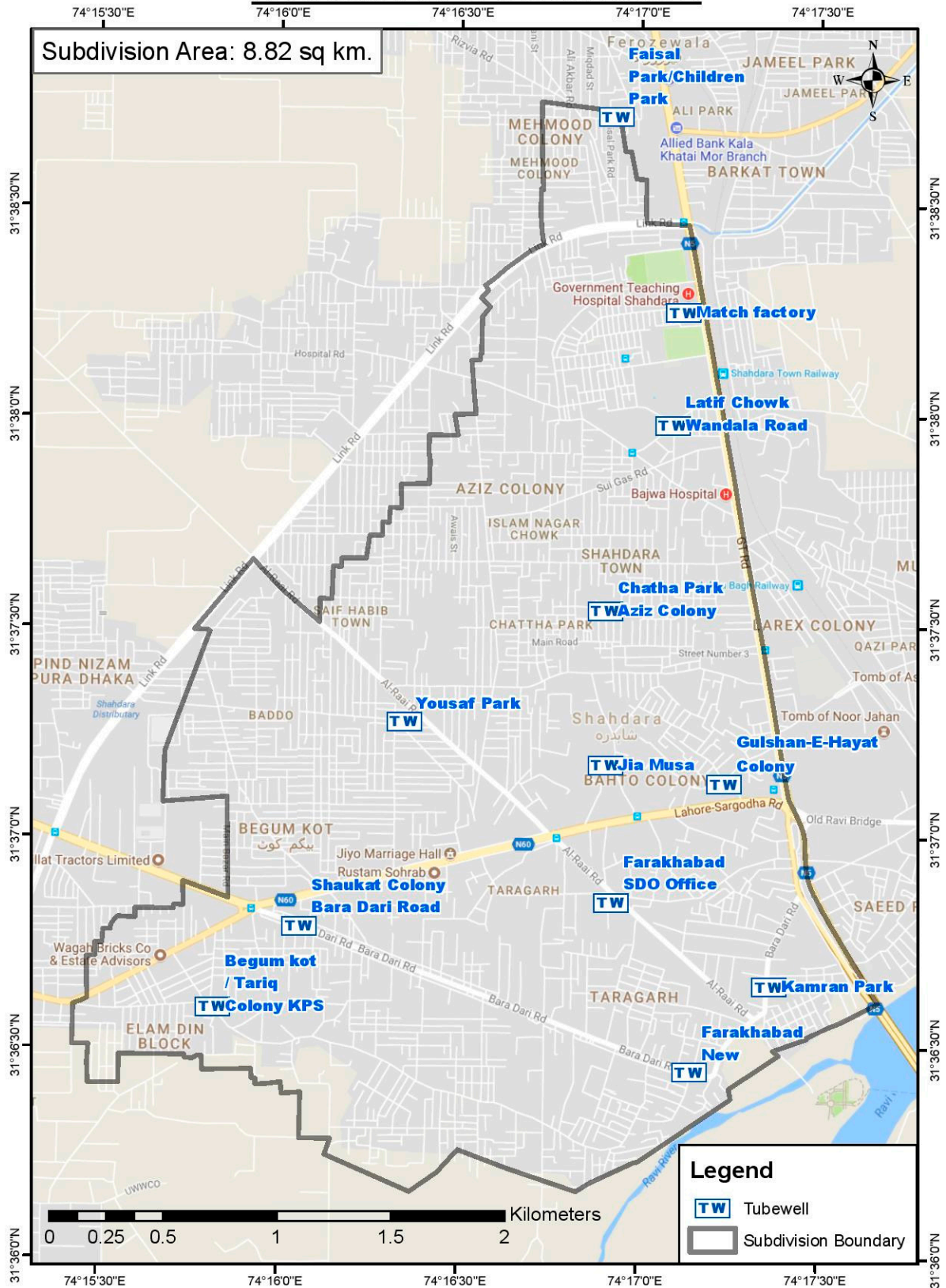


FARRUKHABAD SUBDIVISION



SHAHDARA SUBDIVISION

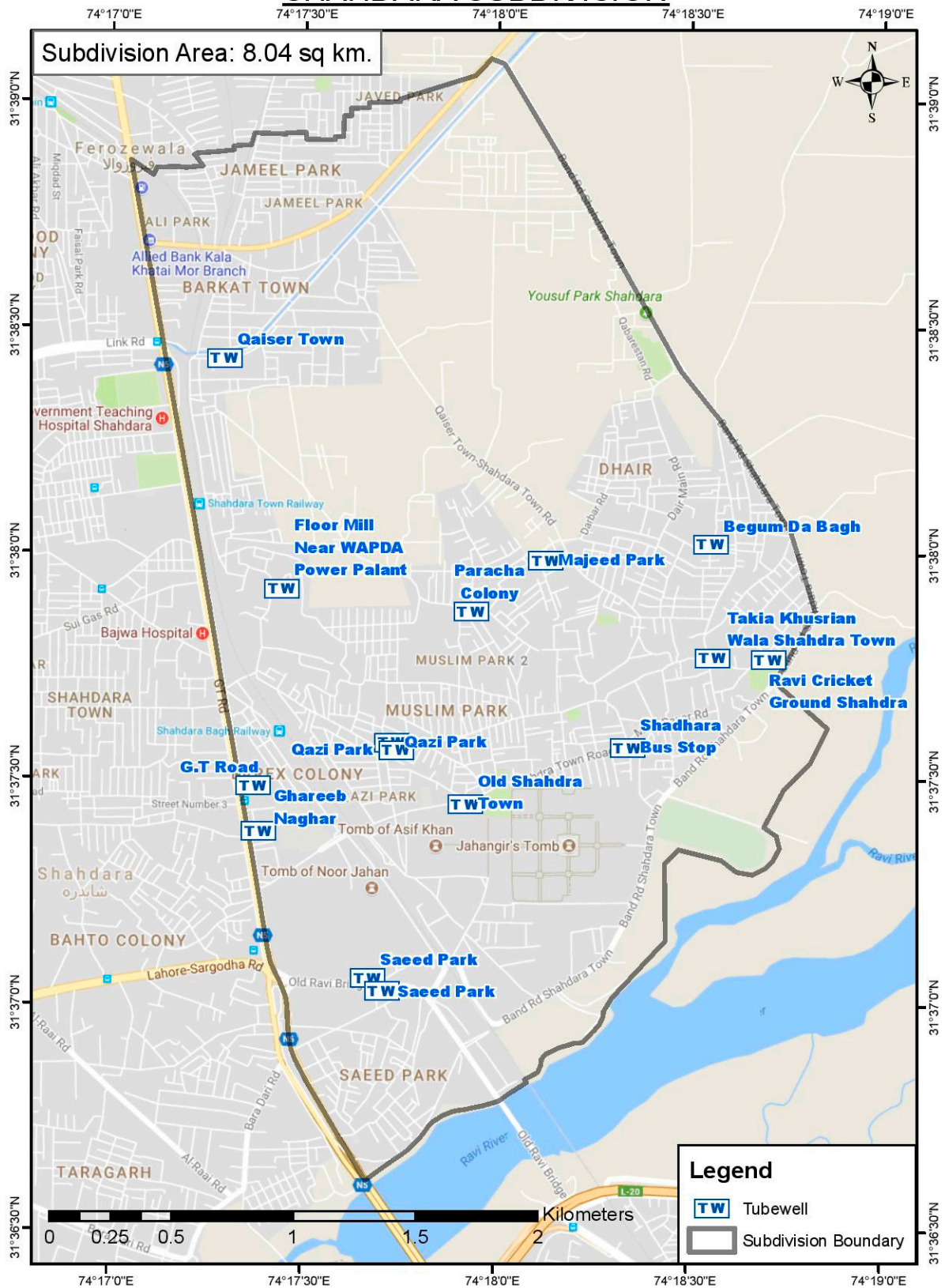


Table-S1: Sampling frequency of selected ground water sources

Parameter	Sampling frequency at single source point per year	Total Number of sources	Total number of samples for six years from (2012-2017)
TDS	4	50	$4*6*50=1200$
EC	4	50	$4*6*50=1200$
Mg	4	50	$4*6*50=1200$
Ca	4	50	$4*6*50=1200$
SO ₄	4	50	$4*6*50=1200$
Cl	4	50	$4*6*50=1200$
pH	4	50	$4*6*50=1200$

Table-S2: Results for 45 developed models of ANN for study area

Sr N o	Stud y area	Netwo rk type	Training algorithm	Learnin g rate	Numbe r of neuron s	All r Coefficient of Correlatio n	Coefficient of determination
1	CITY	FFNN	T-BR	GDM	2	0.980	0.960
2					4	0.980	0.960
3					6	0.980	0.960
4					8	0.979	0.958
5					10	0.983	0.966
6		FFNN	T-LM		2	0.979	0.960
7					4	0.981	0.962
8					6	0.981	0.962
9					8	0.979	0.960
10					10	0.98	0.962
11		FFNN	T-SCG		2	0.980	0.960
12					4	0.977	0.956
13					6	0.980	0.962
14					8	-0.037	0.001
15					10	0.980	0.960

1	FARRUKHABAD	FFNN	T-BR	GDM	2	0.94325	0.889
2					4	0.9446	0.891
3					6	0.93863	0.880
4					8	0.95141	0.904
5					10	0.93788	0.878
6		FFNN	T-LM		2	0.946	0.895
7					4	0.912	0.832
8					6	0.953	0.909
9					8	0.955	0.913
10					10	0.946	0.895
11		FFNN	T-SCG		2	0.946	0.895
12					4	0.947	0.897
13					6	0.951	0.904
14					8	0.948	0.899
15					10	0.942	0.887
1	SHAHADRA	FFNN	T-BR		2	0.861	0.741
2					4	0.862	0.743
3					6	0.865	0.749
4					8	0.865	0.748
5					10	0.864	0.748

6	FFNN	T-LM	GDM	2	0.861	0.741
7				4	0.228	0.052
8				6	0.880	0.774
9				8	0.862	0.744
10				10	0.882	0.777
11		T-SCG		2	0.867	0.752
12				4	0.871	0.759
13				6	0.848	0.719
14				8	0.872	0.760
15				10	0.880	0.774

Table-S3: Predicted value of groundwater data from measured value of TDS.

Study area	No of tube wells	Measured value of TDS for 2019	Predicted value of TDS
CITY	1	274mg/l	274.08mg/l
	2	255mg/l	255.65mg/l
	3	263mg/l	263.41mg/l
	4	245mg/l	245.95mg/l
	5	202mg/l	204.24mg/l
	6	200mg/l	202.3mg/l
	7	235mg/l	236.25mg/l

	8	187mg/l	189.69mg/l
	9	198mg/l	200.36mg/l
	10	155mg/l	158.65mg/l
	11	200mg/l	202.3mg/l
	12	213mg/l	214.91mg/l
	13	236mg/l	237.22mg/l
	14	242mg/l	243.04mg/l
	15	280mg/l	279.9mg/l
	16	169mg/l	172.23mg/l
	17	233mg/l	234.31mg/l
	18	198mg/l	200.36mg/l
	19	201mg/l	203.27mg/l
	20	200mg/l	202.3mg/l
	21	222mg/l	223.64mg/l
	22	241mg/l	242.07mg/l
	23	218mg/l	219.76mg/l
	24	199mg/l	201.33mg/l
	25	232mg/l	233.34mg/l
FARRUK HABAD	26	255mg/l	257.7mg/l
	27	277mg/l	278.38mg/l

	28	243mg/l	246.42mg/l
	29	265mg/l	267.1mg/l
	30	300mg/l	300mg/l
	31	310mg/l	309.4mg/l
	32	285mg/l	286mg/l
	33	230mg/l	234.2mg/l
	34	170mg/l	177.8mg/l
	35	290mg/l	291mg/l
	36	225mg/l	229.5mg/l
	37	310mg/l	309.4mg/l
	38	200mg/l	206mg/l
	39	225mg/l	239.5mg/l
SHAHADRA	40	280mg/l	272.2mg/l
	41	270mg/l	264.3mg/l
	42	450mg/l	406.5mg/l
	43	250mg/l	248.5mg/l
	44	255mg/l	252.45mg/l
	45	237mg/l	238.23mg/l
	46	229mg/l	232mg/l
	47	305mg/l	292mg/l

	48	290mg/l	280mg/l
	49	335mg/l	315.65mg/l
	50	540mg/l	477.6mg/l

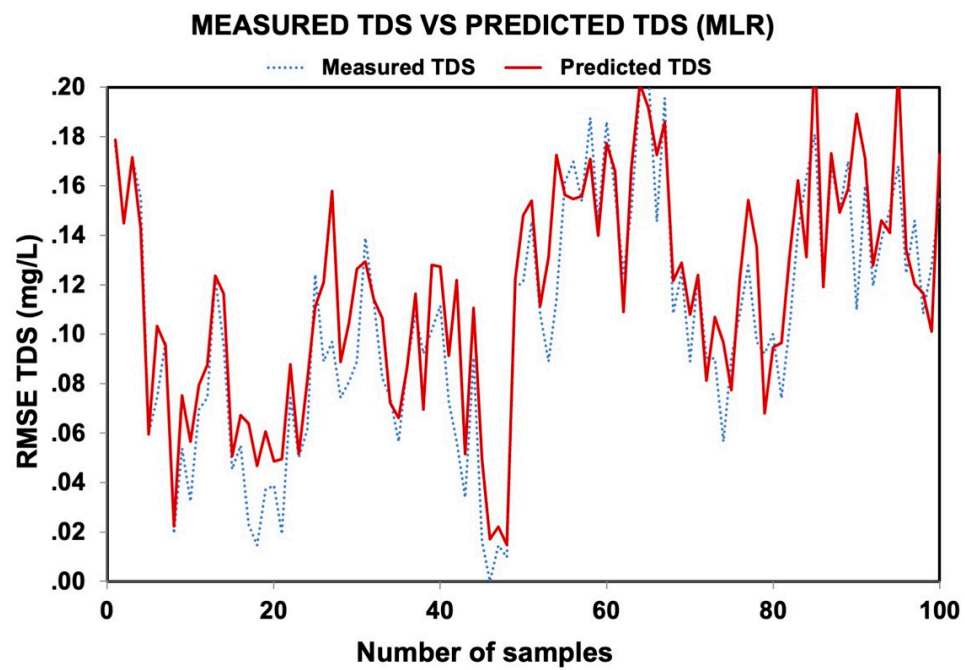


Figure S1 MLR RMSE result of city sub-division.

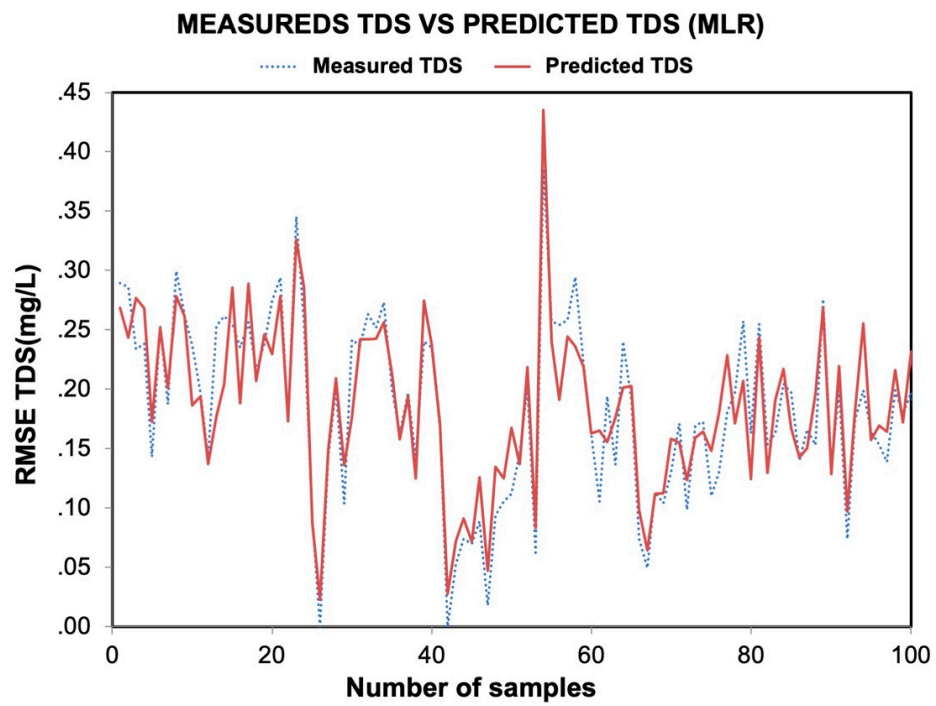


Figure S2 MLR RMSE result of Farrukhabad sub-division

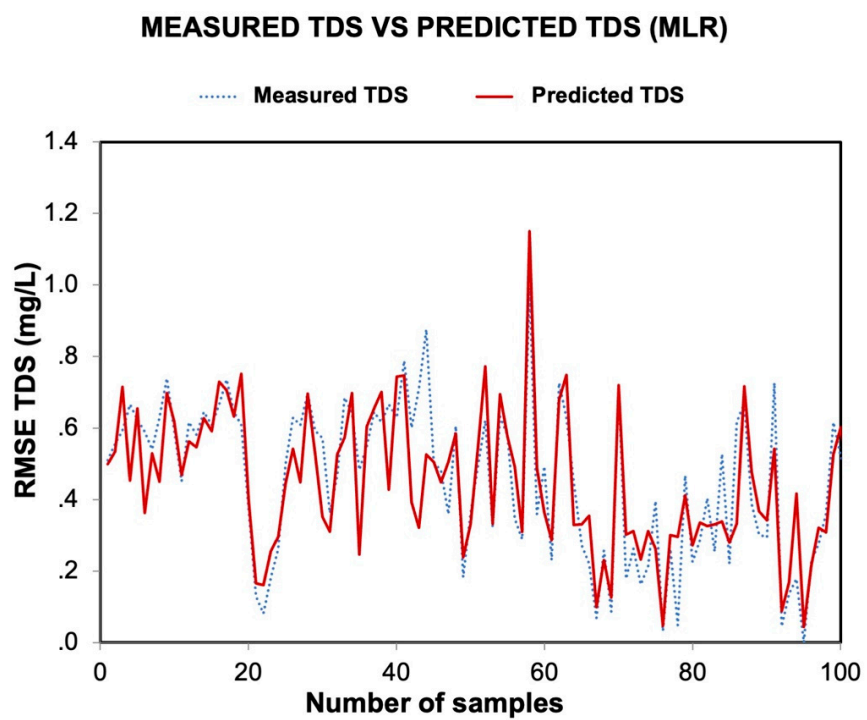


Figure S3 MLR RMSE result of Shahdara sub-division