

**GROUND WATER INFORMATION BROCHURE
BAHRAICH DISTRICT, U.P.**

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BAHRAICH DISTRICT- AT A GLANCE

1.	GENERAL INFORMATION	
	Geographical Area (Sq km)	: 5020
	Administrative Divisions (As on 2010-11)	
	Number of Tehsils/Blocks	: 04/14
	Number of Panchayat/Villages	: 903/1392
	Population (As on 2011 Census)	: 3478257
	Average Annual Rainfall (mm)	: 1152
2.	GEOMORPHOLOGY	
	Major physiographic units	: Upland plains, Gently undulating slope towards south. Older & Younger alluvium
	Major Drainages	: Ghaghra and Sarju
3.	LAND USE (Sq Km) (As on 2010 –11)	
	Forest area	: 677.72
	Net area sown	: 3348.38
	Area sown more than once	: 1672.05
4.	MAJOR SOIL TYPES	
		: Clay, sand and loam
5.	Area under principal crops (Rice, Wheat, Maize, Sugarcane,Pulse)(Sq Km)(2010-11)	: 4207.01
6.	IRRIGATION BY DIFFERENT SOURCES (Number of structures/Area (SqKm)2010-11)	
	Dugwells	69 /0.87
	Tube wells & Pumpsets (Electric/ Diesel)	: 6720.5 /1638
	Tanks/ponds	: ---/00
	Canals	: 166 Km/69.40
	Other sources	: NA/0.0
	Net Irrigated area	: 1638.30
	Gross irrigated area	: 1975.40
7.	NUMBERS OF GROUND WATER MONITORING WELLS OF CGWB (As on 31-3-2012)	
	No of Dug Wells	: 16
	No of Piezometers	: 05
8.	PREDOMINANT GEOLOGICAL FORMATIONS	: Alluvium
9.	HYDROGEOLOGY	
	Major Water bearing formation (Pre-monsoon Depth to water level (m. bgl) during 2012)	: Sand and Gravel : 2.50(Katerniaghat) – 10.60 (Murthia)
	(Post-monsoon Depth to water level (m. bgl) during 2012)	: 1.08(Razichauraha) - 10.28 (Murthia)

	Long term water level trend (2003-2012) in 10 yrs in m/yr	:	Pre-monsoon: Rise 0.01-0.17 Fall 0.003 – 0.05 Post- Monsoon Rise 0.00 – 0.12 Fall 0.002 - 0.09
10	GROUND WATER EXPLORATION BY CGWB (As on 31-3-2013)		
	No of wells drilled (EW, PZ, SH)	:	EW-07, PZ-04
	Depth Range of EW's (mbgl)	:	259.92 (Jarhi) – 453.82 (Bahraich)
	Discharge (lps)	:	46.45 (Girjapuri) – 61.77 (Godh)
	Storativity (S)	:	3.28 * 10 ⁻⁴ (Kewalpur) – 2.06 * 10 ⁻² (Girjapuri Form)
	Transmissivity (m ² /day)		1496(Kewalpur) – 8692 (Sujauli)
11.	GROUND WATER QUALITY		
	Presence of Chemical constituents more than permissible limit (e.g. EC, Cl, F, No3)	:	As (nd –0.102 ppm)
12.	DYNAMIC GROUND WATER RESOURCES (As on 31/3/2009) (In ham)		
	Annual Replenishable Ground Water Resources	:	130597.73
	Gross Annual Ground Water Draft	:	70281.89
	Projected Demand for Domestic industrial Uses upto 2033	:	10732.10
	Stage of Ground Water Development	:	58.69 %
13.	AWARENESS AND TRAINING ACTIVITY		
	Mass Awareness Programmes organized	:	Nil
	Water Management Training Programme organized	:	Nil
14.	EFFORTS OF ARTIFICIAL RECHARGE & RAINWATER HARVESTING		
	Projects completed by CGWB (No & Amount spent)	:	NA
	Projects under technical guidance of CGWB (Numbers)	:	NA
15.	GROUND WATER CONTROL AND REGULATION		
	Number Of OE Blocks	:	Nil
	No of Critical Blocks	:	Nil
	No of blocks notified	:	Nil
16.	MAJOR GROUND WATER PROBLEMS AND ISSUES	:	Arsenic reported at some places. Some part is prone to water logging

1.0. INTRODUCTION

Bahraich is a district in the Devipatan(Gonda) division of Uttar Pradesh occupying a shape of chili. It covers an area of 5020 sq.km. and is bounded by North latitudes 27° 02' and 28° 30' ; East Longitudes 81° 04' and 81° 42' in the Survey of India degree sheets 62 H and 63 E. In the north it lies with Nepal and in the east it faces Shrawasti district . Khiri, Sitapur districts are west of the Bahraich district while south of the district is bounded by District Gonda and Barabanki (Plate- I). Administratively, the district is divided into 4 tehsils and 14 developmental blocks. Administrative detail of the district has been given in Table 1

Table 1 Administrative detail of the Bahraich district ,U.P..

BLOCKS	TEHSIL	AREA OF BLOCKS	POPULATION (2001)
MIHIPURWA	NANPARA	595.47	275195
NAWABGANJ		244.21	149470
BALHA		300.89	177347
SHIVPUR		380.05	185884
RISIA		261.22	168575
CHITTAURA	BAHRAICH	303.71	181824
PAYAGPUR		271.58	158213
VISHESHWARGANJ		255.95	162193
MAHSI	MAHSI	376.70	173570
TEJWAPUR		266.34	162111
FAKHARPUR		345.30	194183
HUZARPUR		242.08	150622
KAISERGANJ	KAISERGANJ	241.03	147618
JARWAL		281.97	169303
TOTAL BLOCKS		4366.50	2456108
TOTAL FOREST		623.55	
TOTAL URBAN		29.95	237998
TOTAL DISTRICT		5020.00	2701478

1.1 Drainage:

Ghaghara and Sarju are the main rivers of the district. The river Ghagra forms the western boundary of the district and enters the district across Indo Nepal International boundary.

The other important drainage channels are Risiya, Bhabhni, Soti Nadi, Jhigri Nadi & Bhakla river. All the rivers are effectively perennial since these maintain the flow for most part of the year. Danger of floods exists in the low-lying areas along the river Ghaghara .

1.2 Irrigation:

Agriculture is the chief occupation in the whole district. For the assured irrigation, large scale development of surface water and ground water is being made. The irrigation area in Bahraich district by different sources is given in (Table-2). The total irrigated area by different sources is 1720.72 sq km .

Table 2 Area irrigated by different Sources (2010-11) (In sq km)

BLOCKS	Canals	Tubewell		Wells	Ponds	Others	total
		Public	Private				
1. Mihipurwa	4.57	3.14	150.11	0	0	0.30	158.12
2. Nawabganj	38.84	0.42	63.81	0	0	0.30	103.37
3. Balha	5.67	3.03	111.98	0	0	0.31	120.99
4. Shivpur	0	1.41	150.75	0	0	0.28	152.44
5. Risia	3.36	8.85	127.78	0	0	0.32	140.31
6. Chittaura	16.82	5.56	124.89	4.10	0	0.34	151.71
7. Payagpur	0.14	1.44	158.66	0	0	0.26	160.50
8. Visheshwarganj	0	0.84	158.95	0	0	0.30	160.09
9. Mahsi	0	1.43	141.92	0	0	0.26	143.61
10. Tajwapur	0	2.34	120.77	4.67	0	0.32	128.10
11. Phakharpur	0	2.57	91.15	0	0	0.31	94.03
12. Huzurpur	0	1.65	85.96	0	0	0.31	87.92
13. Kaiserganj	0	2.90	85.96	0	0	0.30	89.16
14. Jarwal	0	3.74	26.29	0	0	0.34	30.37
Total District	69.40	39.32	1598.98	8.77	0	4.25	1720.72

Sarju Nahar Pariyojna covers the canal network of the district. Length of the major canal in the district was 166 Kms as on 31.3.2011. The state tubewells and canals constitute the state irrigation works, while private tubewells, pump sets, rahat and masonry wells etc. constitute the private works. Net area sown in the district is 3348.38 sq km, only about 50% of the net area sown gets irrigation facilities. During the year 2010-11, about 95.72 % of the net irrigated area was done through groundwater while canal and others only contributes 4.28 % of the total irrigated area.

1.3 Previous works

Systematic hydrogeological survey of Bahraich district was carried out by Sh. V. M. Gandotra (1971-72) followed by Sh. S. A. H. Jaffery in the year 1975-76 and 1976-77. Reappraisal hydrogeological surveys were carried out by S/Sri. S. N. Sinha and A. K. Bhargava in the year 1989-90 , Sh Arun Kumar (1997 – 98) and S/Sri. Prashant Rai & Sant Lal in the year 2005-06. District report entitled "Hydrogeology and Ground Water Potential of Bahraich district, Uttar Pradesh was written by Shri. S. A. H. Jeffery in the year 1982

Central Ground Water Board (CGWB), under its ground water exploration programme, has carried out deep drilling down to a maximum depth of 453.82 mbgl at Bahraich to identify and demarcate aquifer system in the area besides estimating aquifer parameters. A total of seven (7) number of tubewells have been sunk by CGWB under normal exploration.

2. CLIMATE AND RAINFALL

The district experiences sub- humid climate and three district seasons viz. summer, rainy and winter seasons. The hottest month is May with average mean daily temp. of 39.8⁰ C. The coldest month is January with average mean daily temperature of 22.6⁰ C. The highest percentage of humidity occurs in the month of August with normal humidity of 80% followed by 77% in July .During March to May the air is least humid. The normal annual wind speed of the district is 5.6 Kmph. The highest normal wind speed is 8.4 Km/h in the month of June and May Minimum wind speed is observed in winters. The Annual normal Potential Evapo-transpiration of the district is 1422.7mm. The maximum P.E.T. occurs in the month of May & June with 212.6 mm and 183.2 mm respectively.

The average annual normal rainfall (1901-1970) of the district is 1123.95 mm. The maximum rainfall occurs during the monsoon period i.e. June to September having normal

value of 969.65 mm i.e. 86.3% of annual rainfall. July is the wettest month having the normal rainfall of 316.45 mm followed by August with normal rainfall of 298.95 mm.

3.0 GEOMORPHOLOGY & SOIL TYPE

3.1 Physiography, Geomorphologic Features and Landforms

Broadly the district can be considered to be a flat country with a gentle slope towards south. The topography is largely influenced or modified by the existing network of rivers and streams. The maximum elevation is 104 m.amsl. in the south of the district and the approximate general gradient is 0.40 meter/Km. The district can be almost identifiably divided into two units, the upland plains underlain by Older Alluvium and the lowland plains underlain by Newer Alluvium.

The physical features of the district are well defined consisting of four natural divisions of Ghaghara basin in the north- west, central upland, Rapti basin and Tarai in the north. The Ghaghara basin runs through north western and southern portion of district. The Rapti basin that lies on the north eastern side of the central upland, consisting parts of tehsils of Nanpara and Bahraich, is a gentle undulating plain dotted with occasional patches of scrub jungles. In north and northeast lies the Tarai, the low land which remains largely inundated during rains.

Younger Alluvial Plain:

Younger alluvial plain is found along the Ghaghara River and it is flat to sloping slightly undulated terrain. It is produced by extensive deposits of alluvium and usually occur adjacent to flood plains and consist of various fluvial land forms which include back swamp, oxbow lake, old meander, meander scar, paleochannel and point bar. It mainly comprises of younger unconsolidated alluvial materials of varying lithology. In the younger alluvial plain area the ground water table is very shallow and ground water yield prospects are excellent.

Older Alluvial Plain:

Older alluvial plain is similar to younger alluvial plain but are formed at the earlier stage of depositional regimes comprising of unconsolidated sediments. Groundwater prospects are good to very good.

3.2 Soil Characteristics

The soils of the district consist broadly of “*Matiyar*” or clay, “*Dumat*” or loam. The hard clay soil or *Matiyar* is ideal for rice cultivation and very fertile. The *Dumat* or loam is also fertile soil, ideal for cultivation of various types of crops. This is the reason for high crop yields in the district. Bhur consisting of sand and loam, domat a mixture of sand and clay in varying proportions and matiyar (Clay) are the main varieties of soil found in the district. Bhur is found along the Ghaghara and high banks of other rivers while matiyar occurs in tarai with sprinkling of small patches of loam. Domat occurs in Rapti basin and Central upland.

4.0. GROUND WATER SCENARIO

4.1 Hydrogeology:

4.1.1 Water Bearing Formations

Ground water occurs in the pore spaces of unconsolidated alluvial material in the zone of saturation. The near surface clay, kankar and sand beds support mainly open wells where ground water occurs under water table conditions. Kankar occurring at shallow depths, also yield sufficient water. Most of shallow tubewells tap water only from kankar and sandy horizons. The shallow aquifers occur under unconfined conditions, while deeper aquifers occur under semiconfined to confined state of disposition. The confining layers are impermeable clay beds.

4.1.2 Aquifer Geometry

Alluvial tract of Bahraich district is underlain by sands of various grades, gravels, silt and clay. The result of exploratory drillings indicates that the aquifers vary great deal in extent, both vertically as well as laterally. Broadly, a three (3) tier aquifer system can be inferred in the area. The first aquifer group occurs within 90 meters depth. The aquifer material is generally coarse to medium grained greyish sand mixed with gravel and cobbles at places. Quality of formation water of this aquifer is good and suitable for all practical purposes and yield prospects are good in this aquifer group. This aquifer group has been extensively exploited by State tubewells and private agencies. The second aquifer group is separated by first aquifer by an impermeable clay layer of 20-30 meters thickness. The aquifer material is medium to coarse grained. The yield prospects are good. The aquifer material of the third aquifer is fine to medium grained mixed with silt. The yield prospects

are less in comparison to first and second aquifer groups due to fineness of the aquifer material. Depth ranges of the aquifer are as follows.

S.N.	Aquifer	(Depth Range in meters)
1.	I st	00.0- 90.0
2.	II nd	110.0- 220.0
3.	III rd	240.0- 450.0

Ground water in the topmost aquifer occurs under phreatic or water table conditions while in intermediate and deeper aquifer it occurs under semi confined to confined condition.

4.1.3 Depth To Water Level:

As per depth to water level data of ground water monitoring stations of Bahraich of year 2012, pre monsoon water level varies from 2.50 mbgl (Katarniaghat) to 10.60mbgl (Murthia) .In Post monsoon period depth to water level varies from 1.08(Razichouraha) - 10.28 (Murthia) . Water level fluctuation varies from -0.91 to 2.04 meters. The perusal of the depth to water level map reveals that depth to water level in the central and northeastern part is deep, showing the depth to water level ranges of 5 -10 and more than 10 m bgl whereas rest of the of the district shallow water levels(2-5 mbgl) are observed .

4.1.4 Long Term Water Level Trend (2003 – 2012)

Long-term water level behavior of the ground water regime has been studied from the water level data of the ground water monitoring stations (NHS) of CGWB. On and average there is no significant change in depth to water level in the district.

4.1.5 Aquifer with yield, well and aquifer details

A total of seven (7) numbers of exploratory wells have been constructed by CGWB in Bahraich district under its ground water exploration programme. (Annexure- I)The yield prospect of the aquifer in the district is very good. The highest discharge of 3706 lpm was observed at Godh and the lowest discharge was observed at Girjapuri (2785 lpm). Most aquifer parameters have been determined at various places. The drawdown in most of the tubewells is in the range of 2.92, at Godh to as high as 6.06 metres at Kewalpur . The Coefficient of Transmissivity has been determined to be in the range of 1496 (at Kewalpur)

to as high as 8692 m²/day (at Sujauli). The Storativity of the aquifers has been estimated to be in the range of 3.28 x 10⁻⁴ to 2.06 x 10⁻² at Kewalpur and Sujauli respectively.

4.2 Ground Water resources:

Ground water is the most dependable source of irrigation as wells as domestic and industrial water supply, due to its assured and timely supply low cost structures. In Bahraich district, ground water resources cover about 96% of the net irrigated area, and its demand is increasing regularly with steeply growing population and other developmental activities. Dynamic ground water resource of Uttar Pradesh is furnished in table no 3 and plate no IV

Table- 3 DYNAMIC GROUND WATER RESOURCES OF BAHRAICH DISTRICT, UTTAR PREDESH AS ON 31.03.2009

Sl. No.	Assessment Units - Blocks	Annual Ground Water Recharge (in ham)	Net Annual Ground Water Availability (in ham)	Existing Gross Ground Water Draft For All Uses (in ham)	Net Ground Water Availability For Future Irrigation Development (in ham)	Stage of Ground Water Development (in %)	Category of Block
1	2	3	4	5	6	7	8
DISTRICT:BAHRAICH							
1	BALAHA	7508.15	6757.34	4017.00	2461.63	59.45	SAFE
2	BISHESHWARGANJ	8390.86	7551.77	5646.01	1653.51	74.76	SAFE
3	CHITaura	10063.64	9057.28	6186.57	2461.59	68.30	SAFE
4	FAKHERPUR	10762.75	10224.61	6695.46	3227.62	65.48	SAFE
5	HUZOORPUR	7772.22	6995.00	3569.10	3177.91	51.02	SAFE
6	JARWAL	9208.84	8287.96	4835.74	3176.49	58.35	SAFE
7	KAISERGANJ	7940.03	7146.03	4155.01	2740.80	58.14	SAFE
8	MAHASI	8530.13	8103.62	4702.80	3172.54	58.03	SAFE
9	MAHIPURWA	14963.68	14215.50	6005.95	7692.13	42.25	SAFE
10	NAWABGANJ	8710.62	7839.56	4433.32	3108.67	56.55	SAFE
11	PAYAGPUR	8871.94	7984.75	5166.18	2577.17	64.70	SAFE
12	RISIA	9336.05	8402.45	5498.92	2580.51	65.44	SAFE
13	SHEOPUR	10043.76	9541.57	5405.12	3871.09	56.65	SAFE
14	TEJWAPUR	8495.06	7645.55	3964.71	3392.87	51.86	SAFE
	TOTAL	130597.73	119752.97	70281.89	45294.51	58.69	

As per report on Dynamic Ground Water Resources of Uttar Pradesh as on 31.03.2009 annual ground water availability of the district is 119752.97 ham .The Grass ground water draft for all uses is 70281.89 ham .The stage of ground water development is 58.69 %. As per the estimates worked out, all blocks are under safe category.

4.3 GROUND WATER QUALITY

Ground water in the phereatic aquifer in general is colourless, odourless and slightly alkaline in nature. Specific Conductance (EC), which is a measure of total dissolved solids, indicates the ground water in the district is fresh and the EC values range from 257 to 900 μ mhos/cm at 25°C .The arsenic (As) value in the district has been found from nd to 102 ppb.and fluoride ranges from 0.18 to 0.95mg/l. It is observed that the ground water is suitable for drinking and domestic uses except at few places where As occur above permissible limit i.e. 50 ppb. The quality of ground water in deeper aquifer is also potable.

CGWB analyzed water samples for arsenic contamination in ground water from the district. However, Uttar Pradesh Jal Nigam carried out sampling in ten blocks of district, most of them lying along Ghaghara River where probability of occurrence of arsenic in ground water is more. U.P. Jal Nigam analyzed a total of 6509 water samples, of which 766 samples have more than 50 ppb As in ground water. Most affected blocks are Tajwapur, Huzoorpur, Shivpur, Mihipurwa,Fakharpur,Kaisarganj, Chitaura.(Plate – VI)

4.4 STATUS OF GROUND WATER DEVELOPMENT

In Bahraich district ground water development takes place through Private and State tubewells and borings with Pumpsets. The ground water development in the district ranges between 42.25 % (Mihipurwa block) and 68.30 (Chitaura block) through various structures. In all blocks of the district ground water development takes place through dug wells, bore wells and State tubewells. The relevant details are given below.

S.No.	Type of structure	Number	Depth range (mbgl)	Yield (lpm)
1.	Dug wells	69	5.50-30.50	50-100
2.	State tubewells	528	80-411	2000-3200
3.	Borewells	64436	20-60	120-300

Table -4 Blockwise status of sources of irrigation in district / block (31st march 2011)

Block	Canal length (km)	Govt. tubewell (No.)	Perma- nent wells (No.)	Rahat (No.)	Pumpsets				Ground pumpset (No.)
					Electricity Run (No.)	Diesel Run (No.)	Other (No.)	Total (No.)	
1. Mihipurwa	11	12	0	0	43	4659	5	4707	0
2. Nawabganj	100	6	0	0	4	2880	5	2889	0
3. Balha	9	42	0	0	20	3281	15	3316	0
4. Shivpur	6	16	0	0	5	6603	4	6612	0
5. Risia	4	89	0	0	12	4909	19	4940	0
6. Chittaura	34	75	33	0	51	5914	0	5965	0
7. Payagpur	0	55	0	0	37	6033	0	6070	0
8. Visheshwarganj	2	89	0	0	50	7020	0	7070	0
9. Mahsi	0	3	0	0	6	3251	0	3257	0
10. Tajwapur	0	25	36	0	27	2721	3	2751	0
11. Phakharpur	0	19	0	0	22	5584	02	5608	0
12. Huzurpur	0	21	0	0	13	3437	0	3450	0
13. Kaiserganj	0	30	0	0	14	3514	0	3528	0
14. Jarwal	0	45	0	0	10	4630	0	4640	0
Total District	166	527	69	0	314	64436	53	64803	0

The wells generally meet out the domestic requirements. There are 64436 diesel pump sets used in bore wells for irrigation. Maximum number of pump sets is in Visheshwarganj block i.e. 7020. State tubewell constructed by State Tube well division for irrigation. CGWB has constructed tubewell in the district upto 453.82 m bgl and tapping granular zone upto 452 m bgl at Bahraich.

Drinking water tubewells have been constructed in town area and villages for providing water through pipeline scheme. Depth of drinking water tubewells tapping 15 to 30 m granular zones varies from 75 to 320 mbgl. The yield of tubewells varies from 1000 lpm to 3200 lpm. In rural area India Mark II Hand pumps have also been constructed for drinking water that benefited population of the district . Depth of these hand pumps varies from 25-50 m. Centrifugal pumps is commonly used for lifting water from shallow tubewell while submersible pump is used in deep well for high lift of water.

5.0 GROUND WATER MANAGEMENT STRATEGY

5.1 Ground water development

The stage of ground water development in the district is 58.69%.Ground water development in Mihipurwa, Huzoorpur,Tejwapur block is low (42 % - 51 %).Depth to water level is shallow in most part of the district. Shallow tubewell (upto depth of 35 m), constructed by hand boring sets, is suitable to meet out the domestic irrigation requirement. Rotary (direct/Reverse) is suitable for construction of shallow tubewell. Deep tubewell is constructed through direct rotary method. The well assembly for moderately deep tubewells may have 40-50 m housing, tapping 30 to 40 m of granular zone. Since fine sand are encountered in granular zones, it is advised that slot size should be between 0.75 to 1.00 mm. To increase the life and discharge of well, after lowering of well assembly tube well should be developed initially by air compressor followed by turbine pump till water is sand free.

5.2 Water conservation structure & artificial recharge

In Bahraich district, there is not a significant decline in depth to water level, artificial recharge is not required. CGWB has not constructed any recharge structure in the district.

6.0 GROUND WATER RELATED ISSUE AND PROBLEMS

6.1 Water Logging:

A northern west corner of the district and area around Sheopur and Mahsi falls in the 'Prone to water logging' category with depth to water between 2.00 to 3.00 mbgl.(Plate – II) Most of the area along Ghaghra River shows 'water logging' conditions in post

monsoon seasons (Plate III). It covers whole of the Mahsi Fakharpur, Kaiserganj and Jarwal and part of the Tejawapur Mihipurwa.

6.2 Water Quality Problem (Geogenic)

The chemical analysis of ground water samples collected indicates that the problem of Arsenic pollution in ground water has taken serious dimensions in certain parts of Bahraich district. High concentration of Arsenic was observed in the ground water samples collected from India Mark – II hand pumps as well as Cast Iron hand pumps. None of the ground water samples collected from deep tubewell showed the presence of Arsenic above the permissible limits. The map showing potentially affected areas due to Arsenic pollution in ground water (Plate V) shows that the problem is more acute in the doab of the Ghaghra and Sarju covering Belha and Shivpur blocks. Some places in Hazurpur Block also show high concentration of the arsenic. Interaction with local villagers was very helpful in identifying probable Arsenic affected areas. Few villagers were identified who were suspected of having been affected by arsenic pollution.

Arsenic may be found in water owing to its mobilisation through arsenic-rich rocks. Concentrations of arsenic in fresh water vary in magnitude depending on the source of arsenic as well as local geo-chemical environment. Under natural conditions, the elevated concentrations of arsenic are generally found in the ground waters as a result of the strong influence of water-rock interactions.

6.3 Drilling problems

None.

6.4 Risk to natural disaster

NA

7.0 AWARENESS AND TRAINING AVTIVITY

No programme/activity has been organized in the district so far.

8.0 AREA NOTIFIED BY CGWA/SGWA

None

9.0 RECOMMENDATIONS

Following recommendation have been made to sort out ground water problems related to groundwater development, waterlogging and ground water generated diseases.

1)The problem of Arsenic in ground water in Bahraich district has to be immediately addressed to. The first and the foremost task is to identify the villages where Arsenic concentration is above the maximum permissible limit defined by BIS (IS 10500 – 91). Arsenic field-testing kit could prove to a very useful instrument to commence the detailed investigations in these areas.

2) Certain hand pumps yielding water with higher Arsenic concentration may be demarcated like being painted red etc. These markings would indicate that these pumps are not fit to be used for catering to human or livestock needs. Alternative sources of ground water may be identified and recommended for use. For example, if Cast Iron hand pumps in a village are found to contain Arsenic higher than permissible limit, India Mark –II hand pumps tapping aquifers at greater depth may yield safe ground water .

3) The most important aspect of any pollution study is *not to scare but make people aware*. It is imperative to make people aware of the groundwater structures having high concentration of arsenic. The objective is to educate them – to use and/or avoid groundwater structures according to arsenic content in water.

4) Mainly Mahsi, Tejwapur, Jarwal , Fakherpur and Mihipurwa blocks are facing water logging problems. Therefore more groundwater development is required to mitigate the waterlogging problems. Canal water may be regulated so as to implement the conjunctive use of surface and ground water effectively.

											Annexure- I
Sl. No.	LOCATION/	TYP E OF WEL L	YEAR OF DRILLIN G	DEPTH DRILLED (mbgl)	AQUIFER ZONES TAPPED(mbgl)	STATIC WATER LEVEL (mbgl)	DISCHARGE (lpm)	DRAWDOWN (m)	TRANSMISSIVITY	STORATIVITY	EC micromhos at 25 deg C
1	BAHRAICH 27 34 30 81 37	EW	1998-99	453.82	350-355,376- 383,385-390,405- 420,423-426,430- 436,448-452	7.25	Yet to be developed				
3	GIRJAPURI FARM	EW		304.59	75-100	4.89	2785	4.56	5259	2.06X10E-2	556
4	GODH 27 59 40 82 16 00	EW		300.50	59-75,129-157,182- 210	2.55	3706	2.92	7291	3.6X10E-3	505
5	JARHI 28 02 16 81 23 10	EW		259.92	45-49,61-67,84-106	5.64	3433	5.01	2360	2.88X10E-3	589
6	KEWALPUR 27 59 55 81 35 50	EW		300.94	100-110	12.05	3245	6.06	1496	3.28x10E-4	759
7	NANPARA-1 27 51 00 81 30 30	PZ		25.00	10-16,19-22	5.7	-	0.4	99	-	500
8	NANPARA-2	PZ		211.10	56-62,82-88,100- 106,118-124,145- 151	8.51	950	1.9	2079	-	490
9	SHIVPUR MOHRANIA 28 02 11 81 33 00	EW		300.11		Abandoned due to lack of granular zone.					
10	SUJAULI 28 12 40 810930	EW	1980-81	302.86	60-70,155-170,185- 195,240-270	4.19	3668	3.43	8692	3.25x10E-3	606
11	PAYAGPUR-1 27 15 50, 81 45 50	PZ		131.00	24-30,48-54,66- 75,90-102,114-125	5.2	772	2.22			
12	PAYAGPUR-2	PZ		207.56	160-172,184-202	5.45	625	6.38			











