



**केंद्रीय भूमि जल बोर्ड**  
जल संसाधन, नदी विकास और गंगा संरक्षण  
विभाग, जल शक्ति मंत्रालय

भारत सरकार  
**Central Ground Water Board**  
Department of Water Resources, River  
Development and Ganga Rejuvenation,  
Ministry of Jal Shakti  
Government of India

## **AQUIFER MAPPING AND MANAGEMENT OF GROUND WATER RESOURCES**

**THIRUPATHUR FIRKA, TIRUVANNAMALAI  
DISTRICT, TAMIL NADU**

दक्षिण पूर्वी तटीय क्षेत्र, चेन्नई  
South Eastern Coastal Region, Chennai

### **Management Plan-Thirupathur Firka, Vellore District.**

Area:	<b>117.59 Km</b>
Monsoon Rainfall :	802 mm
Stage of groundwater development :	<b>130.72 %</b>
Uncommitted surface runoff/flow :	<b>14.14 MCM.</b>
Total volume of Weathered zone available ( Rechargeable) :	<b>14.11 MCM. (8.00m thickness)</b>
Total volume of weathered zone available ( Rechargeable) :	<b>8.82 MCM (considering 5 m thickness).</b>
Area are suitable for recharge :	<b>95 % (As per integration studies)</b>
Quantity Rechargeable:	6.86 MCM
Effect on Water Level:	<b>4.09 m Rise</b>
Cost Involved:	<b>18.76 Crore</b>

**Management Plan-Thirupathur Firka, Vellore District.**

<b>Feasible Artificial Recharge &amp; Water Conservation structures/ activities</b>	<b>Tentative Design</b>	<b>quantity (in nos. or area in sq. m)</b>	<b>Total volume (cu.m )</b>	<b>Tentative unit cost (in Rs lakh)</b>	<b>Total tentative cost (in Rs lakh)</b>	<b>Expected Annual GW recharge (cu.m)</b>
<b>Recharge Structures/ Activities</b>						
Masonry Check dams ( 4 Fillings )	Crest- 10 -15 m; Height- 0.5 m to 1 m	10	300 (60%)	15.0	150	7200
Nala bunds / Gabion ( 4 Fillings)	Width: 5 to 15 m	20	150 (60%)	2.0	40	7200
Recharge shaft (ON ROAD SIDE)	(1.5 m dia. with bore well up to 17 m)	100	77.2(60%)	4.0	400	4632
Revival, repair of water bodies (3 fillings)	Shaft = 1.5 m dia x 2m h Recharge= area of the smaller tanks x 1.0 m	35	2500000* 1* 3 (60%)	28.0 (25+3)	980	4500000
Recharge shaft with the pond /tanks/canals (3 fillings)	Shaft = 3.0 m dia x 3m h Recharge=(20% of the total area of the big tanks)	10	600000* 1.0*3	5.0	50	1800000
Farm Pond (in ha) (4 filling)	( 30 m x 30m x 1.5 m) 900 sq.m or 0.1 ha	100 unit	1350x4	1	100	540000
				<b>Sub Total</b>	<b>1720</b>	6859032
<b>Water Conservation Activities</b>						
Sprinkler/ drip/ HDPE pipes for 300 ha select area	For 1 ha with 5 m interval HDPE pipe	100 ha		0.6 /ha	60	300000
<b>Sub total</b>					<b>1780</b>	
<b>Impact assessment and O &amp; M</b>						
Piezometers Up to 50 m bgl – 12 nos. @ 0.6 lakh ( Impact assessment to be carried out by the implementing agencies )					<b>7.20</b>	
<b>O &amp; M - 5 % of total cost of the scheme</b>					<b>89.00</b>	
<b>TOTAL</b>					<b>1876.20</b>	

**Tentative sites for proposed artificial recharge structures, Tirupathur firka**

<b>S.NO</b>	<b>LONGITUDE</b>	<b>LATITUDE</b>	<b>TYPE OF ARS</b>
1	78.55	12.50	NALA BUND
2	78.53	12.49	NALA BUND
3	78.59	12.45	NALA BUND
4	78.61	12.51	NALA BUND
5	78.62	12.51	NALA BUND
6	78.60	12.52	NALA BUND
7	78.62	12.51	NALA BUND
8	78.66	12.49	NALA BUND
9	78.66	12.49	NALA BUND
10	78.65	12.50	NALA BUND
11	78.66	12.47	NALA BUND
12	78.66	12.47	NALA BUND
13	78.66	12.46	NALA BUND
14	78.66	12.46	NALA BUND
15	78.64	12.45	NALA BUND
16	78.64	12.44	NALA BUND
17	78.63	12.44	NALA BUND
18	78.64	12.44	NALA BUND
19	78.64	12.43	NALA BUND
20	78.63	12.41	NALA BUND
21	78.61	12.51	CHECK DAM
22	78.63	12.50	CHECK DAM
23	78.63	12.50	CHECK DAM
24	78.65	12.49	CHECK DAM
25	78.66	12.49	CHECK DAM
26	78.65	12.47	CHECK DAM
27	78.65	12.47	CHECK DAM
28	78.64	12.45	CHECK DAM
29	78.63	12.44	CHECK DAM
30	78.63	12.43	CHECK DAM
31	78.55	12.52	RR CUM RS
32	78.55	12.50	RR CUM RS
33	78.56	12.51	RR CUM RS
34	78.57	12.51	RR CUM RS
35	78.57	12.51	RR CUM RS
36	78.56	12.50	RR CUM RS

37	78.55	12.49	RR CUM RS
38	78.54	12.49	RR CUM RS
39	78.59	12.51	RR CUM RS
40	78.59	12.52	RR CUM RS
41	78.58	12.53	RR CUM RS
42	78.63	12.49	RR CUM RS
43	78.63	12.50	RR CUM RS
44	78.62	12.48	RR CUM RS
45	78.62	12.47	RR CUM RS
46	78.61	12.47	RR CUM RS
47	78.60	12.47	RR CUM RS
48	78.60	12.45	RR CUM RS
49	78.61	12.44	RR CUM RS
50	78.58	12.45	RR CUM RS
51	78.61	12.43	RR CUM RS
52	78.63	12.44	RR CUM RS
53	78.64	12.42	RR CUM RS
54	78.65	12.46	RR CUM RS
55	78.64	12.45	RR CUM RS
56	78.63	12.45	RR CUM RS
57	78.62	12.46	RR CUM RS
58	78.66	12.49	RR CUM RS
59	78.63	12.47	RR CUM RS
60	78.57	12.48	RR CUM RS
61	78.54	12.51	RR CUM RS
62	78.56	12.52	RR CUM RS
63	78.56	12.50	RR CUM RS
64	78.57	12.47	RR CUM RS
65	78.59	12.47	RR CUM RS
66	78.58	12.50	RS
67	78.57	12.51	RS
68	78.55	12.51	RS
69	78.54	12.52	RS
70	78.53	12.52	RS
71	78.61	12.50	RS
72	78.61	12.47	RS
73	78.58	12.46	RS
74	78.60	12.47	RS
75	78.59	12.50	RS

