.7 | 10.05 | 75       | 18   | 7.29   | 33.6  | 2.85 | 14.6 | 0    |      |

| Sl.No | Location             | Block      | District | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-   | F-    | NO3- | SO42 - | TH       | Ca2+ | Mg2+   | Na    | K     | SiO2 | P04  |       |
|-------|----------------------|------------|----------|--------------------------------|--------|------|--------|--------|-------|-------|------|--------|----------|------|--------|-------|-------|------|------|-------|
|       |                      |            |          |                                |        |      |        |        |       |       |      |        | as CaCO3 |      |        |       |       |      |      |       |
|       |                      |            |          |                                | mg/l   | mg/l | mg /l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l   | mg /l    | mg/l | mg/l   | mg/l  | mg/l  | mg/l | mg/l | mg /l |
| 218   | Mandar               | Mandar     | Ranchi   | 772                            | 501.8  | 7.84 | 0      | 184.5  | 107   | 0.469 | 51.1 | 54.92  | 210      | 28   | 34.02  | 72    | 2.89  | 7.15 | 0    |       |
| 219   | Military Farm Namkom | Namkom     | Ranchi   | 512                            | 332.8  | 7.15 | 0      | 135.3  | 49.63 | 2.35  | 1.34 | 57.25  | 185      | 42   | 19.44  | 31.8  | 3.84  | 17.3 | 0    |       |
| 220   | Namkom Bz Chowk      | Namkom     | Ranchi   | 918                            | 596.7  | 8.38 | 9      | 227.55 | 110   | 0.461 | 41.2 | 77.29  | 225      | 60   | 18.225 | 94.82 | 11.82 | 14.3 | 0    |       |
| 221   | Hatia                | Namkom     | Ranchi   | 344                            | 223.6  | 7.15 | 0      | 86.1   | 32.5  | 1.44  | 1.3  | 24.96  | 130      | 26   | 15.79  | 13    | 3.3   | 15.2 | 0    |       |
| 222   | Ormanjhi             | Ormanjhi   | Ranchi   | 454                            | 295.1  | 7.9  | 0      | 116.85 | 53    | 0.685 | 28.2 | 36.93  | 165      | 30   | 21.87  | 28.8  | 0.83  | 24.4 | 0    |       |
| 223   | Patarhatu            | Silli      | Ranchi   | 432                            | 280.8  | 8    | 0      | 115.05 | 56.8  | 0.419 | 14.5 | 27.54  | 175      | 38   | 19.44  | 21.6  | 0.65  | 21.8 | 0    |       |
| 224   | Pithauria            | Kanke      | Ranchi   | 951                            | 618.15 | 8.34 | 6      | 239.85 | 124   | 0.485 | 40.9 | 71.39  | 275      | 80   | 18.225 | 110.2 | 1.97  | 18.9 | 0    |       |
| 225   | Rampur               | Namkom     | Ranchi   | 1073                           | 697.45 | 7.78 | 0      | 393.6  | 81.53 | 0.34  | 20.8 | 30.86  | 295      | 84   | 20.655 | 103.2 | 3.28  | 21.5 | 0    |       |
| 226   | Ranchi college       | Ranchi     | Ranchi   | 488                            | 317.2  | 7.69 | 0      | 221.4  | 30.4  | 0.242 | 3.03 | 9.5    | 55       | 6    | 9.72   | 74.8  | 4.2   | 30   | 0    |       |
| 227   | Silli                | Silli      | Ranchi   | 492                            | 319.8  | 7.18 | 0      | 159.9  | 42.3  | 1.48  | 1.93 | 49.72  | 185      | 46   | 17.01  | 28.6  | 3.4   | 24.7 | 0    |       |
| 228   | Sithipokhratoli      | Silli      | Ranchi   | 264                            | 171.6  | 7.93 | 0      | 129.15 | 0.244 | 0.264 | 6.01 | 8.73   | 55       | 6    | 9.72   | 30.8  | 4.23  | 17   | 0    |       |
| 229   | Sonahatu             | Sonahatu   | Ranchi   | 356                            | 231.4  | 8.14 | 0      | 178.35 | 35.45 | 0.328 | 1.88 | 10.64  | 115      | 38   | 4.86   | 36    | 2.95  | 6    | 0    |       |
| 230   | Sons Bazar           | Sonahatu   | Ranchi   | 203                            | 131.95 | 7.09 | 0      | 166.05 | 19.8  | 0.352 | 15   | 8.9    | 75       | 18   | 7.29   | 45    | 2.97  | 10   | 0    |       |
| 231   | Taimara              | Sonahatu   | Ranchi   | 278                            | 180.7  | 7.12 | 0      | 178.35 | 19.8  | 0.438 | 6.15 | 21.27  | 120      | 34   | 8.505  | 29.78 | 0.5   | 14.3 | 0    |       |
| 232   | Ukrid                | Ormanjhi   | Ranchi   | 201                            | 130.65 | 7.28 | 0      | 92.25  | 3.8   | 0.639 | 2.56 | 14.61  | 80       | 26   | 3.64   | 9.6   | 1.3   | 9.14 | 0    |       |
| 233   | Ramkrishna Morabadi  | Kanke      | Ranchi   | 793                            | 515.45 | 7.34 | 0      | 215.25 | 74.44 | 0.45  | 6.11 | 44.57  | 225      | 56   | 20.655 | 58.7  | 1.79  | 26.8 | 0    |       |
| 234   | Sukruhutu            | Kanke      | Ranchi   | 819                            | 532.35 | 7.11 | 0      | 178.35 | 118   | 0.948 | 17.4 | 74.86  | 295      | 86   | 19.44  | 53.76 | 2.7   | 24.5 | 0    |       |
| 235   | Pindarcom            | Namkom     | Ranchi   | 345                            | 224.25 | 8.2  | 0      | 55.35  | 74.44 | 0.319 | 18.2 | 37.18  | 160      | 34   | 18.22  | 14.65 | 1.8   | 24.9 | 0    |       |
| 236   | Kharsidog            | Namkoom    | Ranchi   | 426                            | 276.9  | 8.27 | 0      | 166.05 | 31.9  | 0.257 | 14.6 | 18.3   | 90       | 18   | 10.935 | 55.2  | 3.09  | 27   | 0    |       |
| 237   | Bridford school      | Namkoom    | Ranchi   | 423                            | 274.95 | 7.74 | 0      | 110.7  | 28.3  | 0.389 | 28.8 | 59.91  | 110      | 24   | 12.15  | 48.3  | 1.97  | 22.5 | 0    |       |
| 238   | Kanka School         | Kanke      | Ranchi   | 155                            | 100.75 | 7.21 | 0      | 79.95  | 3.53  | 0.243 | 1.21 | 11.91  | 45       | 16   | 1.21   | 15.2  | 1.2   | 8.94 | 0    |       |
| 239   | Chapodia             | Jama       | Dumka    | 584                            | 379.6  | 8.17 |        | 258.3  | 51.8  | 0.676 | 10   | 12.25  | 250      | 20   | 48.6   | 31.05 | 0.09  | NA   | 0    |       |
| 240   | Chikania             | Jama       | Dumka    | 1027                           | 667.55 | 8.01 |        | 190.65 | 157   | 0.505 | 71.5 | 57.24  | 420      | 50   | 71.685 | 37.77 | 0.29  | NA   | 0    |       |
| 241   | Dumka                | Dumka      | Dumka    | 778                            | 505.7  | 8.21 |        | 264.45 | 66.2  | 0.76  | 51.4 | 71.72  | 230      | 30   | 37.665 | 66.2  | 5.33  | NA   | 0    |       |
| 242   | Gamharja             | Ramgarh    | Dumka    | 636                            | 413.4  | 8.21 |        | 233.7  | 82.2  | 0.72  | 23.2 | 6.97   | 240      | 40   | 34.02  | 33.56 | 0.45  | NA   | 0    |       |
| 243   | Gopikandar           | Gopikandar | Dumka    | 219                            | 142.35 | 7.9  |        | 67.65  | 30.3  | 0     | 12   | 10.35  | 70       | 8    | 12.15  | 16.93 | 3.17  | NA   | 0    |       |
| 244   | Hansdaha             | Saraihat   | Dumka    | 248                            | 161.2  | 7.92 |        | 141.45 | 3.54  | 0.404 | 12.5 | 5.3    | 95       | 18   | 12.15  | 14.66 | 0.13  | NA   | 0    |       |
| 245   | Jama                 | Jama       | Dumka    | 729                            | 473.85 | 8.15 |        | 227.55 | 78.7  | 0.218 | 64   | 52.13  | 270      | 24   | 51.03  | 39.61 | 0.27  | NA   | 0    |       |
| 246   | Jarmundi             | Jarmundi   | Dumka    | 887                            | 576.55 | 8.1  |        | 184.5  | 138   | 0.418 | 63   | 71.79  | 350      | 46   | 57.105 | 44.32 | 0.22  | NA   | 0    |       |
| 247   | Kathikund            | Kathikund  | Dumka    | 871                            | 566.15 | 8.31 | 3      | 325.95 | 73    | 0.342 | 44.1 | 68.18  | 325      | 42   | 53.46  | 51.98 | 0.8   | NA   | 0    |       |

| Sl.No | Location          | Block         | District | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K    | SiO2 | P04  |      |
|-------|-------------------|---------------|----------|--------------------------------|--------|------|--------|--------|-------|-------|------|-------|----------|------|--------|--------|------|------|------|------|
|       |                   |               |          |                                |        |      |        |        |       |       |      |       | as CaCO3 |      |        |        |      |      |      |      |
|       |                   |               |          |                                | mg/l   | mg/l | mg/l   | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l | mg/l | mg/l | mg/l |
| 248   | Masalia           | Masalia       | Dumka    | 702                            | 456.3  | 8.34 | 3      | 258.3  | 78.8  | 0.446 | 4.68 | 46.99 | 245      | 30   | 41.31  | 50.24  | 0.16 | NA   | 0    |      |
| 249   | Masanjor          | Raneshwar     | Dumka    | 259                            | 168.35 | 8.09 |        | 135.3  | 8.78  | 0.32  | 7.72 | 10.74 | 100      | 8    | 19.44  | 13.03  | 0.49 | NA   | 0    |      |
| 250   | Nonihat           | Jarmundi      | Dumka    | 1203                           | 781.95 | 8.13 |        | 227.55 | 258   | 0     | 51.2 | 45.59 | 440      | 78   | 59.535 | 52.55  | 0.36 | NA   | 0    |      |
| 251   | Barapalashi       | Jama          | Dumka    | 1585                           | 1030.3 | 7.96 |        | 387.45 | 282   | 0.453 | 13.6 | 80.33 | 694      | 108  | 103.28 | 85.35  | 0.3  | NA   | 0    |      |
| 252   | Patabari          | Sikaripara    | Dumka    | 828                            | 538.2  | 8.17 |        | 227.55 | 89.5  | 0.562 | 73.2 | 81.35 | 350      | 26   | 69.255 | 37.24  | 0.25 | NA   | 0    |      |
| 253   | Raneshwar         | Raneshwar     | Dumka    | 634                            | 412.1  | 7.85 |        | 104.55 | 106   | 0.235 | 51.4 | 67.55 | 205      | 16   | 40.095 | 50.85  | 0.12 | NA   | 0    |      |
| 254   | Sikaripara        | Sikaripara    | Dumka    | 551                            | 358.15 | 8.1  |        | 153.75 | 69.8  | 0.449 | 45.8 | 38.63 | 210      | 26   | 35.235 | 32.06  | 0.17 | NA   | 0    |      |
| 255   | Jamtara           | Jamtara       | Jamtara  | 917                            | 596.05 | 8    |        | 202.95 | 136   | 0.332 | 69.2 | 81.16 | 395      | 46   | 68.04  | 35.95  | 0.42 | NA   | 0    |      |
| 256   | Nala              | Nala          | Jamtara  | 1187                           | 771.55 | 7.99 |        | 215.25 | 247   | 1.25  | 36   | 80.53 | 295      | 34   | 51.03  | 146.5  | 1.02 | NA   | 0    |      |
| 257   | Mihijam           | Mihijam       | Jamtara  | 529                            | 343.85 | 8.18 |        | 166.05 | 42.6  | 0.469 | 35.5 | 63.57 | 190      | 24   | 31.59  | 25.94  | 0.1  | NA   | 0    |      |
| 258   | Kundahit          | Kundahit      | Jamtara  | 317                            | 206.05 | 8.18 |        | 147.6  | 18.6  | 0     | 2.78 | 20.42 | 110      | 16   | 17.01  | 24.7   | 0.26 | NA   | 0    |      |
| 259   | Dhootala          | Fatehpur      | Jamtara  | 791                            | 514.15 | 8.19 |        | 178.35 | 106   | 0.526 | 77.1 | 69.02 | 300      | 42   | 47.385 | 46.28  | 0.3  | NA   | 0    |      |
| 260   | Jasaydi           | Karmatarn     | Jamtara  | 712                            | 462.8  | 8.2  |        | 178.35 | 92.3  | 1.45  | 46.8 | 68.61 | 280      | 28   | 51.03  | 33.41  | 0.12 | NA   | 0    |      |
| 261   | Basti Palajori    | Fatehpur      | Jamtara  | 345                            | 224.25 | 8.11 |        | 123    | 12.28 | 0.285 | 21.8 | 40.18 | 145      | 18   | 24.3   | 14.91  | 0.32 | NA   | 0    |      |
| 262   | Mohanpur          | Narayanpur    | Jamtara  | 938                            | 609.7  | 8.14 |        | 196.8  | 146   | 0.55  | 66.5 | 74.59 | 405      | 44   | 71.68  | 41.16  | 0.05 | NA   | 0    |      |
| 263   | Fatehpur          | Fatehpur      | Jamtara  | 324                            | 210.6  | 8.15 |        | 153.75 | 14    | 0.633 | 7.93 | 17.03 | 110      | 20   | 14.58  | 21.71  | 0.2  | NA   | 0    |      |
| 264   | Boarjior          | Boarjior      | Godda    | 537                            | 349.05 | 8.42 | 6      | 258.3  | 43.5  | 0.482 | 0    | 8.7   | 175      | 20   | 30.375 | 37.48  | 0.63 | NA   | 0    |      |
| 265   | Doi               | Mahagama      | Godda    | 1981                           | 1287.7 | 8.02 |        | 319.8  | 362   | 0.53  | 33   | 99.21 | 510      | 42   | 98.41  | 208    | 4.77 | NA   | 0    |      |
| 266   | Godda             | Godda         | Godda    | 1416                           | 920.4  | 8.26 |        | 319.8  | 209   | 1.88  | 13.1 | 69.36 | 245      | 28   | 42.52  | 208.9  | 0.02 | NA   | 0    |      |
| 267   | Jaminipaharpur    | Sunsderpahari | Godda    | 1175                           | 763.75 | 8.01 |        | 350.55 | 131   | 0.915 | 64.4 | 81.96 | 200      | 22   | 35.235 | 171.8  | 0.33 | NA   | 0    |      |
| 268   | Lalmati           | Mahagama      | Godda    | 1023                           | 664.95 | 8.27 |        | 264.45 | 121   | 0.564 | 45.9 | 88.67 | 305      | 16   | 64.395 | 99.5   | 1.06 | NA   | 0    |      |
| 269   | Mahagama          | Mahagama      | Godda    | 1296                           | 842.4  | 8.37 | 3      | 639.6  | 117   | 0.794 | 1.55 | 20.15 | 230      | 30   | 37.665 | 203.2  | 0.36 | NA   | 0    |      |
| 270   | Maheshpur         | Maheshpur     | Godda    | 1081                           | 702.65 | 7.93 |        | 209.1  | 206   | 2.02  | 51   | 88.04 | 260      | 28   | 46.17  | 132.25 | 0.29 | NA   | 0    |      |
| 271   | Pathergama        | Pathergama    | Godda    | 1130                           | 734.5  | 7.91 |        | 233.7  | 204   | 0.541 | 20.2 | 75.15 | 280      | 26   | 52.245 | 111.7  | 0.36 | NA   | 0.06 |      |
| 272   | Sunsderpahari     | Sunsderpahari | Godda    | 531                            | 345.15 | 8.34 | 3      | 190.65 | 49.63 | 0.527 | 6.38 | 42.77 | 185      | 38   | 21.87  | 47.19  | 0.94 | NA   | 0    |      |
| 273   | Chamudih          | Poreyahaa     | Godda    | 624                            | 405.6  | 8.4  | 6      | 307.5  | 44.6  | 1.78  | 2.03 | 9.87  | 210      | 34   | 30.375 | 45.96  | 0.6  | NA   | 0    |      |
| 274   | Siktia            | Goodda        | Godda    | 1347                           | 875.55 | 8.15 |        | 246    | 244   | 1.32  | 46.5 | 89.85 | 170      | 34   | 20.655 | 208.27 | 1.78 | NA   | 0    |      |
| 275   | Raghatpur         | poreyahaa     | Godda    | 876                            | 569.4  | 8.22 |        | 276.75 | 134   | 0.475 | 24.7 | 43.79 | 165      | 32   | 20.655 | 123.05 | 4.77 | NA   | 0    |      |
| 276   | Bisaha            | Pathergama    | Godda    | 630                            | 409.5  | 8.3  |        | 350.55 | 29.6  | 1.36  | 1.03 | 11.69 | 140      | 16   | 24.3   | 81.36  | 0.06 | NA   | 0    |      |
| 277   | Kumardih          | Goodda        | Godda    | 675                            | 438.75 | 8.33 | 3      | 270.6  | 75.3  | 0.927 | 10.7 | 27.96 | 185      | 22   | 31.59  | 70.52  | 0.54 | NA   | 0    |      |
| 278   | Bargacha Hariyari | Poreyahaa     | Godda    | 516                            | 335.4  | 8.36 | 3      | 258.3  | 7.09  | 1.75  | 0    | 14.74 | 150      | 30   | 18.225 | 42.84  | 0.11 | NA   | 0    |      |
| 279   | Gobra             | Mahagama      | Godda    | 688                            | 447.2  | 8.29 |        | 313.65 | 48.8  | 0.361 | 12   | 14.89 | 185      | 18   | 34.02  | 61.77  | 0.17 | NA   | 0    |      |



| Sl.No | Location         | Block     | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|------------------|-----------|-----------|--------------------------------|--------|------|-------|--------|-------|-------|------|-------|----------|------|--------|--------|-------|------|------|------|
|       |                  |           |           |                                |        |      |       |        |       |       |      |       | as CaCO3 |      |        |        |       |      |      |      |
|       |                  |           |           |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 280   | Amrapara         | Amrapara  | Pakur     | 851                            | 553.15 | 8.28 |       | 301.35 | 63.81 | 0.181 | 17   | 73.98 | 250      | 42   | 35.23  | 62.86  | 3.36  | NA   | 0    |      |
| 281   | Hiranpur         | Hiranpur  | Pakur     | 1094                           | 711.1  | 8.08 |       | 202.95 | 229   | 0     | 17.1 | 53.56 | 230      | 32   | 36.454 | 128.1  | 5.06  | NA   | 0    |      |
| 282   | Litipara         | Litipara  | Pakur     | 1093                           | 710.45 | 8.03 |       | 190.65 | 210   | 0     | 59   | 66.58 | 343      | 68   | 42.25  | 67.48  | 5.18  | NA   | 0    |      |
| 283   | Maheshpur        | Maheshpur | Pakur     | 453                            | 294.45 | 8.12 |       | 233.7  | 20.7  | 0.327 | 3.47 | 10.74 | 120      | 28   | 12.15  | 46.88  | 0.45  | NA   | 0    |      |
| 284   | Pakur            | Pakur     | Pakur     | 411                            | 267.15 | 8.15 |       | 147.6  | 42.54 | 0.11  | 9.04 | 24.88 | 135      | 20   | 20.655 | 31.73  | 0.13  | NA   | 0    |      |
| 285   | Pakuria          | Pakuria   | Pakur     | 2031                           | 1320.2 | 7.89 |       | 375.15 | 386   | 0     | 32.8 | 96.7  | 395      | 78   | 48.6   | 232.95 | 18.44 | NA   | 0    |      |
| 286   | Salgapara        | Maheshpur | Pakur     | 643                            | 417.95 | 8.22 |       | 246    | 56.8  | 0     | 21   | 26.81 | 315      | 28   | 59.53  | 18.88  | 0.51  | NA   | 0    |      |
| 287   | Rtorai           | Hiranpur  | Pakur     | 1339                           | 870.35 | 8.27 |       | 301.35 | 206   | 0     | 31   | 91.5  | 360      | 74   | 42.525 | 117.54 | 3.6   | NA   | 0    |      |
| 288   | Sahagram         | Maheshpur | Pakur     | 414                            | 269.1  | 8.27 |       | 172.2  | 30.6  | 0.193 | 2.1  | 18.63 | 65       | 6    | 12.15  | 69.67  | 0.53  | NA   | 0    |      |
| 289   | Litipara 2       | Litipara  | Pakur     | 526                            | 341.9  | 8.29 |       | 295.2  | 9.2   | 0.182 | 15.1 | 10.21 | 165      | 24   | 25.515 | 38.02  | 0.15  | NA   | 0    |      |
| 290   | Kariodih         | Litipara  | Pakur     | 770                            | 500.5  | 8.27 |       | 289.05 | 77.99 | 0.147 | 27   | 35.24 | 270      | 32   | 46.17  | 48.22  | 0.28  | NA   | 0    |      |
| 291   | Vikrampur        | Pakur     | Pakur     | 486                            | 315.9  | 8.28 |       | 184.5  | 64.5  | 0     | 12.1 | 16.37 | 165      | 24   | 25.515 | 33.41  | 7.01  | NA   | 0    |      |
| 292   | Pachat hol       | Amrapara  | Pakur     | 287                            | 186.55 | 8.26 |       | 147.6  | 7.09  | 0.2   | 9.88 | 10.85 | 125      | 18   | 19.44  | 11.08  | 0.61  | NA   | 0    |      |
| 293   | Berhait          | Berhait   | Sahebganj | 274                            | 178.1  | 8.26 |       | 98.4   | 20.7  | 0.7   | 5.1  | 25.92 | 105      | 14   | 17.01  | 17.59  | 2.33  | NA   | 0    |      |
| 294   | Barharwa         | Barharwa  | Sahebganj | 650                            | 422.5  | 8.15 |       | 233.7  | 67.35 | 0.8   | 8.4  | 43.2  | 160      | 42   | 13.365 | 59.12  | 6.48  | NA   | 0    |      |
| 295   | Borio            | Borio     | Sahebganj | 735                            | 477.75 | 8.1  |       | 190.65 | 127.6 | 0.14  | 28.3 | 25.46 | 165      | 30   | 21.87  | 79.22  | 1.04  | NA   | 0.21 |      |
| 296   | Ghat selampur    | Rajmahal  | Sahebganj | 1044                           | 678.6  | 8.06 |       | 332.1  | 120.5 | 0.209 | 2.3  | 71.18 | 260      | 52   | 31.59  | 92.66  | 11.7  | NA   | 0    |      |
| 297   | Mandro           | Mandro    | Sahebganj | 1523                           | 989.95 | 8.29 |       | 430.5  | 241.1 | 0.6   | 46   | 93.63 | 335      | 64   | 42.525 | 147.6  | 81.47 | NA   | 0    |      |
| 298   | Rajmahal         | Rajmahal  | Sahebganj | 1101                           | 715.65 | 8.16 |       | 190.65 | 208   | 0.174 | 28   | 65.25 | 180      | 28   | 26.73  | 110.25 | 54.63 | NA   | 0    |      |
| 299   | Ranga            | Pathna    | Sahebganj | 1017                           | 661.05 | 8.29 |       | 313.65 | 127.6 | 0.157 | 23.8 | 59.83 | 300      | 56   | 38.88  | 76.54  | 0.03  | NA   | 0    |      |
| 300   | Sahebganj        | Sahebganj | Sahebganj | 983                            | 638.95 | 8.18 |       | 282.9  | 85.08 | 0.531 | 69.9 | 82.47 | 260      | 44   | 36.45  | 104.11 | 0.49  | NA   | 0    |      |
| 301   | Sakrigali        | Sahebganj | Sahebganj | 1145                           | 744.25 | 7.93 |       | 233.7  | 209.2 | 0.492 | 52.7 | 67.68 | 315      | 58   | 41.31  | 84.84  | 17    | NA   | 0    |      |
| 302   | Talijhari        | Talijhari | Sahebganj | 684                            | 444.6  | 8.15 |       | 252.15 | 71.8  | 0.437 | 16.3 | 47.14 | 195      | 34   | 26.73  | 56.71  | 17.1  | NA   | 0    |      |
| 303   | Udhwa            | Udhwa     | Sahebganj | 1553                           | 1009.5 | 8.05 |       | 246    | 280.1 | 1.02  | 96.2 | 82.1  | 579      | 106  | 76.545 | 58.42  | 1.58  | NA   | 0    |      |
| 304   | Hazipur          | Sahebganj | Sahebganj | 842                            | 547.3  | 8.16 |       | 344.4  | 14    | 0.216 | 33.6 | 62.28 | 250      | 38   | 37.665 | 68.79  | 4.5   | NA   | 0    |      |
| 305   | Dihari           | Sahebganj | Sahebganj | 1379                           | 896.35 | 8.03 |       | 344.4  | 177.3 | 0.187 | 47.8 | 81.7  | 369      | 102  | 27.945 | 131.4  | 11.57 | NA   | 0.16 |      |
| 306   | Harinchara Chowk | Borio     | Sahebganj | 852                            | 553.8  | 8.13 |       | 332.1  | 128   | 0.247 | 4.82 | 13.52 | 225      | 52   | 23.085 | 94.3   | 0.333 | NA   | 0    |      |
| 307   | Maricho          | Borio     | Sahebganj | 409                            | 265.85 | 8.33 | 3     | 196.8  | 27.4  | 0.23  | 1.49 | 14.46 | 145      | 34   | 14.58  | 28.47  | 0.14  | NA   | 0    |      |
| 308   | Chota Kadma      | Berhait   | Sahebganj | 1014                           | 659.1  | 8.17 |       | 215.25 | 152   | 0.18  | 43.1 | 77.92 | 285      | 68   | 27.945 | 76.97  | 9.46  | NA   | 0    |      |
| 309   | Mangalhat        | Rajmahal  | Sahebganj | 865                            | 562.25 | 8.23 |       | 246    | 107   | 0.209 | 49.3 | 78.87 | 150      | 26   | 20.655 | 78.11  | 87.7  | NA   | 0    |      |
| 310   | Baramasia        | Berhait   | Sahebganj | 463                            | 300.95 | 8.36 | 6     | 190.65 | 24.82 | 0.106 | 29.1 | 24.8  | 135      | 20   | 20.655 | 42.63  | 0.13  | NA   | 0    |      |
| 311   | Kotalpokhar      | Barharwa  | Sahebganj | 159                            | 103.35 | 8.28 |       | 73.8   | 7.09  | 0.245 | 6.4  | 10.57 | 60       | 6    | 10.935 | 9.66   | 0.43  | NA   | 0    |      |

| Sl.No | Location           | Block        | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-    | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|--------------------|--------------|-----------|--------------------------------|--------|------|-------|--------|-------|-------|------|-------|----------|------|--------|--------|-------|------|------|------|
|       |                    |              |           |                                |        |      |       |        |       |       |      |       | as CaCO3 |      |        |        |       |      |      |      |
|       |                    |              |           |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l  | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 312   | Kathal wadi        | Udhwa        | Sahebganj | 721                            | 468.65 | 7.82 |       | 270.6  | 56.72 | 0.321 | 2.44 | 38.53 | 175      | 36   | 20.655 | 63.02  | 0.58  | NA   | 0    |      |
| 313   | Fudkipur           | Udhwa        | Sahebganj | 1433                           | 931.45 | 8.07 |       | 424.35 | 205   | 0.477 | 22.3 | 84.24 | 295      | 32   | 52.245 | 181.7  | 1.3   | NA   | 0    |      |
| 314   | Ramnagar           | Barharwa     | Sahebganj | 275                            | 178.75 | 8.39 | 6     | 141.45 | 7.36  | 0.26  | 1.6  | 8.15  | 95       | 22   | 9.72   | 17.16  | 0.58  | NA   | 0    |      |
| 315   | Brindavan          | Talijhari    | Sahebganj | 478                            | 310.7  | 8.24 |       | 258.3  | 12.7  | 0.369 | 3.4  | 15.83 | 120      | 32   | 9.72   | 49.01  | 0.08  | NA   | 0    |      |
| 316   | Belbhadri          | Mandro       | Sahebganj | 529                            | 343.85 | 8.19 |       | 233.7  | 49.63 | 0.253 | 11.9 | 13.52 | 185      | 30   | 26.73  | 35.04  | 0.01  | NA   | 0    |      |
| 317   | Talijhari 2        | Pathna       | Sahebganj | 691                            | 449.15 | 8.38 | 6     | 350.55 | 10.63 | 0.27  | 8    | 60.85 | 190      | 38   | 23.08  | 66.89  | 11.27 | NA   | 0    |      |
| 318   | Chandwa            | Chandwa      | Latehar   | 761                            | 494.65 | 8.37 | 9     | 258.3  | 99.26 | 0.35  | 12.7 | 43    | 305      | 38   | 51.03  | 29     | 8.5   | NA   | 0    |      |
| 319   | Latehar            | Latehar      | Latehar   | 534                            | 347.1  | 8.17 |       | 178.35 | 63.81 | 0.14  | 34.6 | 25    | 210      | 34   | 30.37  | 24     | 4.2   | NA   | 0    |      |
| 320   | Manika             | Manika       | Latehar   | 1197                           | 778.05 | 7.44 |       | 436.65 | 92.17 | 0.76  | 33.9 | 72    | 425      | 64   | 64.39  | 54     | 10.8  | NA   | 0    |      |
| 321   | Balumath           | Balumath     | Latehar   | 915                            | 594.75 | 8.21 |       | 336    | 96    | 0.43  | 22.9 | 45    | 401      | 32   | 78     | 26     | 11.8  | NA   | 0    |      |
| 322   | Barwadih           | Barwadih     | latehar   | 824                            | 535.6  | 8.19 |       | 301.35 | 74.44 | 0.58  | 5.2  | 63    | 258      | 60   | 26.25  | 56.54  | 8.9   | NA   | 0    |      |
| 323   | Bariatu            | Balumath     | latehar   | 750                            | 487.5  | 7.74 |       | 276.75 | 95.71 | 0.54  | 1.45 | 28.4  | 315      | 64   | 37.66  | 29.1   | 4.3   | NA   | 0    |      |
| 324   | Garu               | Garu         | latehar   | 393                            | 255.45 | 8.29 |       | 159.9  | 42.54 | 2.34  | 9.7  | 18.3  | 145      | 24   | 20.65  | 23.44  | 8.35  | NA   | 0    |      |
| 325   | Mahun dar          | Mahundar     | latehar   | 412                            | 267.8  | 8.36 | 9     | 55.35  | 77.99 | 0.08  | 23.7 | 8.24  | 105      | 14   | 17.01  | 38.26  | 17.65 | NA   | 0    |      |
| 326   | Akasi              | Mahundar     | Latehar   | 877                            | 570.05 | 8.14 |       | 372    | 35.45 | 0.33  | 26.1 | 52    | 375      | 70   | 48.6   | 17     | 24.32 | NA   | 0    |      |
| 327   | Baraw              | Panki        | Palamu    | 1606                           | 1043.9 | 8.36 | 9     | 110.7  | 421.9 | 2.09  | 15.8 | 11.87 | 445      | 64   | 69.25  | 141.28 | 4.92  | NA   | 0    |      |
| 328   | Bishrampur         | Bishrampur   | Plamu     | 579                            | 376.35 | 8.34 | 6     | 153.75 | 74.44 | 0.87  | 10   | 13.25 | 256      | 40   | 38     | 12.7   | 0.2   | NA   | 0    |      |
| 329   | Daltenganj         | Daltenganj   | Plamu     | 1581                           | 1027.7 | 7.26 |       | 615    | 138.3 | 1.14  | 9.2  | 84    | 640      | 76   | 109.35 | 37.22  | 12.4  | NA   | 0    |      |
| 330   | Haider Nagar       | Japla        | Plamu     | 1010                           | 656.5  | 8    |       | 375.15 | 85.08 | 0.77  | 24.9 | 47    | 343      | 60   | 47     | 63.77  | 24.5  | NA   | 0    |      |
| 331   | Harihar gang       | Harihar gang | Plamu     | 1258                           | 817.7  | 8.49 | 15    | 387.45 | 152.4 | 0.61  | 14.2 | 4.15  | 230      | 30   | 37.621 | 156.41 | 41.3  | NA   | 0    |      |
| 332   | Japla              | Husainbad    | Palamu    | 480                            | 312    | 8.27 |       | 190.65 | 38.99 | 1.24  | 4.2  | 3.26  | 135      | 34   | 12.15  | 34.4   | 19.65 | NA   | 0    |      |
| 333   | Kajri              | Bishrampur   | Palamu    | 566                            | 367.9  | 8.33 | 6     | 202.95 | 42.54 | 1.37  | 21.4 | 3.26  | 195      | 34   | 26.699 | 36.52  | 1.2   | NA   | 0    |      |
| 334   | Kanda              | Patan        | Palamu    | 1071                           | 696.15 | 8.14 |       | 276.75 | 201.9 | 0.2   | 12.6 | 10    | 310      | 62   | 37.66  | 71.32  | 15.34 | NA   | 0    |      |
| 335   | Lesliganj          | Lesliganj    | Palamu    | 1331                           | 865.15 | 8.18 |       | 301.35 | 241.2 | 2.29  | 11   | 4.77  | 379      | 96   | 33.981 | 117.36 | 5.68  | NA   | 0    |      |
| 336   | Nawadiha           | Patan        | Palamu    | 594                            | 386.1  | 8.25 |       | 190.7  | 67.35 | 0.85  | 14   | 9.66  | 185      | 40   | 20.65  | 51.28  | 3.68  | NA   | 0    |      |
| 337   | Panki              | Panki        | Palamu    | 1244                           | 808.6  | 8.04 |       | 141.45 | 319.1 | 1.03  | 1.4  | 13.35 | 479      | 112  | 48.544 | 41.69  | 1.28  | NA   | 0    |      |
| 338   | Patan              | Patan        | Palamu    | 674                            | 438.1  | 8.44 | 15    | 184.5  | 70.9  | 0.29  | 18.5 | 15    | 250      | 60   | 24.3   | 29.38  | 2.78  | NA   | 0    |      |
| 339   | Rajaura            | Bishrampur   | Palamu    | 1201                           | 780.65 | 8.41 | 15    | 313.65 | 170.2 | 2.16  | 4.5  | 14.3  | 255      | 44   | 35.23  | 139.6  | 1.08  | NA   | 0    |      |
| 340   | Sagalim Govt. Well | Panki        | Palamu    | 499                            | 324.35 | 8.2  |       | 221.4  | 31.9  | 0.17  | 12.7 | 13.09 | 125      | 24   | 15.79  | 59.28  | 13.67 | NA   | 0    |      |
| 341   | Sanda              | Chhatarpur   | Palamu    | 455                            | 295.75 | 7.76 |       | 196.8  | 35.45 | 1.13  | 4.6  | 10    | 125      | 30   | 12.15  | 31.2   | 34.6  | NA   | 0    |      |
| 342   | Satbarwa           | Satabarwa    | Palamu    | 1031                           | 670.15 | 7.91 |       | 135.3  | 240   | 0.17  | 13.1 | 9.21  | 334      | 50   | 50.971 | 82.3   | 1.5   | NA   | 0    |      |
| 343   | chandwara          | Koderma      | Koderma   | 971                            | 631.15 | 7.46 |       | 264.45 | 134.7 | 0.4   | 23   | 21    | 200      | 40   | 24.3   | 134.31 | 2.3   | NA   | 0    |      |

| Sl.No | Location       | Block       | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO 32- | HCO3-  | Cl-   | F-   | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na     | K     | SiO2 | P04  |      |
|-------|----------------|-------------|-----------|--------------------------------|--------|------|--------|--------|-------|------|------|-------|----------|------|--------|--------|-------|------|------|------|
|       |                |             |           |                                |        |      |        |        |       |      |      |       | as CaCO3 |      |        |        |       |      |      |      |
|       |                |             |           |                                | mg/l   | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l   | mg/l  | mg/l | mg/l | mg/l |
| 344   | Jhumrit ilaiya | Domchanch   | Koderma   | 1322                           | 859.3  | 8.32 | 3      | 255    | 231.2 | 1.52 | 52.8 | 51.5  | 430      | 60   | 68.04  | 106    | 4.56  | NA   | 0    |      |
| 345   | Koderma        | KODERMA     | Koderma   | 454                            | 295.1  | 8.39 | 6      | 123    | 70.9  | 0.09 | 9.27 | 29.25 | 180      | 34   | 23.08  | 23.55  | 1.24  | NA   | 0    |      |
| 346   | Domchanch      | Jainagar    | Koderma   | 405                            | 263.25 | 8.28 |        | 92.25  | 56.72 | 0.28 | 47   | 25.04 | 150      | 24   | 21.87  | 20.8   | 1.78  | NA   | 0    |      |
| 347   | Jainagar       | Koderma     | Koderma   | 604                            | 392.6  | 7.99 |        | 135.3  | 95.72 | 1.18 | 29.1 | 2.21  | 210      | 28   | 34.02  | 41.2   | 2.2   | NA   | 0    |      |
| 348   | Patahal diha   | Koderma     | Koderma   | 858                            | 557.7  | 8.34 | 3      | 332.1  | 63.81 | 0.07 | 23.5 | 15    | 295      | 44   | 44.95  | 55     | 3.04  | NA   | 0    |      |
| 349   | Kanobigha      | Koderma     | Koderma   | 312                            | 202.8  | 7.21 |        | 110.7  | 31.9  | 0.31 | 10   | 0     | 140      | 24   | 19.44  | 5.32   | 3     | NA   | 0    |      |
| 350   | Bagra          | Bagra       | Chatra    | 644                            | 418.6  | 8.47 | 15     | 239.8  | 60.26 | 1.53 | 1.9  | 17.2  | 160      | 16   | 29.16  | 69.21  | 32.89 | NA   | 0    |      |
| 351   | Birhu          | Simaria     | Chatra    | 739                            | 480.35 | 7.27 |        | 282.9  | 70.9  | 0.22 | 23.3 | 18.1  | 230      | 52   | 24.3   | 53.4   | 2.7   | NA   | 0    |      |
| 352   | Chatra         | Chatra      | Chatra    | 1888                           | 1227.2 | 7.25 |        | 756    | 104.6 | 0.66 | 31.4 | 70.2  | 565      | 60   | 100.84 | 117.3  | 41.6  | NA   | 0    |      |
| 353   | Itkhor         | Itkhor      | Chatra    | 492                            | 319.8  | 8.22 |        | 189    | 35.45 | 0.55 | 7.3  | 7.24  | 179      | 42   | 18     | 14.53  | 14.8  | NA   | 0    |      |
| 354   | Pitji          | Itkhor      |           | 811                            | 527.15 | 8.37 | 6      | 264.45 | 99.26 | 0.73 | 0.2  | 9.37  | 107      | 36   | 4.28   | 118.87 | 32.3  | NA   | 0    |      |
| 355   | Simariya       | Simariya    | Chatra    | 550                            | 357.5  | 8.13 |        | 98.4   | 63.81 | 0.67 | 25.9 | 71    | 195      | 46   | 19.44  | 29.63  | 14.8  | NA   | 0    |      |
| 356   | Tundwa         | Tandwa      | Chatra    | 893                            | 580.45 | 8.34 | 3      | 436.65 | 63.81 | 1.32 | 0    | 34.6  | 311      | 58   | 40.48  | 59.54  | 20.68 | NA   | 0    |      |
| 357   | Tutilawa       | Simaria     | Chatra    | 1334                           | 867.1  | 8.12 |        | 537    | 96    | 0.53 | 23   | 67    | 536      | 88   | 77     | 37     | 23.4  | NA   | 0    |      |
| 358   | Bhawnathpur    | Bhawnathpur | Garhwa    | 1166                           | 757.9  | 8.01 |        | 372    | 145   | 1.25 | 22   | 60    | 535      | 18   | 119    | 10     | 13.1  | NA   | 0    |      |
| 359   | Garhwa         | Garhwa      | Garhwa    | 786                            | 510.9  | 8.11 |        | 227.55 | 92.17 | 1.4  | 26.4 | 41.8  | 255      | 60   | 25.51  | 44.7   | 4.33  | NA   | 0    |      |
| 360   | Manjhiyan      | Manjhian    | Garhwa    | 792                            | 514.8  | 7.88 |        | 221.4  | 113.4 | 0.27 | 8.1  | 21    | 240      | 56   | 24.3   | 57.2   | 31.3  | NA   | 0    |      |
| 361   | Nagar Utari    | Nagar Utari | Garhwa    | 851                            | 553.15 | 8.22 |        | 252.15 | 85.08 | 0.17 | 24.7 | 39.5  | 145      | 24   | 20.65  | 91.8   | 63.7  | NA   | 0    |      |
| 362   | Ramna          | Ramna       | Garhwa    | 987                            | 641.55 | 7.93 |        | 369    | 77.99 | 1.32 | 25.6 | 55.1  | 315      | 30   | 58.32  | 67.5   | 17.6  | NA   | 0    |      |
| 363   | Ranka          | Ranka       | Garhwa    | 730                            | 474.5  | 8.37 | 6      | 172.2  | 109.9 | 1.53 | 2.88 | 36.3  | 305      | 78   | 26.73  | 29.31  | 1.4   | NA   | 0    |      |
| 364   | Meral          | Meral       | Garhwa    | 532                            | 345.8  | 8.39 | 9      | 252.21 | 31.9  | 2.74 | 12.7 | 6.82  | 100      | 36   | 2.43   | 67.24  | 14.39 | NA   | 0    |      |
| 365   | Amritnagar     | Hazaribag   | Hazaribag | 1191                           | 774.15 | 8.14 | 0      | 189    | 340.3 | 1.86 | 5.3  | 6.598 | 405      | 40   | 74.11  | 91.37  | 33.22 | NA   | 0    |      |
| 366   | Barkagan       | Barkagan    | Hazaribag | 1214                           | 789.1  | 8.34 | 6      | 301.35 | 169.1 | 0.44 | 31.9 | 31.14 | 315      | 80   | 27.94  | 127.12 | 11.17 | NA   | 0    |      |
| 367   | Barkatha       | Barkatha    | Hazaribag | 411                            | 267.15 | 8.21 | 0      | 135    | 42.54 | 0.43 | 0    | 14.89 | 165      | 46   | 12.15  | 14.3   | 5.04  | NA   | 0    |      |
| 368   | Bottambajar    | Hazaribag   | Hazaribag | 435                            | 282.75 | 8.4  | 15     | 92.25  | 70.9  | 0.29 | 0    | 14.03 | 160      | 44   | 12.15  | 34.83  | 2.47  | NA   | 0    |      |
| 369   | College More   | Hazaribag   | Hazaribag | 690                            | 448.5  | 8.32 | 3      | 135.3  | 102.8 | 0.72 | 33.9 | 25.5  | 305      | 58   | 38.88  | 10.89  | 3.5   | NA   | 0    |      |
| 370   | Dari           | Churchu     | Hazaribag | 639                            | 415.35 | 8.16 | 0      | 190.65 | 81.53 | 0.8  | 1.3  | 21.47 | 185      | 42   | 19.44  | 48.7   | 1.45  | NA   | 0    |      |
| 371   | Daru           | Daru        | Hazaribag | 649                            | 421.85 | 7.81 | 0      | 172.2  | 77.99 | 1.27 | 24.3 | 21.2  | 205      | 52   | 18.22  | 54.27  | 0.7   | NA   | 0    |      |
| 372   | Garrikalan     | Keredari    | Hazaribag | 1152                           | 748.8  | 8.38 | 12     | 282.9  | 145   | 0.51 | 39.7 | 36.21 | 365      | 82   | 38.88  | 69.63  | 14.97 | NA   | 0    |      |
| 373   | Habibnagar     | Hazaribag   | Hazaribag | 453                            | 294.45 | 8.27 | 0      | 104.55 | 63.8  | 0.85 | 15.3 | 17.08 | 175      | 50   | 12.15  | 21.04  | 1.94  | NA   | 0    |      |
| 374   | Hatyari        | Hazaribag   | Hazaribag | 568                            | 369.2  | 8.21 | 0      | 116.85 | 113.4 | 0.24 | 8.7  | 20.2  | 265      | 52   | 32.805 | 21.4   | 0.87  | NA   | 0    |      |
| 375   | Hazaribagh     | Hazaribag   | Hazaribag | 512                            | 332.8  | 8.44 | 18     | 110.7  | 81.53 | 0.89 | 14   | 15    | 210      | 60   | 14.58  | 17.47  | 0.77  | NA   | 0    |      |
| 376   | Haribag        | Hazaribag   | Hazaribag | 606                            | 393.9  | 8.32 | 3      | 135    | 81.52 | 0.17 | 24.3 | 24.21 | 255      | 58   | 26.73  | 22     | 1.14  | NA   | 0    |      |

| Sl.No | Location                       | Block           | District  | E.C. micro Siemens/cm at 250 C | TDS    | pH   | CO32- | HCO3-  | Cl-   | F-   | NO3- | SO42- | TH       | Ca2+ | Mg2+   | Na    | K    | SiO2 | P04  |      |
|-------|--------------------------------|-----------------|-----------|--------------------------------|--------|------|-------|--------|-------|------|------|-------|----------|------|--------|-------|------|------|------|------|
|       |                                |                 |           |                                |        |      |       |        |       |      |      |       | as CaCO3 |      |        |       |      |      |      |      |
|       |                                |                 |           |                                | mg/l   | mg/l | mg/l  | mg/l   | mg/l  | mg/l | mg/l | mg/l  | mg/l     | mg/l | mg/l   | mg/l  | mg/l | mg/l | mg/l | mg/l |
| 377   | Ichak More                     | Ichak           | Hazaribag | 280                            | 182    | 8.11 | 0     | 79.95  | 35.45 | 1.58 | 0    | 7.41  | 95       | 30   | 4.8544 | 19.01 | 1.16 | NA   | 0    |      |
| 378   | Kanhari Road                   | Hazaribag       | Hazaribag | 522                            | 339.3  | 8.23 | 0     | 178.4  | 56.72 | 0.4  | 8.28 | 9.1   | 151      | 56   | 2.699  | 38.21 | 3.22 | NA   | 0    |      |
| 379   | Keredari                       | Keredari        | Hazaribag | 734                            | 477.1  | 8.47 | 15    | 227.55 | 81.5  | 1.35 | 9.7  | 8.67  | 220      | 64   | 14.563 | 48.87 | 6.34 | NA   | 0    |      |
| 380   | Korra Chowk                    | Hazaribag Sadar | Hazaribag | 487                            | 316.55 | 8.35 | 6     | 147.6  | 56.72 | 0.14 | 7.29 | 5.3   | 185      | 52   | 13.48  | 25.44 | 0.12 | NA   | 0    |      |
| 381   | Kud ashram                     | Hazaribag Sadar | Hazaribag | 902                            | 586.3  | 8.06 | 0     | 239.85 | 148.9 | 0.32 | 10.4 | 15.31 | 270      | 84   | 14.58  | 65.23 | 0.71 | NA   | 0    |      |
| 382   | Meru (Silver)                  | Hazaribag Sadar | Hazaribag | 889                            | 577.85 | 7.29 | 0     | 270.6  | 145   | 0.12 | 0    | 21.17 | 300      | 80   | 24.3   | 68.27 | 2.2  | NA   | 0    |      |
| 383   | Fasi well (near old bus stand) | Hazaribag Sadar | Hazaribag | 1021                           | 663.65 | 8.44 | 12    | 270.6  | 138.3 | 0.48 | 14   | 16.97 | 340      | 92   | 26.73  | 74.28 | 5.13 | NA   | 0    |      |
| 384   | Padma                          | Padma           | Hazaribag | 381                            | 247.65 | 8.16 | 0     | 129    | 28.36 | 0.5  | 19.4 | 13.66 | 145      | 38   | 12.15  | 22.11 | 0.78 | NA   | 0    |      |
| 385   | Sakrej                         | Barkatha        | Hazaribag | 408                            | 265.2  | 7.82 | 0     | 110.7  | 63.81 | 0.4  | 0    | 9.37  | 170      | 48   | 12.15  | 16.4  | 2.71 | NA   | 0    |      |
| 386   | Simra rest house               | Hazaribag Sadar | Hazaribag | 698                            | 453.7  | 8.39 | 12    | 135    | 109.9 | 0.72 | 15   | 19.43 | 235      | 70   | 14.56  | 54.11 | 0.2  | NA   | 0    |      |
| 387   | Sindur                         | Hazaribag Sadar | Hazaribag | 818                            | 531.7  | 8.47 | 18    | 147.6  | 124.1 | 0.57 | 24.9 | 25.48 | 300      | 80   | 24.3   | 48.1  | 0.78 | NA   | 0    |      |
| 388   | Tatijhariya                    | Bishnugarh      | Hazaribag | 533                            | 346.45 | 7.95 | 0     | 150.6  | 70.9  | 0.8  | 8.58 | 11.33 | 170      | 46   | 13.36  | 44.07 | 0.27 | NA   | 0    |      |
| 389   | Urimari                        | Barkagaon       | Hazaribag | 605                            | 393.25 | 8.38 | 9     | 135    | 77.99 | 1.53 | 18.7 | 21.46 | 200      | 52   | 17.01  | 46.08 | 0.77 | NA   | 0    |      |
| 390   | Chouparan                      | Chouparan       | Hazaribag | 403                            | 261.95 | 7.93 | 0     | 172.2  | 21    | 0.3  | 5.2  | 7.5   | 155      | 52   | 6.068  | 18.09 | 3.2  | NA   | 0    |      |