

ATAL BHUJAL YOJANA (AtalJal)

State : HARYANA

**Department : IRRIGATION & WATER
RESOURCE DEPARTMENT**

BLOCK : SOHNA

DISTRICT : GURUGRAM

YEAR : 2023-2024

*Towards partial fulfilment of requirements for Disbursement of
Incentive under DLI -1*

HYDROGEOLOGICAL REPORT

(YEAR: 2023-24)

STATE	:	HARYANA
DISTRICT	:	GURUGRAM
BLOCK/TALUK	:	SOHNA
BLOCK/TALUK HQs	:	SOHNA

A GENERAL INFORMATION			
1.	Geographical area (Ha)	:	31930.84
2.	No. of Gram Panchayats	:	34
3.	No. of towns	:	2
4.	No. of villages	:	46
5.	Population (2022)	:	Male
			Female
			Total
			43717
			39919
			83636
6.	Rainfall (mm) (2022)	:	Monsoon
			Non-monsoon
			Annual
			564.76
			277.06
			841.82
7.	River basin	:	Yamuna river basin
8.	Major soil types	:	Loamy sand

B LAND USE			
1.	Forest area (Ha)	:	68
2.	Cultivable area (Ha)	:	18200
3.	Net sown area (Ha)	:	15147
4.	Gross cropped area (Ha)	:	33347

C CROPPING PATTERN (As in 2022-23)						
1.	Major crops grown	:	Kharif	Rabi	Summer	Perennial
			Bajra	Wheat	Vegetable	NA
			Paddy	Barley	Green Fodder	
			Jowar			
			Arhar	Mustard		
			Green Fodder	Sweet Potatoes		
			Vegetable	Vegetables		

D IRRIGATION FACILITIES (As in 2022-23)							
1.	Net irrigated area (Ha)	:	15147				
2.	Gross irrigated area (Ha)	:	18200				
3.	Area under irrigation (Ha) (Source-wise)	:	DW	BW/TW	Tanks/Ponds	Canals	Others
			0	18200	0	0	0

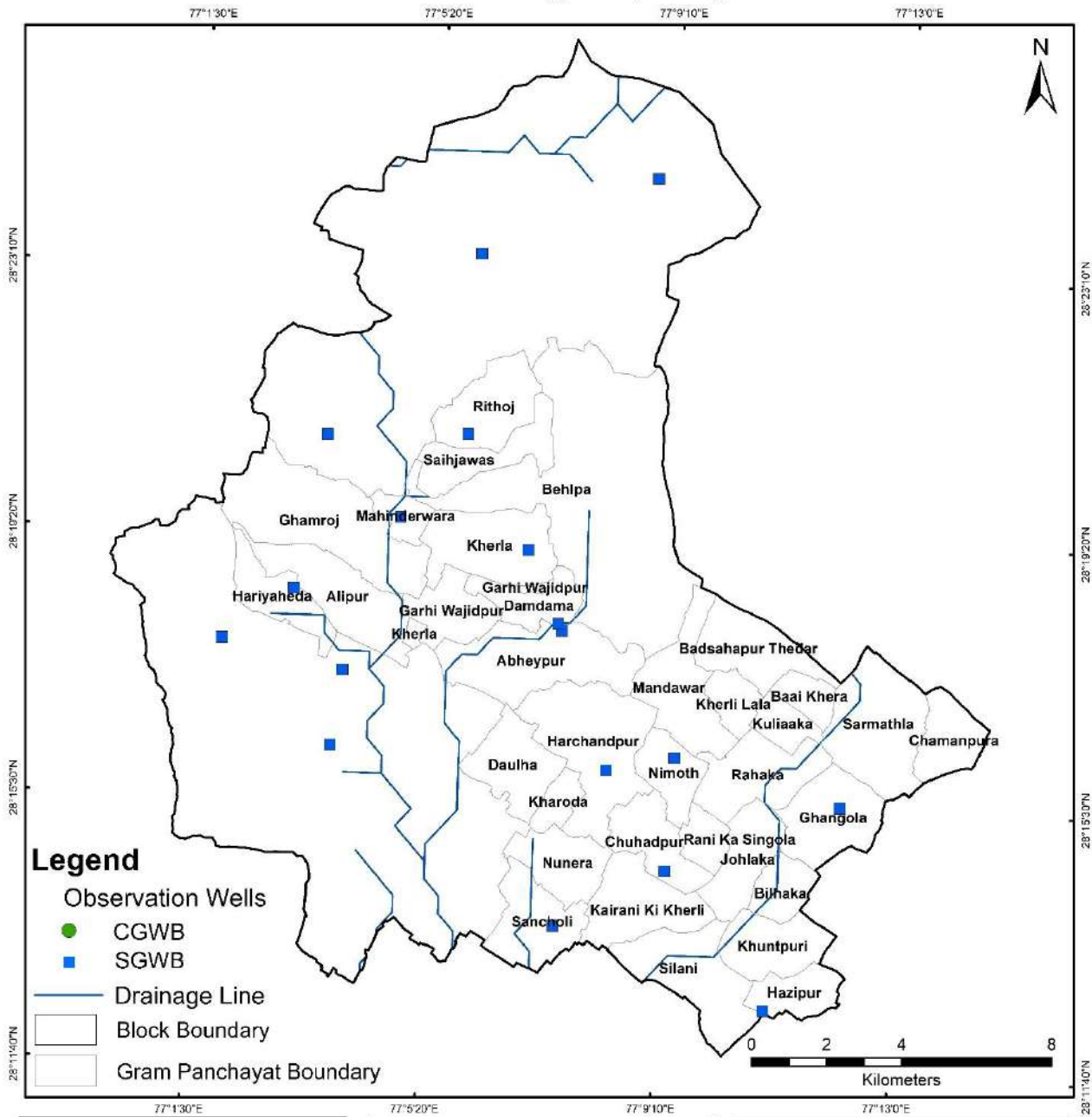
E GEOLOGY & HYDROGEOLOGY			
1.	Predominant rocktype	:	Quartzite, phyllite, Schist, Sand, Silt, Clay with Kankar
2.	Major geological formations	:	Older Alluvium/ Delhi super group
3.	Important water-bearing formations	:	Sand, Weathered and Fractured Hard rock
4.	Status of coverage under NAQUIM	:	Not covered

I		WATER-RELATED SCHEMES	
1.	Schemes with a bearing on ground water, being implemented in the block / taluk.		
	Centrally Sponsored /Central Sector Schemes	i)	PMKSY
		ii)	JJM
		iii)	MGNREGA
		iv)	RKVY
		v)	NHP
		vi)	NAQUIM
	State Schemes	i)	IPWMP
		ii)	MPMV
		iii)	
		iv)	

J		GROUND WATER RELATED ISSUES	
1.	Ground water related issues of the block/		
	i) Issues related to GW availability	:	(i) Due to urbanization, there is over exploitation subsequently the present ground water development 175% (ii) Use of STP water for agriculture purpose which will be stressed the ground water abstraction.
	ii) Issues related to GW quality	:	Water Quality is fresh in Shallow depth & marginal to saline in the deeper zones.
	iii) Other issues if any.	:	No

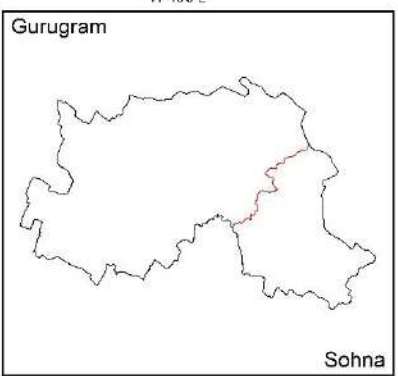
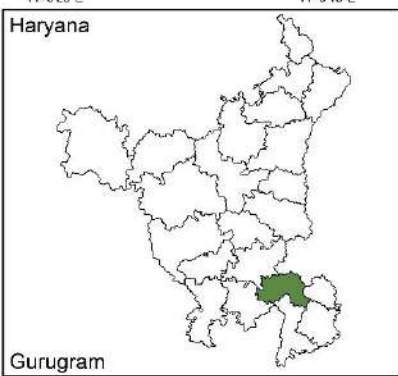
K		ANNEXURES	
I	Basic data of observation wells – Attached		
II.	Historical water level data – Attached		
III.	Historical water quality data – Attached		

Location Map of Block- Sohna, District- Gurugram, Haryana

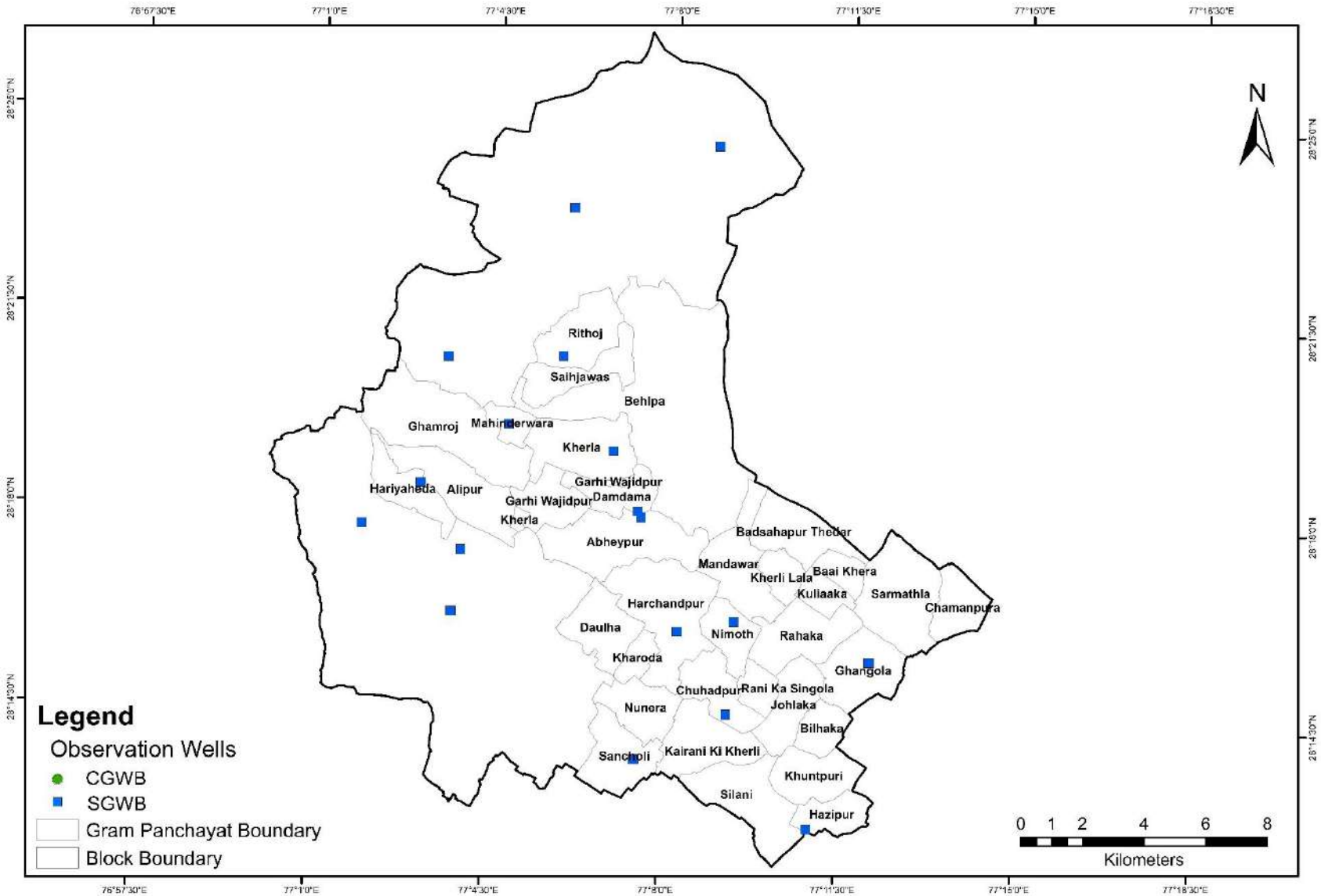


Legend

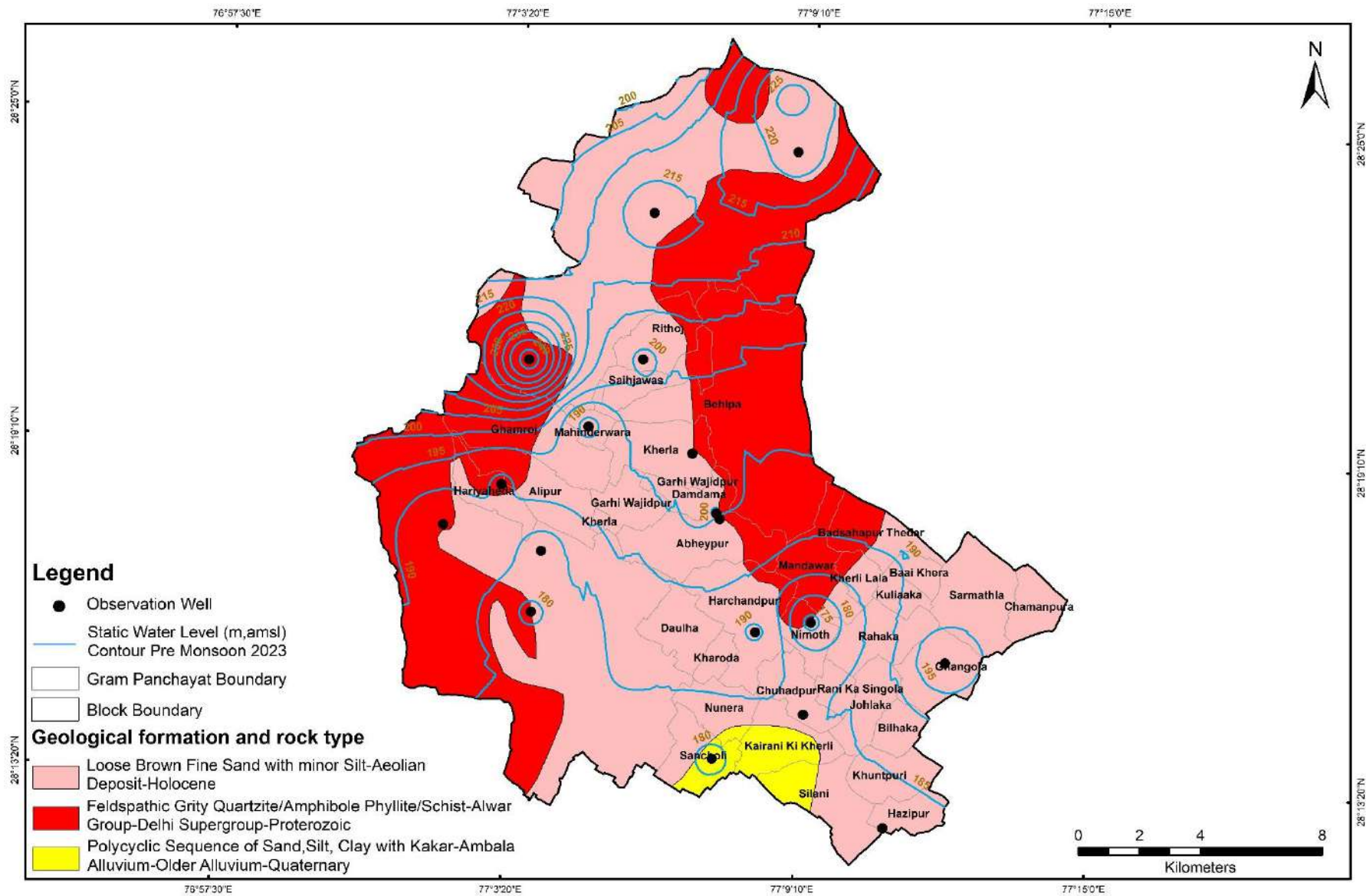
- Observation Wells
- CGWB
- SGWB
- Drainage Line
- Block Boundary
- Gram Panchayat Boundary



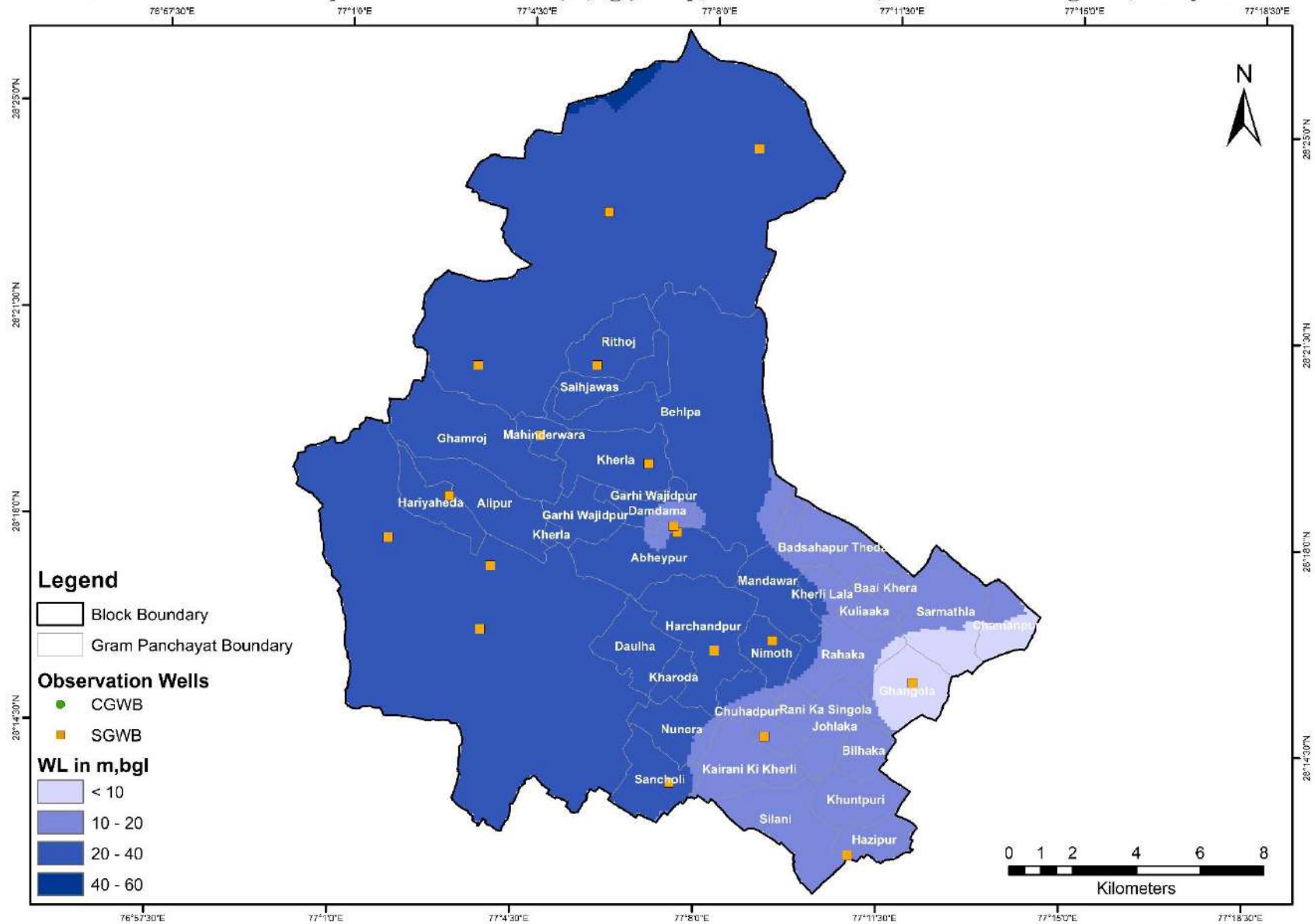
Location of Observation Wells for Monitoring Water Levels and Water Quality, Block-Sohna, District- Gurugram, Haryana



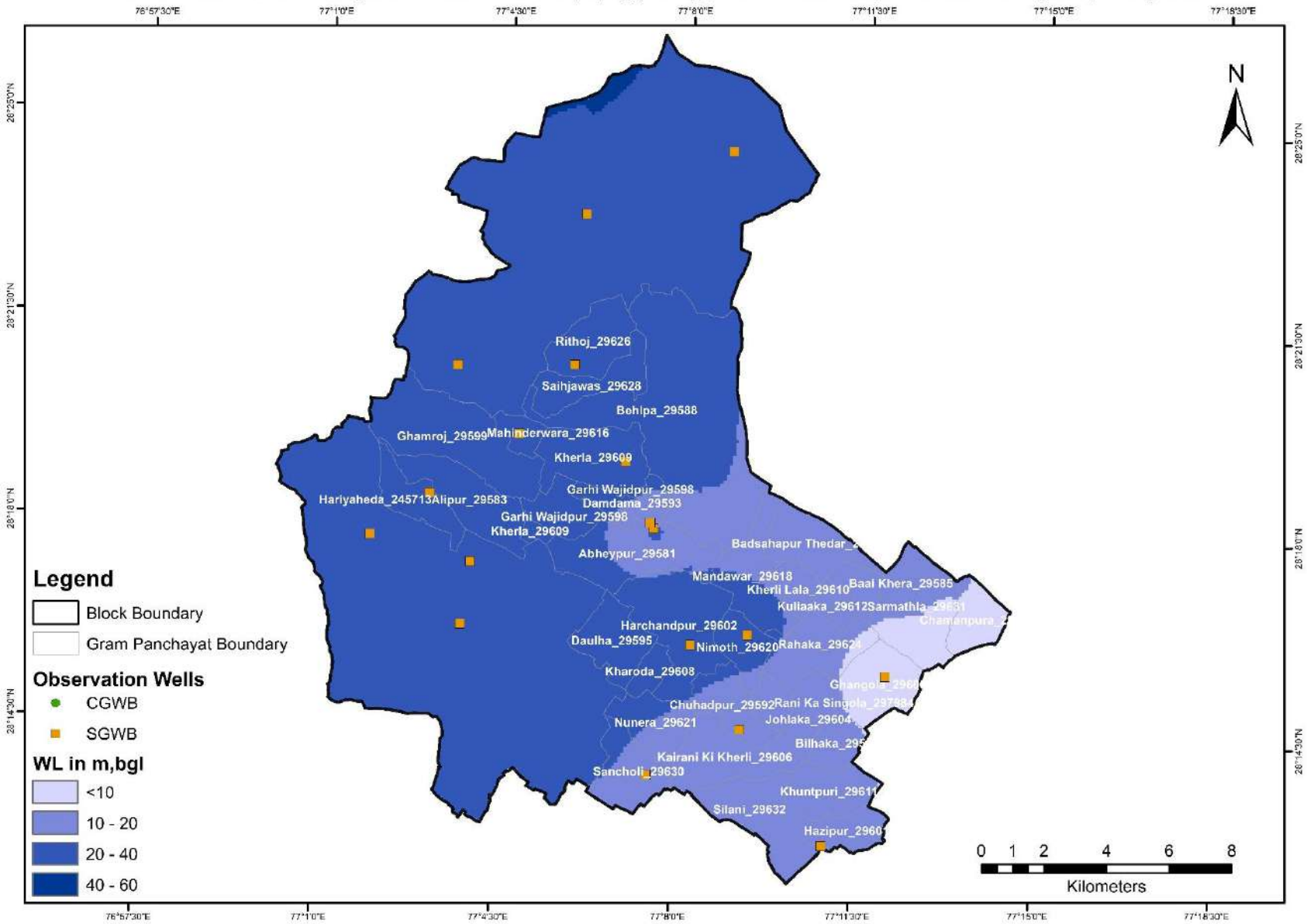
Hydrogeological Map, Block- Sohna, District- Gurugram, Haryana



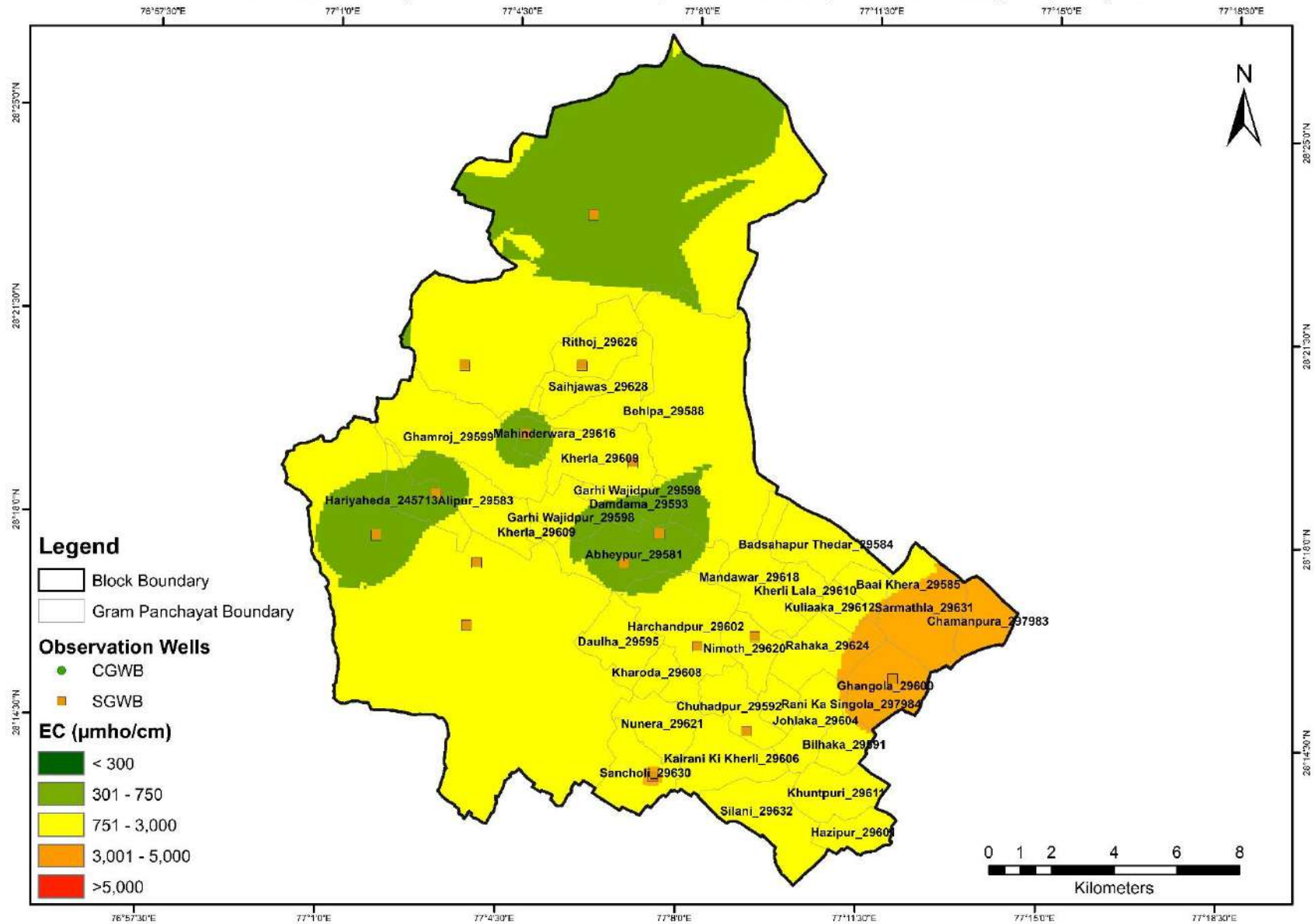
Pre Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Sohna, District - Gurugram, Haryana



Post Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Sohna, District - Gurgaon, Haryana



Electrical Conductivity of Groundwater-2023, Block - Sohna, District - Gurgaon, Haryana



ANNEXURE: I
BASIC DATA OF MONITORING WELLS

State	Haryana				District	Gurugram			Block	Sohana					
S.No	Well ID	GP Name	Name of the village	Site Name	Latitude	Longitude	Type of Well (DW/Pz)	Reduced Level	Aquifer Type/Lithology	Height of Measuring	Depth (m,bgl)	Diameter (m)	Purpose of Monitoring (WL/WQ)	Monitoring Mechanism	Agency
1	Ab_28.29_77.113	Abheypur_29581	Abheypur	Panchyati Land back of hospital,OW	28.29007	77.11346	TW	234.93	Unconfined to Semi Confined	0.7	50	0.25	Both	Manual	SGWB
2	Da_28.299_77.125	Damdama_29593	Damdama	Damdama Resort, OW	28.29903	77.12461	DW	215.77	Unconfined to Semi Confined	1.25	68	2	Both	Manual	SGWB
3	Dh_28.289_77.066	Dhunela	Dhunela	Govt. Middle School, PT	28.28909	77.06569	PZ	210.32	Unconfined to Semi Confined	0.65	60	0.1	Both	Manual	SGWB
4	Ga_28.26_77.202	Ghangola_29600	Gangola	Near Hospital and School outside vill.,OW	28.25957	77.20166	DW	195.09	Unconfined to Semi Confined	1.25	9.29	2	Both	Manual	SGWB
5	Ha_28.26_77.138	Harchandpur_29602	Harchandpur	Well, PT	28.267	77.138	PZ	204.79	Unconfined to Semi Confined	0.65	70	0.1	Both	Manual	SGWB
6	Ha_28.308_77.052	Hariyaheda_245713	Haria Hera	LHSON Haria Hera Raisina Road,KOW	28.30842	77.05183	DW	221.64	Unconfined to Semi Confined	1.25	60	2	Both	Manual	SGWB
7	Ba_28.38_77.053	Badsahpur	Badsahpur	DHBVN, PT	28.38683	77.05261	PZ	220.71	Unconfined to Semi Confined	0.65	67	0.1	Both	Manual	SGWB
8	Kh_28.319_77.115	Kherla_29609	Kherla	Well, OW	28.31923	77.11519	PZ	225	Unconfined to Semi Confined	0.65	120	0.1	Both	Manual	SGWB

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9	Me_28.326_77.08	Mahinderwar_29616	Mehandwara	Govt. High School, PT	28.32619	77.08027	PZ	220.73	Unconfined to Semi Confined	0.65	52	0.1	Both	Manual	SGWB
10	Ne_28.2_77.156	Nimoth_29620	Neemoth	Near Hari Singh House opp. Road in field, OW	28.27037	77.15649	DW	204.98	Unconfined to Semi Confined	1.25	48	2	Both	Manual	SGWB
11	Qu_28.39_77.1	Quadarpur	Quadarpur	CRPF Campe, OW	28.39	77.1	PZ	252.14	Unconfined to Semi Confined	0.65	48	0.1	Both	Manual	SGWB
12	Ra_28.296_77.033	Raisina	Raisina	On Alipur to Raisina Road for vill. on LHS of Road, OW	28.29603	77.03277	DW	223.84	Unconfined to Semi Confined	1.25	65	2	Both	Manual	SGWB
13	Ri_28.34_77.098	Rithoj_29626	Rithoj	In owner field, OW	28.34659	77.09774	DW	231.06	Unconfined to Semi Confined	1.25	42	2	Both	Manual	SGWB
14	Sa_28.2_29_77.125	Sancholi_29630	Sancholi	LHS of Road in owner field Hazikhan, OW	28.22927	77.1249	DW	194.93	Unconfined to Semi Confined	1.25	42	2	Both	Manual	SGWB
15	So_28.271_77.063	Sohna	Sohna	Market committee, PT	28.27101	77.06299	PZ	193.7	Unconfined to Semi Confined	0.65	60	0.1	Both	Manual	SGWB
16	To_28.243_77.155	Chuhadpur_29592	Tolni	Beyond vill. near Vijender S/O Jagdish House, OW	28.24315	77.15482	DW	196.51	Unconfined to Semi Confined	1.25	40	2	Both	Manual	SGWB
17	Bh_28.346_77.06	Bhondsi	Bhondsi	BSF Campe, OW	28.3455	77.0597	TW	221.96	Unconfined to Semi Confined	0.7	48	0.25	Both	Manual	SGWB

Note: Well Type: Dw (Dug well); BW (Bore well); TW (Tube well); Pz (Piezometer)

ANNEXURE: 2
HISTORICAL WATER LEVEL (WL) DATA OF MONITORING WELLS

State	Haryana	District	Gurugram	Block	Sohna
Month of Pre-monsoon Water Level Measurement					June
Month of Post-monsoon water Level measurement					October

S.No.	Observation Point	Source	Well Types	Co-ordinate		Water Level (m)																	
				Latitude	Longitude	2015		2016		2017		2018		2019		2020		2021		2022		2023	
						Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	Abheypur_29581	SGWB	Tube Well	28.3001	77.12495	24.4	24.6	25.1	25.5	25.5	26	25.5	25.2	26.25	25.75	26.1	25.6	26.6	23.7	26.30	25.60	26.05	25.15
2	Damdama_29593	SGWB	Dug Well	28.3017	77.12382	8.35	8.65	11.45	10.75	10.9	10.7	10.65	10.7	11.75	11.5	9.1	7.68	9.85	6.35	9.75	8.55	9.95	6.55
3	Dhunela	SGWB	Piezometer	28.2891	77.06569	22	22.53	25.05	24.9	25.2	25.8	25.2	25.5	27.3	26.8	27.1	26.5	28.3	25.5	28.7	27.4	29.0	27.1
4	Ghangola_29600	SGWB	Dug Well	28.2596	77.20166	5.7	5.35	6.9	6.1	6.05	5.45	6.1	5.55	6.2	6	6.05	4.17	4.2	4.9	4.25	4.00	4.70	3.95
5	Harchandpur_29602	SGWB	Piezometer	28.267	77.138	24.25	24.35	25.35	25	25	24.5	25	24.85	26.25	26.1	26	25.5	26.25	23.5	26.40	25.65	26.65	25.45
6	Hariyaheda_245713	SGWB	Dug Well	28.3084	77.05183	24.75	24.82	25.65	25.85	26.1	26.4	26.1	26.05	27.1	26.95	29.6	28.1	30.85	27.1	31.00	29.10	31.35	28.95
7	Hazipur_29601	SGWB	Dug Well	28.2103	77.1825	10.55	10.65	11.2	11.8	11.7	11.9	12	11.65	12.5	12.2	13	12.7	NA	NA	15.65	15.30	16.10	15.00
8	Kherla_29609	SGWB	Piezometer	28.3192	77.11519	35.8	35.85	36.2	36.4	36.4	37.7	36.4	36.05	36.85	36.15	37.2	36.6	35.45	34.2	35.60	34.95	35.85	34.65
9	Mahinderwar_29616	SGWB	Piezometer	28.3262	77.08027	21	22.67	24.3	24.05	24.28	24.35	24.43	24.75	25.85	25.65	26.45	26.1	27.15	25.55	27.40	26.60	26.90	26.20
10	Nimoth_29620	SGWB	Dug Well	28.2704	77.15649	21.2	21.35	22.35	22.4	22.4	22.65	22.4	22.1	23.25	22.85	23.4	22.9	23.9	20.5	24.30	22.90	24.70	22.70

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11	Quadarpur	SGWB	Piezometer	28.39	77.1	32	32.1	30.1	30.56	30.5	31.1	30.65	30.4	31.4	30.8	31.9	31.6	32.8	29.9	33.1	31.4	33.5	31.0
12	Raisina	SGWB	Dug Well	28.296	77.03277	33.1	33.27	34.1	34.5	34.85	35.3	34.82	34.8	35.5	35.05	36.35	35.3	37	34.5	37.3	36.1	37.7	35.9
13	Bandhwari	SGWB	Dug Well	28.4093	77.14734	20.1	20.15	22	21.75	22.25	21	21.25	21.55	22.95	22.5	23.05	23.6	23.92	26	25.8	26.2	26.2	26.6
14	Rithoj_29626	SGWB	Dug Well	28.3466	77.09774	19.05	19	19.8	20	20.15	20.5	20.35	20.3	21.6	21.15	22.05	21.4	22.4	23.2	23.00	22.85	23.25	22.65
15	Sancholi_29630	SGWB	Dug Well	28.2293	77.1249	18.25	18.35	19.4	20	20	20.5	20	19.95	21	20.65	21.5	20.8	21.65	18	20.95	20.30	20.45	20.00
16	Sohna	SGWB	Piezometer	28.271	77.06299	37.64	39.65	41.5	40	40.38	40.5	40.62	41	33	32.65	32.2	30.6	31.2	30.14	31.3	30.4	30.6	30.2
17	Chuhadpur_29592	SGWB	Dug Well	28.2431	77.15482	12.15	12.3	12.85	13.05	13.25	13.75	13.25	12.6	13.3	13.05	13.9	13.1	14.5	15	15.10	14.35	15.25	14.05
18	Bhondsi	SGWB	Tube Well	28.3455	77.0597	25	28.02	29.35	29.35	28.7	28.55	26.1	26.55	30.2	29.75	30.2	29.9	30.4	31.05	31.6	31.7	31.9	31.7

Note: Well Type: Dw (Dug well); BW (Bore well); TW (Tube well); Pz (Piezometer)

ANNEXURE: 3
WATER QUALITY (WQ) DATA OF MONITORING WELLS

State	Haryana	District	Gurugram	Block	Sohna
Month of Collection of samples for WQ monitoring*					June

Source	Name of village	Latitude	Longitude	Value of EC June-2020	Value of EC June-2021	Value of EC June-2022	Value of EC June-2023
SGWB	BHONDSI	28.3455	77.0597	NA	NA	1100	1000
SGWB	DAMDAMA	28.299	77.1246	450	400	500	300
SGWB	HARCHANDPUR	28.267	77.138	NA	NA	1600	750
SGWB	GANGOLA	28.2596	77.2017	NA	6900	6400	4950
SGWB	ABHEYPUR	28.2901	77.1135	NA	NA	300	700
SGWB	SANCHOLI	28.2293	77.1249	NA	NA	3500	3050
SGWB	KHERLA	28.3192	77.1152	NA	NA	500	950
SGWB	NEEMOTH	28.2704	77.1565	NA	NA	1000	900
SGWB	QUADARPUR	28.39	77.1	NA	NA	900	600
SGWB	RITHOJ	28.3466	77.0977	NA	NA	500	1000
SGWB	TIKLI	28.35	77.03	NA	NA	NA	NA

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SGWB	TOLNI	28.2431	77.1548	NA	1415	1900	1850
SGWB	BADSAHPUR	28.3868	77.0526	NA	900	500	650
SGWB	HARIA HERA	28.3084	77.0518	NA	NA	900	700
SGWB	SOHNA	28.271	77.063	2200	1800	900	1250
SGWB	RAISINA	28.296	77.0328	NA	NA	800	600
SGWB	DHUNELA	28.2891	77.0657	NA	NA	800	900
SGWB	MEHANDWARA	28.3262	77.0803	1250	1100	800	700

Note: 1. CGWB water quality data for Sohna block is not available.
2. Only EC data of SGWB is available.