ATAL BHUJAL YOJANA (AtalJal)

State: Maharashtra

Department: Groundwater Surveys and Development Agency.

HYDROGEOLOGICAL REPORT

BLOCK : Partur

DISTRICT : Jalna

YEAR : 2020

Towards partial fulfillment of requirements for Disbursement of Incentive under DLI -1

DATE OF DISCLOSURE: …24/11/./2020…….

HYDROGEOLOGICAL REPORT

(YEAR : 2019-20)

STATE	:	Maharashtra
DISTRICT	:	Jalna
BLOCK/TALUK	:	Partur
BLOCK/TALUK HQs		Partur

A	**GENERAL INFORMATION**					
1.	Geographical area (Ha)	:	73767			
2.	No. of Gram Panchayats	:	81			
3.	No. of towns		1			
4.	No. of villages	:	97			
5.	Population (2011)	:	Male	Female	Total	
			72765	68941	141706	
6	Average Rainfall (mm)	:	Monsoon	Non-monsoon	Annual	
			714.93	55.93	770.86	
7.	River basin	:	Godavari River			
8.	Major soil types	:	Black Cotton Soil			

B	**LAND USE**		
1.	Forest area (Ha)	:	14.60
2.	Cultivable area (Ha)	:	72212.50
3.	Net sown area (Ha)	:	71820.52
4.	Gross cropped area (Ha)	:	92022.00

C	**CROPPING PATTERN (As in 2019-20)**					
1.	Major crops grown	:	Kharif	Rabi	Summer	Perennial
			Jawar	Jawar	-	Bannana
			Cotton	Cotton	-	Sugarcane
			Pulses	Wheat	-	Grapes
			Vegetables	Gram	-	Horticulture
			Soyabean	Maize	-	
				Bajara	-	

D	**IRRIGATION FACILITIES (As in 2019-20)**						
1.	Net irrigated area (Ha)	:	11757				
2.	Gross irrigated area (Ha)	:	18089				
3.	Area under irrigation (Ha) (Source-wise)	:	DW	BW/TW	Tanks/Ponds	Canals	Others
			11757		6332		

E	**GEOLOGY & HYDROGEOLOGY**		
1.	Predominant rock type	:	Hard Rock ~~/ Soft Rock/Both~~
2.	Major geological formations	:	Basalt
3.	Important water-bearing formations	:	Weathered / Vesicular/Amygdaloidal Basalt
4.	Status of coverage under NAQUIM	:	Not Covered.

F	GROUND WATER CONDITIONS								
1.	No. of wells used for Water Level (WL) monitoring.	:	**Open wells**			**BW/TW/ PZ**		
			CGWB	SGWD	Total	CGWB	SGWD	Total
				9	9			
2.	Monitoring mechanism (Nos.)	:	Manual		DWLR		Telemetry	
			CGWB	SGWD	CGWB	SGWD	CGWB	SGWD
				9				
3.	Monitoring frequency	:	Agency	No. of times monitored/year				
			CGWB					
			SGWD	4				
4.	Period of water level data availability.	:	Agency	Period of WL data availability (From - To)				
				From (year)	To (year)			
			CGWB					
			SGWD	May-1974	Oct-2020			
5.	Water level range (m.bgl)	:	Minimum/Village		Maximum/Village			
	Pre-monsoon (April-May 2019)		8.50/ Ashti		24.10/ Watur			
	Post-monsoon (November 2019)		1.50/ Partur		6.00/ Watur			
6.	Seasonal WL fluctuation range (m)	:	Minimum/ Village		Maximum/ Village			
			7.00		18.10			

G	GROUND WATER QUALITY							
1.	No. of wells used for Water Quality (WQ) monitoring.		Open Wells			BW/TW/ PZ		
			CGWB	SGWD	Total	CGWB	SGWD	Total
2.	Monitoring frequency		Agency	No. of times monitored/year				
			CGWB					
			SGWD	2 Times (Pre & Post Monsoon)				
3.	Period of water quality data availability		Agency	Period of WQ data availability (Years)				
			CGWB					
			SGWD	April-2015				
4.	Parameters analysed		Agency	Parameters Analysed				
			CGWB					
			SGWD	Temperature, pH, EC, TDS, Total Hardness, Alkalinity, Calcium, Chloride, Nitrate, Sulphate, Fluoride, Iron.				
5.	Known ground water quality issues, if any		Salinity/Fluoride/Arsenic/ Iron/Nitrate/Others (Pl. specify)					

H.	GROUND WATER RESOURCES					
1.	Latest assessment year		2017			
2.	Assessment Unit		Taluk/ Block/Watershed			
3.	Annual extractable GW resource (ha.m)		10247.55			
4.	Current annual GW extraction (ha.m)		4919.04			
5.	Net GW availability for future use (ha.m)		3232.97			
6.	Stage of GW extraction (%)		34.10			
7.	Category of block/taluk/(2017)		safe			
8.	Category of block/taluk/ in previous assessments		2013	2011	2009	2004
			safe	safe	safe	safe

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)	Atal Solar Schemes
			iii)	MGNREGA
			iv)	
	State Schemes		i)	PoCRA
			ii)	CM-Solar scheme
			iii)	Dr. Babasaheb Ambedkar Krushi Yojana
			iv)	Birsa Munda Yojana
			v)	MTS

J	GROUND WATER RELATED ISSUES		
1.	Ground water related issues of the block/		
	i) Issues related to GW availability	:	
	ii) Issues related to GW quality	:	Groundwater having Excess Nitrate
	iii) Other issues if any.	:	

TABLE-01

BASIC DATA OF WATER LEVEL (WL)/WATER QUALITY (WQ) WELLS LOCATIONS

STATE-MAHARASHTRA, DISTRICT-JALNA, TALUKA-PARTUR

Sl. No	Well No.	Village Name	Long.	Lat.	Type of well (DW/BW/TW/PZ)	Reduced Level (m.amsl)	Aquifer tapped	Height of measuring point (m.agl)	Depth (m.bgl)	Diameter (m)	Purpose of monitoring (WL / WQ / WL & WQ)	Monitoring mechanism (Manual/ DWLR/ Telemetry)	Agency
1	W192338076082602	Asangaon	54808201	76.1405556	DW	430	VAB	0.7	14.7	4.2	WL	Manual	SGWD
2	W192235076133502	Ashti	54809301	76.2233520	DW	435	VAB	0.8	12.8	1.1	WL	Manual	SGWD
3	W192008076114001	Loni kh.	54810401	76.1944444	DW	430	VAB	0.6	20.5	4.1	WL	Manual	SGWD
4	W193555076130002	Partur	80276201	76.2166667	DW	440	VAB	0.5	16.6	2.2	WL	Manual	SGWD
5	W192958076211501	Satona kh	54805001	76.3541667	DW	435	VAB	0.6	17.1	2.9	WL	Manual	SGWD
6	W192835076134501	Shristi	54807401	76.2291667	DW	451	VAB	0.7	10.5	5.2	WL	Manual	SGWD
7	W193220076121802	Singona	54806601	76.2050000	DW	455	VAB	0.8	16	3	WL	Manual	SGWD
8	W194043076164501	Watur	76.2791667	19.6786111	DW	455	VAB	0.9	27.4	2.2	WL	Manual	SGWD

TABLE-01-Continued

Sl. No	Well No.	Village Name	Long.	Lat.	Type of well (DW/BW/TW/PZ)	Reduced Level (m.amsl)	Aquifer tapped	Height of measuring point (m.agl)	Depth (m.bgl)	Diameter (m)	Purpose of monitoring (WL / WQ / WL & WQ)	Monitoring mechanism (Manual/ DWLR/Telemetry)	Agency
1	W192830076140001	Shreshti	76.233333	19.475	Dug Well	450			13				CGWB
2	W193506076133301	Partur-2	76.225833	19.585	Dug Well	455			16.6				CGWB
3	W193600076123002	Partur_Pz	76.208333	19.6	Bore Well	447			30				CGWB
4	W194045076164001	Watur	76.277778	19.679167	Dug Well	456			14.5				CGWB

TABLE-02

WATER LEVEL (WL) DATA OF MONITORING WELLS-SGWD

STATE-MAHARASHTRA, DISTRICT-JALNA, TALUKA-PARTUR

Sr.No.	Well ID	Well Type	Village	May-15	Oct-15	May-16	Oct-16	May-17	Oct-17	May-18	Oct-18	May-19	Oct-19
1	W192338076082602	DW	Asangaon	11.8	10.85	14.7	3.1	14	6.4	12.4	6.725	12.1	3.2
2	W192235076133502	DW	Ashti	8.2	7.35	11.4	1.65	11.2	4.4	10	7.1	8.5	4.4
3	W192008076114001	DW	Loni kh.	7	6.3	7	2.6	6.8	3.6	4.8	5.25	15	1.6
4	W193555076130002	DW	Partur	14	8.75	15.1	6.4	15.1	8.05	15.8	10.3	16.5	11.8
5	W192958076211501	DW	Satona kh	10.7	6.85	10.7	1.75		3.7	9.6	8.55	15.5	6.2
6	W192835076134501	DW	Shristi	8	4	9.9	2	9.3	2.8	9	7.175	10.5	9.5
7	W193220076121802	DW	Singona	15	8.2	14.3	1.7	13	4.3	13.2	10.05	16	12.2
8	W194043076164501	DW	Watur	10.5	6.05	10.7	1.9		4.6	10.25	8.025	24.1	9.2

TABLE-02-Continued

WATER LEVEL (WL) DATA OF MONITORING WELLS-CGWB

STATE-MAHARASHTRA, DISTRICT-JALNA, TALUKA- PARTUR

Sr.No.	Well ID	Well Type	Village	May-15	Nov-15	May-16	Nov-16	May-17	Nov-17	May-18	Nov-18	May-19	Nov-19
1	W192830076140001	Dug Well	Shristi	6.8	4.4	13	3.3	3.5		9.6	5.9	12.5	3.72
2	W193506076133301	Dug Well	Partur-2		12.7	14	8.17	14	10.66	13.6	13.8	13.68	5.7
3	W193600076123002	Bore Well	Partur_Pz	14.7	7.8	28	3.8	11.5	6.36	15.55	9.2	25.82	3.8
4	W194045076164001	Bore Well	Watur	13.6	9.3	10.5	3.37	9.87	4.76	11.1	10	10.25	8.7

TABLE-03

WATER QUALITY (WQ) DATA OF MONITORING STATIONS-SGWD

STATE-MAHARASHTRA, DISTRICT-JALNA, TALUKA- PARTUR

Sr. No.	Name of Village	Type of Source	Year	Sample Testing Date	Temp	pH	EC	TDS (mg/L)	Alkalinity (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Sulphate (mg/L)	Total Hardness (mg/L)	Iron (mg/L)	Ca (mg/L)	Mg (mg/L)	Remark
1	ASANGAON	HAND PUMP	16-17	7.4.2016	33	7	680	442	140	180	1.32	31.91	NA	442	0.05	NA	NA	FIT
2	ASANGAON	DUGWELL	17-18	26.03.2018	26	7.7	818.462	532	123	180	0.4	152	42	256	0.078	120	NA	UNFIT
3	ASANGAON	Hand Pump with EP	18-19	29.11.2018	28	7.6	765	497	180	140	0.67	132	88	216	0.66	90	-1	UNFIT
4	ASANGAON	HAND PUMP	18-19	29.11.2018	28	7.8	788	512	212	210	0.75	145	100	232	0.73	80	-1	UNFIT
5	ASANGAON	DUGWELL	18-19	29.11.2018	28	7.8	815	530	228	180	0.72	37	76	260	0.91	90	-1	FIT
6	ASANGAON	PWS	19-20	29.05.2019	30	7.6	892	580	104	110	0.3	38.78	75	224	0.31	40	44	FIT
7	ASANGAON	HAND PUMP	19-20	10.12.2019	28	7.5	996.923	648	116	72	0.63	11	40	200	0.14	70	31.59	FIT
8	ASANGAON	DUGWELL	19-20	10.12.2019	25	7.8	532.308	346	104	68	0.72	10	62	192	0.25	20	41.8	FIT
9	ASHTI	HAND PUMP	16-17	15.12.2016	27	7.8	1184.62	770	188	140	0.31	24.16	134.16	260	0.091	57.6	NA	FIT
10	ASHTI	HAND PUMP	16-17	26.8.2016	33	7	1300	845	260	80	1.12	44.03	NA	200	0.29	NA	NA	FIT
11	ASHTI	HAND PUMP	18-19	31.05.2018	25	7.8	569.231	370	196	170	0.493	155.29	64	320	0.046	80	58.32	UNFIT
12	ASHTI	HAND PUMP	18-19	22.06.2018	25	6.8	1213.85	789	184	40	0.14	123	57.65	416	0.036	62	86.02	UNFIT
13	ASHTI	HAND PUMP	18-19	30.10.2018	24	7.4	689.231	448	216	180	0.67	140.43	72	232	0.38	90	34.5	UNFIT
14	ASHTI	HAND PUMP	19-20	18.11.2019	26	7.2	907.692	590	290	304	0.68	10.2	74	324	0.58	78	59	FIT
15	LONI KH	HAND PUMP	19-20	10.12.2019	28	7.6	1010.77	657	168	80	0.47	41	50	340	0.16	40	72.9	FIT
16	LONI KH.	HAND PUMP	16-17	26.8.2016	33	7	1607.69	1045	320	100	1.07	17.37	NA	260	0.08	NA	NA	FIT
17	LONI KH.	HAND PUMP	16-17	26.8.2016	33	7	1046.15	680	260	80	1.11	29.48	NA	200	0.07	NA	NA	FIT
18	LONI KH.	HAND PUMP	16-17	26.8.2016	33	7	1138.46	740	200	90	0.97	44.05	NA	160	0.08	NA	NA	FIT
19	LONI KH.	HAND PUMP	18-19	24.09.2018	26	7.4	806.154	524	178	160	0.6	43	64	246	0.28	70	42.77	FIT
20	LONI KH.	HAND PUMP	18-19	28.11.2018	27	7.4	643	418	172	160	0.61	42	72	226	0.92	110	-1	FIT

21	SATONA KH	HAND PUMP	19-20	22.10.2019	28	8.1	861	560	360	160	0.94	11	80	240	0.78	120	75.33	FIT
22	SATONA KH	BOREWELL	19-20	09.12.2019	21	7.9	1072.31	697	120	72	0.28	12	48	268	0.9	82	45.2	FIT
23	SATONA KH	HAND PUMP	19-20	09.12.2019	25	7.9	1769.23	1150	160	90	0.39	10	38	220	0.15	91	31.35	FIT
24	SHRISTHI	DUGWELL	15-16	15.3.15	33	8	641.538	417	100	40	0.112	39.38	NA	80	0.014	NA	NA	FIT
25	SHRISTHI	HAND PUMP	16-17	15.12.2016	27	7.9	1230.77	800	190	160	0.43	28.19	152.71	240	0.044	46.4	NA	FIT
26	SHRISTHI	DUGWELL	16-17	26.8.2016	33	7	1184.62	770	240	80	1.07	41.05	NA	180	0.07	NA	NA	FIT
27	SHRISTHI	HAND PUMP	17-18	4.8.2017	33	7.4	1492.31	970	160	100	0.98	33.06	90	120	0.04	80	NA	FIT
28	SHRISTHI	HAND PUMP	18-19	31.05.2018	25	7.6	686.154	446	234	180	0.329	139.03	80	256	0.075	90	40.34	UNFIT
29	SINGONA	HAND PUMP	16-17	26.8.2016	33	7	1184.62	770	240	80	1.02	41.08	NA	180	0.22	NA	NA	FIT
30	SINGONA	HAND PUMP	17-18	4.8.2017	33	7.6	941.538	612	120	90	0.98	41.01	90	100	0.08	80	NA	FIT
31	SINGONA	HAND PUMP	18-19	18.05.2018	25	7.6	584.615	380	172	130	0.17	181.32	94	292	0.062	80	51.52	UNFIT
32	SINGONA	HAND PUMP	18-19	27.06.2018	25	7.6	621.538	404	178	180	0.46	39.02	96	236	0.028	90	35.48	FIT
33	WATUR	HAND PUMP	16-17	25.8.2016	33	7	1269.23	825	240	80	1.08	18.09	NA	180	0.07	NA	NA	FIT
34	WATUR	DUGWELL	18-19	26.08.2018	25	7.4	732.308	476	196	140	0.56	42.68	86	228	0.036	90	33.53	FIT
35	WATUR	BOREWELL	18-19	27.11.2018	28	7.9	760	494	216	180	0.67	78	100	268	0.96	90	-1	UNFIT
36	WATUR	HAND PUMP	19-20	09.12.2019	26	7.8	1053.85	685	120	68	0.67	12	49	360	0.2	58	73.39	FIT

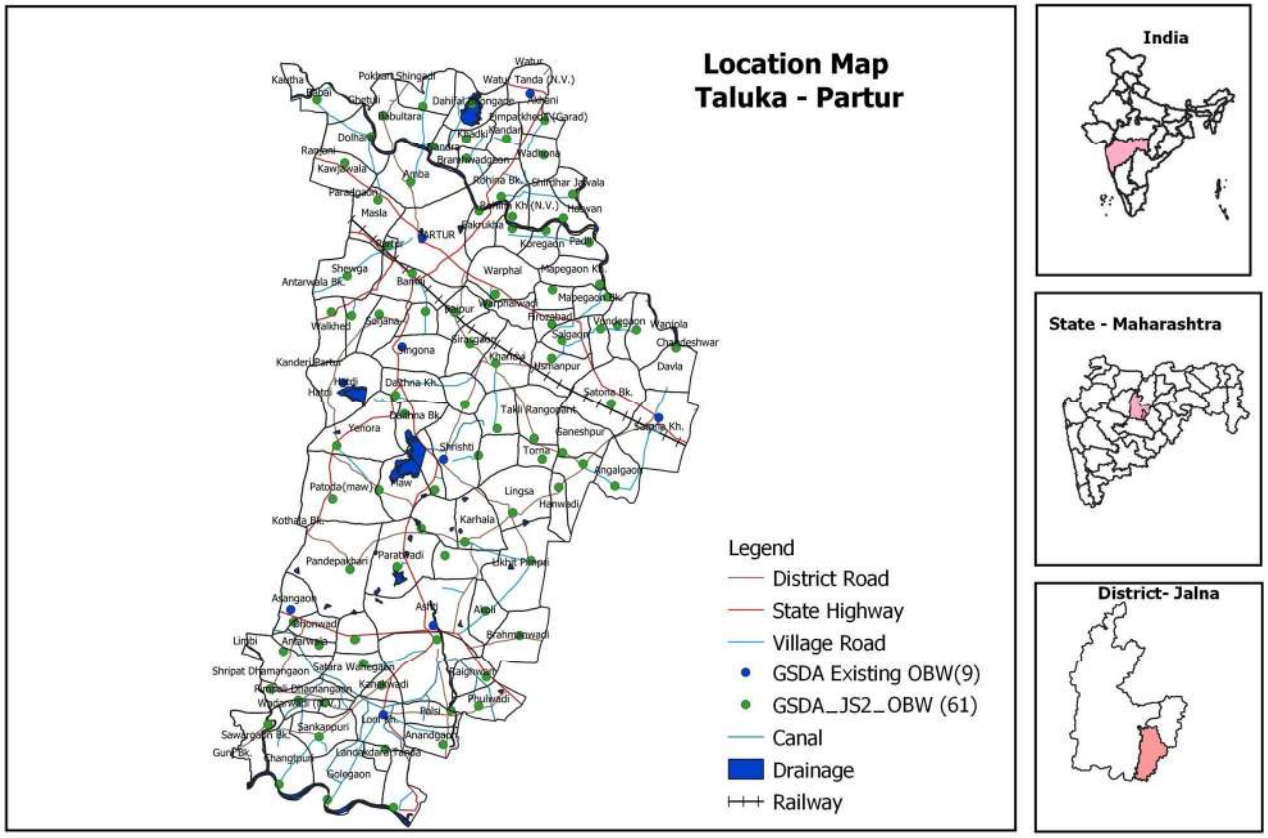
TABLE-03- Continued

WATER QUALITY (WQ) DATA OF MONITORING STATIONS-CGWB

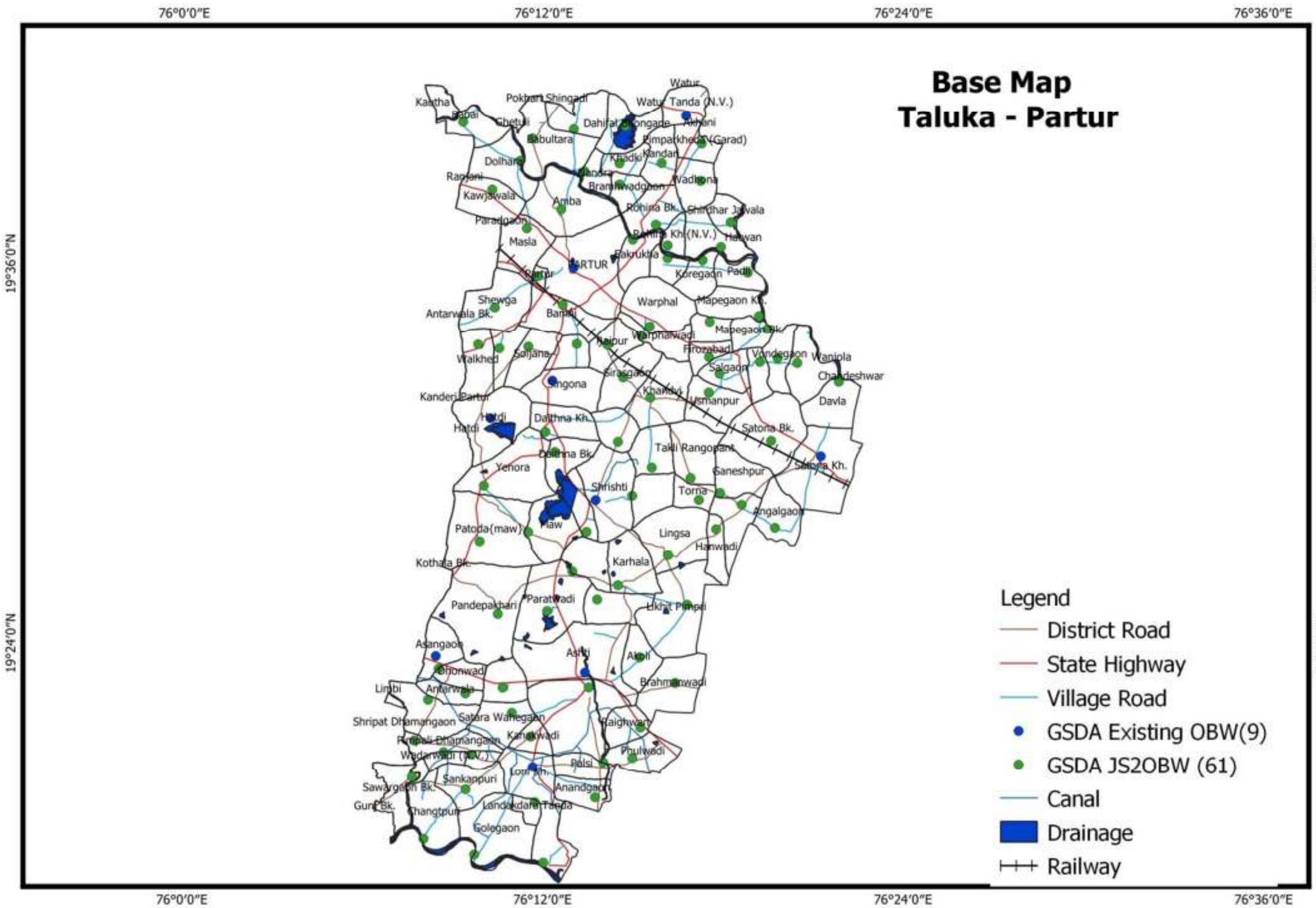
STATE-MAHARASHTRA, DISTRICT-JALNA, TALUKA-PARTUR

Sr.No.	Well No./Locaton	Well Type	Village	Date of Testing	Temp	EC (µS/cm)	pH	Ca	Mg	Na	K	HCO3	CL	SO4	NO3	F
1	W192830076140001		Shreshti	5/21/2015												
2	W192830076140001		Shreshti	5/21/2015		2155	7.8	136	68.24	190	28.76	329	241	315	50	0.64
3	W193506076133301		Partur-2	5/21/2017		1101	7.7	125	27.02	68	2.9	422	83	58	84	0.45
4	W193506076133301		Partur-2	5/21/2016		831	7.8	94	22.97	40	3.3	278	72	60	24	0.53
5	W194045076164001		Watur	5/21/2016		986	7.6	104	48.27	34	2.8	346	80	144	44	0.37
6	W194045076164001		Watur	5/21/2015		877	7.7	92	35.37	37	1.43	354	85	41	52	0.68
7	W194045076164001		Watur	5/21/2017		1003	7.7	74	73.03	30	2.3	488	63	68	44	0.37
8	W194045076164001		Watur	5/21/2015												

Map-01

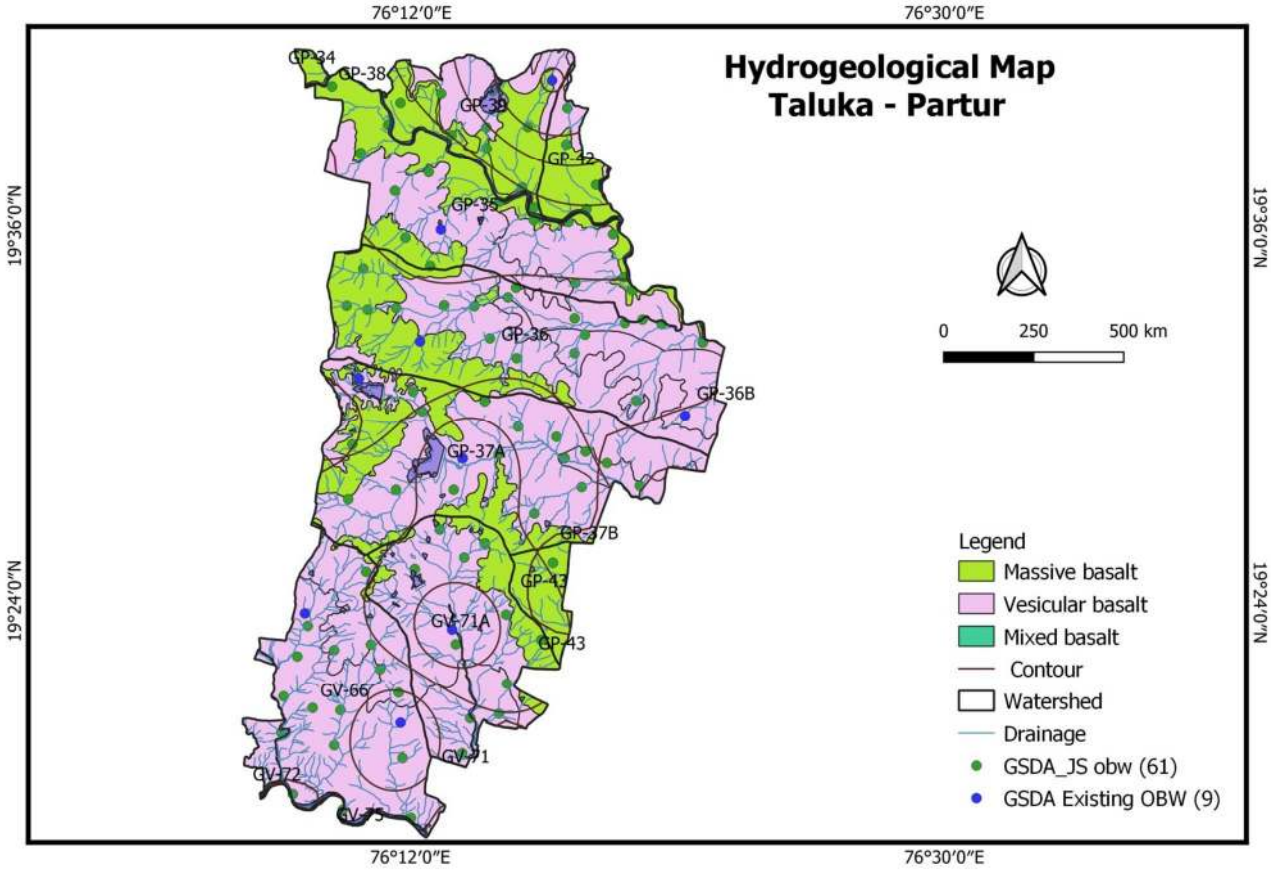

Location Map
Taluka - Partur
Legend
District Road
State Highway
Village Road
GSDA Existing OBW(9)
GSDA_JS2_OBW (61)
Canal
Drainage
Railway
India
State - Maharashtra
District- Jalna

Map-02

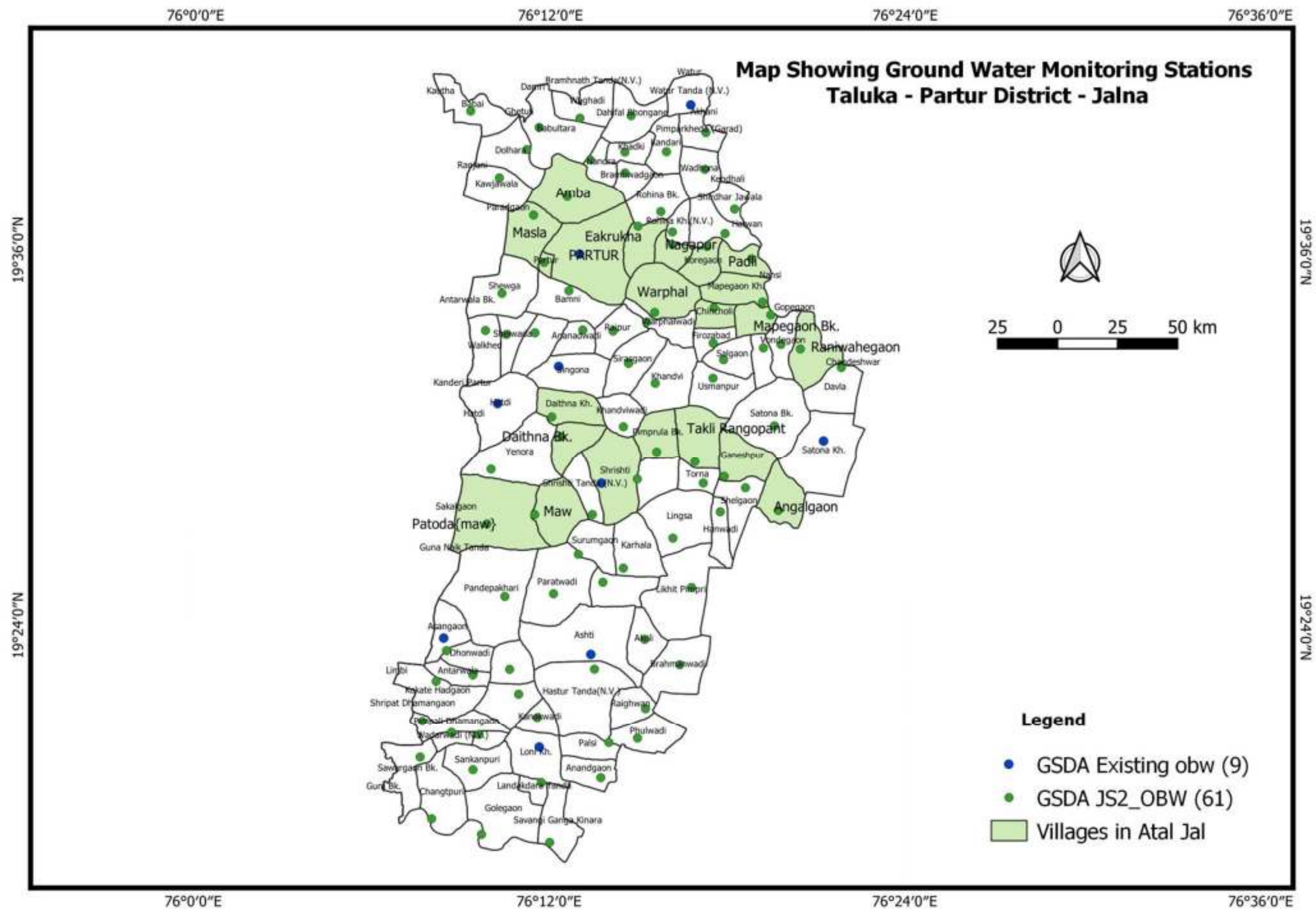


Base Map
Taluka - Partur
76°0'0"E
76°12'0"E
76°24'0"E
76°36'0"E
19°36'0"N
19°24'0"N
PARTUR
Legend
District Road
State Highway
Village Road
GSDA Existing OBW(9)
GSDA JS2OBW (61)
Canal
Drainage
Railway

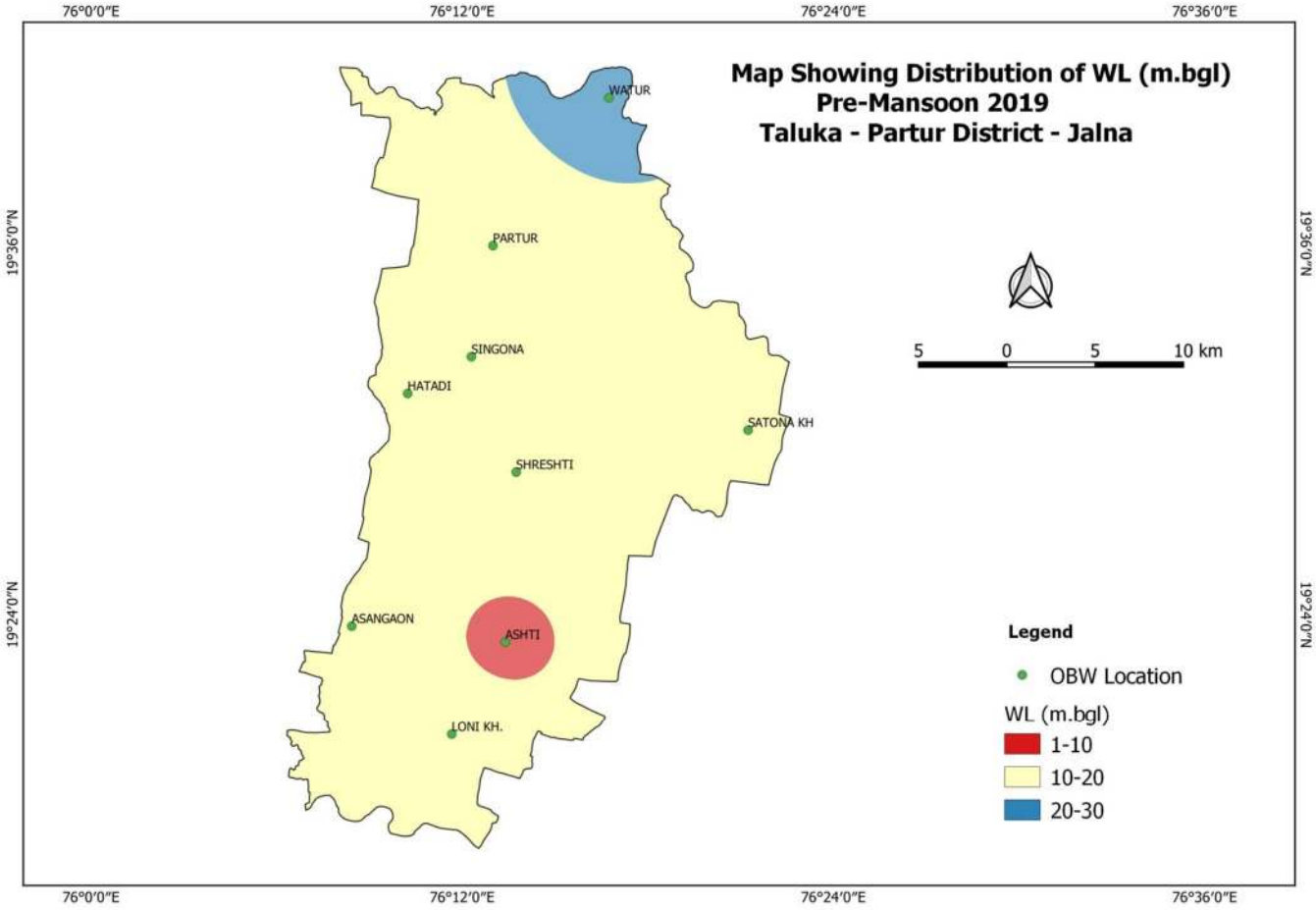
Map-03


Hydrogeological Map
Taluka - Partur
76°12'0"E
76°30'0"E
19°36'0"N
19°24'0"N
GP-34
GP-38
GP-35
GP-42
GP-36
GP-36B
GP-37A
GP-37B
GP-43
GV-71A
GV-66
GV-72
0
250
500 km
Legend
Massive basalt
Vesicular basalt
Mixed basalt
Contour
Watershed
Drainage
GSDA_JS obw (61)
GSDA Existing OBW (9)

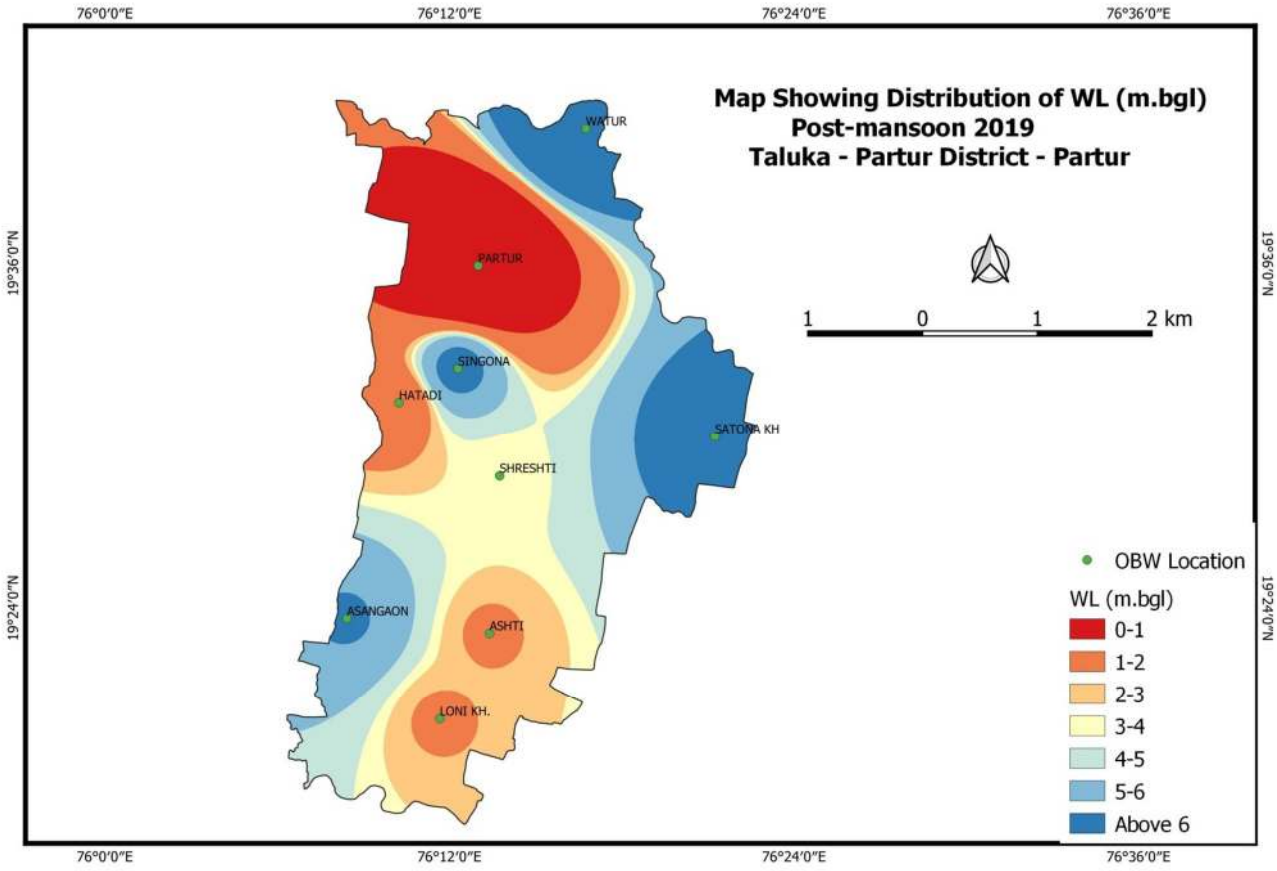
Map-04


Map Showing Ground Water Monitoring Stations
Taluka - Partur District - Jalna
76°0'0"E
76°12'0"E
76°24'0"E
76°36'0"E
19°36'0"N
19°24'0"N
25 0 25 50 km
Legend
GSDA Existing obw (9)
GSDA JS2_OBW (61)
Villages in Atal Jal
Amba
Masla
Eakrukha
PARTUR
Nagapur
Padli
Warphal
Mapegaon Bk.
Raniwahegaon
Daithna Bk.
Takli Rangopant
Angalgaon
Maw
Patoda(maw)
Shrishti
Ashti
Satona Kh.
Satona Bk.
Davla
Lingsa
Karhala
Paratwadi
Pandepakhari
Usmanpur
Khandvi
Torna
Yenora
Sakalgaon
Palsi
Golegaon
Changtpuri
Anandgaon
Phulwadi
Raighvan
Bamni
Shewga
Antarwala Bk.
Walkhed
Kandari
Wadi
Kajwala
Dolhara
Babultara
Watur

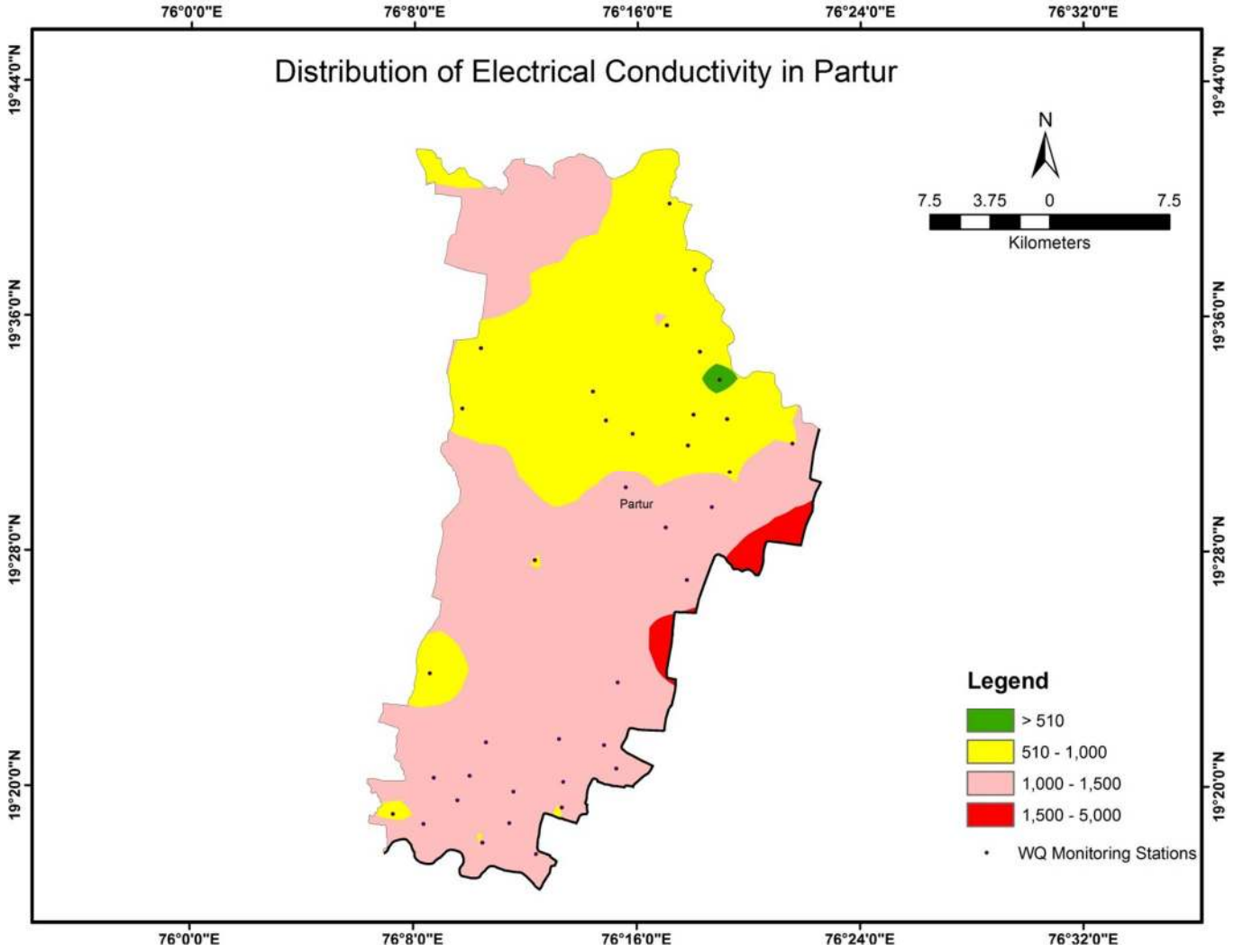
Map-05


Map Showing Distribution of WL (m.bgl)
Pre-Mansoon 2019
Taluka - Partur District - Jalna
76°0'0"E
76°12'0"E
76°24'0"E
76°36'0"E
19°36'0"N
19°24'0"N
WATUR
PARTUR
SINGONA
HATADI
SATONA KH
SHRESHTI
ASANGAON
ASHTI
LONI KH.
5 0 5 10 km
Legend
OBW Location
WL (m.bgl)
1-10
10-20
20-30

Map-06


Map Showing Distribution of WL (m.bgl)
Post-mansoon 2019
Taluka - Partur District - Partur
76°0'0"E
76°12'0"E
76°24'0"E
76°36'0"E
19°36'0"N
19°24'0"N
WATUR
PARTUR
SINGONA
HATADI
SATONA KH
SHRESHTI
ASANGAON
ASHTI
LONI KH.
1 0 1 2 km
OBW Location
WL (m.bgl)
0-1
1-2
2-3
3-4
4-5
5-6
Above 6

Map-07


Distribution of Electrical Conductivity in Partur
76°0'0"E
76°8'0"E
76°16'0"E
76°24'0"E
76°32'0"E
19°44'0"N
19°36'0"N
19°28'0"N
19°20'0"N
N
7.5 3.75 0 7.5
Kilometers
Partur
Legend
> 510
510 - 1,000
1,000 - 1,500
1,500 - 5,000
WQ Monitoring Stations