

ATAL BHUJAL YOJANA (AtalJal)

State : HARYANA

**Department : IRRIGATION & WATER
RESOURCE DEPARTMENT**

BLOCK : RAJOUND

DISTRICT : KAITHAL

YEAR : 2024-2025

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

HYDROGEOLOGICAL REPORT

(YEAR: 2024-25)

STATE	:	HARYANA
DISTRICT	:	KAITHAL
BLOCK/TALUK	:	RAJOUND
BLOCK/TALUK HQs	:	RAJOUND

A	GENERAL INFORMATION				
1.	Geographical area (Ha)	:	24285		
2.	No. of Gram Panchayats	:	21		
3.	No. of towns	:	1		
4.	No. of villages	:	23		
5.	Population (2011)	:	Male	Female	Total
			41288	37404	78692
6.	Rainfall (mm) (2023)	:	Monsoon	Non-monsoon	Annual
			470	264	734
7.	River basin	:	Upper Ghaggar Basin		
8.	Major soil types	:	Loamy sand (Tropical arid brown)		

B	LAND USE				
1.	Forest area (Ha)	:	346.05		
2.	Cultivable area (Ha)	:	15729		
3.	Net sown area (Ha)	:	15729		
4.	Gross cropped area (Ha)	:	27221		

C	CROPPING PATTERN (As in 2022-23)					
1.	Major crops grown	:	Kharif	Rabi	Summer	Perennial
			Paddy	Wheat	Moong	Sugar cane
			Jawar	Mustard	Maize	
			Seasonal vegetable	Potato & other seasonal vegetable		

D	IRRIGATION FACILITIES (As in 2022-23)						
1.	Net irrigated area (Ha)	:	14126				
2.	Gross irrigated area (Ha)	:	26127				
3.	Area under irrigation (Ha) (Source-wise)	:	DW	BW/TW	Tanks/Ponds	Canals	Others
			0	4571		10551	0

E	GEOLOGY & HYDROGEOLOGY				
1.	Predominant rocktype	:	Brown Silt, Clay and Sand with Kankar		
2.	Major geological formations	:	Older Alluvium		
3.	Important water-bearing formations	:	Sand		
4.	Status of coverage under NAQUIM	:	Covered.		

F	GROUND WATER CONDITIONS										
1	No. of wells used for Water Level (WL) monitoring.	:	Open wells				BW/TW/ PZ				
			CGWB	SGWB	Atal Jal	Total	CGWB	SGWB	Atal Jal	Total	
			0	12	2	14	2	2	27	31	
2	Monitoring mechanism (Nos.)	:	Manual			DWLR			Telemetry		
			CGWB	SGWB	Atal Jal	CGWB	SGWB	Atal Jal	CGWB	SGWB	Atal Jal
			2	14	11	0	0	18	0	0	18
3	Monitoring frequency	:	Agency	No. of times monitored/year							
			CGWB	2 times/year Pre and Post Monsoon							
			SGWB	2 times/year Pre and Post Monsoon							
			Atal Jal	2 times/year Pre and Post Monsoon							
4	Period of water level data availability.	:	Agency	Period of WL data availability (From - To)							
				From (year)			To (year)				
			CGWB	2015			2024				
			SGWB	2015			2024				
			Atal Jal	2023			2024				
5	Water level range (m.bgl)	:	Minimum/Village				Maximum/Village				
	Pre-monsoon (May – June 2024)		13.7/Kassan_30714				31.9/Kukar Kanda_30721				
	Post-monsoon (Oct/Nov 2024)		14.82/Kassan_30714				33.2/Birthebihari_30709				
6	Seasonal WL fluctuation range (m)	:	Minimum/ Village				Maximum/ Village				
			-4.97/Kukar Kanda_30721				0.63/Bir Bangra_30708				

G	GROUND WATER QUALITY								
1	No. of wells used for Water Quality (WQ) monitoring.	Open Wells				BW/TW/ PZ			
		CGWB	SGWB	Atal Jal	Total	CGWB	SGWB	Atal Jal	Total
		0	12	0	12	1	1	21	23
2	Monitoring frequency	Agency	No. of times monitored/year						
		CGWB	1 time/year						
		SGWB	1 time/year						
		Atal Jal	1 time/year						
3	Period of water quality data availability	Agency	Period of WQ data availability (Years)						
		CGWB	2015 to 2024						
		SGWB	2020 to 2024						
		Atal Jal	2023 to 2024						
4	Parameters analysed	Agency	Parameters Analysed						
		CGWB	pH,EC,TH,Ca,Mg,Na,K,CO ₃ ,HCO ₃ , SO ₄ ,Cl,F,NO ₃						
		SGWB	EC						
		Atal Jal	pH,EC,TDS,TH,Ca,Mg,Na,K,CO ₃ ,HCO ₃ , SO ₄ ,Cl,F,NO ₃						
5	Known ground water quality issues, if any	No Such Issue							

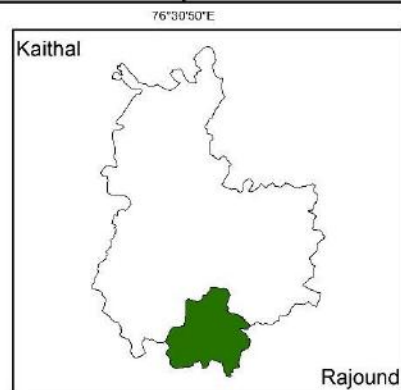
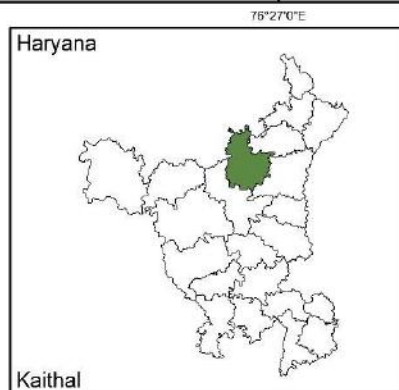
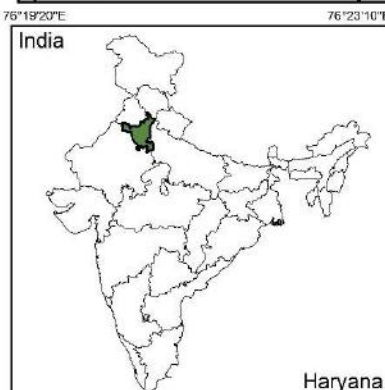
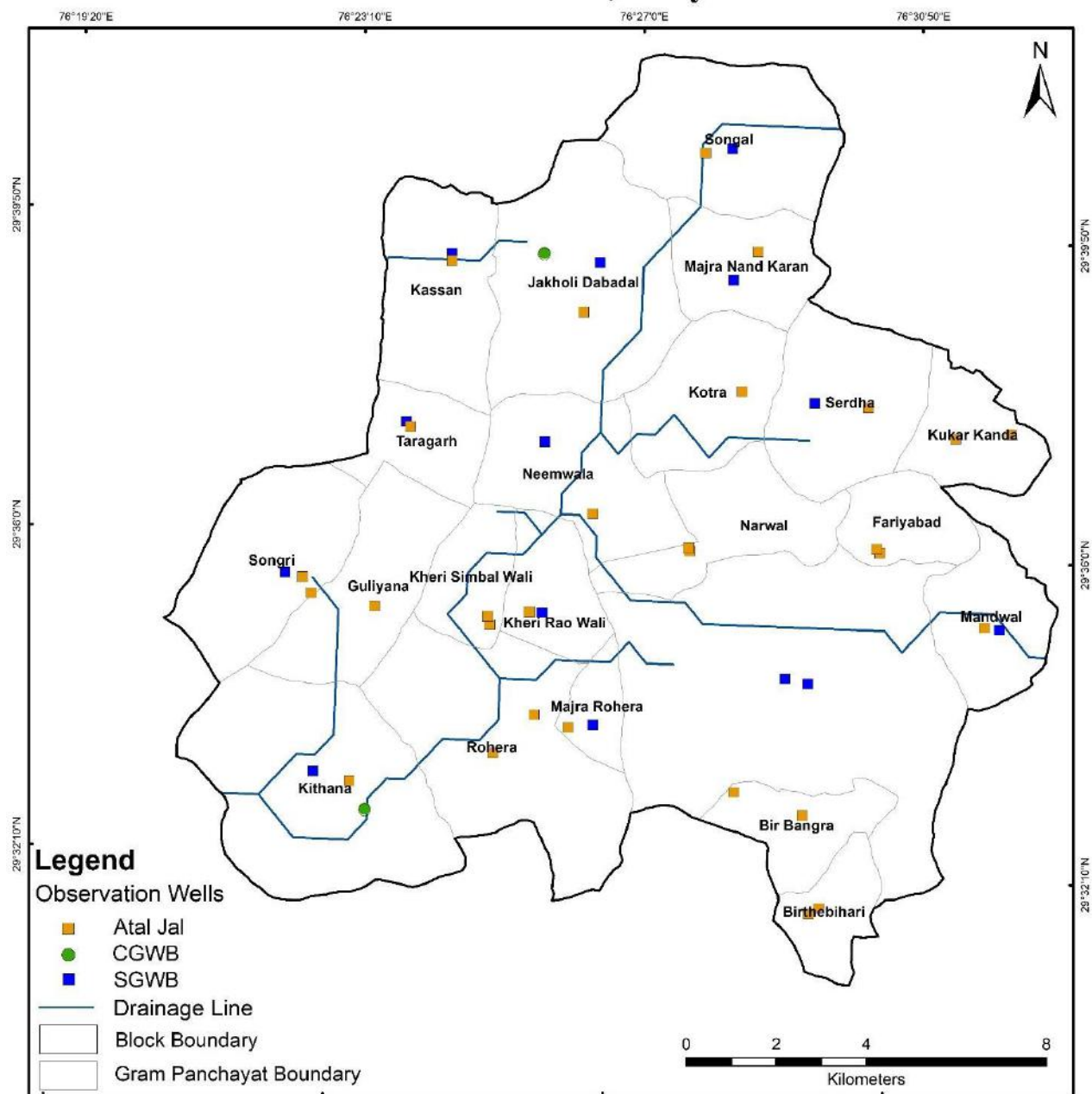
H. GROUND WATER RESOURCES								
1.	Latest assessment year	:	2023					
2.	Assessment Unit	:	Block					
3.	Annual extractable GW resource (ha.m)	:	4659.9					
4.	Current annual GW extraction (ha.m)	:	8868.2					
5.	Net GW availability for future use (ha.m)	:	0.0					
6.	Stage of GW extraction (%)	:	186.88 %					
7.	Category of block/taluk/(2023)	:	Over Exploited					
8.	Category of block/taluk/ in previous assessments		2023	2020	2017	2013	2011	2009
			Over Exploited	Over Exploited	Over Exploited	Over Exploited	Over Exploited	Over Exploited

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	
	State Schemes	i)	State Plan Scheme (Head 2402)	
		ii)	MPMV	
		iii)		
		iv)		

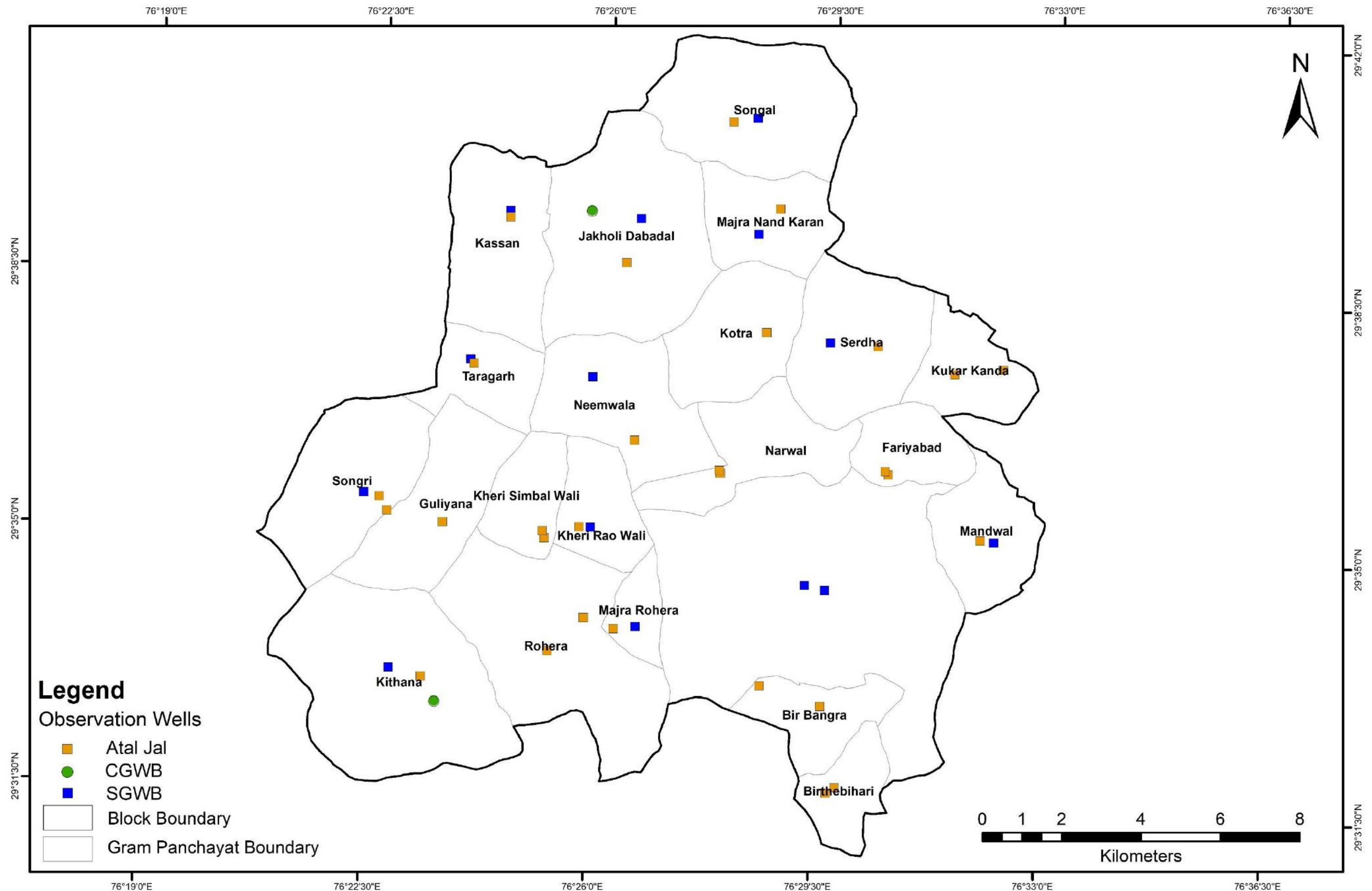
J. GROUND WATER RELATED ISSUES		
1.	Ground water related issues of the block/	
	i) Issues related to GW availability	: Due to over exploitation groundwater is depleting at higher rates in the block. Significantly large number of shallow tube wells exists in the block.
	ii) Issues related to GW quality	: The fluoride concentration is found to be higher than the permissible limit at Rajound. Marginal to saline ground water occur in shallow zones in part of Rajound block. In general, deeper zone in Rajound block contains brackish to saline ground water.
	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

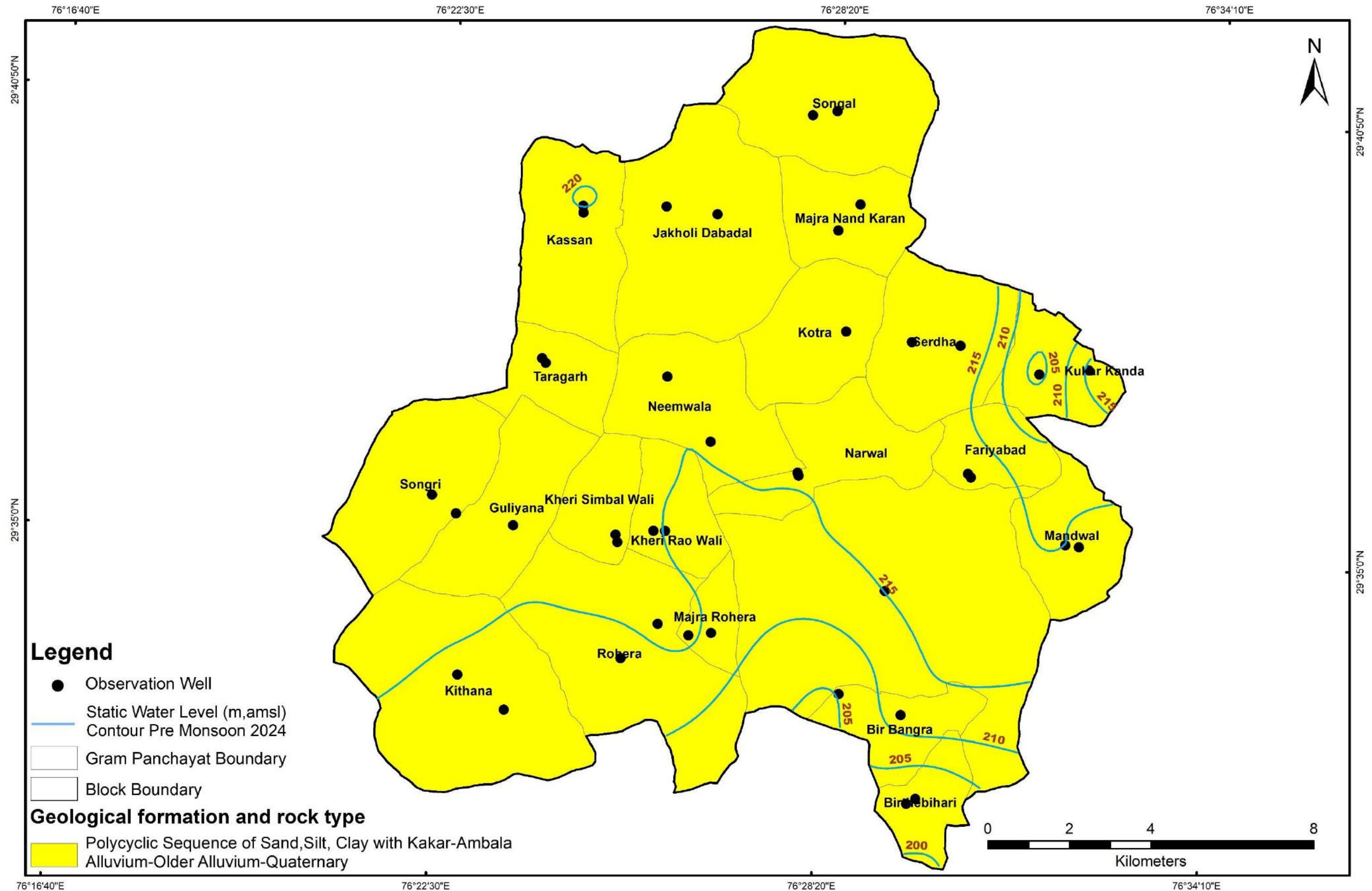
Location Map of Block- Rajound, District- Kaithal, Haryana



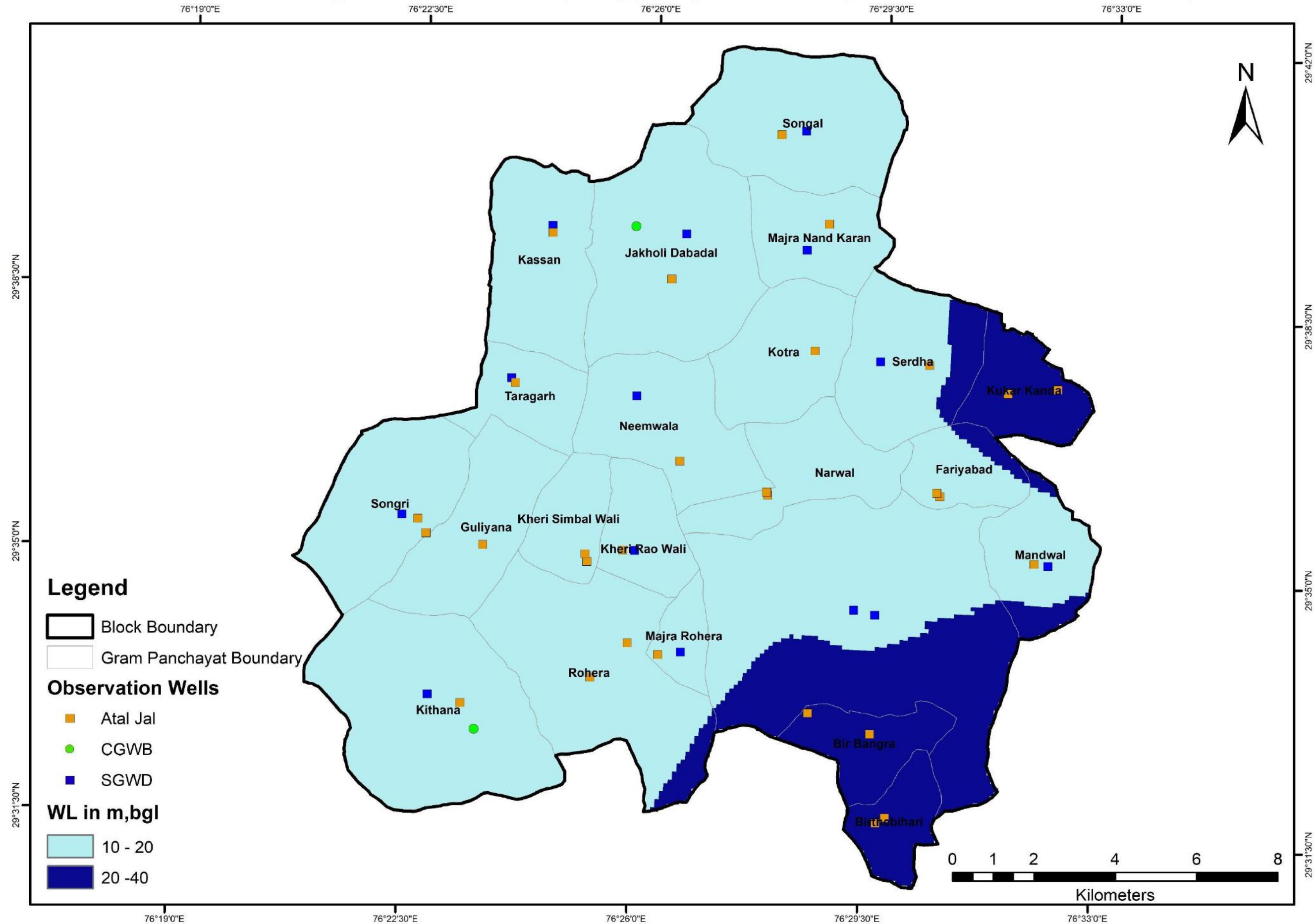
Location of Observation Wells for Monitoring Water Levels and Water Quality, Block-Rajound, District- Kaithal, Haryana



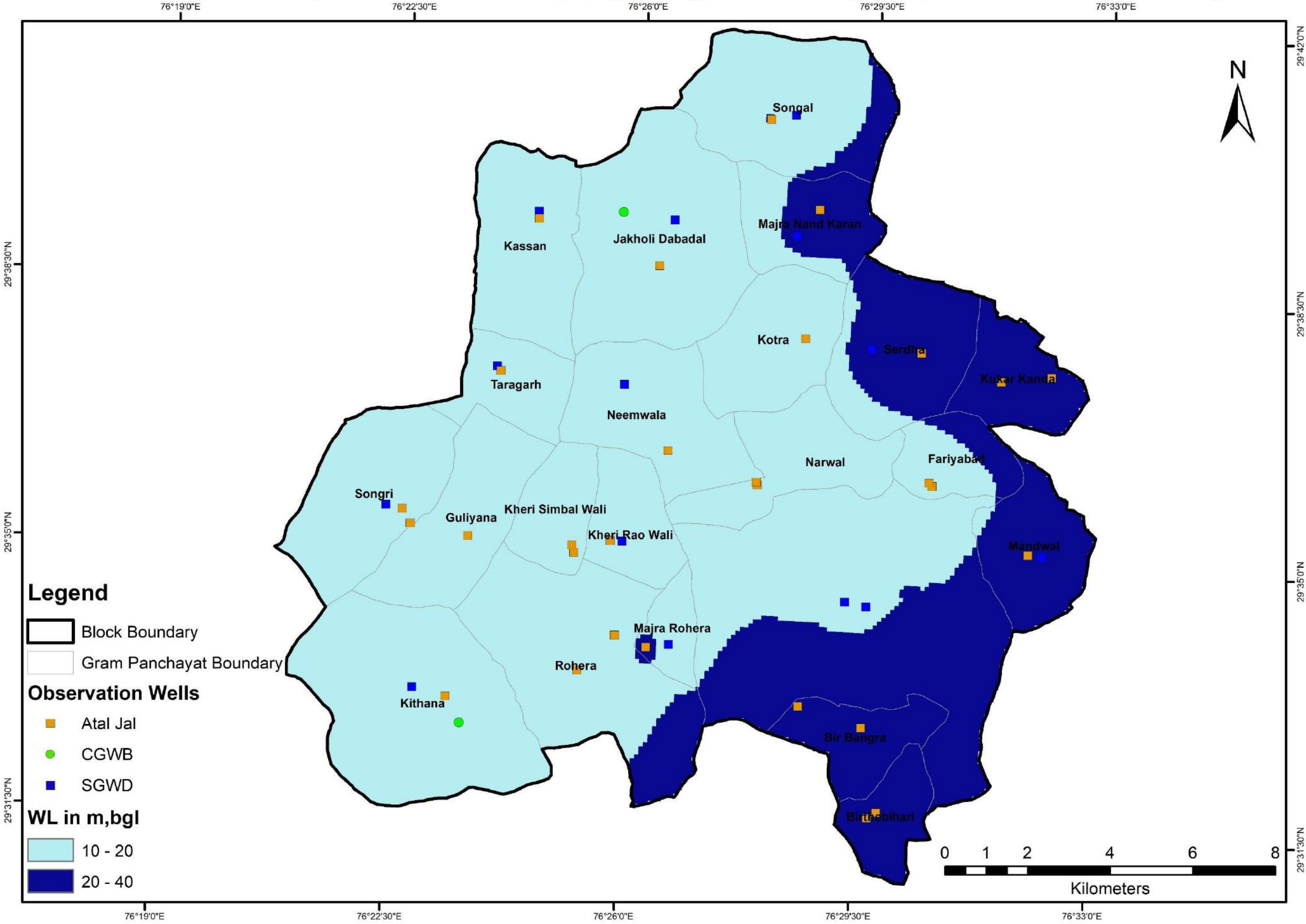
Hydrogeological Map, Block- Rajound, District- Kaithal, Haryana



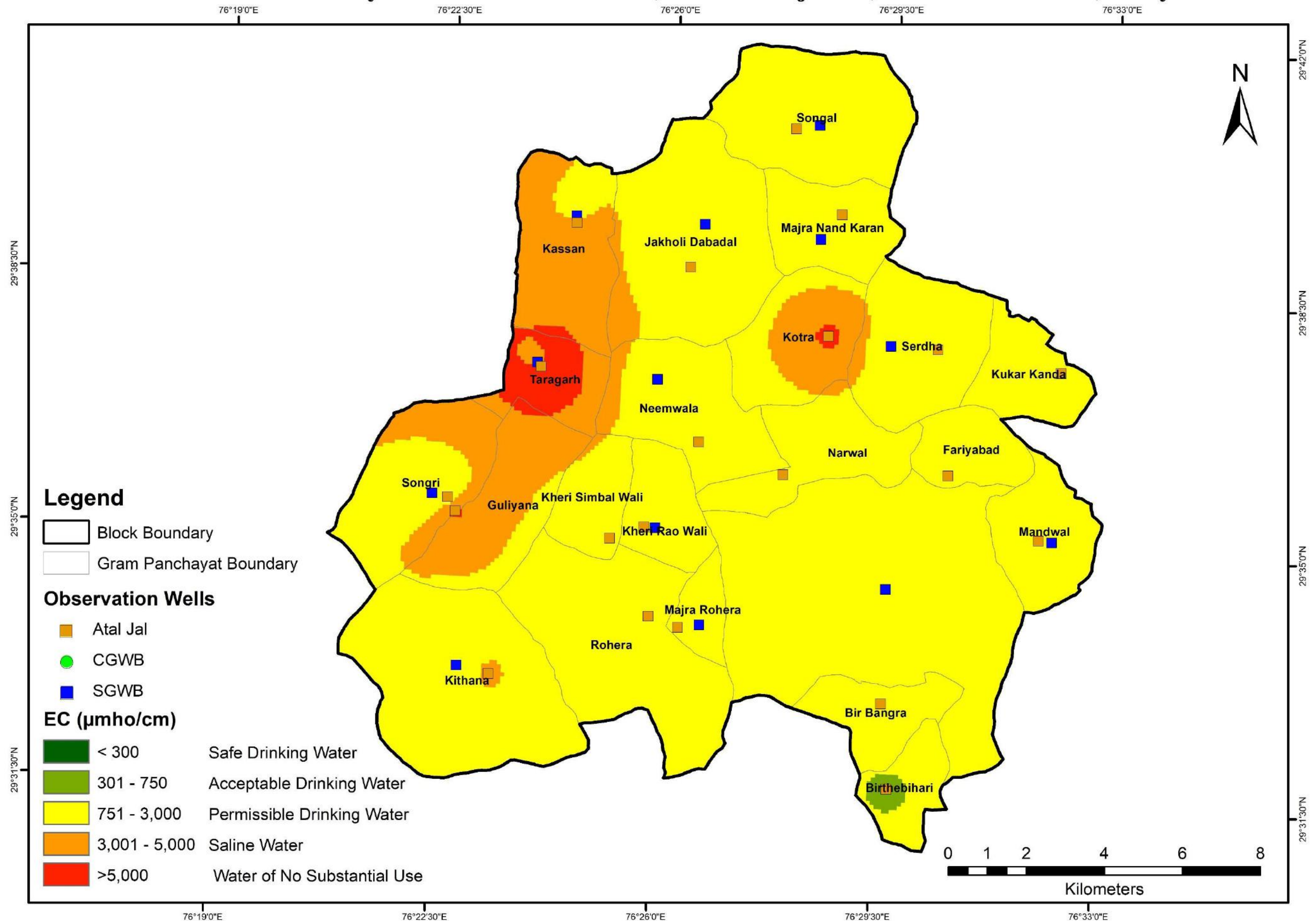
Pre Monsoon 2024 Depth to Water Level (m,bgl) Map, Block - Rajound, District - Kaithal, Haryana



Post Monsoon 2024 Depth to Water Level (m,bgl) Map, Block - Rajound, District - Kaithal, Haryana



Electrical Conductivity of Groundwater-2024, Block - Rajound, District - Kaithal, Haryana



ANNEXURE: 1
BASIC DATA OF MONITORING WELLS

State	Haryana				District	Kaithal				Block	Rajound				
S.No	Well ID	Gram Panchayat	Name of the village	Site Name	Latitude	Longitude	Type of Well	Reduced Level	Aquifer Type/Lithology	Height of Measuring (m, agl)	Depth (m,bgl)	Diameter (m)	Purpose of Monitoring (WL/WQ)	Monitoring Mechanism	Agency
1.	HR_GW_365	Bir Bangra_30708	Bir Bangra	Animal Husbandry, Bir Bangra	29.5480	76.4933	Piezometer	235	Semi Confined to Confined	0.50	58	0.10	Both	Telemetric	Atal Jal
2.	GWL-06-066-00509-00030708-001	Bir Bangra_30708	Bir Bangra	Phed Bir Bangra	29.5522	76.4774	Tube Well	234	Semi Confined to Confined	0.00	76	0.30	WL	Manual	Atal Jal-Private
3.	HR_GW_366	Birthebihari_30709	Birth Bihari	Govt. Middle School, Birth Bihari	29.5285	76.4955	Piezometer	233	Semi Confined to Confined	0.50	58	0.10	Both	Telemetric	Atal Jal
4.	GWL-06-066-00509-00030709-001	Birthebihari_30709	Theh Bahari	Phed Bahari	29.5297	76.4978	Tube Well	231	Semi Confined to Confined	0.00	91	0.30	WL	Manual	Atal Jal-Private
5.	HR_GW_367	Fariyabad_30710	Fariyabad	Govt. Primary School, Fariyabad	29.6011	76.5087	Piezometer	235	Semi Confined to Confined	0.50	70	0.10	Both	Telemetric	Atal Jal
6.	GWL-06-066-00509-00030710-001	Fariyabad_30710	Fariyabad	Near Temple Wala Pond	29.6019	76.5079	Dug Well	234	Semi Confined to Confined	1.06	20	2.40	WL	Manual	Atal Jal-Private
7.	HR_GW_368	Guliyana_30711	Guliyana	Govt. Primary School, Guliyana	29.5887	76.3791	Piezometer	233	Semi Confined to Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
8.	GWL-06-066-00509-00030711-001	Guliyana_30711	Guliyana	Near Phed On Road Guliana	29.5866	76.3936	Dug Well	231	Semi Confined to Confined	0.60	21	1.68	WL	Manual	Atal Jal-Private
9.	ABY_KAI_RAJ_JAKHOLI_1	Jakholi Dabadal_30712	Jakholi Dabadal	Randhir	29.6470	76.4388	Tube Well	234	SEMI CONFINED	1.45	46	2.43	WQ	Manual	Atal Jal
10.	HR_GW_369	Kassan_30714	KASSAN	Govt. Primary School	29.6562	76.4082	Piezometer	233	Semi-Confined To Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
11.	HR_GW_370	Kheri Rao Wali_30715	Kheri Rao Wali	Govt. Primary School, Kheri Rao Wali	29.5866	76.4290	Piezometer	234	Semi Confined to Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
12.	HR_GW_371	Kheri Simbal Wali_30716	Kheri Simbal Wali	Govt. High School, Kheri Simbal Wali	29.5838	76.4201	Piezometer	233	Semi Confined to Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
13.	GWL-06-066-00509-00030716-001	Kheri Simbal Wali_30716	Kheri Simbalwali	Phed Kheri Simbalwali	29.5854	76.4196	Tube Well	233	Semi Confined to Confined	0.00	45	0.13	WL	Manual	Atal Jal-Private
14.	ABY_KAI_RAJ_KITHANA_1	Kithana_30719	Kithana	Sunil	29.5514	76.3894	Tube Well	230	SEMI CONFINED	0.22	37	0.22	WQ	Manual	Atal Jal
15.	HR_GW_372	Kotra_30720	KOTRA	Govt. Primary School	29.6323	76.4758	Piezometer	235	Semi-Confined To Confined	0.50	75	0.10	Both	Telemetric	Atal Jal
16.	HR_GW_373	Kukar Kanda_30721	Kukarkanda	Govt. Middle School, Kukarkanda	29.6258	76.5375	Piezometer	237	Semi Confined to Confined	0.50	72	0.10	Both	Telemetric	Atal Jal
17.	GWL-06-066-00509-00030721-001	Kukar Kanda_30721	Kukar Kanda	Phed Kurkar Kanda	29.6244	76.5250	Tube Well	236	Semi Confined to Confined	0.00	243	0.30	WL	Manual	Atal Jal-Private
18.	HR_GW_374	Majra Nand Karan_30724	Majara Nand Karan	Govt. High School, Majara Nand Karan	29.6604	76.4782	Piezometer	235	Semi Confined to Confined	0.50	73	0.10	Both	Telemetric	Atal Jal

19.	HR_GW_375	Majra Rohera_30722	MAJRA ROHERA	Govt. Primary School	29.5638	76.4389	Piezometer	234	Semi-Confined To Confined	0.50	75	0.10	Both	Telemetric	Atal Jal
20.	HR_GW_376	Mandwal_30723	Mandwal	Govt. Primary School, Mandwal	29.5869	76.5332	Piezometer	235	Semi Confined to Confined	0.50	69	0.10	Both	Telemetric	Atal Jal
21.	HR_GW_377	Narwal_30725	Narwal	Community Centre, Narwal	29.6000	76.4652	Piezometer	231	Semi Confined to Confined	0.50	70	0.10	Both	Telemetric	Atal Jal
22.	GWL-06-066-00509-00030725-001	Narwal_30725	Narwal	Phed Narwal	29.6006	76.4649	Tube Well	234	Semi Confined to Confined	0.25	46	0.25	WL	Manual	Atal Jal-Private
23.	HR_GW_378	Neemwala_30726	Neemwala	Mata Temple, Neemwala	29.6067	76.4426	Piezometer	232	Semi Confined to Confined	0.50	43	0.10	Both	Telemetric	Atal Jal
24.	HR_GW_379	Rohera_30728	Rohera	Stadium, Rohera	29.5661	76.4311	Piezometer	233	Semi Confined to Confined	0.50	55	0.10	Both	Telemetric	Atal Jal
25.	GWL-06-066-00509-00030728-001	Rohera_30728	Rohera	Old Phd	29.5582	76.4220	Tube Well	229	Semi Confined to Confined	0.00	48	0.22	WL	Manual	Atal Jal-Private
26.	HR_GW_380	Serdha_30730	Serdha	Govt. Senior Secondary School, Serdha	29.6301	76.5048	Piezometer	238	Semi Confined to Confined	0.50	73	0.10	Both	Telemetric	Atal Jal
27.	HR_GW_381	Songal_30731	Songal	Govt. Primary School, Songal	29.6797	76.4652	Piezometer	236	Semi Confined to Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
28.	ABY_KAI_RAJ_SONGRI_1	Songri_30732	Songri	Suresh	29.5919	76.3769	Tube Well	233	SEMI CONFINED	0.61	244	2.00	WQ	Manual	Atal Jal
29.	HR_GW_382	Taragarh_30733	TARAGARH	Govt. Primary School Taragarh	29.6227	76.4002	Piezometer	234	Semi-Confined To Confined	0.50	60	0.10	Both	Telemetric	Atal Jal
30.	W293930076254501	Jakholi Dabadal_30712	Jakhauli	Jakhauli-Pz	29.6583	76.4292	Piezometer	223	Unconfined to Semi Confined	0.60	100	0.11	WL	Manual	CGWB
31.	W293245076233501	Kithana_30719	Kathana	Kathana-Pz	29.5458	76.3931	Piezometer	234	Unconfined to Semi Confined	0.50	102	0.10	Both	Manual	CGWB
32.	Ja_29.657_76.442	Jakholi Dabadal_30712	Jakhouli	Panchayati	29.6570	76.4421	Dug Well	232.76	Unconfined and Confined	1.25	25	2.00	WL	Manual	SGWD
33.	Ka_29.658_76.408	Kassan_30714	Kasaan	Panchayati	29.6578	76.4081	Dug Well	232.28	Unconfined and Confined	1.25	19	2.00	WL	Manual	SGWD
34.	Kh_29.587_76.432	Kheri Rao Wali_30715	Kheri Raowali	Panchayati	29.5866	76.4320	Dug Well	229.5	Unconfined and Confined	1.25	22	2.00	WL	Manual	SGWD
35.	Ki_29.553_76.381	Kithana_30719	Kithana	Panchayati	29.5531	76.3810	Dug Well	228.3	Unconfined and Confined	1.25	23	2.00	WL	Manual	SGWD
36.	N_29.654_76.473	Majra Nand Karan_30724	N.K.Majra	Panchayati	29.6545	76.4728	Dug Well	235.6	Unconfined and Confined	1.25	26	2.00	WL	Manual	SGWD
37.	Ro_29.565_76.445	Majra Rohera_30722	Rohera	Panchayati	29.5646	76.4446	Dug Well	226.15	Unconfined and Confined	1.25	23	2.00	WL	Manual	SGWD
38.	Ma_29.587_76.537	Mandwal_30723	Mandwal	Panchayati	29.5866	76.5367	Dug Well	234.6	Unconfined and Confined	1.25	26	2.00	WL	Manual	SGWD
39.	Ki_29.621_76.431	Neemwala_30726	Kichana	Panchayati	29.6208	76.4311	Dug Well	232.21	Unconfined and Confined	1.25	20	2.00	WL	Manual	SGWD
40.	Se_29.631_76.492	Serdha_30730	Serdha	Panchayati	29.6305	76.4924	Dug Well	234	Unconfined and Confined	1.25	24	2.00	WL	Manual	SGWD
41.	So_29.681_76.471	Songal_30731	Songal	Panchayati	29.6808	76.4714	Dug Well	233.98	Unconfined and Confined	1.25	24	2.00	WL	Manual	SGWD
42.	So_29.593_76.373	Songri_30732	Songri	Panchayati	29.5926	76.3728	Dug Well	229.58	Unconfined and Confined	1.25	22	2.00	WL	Manual	SGWD

43.	Ta_29.624_76.399	Taragarh_30733	Taragarh	Panchayati	29.6237	76.3993	Dug Well	231.7	Unconfined and Confined	1.25	19	2.00	WL	Manual	SGWD
44.	Ra_29.575_76.488	Rajaund	Rajaund	Near Maharana Pratap Chauk	29.5753	76.4881	Tube Well	222.52	Unconfined and Confined	0.70	38	0.25	WL	Manual	SGWD
45.	Ra_29.574_76.493	Rajaund (Chocked)	Rajaund (Chocked)	In Bdpo Office	29.5744	76.4934	Tube Well	234	Unconfined and Confined	0.70	20	0.25	WL	Manual	SGWD

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

State	Haryana	District	Kaithal	Block	Rajaund
Month of Pre-monsoon Water Level Measurement					May/June
Month of Post-monsoon water Level measurement					October/November

S.No.	Observation Point	Source	Well Types	Co-ordinate		Water Level (m)																			
				Latitude	Longitude	2015		2016		2017		2018		2019		2020		2021		2022		2023		2024	
						Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	Kassan_30714	Atal Jal	Piezometer	29.6562	76.4082	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	14	14	15
2	Kotra_30720	Atal Jal	Piezometer	29.6323	76.4758	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	16	16	17
3	Majra Rohera_30722	Atal Jal	Piezometer	29.5638	76.4389	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	19	18	21
4	Taragarh_30733	Atal Jal	Piezometer	29.6227	76.4002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	15	15	17
5	Bir Bangra_30708	Atal Jal	Piezometer	29.5480	76.4933	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	25
6	Bir Bangra_30708	Atal Jal	Tube Well	29.5522	76.4774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	28	29	28
7	Birthebihari_30709	Atal Jal	Piezometer	29.5285	76.4955	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30	33
8	Birthebihari_30709	Atal Jal	Tube Well	29.5297	76.4978	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	29	30	33
9	Fariyabad_30710	Atal Jal	Piezometer	29.6011	76.5087	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	16
10	Fariyabad_30710	Atal Jal	Dug Well	29.6019	76.5079	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	15	16	17
11	Guliyana_30711	Atal Jal	Piezometer	29.5887	76.3791	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	16
12	Guliyana_30711	Atal Jal	Dug Well	29.5866	76.3936	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	15	16	16
13	Kheri Rao Wali_30715	Atal Jal	Piezometer	29.5866	76.4290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	16
14	Kheri Simbal Wali_30716	Atal Jal	Piezometer	29.5838	76.4201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	16
15	Kheri Simbal Wali_30716	Atal Jal	Tube Well	29.5854	76.4196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	17	16	16
16	Kukar Kanda_30721	Atal Jal	Piezometer	29.6258	76.5375	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	26
17	Kukar Kanda_30721	Atal Jal	Tube Well	29.6244	76.5250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33	33	32	32
18	Majra Nand Karan_30724	Atal Jal	Piezometer	29.6604	76.4782	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	21
19	Mandwal_30723	Atal Jal	Piezometer	29.5869	76.5332	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	22
20	Narwal_30725	Atal Jal	Piezometer	29.6000	76.4652	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	17
21	Narwal_30725	Atal Jal	Tube Well	29.6006	76.4649	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	16	16	16
22	Neemwala_30726	Atal Jal	Piezometer	29.6067	76.4426	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	18
23	Rohera_30728	Atal Jal	Piezometer	29.5661	76.4311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	18
24	Rohera_30728	Atal Jal	Tube Well	29.5582	76.4220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	16	17	18
25	Serdha_30730	Atal Jal	Piezometer	29.6301	76.5048	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	21
26	Songal_30731	Atal Jal	Piezometer	29.6797	76.4652	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	20
27	Jakholi Dabadal_30712	CGWB	Piezometer	29.6583	76.4292	11	13	13	14	13	14	14	14	14	16	15	16	15	15	20	15	15	17	16	17.75
28	Kithana_30719	CGWB	Piezometer	29.5458	76.3931	14	15	15	16	16	16	17	16	16	18	17	17	17	17	16	15	16	17	16	18.22
29	Jakholi Dabadal_30712	SGWD	Dug Well	29.6570	76.4421	14	15	16	16	17	17	18	18	20	19	20	21	20	20	20	20	18	20	18	20
30	Kassan_30714	SGWD	Dug Well	29.6578	76.4081	11	12	13	15	14	14	15	15	16	16	16	17	15	16	15	16	15	14	14	15
31	Kheri Rao Wali_30715	SGWD	Dug Well	29.5866	76.4320	12	13	13	13	14	14	13	14	15	17	16	17	17	17	16	16	17	17	17	18
32	Kithana_30719	SGWD	Dug Well	29.5531	76.3810	16	16	17	17	18	18	19	18	19	18	18	19	19	18	18	18	18	18	17	17
33	Majra Nand Karan_30724	SGWD	Dug Well	29.6545	76.4728	15	16	16	18	17	17	18	18	18	19	19	19	18	19	18	19	18	19	19	20
34	Majra Rohera_30722	SGWD	Dug Well	29.5646	76.4446	14	15	16	16	16	16	17	17	17	17	18	19	18	19	18	20	18	19	18	19
35	Mandwal_30723	SGWD	Dug Well	29.5866	76.5367	16	18	18	19	20	20	20	21	22	20	22	22	22	22	22	24	22	20	20	21
36	Neemwala_30726	SGWD	Dug Well	29.6208	76.4311	12	13	14	15	16	17	17	18	19	18	18	18	17	16	16	16	15	16	16	16
37	Serdha_30730	SGWD	Dug Well	29.6305	76.4924	15	16	17	19	19	19	20	20	19	20	20	21	20	20	20	20	19	19	19	21
38	Songal_30731	SGWD	Dug Well	29.6808	76.4714	14	15	16	17	16	16	17	17	18	19	18	19	18	19	18	19	17	18	16	19

S.No.	Observation Point	Source	Well Types	Co-ordinate		Water Level (m)																			
				Latitude	Longitude	2015		2016		2017		2018		2019		2020		2021		2022		2023		2024	
						Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
39	Songri_30732	SGWD	Dug Well	29.5926	76.3728	14	14	16	17	17	17	18	17	18	18	17	17	16	16	16	17	16	17	16	17
40	Taragarh_30733	SGWD	Dug Well	29.6237	76.3993	13	12	14	15	14	14	15	15	16	18	17	17	16	15	15	14	15	16	16	17
41	Rajaund	SGWD	Tube Well	29.5753	76.4881	14	15	16	16	17	17	18	18	17	17	17	18	17	16	16	18	16	18	17	18
42	Rajaund	SGWD	Tube Well	29.5744	76.4934	14	15	16	16	17	17	18	18	17	17	17	18	17	16	16	NA	NA	NA	NA	NA

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

State	Haryana	District	Kaithal	Block	Rajound
Month of Collection of samples for WQ monitoring*					May/June

Gram Panchayat	Source	Type of well	Latitude	Longitude	Year	pH	EC	TDS	TH	Ca	Mg	Na	K	CO ₃	HCO ₃	SO ₄	Cl	F	NO ₃
Bir Bangra_30708	Atal Jal	Pizeometer	29.548	76.4933	2024	7.58	2800	1659	762	192.1	68.54	171	19	2.448	682.5	253	326.8	2.06	44.2
Birthebihari_30709	Atal Jal	Pizeometer	29.5285	76.4955	2024	7.16	606	388	178.7	45.21	15.99	40	4	0.217	159.8	56.51	76	0.48	10.3
Fariyabad_30710	Atal Jal	Pizeometer	29.6011	76.5087	2024	7.55	1874	1036	479.8	120.6	43.41	107	12	1.434	428.6	162.1	205.2	1.28	26.8
Guliyana_30711	Atal Jal	Pizeometer	29.5887	76.3791	2024	7.78	5473	3287	1505	380.5	134.8	339	37	7.675	1347	490.1	647.9	3.6	85.6
Jakholi Dabadal_30712	Atal Jal	Tube well	29.647	76.4388	2024	8.19	1169	657	398.1	98.11	37.19	74	8	0.191	322.8	48.9	202.8	1.01	16.35
Kassan_30714	Atal Jal	Piezometer	29.6562	76.4082	2023	8.19	4840	2911	419.2	115.7	30.58	840	90	0.0	46.9	91.1	2097	2.47	50.65
Kassan_30714	Atal Jal	Piezometer	29.6562	76.4082	2024	7.54	4483	2902	1336	335.3	121.1	299	33	3.9	1196.1	434.2	571.9	3.1	75.8
Kheri Rao Wali_30715	Atal Jal	Pizeometer	29.5866	76.429	2024	7.26	1822	1034	470.4	120.6	41.13	107	12	0.727	424.3	162.1	203.3	1.28	26.75
Kheri Simbal Wali_30716	Atal Jal	Pizeometer	29.5838	76.4201	2024	7.77	1108	674	310.5	79.11	27.42	70	8	1.55	278.4	98.12	133	0.83	17.6
Kithana	CGWB	Tube Well	29.63	76.3878	2015	8.45	3930	ND	698.0	33.0	150.0	571.0	90.0	23.0	190.4	720.0	633.0	1.75	201.00
Kithana	CGWB	Tube Well	29.63	76.3878	2016	8.6	2936	ND	498.0	61.0	79.0	450.0	4.0	36.0	227.0	80.0	800.0	3.20	4.51
Kithana	CGWB	Tube Well	29.63	76.3878	2017	7.7	8150	ND	1721.0	273.0	253.0	868.0	18.0	0.0	293.0	1208.0	1503.0	BDL	15.00
Kithana	CGWB	Tube Well	29.63	76.3878	2018	7.88	2840	ND	540.0	16.0	121.0	450.0	15.0	0.0	537.0	534.0	355.0	1.31	46.00
Kithana	CGWB	Tube Well	29.63	76.3878	2019	8.8	1987	ND	160.0	12.0	32.0	388.0	9.0	72.0	403.0	162.0	255.0	2.75	19.00
Kithana	CGWB	Tube Well	29.63	76.3878	2020	8.97	5170	ND	671.0	36.0	141.0	884.0	14.0	252.0	793.0	126.0	978.0	1.41	15.00
Kithana	CGWB	Tube Well	29.63	76.3878	2021	8.51	4876	ND	745.2	43.9	154.5	779.0	7.0	48.0	153.7	968.0	833.1	0.30	30.00
Kithana	CGWB	Tube Well	29.63	76.3878	2022	8.02	5420	ND	798.0	48.0	164.8	884.0	6.7	0.0	183.0	1234.0	867.0	0.23	28.00
Kithana	CGWB	Tube Well	29.63	76.3878	2023	8.07	1650	ND	260.0	44.0	36.5	255.0	8.8	0.0	524.6	192.0	120.7	1.10	1.51
Kithana	CGWB	Tube Well	29.63	76.3878	2024	7.79	5082	0	720.6	91.26	119.7	899.8	12	Nil	427.1	1100	825.3	0.95	34
Kithana_30719	Atal Jal	Tube well	29.5514	76.3894	2024	8.46	3161	2039	1225	302.5	114	229	26	6.187	996.3	153.5	618.5	3.08	48.79
Kotra_30720	Atal Jal	Piezometer	29.6323	76.4758	2023	8.26	5480	3704	533.3	147.2	39.88	1065	115	0.0	59.0	115.8	2668	2.97	64.43
Kotra_30720	Atal Jal	Piezometer	29.6323	76.4758	2024	7.98	5294	3366	1543	391.8	137.1	347	38	12.5	1377.6	501.9	665	3.65	87.6
Kukar Kanda_30721	Atal Jal	Pizeometer	29.6258	76.5375	2024	7.02	1654	916	423.3	105.5	38.84	94	10	0.374	379.6	144.9	180.5	1.14	23.75
Majra Nand Karan_30724	Atal Jal	Pizeometer	29.6604	76.4782	2024	7.22	1822	1168	536.2	135.6	47.98	120	13	0.749	479.2	181.5	229.9	1.45	31.6
Majra Rohera_30722	Atal Jal	Piezometer	29.5638	76.4389	2023	8.37	1227	778.7	334.8	93.4	25.26	145	25	0.0	291.5	38.13	258.9	1.68	28.8
Majra Rohera_30722	Atal Jal	Piezometer	29.5638	76.4389	2024	7.81	1188	690	319.9	79.11	29.7	71	8	1.7	283.2	100.5	136.8	0.86	18
Mandwal_30723	Atal Jal	Pizeometer	29.5869	76.5332	2024	8.19	705	442	207	52.74	18.28	46	5	2.621	177.3	64.35	87.41	0.55	11.65
Narwal_30725	Atal Jal	Pizeometer	29.6	76.4652	2024	6.73	2033	1183	545.6	135.6	50.27	122	13	0.247	489.8	183.6	233.7	1.47	32
Neemwala_30726	Atal Jal	Pizeometer	29.6067	76.4426	2024	7.31	1695	1077	498.6	124.3	45.7	111	12	0.854	444.1	168	212.8	1.34	27.85
Rohera_30728	Atal Jal	Pizeometer	29.5661	76.4311	2024	7.23	1894	1225	564.5	143.2	50.26	126	14	0.806	504.2	190.1	241.3	1.52	33.2
Serdha_30730	Atal Jal	Pizeometer	29.6301	76.5048	2024	8.44	828	482	225.8	56.51	20.56	50	5	5.178	194.8	70.16	95.01	0.6	12.7
Songal_30731	Atal Jal	Pizeometer	29.6797	76.4652	2024	7.5	1558	878	404.5	101.7	36.55	91	10	1.07	358.9	139.5	172.9	1.09	22.75
Songri_30732	Atal Jal	Tube well	29.5919	76.3769	2024	7.38	1673	1044	622.7	155.3	57.02	117	13	0.053	513.2	77.7	314.3	1.61	25.43
Taragarh_30733	Atal Jal	Piezometer	29.6227	76.4002	2023	8.04	11330	6243	899	248.1	67.79	1800	195	0.0	99.8	195.4	4496	3.31	108.6
Taragarh_30733	Atal Jal	Piezometer	29.6227	76.4002	2024	7.43	10904	6957	3189	810	283.3	718	78	7.3	2862.7	607.8	1374	8.15	117.8

Name of District	Name of Block	Source	Name of village/ OW data	Latitude	Longitude	EC June 2020	EC June-2021	EC June-2022	EC June-2023	EC June-2024
Kaithal_66	Rajound_509	Atal Jal	Bir Bangra_30708	29.548	76.4933	ND	ND	ND	ND	2800
Kaithal_66	Rajound_509	Atal Jal	Birthebihari_30709	29.5285	76.4955	ND	ND	ND	ND	606
Kaithal_66	Rajound_509	Atal Jal	Fariyabad_30710	29.6011	76.5087	ND	ND	ND	ND	1874
Kaithal_66	Rajound_509	Atal Jal	Guliyana_30711	29.5887	76.3791	ND	ND	ND	ND	5473

Name of District	Name of Block	Source	Name of village/ OW data	Latitude	Longitude	EC June 2020	EC June-2021	EC June-2022	EC June-2023	EC June-2024
Kaithal_66	Rajound_509	Atal Jal	Jakholi Dabadal_30712	29.647	76.4388	ND	ND	ND	ND	1169
Kaithal_66	Rajound_509	SGWB	Jakhouli	29.657	76.4421	1700	1200	2300	2400	2400
Kaithal_66	Rajound_509	SGWB	Kasaan	29.6578	76.4081	2500	1500	1700	1700	1800
Kaithal_66	Rajound_509	Atal Jal	Kassan_30714	29.6562	76.4082	ND	ND	ND	4840	4483
Kaithal_66	Rajound_509	Atal Jal	Kheri Rao Wali_30715	29.5866	76.429	ND	ND	ND	ND	1822
Kaithal_66	Rajound_509	Atal Jal	Kheri Simbal Wali_30716	29.5838	76.4201	ND	ND	ND	ND	1108
Kaithal_66	Rajound_509	SGWB	KheriRaowali	29.5866	76.432	850	1000	1200	1500	1500
Kaithal_66	Rajound_509	SGWB	Kichana	29.6208	76.4311	1950	1200	2100	1900	2200
Kaithal_66	Rajound_509	SGWB	Kithana	29.5531	76.381	1250	1300	1400	1800	1900
Kaithal_66	Rajound_509	Atal Jal	Kithana_30719	29.5514	76.3894	ND	ND	ND	ND	3161
Kaithal_66	Rajound_509	Atal Jal	Kotra_30720	29.6323	76.4758	ND	ND	ND	5480	5294
Kaithal_66	Rajound_509	Atal Jal	Kukar Kanda_30721	29.6258	76.5375	ND	ND	ND	ND	1654
Kaithal_66	Rajound_509	Atal Jal	Majra Nand Karan_30724	29.6604	76.4782	ND	ND	ND	ND	1822
Kaithal_66	Rajound_509	Atal Jal	Majra Rohera_30722	29.5638	76.4389	ND	ND	ND	1227	1188
Kaithal_66	Rajound_509	SGWB	Mandwal	29.5866	76.5367	1650	3700	2500	2100	2200
Kaithal_66	Rajound_509	Atal Jal	Mandwal_30723	29.5869	76.5332	ND	ND	ND	ND	705
Kaithal_66	Rajound_509	SGWB	N.K.Majra	29.6545	76.4728	1950	2400	2200	2200	2400
Kaithal_66	Rajound_509	Atal Jal	Narwal_30725	29.6	76.4652	ND	ND	ND	ND	2033
Kaithal_66	Rajound_509	Atal Jal	Neemwala_30726	29.6067	76.4426	ND	ND	ND	ND	1695
Kaithal_66	Rajound_509	SGWB	Rajaund	29.5744	76.4934	1100	1100	1300	1500	1700
Kaithal_66	Rajound_509	SGWB	Rohera	29.5646	76.4446	2050	1000	1200	1900	1900
Kaithal_66	Rajound_509	Atal Jal	Rohera_30728	29.5661	76.4311	ND	ND	ND	ND	1894
Kaithal_66	Rajound_509	SGWB	Serdha	29.6305	76.4924	1750	2300	2800	2900	2600
Kaithal_66	Rajound_509	Atal Jal	Serdha_30730	29.6301	76.5048	ND	ND	ND	ND	828
Kaithal_66	Rajound_509	SGWB	Songal	29.6808	76.4714	2500	1400	1800	1800	1700
Kaithal_66	Rajound_509	Atal Jal	Songal_30731	29.6797	76.4652	ND	ND	ND	ND	1558
Kaithal_66	Rajound_509	SGWB	Songri	29.5926	76.3728	1050	1400	1000	1200	1800
Kaithal_66	Rajound_509	Atal Jal	Songri_30732	29.5919	76.3769	ND	ND	ND	ND	1673
Kaithal_66	Rajound_509	SGWB	Taragarh	29.6237	76.3993	850	1000	900	1600	1400
Kaithal_66	Rajound_509	Atal Jal	Taragarh_30733	29.6227	76.4002	ND	ND	ND	11330	10904