

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



GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RD & GR
CENTRAL GROUND WATER BOARD

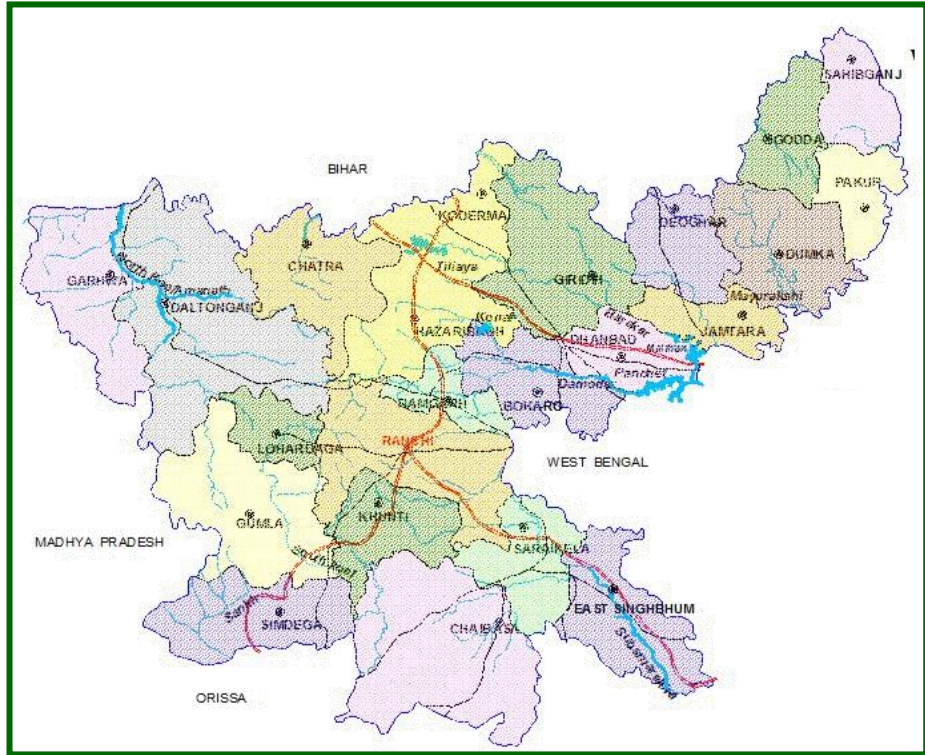
वार्षिक भूजल पुस्तिका

झारखण्ड

(2016 - 2017)

GROUND WATER YEAR BOOK
JHARKHAND

(2016 - 2017)



मध्य पूर्वी क्षेत्र, पटना

राज्य एकक कार्यालय, राँची

MID-EASTERN REGION, PATNA
STATE UNIT OFFICE, RANCHI

September 2017

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

GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES, RD & GR
CENTRAL GROUND WATER BOARD

वार्षिक भूजल पुस्तिका
झारखण्ड
(2016 & 2017)

GROUND WATER YEAR BOOK
JHARKHAND
(2016 - 2017)

Prepared by

T. B. N. Singh Scientist – D	Anukaran kujur AHG
---------------------------------	-----------------------

Central Ground Water Board
Mid Eastern Region, Patna
State Unit Office, Ranchi

**GROUND WATER YEAR BOOK
JHARKHAND
(2016-2017)**

CONTENTS

FOREWORD

ABSTRACT

JHARKHAND AT A GLANCE

	Page No.
1 INTRODUCTION	1
2 BACK GROUND	2
3 GEOLOGY & HYDROGEOLOGY	2
GROUND WATER SCENARIO	
4 Depth To Water Level	5
May 2016	
August 2016	
November 2016	
January 2017	
5 Annual Fluctuation	6
May 2015 to May 2016	
August 2015 to August 2016	
November 2015 to November 2016	
January 2016 to January 2017	
6 Seasonal Fluctuation	8
May 2016 to August 2016	
May 2016 to November 2016	
May 2016 to January 2017	
7 Decadal Fluctuation	10
Decadal mean of May to May 2016	
Decadal mean of August to August 2016	
Decadal mean of November to November 2016	
Decadal mean of January to January 2017	
8 TREND OF GROUND WATER LEVEL	11
9 HYDROCHEMISTRY	12

LIST OF TABLES

TABLE	TITLE
1.	District Wise status of GWMW for the state of Jharkhand for 2016 – 2017
2.	District wise categorisation of depth to water level – May 2016
3.	District wise categorisation of depth to water level – August 2016
4.	District wise categorisation of depth to water level – November 2016
5.	District wise categorisation of depth to water level – January 2017
6.	District wise categorisation of fluctuation in water level and frequency distribution between May 2015 – May 2016
7.	District wise categorisation of fluctuation in water level and frequency distribution between August 2015 – August 2016.
8.	District wise categorisation of fluctuation in water level and frequency November 2015 – November 2016
9.	District wise categorisation of fluctuation in water level and frequency distribution between January 2016 – January 2017
10.	District wise categorisation of fluctuation in water level and frequency distribution between May 2016– August 2016
11.	District wise categorisation of fluctuation in water level and frequency distribution between May 2016– November 2016
12.	District wise categorisation of fluctuation in water level and frequency distribution between May 2016– January 2017
13.	District wise water level Fluctuation of May 2016 with respect to Decadal Mean May water level (2006-15)
14.	District wise water level Fluctuation of August 2015 with respect to Decadal Mean August water level (2006-15)
15.	District wise categorisation of water level of November 2015 with respect to Decadal Mean November water level (2006-15)
16.	District wise categorisation of water level of January 2016 with respect to Decadal Mean January water level (2006-15)

LIST OF FIGURES

PLATE	TITLE
I.	Administrative map of Jharkhand State.
II.	Location of Ground Water Monitoring Wells (GWMW) in Jharkhand State.
III	Hydrogeological map of Jharkhand.
IV.	Geological map of Jharkhand.
V.	Depth to Water level - May 2016
VI.	Depth to Water level - August 2016
VII.	Depth to Water level - November 2016
VIII.	Depth to Water level - January 2017
IX.	Fluctuation in ground water level between May 2015 and May 2016
X.	Fluctuation in ground water level between August 2015 and August 2016
XI.	Fluctuation in ground water level between November 2015 and November 2016
XII	Fluctuation in ground water level between January 2016 and January 2017
XIII	Fluctuation in ground water level between May 2016 and August 2016
XIV	Fluctuation in ground water level between May 2016 and November 2016
XV.	Fluctuation in ground water level between May 2016 and January 2017
XVI	Fluctuation of water level of May 2016 with respect to May Decadal Mean.
XVII	Fluctuation of water level of August 2016 with respect to August Decadal Mean
XVIII	Fluctuation of water level of November 2016 with respect to November Decadal Mean
XIX.	Fluctuation of water level of January 2017 with respect to January Decadal Mean
XX.	Trend of Ground Water Level
XXI.	Isocon (Electrical conductivity) Map of ground water May 2016
XXII.	Concentration of Bi-carbonate Map May 2016

LIST OF ANNEXURES

ANNEXURE	TITLE
I	Depth to water levels (m bgl) in the months of May' 16, August '16, November '16 and January '17 in Jharkhand State.
II	Trend of Ground Water Level (2007-2016)
III	Major chemical parameters of ground water samples of GWMW collected during Pre-monsoon 2016 in Jharkhand State.
IV	Depth to water levels (m bgl) for urban areas in Jharkhand state

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 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 now totals 468 GWMW (as on March 2017) 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 2016-2017 has been produced. The comparisons with decadal mean, seasonal & annual fluctuation, 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 2016-2017, (i.e. in the months of May'16, August'16 and November `16 and January `17). Water samples from the GWMW were collected during the month of May-2016 to study the changes in hydrochemical regime.

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

The assignment of compiling and analyzing data, its retrieval, evaluation, preparation of suitable maps and their reproduction in the form of present report has been carried out by T.B.N.Singh, Scientist-D, Senior Hydrogeologist. The maps has been prepared and data has been compiled by Shri Anukaran kujur, AHG. The works related to chemical analysis of ground water was performed by Sri Suresh Kumar , ACH and Ms.Supriya Singh requires special mention.

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

(A.K.Agrawal)
Regional Director

ABSTRACT

In Jharkhand state ground water levels of 468 Ground Water Monitoring Wells (GWMW) were monitored four times in the year 2016 - 2017 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'16, August'16, November'16, and January'17 and ground water samples were collected in pre-monsoon period (May 2016) 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 Gneissic Complex (CGGC) suit. 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 and Tertiary Formation.

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 had 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 collected during May 2016 measurements were chemically analysed and the data generated has been presented in the tabular form, while iso-chloride and iso-conductance were presented in the form of maps in this report.

During 2016-17, the water level in the State ranges between 0.97 to 19.25 mbgl. The minimum and the maximum depth to water levels during pre-monsoon period have been recorded as 0.97 m bgl and 19.25 m bgl at E. Singhbhum. 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 0.54 mbgl and 13.50 m bgl in Saraikela 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 2016 compared with May 2016 shows rise in water level (96%) for the entire state of Jharkhand. Out of 219 wells analysed, in the tune of 0.20 - 2.00 m (18%), 2.00 - 4.00 m (36%) and above 4 m (42%) 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 9 wells out of 219 wells of the state which is mainly due to temporal withdrawal of ground water in those areas.

. The fluctuation of water level of May 2015 with respect to decadal mean water level of May 2016 indicate that the fall (34%) as well as rise (54%) 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 9 wells in 8 districts which may be due to temporal higher withdrawal of ground water on that area.

. The fluctuation of water level of November 2015 with respect to decadal mean water level of November indicate the fall (57%) as well as rise (33%) 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 samples throughout the state found to be slightly alkaline in nature as the pH mostly varies between 6.65 – 8.73. The quality of ground water in most of part of the state is potable with low mineral contents having electrical conductance varying from 148 (recorded at Brombay, Ranchi) to 2494 (at Rajganj, Dhanbad) $\mu\text{S}/\text{cm}$ at 25°C . The samples found to be suitable for drinking and irrigation purposes. Only 8 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 15 number of samples in Dhanbad, palamau, Latehar, Hazaribagh, Pakur and West singhbhum districts. Altogether 49 blocks are Fluoride affected in jharkhand state. Itki, ormanjhi in Ranchi, Bhawanathpur, Ramna, Kandi, Meral, Ranka in Garhwa, Simaria, itkhor in Chatra, Chandwara in Koderma, Mandu in Ramgarh, keredari, Ichak, hazaribagh in hazaribagh, Garu, Balumath in Latehar district, Bishrampur, Lesliganj, Hussainabad, Satbarwa, Chainpur in palamau, Tisri, Jamua, Gandey, Bengabad, Dewri in Giridih district, Topchanchi, Jharia, Dhanbad, Gobindpur in Dhanbad district, Deoghar, Mohanpur in Deoghar district, Chandrapura, Chandankiyari in Bokaro district, Kolebira in simdega district are Fluoride affected blocks.

To study the water level behavior in the urban areas water level measurements at Dhanbad, Hazaribagh, Ranchi and Jamshedpur urban area are being carried out through outsourcing, the water level data is incorporated in this year book.

GROUND WATER YEAR BOOK OF JHARKHAND

2016 – 2017

JHARKHAND AT A GLANCE

Geographical Area (sq. km.)	79714
Population (Census 2011)	3,29,66,238
Population density	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 (2013)	6.56
Net ground water availability in BCM (2013)	5.99
Annual Ground Water Draft For Domestic & Industrial use in BCM	0.50
Gross annual ground water draft in BCM(2013)	1.35
Stage of ground water development (in %)(2013)	22.42
Number of over-exploited blocks (As on March-2013)	4
Number of critical blocks (As on March-2013)	2
Number of semi critical blocks (As on March-2013)	10
Number of Safe block (As on March-2013)	244
Ground Water Quality	In general chemical Constituents are within permissible limit except fluoride Contamination in Palamu, Garhwa, Koderma, Pakur Districts and Arsenic contamination in Sahebganj district

GROUND WATER YEAR BOOK OF JHARKHAND

2016 – 2017

1.0 INTRODUCTION:

Jharkhand state, was created on 15th 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 located at 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 (**Fig.1**).

The population of the state as per 2011 census is 03.30 crore. The population density is 414 person/km². The urban population is 79.12 million and the rural population is 250.54 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 487 GWMW (Ground water monitoring wells) to delineate the behavior 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 1st to 10th), May (from 20th to 30th), August (from 20th to 30th) and November (from 1st to 10th). The locations of GWMW are shown in **Plate – II**. Water Level Monitoring through outsourcing in Jamshedpur(15 wells), Dhanbad(15 wells) , Hazaribagh(12 wells) urban areas has been started since November 2011. At present it is being carried out monthly.

The district-wise status of GWMW in Jharkhand during the period from May '2016 to January '2017 is given in **Table 1**. The district-wise water level data of GWMW for the period May 2016; August 2016; November 2016 and January 2017 are given in **Annexure- I**. The Trend of ground water level data (March 2007- January 2016) is presented in **Annexure-II**. The results of chemical analysis of water samples collected during May 2016 is also discussed and analytical data is given in **Annexure – III**. The water level data of urban areas for the period 2016-2017 are given in **Annexure- IV**.

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 - U-Jurassic	Rajmahal Trap	Basalt flows with inter-trappean sedimentary beds
Cretaceous-Carboniferous	Gondwana Supergroup	Sandstone, shale, clay conglomerate and coal beds.
L-Cambrian-Proterozoic	Vindhyan Supergroup	Sandstone, quartzite, shale, limestone etc.
Proterozoic	Younger Granite, Granophyre and Soda Granite. Chhotanagpur Granite Gneissic Complex. Kolhan Group, Singhbhum Group, Gangpur Group. Mahakosal	Granites, granite gneiss, schists, phyllites, dolomites, basic lavas, 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 phreatic 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 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.

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 SCENARIO OF DEPTH TO WATER LEVELS IN JHARKHAND DURING 2016 – 2017:

MAY, 2016

Water levels during May 2016 were monitored from 293 wells (out of 417 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 0.97 m bgl and 19.25 m bgl in East Singhbhum district. In general the water level throughout the State varies in the range of 5 – 10 m bgl and has been observed in the 202 wells (68.9%) out of 293 analysed wells. Secondly, water level >10 m bgl has been observed in the 43 wells (14.6%). The water level in the range of 2– 5 m bgl has been observed in the 43 wells (14.6%). The water level below 2 m has been observed only in 5 wells, out of which 3 wells located in E Singhbhum and rest 1 well in Saraikela and West singhbhum district.

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 and W Singhbhum has shown water level less than 2 m bgl.

AUGUST, 2016

Water levels during August, 2016 were monitored from 292 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 0.10 m bgl in Saraikela district and 11.03mbgl n Chatra district. About 32.87% 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 (52.73%) m bgl from 292 analysed wells. Secondly, the water level in the range of 5 – 10 m bgl has been observed in the 17 % of the wells. Water level >10 m bgl has been observed only in the 4 wells (1.3%) one each in Chatra, Jamtara, Palamau, and Ranchi 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 western part of the state whereas the water level less than 2 m bg has been observed in eastern and western part.

NOVEMBER, 2016

A total of 260 GWMW has been monitored during post-monsoon period in November 2015, 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 0.54 m bgl and 13.50 m bgl in Saraikela and East singhbhum district respectively. In about 157 wells (60%) of GWMW, water level rests in range of 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 74 wells (29%). Ground water level of 0 – 2 m bgl depth range has been observed only in 26 wells(10%) at different locations. Only 3 wells(1%) have shown water level more than 10 m bgl. (**Plate VII**).

JANUARY, 2017

To study the water levels of recession period data were collected during January, 2017 from 319 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 as 0.00 m bgl at Saraikela and 25 m bgl in Ranchi. The water level in the range of 5 – 10 m bgl has been observed in the 51% (163 wells) of the wells analysed and covered almost entire State. Few patches(18 wells) of water level range from 10 to 20 m bgl has been observed. About 38.8 % of the wells analysed has shown water level in the range of 2-5 m bgl. The water level below 2 m has been observed in 13 wells. **Plate VIII**

5.0 SCENARIO OF ANNUAL FLUCTUATIONS IN JHARKHAND DURING 2015-16 to 2016-17:

The annual fluctuation in water levels for the periods of (1) May 2015 and May 2016, (2) August 2015 and August 2016, (3) November 2015 and November 2016 and (4) January 2016 and January 2017 have been analysed to study the net status of ground water conditions during the previous and current year.

MAY 2015 AND MAY 2016

The annual fluctuation in water level between May '2015 and May '2016 indicates the net status of ground water condition during the previous year and current summer 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 fall in water level (70.5%) and general rise in water level(29.5%). Total 113 wells out of 198 analysed wells, comes under 0-2 m falling zone category, on the other hand 44 wells show rise within 2 m, which may indicate that the regional fluctuation of the state (79%) is mainly restricted within 2 m. The next higher magnitude of fluctuation is of 2 -4 mbgl fall in water level in the state (15%) is observed in some part of the state. The highest magnitude of >4 mbgl fall has been observed in only 8% of wells.

Overall the entire State is covered under falling zone category (136 wells out of 198 analysed well), which may indicate the slightly less rainfall (2016) and ground water level decline during the analysed period.

AUGUST 2015 AND AUGUST 2016

The annual fluctuation in water level between Aug '2015 and Aug '2016 indicates the net 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 rise in water level (60%) has been found in major part of the State whereas rise in water level recorded in 49% wells within 2 m and 2% rise has been observed in >4 mbgl. About 40% wells ranges between 0 – 2 m has shown fall in water level. Out of 257 analyzed wells fall in water level is recorded in 82 wells within 2 mbgl.

Overall the entire State is covered under the category of 60 % rise and 40 % fall which may be due to more rainfall in respect to during previous year.

NOVEMBER 2015 AND NOVEMBER 2016

The Annual fluctuation in water level between November 2015 and November 2016 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 2015 and November 2016 shows fall in 52.4% GWMW as well as rise in 23% GWMW of the total 252 analysed wells during the period. The major part of the state shows a general fall in water level within 2.00 m. Out of 177 wells showing fall, 2 – 4 m and > 4 m fall has been observed in the 39 wells and 6 wells respectively. Only 29% well analysed has shown rise in water level. of the total analysed wells out of which 14 wells have shown fall within 2-4 m and only one well have shown higher magnitude of annual fluctuation >4m during the period.

JANUARY 2016 AND JANUARY 2017

The annual fluctuation in water level between January '2016 and January '2017 indicates the net 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 rise (72 %) in water level in the range. Total 102 wells out of 207 of the analysed well comes under 0-2 m rising zone category, on the other hand 48 wells show fall within 2 m, which may indicate that the regional fluctuation (72%) of the state is mainly restricted within 2 m. The rise and fall in water level above 2 m bgl has been observed in about 28% of the State.

6.0 SCENARIO OF SEASONAL FLUCTUATIONS IN JHARKHAND DURING THE GROUND WATER YEAR 2016 – 2017:

An attempt has been made to compare the pre-monsoon water levels of May, 2016 with water levels of August 2016 and November 2016 and January 2017 to delineate the impact of rainfall as well as ground water development on ground water regime in the state during the above period.

MAY 2016 AND AUGUST 2016

The fluctuation in water level between May 2016 and August 2016 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 2016 and August 2016 has been prepared from 243 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 2016. However 4 wells shows fall in water level which may be mainly due to temporal withdrawal of ground water and less rainfall in those areas.

MAY 2016 AND NOVEMBER 2016

The seasonal fluctuation in water level between May 2016 and November 2016 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 2016 compared with May 2016 shows rise in water level (96%) for the entire state of Jharkhand. Out of 219 wells analysed, in the tune of 0.20 - 2.00 m (18%), 2.00 - 4.00 m (36%) and above 4 m (42%) 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 9 wells out of 219 wells of the state which is mainly due to temporal withdrawal of ground water in those areas.

MAY 2016 AND JANUARY 2017

The fluctuation in water level between May 2016 and January 2017 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 2016 and January 2017 have been retrieved from

222 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 (208 wells) in water level, in the range of 0.00 to 2.00 m (34 %), 2.00 to 4.00 m (39%) and > 4 mbgl (20%) which is mainly due to recharge on ground water for onset monsoon from June 2016 and rainfall during July - October 2016. However, 14 wells of the state shows fall in water level which may be due to temporal withdrawal of ground water at that area.

7.0 SCENARIO OF DECADAL WATER LEVEL FLUCTUATIONS WITH THE GROUND WATER YEAR 2016 – 2017:

DECADAL MEAN AND MAY 2016

Water level fluctuation map (**Plate XVI**) has been prepared by comparing the water level data (250 wells) for May Mean (2006-2015) with the depth to water level data May 2016. 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 (34%) as well as rise (54%) 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 9 wells in 8 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 2016

Water level fluctuation map (**Plate XVII**) has been prepared by comparing the water level data (272 wells) for August Mean (2006-2015) with the depth to water level data August 2016. 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 (27%) as well and fall (60%) in water level in the range of 0 – 2 m shows variation almost in the entire state. Fluctuation in water level in the range of 2 – 4 m bgl is recorded in 12% wells and for > 4 m in 1% 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 2016

The fluctuation map of water level between November Mean and November 2016 (**Plate XVIII**) has been prepared on the basis of available Mean water level data(263 wells) of November for last 10 years (2006-2015) 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 2015 with respect to decadal mean water level of November indicate the fall (57%) as well as rise (33%) in water level in the range of 0 – 2 m. Fluctuation in water level below 2 m has been recorded as fall in more than 8 % of the wells and rise in 3 % of the wells.

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 2017

Water level fluctuation map (**Plate XIX**) has been prepared by comparing the water level data (245 wells) for January Mean (2007-2016) with the depth to water level data January 2017. 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 (53 %) fall and 40% rise in water level in the range of 0 – 2 m has been observed in almost entire state. Out of 245 wells analysed only 4 % wells have shown rise/fall in water level in the range of 2-4m and about 2 % wells have shown rise/fall > 4 mbgl.

However, overall (93%) 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.

8.0 TREND OF GROUND WATER LEVEL

Trend of ground water level map (Plate XX) has been prepared by comparing the water level trend data (155 wells) for the period of (2007 – 2016). The Trend of ground water level data is presented in **Annexure-II**.

The observation shows the rising trend of ground water level in 83 wells and falling trend in 72 wells. The trend of ground water level of the entire state is mainly restricted within 0.4 m only which is normal phenomenon and no abnormal rise or fall in water level is observed in the well of the state.

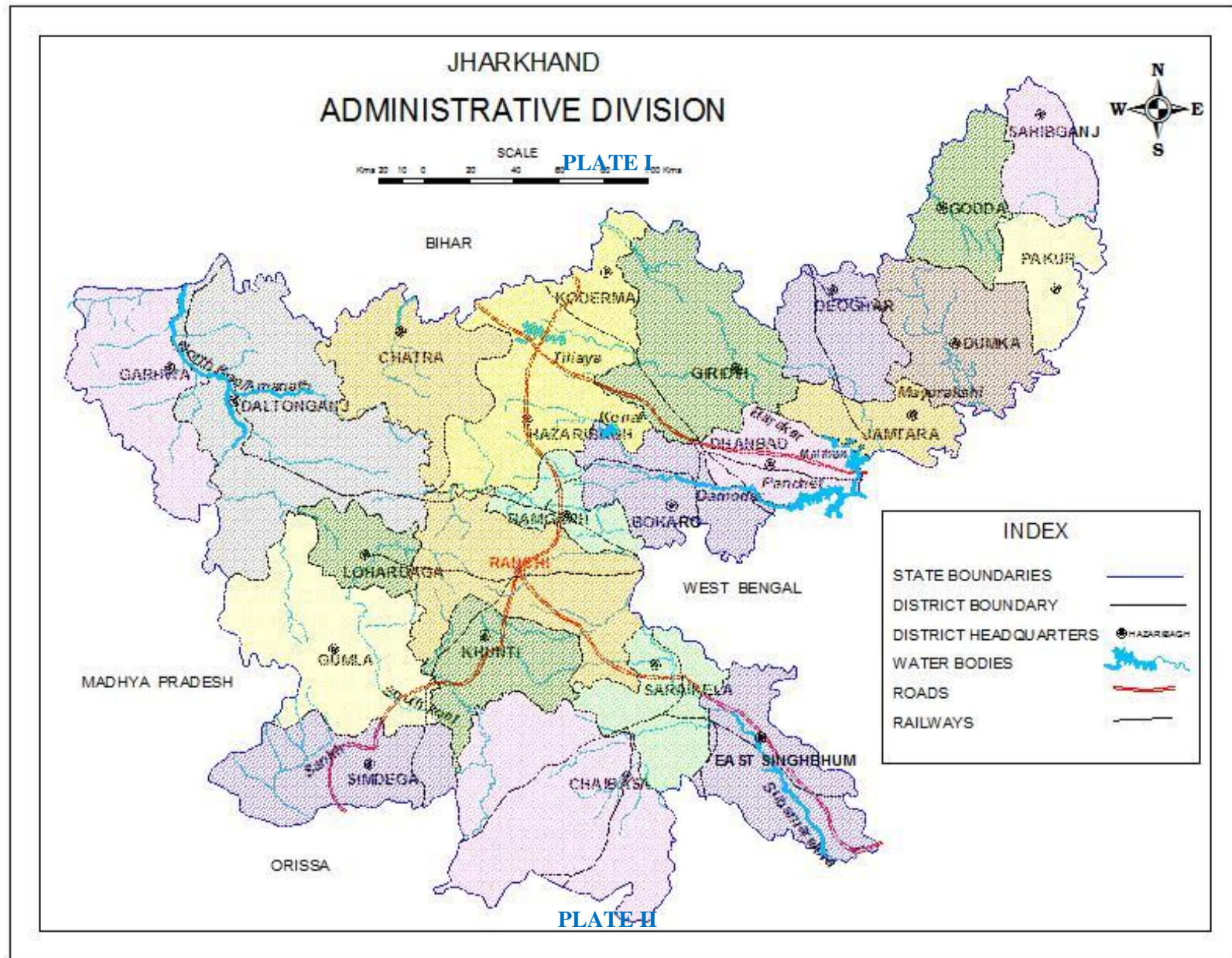
9.0 HYDROCHEMISTRY:

The chemical quality of groundwater is dependent on the source of water and on the course over which it flows. Ground water carries a higher mineral content than surface water due to the slow circulation and longer period of contact with the 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 XXI and XXII. 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, HCO₃, CO₃, Cl, TH, Ca, Mg, K, Na, F, SiO₂, PO₄ and NO₃. The chemical analysis data of ground water samples collected (259) during the period May 2016 from Ground Water Monitoring wells are given in Annexure III.

Ground water samples throughout the state found to be slightly alkaline in nature as the pH mostly varies between 6.65 – 8.73. The quality of ground water in most of part of the state is potable with low mineral contents having electrical conductance varying from 148 (recorded at Brombay, Ranchi) to 2494 (at Rajganj, Dhanbad) $\mu\text{S}/\text{cm}$ at 25⁰c. The samples found to be suitable for drinking and irrigation purposes. Only 8 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 15 number of samples in Dhanbad, palamau, Latehar, Hazaribagh, Pakur and 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.

PLATE I



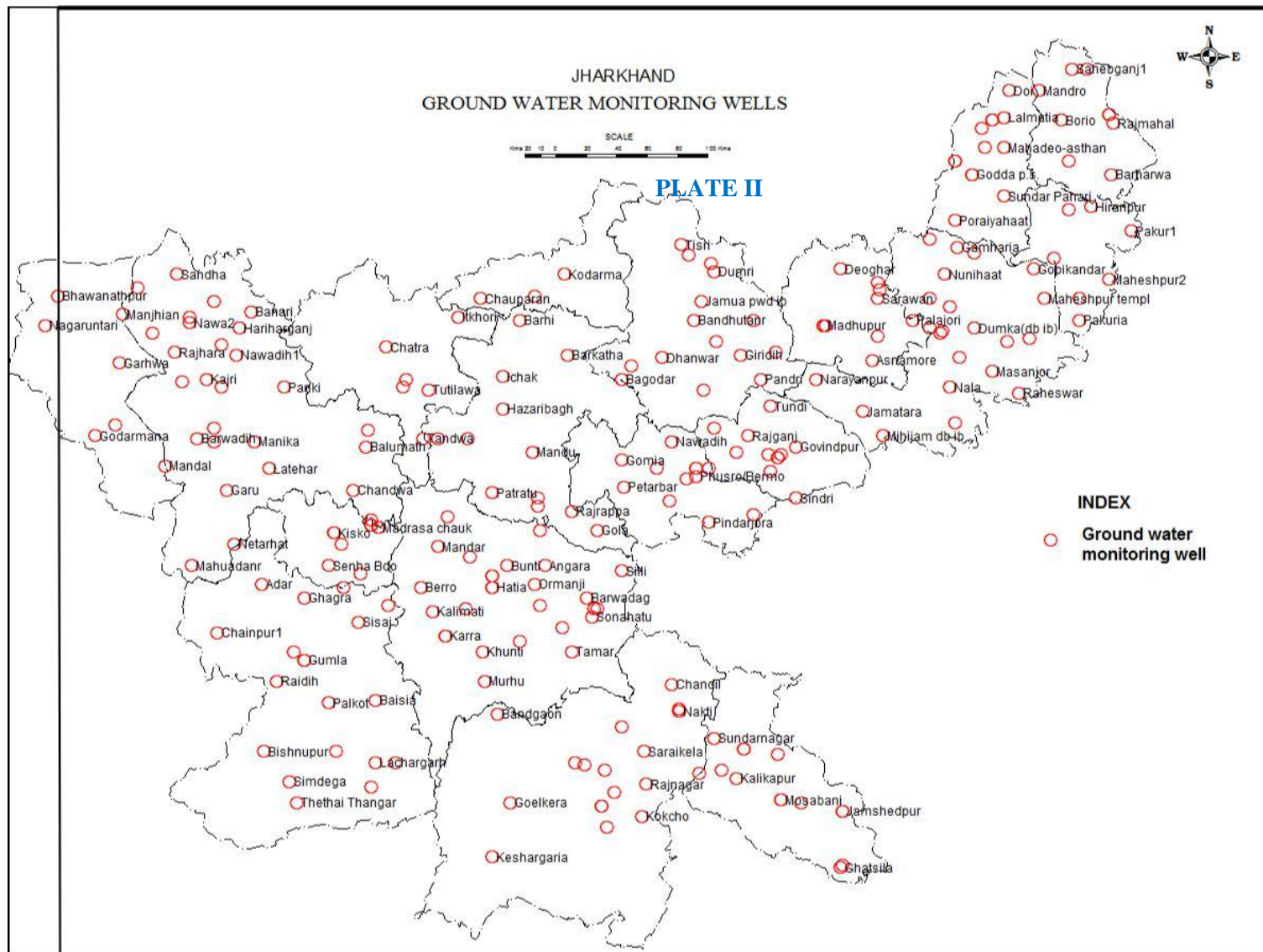
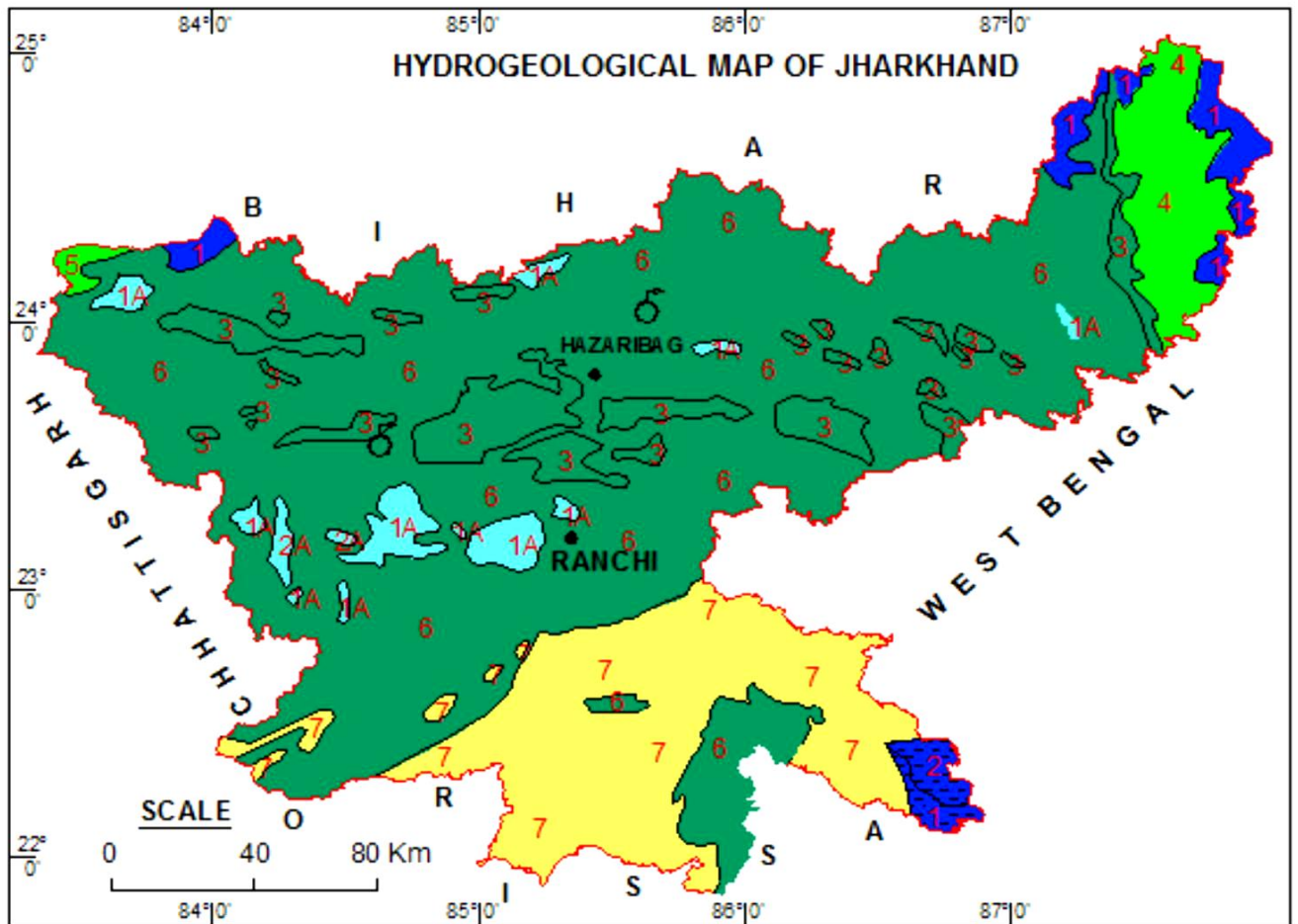


PLATE III



FISSURED & SEMI-CONSOLIDATED FORMATIONS










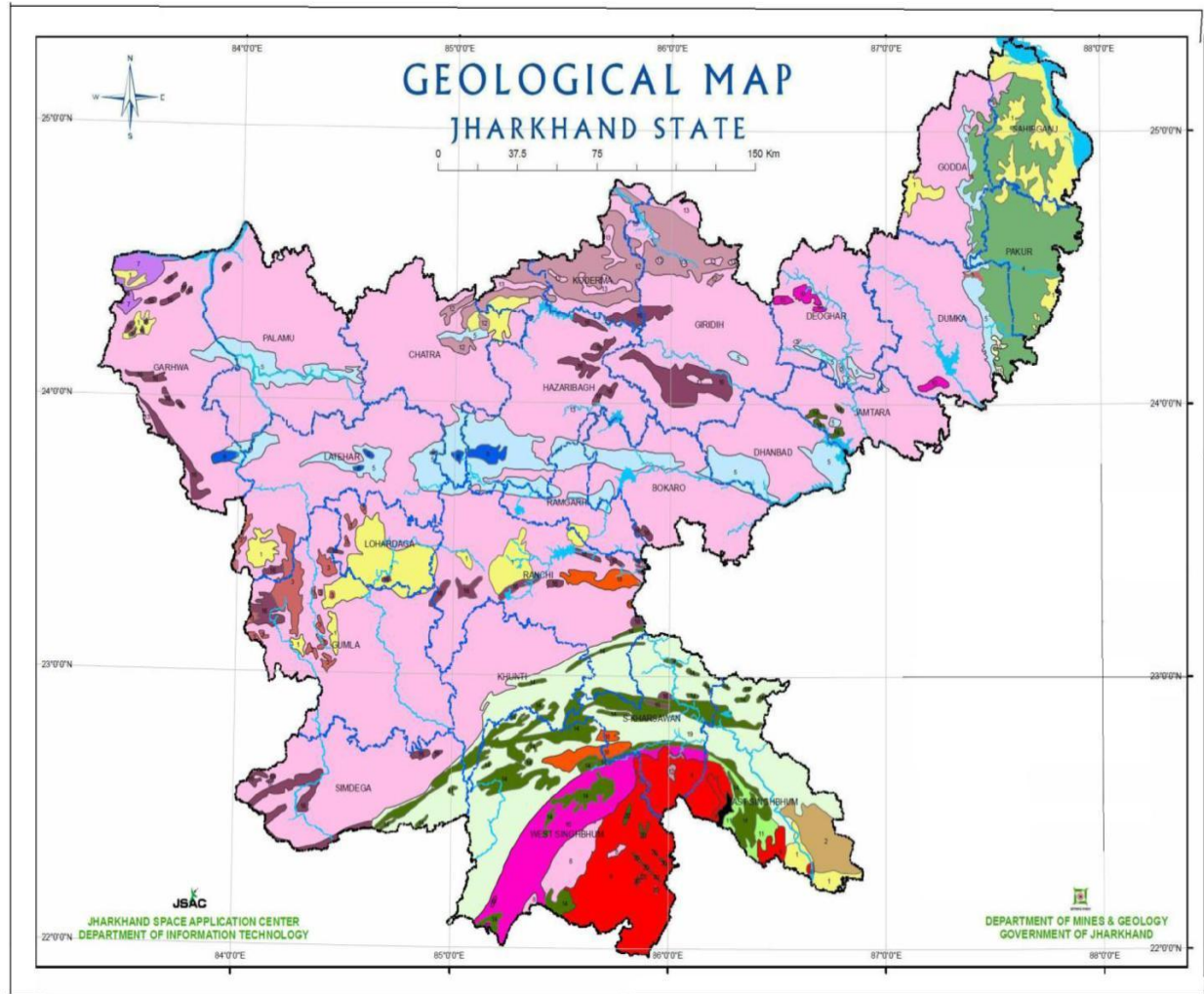
UNITS	AGE GROUP	FORMATION	COLOUR	LITHOLOGY	GROUN WATER POTENTIAL
1	QUATERNARY	ALLUVIUM		CLAY, SILT, GRAVEL, PEBBLES & CALC	>40 m ³ /hr
1A	QUATERNARY	ALLUVIUM		CLAY, SILT & SAND	1-10 m ³ /hr
2	PLEISTOCENE TERTIARY	LATERITES		LATERITES & LITHOMARGE	1-10 m ³ /hr
2A	PLEISTOCENE TERTIARY	TERTIARY		SAND, SILT,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

PLATE IV



INDEX

- 1, Alluvium, Soil/Boulder Conglomerate, Older Alluvium & Laterite
- 2, Tertiary Gravels
- 3, Laterite
- 4, Rajmahal Trap/Intertrappean Beds/Trap Dykes
- 5, Lower Gondwana System/Carbonaceous Shale/Sandstone/Coal Seams
- 6, Upper Godwana System/Sandstone/Red Clay
- 7, Lower Vindhyan System/Limestone/Shale
- 8, Kolhan Series/Limestone/Sandstone/Quartzite
- 9, Singhbhum Granite
- 10, BHQ/BHJ/Metavolcanics/Metasedimentary

- 11, Dhanjori Quartzite and Conglomerate
- 12, Micaschist, Phyllite, Quartzite/Metamorphic of Chhotanagpur
- 13, Chhotanagpur Gneiss & Granophyre
- 14, Dhanjori Lava/Dalma Lava/ Basic rocks
- 15, Sandstone, Shale (Dubrajpur Formation)
- 16, Basic & Ultrabasic
- 17, Gabbro -Anorthosite
- 18, Granite
- 19, Volcanogenic Meta-sediments and Metasedimentary rocks
- 20, Newer Dolerite
- River/Water Body
- District Boundary
- State Boundary

PLATE V

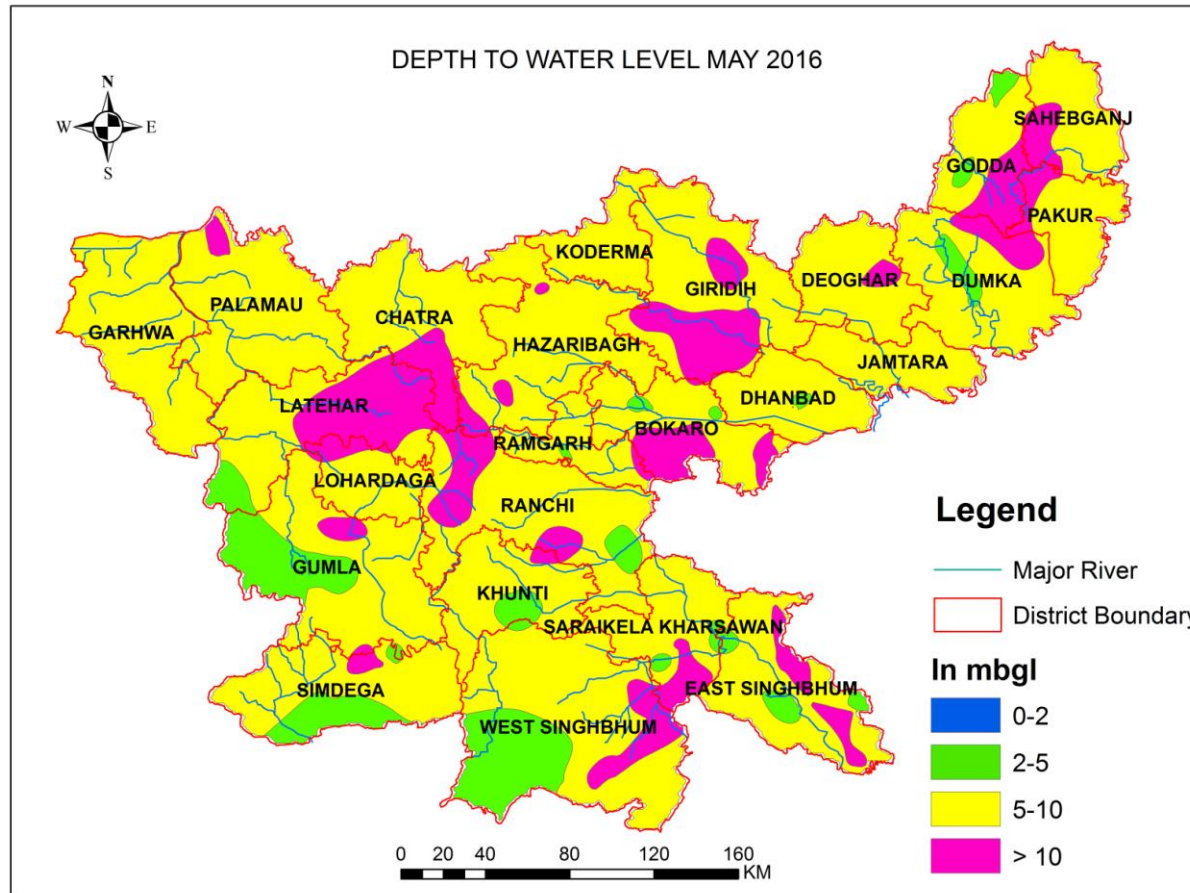


PLATE VI

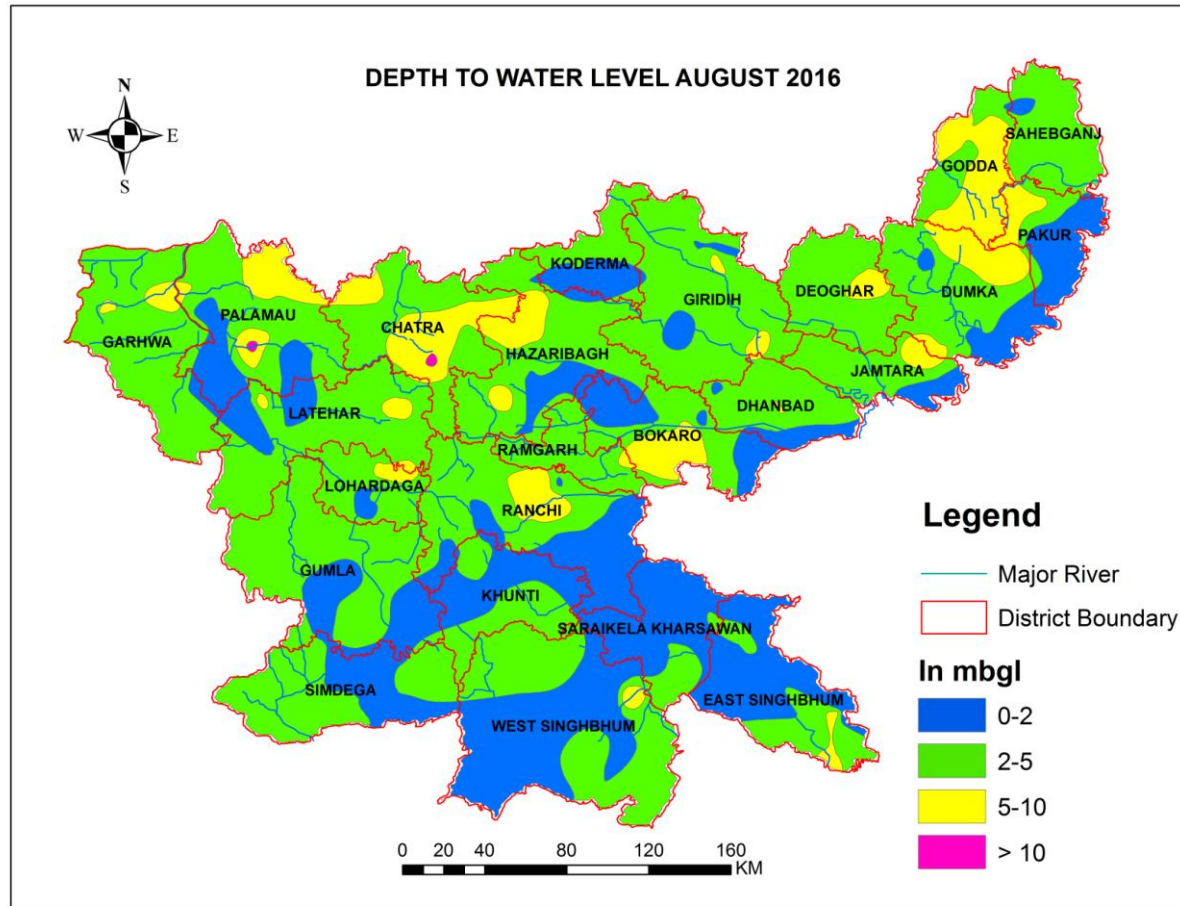


PLATE VII

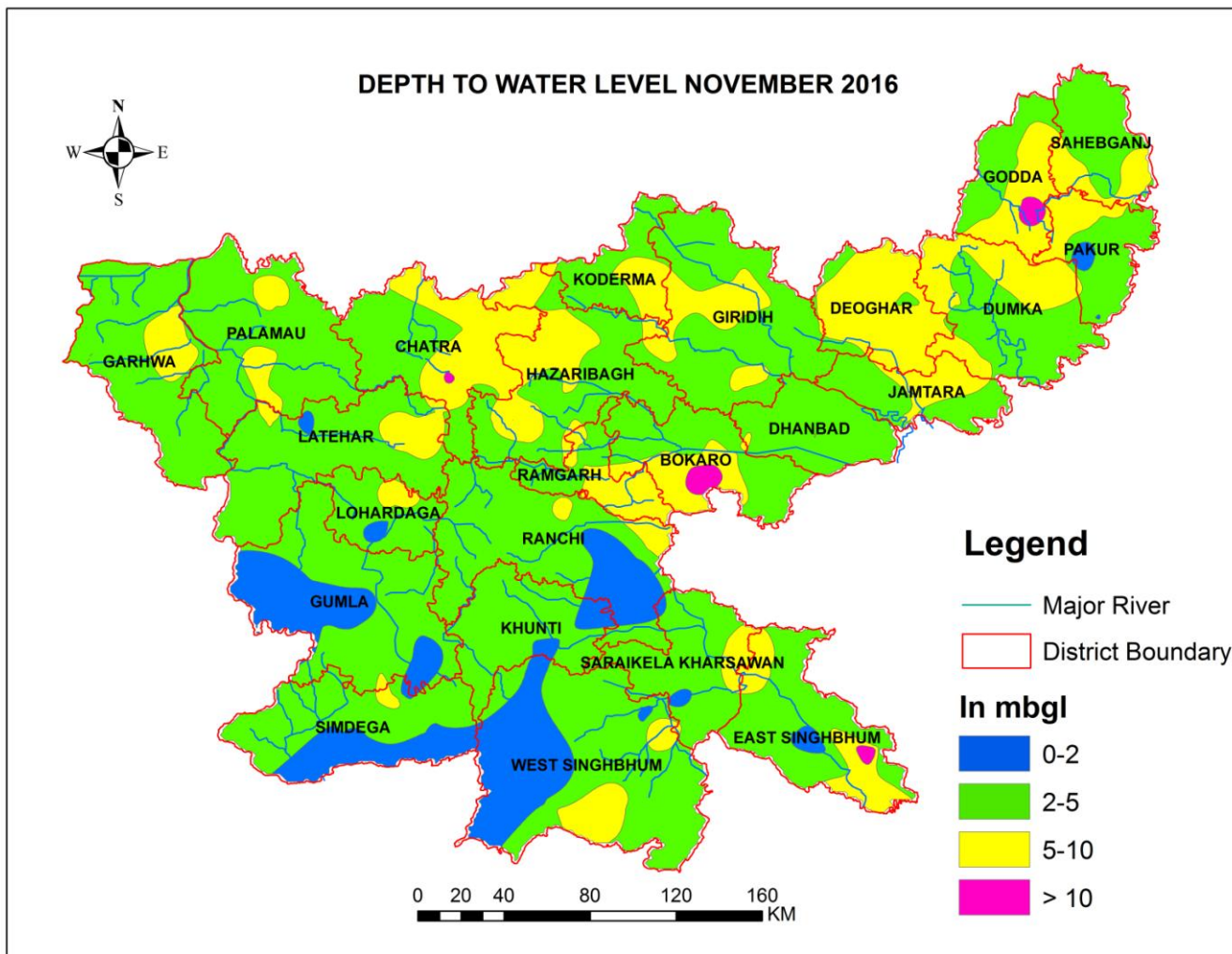


PLATE-VIII

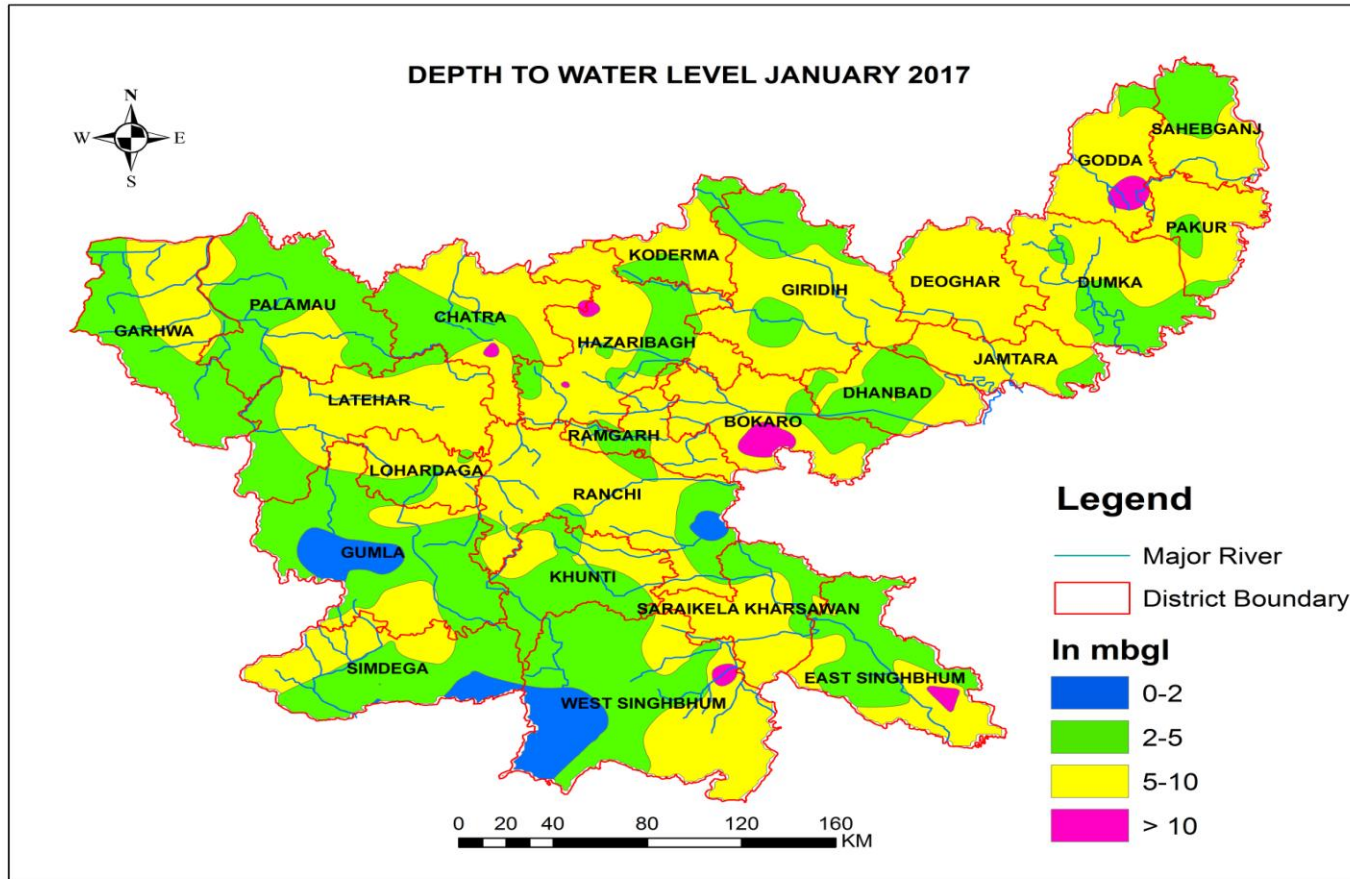


PLATE IX

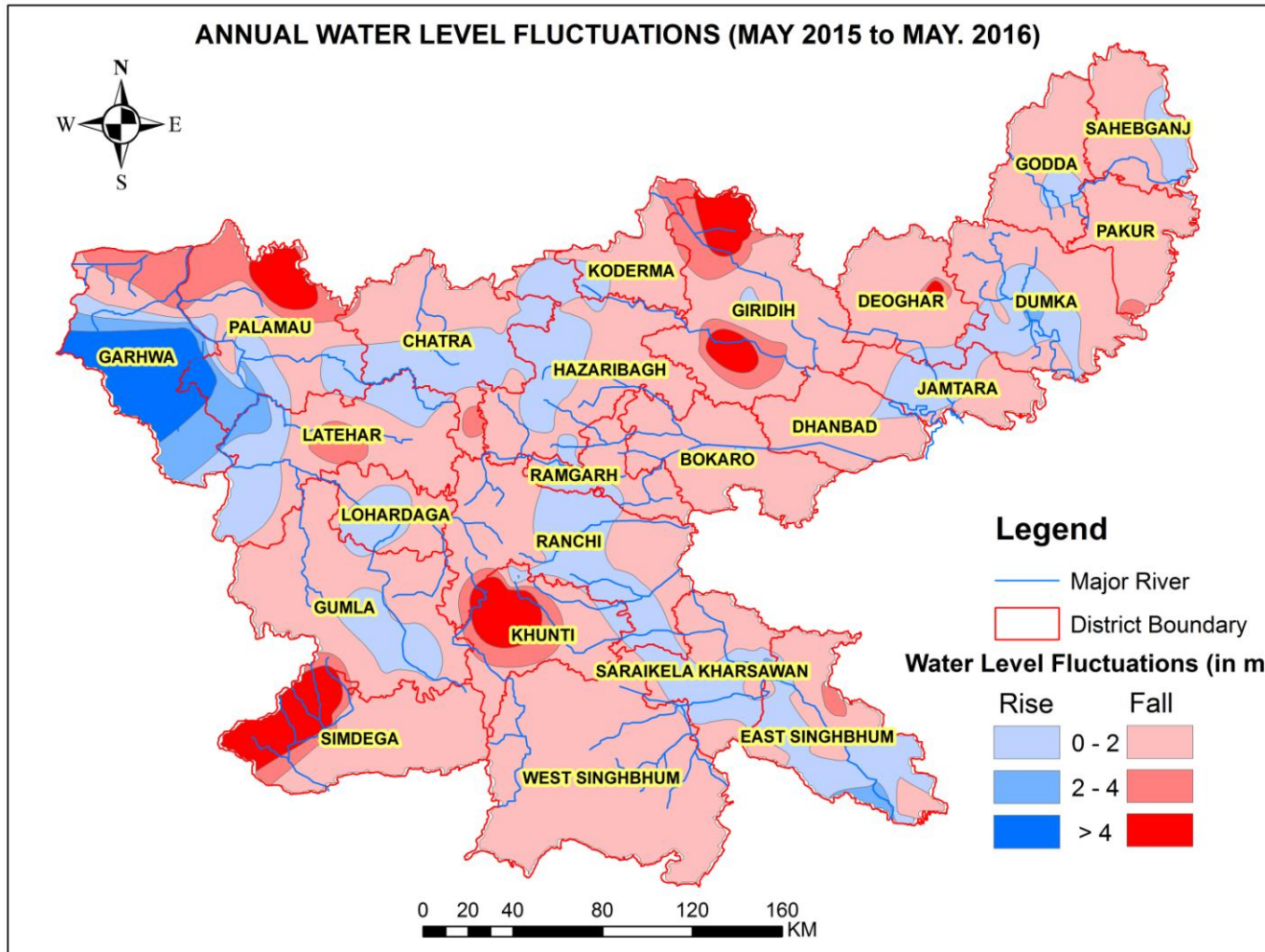


PLATE X

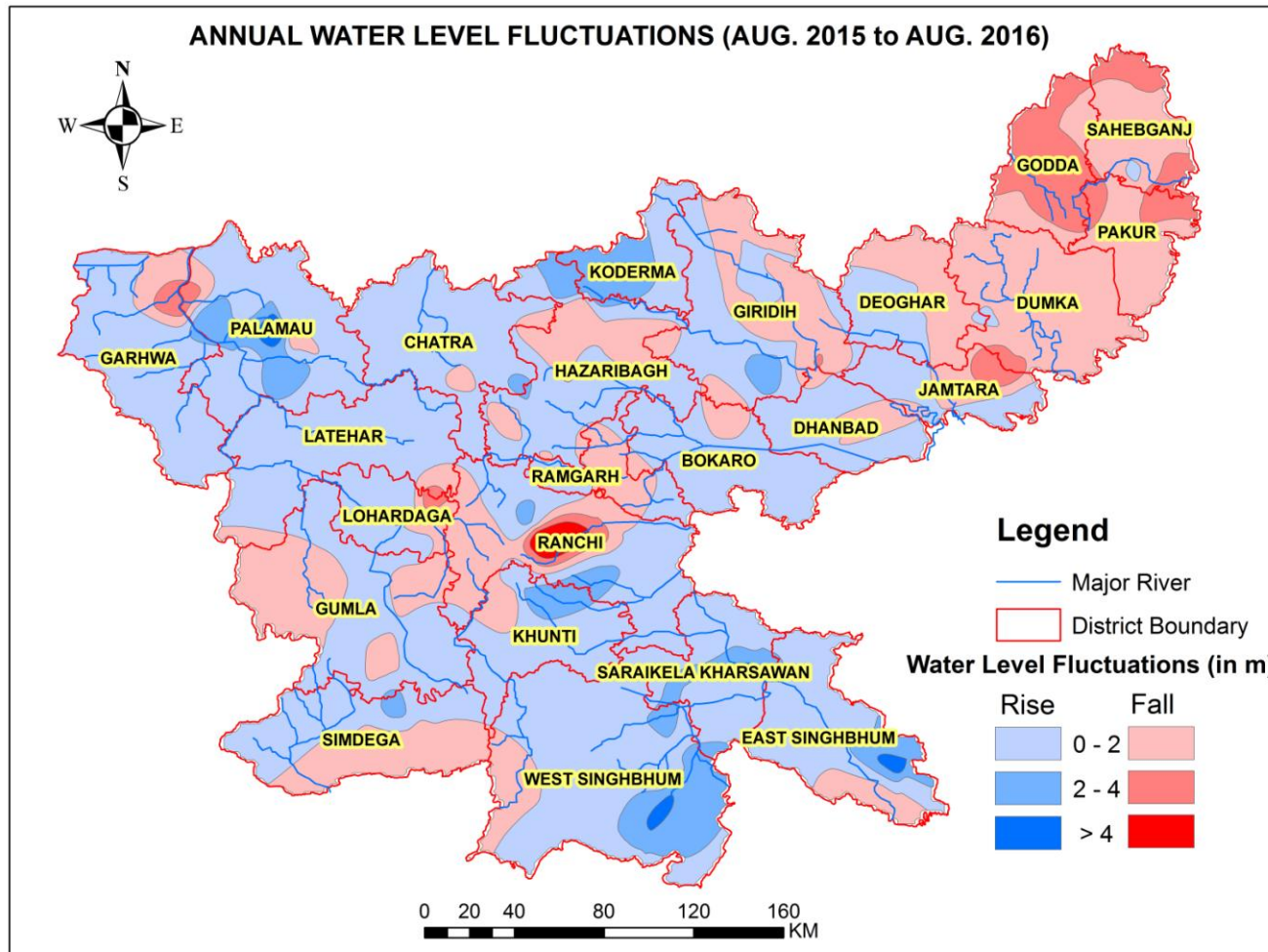


PLATE XI

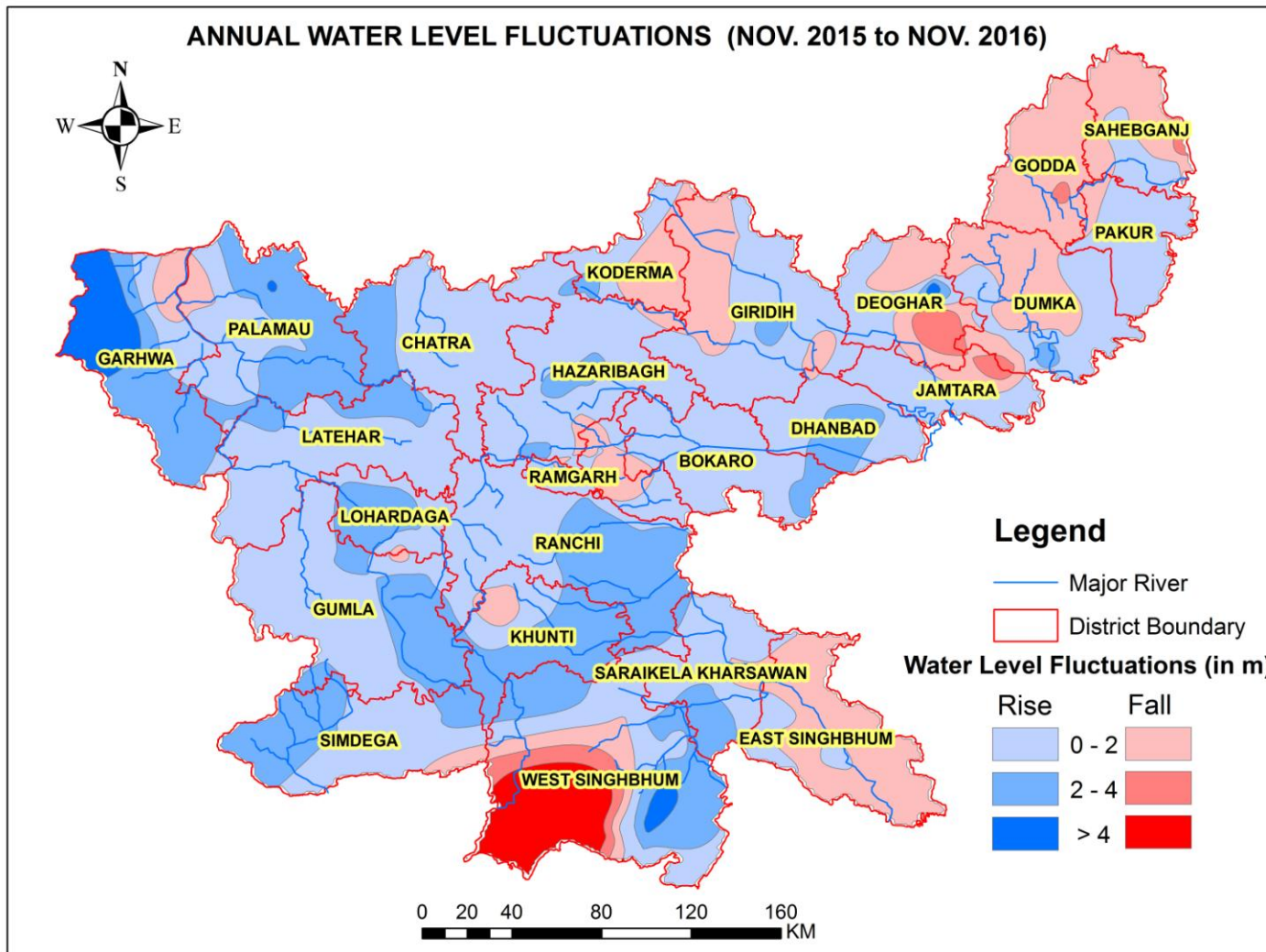


PLATE XII

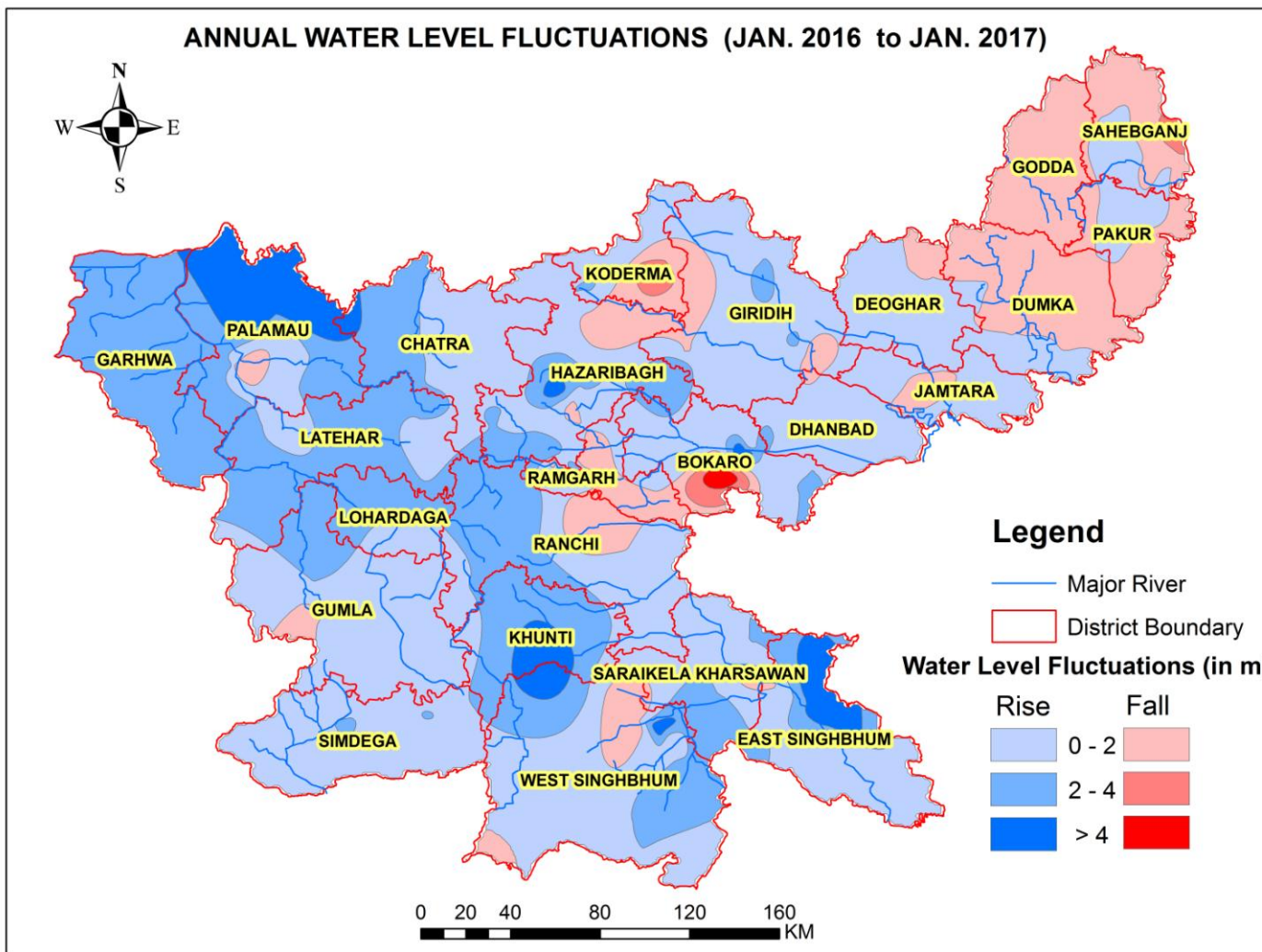


PLATE XIII

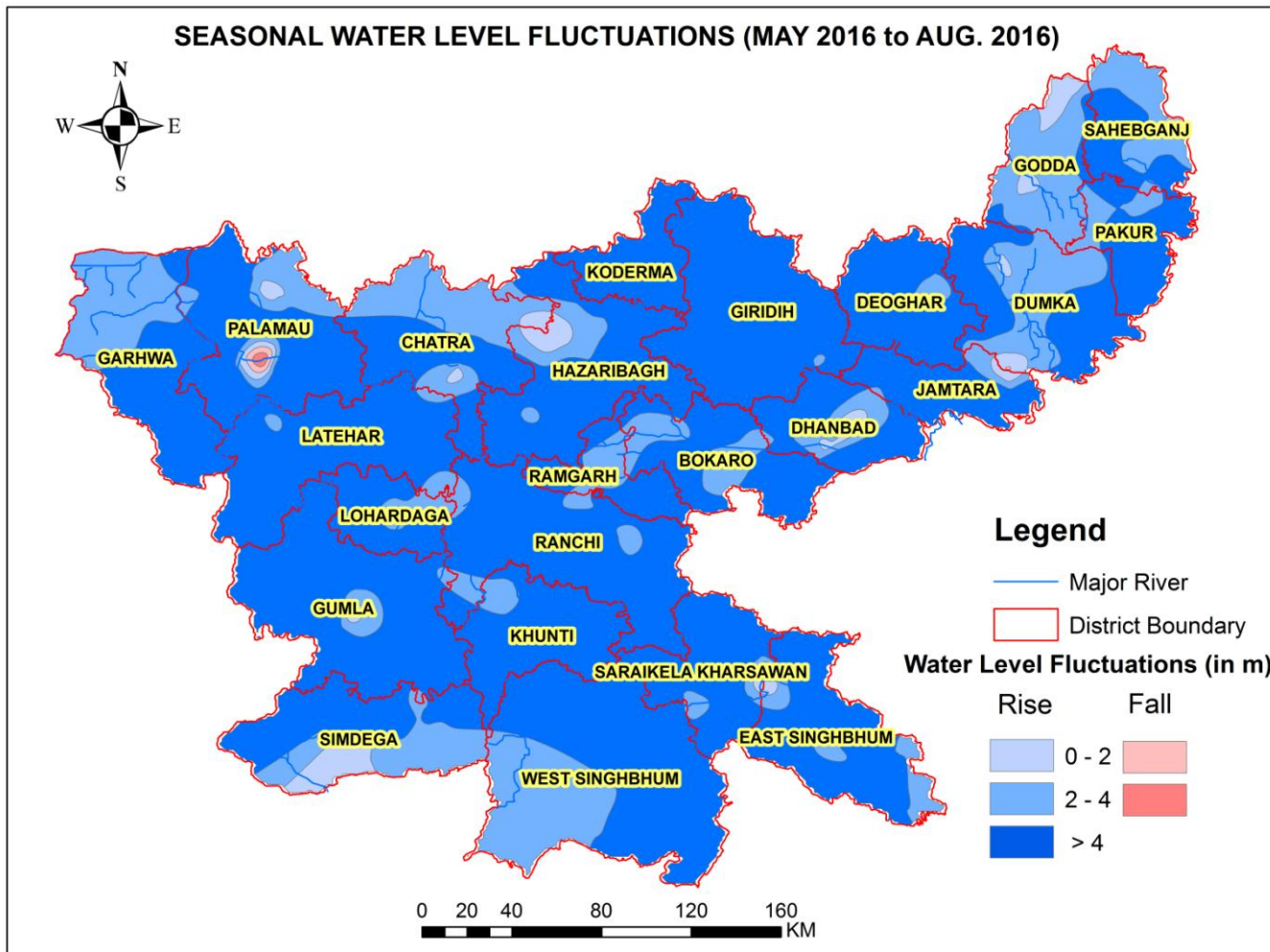


PLATE XIV

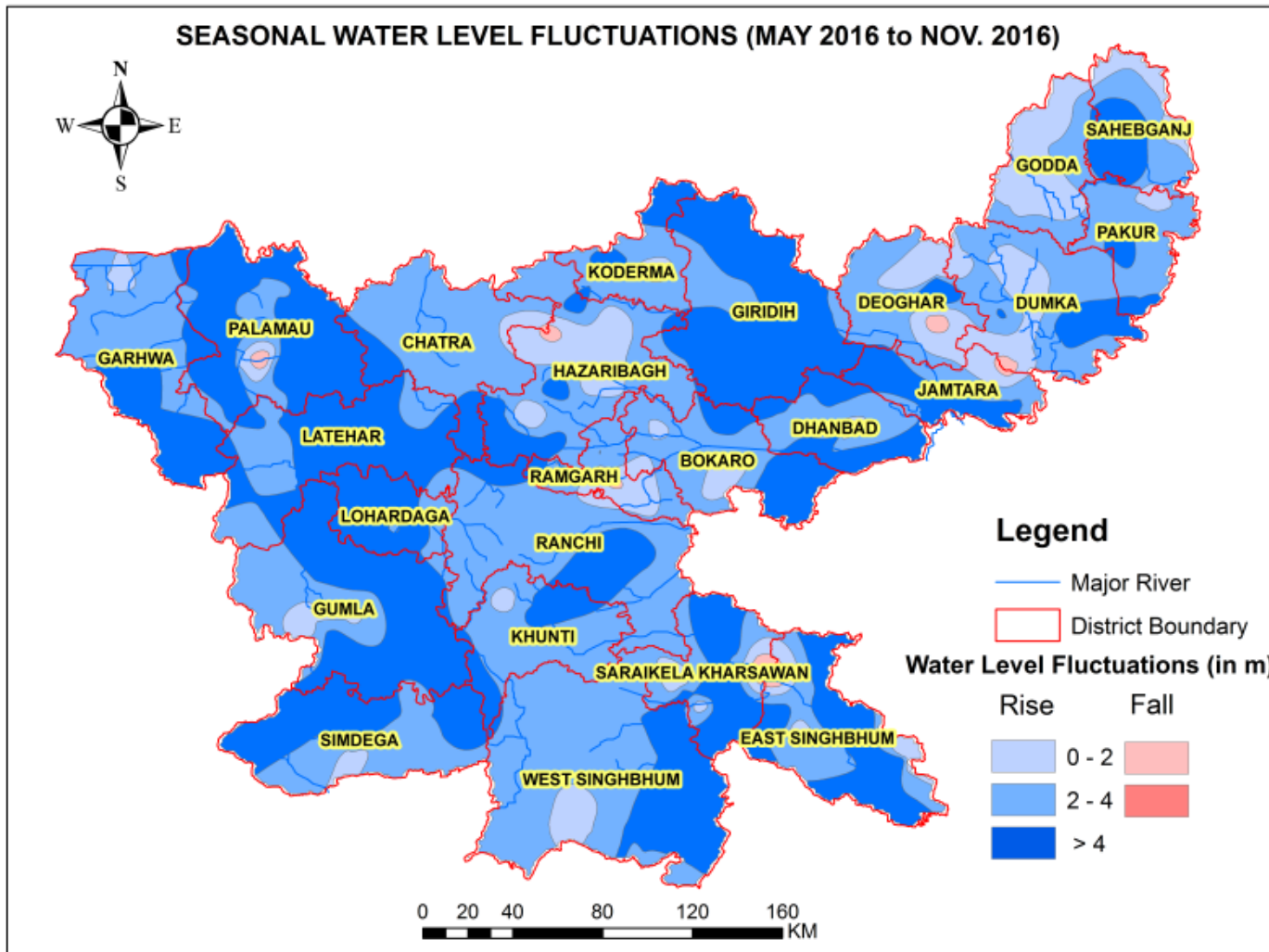


PLATE XV

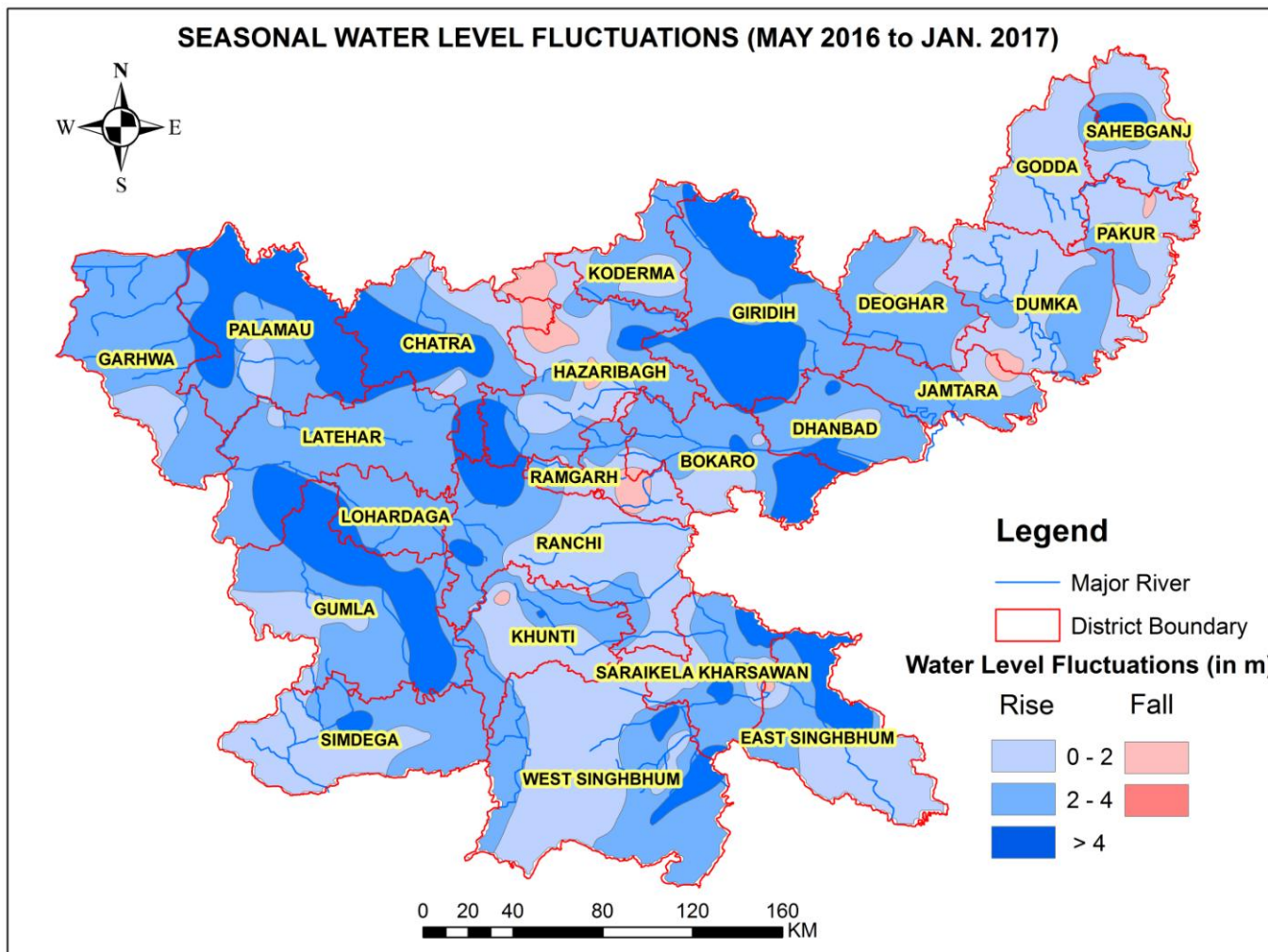


PLATE XVI

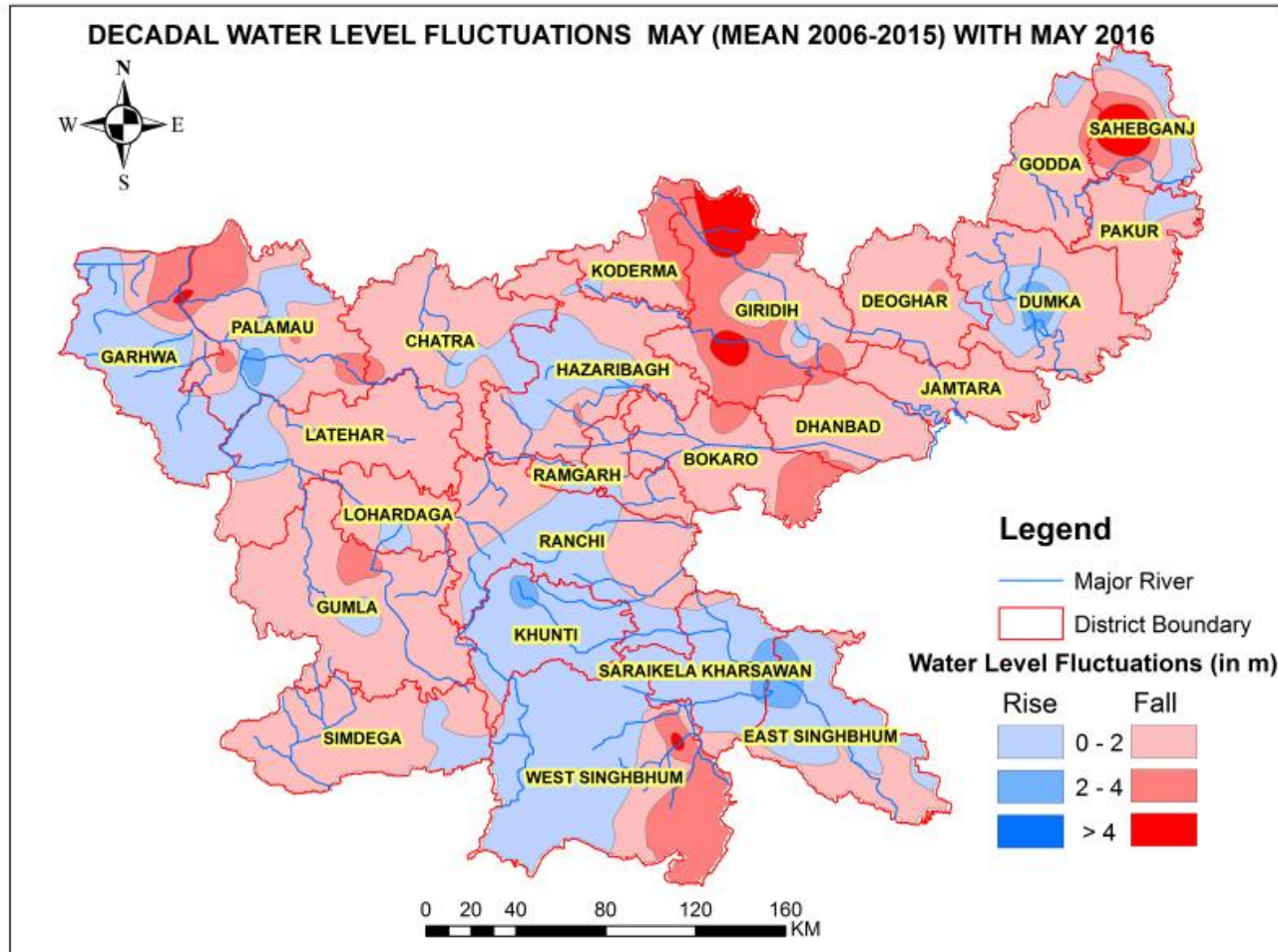
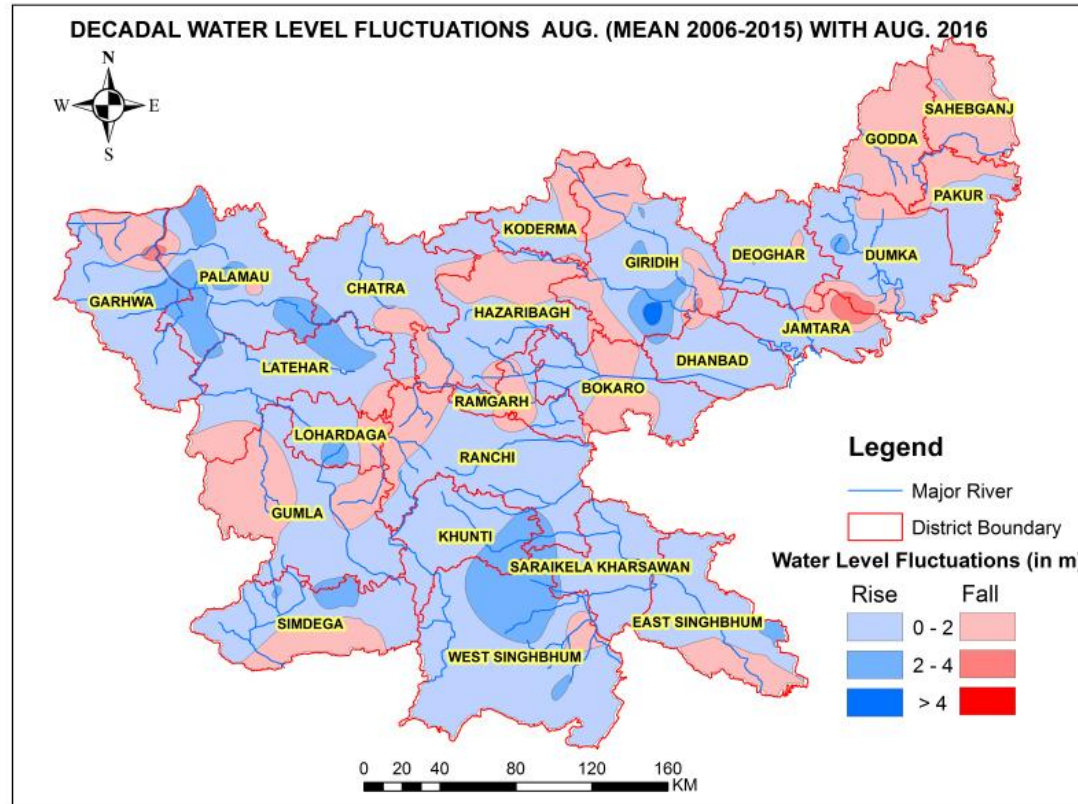


PLATE XVII



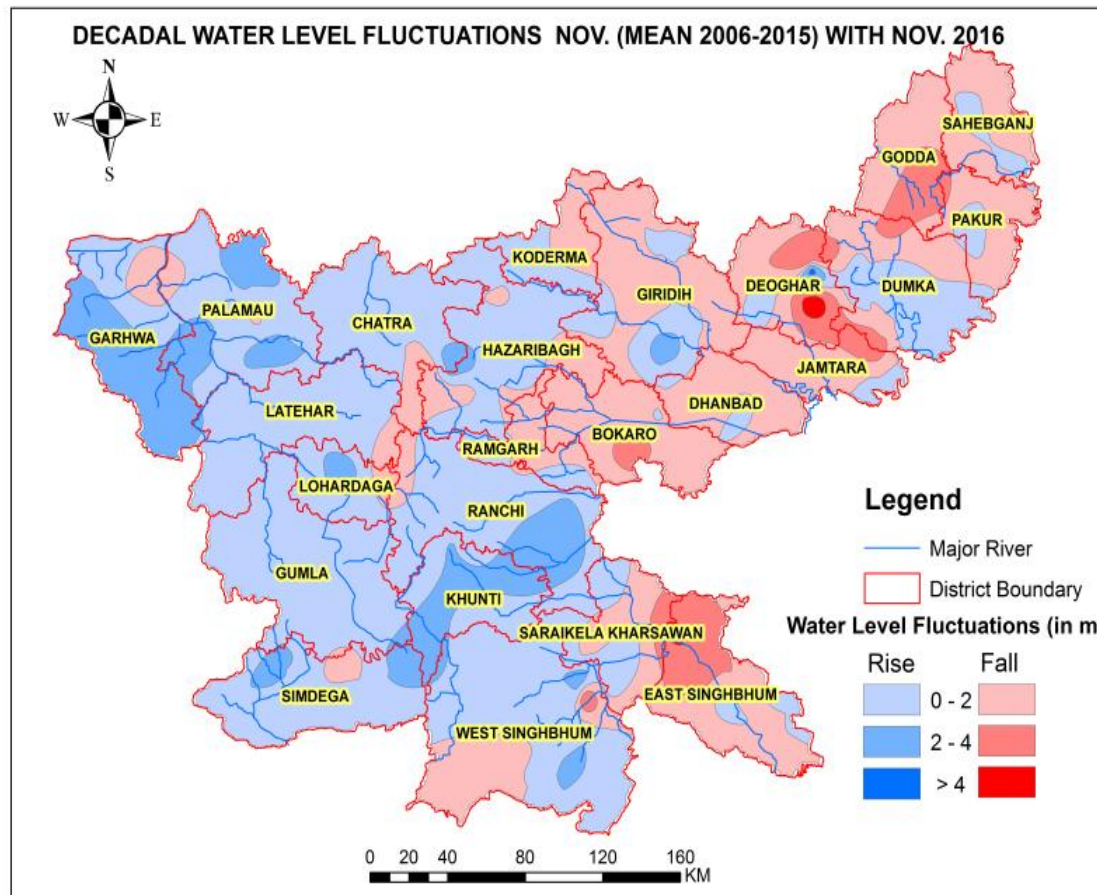
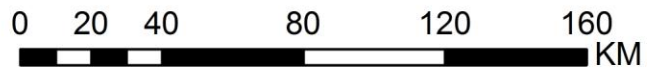


PLATE XIX

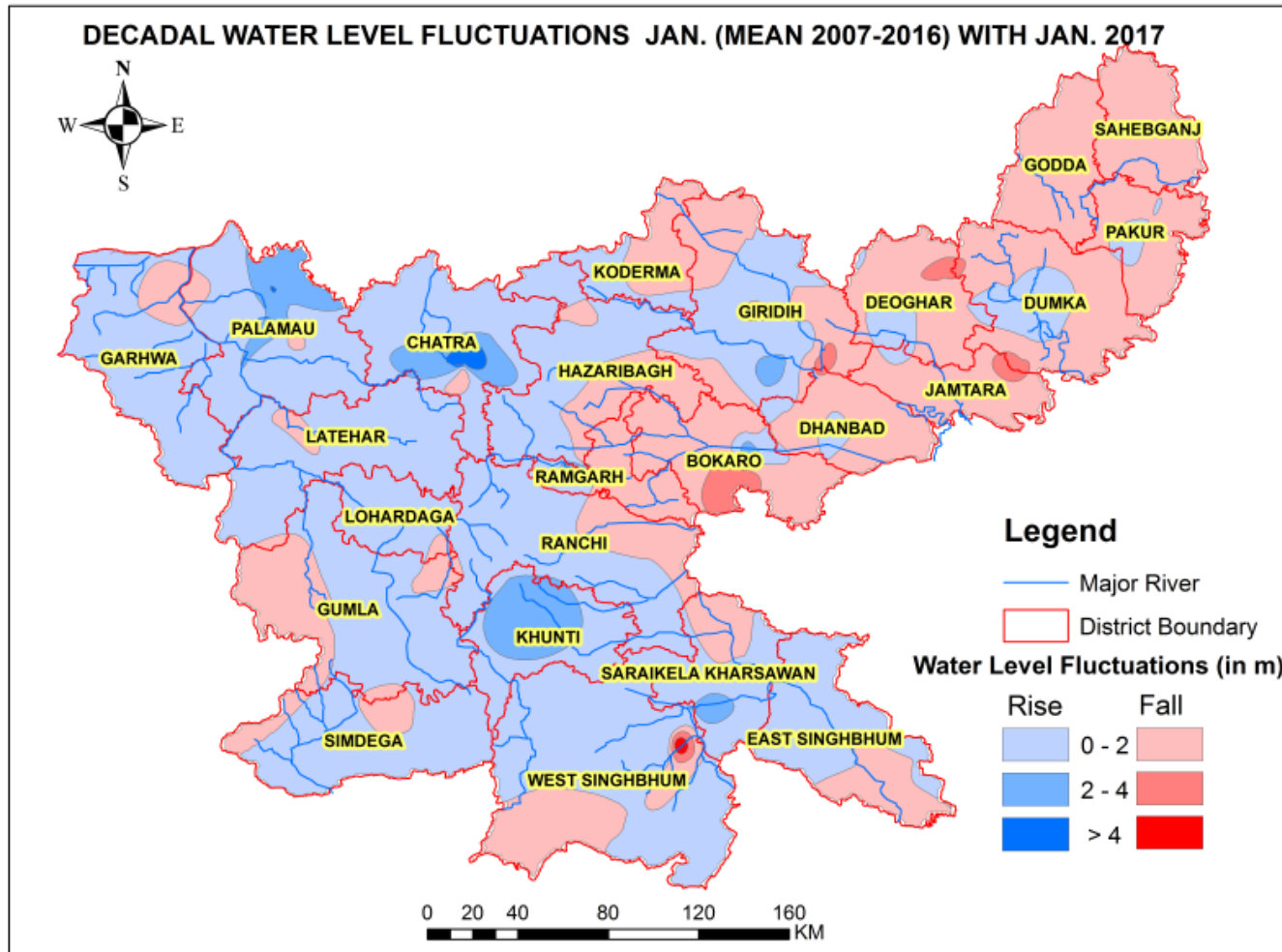


PLATE XX

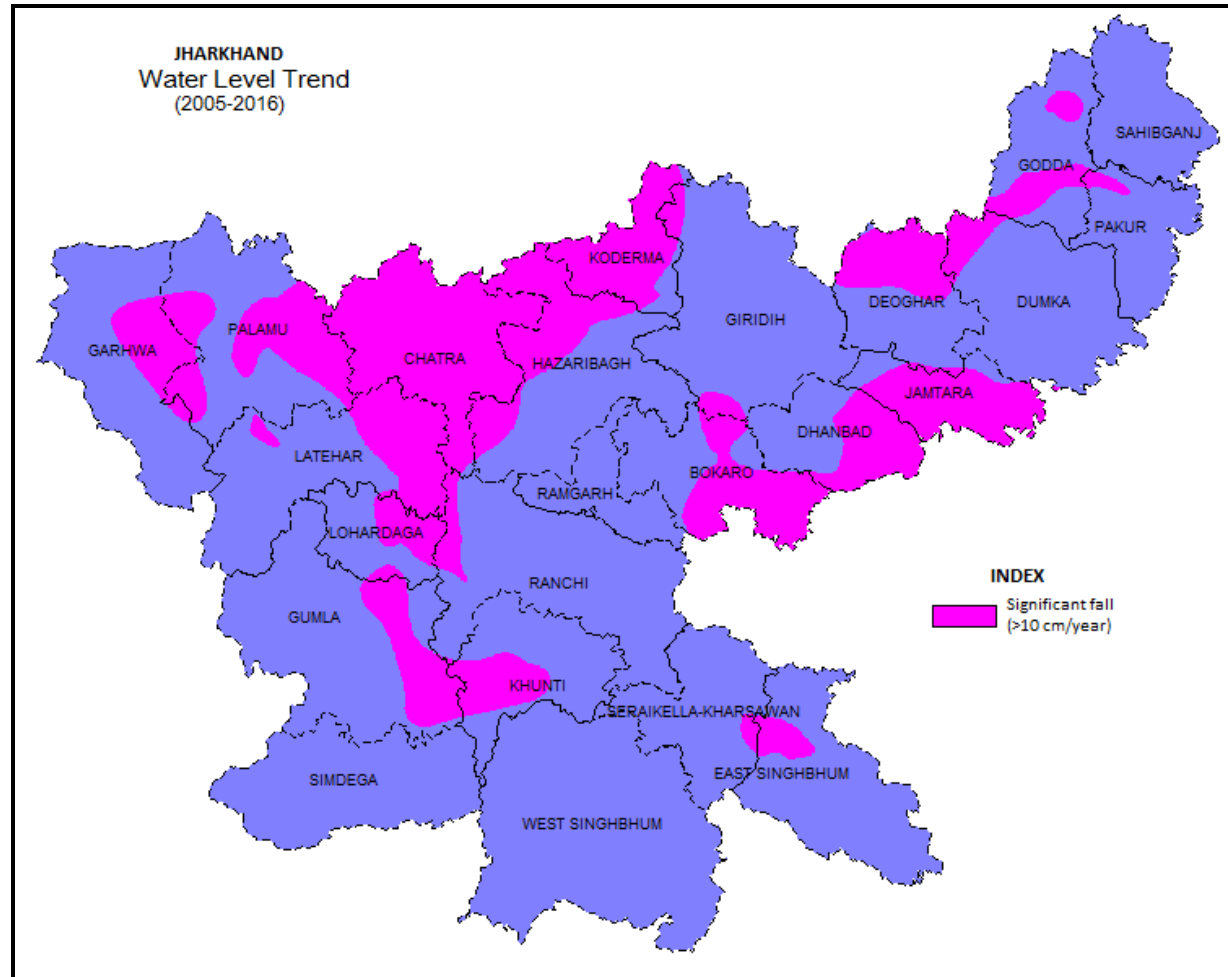
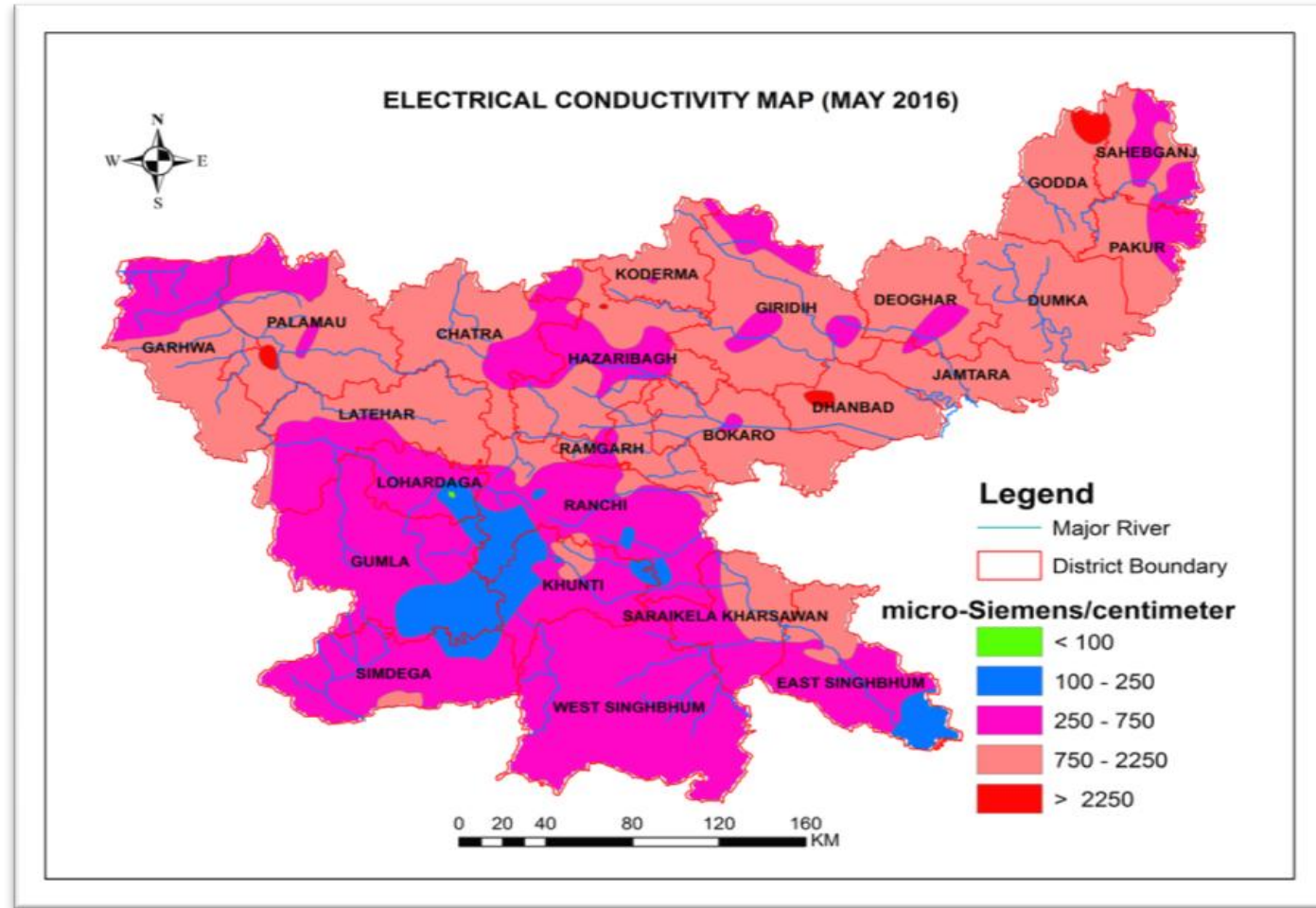


PLATE XXI



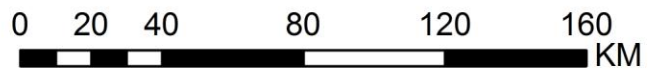


PLATE XXII

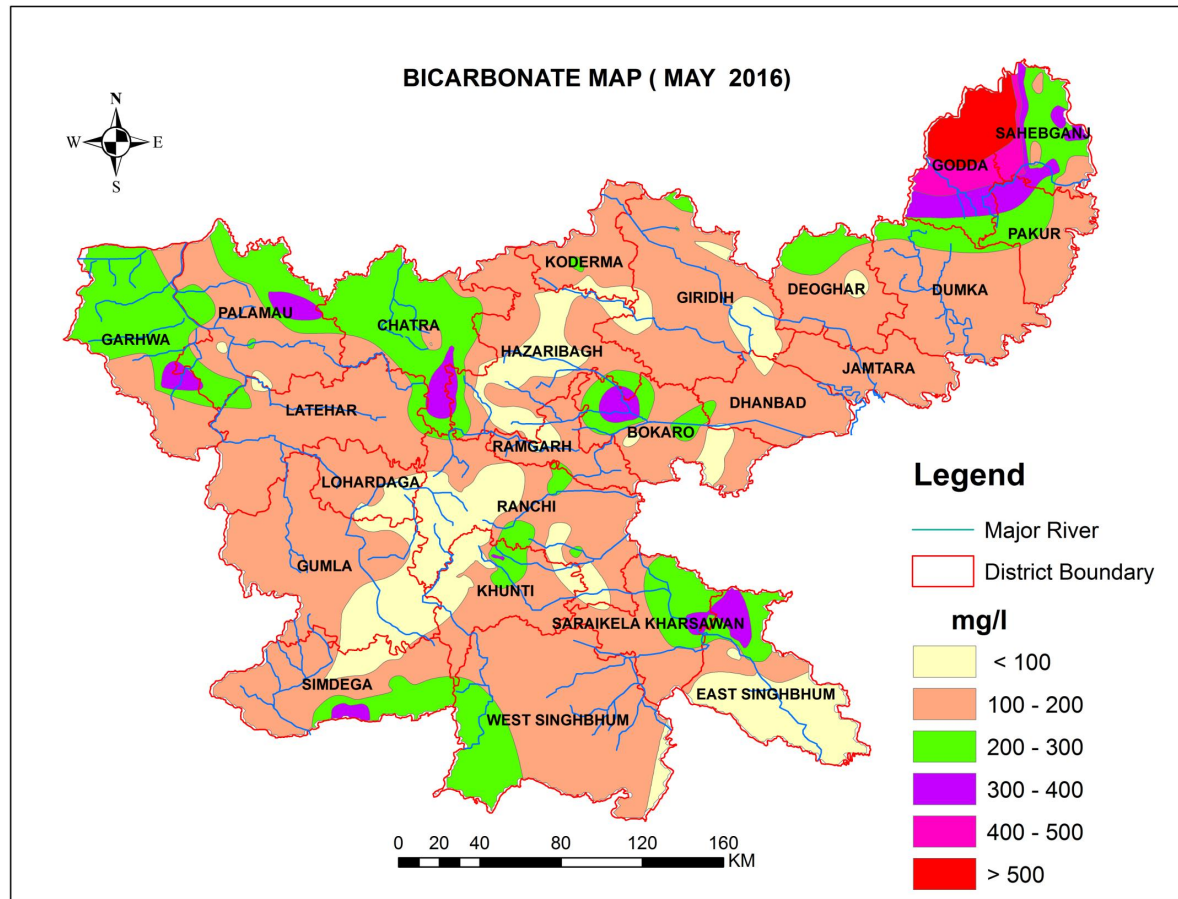


Table - 1

DISTRICT-WISE STATUS OF NHNS FOR THE STATE OF JHARKHAND FOR 2016 – 2017

Sl. No.	District	No. of GWMW as on March 31.03.2016			No. of GWMW abandoned during the year			No. of GWMW established during the year			No. of GWMW as on 31.03. 2017		
		DW	PZ	Total	DW	PZ	Total	DW	PZ	Total	DW	PZ	Total
1	Bokaro	20		20	0		0	2		2	22		22
2	Chatra	10		10	0		0	0		0	10		10
3	Deoghar	11		11	0		0	0		0	11		11
4	Dhanbad	24		24	0		0	0		0	24		24
5	Dumka	16		16	0		0	0		0	16		16
6	Garhwa	10		10	0		0	0		0	10		10
7	Giridih	17		17	0		0	0		0	17		17
8	Godda	17		17	0		0	0		0	17		17
9	Gumla	25		25	0		0	10		0	15		15
10	Hazaribag	33		33	3		0	0		0	30		30
11	Jamtara	10		10	0		0	0		0	10		10
12	Khunti	33	1	34	2		2	0		0	36	1	36
13	Kodarma	7		7	0		0	0		0	7		7
14	Latehar	11		11	0		0	2		2	11		11
15	Lohardaga	11		11	0		0	0		0	11		11
16	Pakaur	12		12	0		0	1		1	13		13
17	Palamu	18		18	0		0	0		1	19		19
18	W Singhbhum	23		23	5		5	0		0	18		18
19	E Singhbhum	32		32	1		1	0		0	31		31
20	Ramgarh	14	4	18	0		0	3		3	17	4	21
21	Ranchi	65	11	76	0	3	3	0		0	56	17	73
22	Sahebganj	19		19			0	0		0	19		19
23	Saraikela-Kharswan	14		14	2		2	0		0	12		12
24	Simdega	10	1	11			4	0		4	15		15
	Total	462	17	479	13	03	17	18	00	13	447	022	468

Table 2: District wise categorisation of depth to water level - May 2016

Sl.	District	No. of wells analysed	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	%	No	%
1	Bokaro	10	4.41	10.30	0	0.0	3	30	3	30	4	40	0	0
2	Chatra	8	7.65	12.59	0	0.0	0	0.0	6	75	2	25	0	0
3	Deoghar	7	7.80	13.10	0	0.0	0	0.0	6	86	1	14	0	0
4	Dhanbad	19	2.51	16.10	0	0.0	7	37	10	53	2	10	0	0
5	Dumka	14	2.67	11.05	0	0.0	2	14	10	72	2	14	0	0
6	Garhwa	7	5.57	9.71	0	0.0	0	0	7	100	0	0	0	0
7	Giridih	17	8.20	14.30	0	0.0	0	0	9	53	8	47	0	0
8	Godda	10	4.67	12.67	0	0.0	2	20	7	70	1	10	0	0
9	Gumla	14	2.05	11.87	0	0.0	2	14	11	79	1	7.0	0	0
10	Hazaribag	29	5.45	13.27	0	0.0	0	0.0	25	86	4	14	0	0
11	Kodarma	6	5.22	8.96	0	0.0	0	0	6	100	0	0	0	0
12	Lohardaga	7	5.60	10.0	0	0.0	0	0.0	7	100.0	0	0	0	0
13	Pakaur	11	4.87	12.41	0	0.0	2	18	8	73	1	09	0	0
14	Palamu	17	4.40	10.12	0	0.0	1	06	15	88	1	06	0	0
15	W Singhbhum	15	3.70	13.50	1	07	9	60	05	33	0	0	0	0
16	E Singhbhum	27	0.97	19.25	03	11	04	15	15	56	5	18	0	0
17	Ranchi	21	2.84	11.80	0	0	2	9	14	67	5	24	0	0
18	Sahibganj	09	2.84	12.0	0	0.0	1	11	7	78	1	11	0	0
19	Khunti	10	4.15	9.65	0	0.0	1	10	9	90	0	0	0	0
20	Ramgarh	09	4.46	8.98	0	0.0	2	22	7	78	0	0	0	0
21	Simdega	09	3.10	10.60	0	0.0	2	22	6	67	1	11	0	0
22	Jamtara	04	6.50	10.08	0	0.0	0	0.0	3	75	1	25	0	0
23	Latehar	08	6.52	11.70	0	0.0	0	0.0	5	63	3	37	0	0
24	Saraikela	05	2.25	10.43	1	20	3	60	1	20	0	0	0	0
	Total	293			5		43		202		43			

Table 3: District wise categorisation of depth to water level - August 2016

SI No.	District	No. of wells analysed	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	%	No	%
1	Bokaro	13	0.85	9.98	6	46	5	38	2	16	0	0	0	0
2	Chatra	8	1.92	11.03	1	12	3	38	3	38	1	12	0	0
3	Deoghar	7	3.15	9.70	0	0.0	6	86	1	14	0	0	0	0
4	Dhanbad	18	0.95	8.59	5	28	7	39	6	33	0	0	0	0
5	Dumka	15	1.17	7.80	3	20	10	67	2	13	0	0	0	0
6	Garhwa	7	2.26	5.90	0	0.0	5	71	2	29	0	0	0	0
7	Giridih	17	1.35	5.98	3	18	11	64	3	18	0	0	0	0
8	Godda	11	2.87	10	0	0	6	55	5	45	0	0	0	0
9	Gumla	13	0.54	7.42	4	31	8	62	1	07	0	0	0	0
10	Hazaribag	25	0.74	8.70	8	32	14	56	3	12	0	0	0	0
11	Kodarma	5	0.30	2.95	2	40	3	60	0	0	0	0	0	0
12	Lohardaga	10	0.65	6.10	2	20	6	60	2	20	0	0	0	0
13	Pakaur	09	0.16	5.50	4	44	4	44	01	12	0	0	0	0
14	Palamu	17	0.18	10.97	6	35	7	41	3	18	1	06	0	0
15	W Singhbhum	17	0.30	7.30	10	59	5	29	2	12	0	0	0	0
16	E Singhbhum	25	0.43	8.63	15	60	7	28	3	12	0	0	0	0
17	Ranchi	32	0.60	10.65	13	41	14	44	4	12	1	3	0	0
18	Sahibganj	10	1.22	6.61	2	20	7	70	1	10	0	0	0	0
19	Khunti	05	1.10	6.05	3	60	1	20	1	20	0	0	0	0
20	Ramgarh	04	2.45	6.28	0	0.0	3	75	1	25	0	0	0	0
21	Simdega	08	0.45	3.25	3	37	5	63	0	0	0	0	0	0
22	Jamtara	04	6.50	10.08	0	0.0	0	0.0	3	75	1	25	0	0
23	Latehar	07	0.80	6.24	2	29	4	57	1	14	0	0	0	0
24	Saraikela	05	0.10	2.10	4	80	13	20	0	0	0	0	0	0
	Total	292			96		154		50		4			

Table 4: District wise categorisation of depth to water level - November 2016

Sl No.	District	No. of wells analysed	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	%	No	%
1	Bokaro	14	1.25	11.41	1	7	9	65	3	21	1	7	0	0
2	Chatra	10	4.30	10.35	0	0.0	3	30	6	60	1	10	0	0
3	Deoghar	6	4.35	8.71	0	0.0	1	17	5	83	0	0	0	0
4	Dhanbad	16	2.11	8.19	0	0.0	10	63	6	37	0	0	0	0
5	Dumka	15	2.02	8.54	0	0.0	9	60	6	40	0	0	0	0
6	Garhwa	7	3.31	5.90	0	0.0	5	71	2	29	0	0	0	0
7	Giridih	17	2.81	10.80	0	0.0	11	65	5	29	1	6	0	0
8	Godda	10	3.47	10.82	4	40	5	50	1	10	0	0	0	0
9	Gumla	17	0.51	5.50	3	18	12	71	2	11	0	0	0	0
10	Hazaribag	16	2.58	10	0	0.0	9	56	7	44	0	0	0	0
11	Kodarma	5	2.20	6.02	0	0.0	4	80	1	20	0	0	0	0
12	Lohardaga	9	1.40	6.55	3	33	5	56	1	11	0	0	0	0
13	Pakaur	9	0.89	7.27	2	22	4	44	3	34	0	0	0	0
14	Palamu	16	2.56	8.84	0	0.0	12	75	4	25	0	0	0	0
15	W Singhbhum	17	1.65	9.42	4	24	8	47	05	29	0	0	0	0
16	E Singhbhum	11	0.80	13.50	01	09	07	64	3	27	0	0	0	0
17	Ranchi	13	0.60	9.89	2	15	8	62	3	23	0	0	0	0
18	Sahibganj	09	2.68	6.16	0	0.0	7	77	2	23	0	0	0	0
19	Khunti	8	2.10	4.70	0	0.0	7	87	1	13	0	0	0	0
20	Ramgarh	09	2.58	7.31	0	0.0	5	56	4	44	0	0	0	0
21	Simdega	09	1.20	5.85	3	33	5	56	1	11	0	0	0	0
22	Jamtara	04	3.01	6.90	0	0.0	2	50	2	50	0	0	0	0
23	Latehar	08	1.81	8.0	1	12.5	6	75	1	12.5	0	0	0	0
24	Saraikela	05	0.54	3.25	2	40	3	60	0	0	0	0	0	0
	Total	260			26		157		74		3			

Table 5: District wise categorisation of depth to water level - january 2017

SI No.	District	No. of wells analysed	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	%	No	%
1	Bokaro	10	2.60	12.40	0	0.0	5	50	4	40	1	10	0	0
2	Chatra	8	3.56	11.29	0	0.0	2	25	5	63	1	12	0	0
3	Deoghar	6	5.94	10.02	0	0.0	0	0.0	5	83	1	17	0	0
4	Dhanbad	18	1.95	11.37	1	6.0	8	44	8	44	1	06	0	0
5	Dumka	16	2.63	9.06	0	0.0	8	50	8	50	0	0	0	0
6	Garhwa	5	4.11	6.37	0	0.0	3	60	2	40	0	0	0	0
7	Giridih	16	3.12	7.10	0	0.0	5	31	11	69	0	0	0	0
8	Godda	11	3.93	10.48	0	0.0	2	18	8	72	1	09	0	0
9	Gumla	18	0.56	6.58	3	17	10	56	5	27	0	0	0	0
10	Hazaribag	18	2.98	10.31	0	0.0	9	50	7	39	2	11	0	0
11	Kodarma	6	3.35	7.63	0	0.0	3	50	3	50	0	0	0	0
12	Lohardaga	10	3.10	6.74	0	0.0	5	50	5	50	0	0	0	0
13	Pakaur	07	2.80	9.88	0	0.0	2	29	5	71	0	0	0	0
14	Palamu	12	3.34	7.08	0	0.0	9	75	3	25	0	0	0	0
15	W Singhbhum	18	0.00	12.50	1	05	7	39	6	51	1	05	0	0
16	E Singhbhum	25	1.00	16.50	03	12	13	52	07	28	2	08	0	0
17	Ranchi	64	1.50	25	1	04	10	17	42	66	6	09	1	04
18	Sahibganj	11	2.76	7.58	0	0.0	4	36	7	54	0	0	0	0
19	Khunti	14	1.50	6.45	1	07	8	57	5	34	0	0	0	0
20	Ramgarh	11	3.87	8.46	0	0.0	2	18	8	73	1	09	0	0
21	Simdega	06	2.00	7.18	1	17	4	66	1	17	0	0	0	0
22	Jamtara	05	3.29	7.25	0	0.0	1	20	4	80	0	0	0	0
23	Latehar	04	3.53	9.33	0	0.0	3	75	1	25	0	0	0	0
24	Saraikela	06	0.00	5.63	2	33	1	17	3	50	0	0	0	0
	Total	321			13		124		163		18		1	

Table 6: District wise categorisation of fluctuation in water level and frequency distribution between May 2015– May 2016

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of wells	
			Rise		Fall		Rise						Fall						Rise	Fall
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4			
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Bokaro	8	0.18	0.18	0.21	1.9	1	12.5	0	0	0	0	7	87.5	0	0	0	0	1	7
2	Chatra	4	1.06	1.06	0.12	3.23	1	25	0	0	0	0	2	50	1	25	0	0	1	3
3	Deoghar	5	-	-	0.60	4.91	0	0	0	0	0	0	4	80	0	0	1	20	0	5
4	Dhanbad	13	0.3	3.39	0.06	9.95	3	23	1	7.5	0	0	8	62	0	0	1	7.5	4	9
5	Dumka	15	0.02	2.33	0.12	0.53	5	33.3	1	6.6	0	0	8	53.3	1	6.6	0	0	6	9
6	Garhwa	4	0.9	6.79	3.85	3.85	1	25	1	25	1	25	0	0	1	25	0	0	3	1
7	Giridih	16	1.1	1.1	0.33	5.34	1	6	0	0	0	0	10	62.5	3	19	2	12.5	1	15
8	Godda	16	0.18	0.18	0.17	1.32	1	14	0	0	0	0	6	86	0	0	0	0	2	14
9	Gumla	16	0.2	0.25	0.1	5.95	2	13	0	0	0	0	13	81	1	6	0	0	2	14
10	Hazaribag	24	0.84	2.22	0.11	10.04	7	29	1	4	1	4	11	46	4	17	1	4	8	16
11	Kodarma	2	1.82	1.82	0.86	0.86	1	50	0	0	0	0	1	50	0	0	0	0	1	1
12	Lohardaga	4	1	1	1.14	1.72	1	25	0	0	0	0	2	50	1	25	0	0	1	2
13	Pakaur	5	-	-	0.49	2.99	0	0	0	0	0	0	4	80	1	20	0	0	0	5
14	Palamu	15	0.1	2.05	0.04	4.73	3	20	3	20	2	13	7	47	0	0	0	0	6	9
15	W. Singhbhum	13	0.37	3.23	0.05	1.86	3	23	0	0	0	0	9	69	0	0	0	0	3	9
16	E. Singhbhum	20	0.5	5.86	0.5	5.45	7	35	4	20	1	5	5	25	1	5	1	5	12	07
17	Ranchi	20	0.03	3.20	0.22	2.55	5	25	1	5	0	0	13	65	1	5	0	0	06	14
18	Sahibganj	07	0.09	0.91	0.35	2.04	2	29	0	0	0	0	4	57	1	14	0	0	2	5
	Total	207					44		12		5		114		16		6		59	145

Table7: District wise categorisation of fluctuation in water level and frequency distribution between August 2015 – August 2016

SN	District	No. Of Wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise								Fall					
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	13	0.21	1.49	0.98	0.98	12	92.4	0	0	0	0	1	7.6	0	0	0	0	12	1
2	Chatra	8	0.27	1.15	0.48	0.5	4	50	2	25	0	0	2	25	1	13	0	0	6	2
3	Deoghar	6	1.27	1.27	0.12	1.97	1	16.66	0	0	0	0	5	83.34	0	0	0	0	1	5
4	Dhanbad	12	0.14	1.63	0.28	3.08	8	66.66	0	0	0	0	3	25	1	8.33	0	0	8	4
5	Dumka	18	0.01	0.62	0.60	3.6	4	22	0	0	0	0	13	72	1	6	0	0	4	14
6	Garhwa	6	1.12	4.14	3.52	3.52	4	67	0	0	1	17.5	1	17.5	0	0	0	0	1	5
7	Giridih	17	0.03	2.85	0.03	2.14	7	41	1	6	0	0	7	41	2	12	1	8	8	9
8	Godda	8	0.03	0.34	0.47	2.65	3	37.5	0	0	0	0	2	25	3	37.5	0	0	3	5
9	Gumla	20	0.2	3.55	0.04	5.52	10	50	1	5	0	0	8	40	0	0	1	5	11	9
10	Hazaribagh	29	0.2	3.45	0.5	3.68	14	48	1	3	0	0	12	41	2	8	0	0	15	14
11	Kodarma	2	2.56	3.44	0	0	0	0	2	100	0	0	0	0	0	0	0	0	2	0
12	Lohardaga	10	0.1	1.75	0.12	3.03	5	50	0	0	0	0	3	30	2	20	0	0	5	5
13	Pakaur	6	-	-	0.15-	2.41	0	0	0	0	0	0	5	83	1	17	0	0	0	6
14	Palamu	21	0.08	5.26	0.05	0.05	15	71	4	19	1	5	0	5	0	0	0	0	20	1
15	W. Singhbhum	19	0.05	4.82	-	-	13	68	5	26	1	6	0	0	0	0	0	0	19	0
16	E. Singhbhum	19	0.9	6.97	0.75	2.28	10	53	3	16	2	11	2	11	1	5	0	0	15	03
17	Ranchi	33	0.2	3.45	1	6.8	15	45	5	15	0	0	10	30	2	6	1	4	20	13
18	Sahibganj	10	-	-	0.3	2.42	0	0	0	0	0	0	8	80	2	20	0	0	0	10
	Total	257					125		24		5		82		18		3		150	106

Table 8: District wise categorisation of fluctuation in water level and frequency distribution between November 2015 – November 2016

SN	District	No. Of Wells analysed	Range in 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		No.	No.	
							No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.	
1	Bokaro	11	0.16	2.38	-	-	9	82	2	18	0	0	0	0	0	0	0	0	0	11	0
2	Chatra	7	0.7	1.24	-	-	7	10	0	0	0	0	0	0	0	0	0	0	0	7	0
3	Deoghar	6	0.32	4.87	0.7	3.8	1	17	0	0	1	17	3	50	1	16	0	0	2	4	
4	Dhanbad	07	0.38	7.05	0.38	0.3	4	58	1	14	1	14	1	14	0	0	0	0	6	1	
5	Dumka	18	0.35	2.73	0.14	2.4	9	50	1	5.5	0	0	7	39	1	5.	0	0	10	8	
6	Garhwa	6	1.39	5.96	1.36	1.3	1	16.	3	50	1	16.3	1	16.	0	0	0	0	5	1	
7	Giridih	16	0.2	2.95	0.02	4.8	10	63	1	6	0	0	4	25	0	0	1	6	11	5	
8	Godda	08	0.27	0.32	0.24	5.5	2	25	0	0	0	0	3	38	2	25	1	12	2	6	
9	Gumla	24	0.04	3.95	0.45	0.4	16	67	7	29	0	0	1	4	0	0	0	0	23	01	
10	Hazaribagh	22	0.03	2.44	0.08	1.9	13	59	3	14	0	0	6	27	0	0	0	0	16	6	
11	Kodarma	4	0.8	2.75	0.05	2.0	1	25	1	25	0	0	1	25	1	25	0	0	2	2	
12	Lohardaga	8	1.3	4.15	0.8	0.8	1	13	5	62	1	13	1	12	0	0	0	0	7	1	
13	Pakaur	6	0.24	1.57	2.51	2.5	5	83	0	0	0	0	0	0	1	17	0	0	5	1	
14	Palamu	14	0.37	4.01	-	-	7	50	6	43	1	7	0	0	0	0	0	0	14	0	
15	W.	14	0.05	5.23	0.50	6.7	6	43	5	36	1	7	1	7	0	0	1	7	12	2	
16	E.	06	0.39	1.68	0.98	4.5	3	50	0	0	0	0	1	16.	1	16	1	16.6	03	03	
17	Ranchi	17	0.5	3.5	0.55	2.1	7	41	5	29	0	0	4	24	1	6	0	0	12	05	
18	Sahibganj	09	0.06	1.55	0.30	2.4	4	44	0	0	0	0	4	44	1	12	0	0	4	5	
	Total	203					106		40		6		38		9		4		152	51	

Table 9: District wise categorisation of fluctuation in water level and frequency distribution between January 2016 – January 2017

SN	District	No. of wells analysed	Range in 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			
							No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Bokaro	10	0.95	5.97	5.1	5.1	6	60	1	10	2	20	0	0	0	0	1	10	9	1
2	Chatra	5	1.01	1.72	-	-	5	100	0	0	0	0	0	0	0	0	0	0	5	0
3	Deoghar	6	0.3	0.88	0.11	0.11	4	67	0	0	0	0	2	37	0	0	0	0	4	2
4	Dhanbad	18	0.3	3.87	0.17	2	09	50	5	28	0	0	4	22	0	0	0	0	14	4
5	Dumka	17	0.04	0.93	0.14	2.15	5	29	0	0	0	0	11	65	1	6	0	0	5	12
6	Garhwa	2	2.23	2.52	-	-	0	0	2	100	0	0	0	0	0	0	0	0	2	0
7	Giridih	15	0.73	2.41	0.05	1.31	8	53	4	27	0	0	3	20	0	0	0	0	12	3
8	Godda	09	1.13	1.13	0.15	3.76	1	11	0	0	0	0	6	67	2	22	0	0	01	8
9	Gumla	21	0.55	3.75	0.32	0.32	16	76	4	19	0	0	1	5	0	0	0	0	20	1
10	Hazaribagh	27	0.02	4.6	0.06	2.44	12	43	5	19	1	4	8	30	1	4	0	0	18	9
11	Kodarma	4	1.11	2.15	2.4	2.4	2	50	1	25	0	0	1	25	0	0	0	0	3	1
12	Lohardaga	10	0.31	2.55	-	-	6	60	4	40	0	0	0	0	0	0	0	0	10	0
13	Pakaur	7	0.01	0.32	0.75	4.91	4	57	0	0	0	0	2	29	0	0	1	14	4	3
14	Palamu	9	1.4	5.97	1.07	1.07	3	33	4	45	1	11	1	11	0	0	0	0	8	1
15	W. Singhbhum	15	0.39	5.02	0.05	1.4	7	48	4	24	2	14	2	14	0	0	0	0	13	2
16	E. Singhbhum	17	0.35	5.53	0.71	2.45	10	58	2	12	1	6	3	18	1	6	0	0	13	4
17	Ranchi	05	1.52	2.85	-	-	1	20	3	60	0	0	0	0	0	0	0	0	4	0
18	Sahibganj	10	0.31	0.36	0.17	3.22	3	30	0	0	0	0	4	40	3	30	0	0	3	7
	Total	207					102		39		7		48		8		2		148	58

Table 10: District wise categorisation of fluctuation in water level and frequency distribution between May 2016 w.r.t. August 2016

SN	District	No. Of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of Wells	
			Rise		Fall		Rise						Fall						Rise	Fall
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		No.	No.
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	9	2.67	9.25	-	-	0	0	5	54	4	44	0	0	0	0	0	0	9	0
2	Chatra	5	1.56	7.89	-	-	1	20	1	20	3	60	0	0	0	0	0	0	5	0
3	Deoghar	6	3.2	5.16	-	-	0	0	2	33	4	67	0	0	0	0	0	0	6	0
4	Dhanbad	14	0.96	12.44	0.1	0.1	5	36	0	0	8	57	1	7	0	0	0	0	13	1
5	Dumka	16	1.5	6.27	0.09	0.09	1	6	4	25	10	63	1	6	0	0	0	0	15	1
6	Garhwa	7	2.04	5.88	-	-	0	0	3	43	4	57	0	0	0	0	0	0	7	0
7	Giridih	16	3.9	11.2	-	-	0	0	1	6	15	94	0	0	0	0	0	0	16	0
8	Godda	8	1.40	3.71	1.25	1.25	2	25	5	63	0	0	1	12	0	0	0	0	7	1
9	Gumla	18	0.8	10.15	-	-	2	11	5	28	11	61	0	0	0	0	0	0	18	0
10	Hazaribagh	28	0.4	10.47	-	-	3	11	5	18	20	71	0	0	0	0	0	0	28	0
11	Kodarma	5	4.09	6.89	-	-	0	0	0	0	5	100	0	0	0	0	0	0	5	0
12	Lohardaga	7	2.02	6.35	-	-	0	0	2	29	5	71	0	0	0	0	0	0	7	0
13	Pakaur	9	2.41	8.48	-	-	0	0	4	44	5	56	0	0	0	0	0	0	9	0
14	Palamu	23	1.29	9.21	3.28	3.28	1	4	3	13	18	83	0	0	0	0	1	7	22	1
15	W. Singhbhum	19	2.15	9.5	-	-	0	0	2	11	17	89	0	0	0	0	0	0	19	0
16	E. Singhbhum	23	0.08	10.62	-	-	6	26	5	22	12	52	0	0	0	0	0	0	23	0
17	Ranchi	22	2.33	11	-	-	0	0	4	18	18	82	0	0	0	0	0	0	22	0
18	Sahibganj	8	1.15	8.41	-	-	1	12.5	3	37.5	4	50	0	0	0	0	0	0	8	0
	Total	243					22		54		163		3		0		1		239	4

Table 11: District wise Water Level Fluctuation -May 2016 w.r.t. November 2016

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. OF wells	
			Rise		Fall		Rise						Fall						Rise	Fall
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4			
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	9	1.24	6.99	-	-	1	11	6	67	2	22	0	0	0	0	0	0	9	0
2	Chatra	8	2.02	6.30	-	-	0	0	7	87.5	1	12.5	0	0	0	0	0	0	8	0
3	Deoghar	5	0.46	8.66	0.40	0.40	1	20	2	40	1	20	1	20	0	0	0	0	4	1
4	Dhanbad	12	0.89	11.66	0.31	0.31	4	33.33	2	17	5	44	1	5.67	0	0	0	0	11	1
5	Dumka	16	0.65	4.75	0.40	0.40	3	19	7	44	5	31	1	6	0	0	0	0	15	1
6	Garhwa	7	1.76	5.15	-	-	1	14.5	5	71	1	14.5	0	0	0	0	0	0	7	0
7	Giridih	16	2.30	9.10	-	-	0	0	2	12.5	14	87.5	0	0	0	0	0	0	16	0
8	Godda	9	1	2.84	2.19	2.19	6	67	2	22	0	0	1	11	0	0	0	0	8	1
9	Gumla	23	1.63	7.37	-	-	3	13	8	35	12	52	0	0	0	0	0	0	23	0
10	Hazaribagh	20	0.47	5.82	0.2	1.07	7	35	4	20	7	35	2	10	0	0	0	0	18	2
11	Kodarma	4	1.54	4.26	-	-	1	25	2	50	1	25	0	0	0	0	0	0	4	0
12	Lohardaga	6	3.22	7	-	-	0	0	2	33.33	4	66.67	0	0	0	0	0	0	6	0
13	Pakaur	9	0.27	5.64	-	-	3	33.33	3	33.33	3	33.33	0	0	0	0	0	0	9	0
14	Palamu	23	1.83	9.02	1.15	1.15	1	4	7	31	14	61	1	4	0	0	1	9	22	1
15	W. Singhbhum	19	1.35	7.93	1.27	1.27	3	16	2	11	13	68	1	5	0	0	0	0	18	1
16	E. Singhbhum	11	1.11	6.84	1.85	1.85	2	18	2	18	6	55	1	9	0	0	0	0	10	1
17	Ranchi	12	1.13	6.15	-	-	1	8	9	75	2	17	0	0	0	0	0	0	12	0
18	Sahibganj	10	1.02	7.97	-	-	2	20	6	60	2	20	0	0	0	0	0	0	10	0
	Total	219					39		78		93		9		0	0	1	9	210	9

Table 12: District wise Water Level Fluctuation - May 2016 w.r.t. January 2017

SN	District	No. Of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of Wells	
			Rise		Fall		Rise						Fall						Rise	Fall
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		No.	No.
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	6	0.3	5.9	-	-	2	33.33	2	33.33	2	33.33	0	0	0	0	0	0	6	0
2	Chatra	5	1.1	7.4	-	-	2	40	1	20	2	40	0	0	0	0	0	0	5	0
3	Deoghar	5	0.4	3	-	-	1	20	4	80	0	0	0	0	0	0	0	0	5	0
4	Dhanbad	12	0.3	10.9	1	1	4	34	2	17	5	41	1	8	0	0	0	0	11	1
5	Dumka	15	0.9	3.4	0.8	0.8	9	60	5	33	0	0	1	7	0	0	0	0	14	1
6	Garhwa	5	1.9	3.3	-	-	1	20	4	80	0	0	0	0	0	0	0	0	5	0
7	Giridih	16	2.1	8.7	-	-	0	0	4	25	12	75	0	0	0	0	0	0	16	0
8	Godda	8	0.6	2.1	-	-	7	87.5	1	12.5	0	0	0	0	0	0	0	0	8	0
9	Gumla	22	1	5.9	-	-	7	32	10	45	5	23	0	0	0	0	0	0	22	0
10	Hazaribag	25	0.4	5.6	0.4	2	8	32	11	44	3	12	3	12	0	0	0	0	22	3
11	Kodarma	6	1.26	3.36	0.38	0.38	2	33.33	3	50	0	0	1	17	0	0	0	0	5	1
12	Lohardaga	7	2.26	3.70	-	-	0	0	7	100	0	0	0	0	0	0	0	0	7	0
13	Pakaur	7	0.01	2.90	0.26	0.26	3	43	3	43	0	0	1	14	0	0	0	0	6	1
14	Palamu	15	0.5	5.55	-	-	3	20	6	40	6	40	0	0	0	0	0	0	15	0
15	W. Singhbhum	20	0.55	5.25	-	-	6	30	9	45	5	25	0	0	0	0	0	0	20	0
16	E. Singhbhum	23	0.15	7.77	0.10	2.2	10	44	6	26	1	4	5	22	1	4	0	0	17	6
17	Ranchi	17	0.83	4.75	0.67	0.67	7	41	6	35	3	18	1	6	0	0	0	0	16	1
18	Sahibganj	8	0.9	7.67	-	-	4		3		1		0	0	0	0	0	0	8	0
	Total	222					76		87		45		13		1		0	0	208	14

Table 13: District wise Water Level Fluctuation - May 2016 w.r.t. Decadal Mean (mean 2006-15)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall						Rise	Fall
			Min	Max	Min	Max	0 to 2		2 to 4		>4		0 to 2		2 to 4		>4			
							No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	10	0.14	1.80	0.16	4.2	7	70	0	0	0	0	2	20	0	0	1	10	7	3
2	Chatra	8	0.20	1.18	0.09	0.97	2	25	0	0	0	0	6	75	0	0	0	0	2	6
3	Deoghar	7	0.34	2.33	0.56	0.56	5	71	1	14.5	0	0	1	14.5	0	0	0	0	6	1
4	Dhanbad	16	0.18	4.52	0.03	6.96	7	44	0	0	2	12.5	5	37.5	0	0	1	6	9	7
5	Dumka	18	0.06	1.45	0.02	3.06	14	78	0	0	0	0	3	17	1	5	0	0	14	4
6	Garhwa	6	3.18	3.18	0.03	1.83	0	0	1	17	0	0	5	83	0	0	0	0	1	5
7	Giridih	16	0.5	4.63	0.49	0.97	9	56	4	25	1	6.5	2	12.5	0	0	0	0	14	2
8	Godda	7	0.16	1.09	0.05	0.15	5	71	0	0	0	0	2	29	0	0	0	0	5	2
9	Gumla	22	0.16	2.38	0.14	0.66	17	77	2	9	0	0	3	14	0	0	0	0	19	3
10	Hazaribagh	34	0.15	5.30	0.19	1.47	18	53	1	3	1	3	14	41	0	0	0	0	20	14
11	Kodarma	3	0.91	0.91	0.15	1.11	1	33.33	0	0	0	0	2	66.67	0	0	0	0	1	2
12	Lohardaga	5	0.13	1.74	0.71	0.71	4	80	0	0	0	0	1	20	0	0	0	0	4	1
13	Pakaur	7	0.44	1.36	0.09	0.14	5	71	0	0	0	0	2	29	0	0	0	0	5	2
14	Palamu	24	0.05	4.09	0.02	4.03	11	47	1	4	1	4	8	33	2	8	1	4	13	11
15	W. Singhbhum	15	0.23	3.34	0.02	2.51	7	47	2	13	0	0	5	33	1	7	0	0	9	6
16	E. Singhbhum	22	0.02	1.52	0.5	2.54	8	36	0	0	0	0	10	46	4	18	0	0	8	14
17	Ranchi	22	0.25	1.86	0.07	1.66	13	59	0	0	0	0	9	41	0	0	0	0	13	9
18	Sahibganj	8	0.44	5.79	0.02	0.76	3	37.5	0	0	1	12.5	4	50	0	0	0	0	4	4
	Total	250					136		12		6		84		8		3		154	96

Table 14: District wise Water Level Fluctuation - August 2016 w.r.t. Decadal Mean (mean 2006-15)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall						Rise	Fall
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		No.	No.
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	13	0.06	1.64	0.25	1.19	4	31	0	0	0	0	9	69	0	0	0	0	4	9
2	Chatra	8	0.78	0.94	0.07	1.31	2	25	0	0	0	0	6	75	0	0	0	0	2	6
3	Deoghar	6	0.15	0.16	0.21	1.89	2	33.33	0	0	0	0	4	66.67	0	0	0	0	2	4
4	Dhanbad	16	-	-	0.04	2.79	0	0	0	0	0	0	13	81	3	19	0	0	0	16
5	Dumka	18	0.32	3.35	0.08	2.15	2	10	1	6	0	0	14	78	1	6	0	0	3	15
6	Garhwa	7	1.96	1.96	0.60	2.71	1	14	0	0	0	0	5	72	1	14	0	0	1	6
7	Giridih	17	0.06	1.98	0.14	3.23	7	41	0	0	0	0	7	41	3	18	0	0	07	10
8	Godda	10	0.01	4.10	1.33	1.33	7	70	1	10	1	10	0	0	1	10	0	0	9	1
9	Gumla	21	0.01	3.49	0.06	3.13	7	33	1	5	0	0	12	57	1	5	0	0	8	13
10	Hazaribagh	28	0.13	1.10	0.03	2.19	9	32	0	0	0	0	17	61	2	7	0	0	9	19
11	Kodarma	3	-	-	0.12	2.63	0	0	0	0	0	0	2	66.67	1	33.33	0	0	0	3
12	Lohardaga	10	0.25	1.63	0.26	2.81	4	40	0	0	0	0	5	50	1	10	0	0	4	6
13	Pakaur	6	0.01	0.30	0.13	0.89	3	50	0	0	0	0	3	50	0	0	0	0	3	3
14	Palamu	23	-	-	0.37	3.05	0	0	0	0	0	0	13	57	10	43	0	0	0	23
15	W. Singhbhum	20	0.03	1.34	0.31	2.90	6	30	0	0	0	0	13	65	1	5	0	0	6	14
16	E. Singhbhum	20	0.07	3.04	0.04	2.15	3	20	1	0	0	0	15	75	1	5	1	5	4	16
17	Ranchi	36	0.20	4.52	0.02	2.44	8	22	1	3	1	3	25	69	1	3	0	0	10	26
18	Sahibganj	10	0.04	1.20	0.05	0.05	9	90	0	0	0	0	1	10	0	0	0	0	9	1
	Total	272					74		5		2		164		27		1	5	81	191

Table 15: District wise Water Level Fluctuation - November 2016 w.r.t. Mean (mean 2006-15)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall						Rise No.	Fall No.
			Min	Max	Min	Max	0 to 2		2 to 4		>4		0 to 2		2 to 4		>4			
							No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Bokaro	12	0.01	2	0.01	1.08	7	58	0	0	0	0	5	42	0	0	0	0	7	5
2	Chatra	10	0.02	0.56	0.27	1.82	4	40	0	0	0	0	6	60	0	0	0	0	4	6
3	Deoghar	6	0.91	4.10	0.19	4.25	1	17	1	17	1	16	2	33	0	0	1	17	3	3
4	Dhanbad	16	0.25	1.45	0.05	3.96	8	50	0	0	0	0	7	44	1	6	0	0	8	8
5	Dumka	19	0.15	2.60	0.11	1.79	9	47	1	6	0	0	9	47	0	0	0	0	10	9
6	Garhwa	6	1.52	1.52	1.16	2.08	1	16	0	0	0	0	4	67	1	17	0	0	1	5
7	Giridih	17	0.15	0.77	0.12	2.48	7	41	0	0	0	0	7	41	3	18	0	0	7	10
8	Godda	10	0.21	1.32	0.12	1.42	5	50	0	0	0	0	5	50	0	0	0	0	5	5
9	Gumla	24	0.08	0.35	0.13	2.23	2	8.3	0	0	0	0	19	79	3	12.7	0	0	2	22
10	Hazaribag	23	0.30	0.99	0.06	1.61	10	43.5	0	0	0	0	13	46.5	0	0	0	0	10	13
11	Kodarma	3	-	-	0.12	2.63	0	0	0	0	0	0	2	66.67	1	33.33	0	0	0	3
12	Lohardaga	10	0.25	1.63	0.26	2.81	4	40	0	0	0	0	5	50	1	10	0	0	4	6
13	Pakaur	6	0.01	0.30	0.13	0.89	3	50	0	0	0	0	3	50	0	0	0	0	3	3
14	Palamu	18	-	-	0.48	2.90	0	0	0	0	0	0	11	61	7	39	0	0	0	18
15	W. Singhbhum	20	0.03	1.34	0.31	2.90	6	30	0	0	0	0	13	65	1	5	0	0	6	14
16	E. Singhbhum	17	0.07	3.04	0.04	2.15	3	18	1	6	0	0	12	70	1	6	0	0	4	13
17	Ranchi	36	0.02	4.52	0.02	2.44	7	21	2	5.4	1	2.7	25	69	1	2.7	0	0	10	26
18	Sahibganj	10	0.04	1.20	0.05	0.05	9	90	0	0	0	0	1	10	0	0	0	0	9	1
	Total	263					86		5		2		149		20		1		93	170

Table 16: District wise Water Level Fluctuation - January 2017 w.r.t. Mean (mean 2007-16)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise				Fall								Rise	Fall
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4			
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	10	0.04	2.54	0.05	3.62	4	40	1	10	0	0	4	40	1	10	0	0	5	5
2	Chatra	8	0.03	0.16	0.02	4.80	2	25	0	0	0	0	5	50	0	0	1	10	2	6
3	Deoghar	6	0.50	2.09	0.36	0.43	3	50	1	16.67	0	0	2	33.33	0	0	0	0	4	2
4	Dhanbad	18	0.09	1.00	0.16	2.32	7	39	0	0	0	0	10	56	1	15	0	0	7	11
5	Dumka	20	0.07	2.26	0.04	1.76	13	65	1	5	0	0	6	30	0	0	0	0	14	6
6	Garhwa	5	1.08	1.08	0.91	1.39	1	20	0	0	0	0	4	80	0	0	0	0	1	4
7	Giridih	16	0.04	2.25	0.08	1.89	5	31	1	5.5	0	0	10	62.5	0	0	0	0	6	10
8	Godda	9	0.17	1.95	-	-	9	100	0	0	0	0	0	0	0	0	0	0	9	0
9	Gumla	23	0.04	0.44	0.02	1.88	7	30	0	0	0	0	16	70	0	0	0	0	7	16
10	Hazaribagh	30	0.01	1.87	0.10	2.48	16	53.7	0	0	0	0	13	43	1	3.3	0	0	16	14
11	Kodarma	5	0.07	1.51	0.56	1.45	3	60	0	0	0	0	2	40	0	0	0	0	3	2
12	Lohardaga	10	-	-	0.18	1.88	0	0	0	0	0	0	10	100	0	0	0	0	0	10
13	Pakaur	7	0.37	2.04	0.07	0.38	4	57	1	14.43	0	0	2	28.57	0	0	0	0	5	2
14	Palamu	15	0.10	0.10	0.44	3.62	1	7	0	0	0	0	11	73	3	20	0	0	1	14
15	W. Singhbhum	21	0.01	4.08	0.04	3.02	6	29	0	0	1	5	11	52	3	14	0	0	7	14
16	E. Singhbhum	22	0.01	0.74	0.03	1.08	8	36	0	0	0	0	14	64	0	0	2	0	8	14
17	Ranchi	9	0.04	1.11	0.35	1.72	2	22	0	0	0	0	7	78	0	0	0	0	2	7
18	Sahibganj	11	0.17	1.71	0.36	1.30	8	73	0	0	0	0	3	27	0	0	0	0	8	3
	Total	245					99		5		1		130		9		3		105	140

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

BOKARO				
Location	(mbgl) May 16	(mbgl) Aug 16	(mbgl) Nov 16	(mbgl) Jan 17
Baramasia		2.83	4.61	5.11
Chandankiyari	10.30	1.05	3.31	5.10
Chandrapura	4.41	0.98	2.35	2.60
Chas	12.65	9.98	11.41	12.40
Gomia	4.81	0.95	2.72	-
Jaina More	10.07	6.35	7.91	4.13
Laghla	-	1.10	3.82	4.80
Nawadih	9.91	4.45	5.90	-
Petarbar	10.47	4.95	4.60	6.22
Phusro_Bermo	4.65	0.85	6.98	7.73
Pindarjora	9.34	-	1.25	-
Pindarjora new	-	1.10	3.35	4.14
Pupunki	-	2.50	3.55	4.10
Tenughat	6.95	2.68	3.51	
CHATRA				
Location				
Bagra	12.59	11.03	10.35	11.29
Birhu	8.07	2.20	5.10	5.82
Chatra	7.07		4.35	
Chatral	-	2.85	4.31	4.70
Itkhorl	8.50	-	6.05	-
Itkhorl 1	-	6.15	6.05	6.78
Pitij	7.97	5.15	5.95	6.87
Simaria	10.95	6.23	8.35	3.56
Tandwa	10.60	2.71	4.30	5.21
Tutilawa	7.65	-	5.40	-
Tutilawal	-	1.92	-	5.85
DEOGHAR				
Location				
Deoghar	7.80			
Ghormara	8.51	4.45	8.05	8.09
Jasidih	8.61	3.41	5.35	6.07

Madhupur	8.10	4.90	5.50	6.28
Madhupur I		4.90	5.19	5.94
Palajori	8.38	3.81	8.71	5.95
Sarath	8.31	3.15	4.35	10.02
Sarawan	13.01	9.70		
DHANBAD				
Location				
Baghmara	14.40	7.86	5.20	11.37
Balajee mandir		8.59	8.19	8.15
Basudeopur CIsf camp	7.10	5.44	5.79	6.35
Bhuli A Block		8.31	8.06	8.45
Chiragora Hirapur	6.00	6.10	6.31	6.98
Dbl Buglow	7.59	2.62	3.19	3.49
Dhanbad	3.10			
Dhanbad New	3.10	1.76	2.19	2.85
Govindpur	9.10			
Jharia	2.51	0.95		
Katras	4.11			
Mahuda		4.40		5.98
Matkuria	4.46	3.50	3.11	3.87
Nirsa ecl I.qtr	3.00		2.11	2.75
Nirsa p.s.	3.00	1.10		
Panderpalli	9.80	5.09	5.11	5.85
Pkroy College	5.91	1.34	2.47	2.67
Purandih Jorapokhar	16.10	3.66	4.44	5.21
Rajganj	8.10	2.71	4.70	5.05
Sindri	7.71		3.11	
Sindri Goushala More		2.65		3.26
Topchanchi	9.10	1.89	4.28	4.91
Tundi	8.34	2.39	3.52	4.21
DUMKA				
Location				
Chapodia		2.80	4.11	4.78
Chapuria	7.24			
Chikania	9.12	3.38	4.93	5.89
Dumka(db ib)	4.62	2.41	3.07	3.39
Gamharia	10.60	6.40	8.31	8.76

Gopikandar	11.05	7.80	8.54	9.06
Hansdiha pwdib	8.73	3.64	5.36	6.94
Jamal	9.43	3.80	5.53	7.80
Jamatara	8.88	2.82	4.64	5.85
Jarmundi db.ib	8.25	2.45	5.05	6.41
Kathikund	7.45	2.60	4.38	5.50
Kundahit	7.03	1.39	3.01	4.78
Masalia	5.79	2.50	4.18	4.91
Masanjor	5.03	1.90	2.50	3.72
Mihijam db ib	10.08			
Mihijam New		2.22	5.03	6.63
Nala	6.50	6.59	6.90	7.25
Nunihaat	2.67	1.17	2.02	2.63
Parapalashi		3.21		5.52
Patabari	8.38	2.11	3.63	4.95
Raneswar	6.91	1.78	3.60	4.67
GARHWA				
Location				
Bhawanathpur	5.57	3.53	3.81	
Garhwa	9.71	4.19	5.90	6.37
Godarmana	8.86	2.98	3.71	
Manjhian	8.15	5.90	5.05	5.93
Nagaruntari	7.47	5.03	4.24	4.87
Ramnal	6.45	2.26	3.31	4.11
Ranka	6.73	2.30	3.82	4.84
GIRIDIH				
Location				
Bagodar	8.25	3.10	4.51	5.32
Bandhutanr	8.45	2.55	6.15	6.31
Bengabad	9.21	2.89	4.75	6.26
Birini	10.82	4.91	5.51	6.65
Chirki (pirtanr)	14.30	3.10	5.20	5.65
Dewri	8.60	1.80	2.98	3.12
Dhanidih	9.81	2.90	3.35	5.31
Dhanwar	10.24	1.35	2.81	3.52
Dumri	12.61	5.98	6.21	7.02
Gande	10.80			

Gandeyl		5.45	10.80	
Giridih	10.20	3.35	4.75	5.51
Jamua pwd ib	11.20	3.81	6.11	7.10
Khijri	9.75	1.81	3.12	3.45
Maheshmunda l	8.20	2.31	3.77	4.13
Pandri	9.55	5.65	4.90	7.31
Saraiya new	10.80	2.85	3.10	5.43
Tisri	8.51	2.85	3.15	3.45
GODDA				
Location				
Bara borijore		5.72		6.85
Chamudih		7.02	7.35	7.63
Doi	4.85	3.45	3.85	4.25
Gobra	4.67	3.13	3.47	3.93
Godda p.s.	5.85			
Godda l	5.85	2.87	3.80	5.10
Jainipaharpur	7.89	4.18	5.05	5.77
Lalmatia	9.16	7.08	7.38	7.84
Mahagama	7.35			
Mahagama l		3.45	8.71	8.88
Maheshpur2	7.11	8.36	9.30	5.23
Pathargama	6.30	3.98	4.34	5.28
Sundar Pahari	12.17	10.00	10.42	10.48
GUMLA				
Location				
Adar	9.15		3.46	4.20
Anjam gram	2.05	0.54	0.42	0.56
Baghma	7.42	7.42	2.60	4.55
Baisia	7.95	1.08	1.60	3.00
Bano	7.40	3.12	2.66	4.35
Bari Biringa	5.17		1.35	1.50
Bharno bdo	7.64	3.80	3.75	4.68
Biru	5.64	1.76	3.25	4.65
Bishnupur	8.10	2.70	3.10	6.05
Chainpur l	5.50	2.80	2.84	4.40
Ghagra	11.87	4.85	4.50	5.95
Gumla l	8.55	3.30	5.50	6.58

Jaldega	5.29	2.05	2.70	3.55
Kasir	2.14	2.14	0.51	0.92
Kolebira	10.60	0.45	5.85	7.18
Lachargarh	7.80	3.25	3.80	4.40
Nagfeni	8.56		4.50	6.10
Palkot	9.20	3.69	4.90	6.50
Puthritoli	3.60	0.45	1.40	
Raidih	7.60	1.05	2.65	4.10
Simdega	9.57	1.90	2.70	4.15
Sisai	9.00	3.26	3.05	4.25
Tengratuku		1.30	2.95	4.95
Thethai Thangar	3.10	2.30	1.20	2.00
HAZARIBAGH				
Location				
Amritnagar	13.27	2.80		
Barhi	10.30	6.38	5.72	7.40
Barkachumba	8.30	2.45	3.98	4.97
Barkagaon	10.55	6.93	10.00	10.16
Barkakhana	4.60	3.11	3.32	3.87
Barkatha	8.70	3.11		4.15
Battom Bazar	9.20	3.59		
Chitarpur	6.45		5.98	8.46
College More	8.69	2.70		
Dari	7.56	1.95		5.16
Daru	8.12	2.00		4.07
Garrikalan	8.58	2.29		6.00
Habib nagar	7.69	3.60		
Hatyari	6.50	1.07	3.09	4.55
Hazaribagh	8.12	2.13	3.35	6.00
Hirabag	9.42	3.46		
Ichak	8.12			
Ichak more		1.00	4.90	5.95
Kaitha	5.71		6.78	4.71
Kanhari Road	7.42	3.77		
Kanjgi	8.28	6.28	7.00	7.74
Keradari	9.11	2.68	4.12	3.47
Korra Chowk	8.73	4.16		
Kud Ashram	8.51			

Kuju	8.60		4.58	5.85
Mandu	8.71		5.53	6.53
Masipiri	7.93			
Meru(Silwar)	8.41	4.45	6.88	8.83
Old Bus Stand	11.80	3.20		
Padma	9.10	8.70	9.30	10.31
Patratu	4.46			
Ramgarh2A	6.40			7.45
Sakrej	6.58	2.65	5.20	5.22
Sayal	5.71		3.85	4.86
Simra Rest House	5.45	1.08		3.96
Sindur	7.17	1.00	2.90	3.96
Sirka	7.28	3.01	3.98	4.80
Tatijharia	6.00	0.74	2.58	3.11
Urimari	8.98	2.00	3.16	5.11
KODARMA				
Location				
Chandwara	6.18	0.30	2.20	3.65
Chauparan	7.25	2.89		7.63
Domchanch	7.56		6.02	6.30
Kanobigha	7.85	2.95		4.49
Kodarma	8.96	2.07	4.70	6.11
Pathaldiha	5.22	1.13	2.40	3.35
LOHARDAGA				
Location				
Barwatoli Chowk	5.60	2.80	1.90	3.10
Bhandara	10.00	4.10		6.30
Hesal		5.65	6.55	6.74
Hinjla	8.12	6.10	4.90	4.70
Irgaon	8.74	3.45	4.25	6.48
Kuru l	9.80	2.60	2.80	6.30
Lohardaga(Patra Toli)		2.75	1.85	3.20
Lohardaga(pwdib	7.45	1.10	2.40	4.40
Rudhl		4.80	3.65	6.60
Senha Bdo	5.70	0.65	1.40	3.10
PAKAUR				
Location				

Amrapara	5.70	0.95	0.89	2.80
Hiranpur	6.29	3.55	6.02	6.55
Kariodih	6.72	3.00	4.44	
Litipara	9.47	5.50	7.27	8.05
Litipara 2	4.87	2.46	3.11	
Maheshpur2	7.15			7.14
Pakur1	12.41	3.93	6.77	9.88
Pakuria	6.24	0.99	1.99	4.75
Pochaibera	5.00			
Salgapara	7.58	1.20	3.92	5.40
Vikrampur	5.22	0.16	2.99	
PALAMU				
Location				
Balumath	11.70	6.24	8.00	9.33
Baraw	9.12	1.00	2.56	3.57
Barjatu		3.00	4.15	5.13
Barwadih	7.02	0.18	2.75	4.11
Betla	9.93	4.70	6.70	
Bishrampur	8.78	1.45	2.73	3.34
Chandwa	11.31	2.51	3.90	
Chhatarpur	9.19	7.90	5.55	4.72
Daltenganj	5.60	3.35	3.77	5.10
Garu	7.74	2.00	4.55	
Haidernagar	8.20	2.87	3.98	4.44
Hariharganj	8.39	3.90	3.15	4.38
Japla	9.13			
Kajri	7.69	10.97	8.84	
Kanda	7.73	3.32	4.06	4.25
Latehar	11.31	2.10	2.29	
Lesliganj	8.03	2.72	3.12	
Mahuadanr	4.40			3.53
Manika	6.52	0.80	1.81	
Nawadih1	9.05	6.00	5.72	
Panki	8.75	2.62	3.09	3.39
Patan	7.20	1.98	3.27	4.63
Rajhara	8.40	1.83	3.72	
Sagalim	9.40	0.82	4.78	5.98
Sandha	10.12	2.19	4.00	4.72

Satbarwa	9.00	5.75	5.06	7.08
PASHCHIMI SINGHBHUM				
Location				
Bandgaon		3.70	1.94	2.49
Bandgaonnew	9.15	2.09	5.09	5.51
Barajamda	3.70	1.14	1.97	2.60
Chaibasa	13.50	7.30	8.60	12.50
Chakradharpur	7.85	1.85	4.70	5.90
Chandil	8.25	0.83	3.06	5.45
Dugani	10.43	2.10	3.14	5.63
Harison	9.13		4.23	5.83
Hat Gamhariya	10.60	1.10	2.67	6.37
Hesadih	6.95	1.30	2.94	3.14
Jagannathpur	10.80	4.67	6.65	8.40
Jaitgarh	7.70	2.92	4.15	5.00
Jamdih	9.05	0.78		4.45
Jhinkpani	7.50	1.57	3.32	6.95
Kandra	7.65	0.40	3.25	5.00
Kereikela	6.87	0.65	5.60	6.05
Keshargaria		0.95	0.54	1.76
Kharsawan	6.12	1.60	4.44	5.45
Khuntpani	9.45	0.75	1.65	4.20
Kokcho	10.85	2.64	3.90	6.55
Nabibera	11.10	3.11	4.80	7.65
Noamundi		0.30	9.42	2.95
Saraikele	2.25	0.10	0.90	0.00
PURBI SINGHBHUM				
Location				
Bagun Nagar	4.10	1.60		4.70
Baharagora	14.20	7.78	8.58	13.30
Baridih		1.80		3.40
Burmamines Thana	1.50	1.42		1.70
Chakulia	19.25	8.63	13.50	16.50
Dhalbhumgarh	10.00	2.73	5.00	9.70
Digarpathar	5.87	2.55		

Galudih	11.59	1.50	4.75	3.82
Garhabasha Jua	1.80	0.43		1.00
Ghatsila	7.70	2.33	3.47	5.70
Golmuri	3.05	2.10		2.90
Hana Bautia	6.00			6.32
Jabirdiha	8.05	2.00		
Jugsalai Thana Jua	2.10	0.53		1.90
Kalapathar	7.14	2.63		6.56
Kalikapur	5.46	0.49	4.35	3.21
Kendadih	5.82	1.50		2.85
Matigora	6.72	1.21		3.15
Mosabani	4.08	0.67	0.86	2.90
Paridih	6.00	5.58	7.85	6.15
Pipla	7.15	2.18	4.20	4.75
Pithajudi	4.66	1.07	3.34	4.49
Potka	9.40		3.68	6.35
Ramgarh I	6.00			
Rankini Madir Jua	3.20	1.80		3.30
Shitla Mandir Sackchi	5.20	2.00		3.80
Sundarnagar	12.45			
Sundarnagar I		2.38		6.85
Telco Zone	0.97	0.87		3.17
RANCHI				
AG Office		7.70		
Angara	9.74			
Angara I		3.35		
Bajra		10.65		
Bala		4.70		
Barwadag	6.10	1.20	1.10	4.38
Berro	10.85	4.08	3.80	
Bidge Frord Sch		1.30		
Bijupara Tangar		2.40		
Bishakhatanga	7.40			
Bundu	9.00	0.90		
Burmoo	10.70	4.95		
Chachgura	11.80	3.86		
Chutupalu	7.80	0.90		
Dorma	6.82	1.20		4.45

Dumardagga	6.05	1.35	2.60	3.85
Gobidpur	7.75		4.70	5.80
Gondlipokhar		7.05	2.20	
Hombai		6.90	5.05	
Hurhuri	8.15	2.85		
Itki NAM		4.35		
Jaltanda	7.55			4.54
Jonha	5.93	3.30		
Kakriya	9.25	6.05	5.40	5.40
Kalimati	6.50	1.50	3.20	4.36
Kantitanr	6.07	1.40		
Karral	8.05			
Kharsidag		4.05	4.20	
Khunti	9.65		3.50	5.40
Kita	7.12	1.15		
Lodma	5.12	1.10	2.45	3.88
Lowadih		5.40	4.50	
Mandar	7.35	0.70		
Masmano	5.78	3.45	4.65	6.45
Murhu	4.15		2.10	2.85
Patrahatu		2.50		
Rangamati	9.40	1.30	6.65	
Seringathu	2.84		0.60	1.50
Silli	8.25	2.20		
Sonahatu	7.30			
Sonahatu I		0.60		
Sonsbazar		2.85		
Taimara	11.70	0.70		
Tamar	10.45	0.80		
Tatilsilwai EEF		3.85	3.95	
Ukrid	4.90	1.05		
SAHIBGANJ				
Barhait	7.40	4.85		6.65
Barharwa	9.28	4.21	6.16	7.58
Borio	12.00	3.59	4.03	4.33
Ghat Selumpur	7.81	2.23	4.27	5.05
Mandro	6.42	1.22	2.98	4.34
Rajmahal	5.87	4.72	4.85	5.78

Ranga		2.52	4.18	5.48
Sahebganj l	8.90	6.61		6.86
Sakrigali	5.35	3.24	3.40	4.37
Taljhari	2.84		2.68	2.76
Taljhari l		1.70		

ANNEXURE-II

TREND OF WATER LEVEL 2007-2016 IN JHARKHAND STATE

District	Sl No.	Location	PreMonsoon			PostMonsoon			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)
Bokaro	1	Nawadih	5			7		0.1212	27		0.2278
	2	Chas	10		0.0583	9		0.5147	38		0.3099
	3	Petarbar	10		0.0306	9		0.071	37	0.0305	
	4	Jaina More	10		0.0191	8		0.1367	37		0.0013
	5	Tenughat	9		0.0695	9		0.077	37		0.0842
	6	Chandrapura	7	0.6417		8		0.0389	33	0.0805	
	7	Mahuda	7	0.0451		7		0.0513	27	0.0758	
	8	Gomia	10	0.668		9	0.0479		37	0.2233	
Chatra	1	Bagra	9		0.2814	8		0.2276	36		0.3739
	2	Simaria	9		0.1878	7	0.1815		34	0.0771	
	3	Chatra	6		0.0993	5			21		
	4	Itkhori	7		0.053	5			22		
Deoghar	1	Sarawan	10		0.0002	9	0.4355		39		0.0238
	2	Ghormara	10		0.1038	8		0.2984	37		0.1337
	3	Deoghar	7		0.1978	5			23		
	4	Sarath	10		0.0447	9		0.2913	39		0.0605
	5	Jasidih	10	0.0154		9	0.0006		39	0.0723	
	6	Madhupur I	8		0.0737	9	0.028		32	0.0647	
	7	Palajori	10	0.0272		9	0.0527		38	0.0847	
Dhanbad	1	Govindpur	10		0.6753	8	0.0012		35		0.3055
	2	Rajganj	10		0.07	9		0.0606	39	0.0111	
	3	Topchanchi	9		0.1098	9		0.0626	38		0.0303
	4	Tundi	8		0.1465	9		0.1252	37		0.0817
	5	Sindri	7		0.0407	5			22		
	6	Jharia	7		0.0684	5			22		
	7	Nirsa ecl l.qtr	10	0.3151		9	0.1649		38	0.1223	
Dumka	1	Jarmundi db.ib	10		0.0604	9		0.0144	38	0.0293	
	2	Maheshpur templ	6	0.2323		2			19		
	3	Nunihaat	6		0.0316	9	0.003		35	0.0099	
	4	Gopikandar	10	0.1414		9		0.0489	39	0.0583	
	5	Gamharia	6		0.6065	4			17		

	6	Hansdiha pwdib	9		0.2785	9		0.0018	36		0.0683
	7	Mihijam db ib	7		0.1116	5			20		
	8	Kundahit	9		0.1913	7		0.1136	31		0.0888
	9	Jamatara	10		0.1369	9		0.1442	39		0.1034
	10	Raneswar	10		0.1168	8		0.0101	37		0.0285
	11	Nala	10		0.1143	8		0.2966	36		0.17
	12	Masanjor	10		0.0289	9		0.0838	38		0.0233
	13	Masalia	9		0.0455	8		0.043	35	0.0502	
	14	Patabari	10		0.0438	7	0.0729		35	0.0511	
	15	Sikaripara	6		0.2649	7		0.228	26		0.1866
	16	Chikania	8		0.0862	8	0.0567		36	0.1042	
	17	Kathikund	10		0.0575	9		0.0351	39	0.0302	
	18	Dumka(db ib)	10	0.384		9	0.4464		37	0.3929	
	19	Jamal	10		0.2365	9	0.0325		38	0.0252	
Garhwa	1	Bhawanathpur	7	0.1548		6		0.0713	27	0.0343	
	2	Garhwa	9		0.8422	6	0.0344		32		0.1481
	3	Nagaruntari	7	0.4655		8		0.1843	33	0.0019	
Giridih	1	Dumri	10	0.037		8		0.0303	38		0.0006
	2	Pandri	10		0.2365	8		0.0985	36		0.2012
	3	Bagodar	8		0.0525	9		0.1237	37		0.0752
	4	Birini	8	0.056		7	0.2724		30	0.1611	
	5	Dhanwar	10		0.1814	9		0.0173	38		0.0371
	6	Giridih	10	0.389		9	0.0155		38	0.2295	
	7	Dhanidih	9		0.2155	9		0.1839	37		0.0045
	8	Bengabad	10		0.0864	9		0.1373	39		0.0441
	9	Bandhutanr	9	0.0291		9		0.1934	37	0.0824	
	10	Jamua pwd ib	10		0.2118	9		0.1539	39		0.0844
Godda	1	Poraiyahaat	7		0.0202	6		0.0097	28		0.0876
	2	Sundar Pahari	9		0.2845	7		0.3339	31		0.2398
	3	Godda1	9		0.0193	9		0.1933	38		0.0956
	4	Maheshpur2	7	0.0176		4			26		0.1868
	5	Pathargama	9		0.0422	9		0.0976	38		0.102
	6	Bara borijore	5			7	0.1632		24		0.1241
	7	Mahagama1	8		0.1905	9		0.3603	35		0.1779
	8	Lalmatia	9		0.0988	9		0.2092	39		0.1353
	9	Doi	8	0.0393		8		0.0601	35	0.028	
Gumla	1	Bharno bdo	9	0.0495		9		0.0167	37	0.0143	
	2	Ghagra	9		0.1899	9		0.0975	38		0.0294

	3	Nagfeni	10	0.0348		9	0.0068		38	0.1337	
	4	Thethai Thangar	10	0.0567		9	0.0835		38	0.0422	
	5	Jaldega	10		0.0613	9		0.0351	38		0.0602
	6	Simdega	9		0.1037	9	0.0729		37	0.0337	
	7	Lachargarh	9	0.0347		8	0.0727		36	0.0797	
	8	Bano	7	0.1602		8	0.1733		32	0.0662	
	9	Bishnupur	10	0.2371		9		0.0161	38	0.0972	
	10	Kolebira	7	0.0179		9		0.064	35	0.007	
	11	Palkot	10		0.0214	9		0.0611	39	0.0444	
	12	Basia	10		0.2854	9		0.0799	38		0.0585
	13	Raidih	8	0.0633		8		0.0759	36	0.0129	
	14	Gumla1	6		0.0059	6	0.0046		24	0.0774	
	15	Anjam gram	8	0.0513		6	0.0372		29	0.0136	
	16	Chainpur1	8	0.0407		7		0.0782	32		0.0404
	17	Sisai	9		0.0741	9		0.1278	37		0.0989
Hazaribagh	1	Mandu	9		0.0046	9		0.0659	37		0.0239
	2	Hazaribagh	10		0.0073	8	0.0621		37	0.0968	
	3	Barkatha	10	0.0122		7		0.0036	34	0.12	
	4	Barhi	10		0.3639	9		0.0824	39		0.204
	5	Gola	9	0.1021		8		0.0472	36		0.0309
	6	Barkakhana	10	0.1723		8		0.0792	36	0.0545	
Kodarma	1	Chauparan	7		0.0566	4			22		
Lohardaga	1	Bhandara	8	0.0909		8		0.3455	36		0.0739
	2	Senha Bdo	10	0.0982		7	0.0805		37	0.0825	
	3	Lohardaga(pwdib	9		0.0007	9		0.1913	38	0.0146	
	4	Hinjla	10		0.3333	9		0.3311	38		0.3006
	5	Kuru1	10		0.1097	9	0.015		39		0.0024
Pakur	1	Salgapara	8		0.0241	8		0.0525	36		0.019
	2	Maheshpur2	6	0.0401		6		0.0482	31		0.0746
	3	Amrapara	7		0.2427	9	0.1605		35	0.0726	
	4	Pakur1	9		0.2128	9	0.1004		37		0.0435
	5	Litipara	9	0.0137		9		0.0972	38		0.0607
	6	Litipara 2	1			1			3		
	7	Hiranpur	10	0.0983		9	0.1024		39	0.096	
	8	Pakuria	7	0.0272		9		0.0999	35		0.0413
Palamu	1	Japla	7	0.3397		4			23		
	2	Sandha	7	0.1529		7		0.0807	28	0.0336	
	3	Balumath	9		0.1263	9		0.2861	37		0.0394

	4	Satbarwa	8		0.0667	9		0.1013	36		0.1118
	5	Manika	10	0.1455		9	0.0402		38	0.0994	
	6	Barwadih	8	0.0147		6		0.1117	28	0.1351	
	7	Barjatu	8		0.1573	9		0.0279	35	0.0568	
	8	Betla	6		0.2755	7	0.0892		29	0.0496	
	9	Lesliganj	7	0.5313		8	0.2253		31	0.2265	
	10	Daltenganj	9	0.207		8	0.2227		37	0.2618	
	11	Kajri	8	0.4739		8		0.1884	32		0.0282
	12	Nawadih I	6	0.4409		5			21		
	13	Rajhara	7		0.0142	8		0.137	32		0.0592
	14	Patan	7	0.0708		6	0.044		25	0.104	
	15	Bishrampur	6		0.0315	9		0.045	34		0.0384
	16	Hariharganj	7		0.2911	7	0.003		30		0.0964
	17	Kanda	9		0.1188	8		0.0882	35	0.0342	
	18	Chhatarpur	10	0.3805		9		0.1324	39	0.0433	
	19	Chandwa	10		0.1201	9		0.1066	37		0.0724
	20	Latehar	9		0.2884	8		0.0501	35		0.0748
W.Sinbhbhum	1	Keshargaria	7	0.0561		6	0.3956		25	0.2676	
	2	Jhinkpani	7		0.0193	8		0.0937	30		0.0295
	3	Kokcho	10		0.1512	10		0.2127	40		0.0889
	4	Hesadih	10	0.0976		9	0.0368		39	0.0898	
	5	Chaibasa	9		1.1853	10		0.8168	39		0.9525
	6	Rajnagar	7		0.074	5			23		
	7	Hata_Tirin	7		0.1718	7	0.1707		27	0.1246	
	8	Pandrasalai	8		0.064	8	0.1081		33		0.0361
	9	Chakradharpur	9	0.1398		9	0.5765		37	0.4368	
	10	Saraikele	9	0.176		10	0.0826		39	0.1244	
	11	Kharsawan	10	0.2064		8	0.0588		36	0.1989	
	12	Bandgaon	9		0.0657	10	0.0878		39	0.1038	
	13	Kereikela	10	0.1639		10	0.0837		39	0.1368	
	14	Kandra	10		0.0464	9	0.0335		37	0.0313	
	15	Chandil	10	0.3864		10	0.0208		40	0.2309	
E.Sinbhbhum	1	Ghatsila	10		0.0174	10	0.0148		40	0.0785	
	2	Baharagora	9	0.0022		10	0.14		38	0.006	
	3	Jamshedpur	6	1.3774		5			23		
	4	Chakulia	9	0.0929		9	0.1838		38	0.1751	
	5	Dhalbhumgarh	10		0.0174	9	0.0757		39	0.04	
	6	Mosabani I	7		0.0567	7		0.122	28	0.064	

	7	Kalikapur	10	0.2486		9	0.0265		39	0.2115	
	8	Potka	9	0.0069		10	0.0671		37	0.1002	
	9	Galudih	10	0.1721		10		0.1733	40		0.001
	10	Ramgarh I	9		0.1414	9		0.1969	35		0.2016
	11	Sundarnagar	8		0.2459	6		0.1045	26		0.4232
	12	Kalimati	7	0.0227		9		0.1116	36	0.0161	
	13	Lodma	9	0.3022		7	0.0975		33	0.1871	
	14	Barwadag	10	0.0412		9	0.0426		38	0.0668	
	15	Berro	10	0.0264		8		0.3217	37		0.0925
	16	Hatia I	8		0.3396	9		0.6547	34		0.2251
	17	Ormanji	9		0.0802	8		0.2686	34		0.0558
	18	Ranchi I	9		0.0539	8		0.1969	32	0.0019	
	19	Silli	10		0.0045	8		0.1263	36	0.0157	
	20	Bunti	9	0.016		8		0.0917	34		0.0099
	21	Angara	6		0.2517	5			20		
	22	Mandar	10		0.0055	8		0.0574	36	0.0717	
	23	Chutupalu	10	0.0035		7		0.0872	35		0.041
	24	Murhu	10		0.0126	9		0.2646	37		0.1804
	25	Khunti	8	0.4223		7		0.0255	30	0.089	
	26	Tamar	10		0.0231	9	0.5316		37	0.3716	
	27	Karra I	9	0.0828		7		0.1937	31		0.0238
	28	Bundu	10		0.0817	7		0.1112	37	0.0705	
Sahibganj	1	Rajmahal	10	0.408		7		0.2457	34	0.1041	
	2	Borio	9		0.4465	9	0.0495		36		0.1183
	3	Taljhari I	9	0.6918		8		0.0948	33	0.3349	
	4	Mangalhat	1			1			3		
	5	Mandro	6		0.3939	4			22		
	6	Sahebganj I	10	0.0105		8	0.1046		35	0.0558	
	7	Sakrigali	9	0.063		6	0.1469		29	0.1251	

ANNEXURE-III
CHEMICAL ANALYSIS RESULTS OF MAJOR CHEMICAL PARAMETERS OF GROUND WATER SAMPLES OF HNS WELLS
DURING MAY 2016 IN JHARKHAND STATE

sl	District	Block	Location	pH	EC	TDS	F-	Cl-	HC O3-	CO 32-	S O 42 -	N O3 -	PO 43-	Si O2	TH	C a2 +	M g2 +	Na+	K+
1	Ranchi	Angara	Angara 1	7.05	246	160	0.79	18	110	0	11	2	NA	NA	125	30	12	15	3
2	Ranchi	Nagri	Bandhea	7.78	690	449	0.51	25	300	0	12	1	NA	NA	350	60	49	13	6
3	Ranchi	Angara	Barwadag	8.30	628	408	0.00	64	125	30	60	16	NA	NA	335	42	56	5	4
4	Ranchi	Bero	Bero	7.37	218	142	0.08	18	100	0	2	1	NA	NA	95	18	12	9	2
5	Ranchi	Chanho	Bijupara Tangar	7.50	709	461	0.45	131	95	0	4	12	NA	NA	255	50	32	30	4
6	Ranchi	Madar	Bisahakha tanga	8.10	273	177	0.68	43	50	0	21	7	NA	NA	120	22	16	11	2
7	Ranchi	Ratu	Brambe	7.83	148	96	0.24	18	65	0	14	3	NA	NA	55	10	7	12	23
8	Ranchi	Bundu	Bundu	8.10	572	372	0.63	74	225	0	12	2	NA	NA	270	24	51	39	6
9	Ranchi	Burmu	Burmu	8.10	188	122	0.45	14	70	0	3	4	NA	NA	80	16	10	11	1
10	Ranchi	Itki	Chachgura	8.08	221	144	0.14	53	20	0	11	7	NA	NA	65	6	12	24	4
11	Ranchi	Ormanjhi	Chutupalu	8.40	1028	668	1.09	167	250	20	17	7	NA	NA	285	56	35	114	6
12	Ranchi	Ratu	Hurhuri	7.79	313	204	0.23	67	45	0	5	4	NA	NA	100	24	10	14	3
13	Ranchi	Itki	Itki	8.08	315	205	1.51	53	90	0	6	5	NA	NA	155	26	22	18	3
14	Ranchi	Angara	Jonha	8.31	307	199	0.49	25	115	40	7	3	NA	NA	180	26	28	7	2
15	Ranchi	Ratu	Kathitanr	8.04	528	343	0.20	82	165	0	83	30	NA	NA	405	38	75	7	5
16	Ranchi	Silli	Kita	8.13	338	220	0.33	43	105	0	12	3	NA	NA	105	16	16	43	1
17	Ranchi	Itki	Kurgi	8.08	283	184	0.73	35	115	0	4	1	NA	NA	75	10	12	38	9
18	Ranchi	Madar	Mandar	8.18	793	515	0.06	128	120	0	11	12	NA	NA	215	48	23	48	12

19	Ranchi	Silli	Patrahatu	8.35	787	512	0.11	131	125	30	16	5	NA	NA	350	16	75	20	3
20	Ranchi	Tamar	Rangamati	8.43	1093	710	0.11	195	185	30	3	9	NA	NA	490	46	91	26	1
21	Ranchi	Silli	Silli	8.42	463	301	0.15	39	85	30	3	7	NA	NA	135	28	16	28	2
22	Ranchi	Sonahatu	Sonahatu	8.19	372	242	0.00	50	125	0	9	3	NA	NA	95	32	4	37	13
23	Ranchi	Bundu	Taimara	8.12	225	146	0.21	28	75	0	12	4	NA	NA	100	12	17	16	4
24	Ranchi	Tamar	Tamar	8.03	188	122	0.00	32	80	0	19	3	NA	NA	125	12	23	12	2
25	Ranchi	Ormanjhi	Ukrid	8.15	267	174	0.17	25	125	0	13	1	NA	NA	125	32	11	16	3
26	Khunti	Torpa	Dorma	7.90	247	160	0.10	28	105	0	9	0	NA	NA	95	14	15	28	3
27	Khunti	Torpa	Dorma	7.98	215	140	0.25	21	105	0	3	1	NA	NA	95	18	12	18	2
28	Khunti	Lapung	Kakariya	8.20	1134	737	0.07	149	220	0	2	24	NA	NA	450	46	81	16	5
29	Khunti	Khunti	Kalamati	8.11	301	196	0.19	32	100	0	15	2	NA	NA	90	20	10	23	11
30	Khunti	Khunti	Khunti	8.50	1167	759	0.82	234	300	30	6	9	NA	NA	500	26	10	96	3
31	Khunti	Karra	Bala	8.52	181	117	0.20	18	55	20	8	5	NA	NA	65	14	7	10	21
32	Khunti	Karra	Nawa Toli	7.91	244	159	0.37	46	90	0	6	2	NA	NA	95	18	12	35	4
33	Khunti	Karra	Barwadag	7.90	230	150	0.32	32	80	0	11	5	NA	NA	115	18	17	12	2
34	Khunti	Karra	Gobindpur	8.14	301	196	0.73	28	155	0	19	1	NA	NA	130	20	19	30	2
35	Khunti	Karra	Jariya	8.05	129	84	0.03	18	55	0	15	2	NA	NA	65	6	12	10	2
36	Khunti	Karra	Raloguttu	7.87	140	91	0.10	21	60	0	36	3	NA	NA	75	8	13	30	1
37	Khunti	Karra	Malgo	7.78	181	118	0.00	46	60	0	4	1	NA	NA	110	22	13	7	7
38	Khunti	Karra	Masmano	7.81	119	77	0.00	25	60	0	11	1	NA	NA	55	8	9	20	4
39	Khunti	Karra	Kasira	6.75	177	115	0.05	35	110	0	4	1	NA	NA	85	22	7	31	5
40	Khunti	Karra	Jobra	7.14	469	305	0.31	64	195	0	4	1	NA	NA	210	38	28	28	3
41	Khunti	Karra	Satiya	7.11	181	118	0.00	25	105	0	3	0	NA	NA	85	14	12	23	10
42	Khunti	Karra	Kudri	7.63	108	70	0.00	18	45	0	1	0	NA	NA	50	12	5	7	4
43	Khunti	Karra	Lodhma	7.21	154	100	0.12	28	75	0	14	2	NA	NA	70	14	9	20	12

44	Khunti	Karra	Sirka	7.60	94	61	0.02	7	45	0	19	1	NA	NA	50	16	2	10	5
45	Khunti	Karra	Bingaon	7.55	171	111	0.00	43	100	0	10	1	NA	NA	90	16	12	32	5
46	Khunti	Karra	Ghunsuli	8.35	917	596	0.00	78	145	20	16	1	NA	NA	230	84	5	22	13
47	Khunti	Khunti	Guitjora	8.31	1293	840	0.24	121	315	20	4	2	NA	NA	360	106	23	70	39
48	Khunti	Khunti	Jaltanda	7.88	324	210	0.04	25	70	0	2	3	NA	NA	45	12	4	16	33
49	Khunti	Khunti	Dumardag	8.12	192	125	0.00	18	50	0	28	4	NA	NA	55	20	1	23	4
50	Khunti	Khunti	Rewa	7.76	123	80	0.00	25	35	0	5	0	NA	NA	55	12	6	8	2
51	Khunti	Murhu	Murhu	7.74	484	315	0.40	78	165	0	7	1	NA	NA	185	32	25	30	10
52	Khunti	Arki	Sarenghatu	7.82	365	237	0.28	60	175	0	8	2	NA	NA	150	20	24	22	41
53	Khunti	Arki	Kurapurti	7.98	1059	688	0.45	124	380	0	10	2	NA	NA	425	86	51	48	3
54	Lohardaga	Lohardaga	Barwatoli Chowk	7.94	377	245	0.41	74	180	0	19	0	NA	NA	155	30	19	51	32
55	Lohardaga	Bhandra	Bhandra	7.33	164	107	0.94	18	75	0	26	1	NA	NA	55	12	6	12	33
56	Lohardaga	Lohardaga	Hesal	7.99	364	237	0.39	67	120	0	17	0	NA	NA	135	34	12	29	12
57	Lohardaga	Kuru	Hinjila	7.22	185	120	0.04	32	75	0	16	2	NA	NA	75	12	11	29	6
58	Lohardaga	Lohardaga	Irgaon	7.96	91	59	0.07	28	90	0	1	0	NA	NA	70	12	10	27	11
59	Lohardaga	Kuru	Kuru 1	8.31	730	474	0.19	57	145	40	29	0	NA	NA	240	88	5	32	12
60	Lohardaga	Lohardaga	Lohardaga (Patra Toli)	7.88	619	402	0.20	64	120	0	33	3	NA	NA	200	60	12	32	2
61	Lohardaga	Lohardaga	Lohardaga (PWD IB)	8.30	928	603	0.27	96	125	50	51	0	NA	NA	320	94	21	36	3

62	Lohardaga	Kuru	Rudh 1	8.03	291	189	0.02	28	65	0	12	1	NA	NA	65	22	2	18	5
63	Lohardaga	Senha	Senha BDO	7.22	647	421	0.00	53	100	0	50	4	NA	NA	185	62	7	30	1
64	Gumla	Ghaghra	Adar	7.27	362	235	0.51	53	155	0	4	0	NA	NA	135	18	22	30	13
65	Gumla	Gumla	Angam Gram	7.92	962	625	0.29	103	90	0	82	5	NA	NA	350	13 6	2	2	3
66	Gumla	Palkot	Baghima	8.20	379	246	0.26	53	85	0	4	1	NA	NA	125	30	12	20	7
67	Gumla	Basia	Basia	8.00	472	307	0.35	85	105	0	13	0	NA	NA	150	50	6	41	3
68	Gumla	Bharno	Bharno BDO	7.26	192	125	0.00	25	90	0	7	0	NA	NA	65	14	7	14	21
69	Gumla	Bishinpur	Bishunpur	7.89	902	587	0.07	92	205	0	12	0	NA	NA	310	66	35	30	6
70	Gumla	Chainpur	Chainpur 1	7.96	672	437	0.00	57	105	0	42	3	NA	NA	205	64	11	20	5
71	Gumla	Sisai	Sisai	8.04	526	342	1.76	39	130	0	33	1	NA	NA	160	50	9	35	6
72	Gumla	Ghaghra	Ghaghra	7.98	473	307	0.23	85	150	0	15	2	NA	NA	190	40	22	32	3
73	Gumla	Gumla	Gumla 1	8.38	1057	687	0.17	124	295	70	19	0	NA	NA	275	10 8	1	99	33
74	Gumla	Raidih	Kasir	8.11	652	424	0.35	96	195	0	3	0	NA	NA	125	48	1	70	43
75	Gumla	Gumla	Kharke	7.98	353	230	0.14	78	70	0	37	2	NA	NA	185	36	23	22	4
76	Gumla	Sisai	Nagfeni	8.31	570	370	0.24	82	85	80	4	1	NA	NA	190	54	13	36	4
77	Gumla	Palkot	Palkot	7.12	119	77	0.02	18	55	0	11	0	NA	NA	30	10	1	26	8
78	Gumla	Raidih	Raidih	7.83	454	295	0.01	82	195	0	14	0	NA	NA	165	32	21	51	19
79	Simdega	Simdega	Simdega	7.98	297	193	0.28	32	100	0	5	0	NA	NA	75	24	4	25	9
80	Simdega	Bano	Bano	7.80	242	157	0.08	39	120	0	4	0	NA	NA	80	18	9	21	31
81	Simdega	Thethai Tangar	Thethai Tangar	7.85	424	275	0.04	53	160	0	9	0	NA	NA	125	42	5	42	8
82	Simdega	Kolebira	Kolebira	8.44	364	237	2.03	53	85	120	11	1	NA	NA	95	14	15	71	31
83	Simdega	Kolebira	Lachragar gh	8.12	816	531	0.58	103	220	0	4	4	NA	NA	230	80	7	46	9

84	Simdega	Jaldega	Jaldega	8.12	430	279	0.42	57	225	0	4	3	NA	NA	165	20	28	42	24
85	Simdega	Simdega	Biru	8.09	368	239	0.27	67	175	0	3	1	NA	NA	115	16	18	53	16
86	Simdega	Kolebira	Puthritoli	8.18	126	82	0.42	11	90	0	11	0	NA	NA	60	14	6	15	11
87	Simdega	Jaldega	Bari Biringa	7.89	353	229	0.38	14	235	0	17	3	NA	NA	160	10	33	33	22
88	Simdega	Jaldega	Lamboi	8.11	273	177	0.00	32	125	0	10	0	NA	NA	60	4	12	41	31
89	Simdega	Thethai Tangar	Kerio	7.90	849	552	0.56	92	330	0	7	0	NA	NA	280	64	29	49	32
90	Simdega	Bolba	Bolba	7.82	610	396	0.04	64	135	0	6	8	NA	NA	175	46	15	33	12
91	Simdega	Kurdeg	Kurdeg	7.92	400	260	0.11	89	185	0	21	2	NA	NA	135	24	18	75	32
92	Bokaro	Chas	Radhagram	7.96	1448	941	0.50	132	310	0	65	3	NA	NA	600	166	45	6	2
93	Bokaro	Chas	Chas	7.65	1189	773	0.89	92	155	0	76	0	NA	NA	350	114	16	24	1
94	Bokaro	Chas	Jaina More	8.46	1415	920	0.84	99	260	100	22	0	NA	NA	425	132	23	70	2
95	Bokaro	Chas	Pindrajora	7.96	1165	757	0.46	145	90	0	45	0	NA	NA	340	128	5	13	3
96	Bokaro	Chas	Pupunki	8.35	881	572	0.64	109	75	30	63	0	NA	NA	310	46	47	20	2
97	Bokaro	Chandanki yari	Chandanki yari	8.42	839	545	0.52	60	120	70	15	4	NA	NA	195	62	10	58	2
98	Bokaro	Chandanki yari	Laghla	8.41	816	530	0.87	53	175	90	9	0	NA	NA	300	68	32	30	3
99	Bokaro	Chandanki yari	Nutandih	8.39	1655	1076	0.83	220	150	90	69	3	NA	NA	655	212	30	13	3
100	Bokaro	Chandanki yari	Baramasiy a	8.31	579	376	0.08	37	175	280	7	0	NA	NA	150	46	9	106	73
101	Bokaro	Chandanki yari	Chandra	8.33	1727	1123	2.18	121	175	90	23	3	NA	NA	415	148	11	32	13
102	Bokaro	Peterwar	Chandapura	8.32	568	369	2.37	60	180	70	4	1	NA	NA	180	30	25	57	41
103	Bokaro	Gomia	Gomia	8.73	1170	761	0.83	39	380	90	8	0	NA	NA	335	96	23	54	60
104	Bokaro	Nawadih	Nawadih	8.34	971	631	0.63	96	180	70	1	6	NA	NA	285	52	38	53	22
105	Bokaro	Petarbar	Petarbar	8.06	791	514	0.00	109	90	0	69	3	NA	NA	255	80	13	41	1
106	Bokaro	Bermo	Bermo/Ph	8.52	1416	920	0.52	39	385	90	33	1	NA	NA	400	14	9	90	22

			usro													6				
107	Bokaro	Gomia	Tenughat	8.29	689	448	0.67	60	160	70	13	1	NA	NA	205	28	33	40	13	
108	Bokaro	Chas	Balidih	8.42	1167	759	0.88	53	240	80	9	0	NA	NA	225	82	5	83	1	
109	Deoghar	Deoghar	Deoghar	8.33	1109	721	0.78	67	245	110	10	7	NA	NA	340	12	75	74	2	
110	Deoghar	Mohanpur	Ghormara	8.43	1018	662	1.05	60	135	90	19	10	NA	NA	230	76	10	60	3	
111	Deoghar	Deoghar	Jasidih	8.29	1100	715	1.10	110	110	60	18	2	NA	NA	255	10	0	1	36	2
112	Deoghar	Madhupur	Madhupur	8.35	1168	759	1.00	71	215	80	13	7	NA	NA	250	84	10	82	1	
113	Deoghar	Palajori	Palajori	8.51	894	581	0.67	50	150	70	3	2	NA	NA	265	80	16	26	2	
114	Deoghar	Sarath	Sarath	8.37	526	342	0.30	53	110	100	14	2	NA	NA	170	30	23	68	11	
115	Deoghar	Sarawan	Sarawan	8.39	959	623	0.18	110	75	50	11	0	NA	NA	270	92	10	14	2	
116	Deoghar	Palajori	Khamarbad	8.29	323	210	0.18	25	75	40	5	0	NA	NA	70	16	7	27	21	
117	Deoghar	Sarath	Matiyara	8.45	390	254	0.97	57	90	30	16	0	NA	NA	135	34	12	26	32	
118	Deoghar	Sarawan	Donihari	8.36	315	204	0.17	46	25	80	12	7	NA	NA	115	28	11	16	32	
119	Deoghar	Sarath	Bada Nawada (New)	8.46	885	575	0.26	50	210	60	33	0	NA	NA	220	76	7	70	4	
120	Dhanbad	Baghmara	Baghmara	8.29	726	472	0.55	50	125	70	22	4	NA	NA	215	48	23	22	6	
121	Dhanbad	Katras	Balaji Mandir	8.45	1003	652	0.49	46	250	70	31	0	NA	NA	255	66	22	83	2	
122	Dhanbad	Dhanbad	Basudeopur	8.38	1319	857	0.90	78	275	90	59	1	NA	NA	395	44	69	54	54	
123	Dhanbad	Dhanbad	Bhuli A Block	8.33	1531	995	0.78	103	235	30	8	1	NA	NA	390	12	8	17	33	3
124	Dhanbad	Dhanbad	Chiragora Hirapur	8.31	1168	759	1.34	57	220	100	37	4	NA	NA	350	84	34	61	4	
125	Dhanbad	Dhanbad	Dbl Buglow	8.43	1000	650	0.94	53	185	60	4	2	NA	NA	190	70	4	77	1	
126	Dhanbad	Dhanbad	Dhaiya Ism	8.47	825	536	1.06	53	65	80	12	0	NA	NA	200	52	17	24	3	
127	Dhanbad	Dhanbad	Dhanbad New	8.32	1547	1006	1.27	46	425	110	33	1	NA	NA	380	13	8	9	110	31

128	Dhanbad	Jharia	Dhansar MRS	8.37	793	516	0.18	78	85	40	12	1	NA	NA	130	46	4	61	7
129	Dhanbad	Dhanbad	Godhar Basti	8.50	900	585	0.53	71	65	60	43	4	NA	NA	210	80	2	40	5
130	Dhanbad	Gobindpur	Gobindpur	8.45	839	545	1.74	53	210	110	5	0	NA	NA	140	44	7	106	21
131	Dhanbad	Jharia	Jharia	8.49	818	532	0.37	64	160	70	14	0	NA	NA	290	84	19	17	2
132	Dhanbad	Jharia	Kandra Mandal Basti	8.32	577	375	0.31	11	140	20	26	1	NA	NA	170	58	6	20	3
133	Dhanbad	Baghmara	Mahuda	8.32	898	584	0.37	25	230	60	21	5	NA	NA	175	34	22	52	33
134	Dhanbad	Dhanbad	Matkuria	8.36	1096	712	1.51	64	260	50	24	1	NA	NA	440	62	69	11	5
135	Dhanbad	Nirsa	Nirsa	8.30	1441	937	0.46	138	135	20	7	5	NA	NA	295	66	32	19	17
136	Dhanbad	Dhanbad	Panderpalli	8.30	278	181	0.83	14	100	10	7	2	NA	NA	105	34	5	17	9
137	Dhanbad	Dhanbad	Pkroy College	8.57	686	446	1.15	35	140	50	13	4	NA	NA	215	52	21	22	19
138	Dhanbad	Dhanbad	Purandih Jorapokhar	8.31	1037	674	0.58	85	135	10	10	4	NA	NA	260	44	36	12	5
139	Dhanbad	Rajganj	Rajganj	8.47	2494	1621	2.82	372	190	230	12	4	NA	NA	840	210	76	82	15
140	Dhanbad	Jharia	Sindri Gosala More	8.32	1012	658	1.32	82	150	40	7	3	NA	NA	250	72	17	39	7
141	Dhanbad	Topchanchi	Topchanchi	8.36	2162	1405	1.38	287	170	30	34	11	NA	NA	520	48	97	31	10
142	Dhanbad	Tundi	Tundi	8.45	983	639	0.85	99	95	40	10	7	NA	NA	280	40	44	15	8
143	Giridih	Bagodar	Bagodar	8.62	986	641	1.40	85	130	70	7	7	NA	NA	280	50	38	14	21
144	Giridih	Giridih	Bandhantannr	8.30	1168	759	0.52	163	110	30	7	7	NA	NA	270	48	36	33	21
145	Giridih	Bengabad	Bengabad	8.29	931	605	1.11	92	100	30	7	8	NA	NA	250	40	36	19	5
146	Giridih	Birini	Birini	8.31	855	556	0.87	121	100	30	7	5	NA	NA	310	104	12	12	4
147	Giridih	Dewri	Dewri	7.79	384	249	1.08	46	50	0	4	4	NA	NA	90	26	6	19	5
148	Giridih	Giridih	Dhanaydih	8.31	487	317	0.79	57	60	10	9	5	NA	NA	125	42	5	20	4

149	Giridih	Dhanwar	Dhanwar	8.33	619	402	0.64	82	125	30	7	2	NA	NA	185	48	16	30	12
150	Giridih	Dumri	Dumri	8.45	991	644	0.59	89	155	70	4	6	NA	NA	330	11 0	13	27	3
151	Giridih	Gandey	Gandey	8.36	546	355	1.32	60	55	10	7	5	NA	NA	125	42	5	15	5
152	Giridih	Jamua	Khijri	8.29	1206	784	2.21	135	115	40	8	5	NA	NA	260	60	27	55	3
153	Giridih	Gandey	Maheshm unda	8.32	559	364	0.36	43	80	20	6	4	NA	NA	145	42	10	17	4
154	Giridih	Saraiya	Saraiya	8.31	1530	995	0.81	227	80	20	6	12	NA	NA	405	96	40	30	2
155	Giridih	Tisri	Tisri	8.45	635	413	2.85	35	200	70	5	2	NA	NA	200	44	22	40	15
156	Ramgarh	Bhukunda	Patratu	8.39	906	589	0.68	46	120	40	15	6	NA	NA	250	64	22	8	3
157	Ramgarh	Kuju	Mandu	8.31	1423	925	2.05	191	110	30	5	11	NA	NA	400	12 6	21	30	2
158	Ramgarh	Mandu	Mandu	8.31	344	224	0.53	21	60	20	5	3	NA	NA	105	28	9	9	4
159	Ramgarh	Barkakana	Ramgarh	8.34	1527	993	0.53	177	105	20	17	14	NA	NA	415	78	53	13	3
160	Ramgarh	Gola	Gola	8.41	1163	756	0.41	124	140	50	6	11	NA	NA	340	70	40	23	2
161	Ramgarh	Ramgarh	Ramgarh	8.11	1403	912	1.44	184	140	0	6	10	NA	NA	365	76	42	32	4
162	Ramgarh	Sayal	Patratu	8.32	960	624	0.51	78	145	50	3	9	NA	NA	200	36	27	53	20
163	Ramgarh	Kaitha	Ramgarh	8.31	701	455	1.50	71	75	20	19	6	NA	NA	200	60	12	18	1
164	Ramgarh	Kusumbha	Dulmi	8.30	1354	880	0.43	180	105	20	19	10	NA	NA	420	16 8	0	5	3
165	Ramgarh	Dulmi	Dulmi	8.30	522	339	0.98	64	80	30	6	4	NA	NA	160	38	16	30	1
166	Ramgarh	Barlong	Ramgarh	8.31	421	274	0.06	32	55	10	16	9	NA	NA	105	30	7	14	1
167	Palamu	Chainpur	Baraw	8.36	2372	1542	2.05	457	95	30	7	9	NA	NA	460	66	72	152	1
168	Palamu	Satabarwa	Betla	8.29	2231	1450	1.96	383	65	50	5	5	NA	NA	405	64	59	145	3
169	Palamu	Bishrampur	Bishramp ur	8.85	1402	911	1.29	170	250	90	7	4	NA	NA	280	30	50	152	2
170	Palamu	Chhatarpur	Chhatarpu r	8.64	622	404	0.76	35	225	40	5	3	NA	NA	200	44	22	35	22
171	Palamu	Daltonganj	Daltongan j	8.35	2208	1435	0.73	404	210	70	5	9	NA	NA	445	70	66	215	3
172	Palamu	Haidarnaga r /Husainbad	Haidarnag ar Rly well	8.68	1397	908	0.67	156	355	60	4	7	NA	NA	215	38	29	182	1
173	Palamu	Harihargan	Hariharga	8.63	1407	915	0.68	160	370	70	4	7	NA	NA	210	22	38	176	41

		j	nj																
174	Palamu	Husainbad	Japla	8.29	513	334	1.10	35	185	50	4	3	NA	NA	150	32	17	43	37
175	Palamu	Bishrampur	Kajri	8.32	549	357	1.08	32	205	70	5	3	NA	NA	190	32	27	53	2
176	Palamu	Patan	Kanda	8.29	1391	904	0.50	238	100	20	7	8	NA	NA	315	66	36	67	13
177	Palamu	Lesliganj	Lesliganj	8.33	1596	1037	2.05	245	165	40	4	11	NA	NA	415	11 0	34	91	3
178	Palamu	Patan	Nawadiha	8.34	689	448	0.70	74	170	40	6	7	NA	NA	215	48	23	29	12
179	Palamu	Panki	Panki	8.24	1563	1016	0.84	294	145	60	6	11	NA	NA	505	12 2	49	49	5
180	Palamu	Patan	Patan	8.35	704	458	0.71	78	175	40	6	7	NA	NA	230	56	22	29	13
181	Palamu	Bishrampur	Rajaura	8.73	1400	910	1.82	170	270	60	5	4	NA	NA	280	42	42	135	2
182	Palamu	Panki	Sagalim Govt. Well	8.34	384	250	0.77	18	200	50	4	2	NA	NA	130	24	17	74	17
183	Palamu	Chhatarpur	Sanda	8.25	447	291	0.99	32	195	40	4	3	NA	NA	140	26	18	35	71
184	Palamu	Satabarwa	Satbarwa	8.21	1397	908	0.54	238	125	20	7	6	NA	NA	325	46	51	92	4
185	Latehar	Chandwa	Chandwa	8.27	1098	714	0.61	113	140	30	8	10	NA	NA	285	62	32	26	3
186	Latehar	Latehar	Latehar	8.43	670	435	0.56	71	135	30	14	5	NA	NA	200	42	23	37	10
187	Latehar	Satabarwa	Satbarwa	8.37	685	445	0.93	28	200	60	4	3	NA	NA	240	40	34	24	10
188	Latehar	Manika	Manika	8.25	1409	916	0.64	207	120	20	20	10	NA	NA	485	98	58	3	2
189	Latehar	Balumath	Balumath	8.76	1220	793	0.81	110	220	50	4	5	NA	NA	290	66	30	52	36
190	Latehar	Barwadih	Barwadih	8.26	1779	1156	0.81	305	235	60	10	6	NA	NA	580	74	96	67	7
191	Latehar	Balumath	Balumath	8.34	1349	877	1.33	18	155	30	10	8	NA	NA	195	26	32	18	1
192	Latehar	Garu	Garu	8.25	371	241	2.01	35	125	30	6	2	NA	NA	130	20	19	21	20
193	Latehar	Mahuadana r	Mahuadan ar	8.31	406	264	0.39	96	35	20	7	4	NA	NA	75	10	12	39	22
194	Hazaribagh	Hazaribagh	Amritnaga r	8.37	900	585	1.46	355	210	70	7	3	NA	NA	380	36	71	114	77
195	Hazaribagh	Barhi	Barhi	8.24	2318	1507	0.67	190	100	20	19	13	NA	NA	415	70	58	13	4
196	Hazaribagh	Mandu	Barka chumba	8.36	1061	690	2.17	156	75	40	15	1	NA	NA	350	11 2	17	18	1
197	Hazaribagh	Barkgaon	Barkagaon	8.21	1334	867	0.63	191	105	20	22	10	NA	NA	460	13 4	31	8	2

198	Hazaribagh	Barkatha	Barkatha	8.25	606	394	0.56	43	135	30	12	0	NA	NA	190	66	6	13	5
199	Hazaribagh	Hazaribagh	Bodam bajar	8.45	416	270	0.40	64	75	20	8	0	NA	NA	135	40	9	33	1
200	Hazaribagh	Hazaribagh	College More	8.36	885	575	0.39	106	120	30	19	11	NA	NA	345	68	40	6	2
201	Hazaribagh	Churchu	Dari	8.30	779	506	0.00	89	95	10	17	2	NA	NA	220	48	24	20	5
202	Hazaribagh	Daru	Daru	8.29	741	482	0.98	96	85	20	17	3	NA	NA	225	52	23	26	5
203	Hazaribagh	Keredari	Garrikalan	8.30	1302	846	0.66	191	85	20	20	3	NA	NA	345	74	38	23	2
204	Hazaribagh	Hazaribagh	Habibnaga r	8.30	488	317	0.72	57	95	40	6	0	NA	NA	205	56	16	18	2
205	Hazaribagh	Hazaribagh	Hatyari	8.39	691	449	0.67	109	105	40	18	4	NA	NA	305	66	34	20	2
206	Hazaribagh	Hazaribagh	Hazaribag h	8.50	639	415	0.69	99	75	30	13	1	NA	NA	235	66	17	21	3
207	Hazaribagh	Hazaribagh	Hirabag	8.41	697	453	0.44	94	110	30	14	0	NA	NA	310	78	28	3	2
208	Hazaribagh	Hazaribagh	Hazaribag h	8.34	1572	1022	0.58	319	85	10	14	5	NA	NA	550	15 8	38	2	3
209	Hazaribagh	Ichak	Ichak More	8.31	308	200	1.41	32	70	10	2	1	NA	NA	100	32	5	21	0
210	Hazaribagh	Hazaribagh	Kanhari Road	8.30	596	388	0.46	64	105	10	6	0	NA	NA	160	60	3	17	2
211	Hazaribagh	Mandu	Kanjgi	8.30	293	191	1.39	32	65	20	2	2	NA	NA	105	28	9	20	0
212	Hazaribagh	Keredari	Keredari	8.54	795	517	1.10	106	100	40	10	4	NA	NA	290	92	15	16	4
213	Hazaribagh	Hazaribagh Sadar	Korra Chowk	8.60	572	372	0.21	85	125	30	3	0	NA	NA	220	62	16	33	2
214	Hazaribagh	Hazaribagh Sadar	Kud ashram	8.30	1102	716	0.31	191	70	20	19	2	NA	NA	405	13 2	18	6	2
215	Hazaribagh	Hazaribagh Sadar	Masipiri	8.32	1118	727	0.20	191	70	10	13	1	NA	NA	360	12 2	13	18	2
216	Hazaribagh	Hazaribagh	Meru (Silver)	8.31	1089	708	0.21	198	80	10	15	1	NA	NA	400	11 8	25	11	2
217	Hazaribagh	Hazaribagh Sadar	Fasi well (near old bus stand)	8.41	1101	716	0.30	195	75	10	12	0	NA	NA	360	11 4	18	18	10
218	Hazaribagh	Padma	Padma	8.30	387	252	0.70	18	145	10	10	0	NA	NA	160	44	12	21	2
219	Hazaribagh	Barkatha	Sakrej	8.39	1125	731	0.63	71	90	10	5	3	NA	NA	190	54	13	15	4

220	Hazaribagh	Patratu	Saunda (Budh Bazar)	8.33	549	357	0.52	71	75	30	15	2	NA	NA	195	58	12	21	3
221	Hazaribagh	Hazaribagh Sadar	Simra rest house	8.31	949	617	0.64	167	65	10	11	5	NA	NA	345	98	24	4	2
222	Hazaribagh	Hazaribagh Sadar	Sindur	8.41	1038	675	0.64	177	85	30	17	5	NA	NA	400	98	38	9	4
223	Hazaribagh	Mandu	Sirka	8.30	625	406	0.98	78	85	20	2	2	NA	NA	150	46	9	32	7
224	Hazaribagh	Bishnugarh	Tatijhariya	8.52	613	399	0.79	89	95	20	4	0	NA	NA	205	48	21	28	6
225	Hazaribagh	Barkagaon	Urimari	8.60	825	536	1.17	103	90	30	17	3	NA	NA	270	64	27	19	3
226	Hazaribagh	Chouparan	Chouparan	8.31	394	256	0.28	14	130	20	5	0	NA	NA	150	50	6	18	5
227	Koderma	Chandwara	Chandwara	8.32	971	631	1.11	130	110	40	23	3	NA	NA	380	124	17	7	1
228	Koderma	Koderma	Jhumritilaiya	8.33	1004	653	0.00	96	120	30	11	5	NA	NA	300	88	19	10	3
229	Koderma	Koderma	koderma	8.36	1158	753	0.80	133	95	20	24	9	NA	NA	395	135	1	7	4
230	Koderma	Domchanch	Domchanch	8.43	1236	803	0.50	163	135	40	3	1	NA	NA	360	130	9	39	7
231	Koderma	Jainagar	Jainagar	8.31	1994	1296	0.72	316	95	10	17	5	NA	NA	565	186	24	24	8
232	Koderma	Koderma	Pathaldiha	8.43	496	323	1.06	35	215	20	9	2	NA	NA	150	54	4	42	26
233	Koderma	Koderma	Kanobigha	8.32	1003	652	0.98	103	210	30	37	8	NA	NA	260	34	42	85	3
234	Chatra	Simaria	Bagra	8.55	625	406	1.17	57	255	50	14	1	NA	NA	175	8	38	72	31
235	Chatra	Simaria	Birhu	8.35	333	217	0.62	35	95	10	7	3	NA	NA	120	28	12	16	1
236	Chatra	Chatra	Chatra	8.41	2250	1463	0.92	425	245	10	42	16	NA	NA	455	116	40	184	1
237	Chatra	Itkhori	Itkhori	8.26	599	389	1.37	35	185	40	5	2	NA	NA	185	36	23	42	28
238	Chatra	Itkhori	Pitij	8.29	818	531	0.58	106	240	50	4	1	NA	NA	100	34	4	112	62
239	Chatra	Simaria	Simaria	8.27	331	215	0.47	32	95	10	5	3	NA	NA	120	30	11	16	1
240	Chatra	Tandwa	Tandwa	8.34	780	507	0.92	53	355	50	7	0	NA	NA	200	38	25	89	51
241	Chatra	Simaria	Tutilawa	8.36	700	455	1.66	50	305	50	7	1	NA	NA	210	22	38	75	61

242	Garhwa	Bhawnathpur	Bhawnathpur	8.41	1148	746	1.57	138	285	20	26	8	NA	NA	190	46	18	165	12
243	Garhwa	Garhwa	Garhwa	8.32	963	626	0.58	131	225	20	28	0	NA	NA	320	66	38	49	1
244	Garhwa	Bhandaria	Godarman a	8.33	1090	709	0.76	131	155	20	23	12	NA	NA	410	74	55	5	4
245	Garhwa	Manjhain	Manjhain	8.32	807	524	0.88	64	315	50	17	1	NA	NA	155	22	24	92	71
246	Garhwa	Nagar Utari	Nagar Utari	8.34	755	491	0.79	71	240	40	19	1	NA	NA	165	28	23	100	1
247	Garhwa	Ramna	Ramna	8.29	717	466	1.09	53	255	40	9	4	NA	NA	210	54	18	55	26
248	Garhwa	Ranka	Ranka	8.30	849	552	1.60	32	360	70	17	0	NA	NA	185	40	21	95	55
249	Garhwa	Meral	Meral	8.36	494	321	2.83	18	215	30	5	4	NA	NA	135	38	10	58	21
250	Garhwa	Ramna	Ramna	8.31	712	462	1.09	50	250	30	8	6	NA	NA	205	54	17	46	31
251	Garhwa	Kandi	Kandi	8.37	824	535	1.49	53	285	30	13	8	NA	NA	220	56	19	70	32
252	Dumka	Chapodia	jama	7.87	408	265	0.69	18	183	0	21	20	0	4	150	16	26	20	14
253	Dumka	Chikania	jama	8.17	669	435	0.06	106	110	0	54	38	0	6	225	24	40	45	11
254	Dumka	Dumka	dumka	8	1035	673	0.07	145	244	0	85	38	0	5	415	40	76	48	17
255	Dumka	Gamhariya	ramgarh	8.21	531	345	0.00	99	98	0	6	29	0	8	205	28	32	20	4
256	Dumka	gopikandar	gopikanda r	8.12	321	209	0.00	14	160	0	2	6	0	0	130	22	18	10	2
257	Dumka	hansdiha	sarihat	8.13	136	89	0.00	11	53	0	0	9	0	7	60	8	10	1	0
258	Dumka	jama	jama	8.14	639	415	0.00	74	153	0	40	38	0	7	230	22	42	30	10
259	Dumka	jarmundi	jarmundi	7.84	981	638	0.00	170	128	0	63	39	0	9	320	46	49	43	2
260	Dumka	kathikund	kathikund	8.04	866	563	0.00	113	156	0	63	39	0	4	285	26	53	43	10
261	Dumka	masalia	masalia	8.16	527	343	0.42	53	196	0	28	5	0	8	170	26	25	37	1
262	Dumka	masanjor	raneshwar	7.76	199	130	0.00	18	73	0	2	5	0	6	75	14	10	5	4
263	Dumka	nonihat	jarmundi	8.21	245	159	0.00	32	90	0	7	6	0	2	90	16	12	17	2
264	Dumka	barapalasi	jama	8.05	510	332	0.00	67	96	0	19	10	0	7	145	28	18	24	5
265	Dumka	patabari	sikaripara	8.21	769	500	0.00	89	173	0	65	41	0	8	275	48	37	36	9
266	Dumka	raneshwar	raneshwar	8.05	311	202	0.00	28	107	0	7	36	0	10	100	18	13	30	1
267	Godda	Borijor	boarior	8.21	518	337	0.22	11	268	0	16	6	0	10	125	28	13	57	2
268	Godda	doi	mahagama	7.77	1839	1195	0.00	309	301	0	85	41	0	4	505	68	80	123	3
269	Godda	godda	godda	8.17	1405	913	1.00	220	309	0	83	13	0	1	340	28	65	140	9

270	Godda	jaminipahapur	sunderpahari	8.15	724	471	0.00	117	151	0	44	23	0	2	230	26	40	54	1
271	Godda	lalmatia	mahagama	7.06	961	625	0.00	138	207	0	72	41	0	2	350	38	61	54	7
272	Godda	mahagama	mahagama	7.955	561	365	0.00	53	168	0	32	8	0	5	60	20	2	98	2
273	Godda	maheswar	pathergama	7.91	1810	1177	0.00	447	117	0	70	7	0	1	435	68	64	160	14
274	Godda	pathergama	pathergama	7.83	1157	752	0.47	213	117	0	70	42	0	4	410	54	66	38	6
275	Godda	poreyahaat	poreyahaat	7.63	1805	1173	0.00	269	323	0	73	43	0	5	650	76	110	51	5
276	Godda	sunderpahaar	sunderpahari	8.1	615	400	0.00	89	151	0	33	5	0	7	240	40	34	22	4
277	Godda	chamudih	poreyahaat	8.14	634	412	1.02	92	170	0	6	33	0	7	170	18	30	63	2
278	Godda	sikitia	godda	7.86	1284	835	0.30	220	198	0	70	41	0	5	175	24	28	170	20
279	Godda	raghunathpur	poreyahaat	8.2	708	460	0.00	82	167	0	32	8	0	4	120	16	19	69	7
280	Godda	bisaha	pathergama	8.18	566	368	0.00	18	307	0	9	10	0	4	130	16	22	73	2
281	Godda	kumardih	godda	8.16	474	308	0.01	46	201	0	10	8	0	9	150	14	28	43	3
282	Godda	bargacha	poreyahaat	8.06	421	274	0.68	35	146	0	11	15	0	9	110	22	13	36	5
283	Godda	gobra	mahagama	7.72	672	437	0.00	35	273	0	15	6	0	7	200	24	34	42	2
284	Pakur	amarpara	amrapara	8.08	491	319	1.05	64	167	0	9	14	0	0	175	16	32	30	5
285	Pakur	hiranpur	hiranpur	7.15	1106	719	0.00	252	157	0	55	42	0	0	385	44	66	86	2
286	Pakur	litipara	litipara	7.74	1269	825	0.00	252	126	0	38	9	0	8	440	74	61	26	4
287	Pakur	mahespur	mahespur	8.18	494	321	0.00	53	139	0	20	8	0	5	170	32	22	18	5
288	Pakur	pakur	pakur	7.9	339	220	0.00	25	170	0	5	6	0	9	150	22	23	6	11
289	Pakur	pakuria	pakuria	8	523	340	0.00	99	123	0	12	17	0	9	220	22	40	16	2
290	Pakur	salgapara	mahespur	8.03	415	270	0.00	43	149	0	20	11	0	9	170	30	23	13	6
291	Pakur	toria	hiranpur	7.06	1554	1010	0.00	294	218	0	84	42	0	7	575	70	96	56	4
292	Pakur	sahagrama	mahespur	8.07	263	171	0.00	14	88	0	5	10	0	8	90	22	8	3	8
293	Pakur	litipara2	litipara	8.05	1199	779	0.00	358	70	0	17	7	0	4	495	94	62	33	5

294	Pakur	kariodih	litipara	8.08	799	519	0.00	121	160	0	43	35	0	7	280	34	47	40	1
295	Pakur	vikrapur	pakur	8.11	474	308	0.00	78	115	0	8	9	0	2	155	34	17	24	4
296	Pakur	pachathol	amrapara	8.11	255	166	0.00	18	106	0	5	8	0	6	105	28	8	6	2
297	Jamtara	jamtara	jamtara	8.1	683	444	0.00	99	129	0	63	41	0	4	230	38	32	41	10
298	Jamtara	nala	nala	7.33	1304	848	0.62	234	196	0	75	37	0	5	305	30	55	125	22
299	Jamtara	mihijam	mihijam	8.17	1120	728	0.00	145	187	0	81	16	0	36	210	20	38	87	35
300	Jamtara	kundahit	kundahit	8.02	384	250	0.00	21	165	0	14	6	0	0	130	30	13	20	7
301	Jamtara	dhootala	fatehpur	8.15	493	320	0.00	50	153	0	23	41	0	3	160	10	32	34	6
302	Jamtara	narayanpur	narayanpur	8.1	139	90	0.00	14	102	0	4	39	0	4	105	30	7	11	7
303	Jamtara	jasaydih	karmatarn	8.12	554	360	0.00	14	235	0	46	41	0	4	200	24	34	30	13
304	Jamtara	basti	fatehpur	8.13	335	218	0.00	67	43	0	24	7	0	0	115	42	2	13	10
305	Jamtara	mohanpur	narayanpur	8.19	895	582	0.00	21	329	0	57	42	0	5	250	18	49	48	18
306	Jamtara	fatehpur	fatehpur	8.03	288	187	0.00	43	129	0	9	7	0	4	125	12	23	19	10
307	E Singhbhumi	Ghatsila	Galudih	7.13	378	246	0.00	78	67	0	39	0	0	4	100	30	6	44	7
308	E Singhbhumi	Dalbhumgarh	Dalbhumgarh	6.92	325	211	0.00	64	61	0	7	9	0	2	50	18	1	43	10
309	E Singhbhumi	Chakulia	Chakulia	6.85	226	147	0.00	43	55	0	0	35	0	0	20	4	2	48	4
310	E Singhbhumi	Chakulia	Kalapatshr	6.65	304	198	0.00	64	37	0	1	37	0	0	70	22	4	33	9
311	E Singhbhumi	Bharagora	Digarpther	6.77	138	90	0.00	18	18	0	4	24	0	4	60	8	10	2	1
312	E Singhbhumi	Bharagora	Bharagora	6.9	344	224	0.00	177	37	0	3	26	0	0	130	18	20	78	17
313	E Singhbhumi	Chakulia	Pithajudi	6.69	249	162	0.00	53	12	0	16	35	0	0	55	12	6	33	2

314	E Singhbhum i	Ghatsila	Ghatsila	6.84	943	613	0.00	39	329	0	87	0	0	5	220	40	29	88	7
315	E Singhbhum i	Mosabani	Mosabani	7.41	1084	705	0.00	142	171	0	95	38	0	0	210	62	13	98	19
316	E Singhbhum i	Potka	Kalikapur	7.09	2110	1372	0.00	486	305	0	98	36	0	6	830	19 8	80	101	18
317	E Singhbhum i	Potka	Gitilata	7.39	543	353	0.00	43	183	0	36	0	0	10	155	30	19	41	6
318	E Singhbhum i	Potka	Hata	7.4	1253	814	0.00	188	342	0	46	39	0	16	395	10 4	32	101	8
319	E Singhbhum i	Potka	Potka	7.48	811	527	0.00	71	171	0	46	0	0	6	110	26	11	69	17
320	E Singhbhum i	Golmuri	Bhuludih	7.33	1051	683	0.00	131	140	0	96	0	0	6	250	26	44	78	5
321	E Singhbhum i	Golmuri	Amarjoti	7.53	574	373	0.00	85	104	0	57	0	0	11	140	28	17	54	14
322	Sarikela	Sarikela	Saraikela	7.2	2410	1567	0.00	351	683	0	10 0	0	0	1	705	11 8	98	169	78
323	Sarikela	Kharsawan	Kharsawa n	7.56	1111	722	0.80	124	140	0	81	38	0	1	195	32	28	95	16
324	Sarikela	Adityapur	Kandra	7.3	980	637	0.00	89	268	0	79	39	0	13	290	50	40	67	20
325	Sarikela	Chandil	Chandil	7.28	647	421	0.00	78	226	0	31	2	0	7	190	46	18	59	11
326	Sarikela	Nimdih	Jamdih	7.37	957	622	0.00	152	201	0	80	6	0	7	245	54	26	95	17
327	W.Singhbh um	Bandgaon	Bandgaon	7.12	1039	675	0.00	262	55	0	33	39	0	1	250	36	38	100	18
328	W.Singhbh um	Bandgoan	Hesadih	7.28	392	255	0.00	35	110	0	8	12	0	3	150	26	20	3	1
329	W.Singhbh um	kerekala	Krerekela	7.36	844	549	0.30	145	128	0	59	35	0	1	205	44	23	95	8
330	W.Singhbh	Chakradha	Chakradha	7.7	738	480	0.00	78	268	0	31	0	0	2	210	24	36	64	11

	um	pur	rpur																
331	W.Singhbhum	Khuntpani	khuntpani	7.43	447	291	0.00	32	128	0	34	20	0	18	200	34	28	2	1
332	W.Singhbhum	Chaibasa	chaibasa	7	748	486	0.00	113	183	0	46	11	0	5	130	22	18	97	21
333	W.Singhbhum	Jinkpani	Jinkpani	7.1	1291	839	0.00	259	189	0	98	19	0	0	340	80	34	107	22
334	W.Singhbhum	hatgamhari a	Hatgamriy a	7.4	1053	684	0.00	209	122	0	76	42	0	0	175	66	2	120	28
335	W.Singhbhum	Jagannathp ur	jaganthpur	7.41	901	586	0.00	142	232	0	10	42	0	0	235	44	30	91	16
336	W.Singhbhum	Noamundi	Barajamda	7.47	467	304	0.00	50	104	0	43	14	0	0	185	34	24	9	1
337	W.Singhbhum	Noamundi	Bhangoan	7.45	536	348	0.00	32	238	0	17	0	0	3	195	38	24	23	6
338	W.Singhbhum	Jaganthpur	Jaithgarh	7.49	334	217	0.00	32	116	0	20	0	0	4	155	48	8	1	1
339	W.Singhbhum	Tantnagar	Kokcho	7.27	672	437	0.00	82	110	0	44	10	0	7	210	40	26	20	2

THE WATER LEVEL DATA OF URBAN AREAS FOR THE PERIOD 2016-2017

MONTHLY WATER LEVELS (2016-17)

MONTHLY WATER LEVEL MONITORING DATA OF RANCHI URBAN AREA

SL. No.	Location	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
1	Daily Market (Near Thana)		16.0	16.5	16.7	10.9	5.7	7.5		13.18			16.5
2	Chutiya (Sani Mandir)		4.6	4.25	2.95	1.15	1.1	1.45		3.3			4.25
3	Lowadih		9.3	9.6	9.5	5.4	4	4.5		6.62			8.2
4	Mahilong Forest Nurssery		9.75	9.85	9.9	8.6	6.85	7.15		8.4			9.3
5	Gondli Pokhar		6.85	7.35	7.15	2	1.5	2.2		6.15			6.4
6	Tati Silway(E.F.)			9.15	8.75	3.85	2.85	3.95		6.6			4.15
7	Tungri Tola		12.65	13	13.05	12.1	6.2	6.7		9.35			10.2
8	Hombai B.I.T. Mesra		9.6	9.85	9.8	6.9	4	5.05		7.4			8.05
9	Hillview,Bariatu		3.59	3.49	3.14	1.94	2.9	3.29		4.3			3..74
10	Ramkrishna Mission Ashram Morabadi		8.68	8.58	7.33	1.38	1.38	2.28		7.3			7.53
11	Hochar			6.55	4.85	2.15	1.8	4.25		6.2			6.15
12	Bukru		8.95	8.9	8.9	7.6	5.5	5.52		7.4			8.5
13	Kanke Choak		7.35	7.7	7.25	5.55	2.15	2.55		4.9			5.45
14	Sukurhutu			3.88	5.18	2.38	1.03	1.53		4.57			
15	I.T.I. Bajra		9.55	8.35	3.55	2.2	2.6	3.25		4.9			6.3
16	Ladnapiri		6.4	6.65	6.1	3.75	2.2	2.6		4.05			5
17	Pindarcom		8.65	8.75	7.7	2.6	2.15	3.2		6.5			7.8
18	Kharsidag		7.25	7.45	6.8	4.05	3.7	4.2		5.9			6.4

19	Kachnar Toli		12.25	12.25	9.7	3.5	2.85	4		8.85		12.05
20	Mani Tola (Doranda)		7.6	6.2	2.5	1.6	2	2.3		4.1		2.8
21	Hanuman Mandir AG.Office)			7.15		7.7	5.75	6.35		8.35		8.95
22	Bridge Ford School			1.3	4.3	1.3	1.95	3.5		6.45		7.7
23	Bandhea					10	5.6	5.65				9.9
DEEPER AQUIFERS (RANCHI UBAN AREA)												
1	Jamchuwan (Tata Road)			10.83	12.75	10.02	7.92	2.27	6.4		9.02	11.5
2	NIFT (Hatia)			32.66	26.91	20.28	18.78	19.62	19.89		22.9	17.8
3	HEC Sector II					10.05	12.35	11.61	12.27		11.1	13.2
4	Hinoo,Airodram			15.45	11.7	11.55	7.4	7.89	9.15		8.36	11
5	J.V.M. Shaymli (Doranda)-pZ-I			17.44	23.95	23.13	22.65	17.25	17.65		18.25	21.55
6	J.V.M. Shaymli (Doranda)-pZ-II			27.09	26.35	22.65	22.2	15.45	16.1		26.8	21.1
7	J.V.M. Shaymli (Doranda)-pZ-III			22.73	22.9	22.3	21.65	16.25	16.85			33.35
8	HHC, Harmu			23.55	23.9	35.81	12.16	11.52	12.54		16.8	29.01
9	Ranchi College Ranchi					3.87	2.95	3.65	3.9			6
11	Kanke School (High School)			16.29	16.87	23.75	21.54	17.44	17.54		19.78	22.94
12	Bukru					9.51	5.16	3.85	4.4		7.29	9.1
13	Military Farm Namkum			9.64	9.65	16.8	9.2	9.55	13.95		24.5	31.5
14	Forest Nursery			16.6	19.97	10.58	9.25	7.75	10.15		10.48	13.15

WATER LEVEL DATA OF DHANBAD URBAN AREA													
Sl	Location	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
1	District Board I.B.	6.45	7.35	7.4	6.1	2.6	2.38	3.2	3.15	3.48	4.4	5.05	5.17
2	Panderpalli	9.2	10.2	9.3	8.4	5.1	4.3	5.1	5.4	5.8	6.65	6.7	7.75
3	Bhuli-A Block	10.45	10.75	10.68	9.9	8.3	7.65	8.05	8.25	8.4	8.7	8.8	9.1
4	Balaji Mandir, Katras	9.8	10.93	10.63	9.4	8.6	8.1	8.2	7.7	8.1	8.6	9	9.2
5	Basdeopur (CISF Camp)	7.65	7.1	7.15	6.1	5.45	5.2	5.8	6.1	6.3	6.75	6.78	6.85
6	Godhar basti	8.73	8.58	8.18	5.9	4.5	4.1	4.6	4.8	5.1	7.4	7.6	7.9
7	Matkuria	5.1	4.1	4.9	3.1	3.5	2.4	3.1	3.7	3.86	3.75	3.8	4.1
8	Dhansar Mines rescue station	6.8	7.55	8.93	8.2	3.55	3.25	4.1	5.58	5.76	6.1	6.2	6.8
9	purnadih Jorapokhar	9.58	14.1	10.1	8.1	3.65	3.35	4.45	4.6	5.2	5.6	5.75	5.89
10	Sindri/loyabad	4.3	3.3	3.15	2.8	1.75	1.6	2.3	2.7	2.83	2.9	2.98	3.1
11	Kandra mandal basti	8.35	9.45	9.05	7.6	4.6	4.3	4.8	5.35	5.7	5.85	5.96	6.2
12	Sindri Gosala more	5.68	7.45	7.26	4.1	2.65	2.45	3.1	3.4	3.25	3.65	3.85	4.45
13	Dhaiya, Near ISM Gate	5.1	4.4	4.38	3.2	2.8	2.6	3	3	3.1	3.4	3.45	4.15
14	P.K.Roy memorial College	6.1	5.1	5.1	4.1	1.35	1.25	2.48	2.4	2.6	2.85	3.1	3.8
15	Chiragora, Hirapur	8.05	8.85	6.6	6.15	6.1	5.8	6.3	6.85	6.95	7.1	7.83	8.1

WATER LEVEL DATA OF JAMSHEDPUR URBAN AREA													
Sl	Location	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
1	Rankini Mandir,Kadma	4.4	3.8	4.2	2.9	1.8	1.8	2.8	3.2	3.7	4.3	4.6	4.3
2	Jamshedpur Blood bank,bistupur	2.2	2.4	2.4	2	1.6	2	2.2	3.3	2.2	2.2	2.4	2.5
3	Jugsalai thana	3.5	3.1	3	1.9	1.3	1.8	2.3	2.4	2.5	3.9	2.8	3.8
4	Sundernagar	12.8	13.5	13.5	13	6.3	2.8	6	6.9	7.5	10.1	11	12
5	Barmamines Shiv mandir	3.9	4	4	3.2	1.4	1.9	2.7	3	3	3.2	3.2	3.8
6	Barmamines thana	2.1	2.1	2.2	2.1	1.5	1.8	2	2	2	2.4	2.6	3
7	Garhabasa	2.5	1.8	1.2	1.7	1	1.6	1.4	1.9	1.4	1.6	1.8	1.9
8	Agrico	2.3	3.2	2.9	4.6	2.4	2.7	2.6	3.6	3.5	3.7	3.5	3.9
9	Shri maria mandir,Golmuri	4	3.5	2.1	3.5	1.3	1.3	2.9	2.6	3.6	3.1	2.5	3.1
10	Sri deenbandhu Shiv mandir,Telco	2.1	1.5	3.1	2	2.4	2.6	3.9	3	3.2	3.3	3.1	3.3
11	Telco,Zone No.-11	5.5	5.8	5.7	5.7	2.5	2	2.1	4.3	4.5	4.8	5.1	5.2
12	Baridih	5.6	5.8	5.8	5.2	2.9	2.1	4.2	4.7	3.7	3.9	5.3	5.5
13	Bagun nagar	4.6	4.5	4.6	4.8	1.8	2.1	2.9	3.4	5.2	5.4	4.3	4.6
14	Shitla mandir,sakchi	5.2	5.8	5.2	3.4	3.6	2.7	4.3	3.3	4.5	4.7	3.3	3.5
15	Amar Jyoti School,mango	6	6.7	8	7.9	6	6.1	5.9	6.2	6.15	6.4	7.1	7.2

WATER LEVEL DATA OF HAZARIBAGH URBAN AREA													
Sl	Location	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
1	Amritnagar	13.41	13.27	12.96	11.86	6.11	5.69	6.41	7.49		9.21	9.7	10.81
2	Korra Chowk					3.65	1.11	2.33	3.93		7.93	8.93	9.53
3	College More	7.34	8.15	8.2	7.57	5.5	0.31	1.08	2.07		4.1	4.25	6.45
4	Simra Rest House	4.02	4.6	4.4	0.57	0.65	0.55	0.9	1.15		1.4	1.55	2.70
5	Sindur	8.69	8.61	8.56		0.79	0.45	1.26	2.54		4.61	4.71	6.71
6	Masipiri	8.75	8.94	8.56	7.85	3.65	3.45	6.1	6.69		8.6	8.62	8.45
7	Habib Nagar		10.37	11.05	10.07	5.7	3.63	4.63	4.67		7.5	7.44	9.25
8	Battom Bazar	2.95	3.57	3.67	1.39	0.49	0.55	0.72	2.05		3.57	3.07	3.17
9	Infront of Kud Ashram	11.66	10.88	10.13	0.96	0.25	0.28	0.98	2.04		4.3	8	9.25
10	Kanhari Road	8.83	9.65	9.63	8.79	1.79	3.78	5.15	3.77		3.65	6.7	9.60
11	Hirabag					1.51	0.23	1.88	4.53		6.78	7.56	7.93
12	Old Bus Stand	11.9	11.8	12.8	12.5	2.75	1.55	2.58	2.67		7.6	7.9	10.30