

For official use only
CGWB/SR/AR/2015-16/41



GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
CENTRAL GROUND WATER BOARD

PLAN ON
ARTIFICIAL RECHARGE TO GROUNDWATER AND
WATER CONSERVATION IN
YERRAGONDAPALEM MANDAL, PRAKASAM DISTRICT,
ANDHRA PRADESH STATE

SOUTHERN REGION
HYDERABAD
AUGUST-2016

PLAN ON
ARTIFICIAL RECHARGE TO GROUNDWATER AND
WATER CONSERVATION IN
YERRAGONDAPALEM MANDAL, PRAKASAM DISTRICT,
ANDHRA PRADESH STATE

CONTENTS

S.NO	TOPIC
1	INTRODUCTION
2	LOCATION
3	PHYSIOGRAPHY AND DRAINAGE
4	RAINFALL
5	LAND USE PATTERN
6	HYDROGEOLOGY
7	GROUND WATER LEVEL SCENARIO
8	DYNAMIC GROUND WATER RESOURCES
9	NEED FOR ARTIFICIAL RECHARGE AND CONSERVATION METHODS
10	JUSTIFICATION OF THE ARTIFICIAL RECHARGE PROJECT
11	AVAILABILITY OF SURPLUS, SURFACE WATER FOR ARTIFICIAL RECHARGE OR CONSERVATION
12	FEASIBLE ARTIFICIAL RECHARGE STRUCTURES
13	TENTATIVE COST ESTIMATES
14	TIME SCHEDULE

AT A GLANCE

Name of the Mandal	YERRAGONDAPALEM
District	PRAKASAM
State	ANDHRA PRADESH
Total Area sq.km.	390
Area suitable for Artificial Recharge (sq.km.)	390
Latitude and Longitude	15.898410 to 16.267520 and 78.917880 to 79.455860.
Average Annual Rainfall (mm)	732
Geology	Shales
Average Depth To Water Level (Decadal) (Pre Monsoon)	28.9
Average Depth To Water Level (Decadal) (Post Monsoon)	14.1
Ground Water Resources (2011)	
Annual Replenishable Ground Water Resources (MCM/yr)	19.80
Net Annual Ground Water Availability(MCM)/yr	17.82
Net Annual Ground Water Draft(MCM)/yr	27.29
Projected Demand for Domestic and Industrial Use(MCM)/yr	0.36
Stage of Ground Water Development (%)	153
Surface runoff available (MCM)/yr	50.65
Total Storage Created in the Mandal by Various Agencies (MCM)/yr	1.08
Artificial Recharge/Conservation Measures	
Recharge Structures Proposed (No.s)	Percolation Tanks: 85, Check Dams: 253 Farm ponds: 480, Recharge Shafts: 77
Improving Water use Efficiency	Micro Irrigation System: 2400 ha
Tentative Total Cost in Lakhs (Rs.)	4375.77
Expected Recharge/Savings (MCM)/yr	19.797

1. INTRODUCTION

Yerragondapalem is one of over-exploited mandal in Prakasham district, Andhra Pradesh State, which is economically backward and chronically drought affected. The mandal has 24 inhabited villages and 9 un inhabited villages with 16 gram panchayats.

2. LOCATION

The mandal lies between north latitudes 15.898410 to 16.267520 and between east longitudes 78.917880 to 79.455860. The mandal occupies the northwest part of the Prakasham district and is bounded on the north by Mahaboobnagar district, on the east by Pullalacheruvu mandal, on the south by Dornala mandal and west by Mahaboobnagar district. (Fig.1) The geographical area of the mandal is 390 sq.km.

3. PHYSIOGRAPHY AND DRAINAGE:

The area is drained by streams which are tributaries of Musi River. The streams are mostly ephemeral in nature. The drainage pattern is dendritic, rectangular to sub rectangular due to the influence of geological structures. (Fig.2)

4. RAINFALL

The average rainfall in the mandal is 732 mm. The rainfall during the South-west monsoon season i.e., June-September accounts for about 85% of the total rainfall.

5. LAND USE PATTERN

Out of the total geographical area of 390 sq.km, the area covered by forest is 814.68 sq.km and the net area sown is 80.14 sq.km. Barren and uncultivable land is 52.78 sq.km. The land for non agricultural use accounts for 23.99 sq.km.(Fig.3)

6. HYDROGEOLOGY

The area is underlain by Meta sedimentary formations comprising of Shales and Lime stones and slates of Pre-Cambrian age (Fig.4). Ground water occurs in weathered and fractured zones under water table and semi- confined conditions. The weathered zone thickness as per the GEC report is 30 m. The weathered zone has been extensively tapped by dug and dug cum bore wells up to 30 m depth, which are mostly dry now. Ground water occurs in the fractured rock formations up to 200 m bgl. However, the potential fractures are encountered between 50-100 m bgl. The cumulative yield varies from 2-5 lps.

7. GROUND WATER LEVEL SCENARIO

The depth to water level during the pre-monsoon and post-monsoon varies from 2 to 10 m. The average depth to water level (decadal) during pre and post monsoon is 28.9 and 14.1 m bgl respectively. The depth to water levels maps for pre and post monsoon period

(2014) are shown in Fig 5. The decadal mean water level trend during post monsoon is depicted in the Fig-6.

8. DYNAMIC GROUND WATER RESOURCES

The Ground water availability, Utilization and stage of Development in Yerragondapalem Mandal, Prakasham District is given in Table-1.

Table-1: Ground water resources of Yerragondapalem Mandal Prakasham District.

Annual Replenishable Ground water resources (MCM)	19.80
Net Annual Ground Water Availability(MCM)/yr	17.82
Net Annual Ground Water Draft(MCM)/yr	27.29
Projected Demand for Domestic and Industrial use up to 2025. (MCM)	0.36
Stage of Ground water development (%).	153
Whether notified or not with year of notification.	No

9. NEED FOR ARTIFICIAL RECHARGE AND CONSERVATION METHODS

The ground water withdrawal is more than the recharge with a stage of development above hundred percent. The long term water level trend mostly shows a declining trend and the water levels are very deep ranging upto 30 m. The sustainability of bore wells has become questionable as many bore wells are either drying up or have recorded reduced yields. There is no surface water irrigation facility in the area. All these factors indicate that there is an urgent need for artificial recharge and water conservation in the Mandal.

10. JUSTIFICATION OF THE ARTIFICIAL RECHARGE PROJECT

Yerragondapalem Mandal falls under high stage of ground water development i.e., 153 % and with sufficient amount of uncommitted surface runoff. The area is completely dependent on ground water for domestic, industrial and irrigation purposes. During the monsoons runoff quickly flows out of the area without natural recharge to ground water. It is necessary to apply artificial recharge techniques to allow more and more recharge through check dams, PTs, MPTs, farm ponds, recharge shafts to cope up with the withdrawal pattern and also to improve ground water situation through various interventions including on farm activities and micro irrigation systems (Sprinkler-Drip-HDPE).

11. AVAILABILITY OF SURPLUS, SURFACE WATER FOR ARTIFICIAL RECAHRGE OR CONSERVATION

The runoff was calculated by taking into account of normal rainfall of the mandal and corresponding runoff yield from Strangers table. The existing storage created by various artificial recharge structures constructed by the State Government, if any, was deducted for calculating the runoff yield to recommend new AR structures.

Total Geographical area (Sq.kms)	390
Hilly Area (Sq.kms)	0
Area suitable for Artificial Recharge (sq.km.)	390
Runoff Yield in MCM/yr.	50.65
Existing No. of Check Dams	95
Storage created MCM/yr.	0.67
Existing No. of Percolation Tanks	58
Storage created MCM/yr.	0.41
Total Existing Storage Created	1.08

12. FEASIBLE ARTIFICIAL RECHARGE STRUCTURES

Since the mandal is categorized as over exploited, there is an immediate need for improving ground water scenario and to ensure sustainability of ground water sources. It is also suggested to create additional storage capacity of surface water bodies which would result in supplementing irrigation thereby reducing the ground water draft. The run off available in the mandal has been assessed as 49.57 MCM/yr, which could be considered for further planning of artificial recharge. However, the number of artificial recharge structures feasible has been recommended in areas, by considering the utilizable yield, number of existing structures, land use, drainage pattern and also where the post monsoon water levels (decadal mean) are more than 5 m bgl., and or decadal trends are either falling or showing insignificant raising trend.

A) Check dams and Percolation Tanks

The area is covered by seasonal nalas – drains, which carry discharge during monsoon period debauched into the water bodies within a short duration. It is proposed to identify such nalas for construction of check dams/Percolation tank with recharge shafts, so as to harness ground water and to increase soil moisture content.

- The site selected for check dam/Percolation Tank should have sufficient thickness of permeable soils or weathered material to facilitate recharge of stored water within a short span of time. The water stored in these structures is mostly confined to the stream course and height is normally less than 2m.
- These are designed based on stream width and excess water is allowed to flow over the crest wall. In order to avoid scouring from excess runoff water cushions are provided on the downstream side. To harness maximum runoff in the stream, a series of such check dams can be constructed to have recharge on a regional scale.
- Considering the annual monsoon rainfall of 732 mm, sufficient rain water can be harnessed. This will improve ground water regime as well as delaying the instant flow into the main river.
- The flow in these seasonal rivers can be sustained up to about 2 to 3 months after monsoon.

- Recharge trenches can also be constructed along upstream side of the check dam/Percolation Tank in the impoundment area for enhancing the ground water recharge rate.

Thus, a total of 253 **Check dams and 85 Percolation tanks** are recommended.

B). Recharge Shafts

The existing check dams and percolation tanks lose their storage capacity as well as recharge capacity due to siltation. Hence, Recharge shafts are recommended in the existing Check dams and Percolation tanks to enhance the ground water recharge. During the heavy downpours, there will be sufficient accumulation of runoff, which can also effectively be utilized for recharge by constructing recharge shafts. Hence, it is proposed to construct 48 and 29 recharge shafts of 165 mm dia with 30 m depth in the existing check dams and percolation tanks respectively.

C). Farm Ponds

A farm pond is a large dug out in the earth, usually square or rectangular in shape, which harvests rain water and stores it for future use. It has an inlet to regulate inflow and an outlet to discharge excess water. The pond is surrounded by a small bund, which prevents erosion on the banks of the pond. The size and depth depend on the amount of land available; the type of soil water from the farm pond is conveyed to the fields manually, by pumping, or by both methods.

Advantages of Farm Ponds

- They provide water to start growing crops, without waiting for rain to fall.
- They provide irrigation water during dry spells between rainfalls. This increases the yield, the number of crops in one year, and the diversity of crops that can be grown.
- Bunds can be used to raise vegetables and fruit trees, thus supplying the farm household with an additional source of income and of nutritious food.
- Farmers are able to apply adequate farm inputs and perform farming operations at the appropriate time, thus increasing their productivity and their confidence in farming.
- They check soil erosion and minimize siltation of waterways and reservoirs.
- They supplies water for domestic purposes and livestock.
- They promote fish rearing.
- They recharge the ground water.
- They improve drainage.

- The excavated earth has a very high value and can be used to enrich soil in the fields, levelling land, and constructing farm roads.

As per the Land use classification, majority of the area is covered by the agricultural field. Hence, it is proposed to construct 480 farm ponds in 29 villages of the Mandal @ 20 farm ponds in each village.

D). Micro Irrigation System (Sprinkler /drip/HDPE pipes)

Micro irrigation is defined as the frequent application of small quantities of water directly above and below the soil surface; usually as discrete drops, continuous drops or tiny streams through emitters placed along a water delivery line.

In flood/furrow irrigation method more than 50% of applied water is wasted through seepage to deeper level, localized inundation causes loss through evaporation and it leaches out the nutrients from the plant. While through drip & sprinkler irrigation wastages of irrigational water could be minimized. The studies on different crops, has revealed that irrigation water is saved drastically. The conveyance losses (mainly seepage & evaporation) can be saved up to 25 to 40% through utilization of HDPE pipes. Initially the scheme is proposed to be implemented in worst affected areas showing deepest water levels and significant declining trends. It is proposed to take up micro irrigation system in 2900 ha @ 100 ha per village.

13. TENTATIVE COST ESTIMATES (YERRAGONDAPALEM MANDAL)

S.No.	Feasible Artificial Recharge & Water Conservation structures/	No. of Structures/ Quantity	Total Volume (MCM)	Tentative unit cost (in Rs lakh)	Total tentative cost (in Rs Lakh)	Expected Annual GW recharge/savings (MCM)
1	Proposed Masonry Check dams Crest Length -10-15 m, Height-1-2 m) (0.007 MCM*4 fillings)	253	7.084	5	1265	5.313
2	Recharge shaft in Check dam (50% of the existing Check dams)	48	0.528	0.5	24	0.528
3	Proposed Percolation Tanks (100*100*2.5)* 4 fillings)	85	8.5	15	1275	6.375
4	Renovation Desilting, Repairs and installation of Recharge Shafts in existing PTS (50% of the existing PTS)	29	0.319	1	29	0.319
5	Proposed Farm Pond (6 filling) 5*5*1.5 dimension @ 20 farm ponds per each village	480	0.06912	0.25	120	0.062208
6	Proposed Sprinkler/drip/HDPE pipes for 100 ha in each village	2400	14.4	0.6	1440	7.2
7	Proposed Piezometers up to 50 mbgl @ one PZ per Village	24	0	0.6	14.4	0
8 (i)	Total (No. of AR Structures)	919	16.50		2727.4	12.597
8 (ii)	Total (ha)	2400			1440	7.2
	Total (8(i) + 8 (ii))				4167.4	19.797
9	Impact Assessment & O & M -5 % of Total cost of the Scheme				208.37	
	Grand Total				4375.77	

*(Expected annual GW Recharge/Savings MCM - CDS& PTS: 75%, Farm ponds - 90%, Sprinklers-50%, Recharge shafts in existing CDS and PTS-100%)

Note: The type, number and cost of structure may vary according to site, after the ground truth verification.

14. TIME SCHEDULE

Steps	Quarters							
	1st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th
Identification of line department/implementing agency and preparation of DPR								
Approval of Scheme and releases of sanction of funds								
Implementation of ARS								

Phase = one quarter or 3 months or equivalent to financial quarter

A). Operation and Maintenance

In all projects impact assessment has to be carried out to ensure that project is economically viable, socially equitable and environmentally sustainable by inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. Accordingly it is proposed to have impact assessment as well as operation & Maintenance at the rate of 5% of the total cost of the project for 5 years from the completion of artificial recharge project.

B). Expected Benefits

The benefits of the project are:

1. The implementation of the project would result in additional recharge/Ground water savings to the tune of 19.797 MCM.
2. Ground water recharge will help in arresting the rapid decline in ground water resources and will also ensure improvement in quality of ground water by dilution.
3. Proposed structures and measures will also enhance the ground water potential and would ensure sustainability of ground water resources. It is estimated that the stage of ground water development may likely to be reduced from the present 153% to 72% (81%)
4. It will also help in controlling soil erosion.

Acknowledgements

The data received from the Director Ground Water Department Andhra Pradesh in respect of the basic inputs is duly acknowledged. The information on existing Artificial Recharge Structures have been taken from the EMUSTER, Department of Rural Development, Government of AP.

EXISTING ARTIFICIAL RECHARGE STRUCTURES
YERRAGONDAPELEM MANDAL, PRAKASAM DISTRICT, AP

S.no	Gram Panchayat	Habitation	Structure Type	Longitude	Latitude	Scheme
1	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2746	15.9321	NREGS
2	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2826	15.9243	NREGS
3	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2697	15.9346	NREGS
4	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2676	15.9377	NREGS
5	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2536	15.9533	NREGS
6	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2595	15.9433	NREGS
7	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2697	15.9323	NREGS
8	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2731	15.9652	NREGS
9	Ammanigudipadu	Ammanigudipadu	Check Dam	79.2755	15.9596	NREGS
10	Narasaya palem	Narasaya Palem	Check Dam	79.3486	16.0106	NREGS
11	Vadampalli	Vadampalli	Check Dam	79.3013	15.9233	NREGS
12	Vadampalli	Vadampalli	Check Dam	79.2851	15.9215	NREGS
13	Vadampalli	Vadampalli	Check Dam	79.2853	15.9220	NREGS
14	Mogullapalli	Mogullapalli	Check Dam	79.2877	16.0671	NREGS
15	Mogullapalli	Mogullapalli	Check Dam	79.2683	16.0787	NREGS
16	Mogullapalli	Mogullapalli	Check Dam	79.2681	16.0742	NREGS
17	Mogullapalli	Regullapalli	Check Dam	79.2637	16.0836	NREGS
18	Gollavidipi	Kotha Gollavidipi	Check Dam	79.3372	15.9563	NREGS
19	Gurije palli	Gurije Palli	Check Dam	79.3041	15.9582	NREGS
20	Gurije palli	Gurije Palli	Check Dam	79.3163	15.9625	NREGS
21	Gurije palli	Sarvaya Palem	Check Dam	79.3435	15.9619	NREGS
22	Gurije palli	Sarvaya Palem	Check Dam	79.3411	15.9706	NREGS
23	Gurije palli	Sarvaya Palem	Check Dam	79.3338	15.9573	NREGS
24	Gurije palli	Sarvaya Palem	Check Dam	79.3328	15.9577	NREGS
25	Gurije palli	Sarvaya Palem	Check Dam	79.3435	15.9625	NREGS
26	Gurrapusala	Gangupalli	Check Dam	79.2308	15.9378	NREGS
27	Gurrapusala	Gurrapusala	Check Dam	79.2278	15.9574	NREGS
28	Gurrapusala	Gurrapusala	Check Dam	79.2272	15.9564	NREGS
29	Gurrapusala	Gurrapusala	Check Dam	79.2250	15.9554	NREGS
30	Gurrapusala	Gurrapusala	Check Dam	79.2272	15.9671	NREGS
31	Gurrapusala	Gurrapusala	Check Dam	79.2165	15.9529	NREGS
32	Gurrapusala	Gurrapusala	Check Dam	79.2291	15.9620	NREGS
33	Gurrapusala	Gurrapusala	Check Dam	79.2303	15.9618	NREGS
34	Gurrapusala	Gurrapusala	Check Dam	79.2282	15.9670	NREGS
35	Boyala palli	Boyala Palli	Check Dam	79.3177	15.9856	NREGS
36	Boyala palli	Boyala Palli	Check Dam	79.3154	15.9875	NREGS
37	Boyala palli	Boyala Palli	Check Dam	79.2958	15.9573	NREGS
38	Boyala palli	Boyala Palli	Check Dam	79.3086	15.9623	NREGS
39	Boyala palli	Boyala Palli	Check Dam	79.3164	15.9625	NREGS
40	Tamadapalli	Battuvani Palli	Check Dam	79.2077	15.9237	NREGS
41	Tamadapalli	Battuvani Palli	Check Dam	79.2134	15.9238	NREGS

42	Tamadapalli	Tamadapalli	Check Dam	79.1824	15.9341	NREGS
43	Tamadapalli	Tamadapalli	Check Dam	79.1834	15.9340	NREGS
44	Tamadapalli	Tamadapalli	Check Dam	79.1856	15.9422	NREGS
45	Gangapalem	Ayyambhotla Palli	Check Dam	79.3508	16.0094	NREGS
46	Gangapalem	Ayyambhotla Palli	Check Dam	79.3570	16.0087	NREGS
47	Gangapalem	Ayyambhotla Palli	Check Dam	79.3645	16.0142	NREGS
48	Gangapalem	Gangapalem	Check Dam	79.3609	15.9963	NREGS
49	Gangapalem	Gangapalem	Check Dam	79.3702	15.9851	NREGS
50	Kolukula	Chennarayuni Palli	Check Dam	79.2194	15.9911	NREGS
51	Kolukula	China Kolukula	Check Dam	79.2157	15.9975	NREGS
52	Kolukula	Kolukula	Check Dam	79.2390	16.0258	NREGS
53	Kolukula	Kolukula	Check Dam	79.2382	16.0241	NREGS
54	Kolukula	Kolukula	Check Dam	79.2488	16.0222	NREGS
55	Kolukula	Kolukula	Check Dam	79.2283	16.0130	NREGS
56	Ganjivari palli	Gandhi Nagar	Check Dam	79.1811	16.0407	NREGS
57	Ganjivari palli	Ganjivari Palli	Check Dam	79.1997	16.0361	NREGS
58	Ganjivari palli	Jangamvari Palli	Check Dam	79.1957	16.0282	NREGS
59	Mellampalli	Mellampalli	Check Dam	79.3192	16.0499	NREGS
60	Mellampalli	Pallekunta Thanda	Check Dam	79.2999	16.0685	NREGS
61	Veerabhadra puram	Gaddamuri Palli	Check Dam	79.2456	16.0447	NREGS
62	Veerabhadra puram	Yallareddy Palli	Check Dam	79.2428	16.0742	NREGS
63	Veerabhadra puram	Yallareddy Palli	Check Dam	79.2598	16.0585	NREGS
64	Venkatadri palem	Akkamma Gudem	Check Dam	79.2007	16.0503	NREGS
65	Venkatadri palem	Venkatadri Palem	Check Dam	79.2157	16.0493	NREGS
66	Venkatadri palem	Venkatadri Palem	Check Dam	79.2194	16.0494	NREGS
67	Venkatadri palem	Venkatadri Palem	Check Dam	79.2135	16.0503	NREGS
68	Venkatadri palem	Venkatadri Palem	Check Dam	79.2230	16.0595	NREGS
69	Venkatadri palem	Venkatadri Palem	Check Dam	79.2221	16.0631	NREGS
70	Venkatadri palem	Venkatadri Palem	Check Dam	79.2228	16.0489	NREGS
71	Venkatadri palem	Venkatadri Palem	Check Dam	79.2261	16.0536	NREGS
72	Venkatadri palem	Venkatadri Palem	Check Dam	79.2290	16.0556	NREGS
73	Venkatadri palem	Venkatadri Palem	Check Dam	79.2125	16.0507	NREGS
74	Venkatadri palem	Venkatadri Palem	Check Dam	79.2281	16.0479	NREGS
75	Gollavidipi	Kotha Gollavidipi	Check Dam	79.3372	15.9563	IWMP
76	Mellampalli	Mellampalli	Check Dam	79.3192	16.0499	IWMP
77	Mellampalli	Pallekunta Thanda	Check Dam	79.2999	16.0685	IWMP
78	Veerabhadra puram	Yallareddy Palli	Check Dam	79.2428	16.0742	IWMP
79	Veerabhadra puram	Yallareddy Palli	Check Dam	79.2598	16.0585	IWMP
80	Venkatadri palem	Venkatadri Palem	Check Dam	79.2157	16.0493	IWMP
81	Venkatadri palem	Venkatadri Palem	Check Dam	79.2194	16.0494	IWMP
82	Venkatadri palem	Venkatadri Palem	Check Dam	79.2135	16.0503	IWMP
83	Venkatadri palem	Venkatadri Palem	Check Dam	79.2230	16.0595	IWMP
84	Venkatadri palem	Venkatadri Palem	Check Dam	79.2221	16.0631	IWMP
85	Venkatadri palem	Venkatadri Palem	Check Dam	79.2228	16.0489	IWMP

86	Venkatadri palem	Venkatadri Palem	Check Dam	79.2261	16.0536	IWMP
87	Venkatadri palem	Venkatadri Palem	Check Dam	79.2290	16.0556	IWMP
88	Venkatadri palem	Venkatadri Palem	Check Dam	79.2125	16.0507	IWMP
89	Venkatadri palem	Venkatadri Palem	Check Dam	79.2281	16.0479	IWMP
90	Ammanigudipadu	Ammanigudipadu	Check Wall	79.2921	15.9565	NREGS
91	Narasaya palem	Narasaya Palem	Check Wall	79.3507	16.0094	NREGS
92	Gurrapusala	Gurrapusala	Check Wall	79.2290	15.9651	NREGS
93	Boyala palli	China Boyala Palli	Check Wall	79.3285	15.9780	NREGS
94	Boyala palli	China Boyala Palli	Check Wall	79.3307	15.9793	NREGS
95	Ganjivari palli	Ganjivari Palli	Check Wall	79.2063	16.0328	NREGS
96	Ammanigudipadu	Ammanigudipadu	MPT	79.2498	15.9585	NREGS
97	Ammanigudipadu	Ammanigudipadu	MPT	79.2650	15.9271	NREGS
98	Narasaya palem	Narasaya Palem	MPT	79.3465	16.0092	NREGS
99	Vadampalli	Vadampalli	MPT	79.2896	15.9186	NREGS
100	Vadampalli	Vadampalli	MPT	79.2957	15.9156	NREGS
101	Gurije palli	Sarvaya Palem	MPT	79.3306	15.9644	NREGS
102	Gurrapusala	Gangupalli	MPT	79.2063	15.9466	NREGS
103	Gurrapusala	Gangupalli	MPT	79.2194	15.9446	NREGS
104	Gurrapusala	Gurrapusala	MPT	79.2172	15.9542	NREGS
105	Boyala palli	China Boyala Palli	MPT	79.3246	15.9651	NREGS
106	Gangapalem	Ayyambhotla Palli	MPT	79.3572	16.0119	NREGS
107	Gangapalem	Gangapalem	MPT	79.3697	15.9824	NREGS
108	Gangapalem	Gangapalem	MPT	79.3516	15.9901	NREGS
109	Kolukula	Chennarayuni Palli	MPT	79.2149	15.9869	NREGS
110	Kolukula	China Kolukula	MPT	79.2165	15.9975	NREGS
111	Kolukula	Kolukula	MPT	79.2402	16.0277	NREGS
112	Kolukula	Kolukula	MPT	79.2349	16.0259	NREGS
113	Kolukula	Kolukula	MPT	79.2285	16.0171	NREGS
114	Kolukula	Kolukula	MPT	79.2147	16.0072	NREGS
115	Yerragondapalem	Pandivari Palli	MPT	79.2705	16.0545	NREGS
116	Ganjivari palli	Ganjivari Palli	MPT	79.1992	16.0377	NREGS
117	Venkatadri palem	Akkamma Gudem	MPT	79.2011	16.0516	NREGS
118	Venkatadri palem	Venkatadri Palem	MPT	79.2120	16.0527	NREGS
119	Venkatadri palem	Venkatadri Palem	MPT	79.2220	16.0538	NREGS
120	Yerragondapalem	Pandivari Palli	MPT	79.2705	16.0545	IWMP
121	Venkatadri palem	Venkatadri Palem	MPT	79.2120	16.0527	IWMP
122	Venkatadri palem	Venkatadri Palem	MPT	79.2220	16.0538	IWMP
123	Narasaya palem	Narasaya Palem	PT	79.3372	15.9986	NREGS
124	Narasaya palem	Narasaya Palem	PT	79.3470	16.0106	NREGS
125	Narasaya palem	Narasaya Palem	PT	79.3547	16.0033	NREGS
126	Narasaya palem	Narasaya Palem	PT	79.3438	16.0146	NREGS
127	Narasaya palem	Narasaya Palem	PT	79.3282	16.0022	NREGS
128	Narasaya palem	Narasaya Palem	PT	79.3307	15.9907	NREGS
129	Mogullapalli	Mogullapalli	PT	79.2692	16.0865	NREGS

130	Mogullapalli	Regullapalli	PT	79.2656	16.0861	NREGS
131	Gurije palli	Gurije Palli	PT	79.2978	15.9540	NREGS
132	Gurije palli	Gurije Palli	PT	79.3044	15.9568	NREGS
133	Gurije palli	Gurije Palli	PT	79.3113	15.9615	NREGS
134	Gurije palli	Gurije Palli	PT	79.3393	15.9448	NREGS
135	Gurije palli	Gurije Palli	PT	79.3251	15.9353	NREGS
136	Gurije palli	Sarvaya Palem	PT	79.3404	15.9726	NREGS
137	Gurije palli	Sarvaya Palem	PT	79.3418	15.9672	NREGS
138	Gurrapusala	Gangupalli	PT	79.2265	15.9348	NREGS
139	Gurrapusala	Gangupalli	PT	79.2121	15.9462	NREGS
140	Gurrapusala	Gangupalli	PT	79.2142	15.9369	NREGS
141	Gurrapusala	Gangupalli	PT	79.2064	15.9457	NREGS
142	Gurrapusala	Gurrapusala	PT	79.2283	15.9579	NREGS
143	Gurrapusala	Gurrapusala	PT	79.2276	15.9567	NREGS
144	Gurrapusala	Gurrapusala	PT	79.2146	15.9522	NREGS
145	Boyala palli	Boyala Palli	PT	79.3214	15.9714	NREGS
146	Boyala palli	China Boyala Palli	PT	79.3278	15.9753	NREGS
147	Boyala palli	China Boyala Palli	PT	79.3292	15.9793	NREGS
148	Boyala palli	China Boyala Palli	PT	79.3271	15.9752	NREGS
149	Ganjivari palli	Ganjivari Palli	PT	79.1928	16.0419	NREGS
150	Mellampalli	Mellampalli	PT	79.3146	16.0504	NREGS
151	Venkatadri palem	Venkatadri Palem	PT	79.2168	16.0607	NREGS
152	Mellampalli	Mellampalli	PT	79.3146	16.0504	IWMP
153	Venkatadri palem	Venkatadri Palem	PT	79.2168	16.0607	IWMP

PROPOSED ARTIFICIAL RECHARGE STRUCTURES
YERRAGONDAPALEM MANDAL, PRAKASAM DISTRICT, AP

1	Yerragondapalem	16.1624	78.9935	Checkdam
2	Yerragondapalem	16.1651	79.0117	Checkdam
3	Yerragondapalem	16.1611	79.0373	Checkdam
4	Yerragondapalem	16.1647	79.0453	Checkdam
5	Yerragondapalem	16.1609	79.0639	Checkdam
6	Yerragondapalem	16.1588	79.0765	Checkdam
7	Yerragondapalem	16.1640	79.0917	Checkdam
8	Yerragondapalem	16.1716	78.9798	Checkdam
9	Yerragondapalem	16.1591	78.9829	Checkdam
10	Yerragondapalem	16.1752	78.9974	Checkdam
11	Yerragondapalem	16.1402	78.9419	Checkdam
12	Yerragondapalem	16.1382	78.9277	Checkdam
13	Yerragondapalem	16.1206	78.9308	Checkdam
14	Yerragondapalem	16.1641	78.9158	Checkdam
15	Yerragondapalem	16.1755	79.0336	Checkdam
16	Yerragondapalem	16.1850	79.0242	Checkdam
17	Yerragondapalem	16.1956	79.0201	Checkdam
18	Yerragondapalem	16.1836	79.0458	Checkdam
19	Yerragondapalem	16.1696	79.0684	Checkdam
20	Yerragondapalem	16.1670	79.1073	Checkdam
21	Yerragondapalem	16.1802	79.1158	Checkdam
22	Yerragondapalem	16.2056	79.1186	Checkdam
23	Yerragondapalem	16.1926	79.0437	Checkdam
24	Yerragondapalem	16.1910	79.0978	Checkdam
25	Yerragondapalem	16.2060	79.1442	Checkdam
26	Yerragondapalem	16.2062	79.1674	Checkdam
27	Yerragondapalem	16.1933	79.1549	Checkdam
28	Yerragondapalem	16.2070	79.1896	Checkdam
29	Yerragondapalem	16.1993	79.1910	Checkdam
30	Yerragondapalem	16.1828	79.1719	Checkdam
31	Yerragondapalem	16.1781	79.1434	Checkdam
32	Yerragondapalem	16.1796	79.1663	Checkdam
33	Yerragondapalem	16.1796	79.1775	Checkdam

34	Yerragondapalem	16.1643	79.1869	Checkdam
35	Yerragondapalem	16.1534	79.1362	Checkdam
36	Yerragondapalem	16.1590	79.0897	Checkdam
37	Yerragondapalem	16.1428	79.0858	Checkdam
38	Yerragondapalem	16.1238	79.0653	Checkdam
39	Yerragondapalem	16.1519	79.0492	Checkdam
40	Yerragondapalem	16.1535	79.0317	Checkdam
41	Yerragondapalem	16.1564	79.0089	Checkdam
42	Yerragondapalem	16.1080	78.9473	Checkdam
43	Yerragondapalem	16.1109	78.9351	Checkdam
44	Yerragondapalem	16.1060	78.9627	Checkdam
45	Yerragondapalem	16.0965	78.9701	Checkdam
46	Yerragondapalem	16.1039	78.9936	Checkdam
47	Yerragondapalem	16.1060	79.0182	Checkdam
48	Yerragondapalem	16.0883	78.9752	Checkdam
49	Yerragondapalem	16.0767	78.9810	Checkdam
50	Yerragondapalem	16.0805	78.9421	Checkdam
51	Yerragondapalem	16.0778	78.9315	Checkdam
52	Yerragondapalem	16.0690	78.9452	Checkdam
53	Yerragondapalem	16.0721	78.9581	Checkdam
54	Yerragondapalem	16.0570	78.9538	Checkdam
55	Yerragondapalem	16.0432	78.9611	Checkdam
56	Yerragondapalem	16.0378	78.9312	Checkdam
57	Yerragondapalem	16.0075	78.9170	Checkdam
58	Yerragondapalem	16.0144	78.9667	Checkdam
59	Yerragondapalem	16.0476	78.9940	Checkdam
60	Yerragondapalem	16.0749	79.0078	Checkdam
61	Yerragondapalem	16.0879	79.0236	Checkdam
62	Yerragondapalem	16.1084	79.0752	Checkdam
63	Yerragondapalem	16.1322	79.0876	Checkdam
64	Yerragondapalem	16.1363	79.0312	Checkdam
65	Yerragondapalem	16.1110	78.9909	Checkdam
66	Yerragondapalem	16.1148	79.0161	Checkdam
67	Yerragondapalem	16.1166	78.9660	Checkdam
68	Yerragondapalem	16.1162	79.0891	Checkdam

69	Yerragondapalem	16.0785	79.0555	Checkdam
70	Yerragondapalem	16.1007	79.0261	Checkdam
71	Yerragondapalem	16.0900	79.1085	Checkdam
72	Yerragondapalem	16.0975	79.1254	Checkdam
73	Yerragondapalem	16.0765	79.0913	Checkdam
74	Yerragondapalem	16.0590	79.0722	Checkdam
75	Yerragondapalem	16.0453	79.0289	Checkdam
76	Yerragondapalem	16.0713	79.0380	Checkdam
77	Yerragondapalem	16.0646	78.9919	Checkdam
78	Yerragondapalem	16.1404	79.1589	Checkdam
79	Yerragondapalem	16.1571	79.2195	Checkdam
80	Yerragondapalem	16.1105	79.2463	Checkdam
81	Yerragondapalem	16.0773	79.2300	Checkdam
82	Yerragondapalem	16.1172	79.2941	Checkdam
83	Yerragondapalem	16.1441	79.1300	Checkdam
84	Yerragondapalem	16.0292	79.1756	Checkdam
85	Yerragondapalem	15.9874	79.1987	Checkdam
86	Yerragondapalem	15.9803	79.1925	Checkdam
87	Yerragondapalem	15.9508	79.2013	Checkdam
88	Yerragondapalem	15.9675	79.1574	Checkdam
89	Yerragondapalem	15.9762	79.1607	Checkdam
90	Yerragondapalem	16.0010	79.1678	Checkdam
91	Yerragondapalem	16.0259	79.1630	Checkdam
92	Yerragondapalem	16.0239	79.1375	Checkdam
93	Yerragondapalem	16.0317	79.1600	Checkdam
94	Yerragondapalem	16.0182	79.1017	Checkdam
95	Yerragondapalem	16.0164	79.0822	Checkdam
96	Yerragondapalem	16.0593	79.1200	Checkdam
97	Yerragondapalem	16.0412	79.0989	Checkdam
98	Yerragondapalem	16.0063	79.0537	Checkdam
99	Yerragondapalem	16.0010	78.9835	Checkdam
100	Yerragondapalem	16.0354	79.0880	Checkdam
101	Yerragondapalem	16.1240	79.2552	Checkdam
102	Yerragondapalem	16.1107	79.2284	Checkdam
103	Yerragondapalem	16.0946	79.2670	Checkdam

104	Yerragondapalem	16.1016	79.3121	Checkdam
105	Yerragondapalem	16.0817	79.3192	Checkdam
106	Yerragondapalem	16.0618	79.3146	Checkdam
107	Yerragondapalem	16.0826	79.2482	Checkdam
108	Yerragondapalem	16.0819	79.2422	Checkdam
109	Yerragondapalem	16.0803	79.1848	Checkdam
110	Yerragondapalem	16.0777	79.1762	Checkdam
111	Yerragondapalem	16.0756	79.1481	Checkdam
112	Yerragondapalem	16.1496	79.1910	Checkdam
113	Yerragondapalem	16.0696	79.1209	Checkdam
114	Yerragondapalem	16.1321	79.1198	Checkdam
115	Yerragondapalem	16.1559	79.1747	Checkdam
116	Yerragondapalem	16.1093	79.2059	Checkdam
117	Yerragondapalem	16.0807	79.1958	Checkdam
118	Yerragondapalem	16.0931	79.1367	Checkdam
119	Yerragondapalem	16.0802	79.1169	Checkdam
120	Yerragondapalem	16.1485	79.1764	Checkdam
121	Yerragondapalem	16.1465	79.2153	Checkdam
122	Yerragondapalem	16.1451	79.2385	Checkdam
123	Yerragondapalem	16.1184	79.2864	Checkdam
124	Yerragondapalem	16.1005	79.2912	Checkdam
125	Yerragondapalem	16.0987	79.2580	Checkdam
126	Yerragondapalem	16.1063	79.2414	Checkdam
127	Yerragondapalem	16.2173	79.1023	Checkdam
128	Yerragondapalem	16.2235	79.0651	Checkdam
129	Yerragondapalem	16.2291	79.0471	Checkdam
130	Yerragondapalem	16.2180	79.0113	Checkdam
131	Yerragondapalem	16.0039	79.1237	Checkdam
132	Yerragondapalem	15.9915	79.1006	Checkdam
133	Yerragondapalem	16.1826	78.9897	Checkdam
134	Yerragondapalem	16.1240	79.1487	Checkdam
135	Yerragondapalem	16.1139	79.1747	Checkdam
136	Yerragondapalem	16.1358	79.1904	Checkdam
137	Yerragondapalem	16.1231	79.2078	Checkdam
138	Yerragondapalem	16.0568	79.1521	Checkdam

139	Yerragondapalem	16.0463	79.1060	Checkdam
140	Yerragondapalem	16.0189	79.1064	Checkdam
141	Yerragondapalem	16.0193	79.1251	Checkdam
142	Yerragondapalem	16.0233	79.1444	Checkdam
143	Yerragondapalem	16.0172	79.1413	Checkdam
144	Yerragondapalem	16.1090	79.0959	Checkdam
145	Yerragondapalem	16.1264	79.1136	Checkdam
146	Yerragondapalem	16.0870	79.0498	Checkdam
147	Yerragondapalem	16.1070	79.0097	Checkdam
148	Yerragondapalem	16.0167	79.0535	Checkdam
149	Yerragondapalem	16.0316	79.0721	Checkdam
150	Yerragondapalem	16.0344	79.0777	Checkdam
151	Yerragondapalem	16.0207	79.0860	Checkdam
152	Yerragondapalem	16.0186	79.0155	Checkdam
153	Yerragondapalem	16.0343	78.9902	Checkdam
154	Yerragondapalem	16.0421	78.9759	Checkdam
155	Yerragondapalem	16.0069	78.9873	Checkdam
156	Yerragondapalem	16.0064	79.0405	Checkdam
157	Yerragondapalem	15.9995	79.0236	Checkdam
158	Yerragondapalem	16.0002	79.0131	Checkdam
159	Yerragondapalem	15.9749	79.0764	Checkdam
160	Yerragondapalem	15.9889	79.0803	Checkdam
161	Yerragondapalem	15.9860	79.1783	Checkdam
162	Yerragondapalem	15.9592	79.1927	Checkdam
163	Yerragondapalem	15.9586	79.1762	Checkdam
164	Yerragondapalem	16.1554	79.1967	Checkdam
165	Yerragondapalem	16.1395	79.2343	Checkdam
166	Yerragondapalem	16.1418	79.2136	Checkdam
167	Yerragondapalem	16.1146	79.2038	Checkdam
168	Yerragondapalem	16.1091	79.1900	Checkdam
169	Yerragondapalem	16.0918	79.1827	Checkdam
170	Yerragondapalem	16.0851	79.1728	Checkdam
171	Yerragondapalem	16.0803	79.1488	Checkdam
172	Yerragondapalem	16.0843	79.1374	Checkdam
173	Yerragondapalem	16.0716	79.1129	Checkdam

174	Yerragondapalem	16.0556	79.1011	Checkdam
175	Yerragondapalem	16.1725	78.9679	Checkdam
176	Yerragondapalem	16.1613	79.0524	Checkdam
177	Yerragondapalem	16.1400	78.9480	Checkdam
178	Yerragondapalem	16.0457	79.0467	Checkdam
179	Yerragondapalem	16.0731	79.0565	Checkdam
180	Yerragondapalem	16.0641	79.0271	Checkdam
181	Yerragondapalem	16.0795	79.0255	Checkdam
182	Yerragondapalem	15.9998	79.1915	Checkdam
183	Yerragondapalem	16.0069	79.1592	Checkdam
184	Yerragondapalem	15.9747	79.1286	Checkdam
185	Yerragondapalem	16.1274	79.1867	Checkdam
186	Yerragondapalem	16.1056	79.1659	Checkdam
187	Yerragondapalem	16.0967	79.1416	Checkdam
188	Yerragondapalem	16.1032	79.1288	Checkdam
189	Yerragondapalem	16.1121	79.2792	Checkdam
190	Yerragondapalem	16.1071	79.2807	Checkdam
191	Yerragondapalem	16.0805	79.2210	Checkdam
192	Yerragondapalem	16.0601	79.3031	Checkdam
193	Yerragondapalem	16.2259	79.0077	Checkdam
194	Yerragondapalem	16.2099	78.9911	Checkdam
195	Yerragondapalem	16.2050	78.9894	Checkdam
196	Yerragondapalem	16.1698	79.0954	Checkdam
197	Yerragondapalem	16.1878	79.1154	Checkdam
198	Yerragondapalem	16.1992	79.1426	Checkdam
199	Yerragondapalem	16.1686	79.1643	Checkdam
200	Yerragondapalem	16.1256	79.1278	Checkdam
201	Yerragondapalem	16.1272	79.1624	Checkdam
202	Yerragondapalem	16.1423	79.1691	Checkdam
203	Yerragondapalem	16.0291	79.1137	Checkdam
204	Yerragondapalem	16.0317	79.1355	Checkdam
205	Yerragondapalem	16.0556	79.1388	Checkdam
206	Yerragondapalem	16.0718	79.1044	Checkdam
207	Yerragondapalem	16.0220	79.0313	Checkdam
208	Yerragondapalem	16.0235	79.0540	Checkdam

209	Yerragondapalem	16.0340	78.9837	Checkdam
210	Yerragondapalem	16.0409	78.9592	Checkdam
211	Yerragondapalem	16.0353	78.9369	Checkdam
212	Yerragondapalem	16.0147	78.9280	Checkdam
213	Yerragondapalem	16.0118	79.0634	Checkdam
214	Yerragondapalem	16.0017	79.1156	Checkdam
215	Yerragondapalem	15.9833	79.1421	Checkdam
216	Yerragondapalem	16.0027	79.1788	Checkdam
217	Yerragondapalem	16.2132	79.0713	Checkdam
218	Yerragondapalem	16.2108	79.0832	Checkdam
219	Yerragondapalem	16.2188	79.1257	Checkdam
220	Yerragondapalem	16.1873	79.1775	Checkdam
221	Yerragondapalem	16.1864	79.2116	Checkdam
222	Yerragondapalem	16.1633	79.2290	Checkdam
223	Yerragondapalem	16.1393	79.2615	Checkdam
224	Yerragondapalem	16.1550	78.9686	Checkdam
225	Yerragondapalem	16.1890	78.9779	Checkdam
226	Yerragondapalem	16.1420	79.0679	Checkdam
227	Yerragondapalem	16.0084	79.2688	Checkdam
228	Yerragondapalem	16.0273	79.2704	Checkdam
229	Yerragondapalem	16.0427	79.2641	Checkdam
230	Yerragondapalem	16.0419	79.2774	Checkdam
231	Yerragondapalem	16.0445	79.3006	Checkdam
232	Yerragondapalem	16.0526	79.2872	Checkdam
233	Yerragondapalem	16.0630	79.2781	Checkdam
234	Yerragondapalem	16.0432	79.3142	Checkdam
235	Yerragondapalem	16.0227	79.3194	Checkdam
236	Yerragondapalem	16.0116	79.3399	Checkdam
237	Yerragondapalem	15.9884	79.2644	Checkdam
238	Yerragondapalem	16.0133	79.2589	Checkdam
239	Yerragondapalem	16.0316	79.2531	Checkdam
240	Yerragondapalem	15.9808	79.2327	Checkdam
241	Yerragondapalem	15.9791	79.2639	Checkdam
242	Yerragondapalem	16.0423	79.1641	Checkdam
243	Yerragondapalem	16.0292	79.1701	Checkdam

244	Yerragondapalem	15.9705	79.1164	Checkdam
245	Yerragondapalem	15.9679	79.0997	Checkdam
246	Yerragondapalem	16.0817	79.0638	Checkdam
247	Yerragondapalem	16.0800	79.0604	Checkdam
248	Yerragondapalem	16.1051	79.0412	Checkdam
249	Yerragondapalem	16.1062	79.2688	Checkdam
250	Yerragondapalem	16.1417	79.2479	Checkdam
251	Yerragondapalem	16.1174	79.2171	Checkdam
252	Yerragondapalem	16.1071	79.2308	Checkdam
253	Yerragondapalem	16.0944	79.1657	Checkdam
254	Yerragondapalem	16.0458	79.2518	Percolation Tank
255	Yerragondapalem	16.0380	79.2321	Percolation Tank
256	Yerragondapalem	16.0383	79.2744	Percolation Tank
257	Yerragondapalem	16.0382	79.2885	Percolation Tank
258	Yerragondapalem	16.0348	79.2954	Percolation Tank
259	Yerragondapalem	16.0285	79.3063	Percolation Tank
260	Yerragondapalem	16.0110	79.3294	Percolation Tank
261	Yerragondapalem	16.0134	79.3139	Percolation Tank
262	Yerragondapalem	16.0182	79.3074	Percolation Tank
263	Yerragondapalem	16.0075	79.3084	Percolation Tank
264	Yerragondapalem	15.9956	79.3095	Percolation Tank
265	Yerragondapalem	15.9720	79.2978	Percolation Tank
266	Yerragondapalem	15.9691	79.2865	Percolation Tank
267	Yerragondapalem	15.9864	79.2761	Percolation Tank
268	Yerragondapalem	15.9975	79.2709	Percolation Tank
269	Yerragondapalem	15.9879	79.2551	Percolation Tank
270	Yerragondapalem	16.0157	79.2761	Percolation Tank
271	Yerragondapalem	16.0096	79.2516	Percolation Tank
272	Yerragondapalem	16.0183	79.2559	Percolation Tank
273	Yerragondapalem	16.0183	79.2636	Percolation Tank
274	Yerragondapalem	16.0214	79.2668	Percolation Tank
275	Yerragondapalem	16.0132	79.2087	Percolation Tank
276	Yerragondapalem	16.0002	79.2084	Percolation Tank
277	Yerragondapalem	15.9883	79.2100	Percolation Tank
278	Yerragondapalem	15.9860	79.2277	Percolation Tank

279	Yerragondapalem	16.0250	79.1912	Percolation Tank
280	Yerragondapalem	16.0236	79.1835	Percolation Tank
281	Yerragondapalem	15.9995	79.1916	Percolation Tank
282	Yerragondapalem	16.0124	79.1938	Percolation Tank
283	Yerragondapalem	16.0199	79.2061	Percolation Tank
284	Yerragondapalem	16.0230	79.2183	Percolation Tank
285	Yerragondapalem	15.9781	79.2969	Percolation Tank
286	Yerragondapalem	15.9871	79.3562	Percolation Tank
287	Yerragondapalem	15.9524	79.3531	Percolation Tank
288	Yerragondapalem	15.9533	79.3448	Percolation Tank
289	Yerragondapalem	15.9474	79.3347	Percolation Tank
290	Yerragondapalem	15.9321	79.3059	Percolation Tank
291	Yerragondapalem	15.9689	79.2816	Percolation Tank
292	Yerragondapalem	15.9909	79.2794	Percolation Tank
293	Yerragondapalem	15.9938	79.2915	Percolation Tank
294	Yerragondapalem	16.0084	79.3025	Percolation Tank
295	Yerragondapalem	16.0085	79.2807	Percolation Tank
296	Yerragondapalem	16.0232	79.2820	Percolation Tank
297	Yerragondapalem	16.0277	79.2612	Percolation Tank
298	Yerragondapalem	16.0308	79.3289	Percolation Tank
299	Yerragondapalem	16.0377	79.3445	Percolation Tank
300	Yerragondapalem	16.0361	79.3538	Percolation Tank
301	Yerragondapalem	16.0331	79.3382	Percolation Tank
302	Yerragondapalem	16.0394	79.3371	Percolation Tank
303	Yerragondapalem	16.0371	79.3288	Percolation Tank
304	Yerragondapalem	16.0311	79.3182	Percolation Tank
305	Yerragondapalem	16.0588	79.3158	Percolation Tank
306	Yerragondapalem	16.0622	79.3386	Percolation Tank
307	Yerragondapalem	16.0795	79.3127	Percolation Tank
308	Yerragondapalem	16.0691	79.3134	Percolation Tank
309	Yerragondapalem	16.0664	79.3334	Percolation Tank
310	Yerragondapalem	16.0645	79.3055	Percolation Tank
311	Yerragondapalem	16.0499	79.2923	Percolation Tank
312	Yerragondapalem	16.0552	79.2830	Percolation Tank
313	Yerragondapalem	16.0612	79.2369	Percolation Tank

314	Yerragondapalem	16.0737	79.2372	Percolation Tank
315	Yerragondapalem	16.0712	79.2129	Percolation Tank
316	Yerragondapalem	16.0672	79.3492	Percolation Tank
317	Yerragondapalem	16.0344	79.3690	Percolation Tank
318	Yerragondapalem	16.0321	79.3637	Percolation Tank
319	Yerragondapalem	16.0482	79.3640	Percolation Tank
320	Yerragondapalem	16.0457	79.3755	Percolation Tank
321	Yerragondapalem	16.0265	79.3548	Percolation Tank
322	Yerragondapalem	15.9613	79.2567	Percolation Tank
323	Yerragondapalem	15.9457	79.2447	Percolation Tank
324	Yerragondapalem	15.9394	79.2246	Percolation Tank
325	Yerragondapalem	15.9740	79.2143	Percolation Tank
326	Yerragondapalem	15.9652	79.1862	Percolation Tank
327	Yerragondapalem	15.9298	79.1722	Percolation Tank
328	Yerragondapalem	15.9472	79.1703	Percolation Tank
329	Yerragondapalem	15.9289	79.1962	Percolation Tank
330	Yerragondapalem	15.9886	79.1950	Percolation Tank
331	Yerragondapalem	16.0241	79.1746	Percolation Tank
332	Yerragondapalem	16.0770	79.2516	Percolation Tank
333	Yerragondapalem	16.1092	79.2011	Percolation Tank
334	Yerragondapalem	16.0309	79.1534	Percolation Tank
335	Yerragondapalem	16.1896	78.9257	Percolation Tank
336	Yerragondapalem	16.1091	79.3009	Percolation Tank
337	Yerragondapalem	16.1005	78.9791	Percolation Tank
338	Yerragondapalem	16.1273	78.9872	Percolation Tank

Fig.1

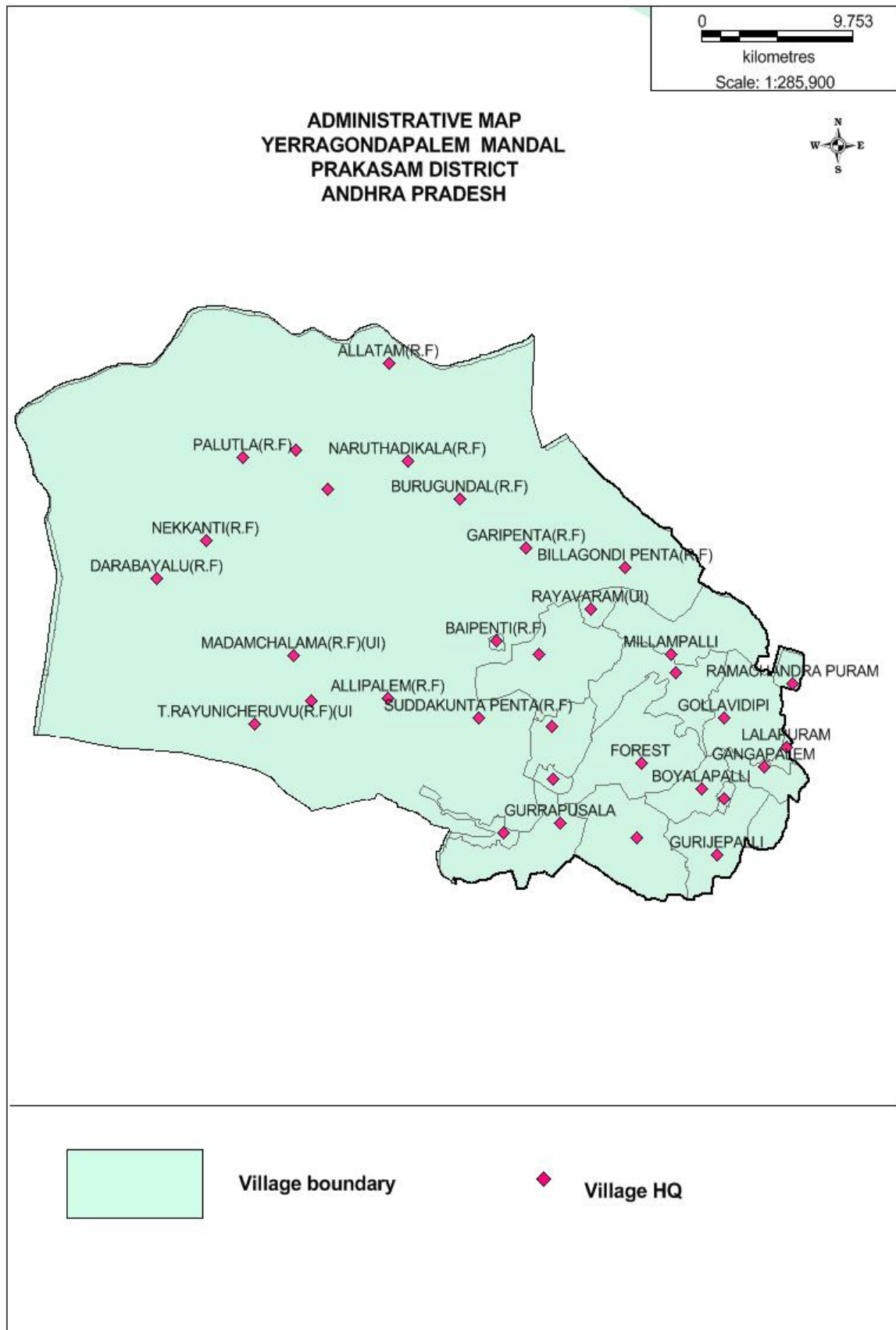


Fig.2

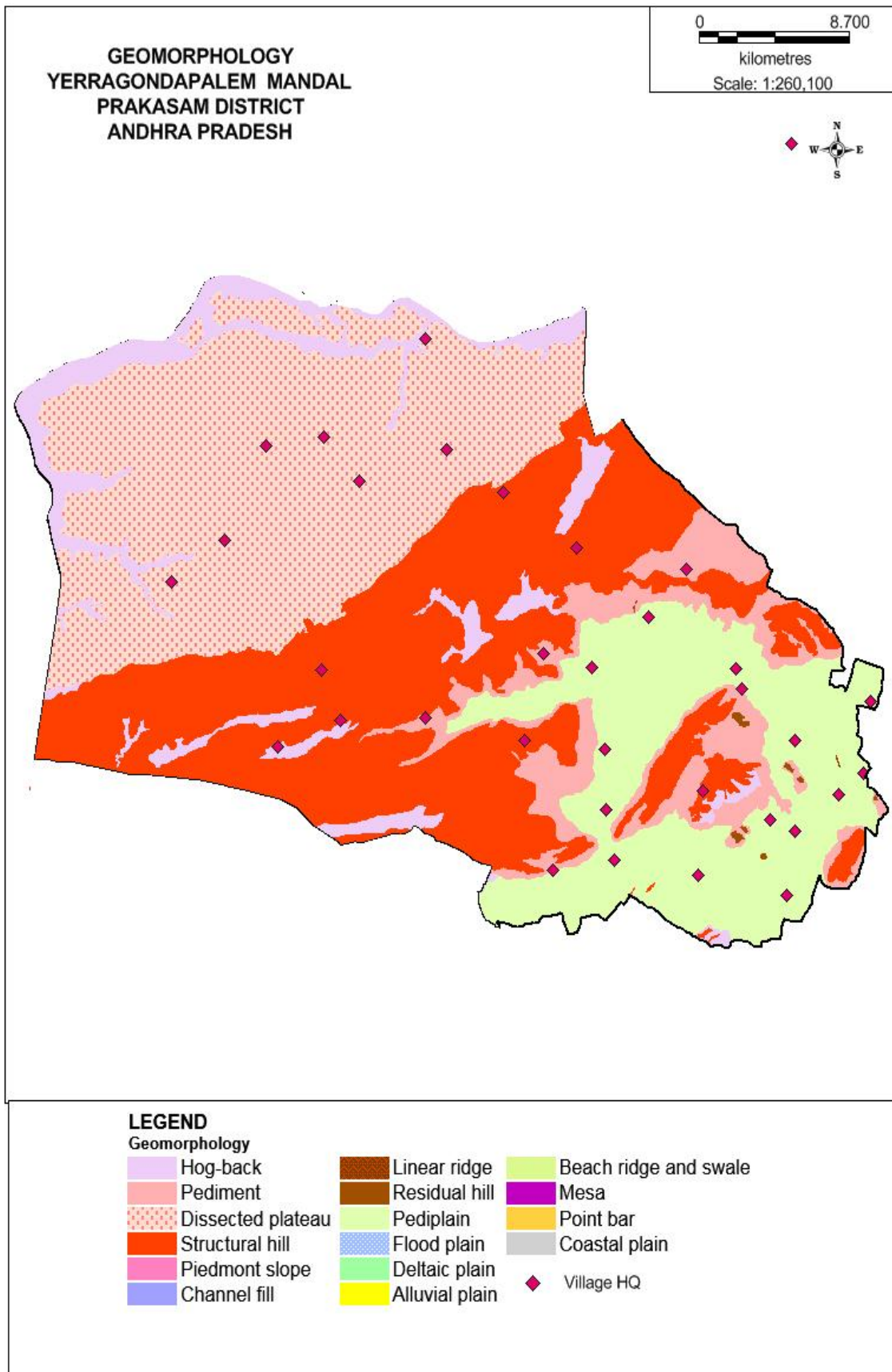


Fig.3

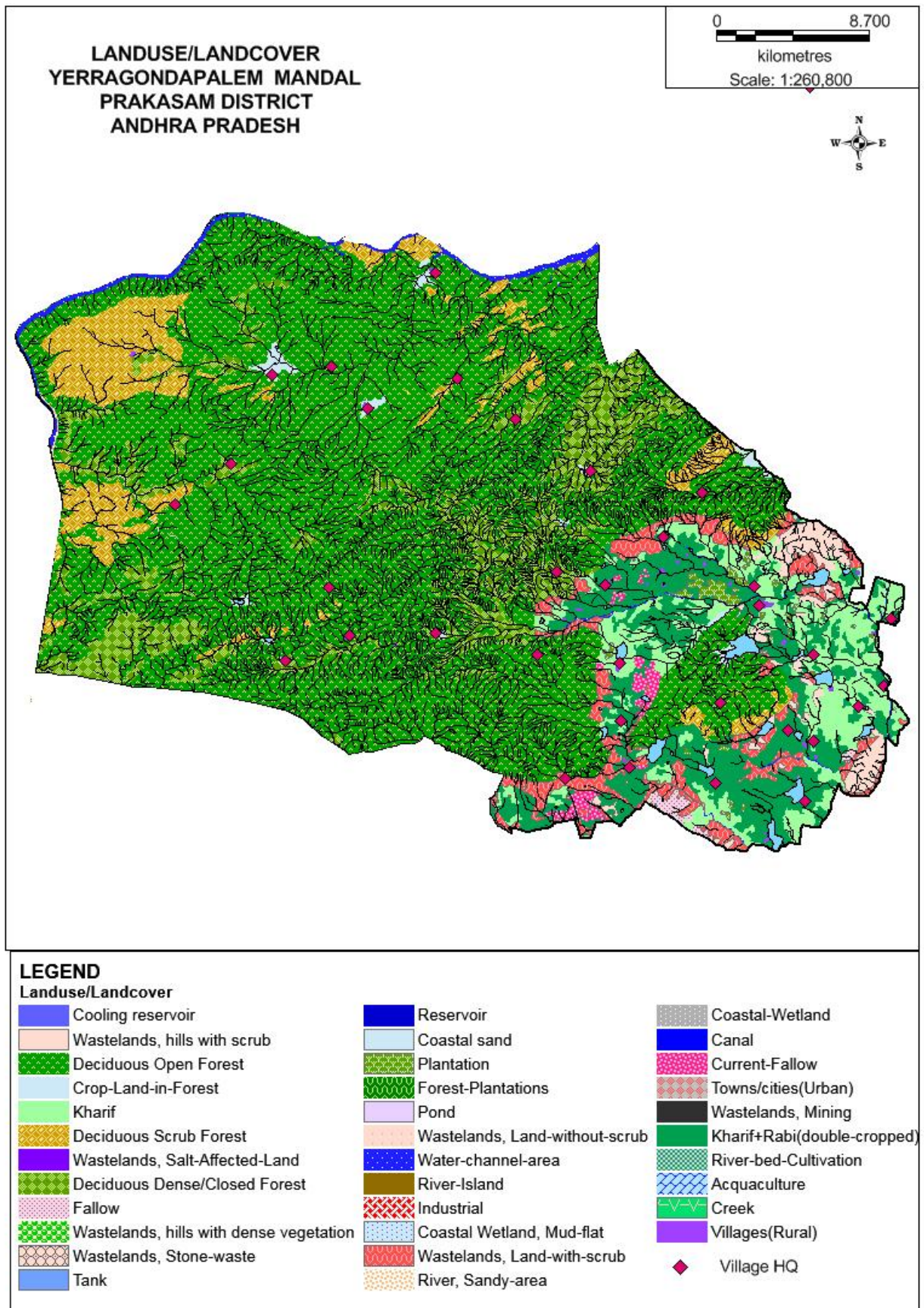


Fig.4

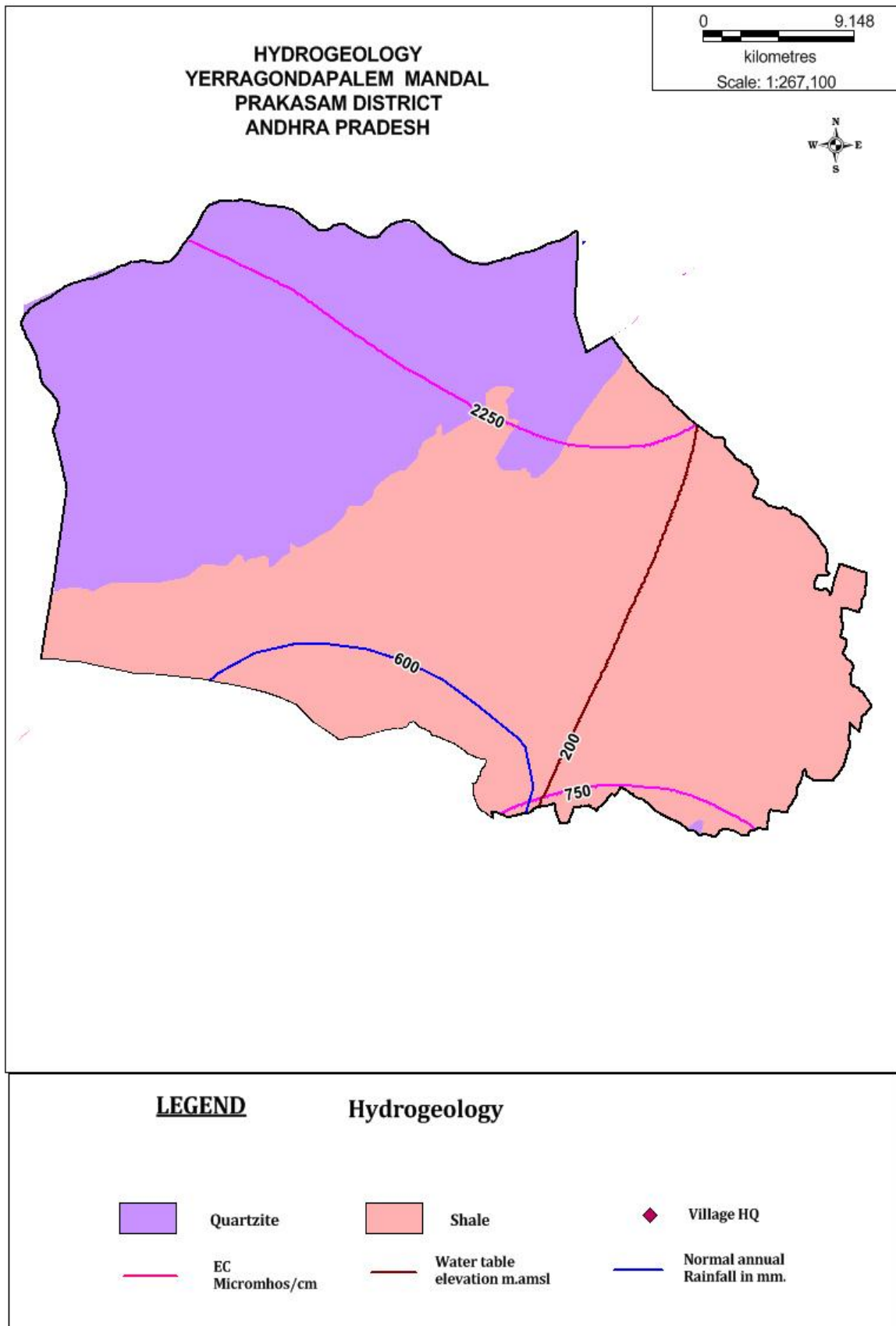


Fig.5

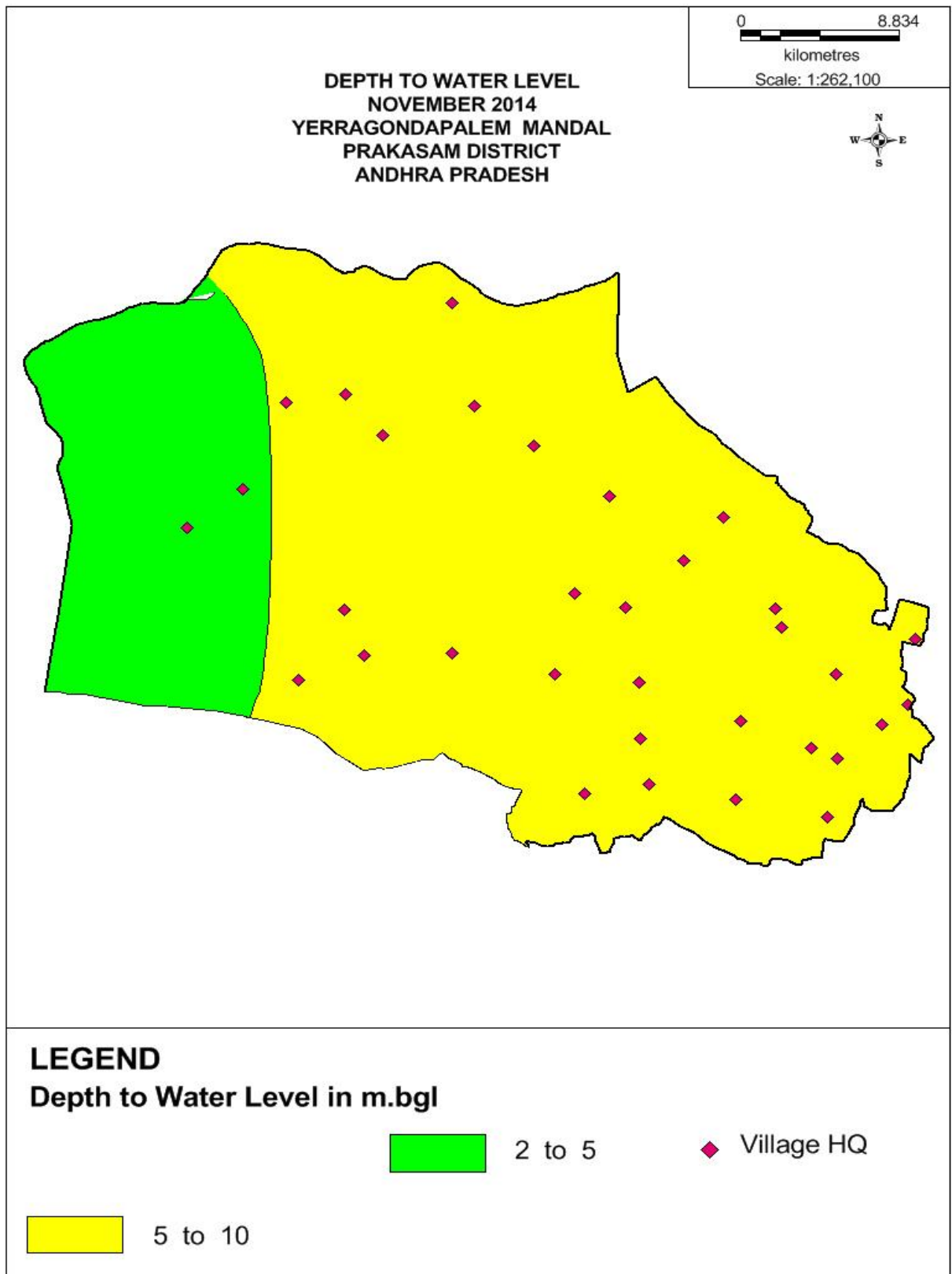


Fig.6

