

GROUND WATER BROCHURE OF AZAMGARH DISTRICT, U.P.

(A.A.P.:2012-13)

By

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DISTRICT AT GLANCE

1. GENERAL INFORMATION

i. Geographical Area (Sq. Km.)	: 4054
ii. Administrative Divisions (as on 31.03.2012)	
Number of Tehsil	: 7
Number of Block	: 22
Number of Panchayat	: 278
Number of Villages	: 4016
iii. Population (as on 2011 census)	: 3939916
iv. Average Annual Rainfall (mm)	: 1031

2. GEOMORPHOLOGY

Major Physiographic Units	: The district can be divided into two natural division. (i) The southern low lying plain. (ii) Northern high plain the area of district is a part of flat Ganga alluvial plain. But surrounding of Ghaghara and Tones. They show meandering ox-bow lake natural levee flood plain.
Major Drainages	:

3. LAND USE (Hectare)

a) Forest area	: 110
b) Net area sown	: 300438
c) Net irrigated area	: 286528

4. MAJOR SOIL TYPES

: Older alluvial soil consisting broadly of Bhur of sandy, Matiar & clay rich and Dumat or loam.

5. AREA UNDER PRINCIPAL CROPS (As on 2010) Ha.	: Rabi – 256674 Kharif – 245902 Zaid -3490
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6.	IRRIGATION BY DIFFERENT SOURCES	
	(Area in ha. and number of structures)	
	Dug wells	: 0
	Tubewells / Borewells nos. 409	: 2879 Ham
	Tanks / Ponds	:
	Canals (Length = km) 1872 km.	: 42229 Ham
	Other sources	: 241306
	Net Irrigated Area	: 286528
	Gross Irrigated Area	: 478117
7.	NUMBER OF GROUND WATER MONITORING	
	WELLS OF CGWB (2009)	
	No. of Dugwells	: 20
	No. of Piezometers	: 1
8.	PREDOMINANT GEOLOGICAL FORMATIONS	Quaternary alluvial comprising older new or alluvial.
9.	HYDROGEOLOGY AND AQUIFER GROUP	: Broadly three tier aquifer system I Tier– Ground level 60 mts. Phreatic. II Tier– 80 mts to 250 mts. III Tier- 250 mts to 755.05 mts.
	Major water bearing formation	: Quaternary sediments Deposited over concealed basement making to major fresh water aquifer group.
	Pre-monsoon Depth to water level during May’ 2012	: 2.80 to 9.18 mbgl.
	Post-monsoon Depth to water level during Nov.’ 2012	: 1.50 to 9.10 mbgl.
	Long term water level trend in 10 years (2003-2012) In	: Rise-0.0273 to 0.2085 m/year. Fall-0.0764 to 0.20
10.	GROUND WATER EXPLORATION BY CGWB	
	(As on 2012)	
	No of wells drilled (EW, OW, PZ, SH, Total)	: 2 PZ, 16 EW
	Discharge (liters per minute)	: 1474 to 4416 lpm.
	Storativity (S)	: 2.5×10^E
	Transmissivity (m ² /day)	: 292 to 8850

11. GROUND WATER QUALITY

Presence of Chemical constituents more than permissible : 260 micro mhos/cm
limit (e.g. EC, F, As, Fe)
Type of water : 3240 mhos/cm

12. DYNAMIC GROUND WATER RESOURCES (2009)-in HAM

Annual Replenishable Ground Water Resources : 127183.33
Gross Annual Ground water Draft : 71666.38
Projected Demand for domestic Industrial uses up to 2033 : 17056.69
Stage of Ground water Development : 66.23%

13. AWARENESS AND TRAINING ACTIVITY

Mass Awareness Programmes organized : Nil
Date :
Place :
No. of participants :
Water Management Training Programme (Artificial : Nil
Recharge) organized
Date
Place
No. of participants

14. EFFORTS OF ARTIFICIAL RECHARGE & RAINWATER HARVESTING

Projects completed by CGWB (No & Amount spent) : Nil
Projects under technical guidance of CGWB (Numbers) :

15. GROUND WATER CONTROL AND REGULATION

: Nil
Number of OE Blocks : Nil
No of Critical Blocks : Nil
No of blocks notified :

16. MAJOR GROUND WATER PROBLEMS AND ISSUES :

Broadly natural geo-environmental problem occur i.e. Natural hazards like flood common in low lying area of Ghaghara and Tones.

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1.0 INTRODUCTION

The territory of this district lies in eastern Uttar Pradesh. It lies south of Ghaghara river between north latitude $25^{\circ}38'00''$ and $26^{\circ}27'25''$ and east longitude $82^{\circ}40'00''$ and $83^{\circ}27'30''$ falling in the survey of India Toposheet No 63N, J, K, & O. The district head quarter is in Azamgarh having 7 (seven) number of tehsil and 22 no. of block. As per 2011 census the district has population 3939916 of which 1950415 male and 1989501 females. Scheduled caste population is 1013801 and scheduled tribe population is 700. Geographically the area comprises Quaternary Alluvium sediments heterogeneous in nature. The main and major drainage of district belong to Ghaghara and Tones river system and Gangi, Udanti, Beru tributaries.

Physiographically the area can be divided into two parts: older and younger alluvium. The southern low lying plain and northern high plain. Older Alluvial plain is marked by the Kankar, red and yellow colour carbonaceous soil. The area is mostly known as 'Bhangar'. The northern plain is divided Physiographically into up land known as Bhangar and low land which lies in the vicinity of Ghaghara and are locally known as Kacchar.

Agriculture is the main source of economy of the district. Both surface and ground water are used for irrigation. The net irrigated area-286528 Ha and the net area shown 300438 Ha. Which shows that 95% area is irrigated and the rest are depending on rain fall. Length of canal in the district 1872 km and No of Govt. tube well 409.

Azamgarh district is drained by Ghaghara river system of which Tons and Gangi Udanti & Beru are tributaries, the Ghaghara enters at Mahrajganj area. The northern plain that's low land partly drained by chhoti Sarju and mostly by Tones river and its tributaries. Tons river enters in the district near Ahiraula in the west and flows through the entire length, leaves the district near chorhar in the east. The valley of Ghaghara river in northern low lying

plain which form the strip along the river. It is represented by the old and present flood plain of Ghaghara. This old course has now been partly occupied by Chhoti Sarju and long narrow lake exist along. Near Maharaj Ganj in the western part of Sagari Tehsil a branch of Ghaghara has out in to the Channel of Chhoti Sarju.

The district was covered reappraisal, hydrogeological survey of Sharda Sahayak district Azamgarh carried out by Dr. J.N. Rai 1994 and ground water potential of Azamgarh district Uttar Pradesh by Ram Pratap 1981.

A report of reappraisal Hydrogeological survey in Azamgarh dist. U.P. carried out by U.B. Singh Asstt. Hydrogeologist 2002-2003.

2.0 RAINFALL & CLIMATE

The average annual rain fall is 1031 mm. Climate of district is sub-humid characteristic. The district experience a moderate tropical monsoon winter. The summer season started by mid march and lost up mid or late June. Generally the month May is hottest when the day temperature 45°C . January is usually the coldest month the temperature going up to 9.3°C .

The relative humidity is highest during the month of August with normal relative humidity 75% followed by 85% of September.

3.0 GEOMORPHOLOGY & SOIL

3.1 GEOMORPHOLOGY:

The district can be divided in to two natural division.

- (i) The southern low lying plain.
- (ii) Northern high plain. They are mostly older and younger alluvial depositional plain. The southern older alluvial plain is marked by the Kankar bed and yellow colour carbonaceous soil. The area is mostly know as Bhangar. That is most fertile tract of district. There are several depression, marshy land & ponds, natural levee and swamp deposit. The northern plain divided Physiographically in to up land know as Bhangar

and low land which is lies in the of Ghaghara are locally know as Kacchar. Bhangar is characterized by sandy alluvium. The low land Kachhar is demarcated by old and present flood plain of Ghaghara.

3.2 SOIL:

Azamgarh district come under the older and younger alluvial deposits. The development of soil in the district can be described to different erosional and depositional agencies. Different morphological units have different type of soil. The Matiyar soil mainly clay composition. When the Dumat or loam soil having mixed and equal proportion of sand and clay. It lies low lying and depressed area it has black colour and it has adhering capacity of water is more it is known as Karael.

3.3 GEOLOGICAL SETUP:

Azamgarh district is a part of Central Ganga Plains and is covered by Quarternary alluvial deposits. The older alluvial which occupies a large part of the area are locally know as ‘Bhangar’. It does not get flooded and mostly calcareous soil with Kankar & Reh. The newer alluvium which occupies the area of lower altitude confines mostly along the area of Ghaghara and Chhoti Sarju. It get flooded during monsoon period. The newer alluvium characterized by sandy and silty clay. Pathak 1967 has assigned a middle to upper Pleistocene age to older alluvium and upper Pleistocene to recent age to the newer alluvium.

Alluvium of the southern tract of the district comprises mainly clay. Bhangar area of the northern tract is more fertile and are generally dumat or loam.

The geological formation met with in the area are as follow.

Age 1	Formation 2	Lithology 3
Recent to Quaternary	Newer Alluvium	Soil, silt, clay, mainly flood plain of Kachchar of Ghaghara.
Recent to Quaternary	Older Alluvium	Brown clay with Kankar and sand ‘Bhangar’.

4.0 GROUND WATER SCENARIO

Table: Water level fluctuation (Pre & Post-monsoon) for the year 2012.

Table-1

WATER LEVEL FLUCTUATION (PRE & POST - MONSOON) FOR THE YEAR 2012

District	AZAMGARH			
Sl. No.	Well Name	Pre-Monsoon (mbgl)	Post- Monsoon (mbgl)	Fluctuation (m)
1	Ahraula	8.16	7.39	0.77
2	Azamgarh	-	9.10	-
3	Badihari	6.74	1.54	5.20
4	Bahrapur	6.60	4.40	2.20
5	Bairadih	9.18	9.25	-0.07
6	Bazidpur	6.98	2.93	4.05
7	Belwana	4.76	3.97	0.79
8	Bibipur Khatauli	4.80	4.00	0.80
9	Captainganj	8.10	2.36	5.74
10	Deogaon	2.80	1.50	1.30
11	Karsandia Kalan	3.25	2.40	0.85
12	Lohra	6.25	6.16	0.34
13	Madayan	7.20	5.95	1.25
14	Mukusudia	5.06	3.69	1.37
15	Nizamabad	3.76	6.00	-2.24
16	Phulpur	6.20	4.80	1.40
17	Rahul Nagar	4.73	2.33	2.40
18	Sageri	6.25	5.45	0.80
19	Saraimir	6.20	3.85	2.35
20	Sidhauna	6.13	2.10	4.03

A perusal of the table to water level contour map for the period May 2012 reveals that water level varies from 2.80 mbgl as seen in Deogaon in block Lalganj to 9.18 at Bairadich in

block Rani ki Sarai' Almost all the block, covering approximately 80% of area of the district show the DWL between 2 to 10 mbgl.

A perusal of table and depth water level contour map for the period November 2012 water level has become shallower varies from. 1.50 at Lalganj block, 9.10 at Pilhani block. The data reveals that no well is showing DWL > 10 mbgl about 100% of the area lies in 2 to 10 mbgl.

SEASONAL FLUCTUATION:

Water Level/table fluctuates in response to recharge the aquifer and withdrawal from the aquifer. The quantum of fluctuation is a direct function of the above. Recharge takes place mainly during rainy season. The minimum depth to water level in an area is expected sometime at the close of monsoon or in the middle of monsoon period depending upon the intensity and duration of rainfall as well as soil characteristics and maximum depth to water level is expected to be just before the rainfall. The part of the rainfall in the initial period goes towards meeting the soil moisture deficiency as well as to saturate the Evapotranspiration losses.

ANNUAL SEASONAL FLUCTUATION OF WATER LEVEL:

Annual Seasonal Fluctuation of Water Level has been determined from the Pre-monsoon (May' 2012) and Post-monsoon (Nov' 2012) water level data of Ground Water monitoring wells. The fluctuation varies from minimum -0.07 mbgl to maximum 5.20 mbgl at Bairadih and Badihari.

LONG TERM TREND OF WATER LEVEL TABLE-1

Premonsoon Trend of Water Level:

A perusal of the table shows that there is falling trend in 50% wells during pre monsoon period. The range of decline 7cm/year at Badihari block to 16cm/year at Bazidpur in block Ahiraura. While 26% of wells shows the increasing trend. The rise of water level varies from. 2 cm/year at Azamgarh in block Palhani and 20 cm/year at Langerpur in Bilariyagaj block.

Table-2

**TREND OF WATER LEVEL – ALL
From Year 2003 to Year 2012**

State : Uttar Pradesh

District: Azamgarh

Sl. No.	Location	Pre Monsoon			Post Monsoon			Annual		
		Date Points	Rise (m/year)	Fall (m/year)	Date Points	Rise (m/year)	Fall (m/year)	Date Points	Rise (m/year)	Fall (m/year)
1-	Captainganj	9		0.1179	8	0.0597		34		0.1301
2-	Badihari	10		0.0764	10		0.0458	40		0.0875
3-	Langerpur	8	0.2085		7		0.0169	30	0.0938	
4-	Kakhbhar	2			2			8		
5-	Bazidpur	10		0.1606	10		0.0487	39		0.0216
6-	Sageri	10		0.1590	10		0.1619	40		0.1602
7-	Phulpur	10		0.0583	10		0.1289	39		0.1120
8-	Lalganj 2	5			6		0.8167	23		
9-	Azamgarh	7	0.0273		10		0.2085	36		0.0660
10-	Bairadih	9		0.1606	9		0.2963	36		0.3108
11-	Sidhauna	10		0.2001	10		0.0861	40		0.1409
12-	Bardah	1			0			2		
13-	Khalibam	1			2			7		
14-	Karsandia Kalan	8	0.1386		9		0.0087	35	0.0149	
15-	Nizamabad	7	0.1754		10		0.0693	32	0.0341	

Table-3

DYNAMIC GROUND WATER RESOURCES OF AZAMGARH DISTRICT UTTAR PRADESH AS ON 31.3.2009

SI. No.	Assessment Units - Blocks/ District	Command/ Non Command/ Total	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for Irrigation	Existing Gross Ground Water Draft for Domestic & Industrial Water Supply	Existing Gross Ground Water Draft for AH uses (11+12)	Provision for Domestic and Industrial Requirement Supply for 2025	Net Ground Water Availability for future Irrigation Development (10-11-14)	Stage of Ground Water Development (13/10)* 100 (%)
1	2	3	10	11	12	13	14	15	16
	DISTRICT - AZAMGARH								
1-	AHIRAULA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6632.93	4934.30	563.86	5497.86	761.73	936.90	82.89
2-	ATRAULIA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	3977.95	3052.07	480.54	3532.61	640.94	284.94	88.80
3-	AZMATGARH	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	5822.09	4098.28	670.06	4768.34	918.32	805.49	81.90
4-	BILARIYAGANJ	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	5496.54	2669.37	703.82	3373.19	963.47	1863.70	61.37
5-	HARRAIYA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6711.07	4122.84	455.51	4578.35	579.02	2009.21	68.22
6-	JAHANAGANJ	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	5368.85	1551.43	495.46	2046.89	679.96	3137.46	38.13

SI. No.	Assessment Units - Blocks/ District	Command/ Non Command/ Total	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for Irrigation	Existing Gross Ground Water Draft for Domestic & Industrial Water Supply	Existing Gross Ground Water Draft for AH uses (11+12)	Provision for Domestic and Industrial Requirement Supply for 2025	Net Ground Water Availability for future Irrigation Development (10-11-14)	Stage of Ground Water Development (13/10)* 100 (%)
1	2	3	10	11	12	13	14	15	16
7-	KAYALSA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6454.67	4250.52	504.93	4755.45	678.59	1525.56	73.67
8-	LALGANJ	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6112.08	2881.20	635.56	3516.76	847.49	2383.39	57.54
9-	MAHARAJ GANJ	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6599.68	3597.10	486.84	4083.94	632.56	2370.02	61.88
10-	MARTEENGANJ	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	8002.63	3693.74	492.35	4186.09	664.75	3644.14	52.31
11-	MEH NAGAR	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	5578.29	2451.27	658.35	3109.62	885.97	2214.05	55.75
12-	MIRZAPUR	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total 16556	5262.07	3751.23	622.50	4373.73	848.99	661.85	83.12
13-	MOHAMMADPUR	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	5394.85	3550.64	561.17	4144.81	793.01	1051.20	76.22

SI. No.	Assessment Units - Blocks/ District	Command/ Non Command/ Total	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for Irrigation	Existing Gross Ground Water Draft for Domestic & Industrial Water Supply	Existing Gross Ground Water Draft for AH uses (11+12)	Provision for Domestic and Industrial Requirement Supply for 2025	Net Ground Water Availability for future Irrigation Development (10-11-14)	Stage of Ground Water Development (13/10)* 100 (%)
1	2	3	10	11	12	13	14	15	16
14-	PALHANA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	31.78.96	1622.34	347.94	1970.28	468.68	1087.94	61.98
15-	PALHANI	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	33.31.95	2189.55	789.52	2979.07	1052.73	89.67	89.41
16-	PAWAI	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	7311.82	2315.22	5597.79	2913.09	8036.09	4160.51	39.84
17-	PHOOLPUR	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	7528.71	3466.04	5078.19	4044.23	803.23	3259.44	53.72
18-	RANI KI SARAI	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	4998.02	3087.26	501.83	3589.09	692.69	1218.07	71.81

SI. No.	Assessment Units - Blocks/ District	Command/ Non Command/ Total	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for Irrigation	Existing Gross Ground Water Draft for Domestic & Industrial Water Supply	Existing Gross Ground Water Draft for AH uses (11+12)	Provision for Domestic and Industrial Requirement Supply for 2025	Net Ground Water Availability for future Irrigation Development (10-11-14)	Stage of Ground Water Development (13/10)* 100 (%)
1	2	3	10	11	12	13	14	15	16
19-	SATHIAN	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	4017.76	2551.60	884.66	3436.26	1289.31	176.85	85.53
20-	TAHABARPUR	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6401.55	4952.02	414.56	5406.58	526.31	883.22	84.46
21-	TARWA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6300.31	3201.31	560.27	3761.58	731.49	2369.51	59.70
22-	THEKMA	Command	-	-	-	-	-	-	-
		Non - command	-	-	-	-	-	-	-
		Total	6700.56	3637.05	557.82	4194.87	761.36	2302.15	62.60
	TOTAL		127183.33	71666.38	12563.23	84229.61	17056.69	38460.26	66.23

Postmonsoon Trend of Water Level:

A perusal of table shows that there is falling trend in 53% of wells. The range varies from 2cm/year at Bazidpur in Ahiraura block to 14 cm/year at Sidauna in block Tarawa, while 25% of well shows the rising trend. The range varies from 1 cm/year to 9 cm/year at khar sandi Kalan and Langerpur area.

Sl. No.	Assessment Units – Blocks	Stage of Ground Water Development (%)	Pre-Monsoon		Post- Monsoon		Category (Safe / Semi Critical / Critical Over Exploited)
			Water levels trend	Is there a significant decline (Yes/No)	Water levels trend	Is there a significant decline (Yes/No)	
District Azamgarh							
1-	AHIRAULA	82.89	14.34	NO	6.58	NO	SAFE
2-	ATRAULIA	88.80	-3.38	NO	15.36	NO	SAFE
3-	AZMATGARH	81.90	17.01	NO	10.82	NO	SAFE
4-	BILARIYAGANJ	61.37	18.19	NO	-0.98	NO	SAFE
5-	HARRAIYA	68.22	10.99	NO	8.47	NO	SAFE
6-	JAHANAGANJ	38.13	10.18	NO	2.22	NO	SAFE
7-	KOYALSA	73.67	13.65	NO	7.68	NO	SAFE
8-	LALGANJ	57.54	5.29	NO	9.68	NO	SAFE
9-	MAHARAJGANJ	61.88	12.28	NO	4.85	NO	SAFE
10-	MARTEENGANJ	52.31	-12.6	NO	3.86	NO	SAFE
11-	MEHNAGAR	55.75	10.09	NO	9.21	NO	SAFE
12-	MIRZAPUR	83.12	2.87	NO	15.74	NO	SAFE
13-	MOHAMMADPUR	76.22	-3.27	NO	13.51	NO	SAFE
14-	PALHANA	89.41	16.37	NO	18.16	NO	SAFE
15-	PALHANI	61.98	18.78	NO	14.55	NO	SAFE
16-	PAWAI	39.84	15.73	NO	-2.26	NO	SAFE
17-	PHOOLPUR	53.72	7.5	NO	-1.99	NO	SAFE
18-	RANI KI SARAI	71.81	1.8	NO	-7.73	NO	SAFE
19-	SATHIAON	85.53	5.63	NO	15.85	NO	SAFE
20-	TAHABARPUR	84.46	13.9	NO	15.69	NO	SAFE
21-	TARWA	59.70	8.85	NO	17.95	NO	SAFE
22-	THEKMA	62.60	-6.56	NO	10.76	NO	SAFE

4.2 GROUND WATER RESOURCES:

The net ground water availability in the district ranges from 3178.96 Ham to 8002.63 Ham minimum being in Palhana block and maximum being at Marteenganj block. Gross ground water draft ranges from 1970.28 to 5497.86 Ham minimum in Palhana block and maximum in Ahiraura block. Net ground water availability for future irrigation developments is 89.67 minimum in Palhani block and maximum is 3259.41 in Phoolpur block. Stage of ground water development in the district is minimum in Jahanaganj block 38.13% and maximum in Ataraulia 88.80% stage of ground water development of the district as whole is 66.23% of all the block is district belonging in to safe category.

4.3 GROUND WATER QUALITY:

The ground water quality in the district is generally good and potable except at few patches like Azamgarh, Chande Swar, Bilariyaganj, Rani Ki Sarai where the E.C. has been recorded 3140, 3020, 2690, 2190 micromhos/cm at 25⁰C. 9% of water sample are fall in the doubtful category

For the irrigation purpose classification based on U.S.S.L. 31.43% of water samples belong to brakish and high where SAR value range between 18-26. However having salinity very high the SAR value ranging more than 26.

4.4 STATUS OF GROUND WATER DEVELOPMENT:

Development of ground water in district is mainly through dugwells, handpumps, India Mark II and tubewells. The gross ground water draft for irrigation in the district as on 31.3.2009 is 71666.38 Ha where as the ground water draft for domestic and industrial is 12563.23 ha. Hence the existing gross ground water draft for all uses in the district 84229.61 Ham. Net ground water availability for future irrigation development in the district 38460.26 Ha. A quantum of 17056.69 Ha. has been allocated for domestic and industrial requirement for next 25 year (2033), net available ground water availability in the district is 127183.73 ha. The stage of ground water development for the district is 66.23% of all block in district fall in 'safe' categories.

Water Supply Based on Ground Water Sources:

U.P. Jal Nigam is the government agency responsible for providing drinking water supplies to the urban and rural population in the district. The water requirements of the habitants are not with through surface water source through various mini water supply schemes or integrate water supply schemes utilizing the available water resources.

There are many shallow and deep tubewells through which water is supplied through pipe lines/taps in the urban areas of district.

In the rural areas are the districts there are 4106 number of villages is which water is supplied by Tap / Handpumps India Mark-II benefitting 23,01,094 population as per data of 2010-11.

5.0 GROUND WATER MANAGEMENT STRATEGY

5.1 Ground Water Development:

Lalganj, Marteenganj, Mehnagar & Phoolpur the level of development is <60%. In these blocks there is scope of ground water development with proper management and control.

In the blocks of high level of ground water development (>70%) covering major parts of the district it is necessary to exercise caution while planning further development of available ground water resources in the district.

In the area of low ground water development the well suitable for extraction of ground water suitability of rigs depth ranges and discharge in the district can be summarized as follows:

Sl. No.	Well Feasible	Rig Suitable	Depth of Well	Discharge
1.	Dug well/ Handpump	Manual Hand/ Boring set	20-40	50-100
2.	Shallow Tubewell	Rigs (Direct/Rotary)	50-150	1500-2500
3.	Deep Tubewell	Rotary Rig	250-755	2000-4400

6.0 GROUND WATER RELATED ISSUES AND PROBLEMS

The trend analysis of ground water level data indicate fall both in pre and postmonsoon period in the major part of district. This will impact in.

1. Further decline of ground water level
2. Drying up of dug wells / shallow wells.
3. Decrease in yield of tubewells and
4. Increased expenditure and power consumption for withdrawing water from progressively deeper depth.

7.0 AWARENESS & TRAINING ACTIVITY

Central Ground Water Board has not conducted any Mass Awareness Programme and Water Management Training Programme in the district.

8.0 AREAS NOTIFIED BY CENTRAL GROUND WATER AUTHORITY

Central Ground Water Authority has not notified any area / block in the district.

9.0 RECOMMENDATIONS

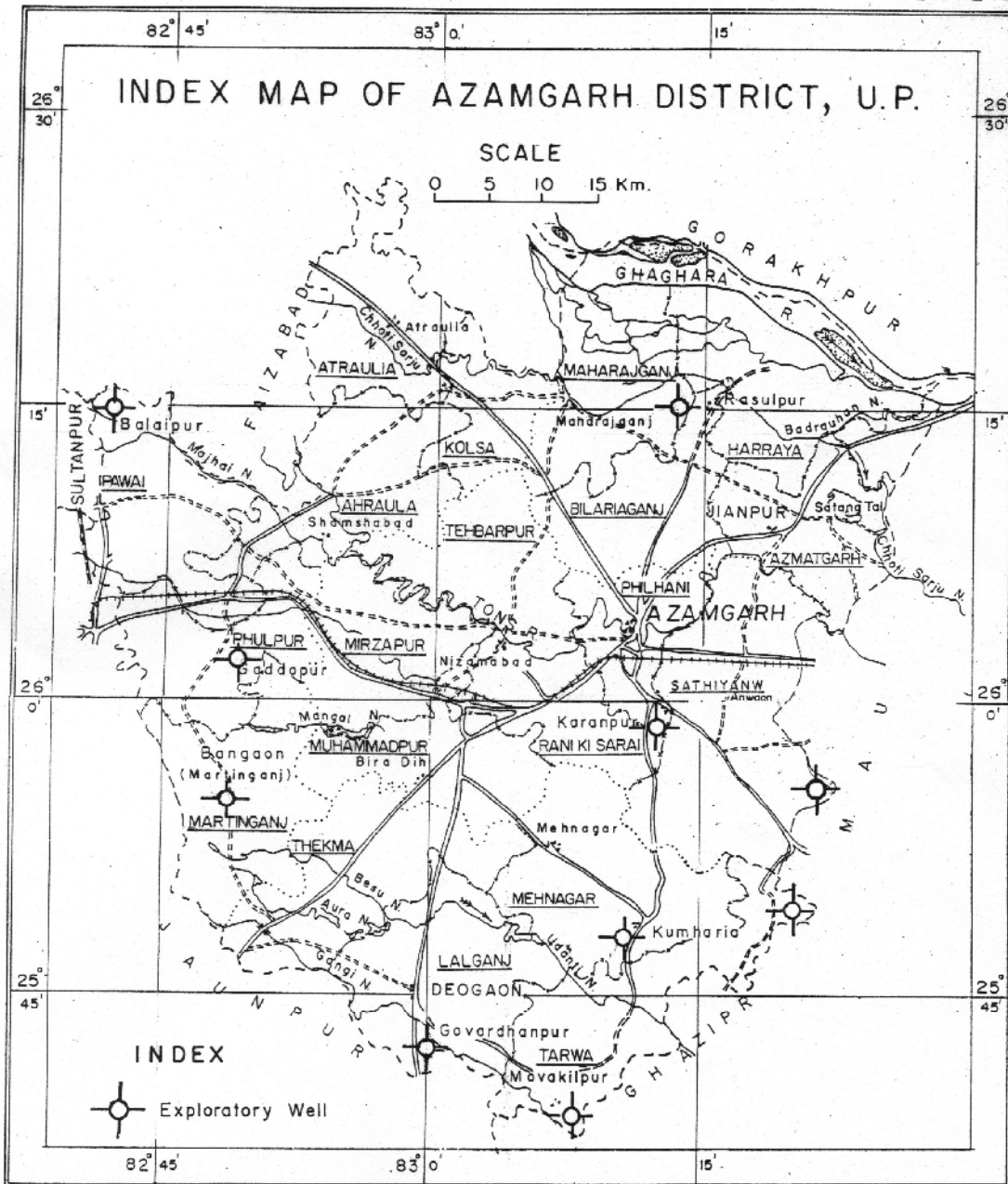
1. As level of development in many blocks of the district is high, further development of ground water should be restricted in these areas, especially in Ahiraura, Atatraulia, Azamgarh, Mehnagar and Palhani block which falls in over exploited category.
2. Artificial recharge technique should be adopted in the district due to occurrence of deep water condition to restrict the decline of water level, in urban areas, rooftop rain water harvesting, structures such as recharges pits /

shafts / trenches of suitable design, should be made mandatory for all government buildings, schools etc. having large roof top area.

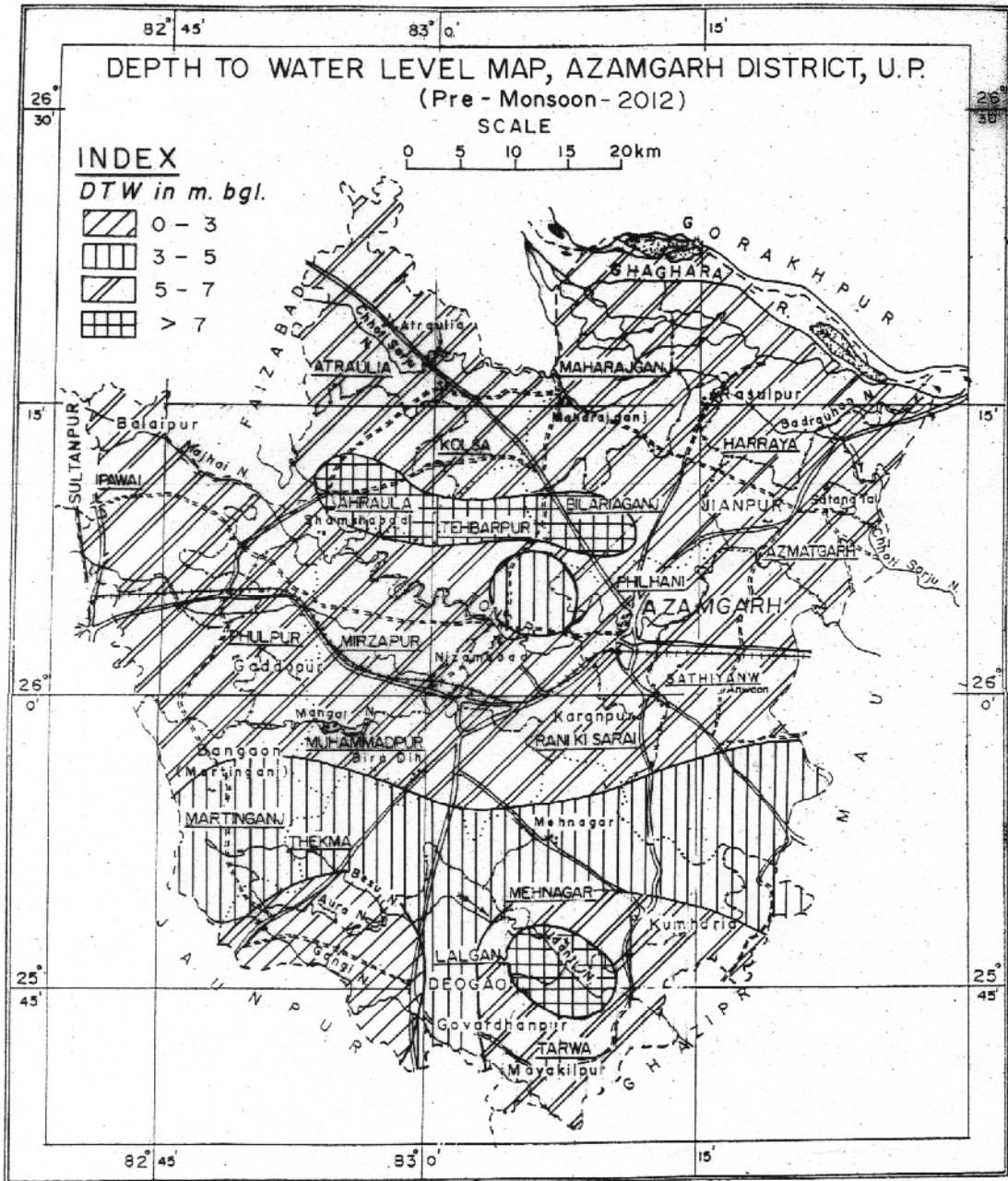
3. All the blocks are exhibiting declining trends in their ground water level hence proper vigilance and regular monitoring of water levels at close intervals through suitably located structure is essential.
4. To minimize the over stress on Aquifer Group, it is advisable to plan heavy duty water supply tubewell for further all uses by exploiting the ground water from the deeper aquifer.
5. Efforts should be made reclaim the barren land resulted due to saline efflorescence for agriculture purpose. The area of shallow ravines is reclaimable for cropping.
6. Excessive use of fertilizers by the farmers should be discouraged particularly in blocks showing high nitrate concentration.

REFERENCE

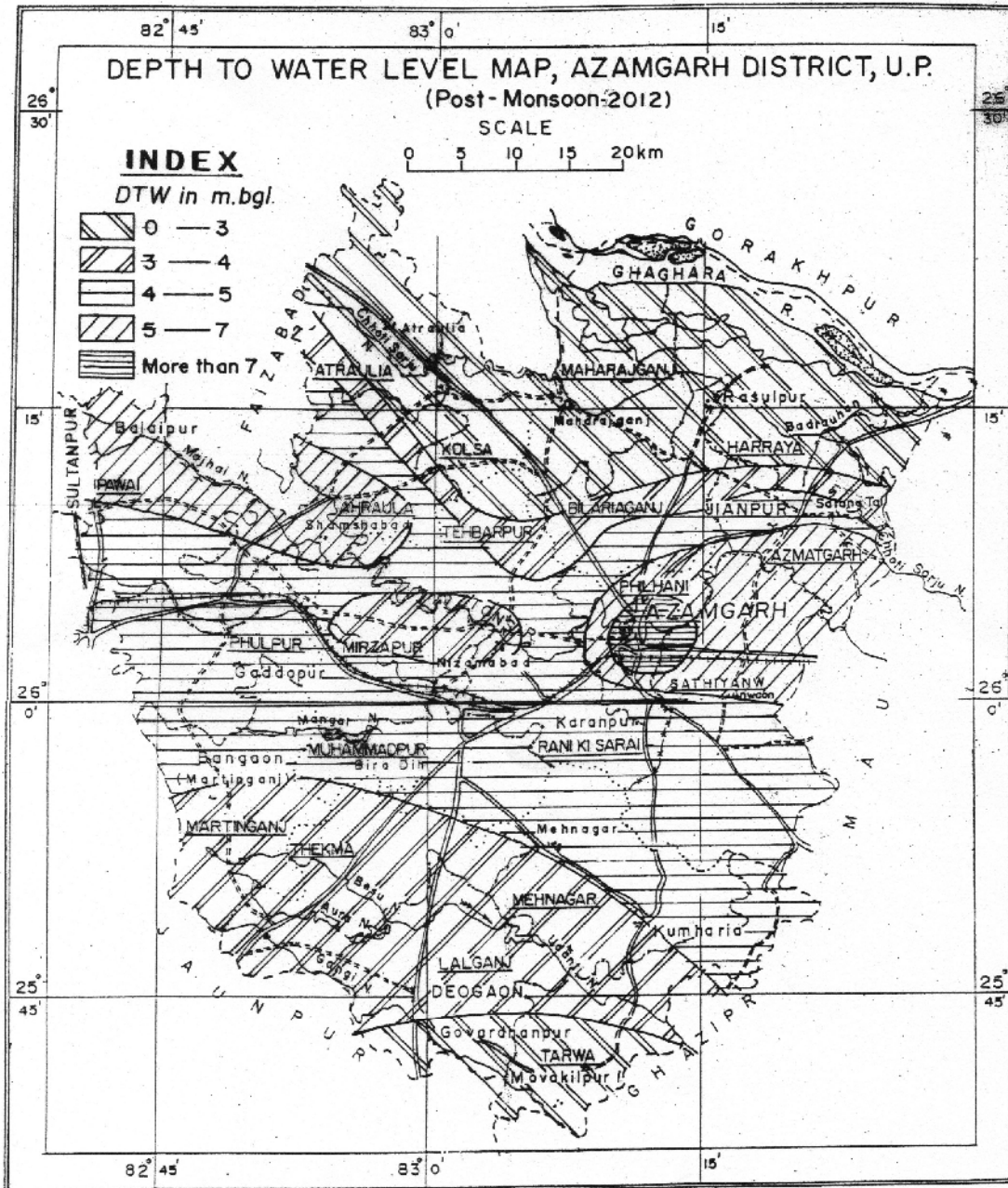
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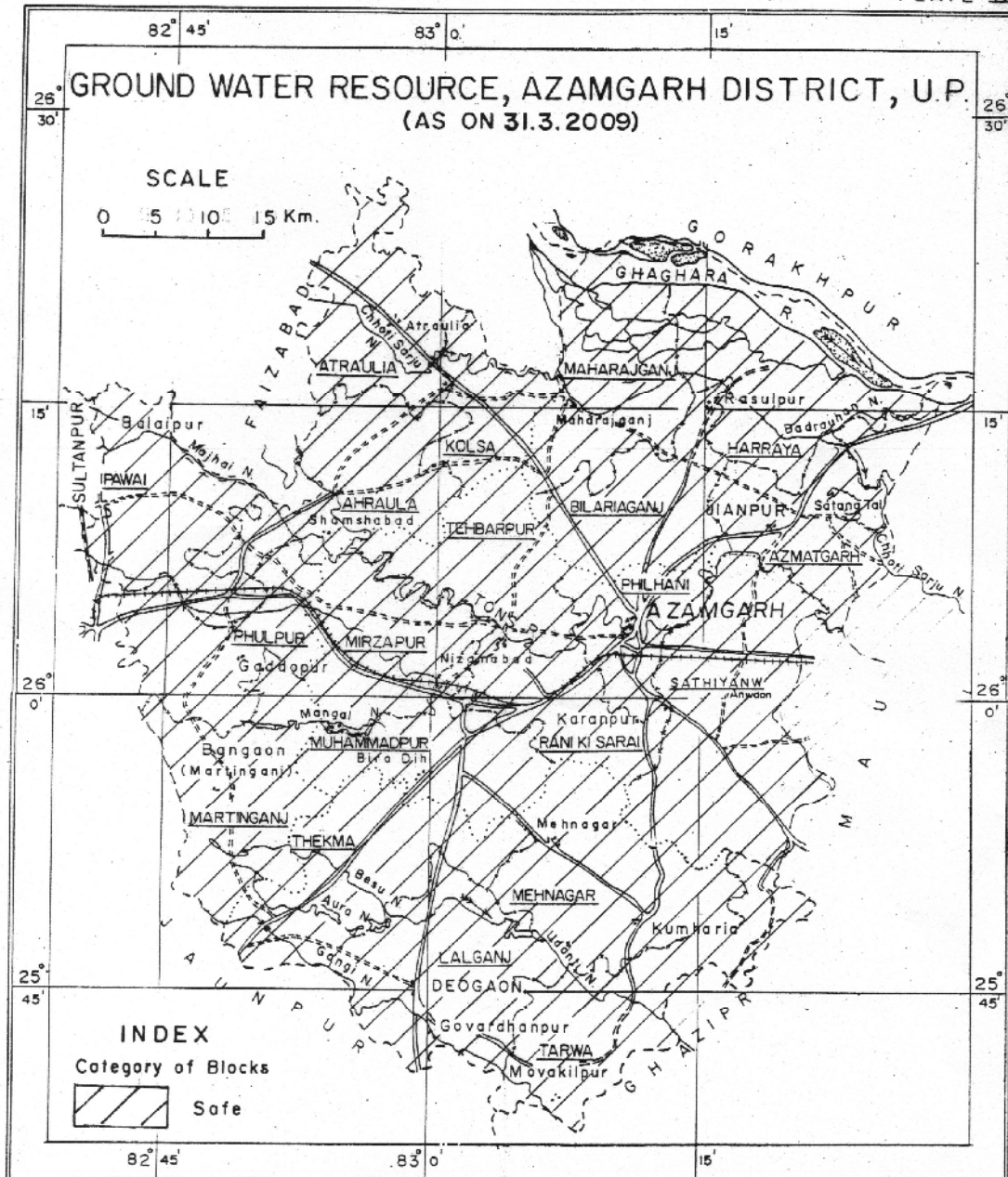
C G W B, NR (N. Chandra) Drg. No. 5032/14



CGWB, NR, (RAKESH), Drg. No. 5033/14



C.G.W.B.,NR, (N.C.Pandey) Drg.No. 5034/14



CGWB, NR (N. Chandra) Drg. No. 5020/14