
# भारत सरकार
# जल शक्ति मंत्रालय
# जल संसाधन नदी विकास एवम् गंगा संरक्षण विभाग
# केंद्रीय भूमिजल बोर्ड

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

**REPORT ON**

# AQUIFER MAPPING FOR SUSTAINABLE MANAGEMENT OF GROUND WATER RESOURCES IN SPSR NELLORE DISTRICT, ANDHRA PRADESH

**(AAP-2022-23)**

**CENTRAL GROUND WATER BOARD**
**APSUO, VISAKHAPATNAM**
**FEBRUARY, 2023**

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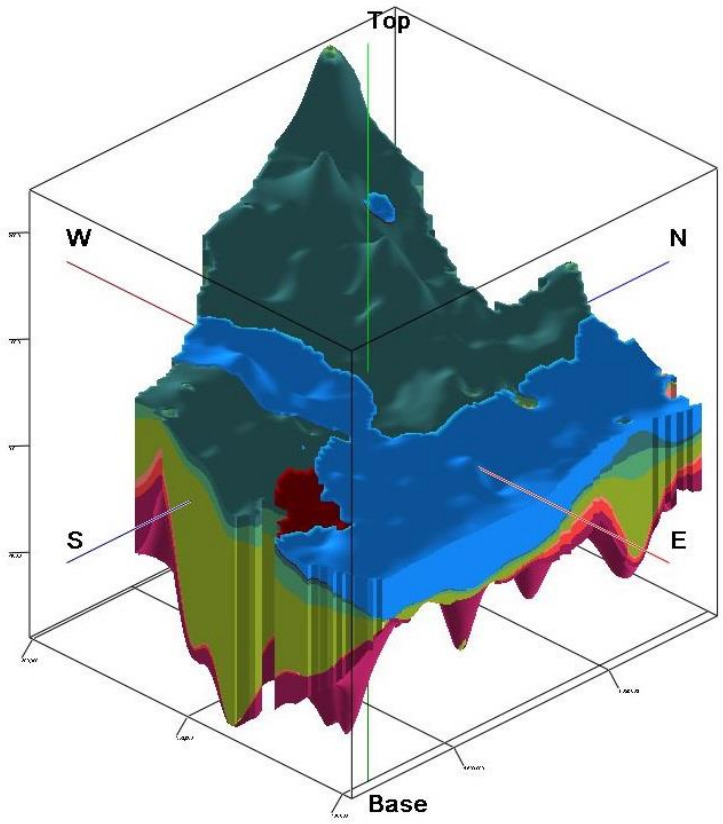


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**Contributors' page**

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|---|---|
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## SPSR NELLORE DISTRICT AT GLANCE

| Sl. No | Items | Statistics |
|---|---|---|
| 1 | **General Information** | |
| | i) Geographical area (Sq. Km) | 10,440 |
| | ii) Administrative Divisions (As on 3/2022)<br>Revenue Divisions<br>Number of Mandals<br>Number of Villages | <br>04<br>38<br>720 |
| | iii) Populations (As per Census 2011) | 24.69 Lacks |
| | iv) Average Annual Rainfall (mm) | 856 |
| 2. | **GEOMORPHOLOGY** | |
| | **Major Physiographic Units**: Western hills, Central Pedi plains and Eastern deltaic & Coastal plains. | |
| | Major Drainages: Pennar, Kandaleru and Boggeru. | |
| 3. | **LAND USE (Area in Hectares) (HAND BOOK OF STATISTICS-2020 SPSR NELLORE DISTRICT)** | |
| | 1 Forests | 215801 |
| | 2 Barren & uncultivable land | 72964 |
| | 3 Land put to non-agricultural uses | 198255 |
| | 4 Cultivable waste | 72105 |
| | 5 Permanent pastures and other grazing lands | 28166 |
| | 6 Land under miscellaneous tree crops & groves not included in net areasown | 6276 |
| | 7 Current fallows | 57836 |
| | 8 Other fallow lands | 93891 |
| | 9 Net Area Sown | 288770 |
| | 10 Total Cropped Area | 305481 |
| | 11 Area Sown More than Once | 16711 |
| 4. | **MAJOR SOIL TYPES:** Sandy soils, Red Soils & Black cotton soils | |
| 5. | **AREA UNDER PRICIPAL CROPS** (Area in Hectares) (2019-20)<br>Paddy-167033, Bajra-268, Jowar-1233, Maize-476, Total food grains-209160, Totalfood crops-27425 & Total Oil Seads-18794. | |
| 6. | **IRRIGATION BY DIFFERENT SOURCES (Area in Hectares/ no of structures)** | |
| | Dug wells | 711/4468 |
| | Tube wells/Bore wells | 61617/47109 |
| | Tanks/Ponds/Water conservation structures | 15083/ |
| | Canals | 125428/ |
| | Lift Irrigation | 549 |
| | Net Irrigated area (Area in Hectares.) (2019-20) | 186884 |
| | Gross Irrigated area (Area in Hectares.) (2019-20) | 203388 |
| 7. | **NUMBERS OF GROUND WATER MONITORING WELLS.** | |
| | a) CGWB<br>b) SGWD | 49<br>57 |

**8.** **PREDOMINANT GEOLOGICAL FORMATIONS:** The district is underlain by oldest Archaean Super Group to Recent alluvium. Major part of the district is underlain by gneisses, schists of Peninsular Gneissic Complex and Dharwar Super Group of rocks. Along Pennar river and eastern part of the district is underlain by the deltaic, river and coastal alluvium

**9.** **HYDROGEOLOGY:** Major Water Bearing Formation: The principal aquifer in the area is Schists and gneisses and the occurrence and movement of ground water in these rocks is controlled by the degree of interconnection of secondary pores/voids developed by fracturing and weathering.

**Depth to water Level during 2021-22**

| Period | Phreatic Aquifer (DTW) | | Semi-confined /Confined Aquifer (PZ head) | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| Pre-Monsoon | 0.50 (Battepadu) | 17.65 (Duthaluru) | NA | NA |
| Post Monsoon | 0.10 (Adurupalli) | 12.7 (Duthaluru) | NA | NA |

**Long Term (10 Years) Water Level Trend (2012 to 2022)**

| Trend | Pre-Monsoon | Post- Monsoon |
|---|---|---|
| Rise (m/Yr) | 0.00882 (Puretipalli) to 1.38534 (Garimenapenta) | 0.002030 (Kandukur) to 1.38053 (Kaluvaya) |
| Fall (m/Yr) | -0.01957 (Utukuru) to -1.051785 (Atmakur) | -0.00306 (North rajupalem) to -0.74490 (Udayagiri) |

**10.** **GROUND WATER EXPLORATION BY CGWB (As on 31-03-2022)**

| | **Hard rock** | **Soft rock** |
|---|---|---|
| No. of exploratory wells | 82 | 10 |
| No. of observation wells | 15 | 2 |
| No. of piezometer/water table wells | 17 | 1 |
| Depth range (m bgl) | 20-208 | 33-349 |
| Depth of potential zone (m bgl) | 25-85 | 20-40 |
| General yield range (lps) | 0.4 to 20 | 1.0-2.5 |
| Transmissivity ($m^2$/day) | 0.17 to 165 | 0.63 to 1685 |
| Storativity | 1x 10-6 to0.001 | 1x 10-6 to 0.007 |
| Specific Capacity (lpm/m.dd) | 3-48 | 6– 371 |

**11.** **GROUND WATER QUALITY**

| | |
|---|---|
| Presence of chemical constituents more than permissible limit) | High Fluoride & Nitrateat isolated pockets |
| Type of water | Potable in general |

**12.** **DYNAMIC GROUND WATER RESOURCES (As on 2022)**

| **Parameters** | **Total (MCM)** |
|---|---|
| **Dynamic (Net GWR Availability)** | **2446.39** |
| Monsoon recharge from rainfall | 726.39 |
| Monsoon recharge from other sources | 434.04 |
| Non-monsoon recharge from rainfall | 203.54 |
| Non-monsoon recharge from other sources | 1211.17 |
| Total Natural Discharge | 128.76 |
| **Gross GW Draft** | **702.65** |
| Irrigation | 657.84 |
| Domestic and Industrial use | 44.81 |

| | | |
|---|---|---|
| | Allocation of Ground Water Resource for Domestic Utilization for projected year 2025 | 45.88 |
| | Net GW availability for future use | 1752.36 |
| | **Stage of GW development (%)** | **28.72** |

**13 GROUND WATER CONTROL AND REGULATION (3/2022)**

| | |
|---|---|
| Number of Over Exploited Blocks | Nil |
| Number of Critical Blocks | Nil |
| Number of Semi Critical Blocks | Nil |
| Number of Safe Blocks | 38 |
| Number of Saline Blocks | Nil |
| No. Of Blocks Notified by CGWA | Nil |

**14 DATA INTEGRATION**

| **Data** | **Aquifer** | **Total Data Points** | **Source** | | |
|---|---|---|---|---|---|
| | | | **CGWB** | **SGWD** | **Naquim Key Wells** |
| Panel Diagram (3-D) | 1 no | 93 | Expl:128 | - | |
| Hydrogeological Cross Sections | 04 no | 93 | Expl: 128 | - | |
| Fence/panel Diagrams | 1 no | 93 | Expl: 128 | - | |
| Depth of weathering | 1 no | 93 | Expl: 128 | - | |
| Depth of fracturing | 1 no | 93 | Expl: 128 | - | |
| Depth to Water Level Maps (2022) | Combine | 181 | NHS:49 | NHS: 58 | 74 |
| Decadal Water Level Maps (2013-22 | Combine | 107 | NHS:49 | NHS: 58 | - |
| Water quality pre-2022 | Combine | 177 | Expl: 54 & NHS: 49 | - | 74 |

**15 AQUIFER CHARACTERIZATION AND DISPOSITION**

| **Stratigraphy** | **Aquifer Nomenclatu** | **Lithological Characteristics** | **Depth of occurrence** | **Thickness** | **Water Level** | **Quality (EC)** | **Discharge** | **Transmissivity** | **Storativity** |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Aquifer** | **Range** | **Range** | **Range** | **Range** | **Range** | |
| | | | **(mbgl)** | **(m)** | **(mbgl)** | **µs/cm** | **lps** | **m2/day** | |
| **Recent Alluvium** | **Alluvium** | Alluvium - Sand, Kankar and Clay | **0 to 62** | **0 to 62** | **1.45 to 18.8** | **205 to 7515** | **0.01 to 3.8** | **0.63 to 1685** | |
| **Archaean Super Group** | **Weathered Schist** | Schist (Quart-Clorite rich) | **0 to 26** | **05 to 26** | **0.76 to 12.00** | **310 to 3982** | | | |
| | **Fractured Schist** | Schist (Quart-Clorite rich) | **30 to 189** | | **01 to 16** | **555 to 2800** | **0.4 to 20** | **0.17 to 165** | **1x 10-6 to 0.001** |
| | **Weathered Gneiss** | Quartz mica schist and gneiss | **0 to 28** | **07 to 28** | **2.40 to 7.40** | **310 to 3982** | | | |
| | **Fractured Gneiss** | Quartz mica schist and gneiss | **35 to 170** | | **3 to 21** | **440 to 1995** | **0.5 to 8.2** | **1.47 to 59.3** | **1x 10-5 to 0.001** |

**16 MAJOR GROUND WATER PROBLEMS AND ISSUES**

| | |
|---|---|
| | i) Deeper Water Levels in North western part of the study area<br>ii) Limited Yield Potential in Hard Rock.<br>iii) Higher concentration of Nitrate is observed in 40% of samples.<br>iv) EC is >2000 µ Siemens/cm covering an area around 3609 sq.kms (34%).<br>v) Higher concentration of Fluoride (>1.5 mg/l) is observed in 14 samples at localized pockets.<br>vi) Demand Supply Management |
| **17** | **MANAGEMENT STRATEGIES** |
| | ❖ Recommended for construction of total 388 AR structures (249 check dams and 139 percolation tanks) in the study area.<br>❖ In addition, roof top rainwater harvesting structures should be made mandatory to all Government buildings (new and existing).<br>❖ Existing ARS like percolation tanks and check dams can be de-silted involving people's participation.<br>❖ The sprinkler and drip irrigation system with suitable cropping pattern is recommended where the yield of bore well is <2.0 lps identified in 3661.43 sq.km (35%) of the district Particularly in North western parts of the district as a measure for groundwater conservation, protection and management.<br>❖ De siltation and cascading of existing MI tanks and filling up MI tanks with surface water schemes. This can result in increased ayacut, sustainability of bore wells and decrease the ground water irrigation.<br>❖ Participatory groundwater management (PGWM) approach are recommended.<br>❖ In urban and rural area, the sewerage line should be constructed to arrest leaching of nitrate. |

## EXECUTIVE SUMMARY

The SPSR Nellore (Sri Potti Sriramulu Nellore) District is one of the twelve Coastal districts of Andhra Pradesh State. It lies between 14˚ 6' and 15˚ 51' N of the Northern Latitude and 79˚ 0' and 80˚ 42' of the Eastern Longitude. It spreads over an area of 10,440 Sq Kms. Administratively, the district is governed by 04 Revenue Divisions viz., Kandukur, Kavali, Nellore and Atmakur, 38 revenue mandals including 1 Nellore Urban Mandal and 720 Gram Panchayats. The total population of the district as per 2011 population census is 24.69 lakhs. The normal rainfall of the district is 1022.9 m.m. The main River that drains the Nellore district is Pennar River.

Geomorphologically the district can be broadly divided into 3 distinct units, viz., western hills, central Pediplains and eastern deltaic & coastal plains. The higher relief is represented by hill ranges of Eastern Ghats, in the western border of the district. These hills are locally known as Veligonda hills, run in a northwesterly direction with a highest elevation of 1,105 m amsl at Penchalakonda. The Pediplain area i.e., in the central part of the district extends in a north - south direction. The general altitude of this physiographic unit varies from 36 to 170 m amsl with isolated hillocks. Agriculture is the main stay of the people in the district. The total cropped area of the district is 3.05 Lakh hectares during the year 2019-20. The principal crops being grown are Paddy, Bajra, Sugarcane, Groundnut, Fruits & Vegetables, Chilies, Cotton and Tobacco. The Net area irrigated in the district by canals, tanks, tube wells & filter points and other wells. The gross area irrigated is 2.03 lakh hectares. In which, 69% of the irrigation is through surface irrigation and 31% of the area is irrigated through ground water irrigation.

Three major Irrigation Projects and two medium Irrigation Projects and 968 Minor Irrigation tanks are present in the district. Pennar delta (1,00,000 Ha Ayacut), Somasila Project (35,661 Ha Ayacut) and Telugu Ganga Projects (72,645 Ha Ayacut) are the Major Irrigation Projects with a total ayacut of 2,08,306 Ha. Gandipalem project (now named as P.C.R. Gandipalem Project) with an ayacut of 6,475 Ha and Kanpur canal system with an ayacut of 13,355 Ha wet are the two medium irrigation Projects. There are 968 Minor Irrigation sources in the district with a total registered ayacut is 77478.23 Ha but actual area irrigated is 14,982 Ha**.**

The district is underlain by oldest Archaean Super Group to Recent alluvium. Major part of the district is underlain by gneisses, schists of Peninsular Gneissic Complex and Dharwar Super Group of rocks. All along, the western boundary of the district is underlain by quartzites, shales of Cuddapah Super Group of rocks. A small patch of Gondwana sandstone and shales occur in northern part of the district. Sandstones of Tertiary age overlain by laterites occur as isolated patches in and around Nellore town. Along Pennar river and eastern part of the district is underlain by the deltaic, river and coastal alluvium.

As on 31/12/2022, CGWB drilled 128 bore wells (exploratory, observation and piezometers) in the district. Data analyzed from CGWB wells indicates, 08 wells are of shallow depth (30 m), 07 nos are of 30-60 m, 13 nos are of 60-100 m, 39 nos are of 100-150 m, 54 nos are of 150-200 m and 08 nos are of 200- 349 m depth. As per data gap analysis, ground water exploration is being carried out in SPSR Nellore district for data generation during the current annual action plan 2022-23.

The Water levels are being monitored through 106 number of monitoring wells by both CGWB (49) and GWD & WA (57). In Majority of the areas, water level during pre-monsoon season is in the range of 3-6 m in 62% of the area, followed by shallow water level <3 m bgl in 24% of the area and deeper water levels 6 to 9 m bgl in 14% of the area. During post-monsoon season is in the range of 3-6 m in 51% of the area, followed by shallow water level <3 m bgl in 41% of the area and deeper water levels 6 to 9 m bgl in 9% of the area. Out of 130 wells, 125 wells records water level rise. The water level rise varies from <1 to 3.0 m in all the wells During Pre-Monsoon, water-table elevation ranges from 2.10-211.45 meter above mean sea level and in post-monsoon season 2.41-211.45 meter above mean sea level (m amsl). Ground water flow maximum areas are north west to south eastern direction.

To understand chemical nature of groundwater, total 177 data points is utilized from ground water monitoring wells, exploratory wells and well inventory. During pre-monsoon season of 2022 (NHS: 49, and Well inventory: 74 wells along with exploratory wells:54 wells (mostly tapping combined aquifers Aq-1 and aq-2) were analyzed. Electrical conductivity varies from 165-33128 (avg: 1981) µ Siemens/cm. In 66 % of area, EC is within 2000 µ Siemens/cm, in 23 % area, it is between 2000-3000µ Siemens and in 11% of area it is beyond permissible limit. Average concentration of TDS is 1248 mg/L and NO3 ranges from 0.3-598 mg/L. Nitrate concentration in 40% of samples is beyond permissible limits of 45 mg/L. Fluoride concentration varies from 0.06-4.98 with 11% of samples is beyond the permissible limits of BIS and rest is within the permissible limit

The aquifers of **Nellore** district can be conceptualized in to Aquifer-**1,** the shallow aquifer is considered up to the maximum depth of weathering and first fracture encountered (below weathered depth) generally down to ~30 m depth. They are unconfined aquifers. Ground water yield varies from <1 lps (avg: 1.0 lps) in weathered Schist/gneiss aquifer to 3 to 5 lps (avg: 4 lps) in Alluvial aquifers. The aquifer-II is the deeper aquifer which tapped the fractured zone. Ground water in the second aquifer occurs under semi-confined to confined condition in the fractures up to the maximum depth of 189 m bgl (deepest fracture encountered). The deth of fracturing varies from 30 m to 189 m with yield of <1 to 20 lps. The transmissivity of consolidated formation varies from <1 to more

than 150 m2 /day. The storativity in Schists and Gneisses varies from 1x 10-6 to 0.001.

The annual extractable ground water resource (GWRA-2022) is 2446.39 MCM, the gross ground water draft for all uses is 702.65 MCM, provision for drinking and industrial use for the year 2025 is 45.88 MCM and net available balance for future irrigation use is 1752.36 MCM. The stage of ground water development varies from 6.35% to 56.19%.

The district has no such major issue in terms of ground water, there are few localized issues i.e., it was reported during well inventory field work that North and North West parts of the study area is backward/drought area of SPSR Nellore district comprises Seetharampuram, Varikuntapadu, Voletivaripalem, Udayagiri, Duttaluru, Vinjamuru and Marripadu mandals and water levels are in the range of 10.50 m to 19.36 m bgl during pre-monsoon and 9m to 14.87 m during post monsoon periods. The average water level in the study area is 13.47 and 11.17 during pre and post monsoon periods respectively. Low yield (<2 lps) occurs in ~35 % of the area observed in western parts of the study area. The western parts of the study area are mainly comprising of Schist/gneiss and as per ground water exploration data, the general yield of the Schist/gneiss is between 1 to 2 lps. EC is >2000 µ Siemens/cm covering around 3609 sq.kms (34%) in parts of Ananthasagaram, Anumasamudrampeta, Kandukur, Ulavapadu, Vidavaluru, Venkatachalam, Manubolu, Sydapuram, Voletivaripalem, Marripadu, Thatapalligudur, Kaligiri, Muthukuru, Allur & Indukurpeta mandals. Higher concentration of Nitrate is observed in 40% of samples. Higher concentration of Fluoride (>1.5 mg/l) is observed in 14 samples at localized pockets.

The management strategies mainly include both supply side and demand side measures. Recommended for construction of total 388 AR structures (249 check dams and 139 percolation tanks) in the study area. In addition, roof top rainwater harvesting structures should be made mandatory to all Government buildings (new and existing). Existing ARS like percolation tanks and check dams can be de-silted involving people's participation. The sprinkler and drip irrigation system with suitable cropping pattern is recommended where the yield of bore well is <2.0 lps identified in 3661.43 sq.km (35%) of the district Particularly in North western parts of the district as a measure for groundwater conservation, protection and management. De siltation and cascading of existing MI tanks and filling up MI tanks with surface water schemes. This can result in increased ayacut, sustainability of bore wells and decrease the ground water irrigation. Participatory groundwater management (PGWM) approach is recommended. In urban and rural area, the sewerage line should be constructed to arrest leaching of nitrate.

# 1. INTRODUCTION

Aquifer mapping is a process wherein a combination of geologic, geophysical, hydrologic and chemical analyses is applied to characterize the quantity, quality and sustainability of ground water in aquifers. In recent past, there has been a paradigm shift from "**groundwater development**" to "**groundwater management**". As large parts of India particularly hard rocks have become water stressed due to rapid growth in demand for water due to population growth, irrigation, urbanization and changing life style. Therefore, in order to have an accurate and comprehensive micro-level picture of groundwater in India, aquifer mapping in different hydrogeological settings at the appropriate scale is devised and implemented, to enable robust groundwater management plans. This will help in achieving drinking water security, improved irrigation facility and sustainability in water resources development in large parts of rural and many parts of urban India. The aquifer mapping program is important for planning suitable adaptation strategies to meet climate change also. Thus the crux of National Aquifer Mapping (NAQUIM) is not merely mapping, but reaching the goal-that of ground water management through community participation.

Hard rocks (Granites/Gneisses) lack primary porosity, and groundwater occurrence is limited to secondary porosity developed by weathering and fracturing. Weathered zone is the potential recharge zone for deeper fractures and excessive withdrawal from this zone leads to drying up in places and reducing the sustainability of structures. Besides these quantitative aspects, groundwater quality also represents a major challenge which is threatened by both geogenic and anthropogenic pollution. In some places, the aquifers have high level of geogenic contaminants, such as fluoride, rendering them unsuitable for drinking purpose. High utilization of fertilizers for agricultural productions and improper development of sewage system in rural/urban areas lead to point source pollution viz., nitrate and chloride.

**1.1 Objectives:** In view of the above challenges, an integrated hydrogeological study was taken up to develop a reliable and comprehensive aquifer map and to suggest suitable groundwater management plan on 1: 50,000 scale.

**1.2 Scope of study:** The main scope of study is summarized below.

1. Compilation of existing data (exploration, geophysical, groundwater level and groundwater quality with geo-referencing information and identification of principal aquifer units.
2. Periodic long-term monitoring of ground water regime (for water levels and water quality) for creation of time series data base and ground water resource estimation.
3. Quantification of groundwater availability and assessing its quality.
4. To delineate aquifer in 3-D along with their characterization on 1:50, 000 scale.
5. Capacity building in all aspects of ground water development and management through information, education and communication (IEC) activities, information dissemination, education, awareness and training.
6. Enhancement of coordination with concerned central/state govt. organizations and academic/research institutions for sustainable ground water management.

**1.3 Area details:** The SPSR Nellore (Sri Potti Sriramulu Nellore) District is one of the twelve Coastal districts of Andhra Pradesh State. It lies between 14˚ 6' and 15˚ 51' N of the Northern Latitude and 79˚ 0' and 80˚ 42' of the Eastern Longitude (**Fig.1.1**). It spreads over an area of 10,440 Sq Kms and these accounts for 6.40% of total area of the State. The district is bounded by Bay of Bengal in the east, YSR Kadapa district in the west (Veligonda Hills), Prakasam district in the north and Tirupati (Balaji) District and Tamilnadu in the South.

Administratively, the district is governed by 04 Revenue Divisions viz., Kandukur, Kavali, Nellore and Atmakur, 38 revenue mandals including 1 Nellore Urban Mandal and 720 Gram Panchayats. The Nellore is Municipal Corporation, Kavali, Atmakur and Kandukur are 3 Municipalities. Buchireddypalem is Nagar Panchayat.

The total population of the district as per 2011 population census is 24.69 lakhs. Out of this, the rural and urban populations are 17.64 lakhs and 7.05 lakhs respectively forming 71.42 % and 28.58 % of total population. The density of population is 236 per Sq.km. The population of females per 1000 males is 983. The decennial growth rate is registered at 11.05% whereas the density of population per Sq. Km has been increased from 204 to 236 in the period 2001-2011.

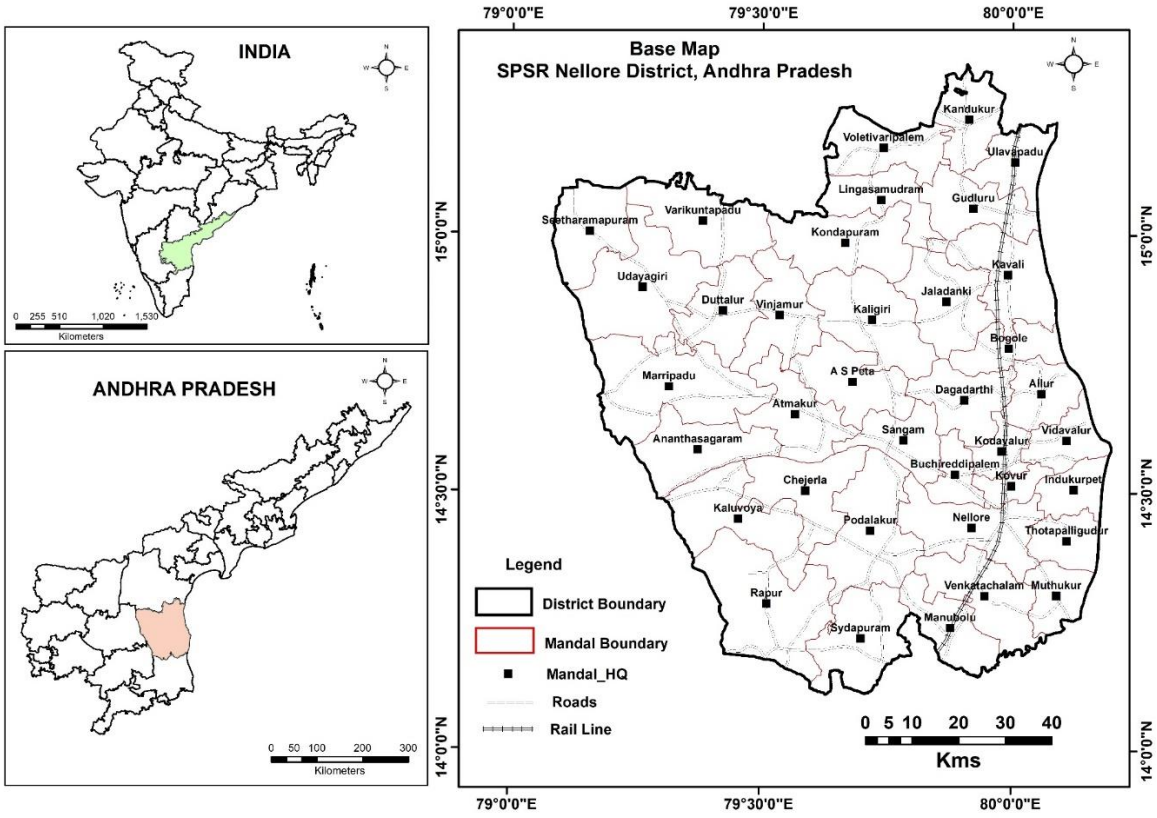



**Fig.1.1: Location Map of SPSR Nellore district.**

**1.4 Climate and Rainfall:** The climate of the study area is characterized by hot summer and generally dry weather. Generally, April, May and June are the hottest months with highest maximum temperature recorded was 41.5$^0$C in May whereas the temperature is low in the months of December and January the minimum temperature was recorded i.e., 20.5$^0$C in January during 2019-2020. The normal rainfall of the district is 1022.9 m.m. The rainfall received during 2019-20 is 856.4 mm, 15.7 % less than the Normal rainfall. The Iso hyetal map of SPSR Nellore district is shown is **Fig-1.2**.

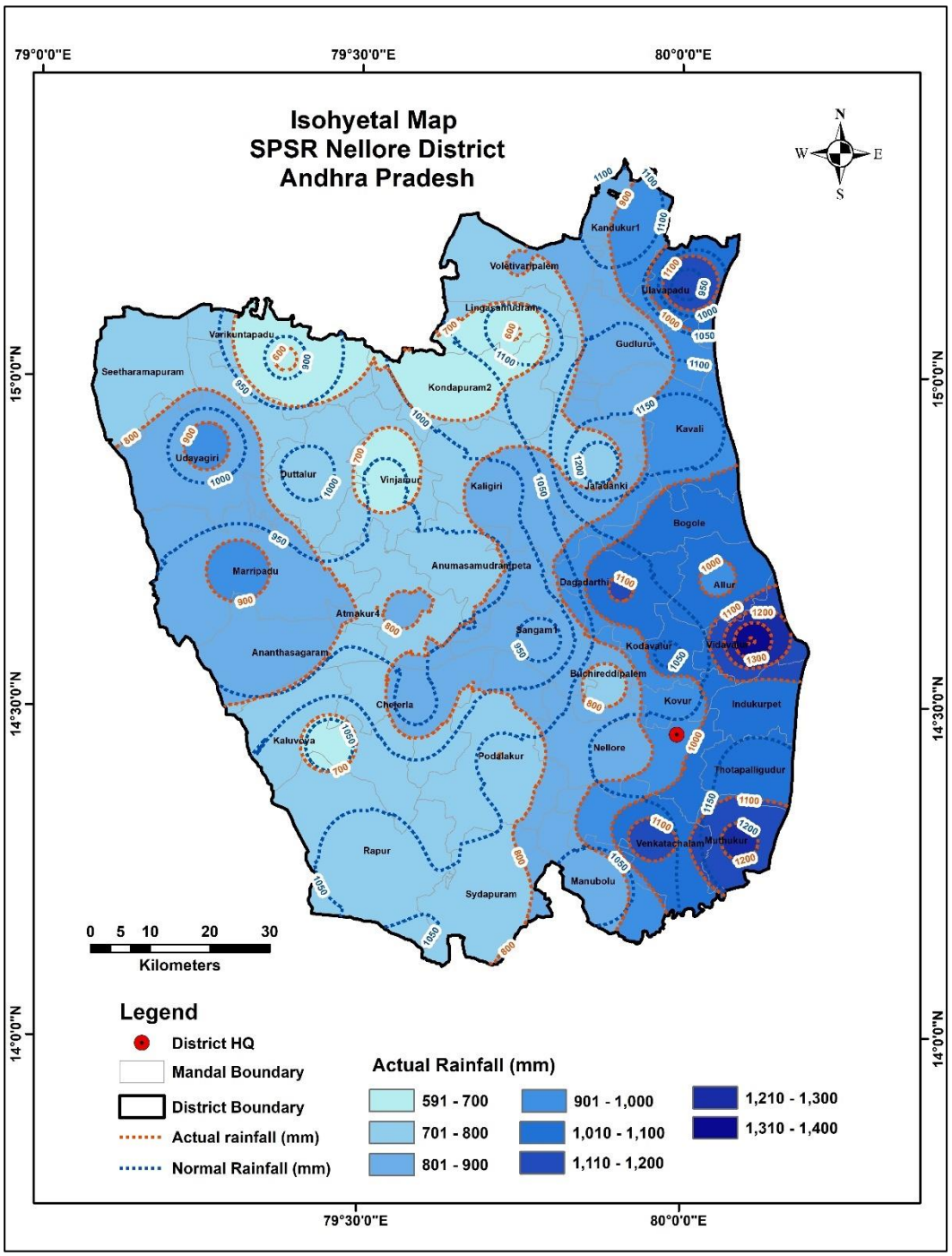



**Fig.1.2: Iso hyetal map of SPSR Nellore district.**

**1.5 Geomorphological Set up:** Geomorphologically the district can be broadly divided into 3 distinct units, viz., western hills, central Pediplains and eastern deltaic & coastal plains. The higher relief is represented by hill ranges of Eastern Ghats, in the western border of the district. These hills are locally known as Veligonda hills, run in a northwesterly direction with a highest elevation of 1,105 m amsl at Penchalakonda. The Pediplain area i.e., in the central part of the district extends in a north - south direction. The general altitude of this physiographic unit varies from 36 to 170 m amsl with isolated hillocks. The master slope of the area is from west to east towards the Bay of Bengal. The deltaic and coastal plain extends from north to south along the eastern margin of the district all along the coast. Pennar and Swarnamukhi rivers are the major contributors to the formation of the deltaic plains. The sandy coastal plain extends up to a distance of 5 to 6 km from sea coast. The southernmost fringe of the coastal plain is occupied by Pulicat lake**. (Table No-1.1) & (Fig.1.3).**

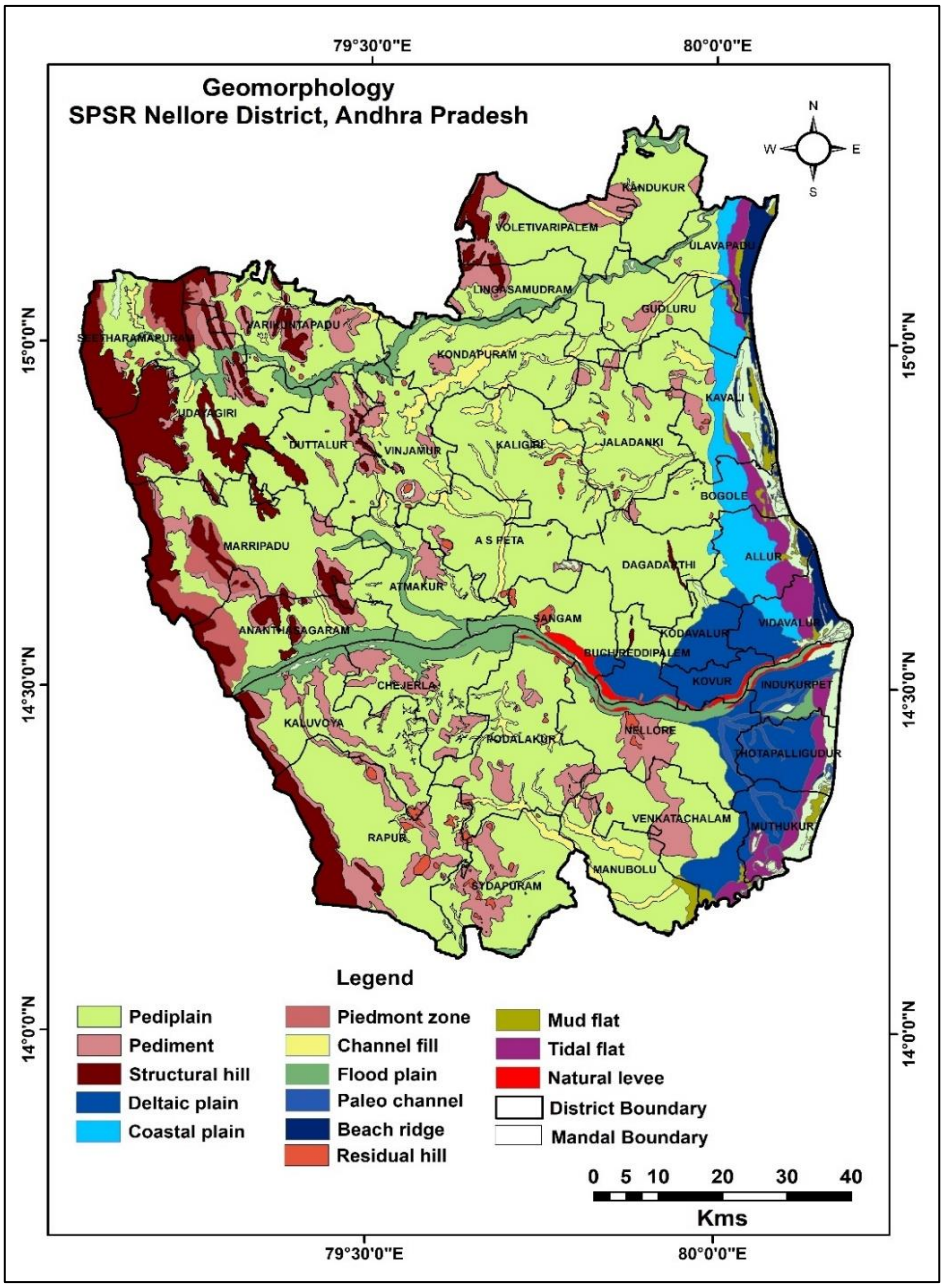



**Fig.1.3: Geomorphology map of SPSR Nellore district.**

**Table No-1.1: Geomorphological features of SPSR Nellore District**

| S.No. | Description | Area (Sq.kms) |
|---|---|---|
| 1 | Pedi plain | 5946 |
| 2 | Pediment | 1046 |
| 3 | Structural hill | 722 |
| 4 | Deltaic plain | 605 |
| 5 | Flood plain | 485 |
| 6 | Channel fill | 368 |
| 7 | Coastal plain | 276 |
| 8 | Tidal flat | 216 |
| 9 | Piedmont zone | 132 |
| 10 | Beach ridge and swale | 122 |
| 11 | Beach ridge | 97 |
| 18 | Others | 79 |
| 12 | Mud flat | 78 |
| 13 | Residual hill | 75 |
| 14 | Natural levee | 53 |
| 15 | Paleo channel | 51 |
| 16 | Salt flat | 34 |
| 17 | Sand dune | 15 |
| | **Total** | **10400** |

**1.6 Drainage and Structures:** The main River that drains the Nellore district is Pennar River, which is ephemeral in nature The other streams are Kandaleru and Boggeru which are occasionally torrential in character during rainy season. The rivers and rivulets remain dry for major part of the year and carry floods only during rainy season. Pennar River is the most important one and flows for about 112 Kms in the district which serve as a boon to the eastern half of the taluks of Nellore and Kovur. Two anicuts are situated one at Sangam and the other at Nellore. Map depicting drainage and water bodies is presented in **Fig.1.4**.

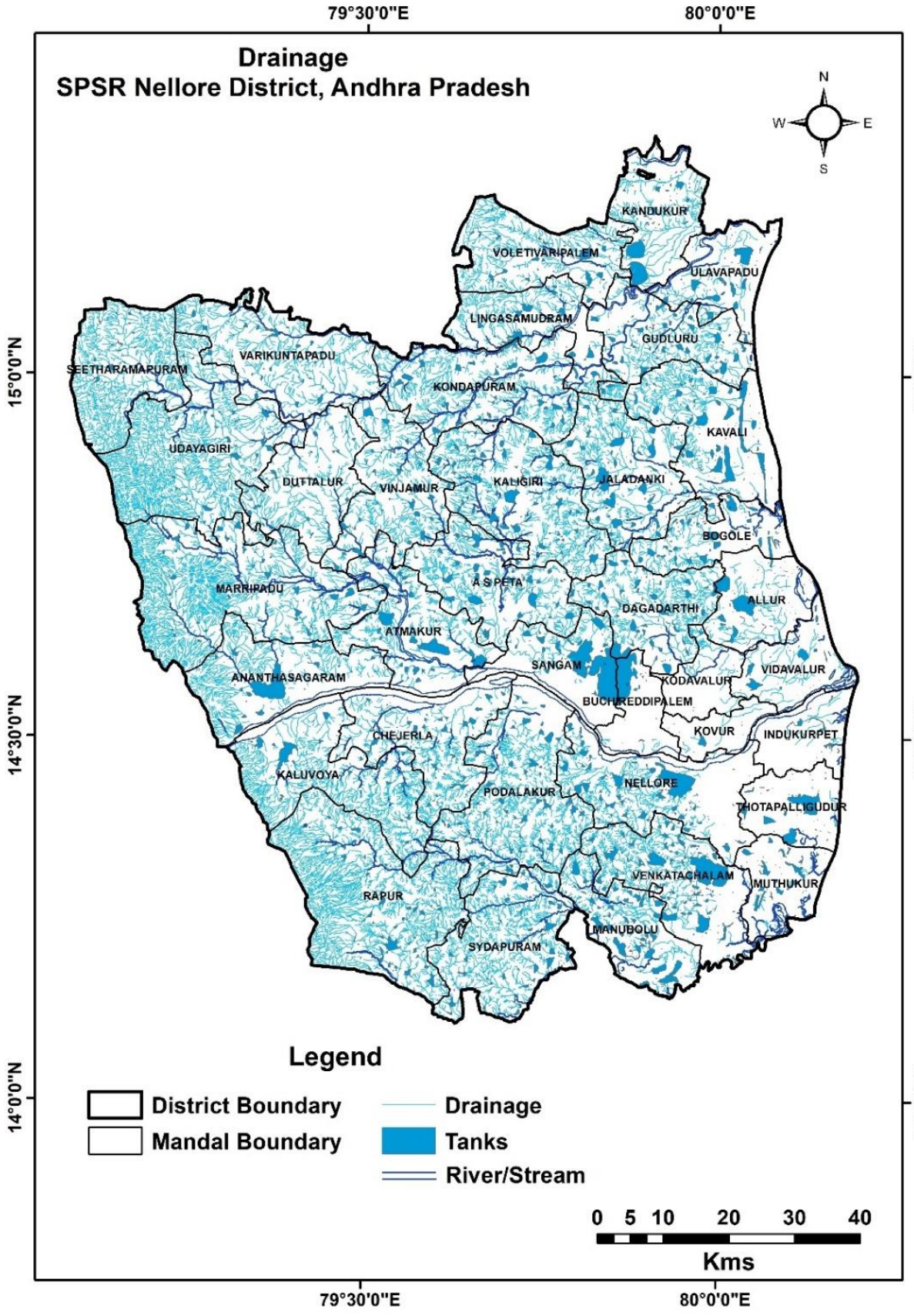



**Fig.1.4: Drainage map of SPSR Nellore district.**

**1.7 Land use pattern (2019-20):** The total geographical area of the district is 10.44 lakh hectares. Out of this, 20.67 % of the area is covered by forests. The rest is distributed among Barren and Uncultivable land and Land Put to Non-Agricultural Uses which constitute 6.99% and 18.99% of the geographical area respectively. The Net area sown forms 27.66% of the total geographical area while the cultivable waste, fallow lands, permanent pastures and miscellaneous tree crops constitute 25.69%. **(Table No-1.2) & (Fig.1.5) & (Fig.1.6)**

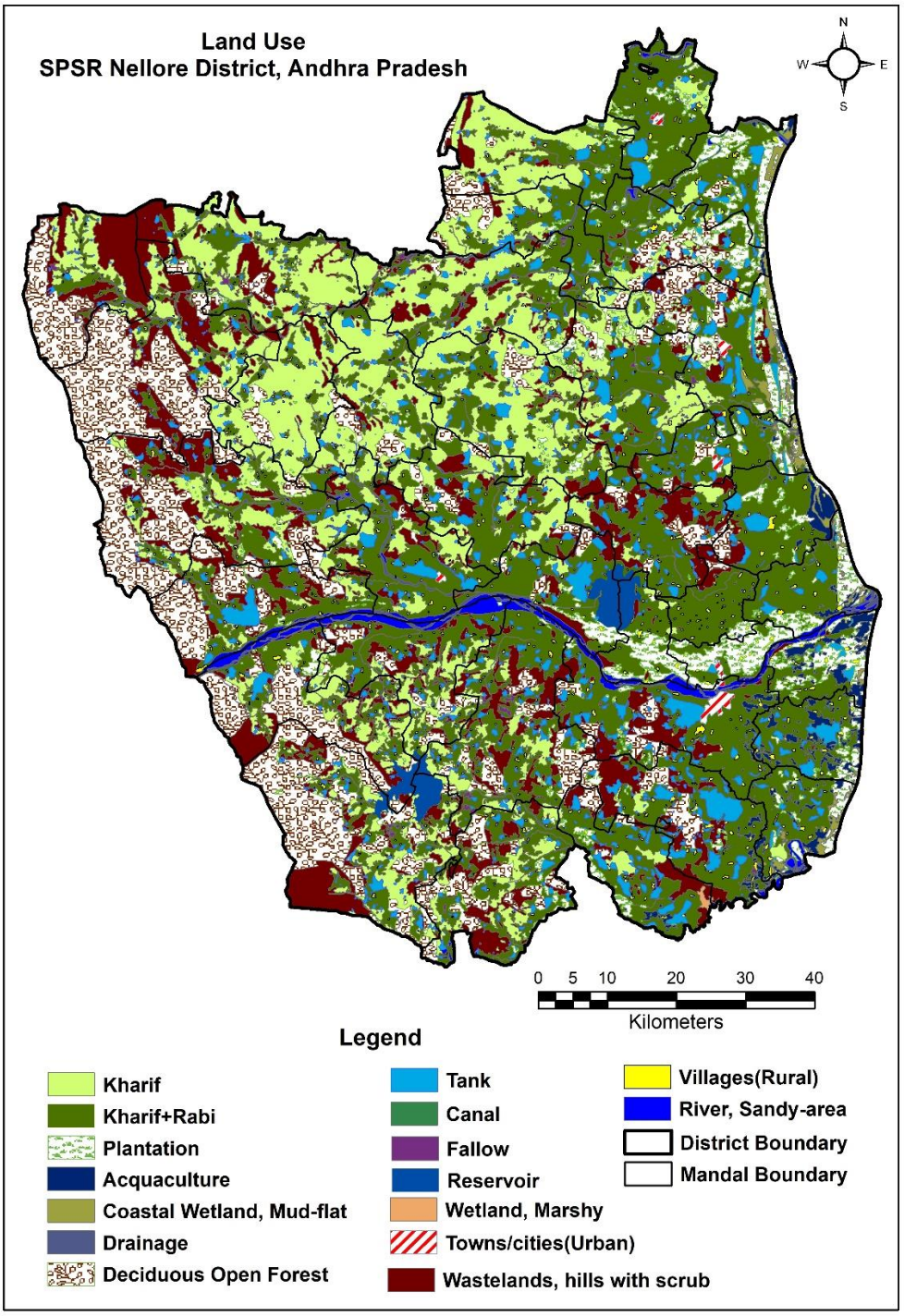



**Fig.1.5: Land use and land cover map of SPSR Nellore district.**

**Table No-1.2: Land Use Particulars, SPSR Nellore District**

| S.NO | CATEGORY | AREA (Hectares) |
|---|---|---|
| 1 | Total geographical area | 1043975 |
| 2 | Forests | 215801 |
| 3 | Barren & uncultivable land | 72964 |
| 4 | Land put to non-agricultural uses | 198255 |
| 5 | Cultivable waste | 72105 |
| 6 | Permanent pastures and other grazing lands | 28166 |
| 7 | Land under miscellaneous tree crops & groves not included in net areasown | 6276 |
| 8 | Current fallows | 57836 |
| 9 | Other fallow lands | 93891 |
| 10 | Net Area Sown | 288770 |
| 11 | Total Cropped Area | 305481 |
| 12 | Area Sown More than Once | 16711 |
| 13 | Fish & Prawn Culture | 9911 |

**Source: Statistical Hand Book of SPSR Nellore District (2019-2020)**

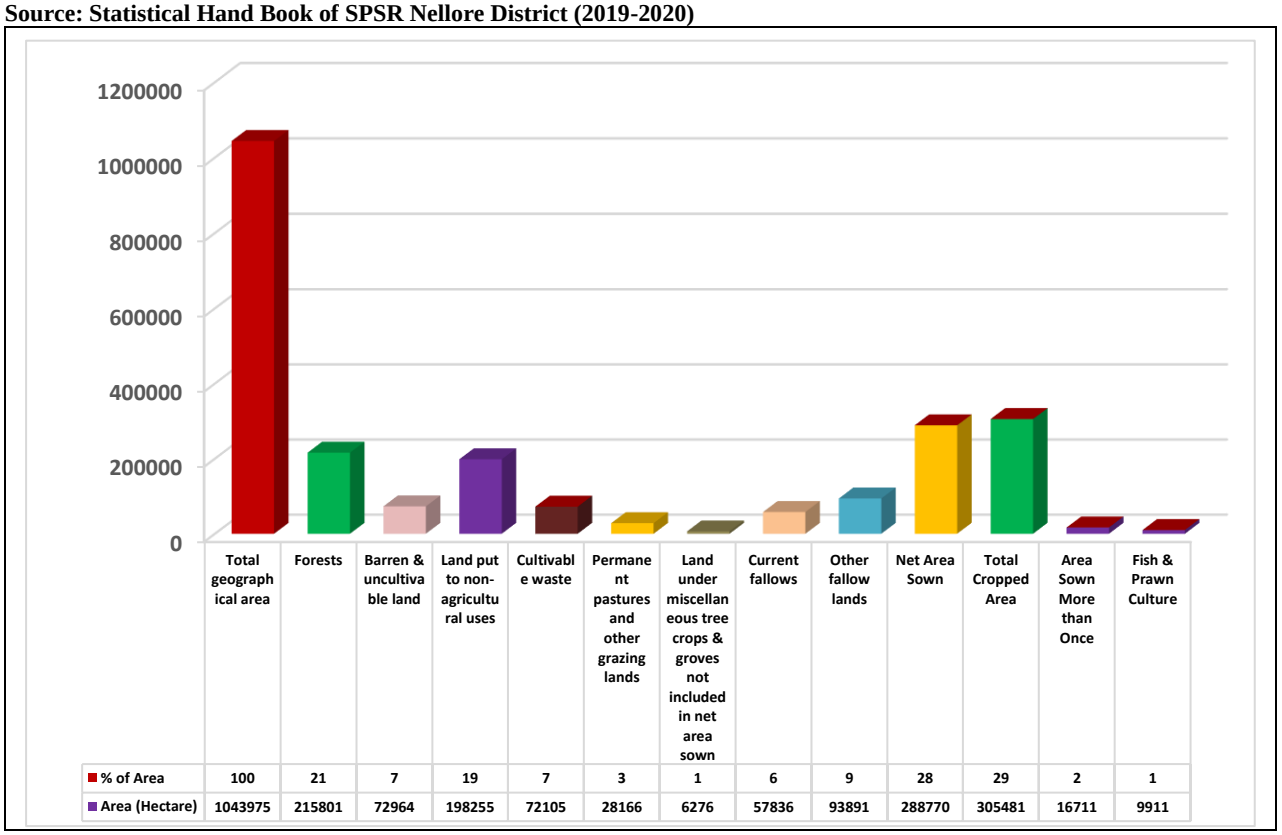



**Fig.1.6: Land use and land cover map of SPSR Nellore district.**

**1.8 Agriculture:** Agriculture is the main stay of the people in the district. The total cropped area of the district is 3.05 Lakh hectares during the year 2019-20 which forms 29.26% of the total area of the district. The principal crops being grown are Paddy, Bajra, Sugarcane, Groundnut, Fruits & Vegetables, Chilies, Cotton and Tobacco. The total gross cropped area during the year 2019-20 is 3,05,599 ha and net sown area is 2,88,770 ha. The gross area cropped during Kharif season is 88,053 ha and the major crops grown during kharif season are Paddy (46%), Groundnut (17%), Total oil seeds (21%), cotton (3%), total pulses (6%) and 07% remaining other crops. The gross area cropped during Rabi season is 2,17,546 ha and the major crops grown during the period are Paddy (67%), Groundnut (1%), Total oil seeds (2%), Tobacco (5%), total pulses (17%) and 08% remaining other crops. Season wise cropping pattern is given in Fig.1.7a and Fig.1.7b. Land use and land cover map of the district is depicted in **Fig. 1.6.**

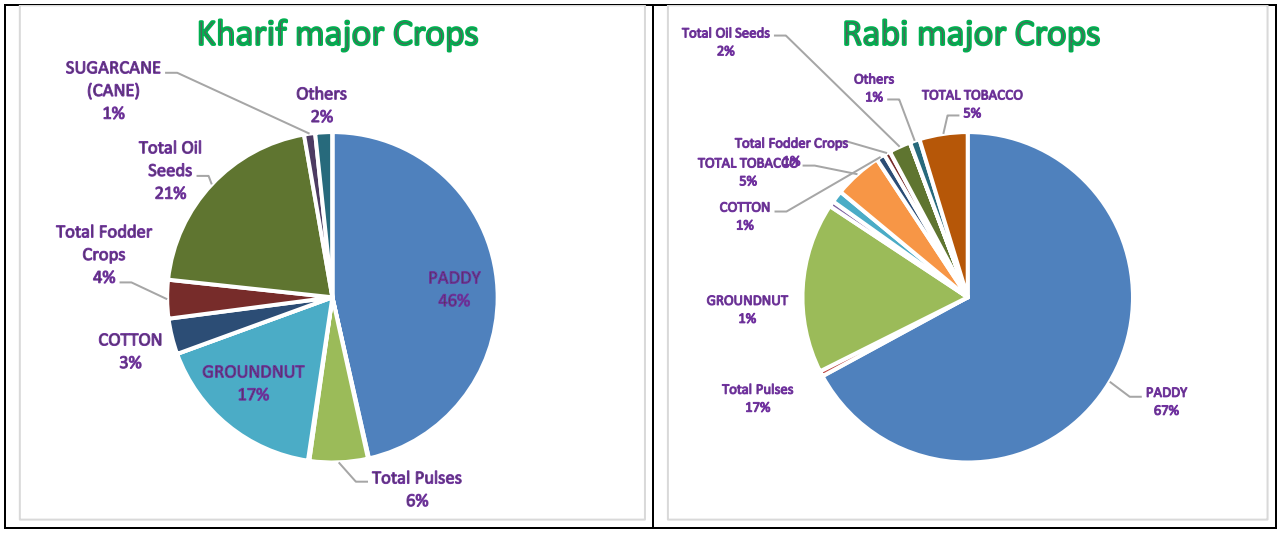



**Fig 1.7a & 1.7b Crop wise irrigation Status in the SPSR Nellore District**

In the district there are 2,92,145 marginal farmers (Below 1.00 Hectares of land), 90,166 small farmers (1.0-2.0 Hectares of land), 40,371 semi-medium farmers (2.0-4.0 Hectares of land), 1,24,469 medium farmers (4.0-10.0 Hectares of land) and 1396 large farmers (10 & above Hectares of land).

**1.9 Irrigation**: During the agricultural year 2019-20, the Net irrigated area in the district is 1.87 lakh hectares out of Net Cropped area of 2.89 lakh hectares. The Net area irrigated in the district by canals, tanks, tube wells & filter points and other wells. The area irrigated under canals is 1.25 Lakh hectares, tanks is 0.15 Lakh hectares, tube wells & filter pointes is 0.62 respectively. An extent of 0.01 lakh hectares is irrigated under lift irrigation sources. The gross area irrigated is 2.03 lakh hectares which is inclusive of 0.16 lakh hectares under area irrigated more than once. The area irrigated by ground water is 62,328 ha (31%) whereas 1,41,060 ha of area are mainly irrigated by surface water sources (69%). There are ~4,468 dug wells and there are 47,109 bore wells in the district. The salient features of irrigation are givenin **Table-1.3 & Fig 1.8.**

**Table-1.3: Salient Features of Irrigation Kharif and Rabi season**

| Source of Irrigation | Irrigation structures | Kharif (ha) | % | Rabi (ha) | % | Total (ha) | Gros area Irrigated Total(ha) |
|---|---|---|---|---|---|---|---|
| **Ground Water** | Bore wells | 39489 | 64 | 22128 | 36 | 61617 | **62,328** |
| | Dug wells | 541 | 76 | 170 | 24 | 711 | |
| **Surface Water** | Canals | 130 | 0.1 | 125298 | 99.89 | 125428 | **1,41,060** |
| | Tanks | 0 | 0 | 15083 | 100 | 15083 | |
| | Lift Irrigation | 63 | 11 | 486 | 89 | 549 | |
| **Others** | Others | 0 | 0 | 0 | 0 | 0 | |

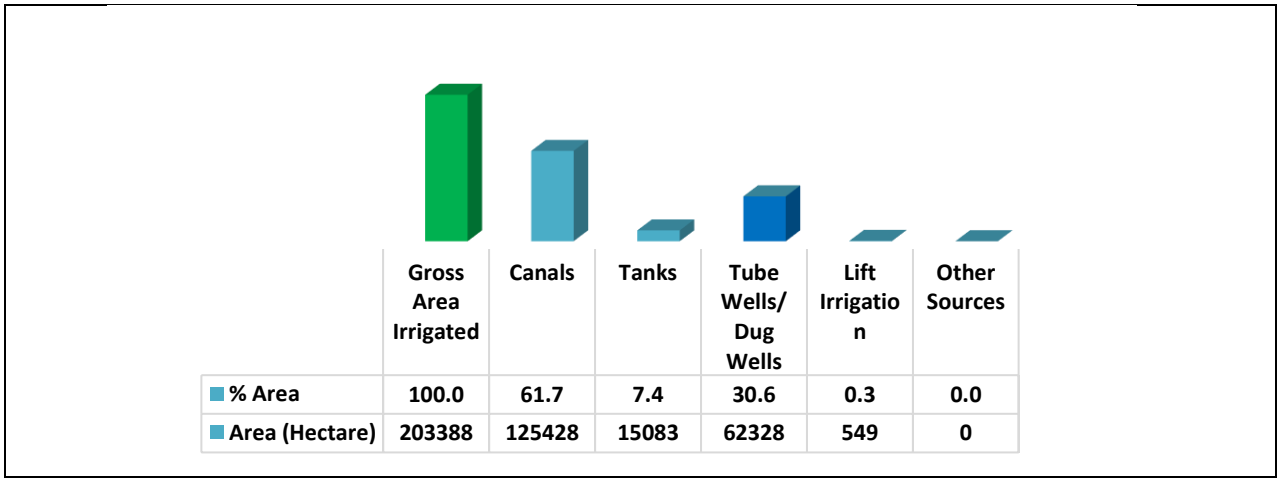



**Fig 1.8 Source of Irrigation**

The gross area irrigated is 2.03 lakh hectares. In which, 69% of the irrigation is through surface irrigation and 31% of the area is irrigated through ground water irrigation

**1.10 Irrigation Projects:** Three major Irrigation Projects and two medium Irrigation Projects and 968 Minor Irrigation tanks. Pennar delta (1,00,000 Ha Ayacut), Somasila Project (35,661 Ha Ayacut) and Telugu Ganga Projects (72,645 Ha Ayacut) are the Major Irrigation Projects with a total ayacut of 2,08,306 Ha. Gandipalem project (now named as P.C.R. Gandipalem Project) with an ayacut of 6,475 Ha and Kanpur canal system with an ayacut of 13,355 Ha wet are the two medium irrigation Projects. There are 968 Minor Irrigation sources in the district with a total registered ayacut is 77478.23 Ha but actual area irrigated is 14,982 Ha**.(Fig 1.9) & (Fig 1.10)**

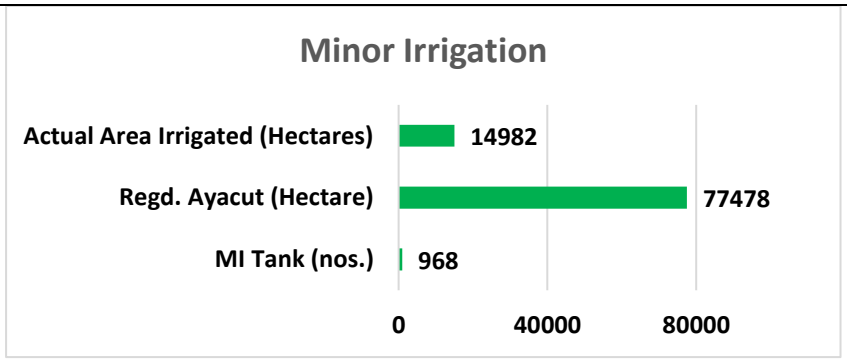



**Fig 1.9 Minor Irrigation sources**

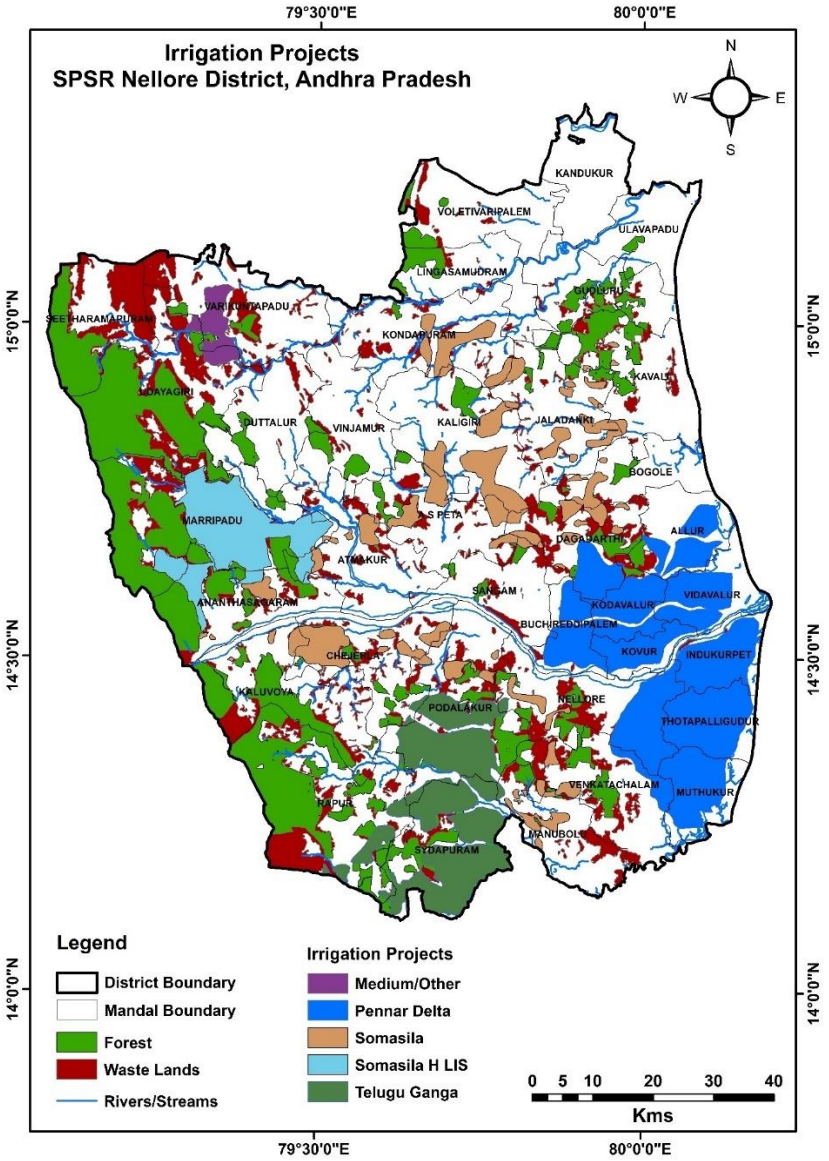



**Fig 1.10 Irrigation Projects**

**1.11 Prevailing water conservation/Recharge practices:** In the district there are ~588 percolation tanks, 748 Check dams/Check Walls and 15,175 farm ponds. Till 2019-20, ~ 59,154 ha area is brought under micro-irrigation practices (Drip and Sprinklers).**( Fig 1.11)**

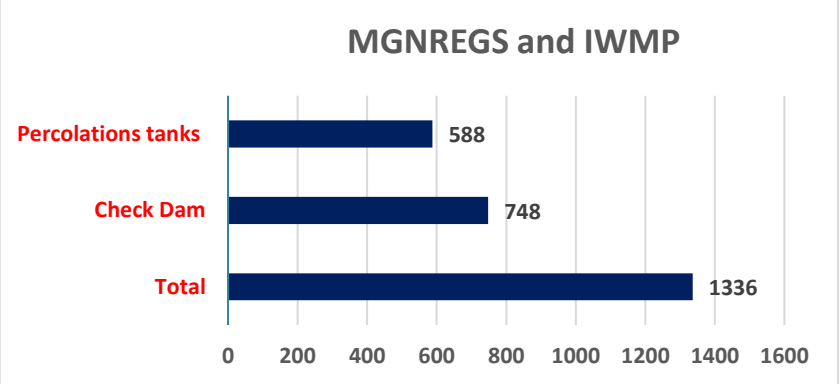



**Fig 1.11 water conservation structures**

**1.12 Soils:** The soils of the district are classified as black, red and sandy. The black cotton soil is predominant with 80% of the area in the district. The red soil and sandy loams occupy 10% and 10% of the area respectively. (**Fig.1.12**).

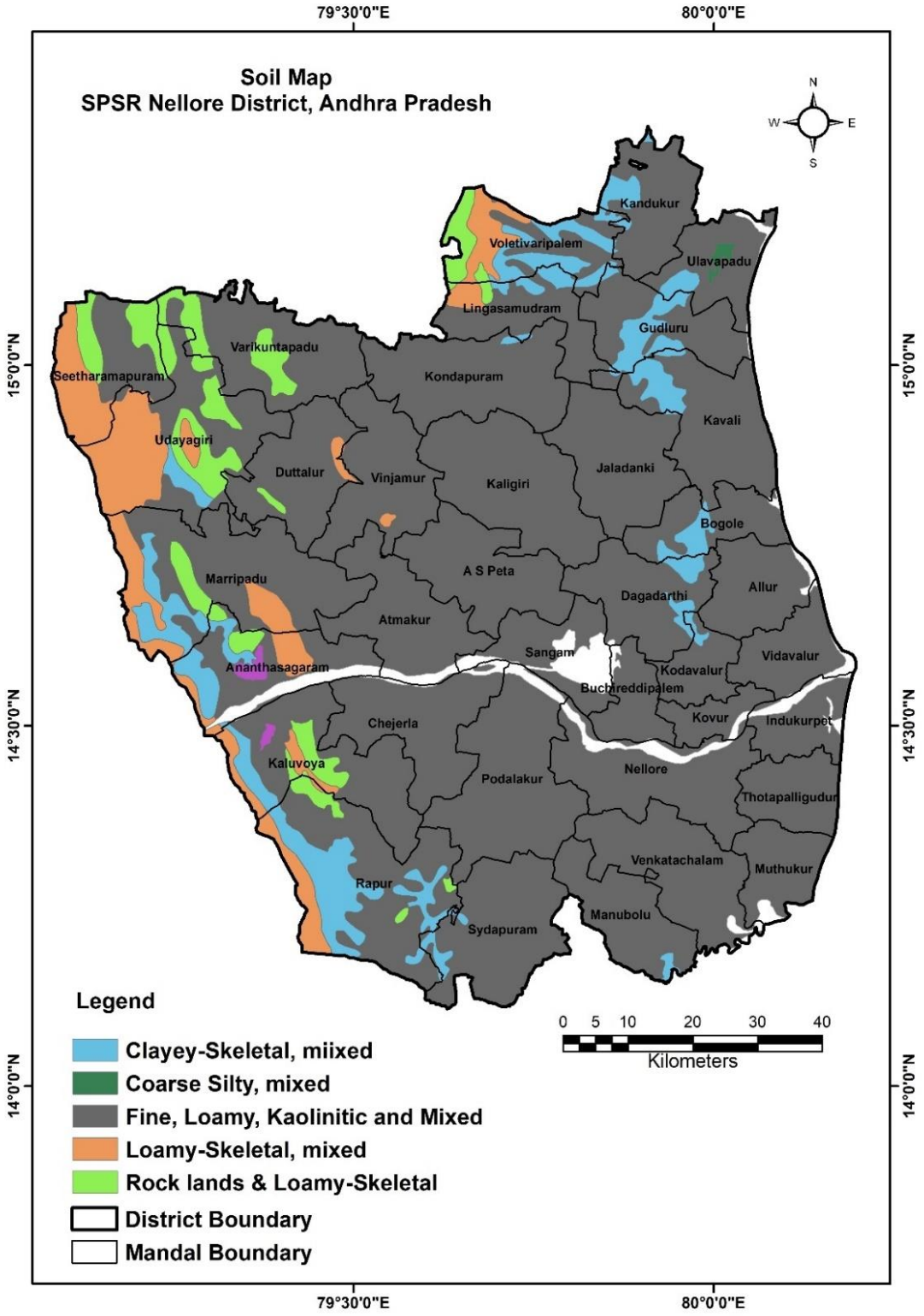



**Fig.1.12: Soil map of SPSR Nellore district**

**1.13 Geology:** The district is underlain by oldest Archaean Super Group to Recent alluvium. Major part of the district is underlain by gneisses, schists of Peninsular Gneissic Complex and Dharwar Super Group of rocks. All along, the western boundary of the district is underlain by quartzites, shales of Cuddapah Super Group of rocks. A small patch of Gondwana sandstone and shales occur in northern part of the district. Sandstones of Tertiary age overlain by laterites occur as isolated patches in and around Nellore town. Along Pennar river and eastern part of the district is underlain by the deltaic, river and coastal alluvium. **(Fig1.13).**

| Aquifer/Formation | Area (Sq.kms) | Aquifer/Formation | Area (Sq.kms) |
|---|---|---|---|
| Schist | 7121 | Laterite | 210 |
| Alluvium | 1860 | Sand Stone | 87 |
| BG | 803 | Granite | 64 |
| Quartzite | 256 | **Total** | **10401** |

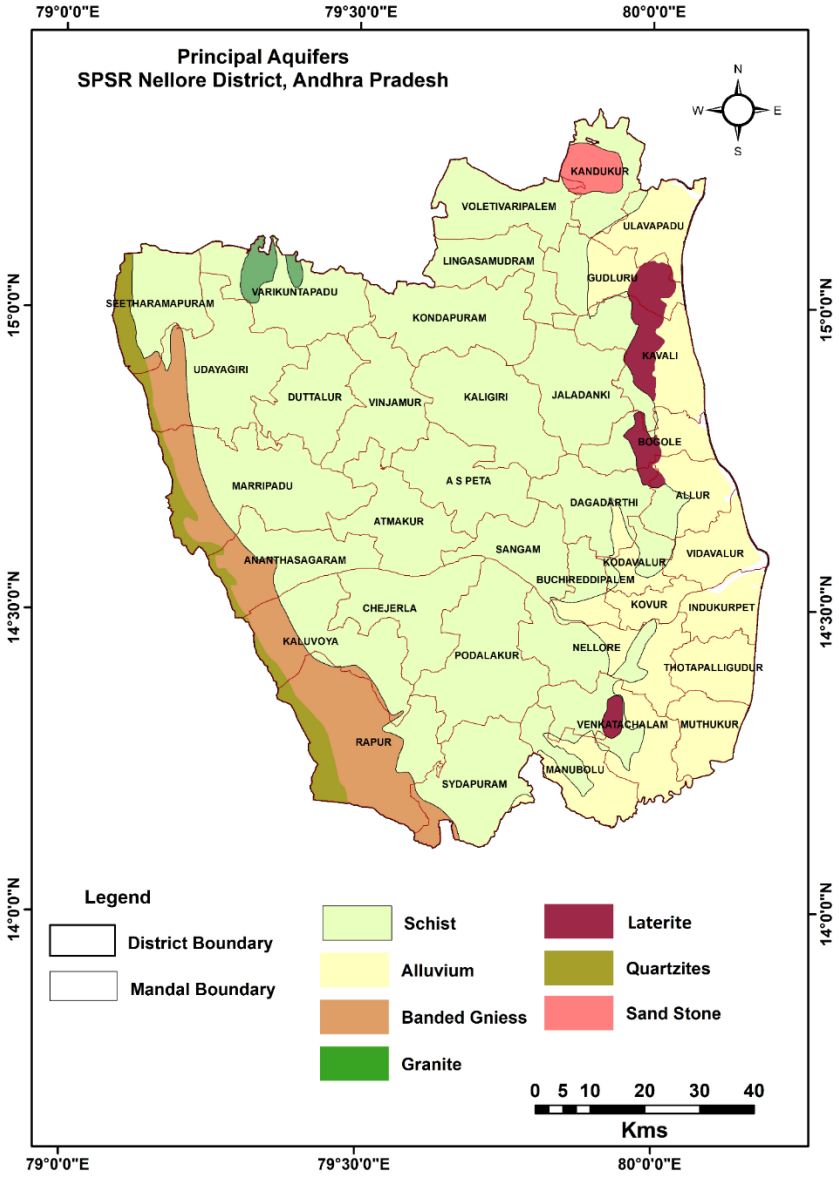



**Fig.1.13: Geology Map of SPSR Nellore district.**

# 2. DATA COLLECTION and GENERATION

The historically available data of Geology, Geophysics, Hydrogeology, and Hydrochemistry generated under various studies by the CGWB through Systematic Hydrogeological studies, Reappraisal Hydrogeological studies, Groundwater Management studies, Exploratory drilling, and special studies have been utilized for data gap analysis, along with the data collected from various State and Central government departments. **(Table-2.1)**.

**Table-2.1: Brief activities showing data compilation and generations.**

| S.No. | Activity | Sub-activity | Task |
|---|---|---|---|
| 1 | Compilation of existing data/ Identification of Principal Aquifer Units and Data Gap | Compilation of Existingdata on groundwater | Preparation of base map and various thematic layers, compilation of information on Hydrology, Geology, Geophysics, Hydrogeology, Geochemical etc. Creation of data base of Exploration Wells,delineation of Principal aquifers (vertical and lateral) and compilation of Aquifer wise water level and draft data etc. |
| 2. | Generation of Data | Generation of geological layers (1:50,000) | Preparation of sub-surface geology, geomorphologic analysis of land use pattern. |
| | | Surface and sub-surface geo-electrical and gravity data generation | Vertical Electrical Sounding (VES), bore-holelogging, 2-D imaging etc. |
| | | Hydrological Parameters on groundwater recharge | Soil infiltration studies, rainfall data analysis, canal flow and recharge structures. |
| | | Preparation of Hydrogeological map (1:50, 000 scale) | Water level monitoring, exploratory drilling, pumping tests, preparation of sub-surface hydrogeological sections. |
| | | Generation of additionalwater quality parameters | Analysis of groundwater for general parametersincluding fluoride. |
| 3. | Aquifer Map Preparation (1:50,000 scale) | Analysis of data and preparation of GIS layers and preparation of aquifer maps | Integration of Hydrogeological, Geophysical,Geological and Hydro-chemical data. |
| 4. | Aquifer Management Plan | Preparation of aquifermanagement plan | Information on aquifer through training to administrators, NGO's, progressive farmers and stakeholders etc. and putting in public domain. |

**2.1 Exploratory Drilling:** As on 31/12/2022, CGWB drilled 126 bore wells (Table-2.2) (exploratory, observation and piezometers) in the district. Data analyzed from CGWB wells indicates, 08 wells are of shallow depth (30 m), 07 nos are of 30-60 m, 13 nos are of 60-100 m, 39 nos are of 100-150 m, 54 nos are of 150-200 m and 08 nos are of 200- 349 m depth. As per data gap analysis, ground water exploration is being carried out in SPSR Nellore district for data generation during the current annual action plan 2022-23.

Depth of exploratory wells in Cuddapah group of rocks varies from 20-208 m and deepest fractured encountered is at 189 m (Ganupalli in Rapur mandal). In Schist rocks the depth of bore wells ranges from 21-203 m and deepest fracture is encountered at 186 m (Bonthamarupalli). In Gniesses the depth of exploratory wells ranges from 30-202 m and deepest fracture is encountered at 189m (Gonupalli). In alluvium depth of tube wells ranges from 33-300 m and zones tapped from 9-74 m only.

**Table:2.2: Details of Exploratory Wells Drilled in Nellore District**

| | **Hard rock** | **Soft rock** |
|---|---|---|
| No. of exploratory wells | 82 | 10 |
| No. of observation wells | 15 | 2 |
| No. of piezometer/water table wells | 17 | 1 |
| Depth range (m bgl) | 20-208 | 33-349 |
| Depth of potential zone (m bgl) | 25-85 | 20-40 |
| General yield range (lps) | 0.4 to 20 | 1.0-2.5 |
| Transmissivity ($m^2$/day) | 0.17 to 165 | 0.63 to 1685 |
| Storativity | 1x 10-6 to 0.001 | 1x 10-6 to 0.007 |
| Specific Capacity (lpm/m.dd) | 3-48 | 6 – 371 |

**2.2 Water Level:** Ground water regime monitoring is the basic component of groundwater management and it is carried out in parts of SPSR Nellore district through National Hydrograph Network Stations (NHNS or NHS). NHSs are observation wells, comprising of dug wells and purpose built bore wells – known as piezometers. There are 106 wells (CGWB:49, SGWD: 57 PZ) part of the NHS. CGWB wells are being monitored four times (January, May, August and November) in a year whereas; the monitoring wells of State Ground Water Department (SGWD) are being monitored every month. These 104 groundwater monitoring wells were used in order to understand the annual as well as decadal spatial-temporal behavior of the groundwater regime. 74 key wells were established for monitoring of water level and ground water samples collected for chemical analysis.

**2.3 Hydro chemical Studies:** Water quality data of Exploratory wells, NHS monitoring wells and Key Wells are utilized for understanding the spatial variation of quality in the district. A total of 177 Pre monsoon (NHS:49, Key Wells: 74 & Exploratory Wells: 54). Ground water monitoring well data of Central Ground Water Board and Andhra Pradesh State Rural Water Supply Department (mostly tapping combined aquifers Aq-1 and Aq-2) is utilized to understand the chemical characteristics of groundwater. Parameters namely pH, EC (in µS/cm at 25 ° C), TH, Ca, Mg, Na, K, CO3, HCO3, Cl, SO4, NO3 and F were analyzed.

**2.4 Geophysical Studies:** Geophysical data on VES and profiling are used to extract information on the weathered thickness, fracture depth, thickness of fracture etc in the study area. For the interpretation of the aquifer geometry geophysical data in conjunction with the available groundwater exploration data is utilized. A total of 120 VES studies have been carried out in the district as per data gap analysis. **(Fig 2.1) & (Fig 2.2)**

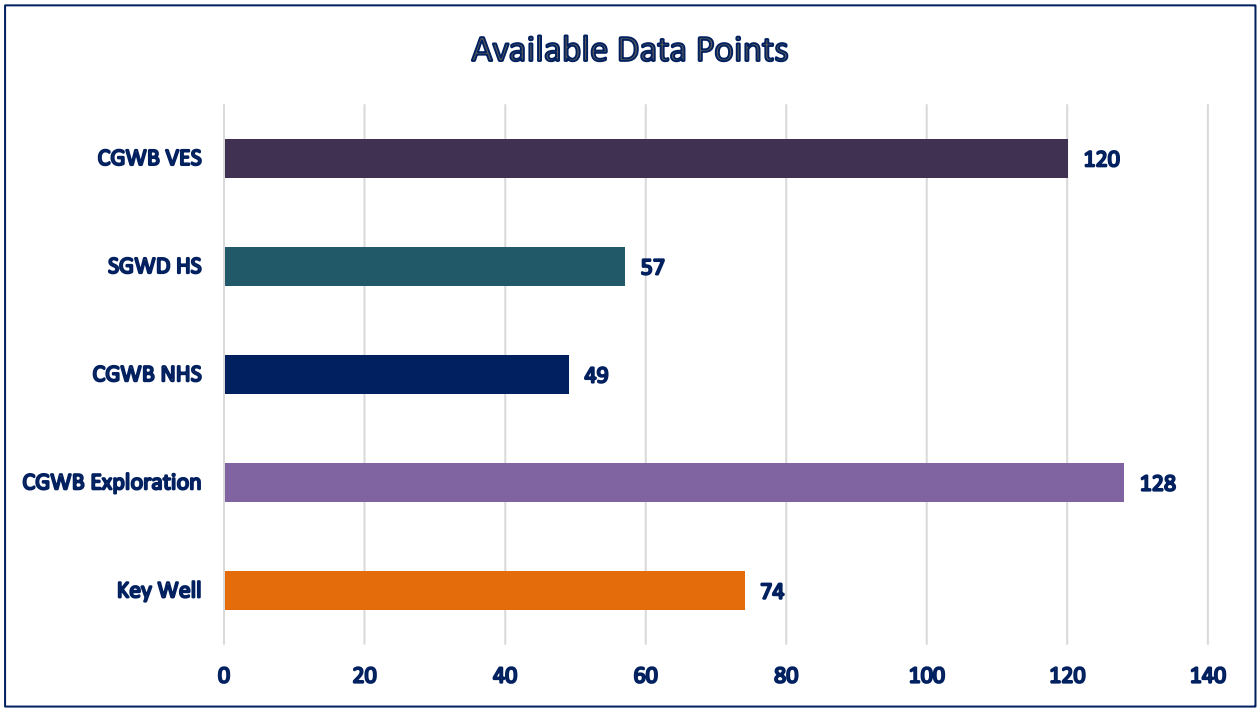



**Fig 2.1 Available Data Points**

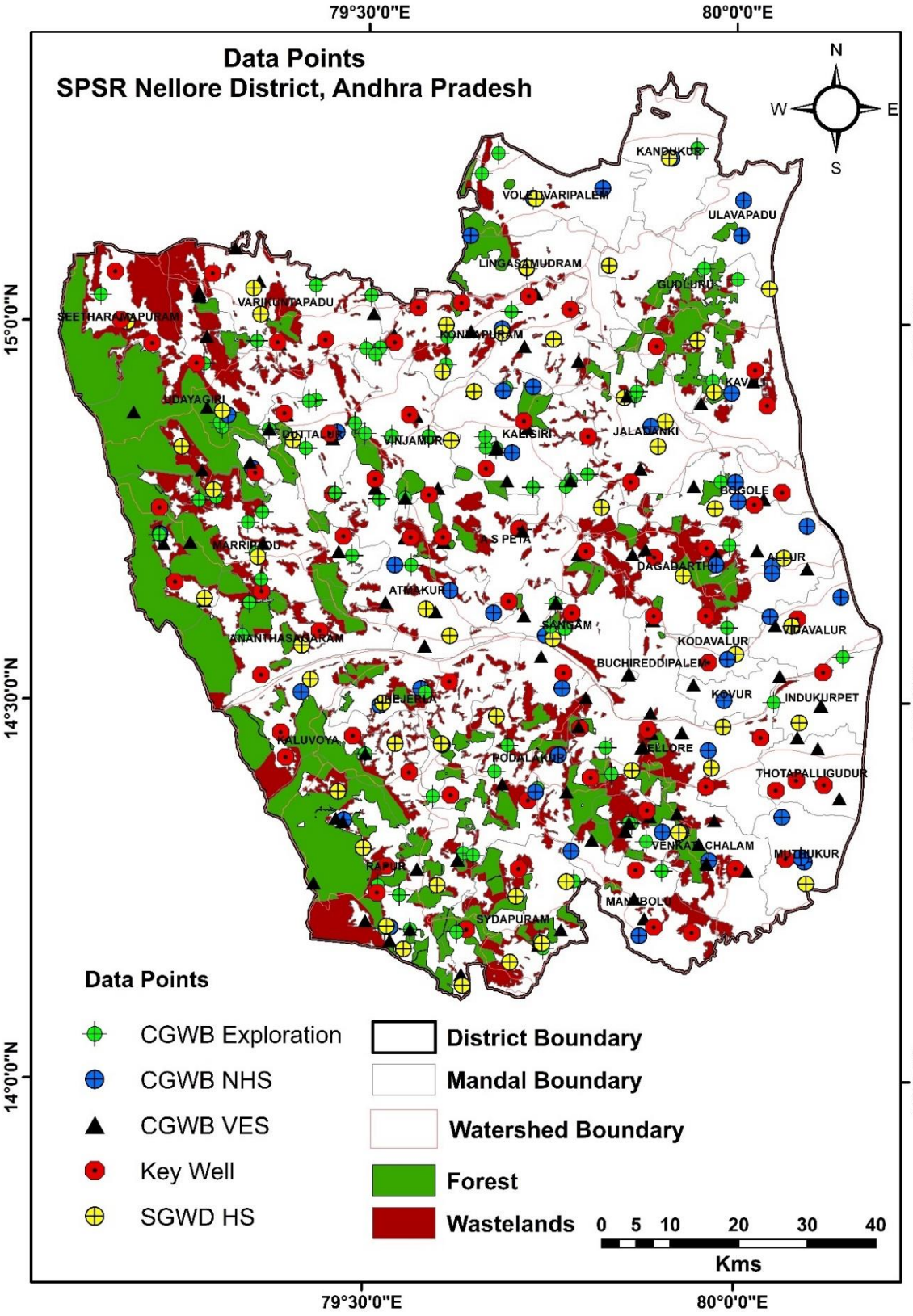



**Fig. 2.2: Map Showing Hydrogeological data availability in SPSR Nellore District.**

# 3. DATA INTERPRETATION, INTEGRATION AND AQUIFER MAPPING

In order to establish the three-dimensional disposition of aquifer system in the area, the existing data of litho logical logs of Exploratory wells studies carried out by CGWB were used to prepare a hydro geological cross section, Fence diagram and 3D Model. The data has been analyzed using Rockworks 17 software and is presented below in the Hydrogeological cross sections A-A' to D-D'' and Solid Model of the district showing the depiction of Aquifer Groups up to 200m. Map showing section lines are presented in Fig. 3.1. The stratigraphic sections depicting in Alluvium area comprising silt, sand, clay, gravel and kankar, unconfined/Semi Confined aquifer, occurring up to the depth from 0 to 62 m bgl. In Hard rock area weathered Aquifer depth of occurrence is from 0 to 28m and fractured aquifer depth of occurrence is from 35 to 170m. Hydrogeological cross sections are placed at Figs 3.2 a to 3.2 d (A to D). Fence Diagram and 3D Solid Model of SPSR Nellore district is depicted in Fig. 3.3 and 3.4, respectively.

A total of 128 exploratory wells and piezometers constructed by CGWB. And 93 lithologs are utilized to decipher the subsurface geometry of the aquifer by using Rockworks 17 software prepared hydro geological cross sections, Fence diagram and 3D Model up to the depth of 200 mbgl. **Table No: - 3.1**

**Table No: - 3.1 Data integration**

| S. No. | Data | Aquifer | Total Data Points | Source | | |
|---|---|---|---|---|---|---|
| | | | | CGWB | SGWD | NAQUIM KEY WELLS |
| **1** | Panel Diagram (3-D) | 1 no | 93 | Expl:128 | - | |
| **2** | Hydrogeological Cross Sections | 04 no | 93 | Expl: 128 | - | |
| **3** | Fence/panel Diagrams | 1 no | 93 | Expl: 128 | - | |
| **4** | Depth of weathering | 1 no | 93 | Expl: 128 | - | |
| **5** | Depth of fracturing | 1 no | 93 | Expl: 128 | - | |
| **7** | Depth to Water Level Maps (2022) | Combine | 181 | NHS:49 | NHS: 58 | 74 |
| **8** | Decadal Water Level Maps (2013-22 | Combine | 107 | NHS:49 | NHS: 58 | - |
| **9** | Water quality pre-2022 | Combine | 177 | Expl: 54 & NHS: 49 | - | 74 |

### 3.1 Conceptualization of Aquifer system in 2D

Four hydrogeological cross sections are drawn from North-East to South-West and North-West to South-East directions across the area represented in Figs 3.2 a to 3.2 d (A to D). Lithological logs of subsurface are correlated based on the position and depth of the geological formations and prepared four cross sections one fence diagram and one 3D solid model of SPSR Nellore district.

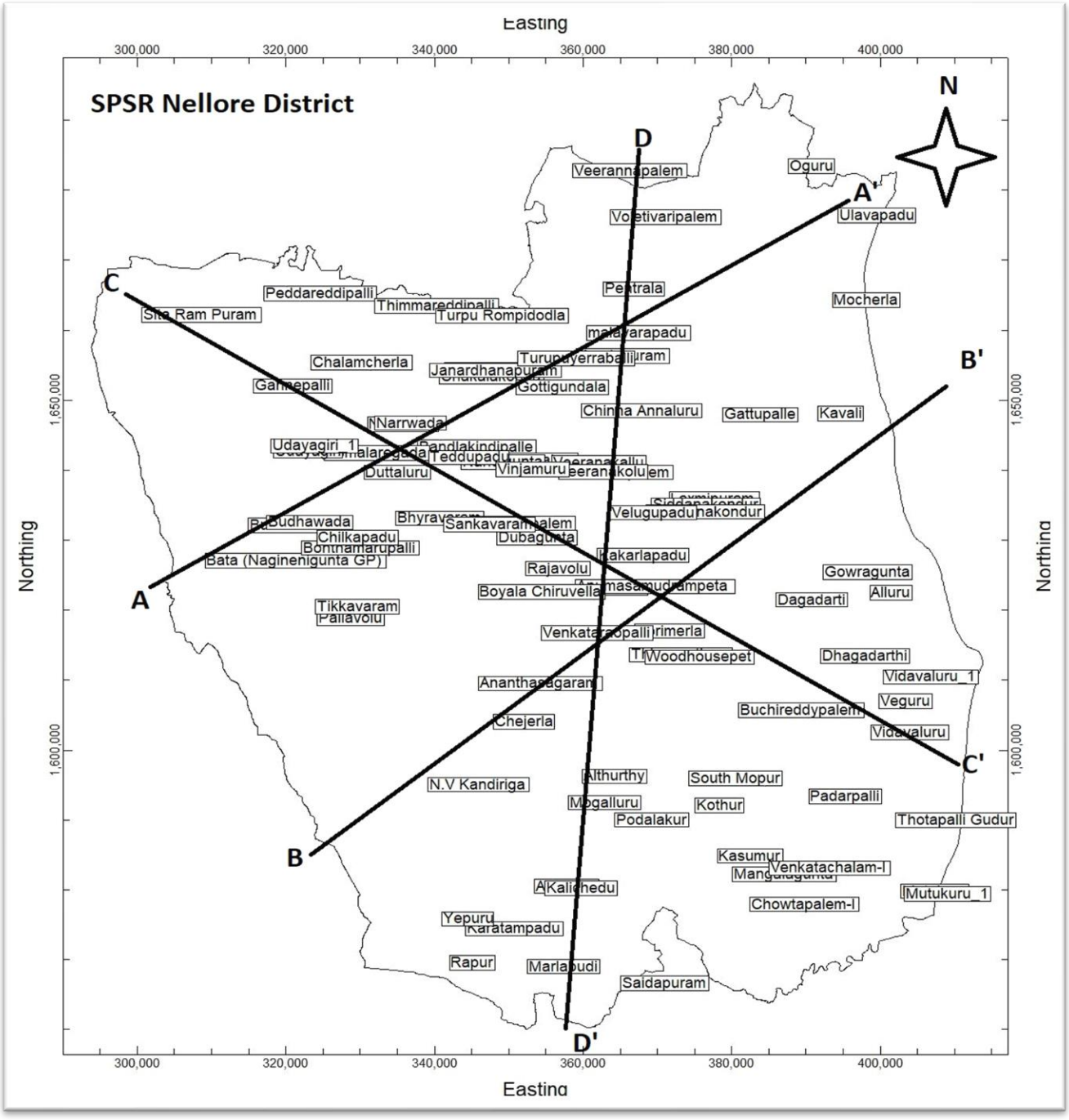
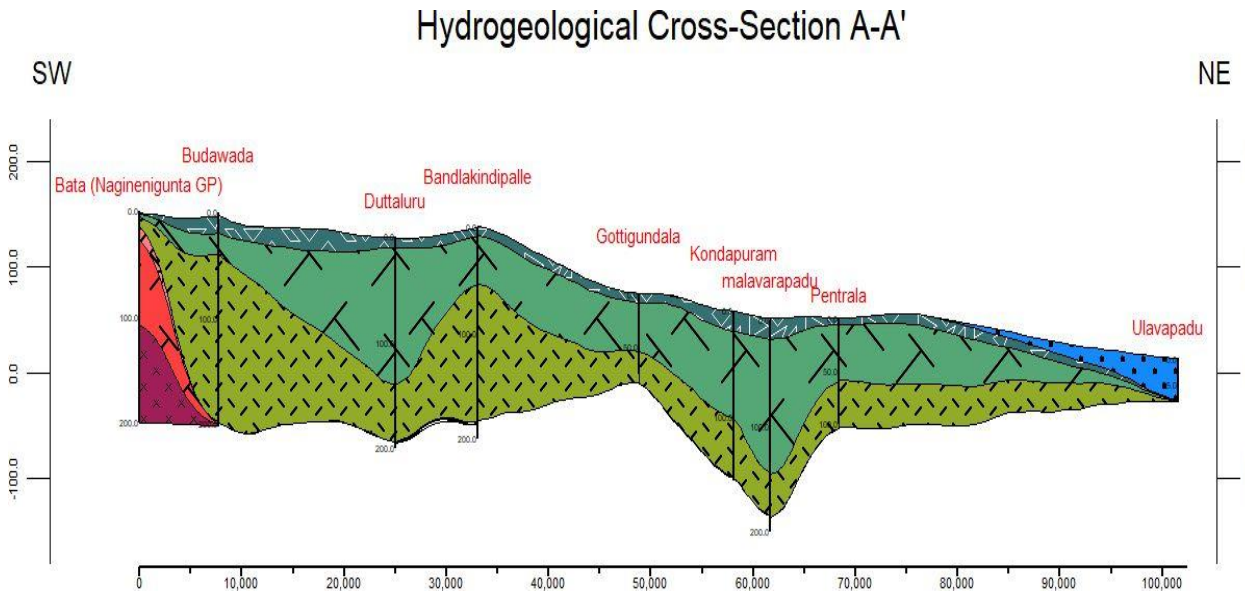
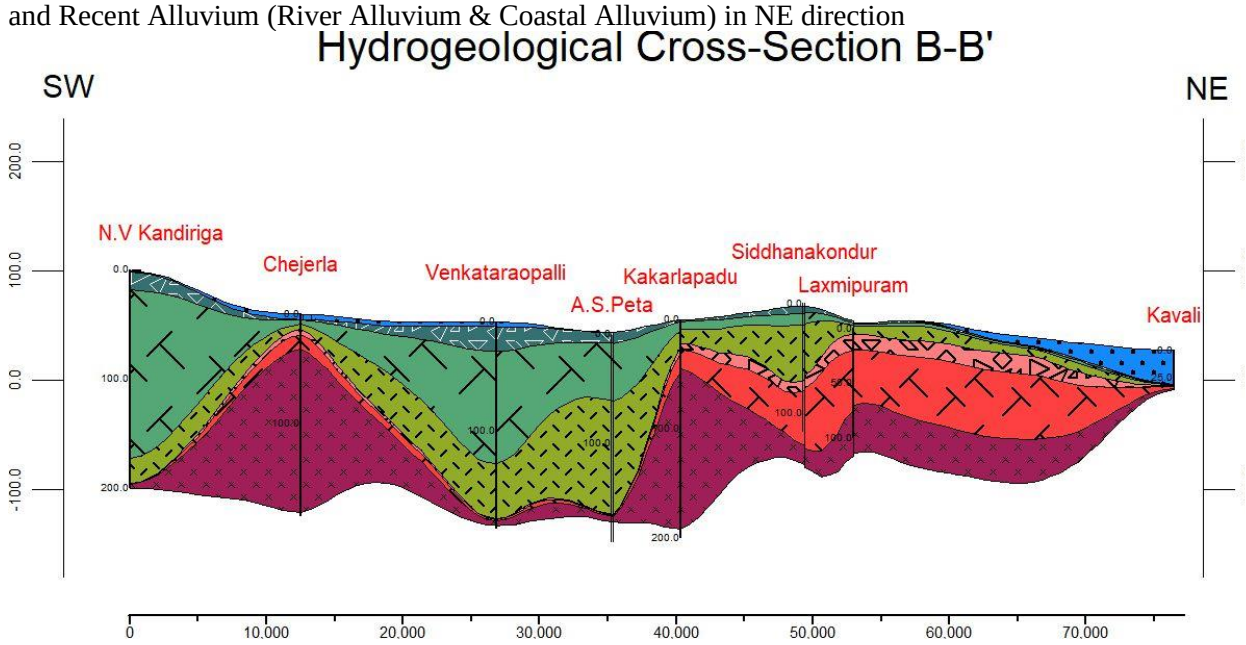


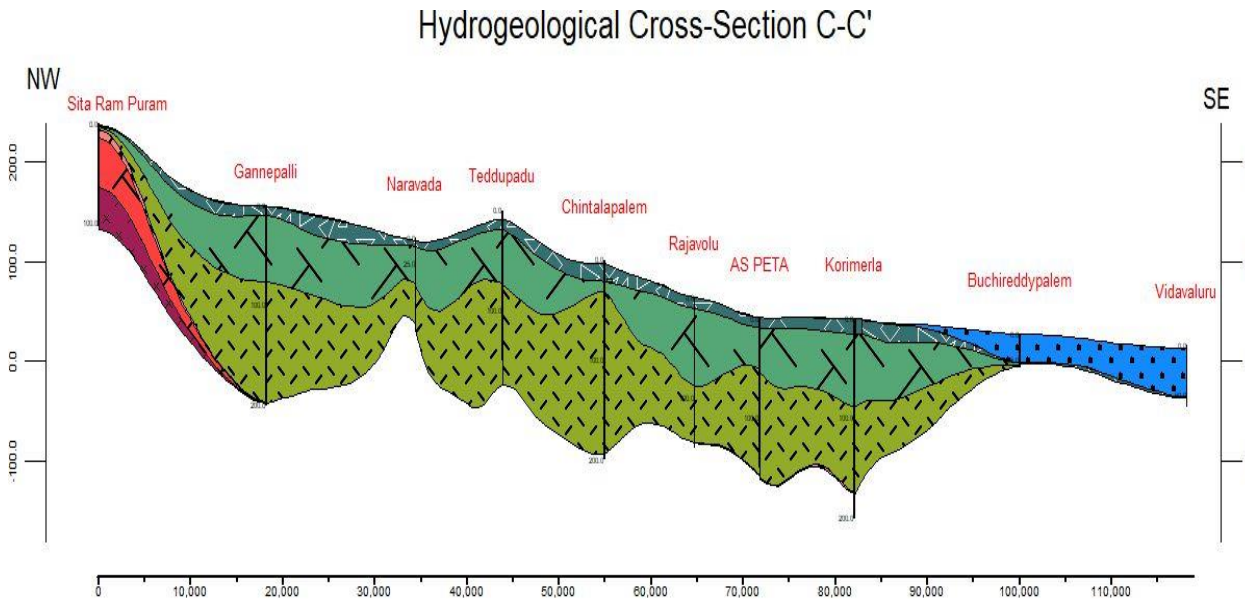

**Fig :3.1 Map Showing Section Lines**



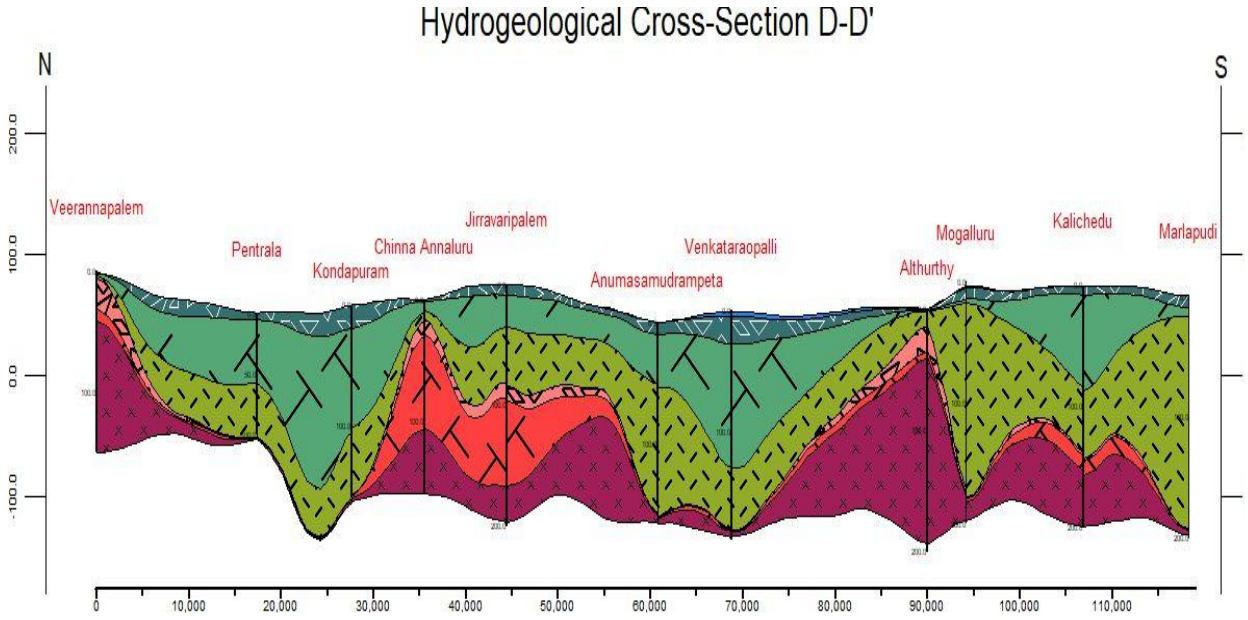

Section A-A' (Fig 3.2 a) - Section is drawn roughly NE-SW direction and start from Bata to Ulvapadu passing through Budavada, Gottigundala & Pentrala. Section is represented geologically, the oldest formation in the area is Archaean comprises various meta-sediments (Gneisses & Schist) in SW direction and Recent Alluvium (River Alluvium & Coastal Alluvium) in NE direction




Section B-B' (Fig 3.2 b)- section is drawn roughly NE-SW direction and start from NV Kandriga to Kavali passing through Chejerla, AS Peta & Laxmipuram. Geological formation encountered more or less same as in the section A-A' except in Chejerla River alluvium encountered at Ground Level.




Section C-C' (Fig 3.2 c)- section is drawn roughly NW-SE direction and start from Sita Rampuram to Vidavaluru passing through Gannepalli, Chintapalem & Buchireddypalem. Geological formation encountered more or less same as in the section A-A' except variation of thickness and position of out crops.




Section D-D' (Fig.3.2d)- section is drawn roughly N-S direction and start from Veerannapalem to Marlapudi passing through Pentrala, Jirravanipalem & Althurthy . Only Hard rock Geological formations (Gneisses & Schists) encountered with variation of thickness and position of out crops.

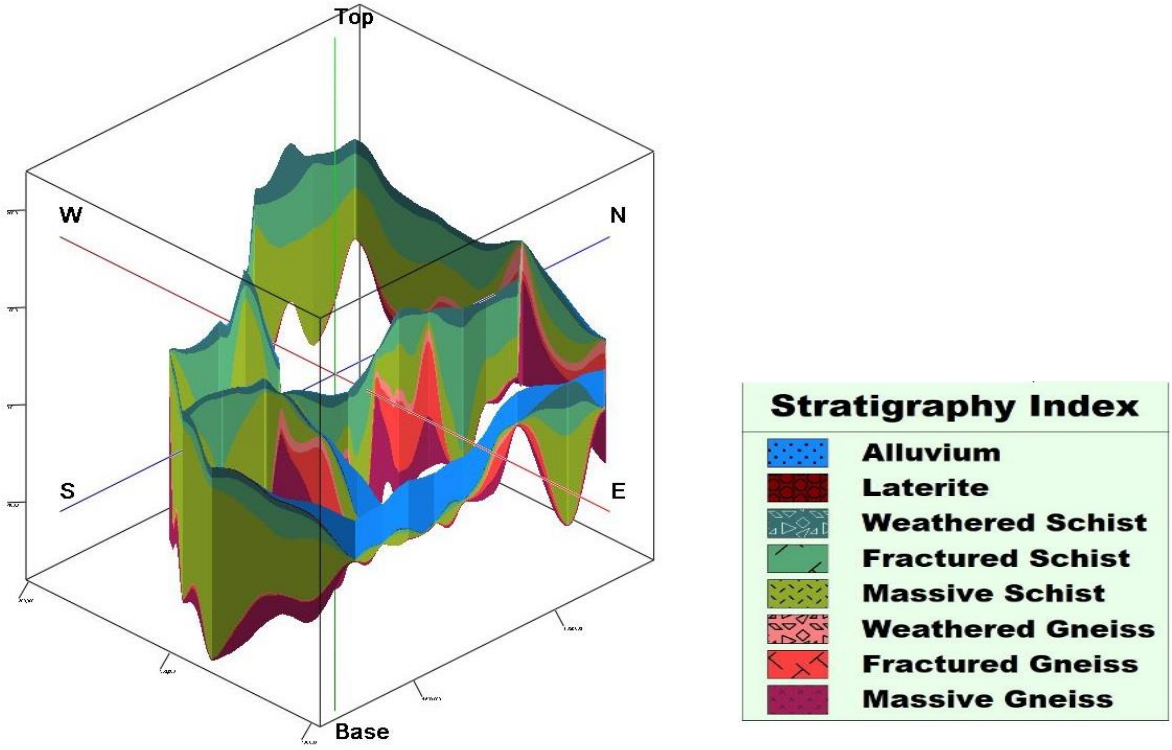



**Fig: 3.3 SPSR NELLORE DISTRICT FENCE DIAGRAM**

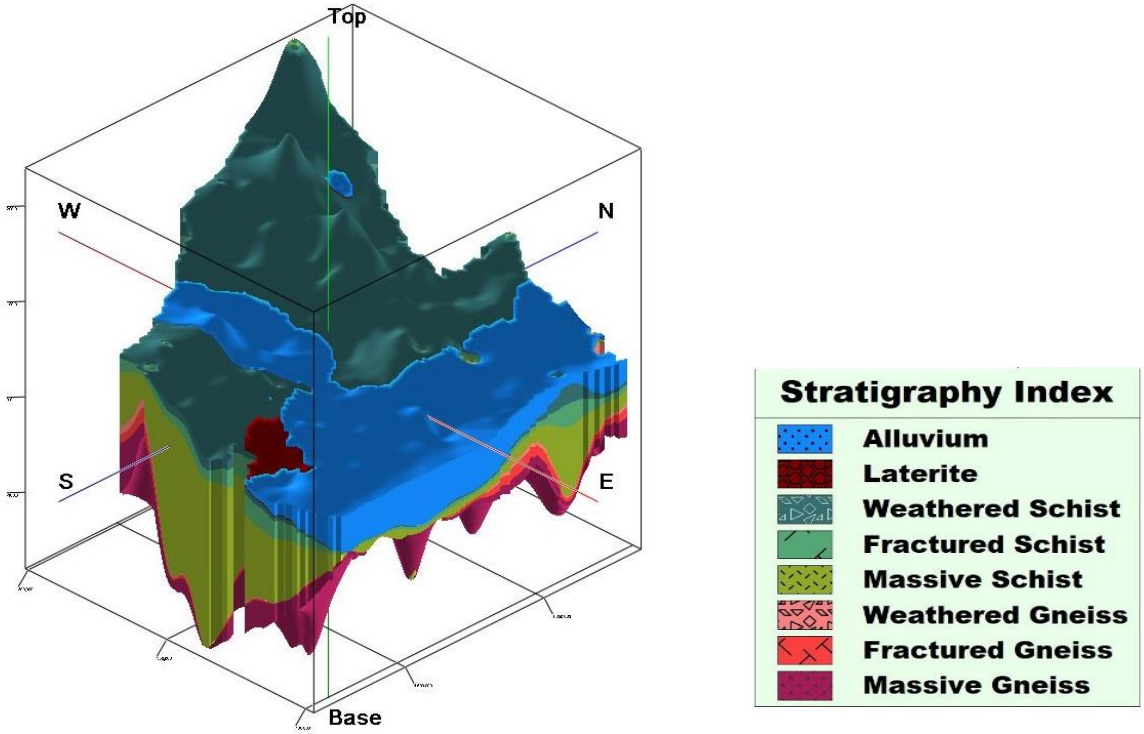



**Fig:3.4 SPSR NELLORE DISTRICT 3D AQUIFER DISPOSITION**

Finally, the study of these sections revels that the identification and delineating the Aquifers vertically and laterally. The SPSR Nellore district has two main hydrogeological provinces

consisting of hard rock and soft rock. In the hard rock, it is constituted of Meta sediments. In soft rock type, it has alluvium, Laterite and Sandstone. Each terrain has varied hydro-geochemical regime. Groundwater of the district originates as rainwater that infiltrates through soil into flow system in the underlying geologic material. In SPSR Nellore district, higher plateau and hill zones of Western part constitute as recharge areas, which is underlain by metasediments Gneisses and Schists. The discharge area constitutes alluvium plain in Eastern part of the district, facing Bay of Bengal Sea.

**3.2 Aquifer Disposition:** In Alluvium area comprising silt, sand, clay, gravel and kankar, unconfined/Semi Confined aquifer, occurring up to the depth from 0 to 62 mbgl. In Hard rock area weathered Aquifer depth of occurrence is from 0 to 28m and fractured aquifer depth of occurrence is from 35 to 186m. The ground water in major part of the district is suitable for domestic, irrigation and industrial purposes.

**3.3 Weathered zone:**

Thickness of weathered zone in the range of 10 to 20 m in most part of area covering ~64 % of area, shallow weathering <10 m occurs in ~04 % of area and deep weathering 20 to 30 m occurs in ~19 % of area and 30 to 40 m occurs in ~10% area and > 40 m occurs in ~3% rest of the area. **(Fig.3.5) & (Fig.3.6) .**

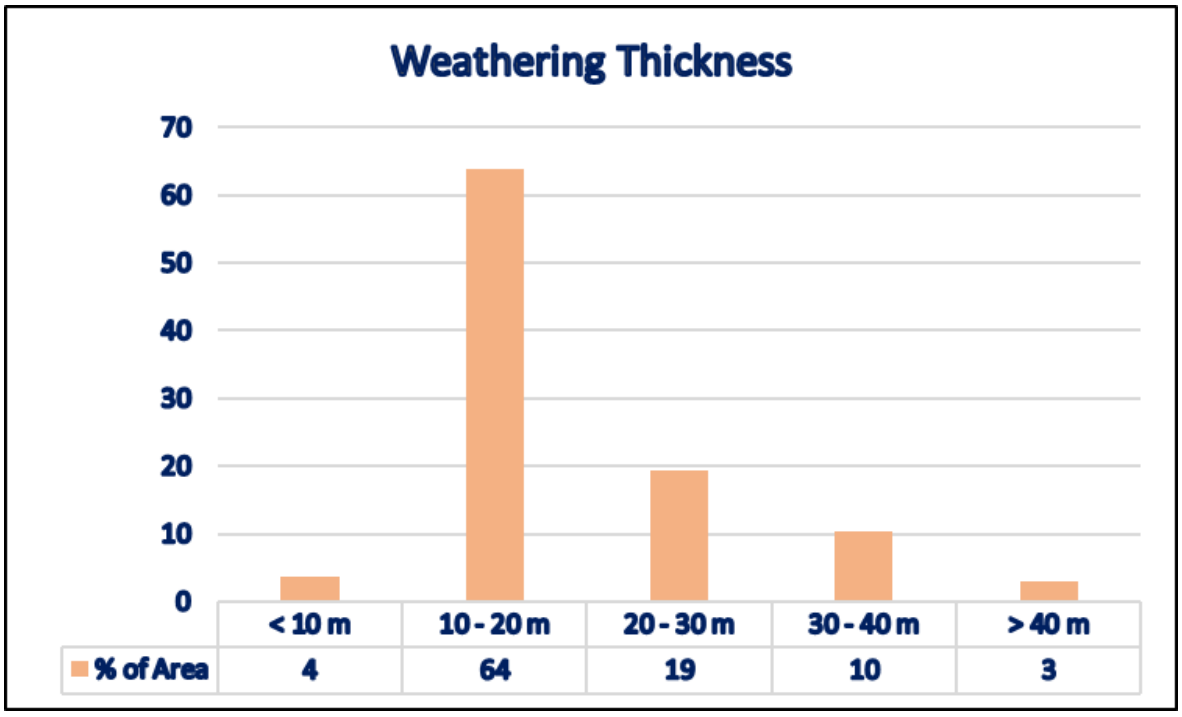



**Fig 3.5 Weathering Thickness**

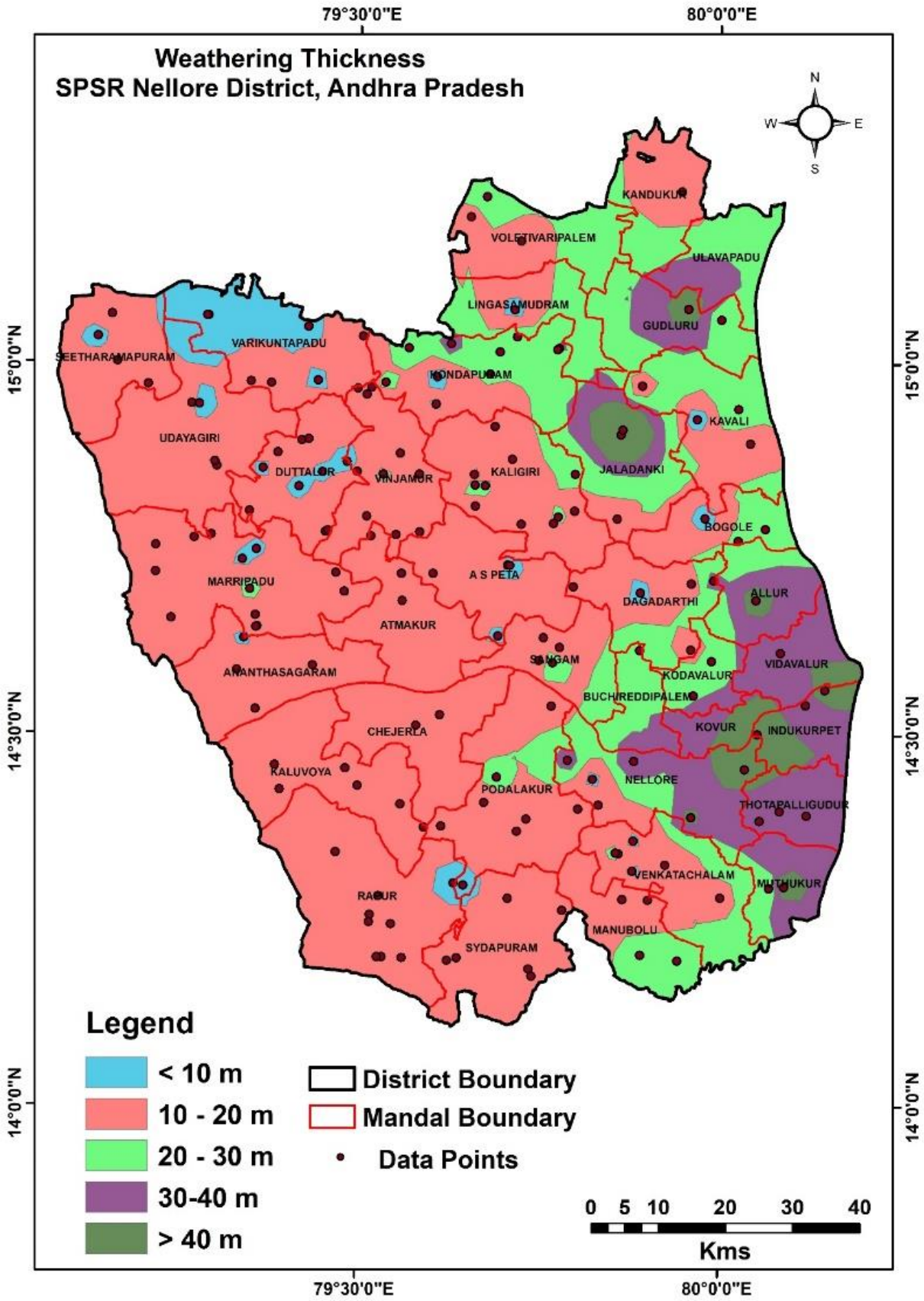



**Fig 3.6 Weathering Thickness**

**3.4 Aquifer Characterization of Shallow Aquifer:** (Aquifer-1): It consists of weathered residuum where ground water occurs under water table condition and is mainly developed by construction of dug wells or shallow bore wells/Tube wells as hand pump. The shallow aquifer is considered up to the maximum depth of weathering and first fracture encountered (below weathered depth) generally down to ~30 m depth. They are unconfined aquifers. Ground water yield varies from <1 lps (avg: 1.0 lps) in weathered Schist/gneiss aquifer to 3 to 5 lps (avg: 4 lps) in Alluvial aquifers.

**3.5 Fractured Zone:** Based on Exploration data, it is inferred that fractures in the range of <60 m depth is more predominant (65 % of the area), 60-90 m in 15 % of the area and >100 m fractures occur in remaining areas. Deep fractures in the range of >150 m occur in Duttaluru, Kaligiri, Marripadu and Vinamuru. The deepest fracture encountered is 189 m in Gonupalli and Bonthamarupalli villages in Rapur and Marripadu mandals respectively. Analysis of occurence of fractures reveal that majority of fractures (~80 %) occur within 100 m depth **(Fig. 3.7)**

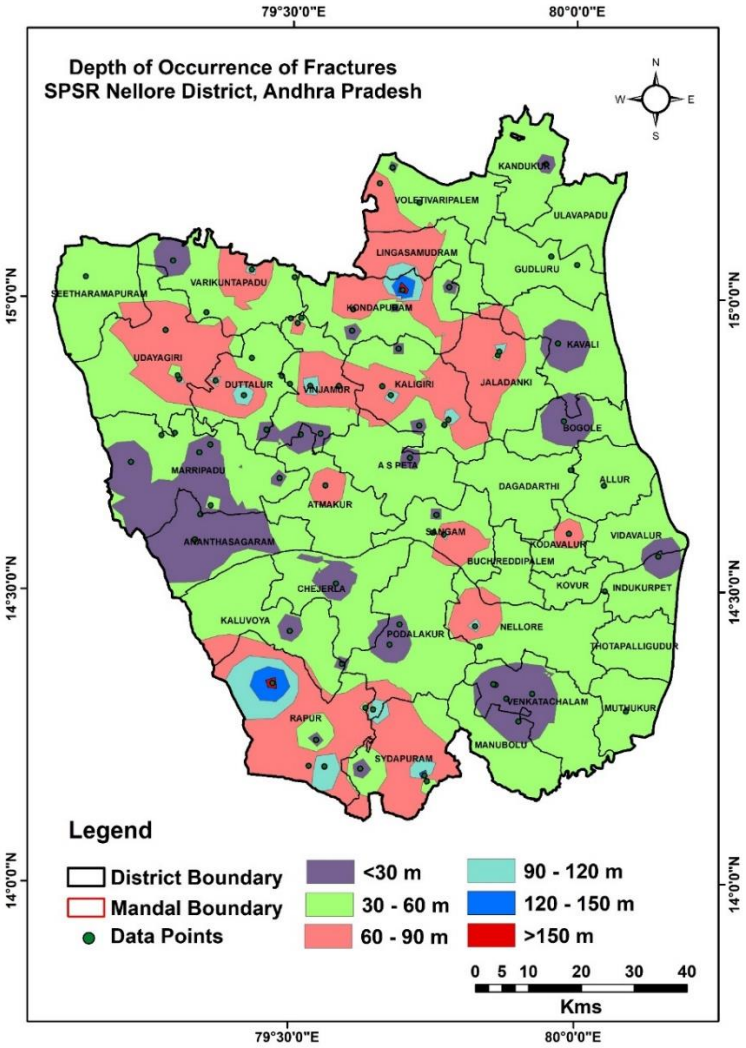



**Fig 3.7 Depth of occurrence of Fractures**

**3.6 Aquifer Characterization of Deeper Aquifer (Aquifer II):** The aquifer-II is the deeper aquifer which tapped the fractured zone. Ground water in the second aquifer occurs under semi-confined to confined condition in the fractures up to the maximum depth of 189 m bgl (deepest fracture encountered). The deth of fracturing varies from 30 m to 189 m with yield of <1 to 20 lps. The transmissivity of consolidated formation varies from <1 to more than 150 m2 /day. The storativity in Schists and Gneisses varies from 1x 10-6 to 0.001.

**3.7 Ground water Yield:** Ground water yield from weathered and fractured Schist/gneiss aquifer varies from < 2 to >10 lps. Based on exploratory data of CGWB, yield map is prepared and shown in **Fig.3.8 & Fig 3.9**. In most of the area wells yields are in the range of 2-4 lps in ~52 % of the area and < 2lps in ~35 % of the area observed, followed by yield range of 4-6 & 6-8 observed in ~10 % area and >8 to 10 lps observed in ~3% area. Wells located in the command area have higher yield (2-4 lps). and sustain for more hours of pumping as compared to non-command area where yields are relatively low with sustainability for 2-3 hrs.(Fig

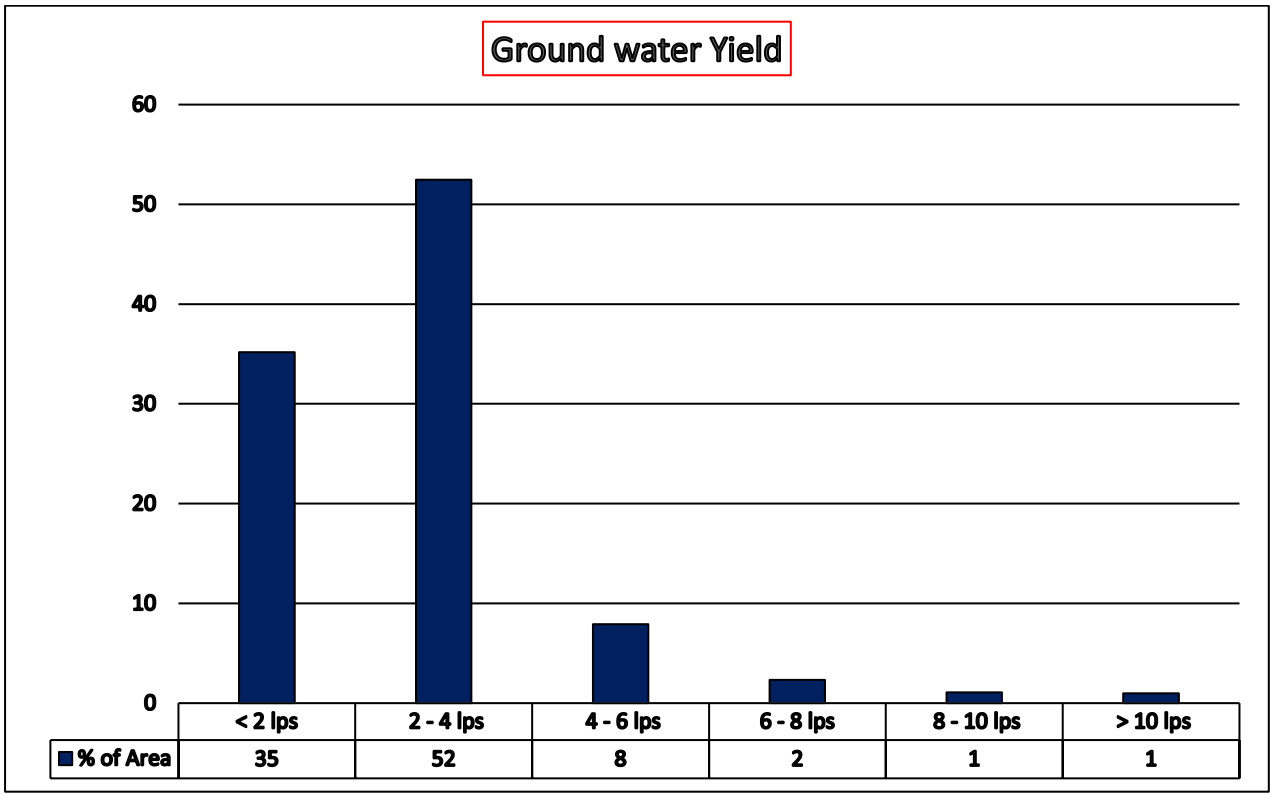



**Fig.3.8 Ground water Yield**

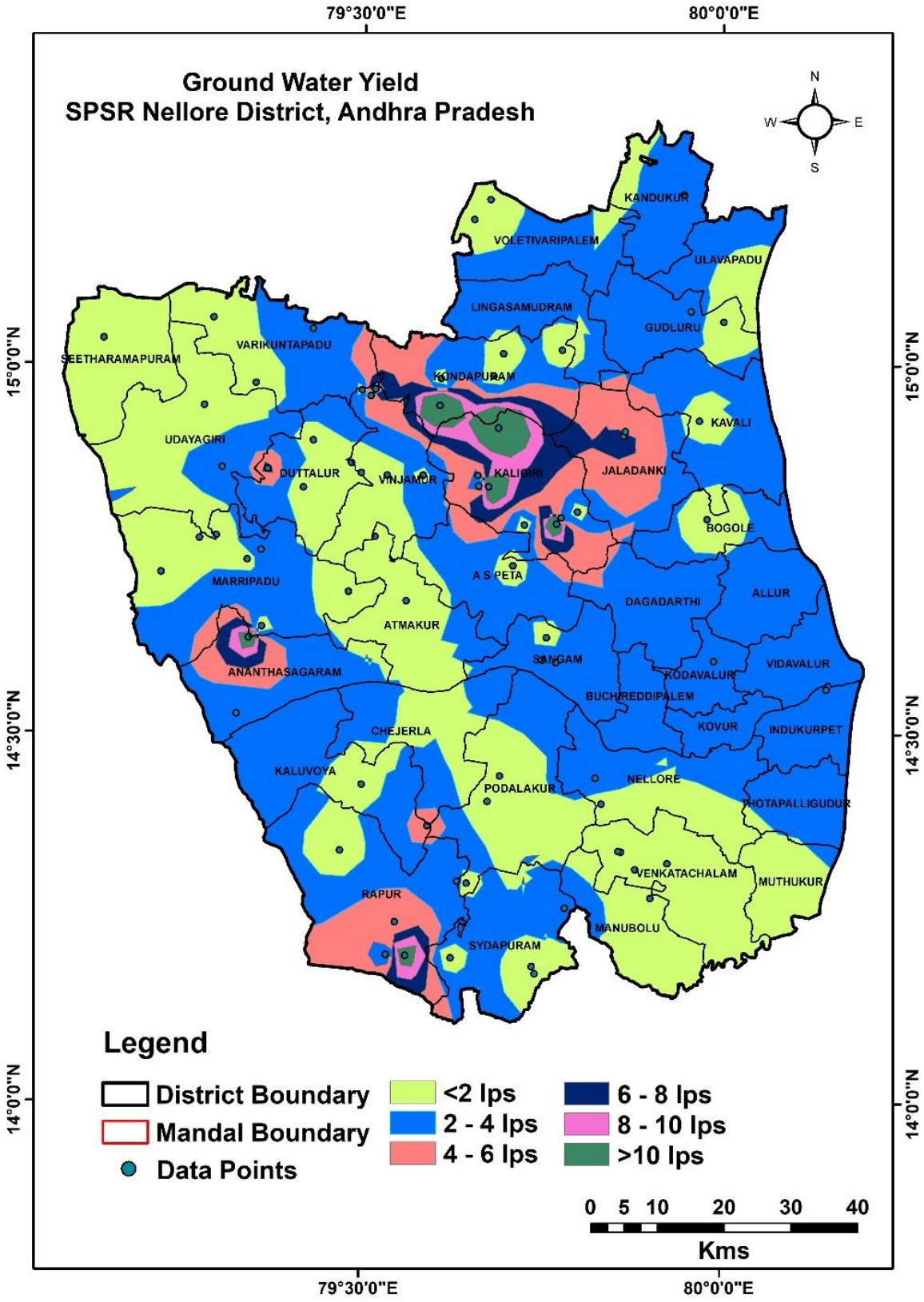



**Fig.3.9 Ground water Yield**

### 3.8 Aquifer Characterization and Disposition.

On the basis of Hydrogeological cross sections the following salient features of aquifer system in the area is summarized below **Table No :-3.2**

| Aquifer Characterisation and Disposition | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Stratigraphy | Aquifer Nomenclature | Lithological Characteristics | Depth of occurrence | Thickness | Water Level | Quality (EC) | Discharge | Transmissivity | Storativity |
| | | | Aquifer | Range | Range | Range | Range | Range | |
| | | | (mbgl) | (m) | (mbgl) | µs/cm | lps | m2/day | |
| Recent Alluvium | Alluvium | Alluvium - Sand, Kankar and Clay | 0 to 62 | 0 to 62 | 1.45 to 18.8 | 205 to 7515 | 0.01 to 3.8 | 0.63 to 1685 | |
| Archaean Super Group | Weathered Schist | Schist (Quart-Clorite rich) | 0 to 26 | 05 to 26 | 0.76 to 12.00 | 310 to 3982 | | | |
| | Fractured Schist | Schist (Quart-Clorite rich) | 30 to 189 | | 01 to 16 | 555 to 2800 | 0.4 to 20 | 0.17 to 165 | 1x 10-6 to 0.001 |
| | Weathered Gneiss | Quartz mica schist and gneiss | 0 to 28 | 07 to 28 | 2.40 to 7.40 | 310 to 3982 | | | |
| | Fractured Gneiss | Quartz mica schist and gneiss | 35 to 170 | | 3 to 21 | 440 to 1995 | 0.5 to 8.2 | 1.47 to 59.3 | 1x 10-5 to 0.001 |

### 3.9 GROUNDWATER REGIME MONITORING

Ground water regime monitoring is the basic component of groundwater management and it is carried out in parts of SPSR Nellore district through National Hydrograph Network Stations (NHNS or NHS). NHSs are observation wells, comprising of dug wells and purpose built bore wells – known as piezometers. There are 106 wells (CGWB:49, SGWD: 57 PZ) part of the NHS. 74 key wells were established for monitoring of water level and ground water samples collected for chemical analysis. The following maps have been generated to understand the behavior of ground water regime.

### 3.9.1 Depth to Ground Water Levels (Pre monsoon 2022)

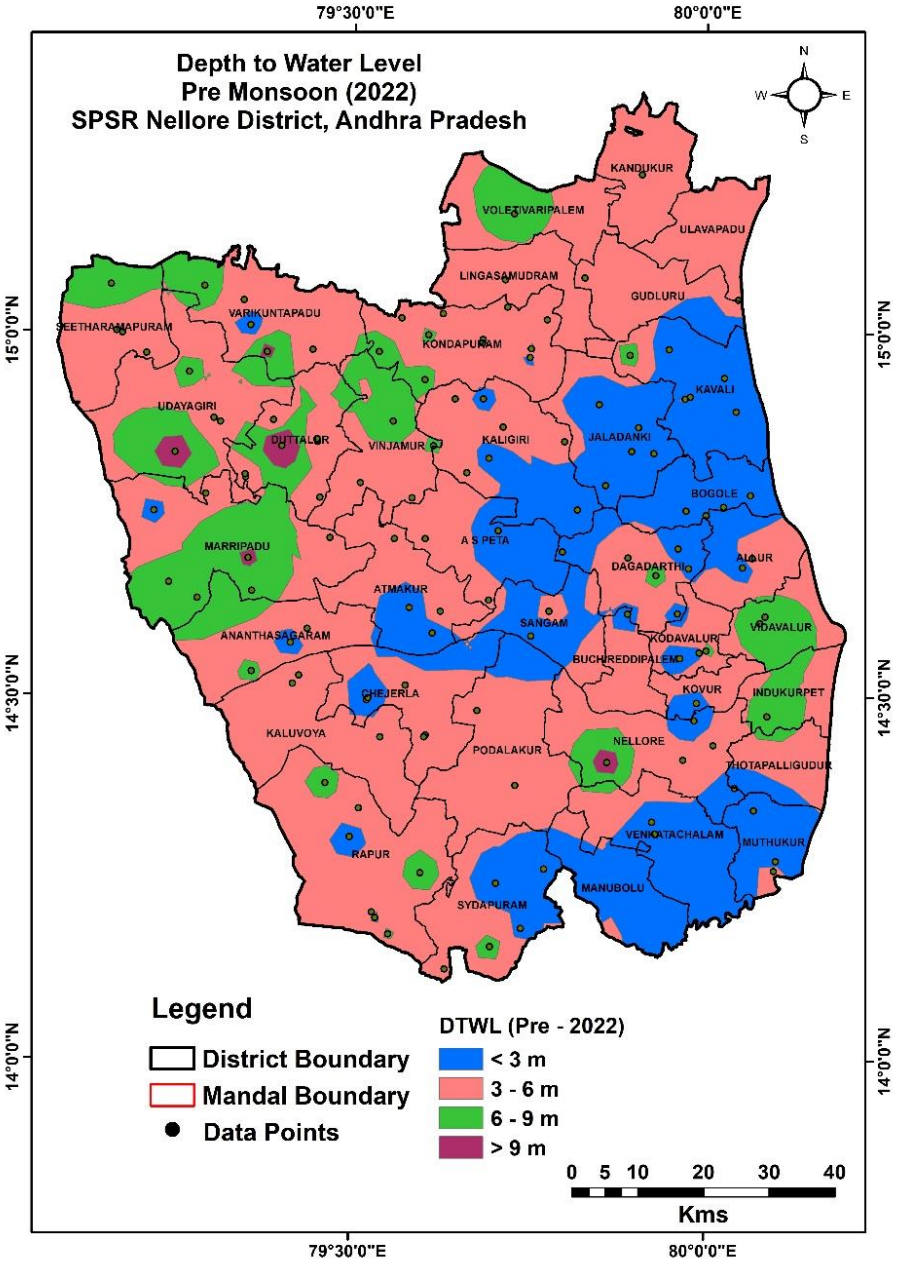



**Fig 3.10 Depth to Ground Water Levels (Pre monsoon 2022)**

In Majority of the areas, water level during this season is in the range of 3-6 m in 62% of the area, followed by shallow water level <3 m bgl in 24% of the area and deeper water levels 6 to 9 m bgl in 14% of the area. **(Fig 3.10)**

### 3.9.2 Depth to Ground Water Levels (Post monsoon 2022)

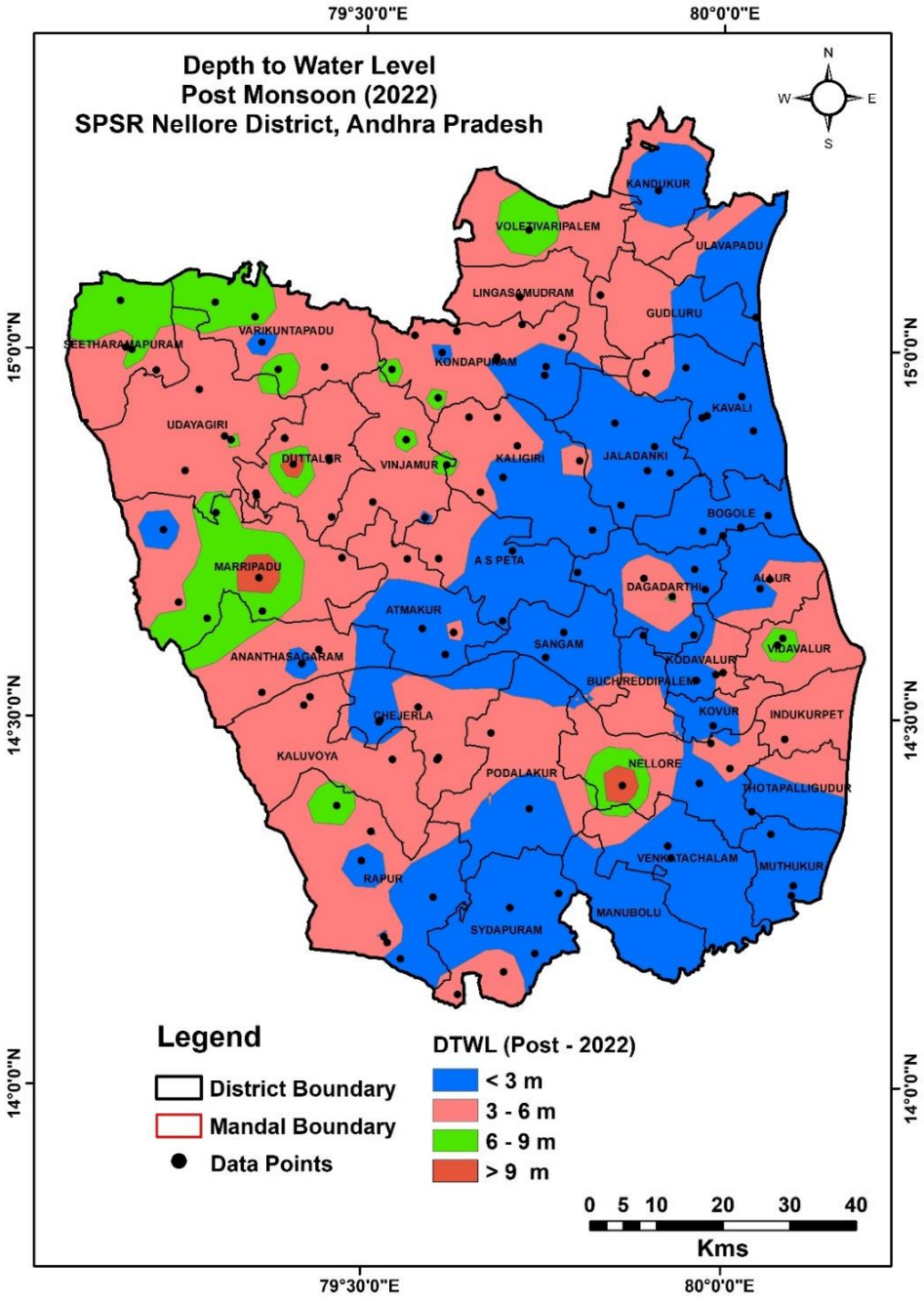



**Fig 3.11 Depth to Ground Water Levels (Post monsoon 2022)**

In Majority of the areas, water level during this season is in the range of 3-6 m in 51% of the area, followed by shallow water level <3 m bgl in 41% of the area and deeper water levels 6 to 9 m bgl in 9% of the area. **(Fig 3.11)**

### 3.9.3 Water Level Fluctuations (May vs. November 2022)

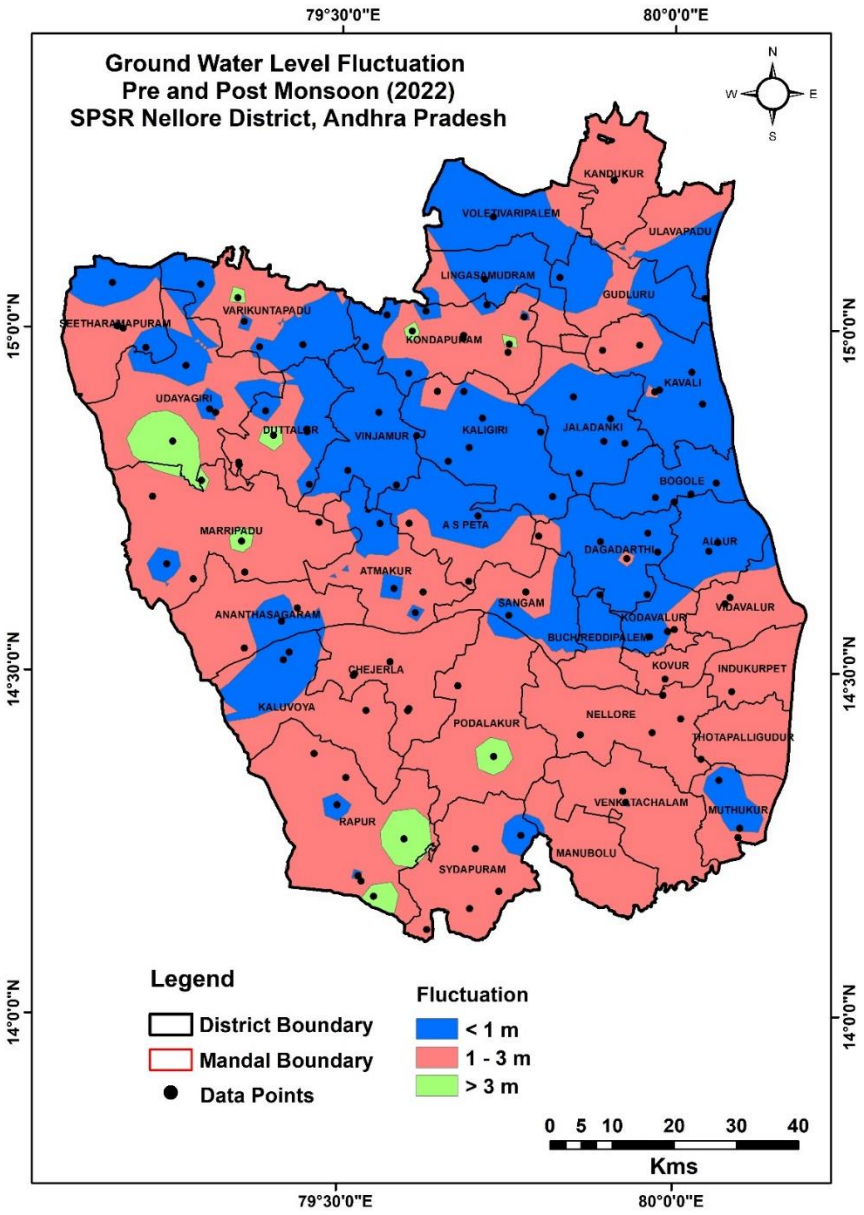



**Fig 3.12 Water Level Fluctuations (May vs. November 2022)**

Out of 130 wells, 125 wells records water level rise. The water level rise varies from <1 to 3.0 m in all the wells (Fig.3.3). Rise in water level between 1 to 3 m is observed in 61% of the area, <1 m rise is observed in 37% of the area. Rise in water level > 3 m is observed in 2% of area. Water level fall is recorded in 05 wells. **(Fig 3.12)**

### 3.9.4 Decadal Average Depth to water level map (Pre monsoon 2012-2022)

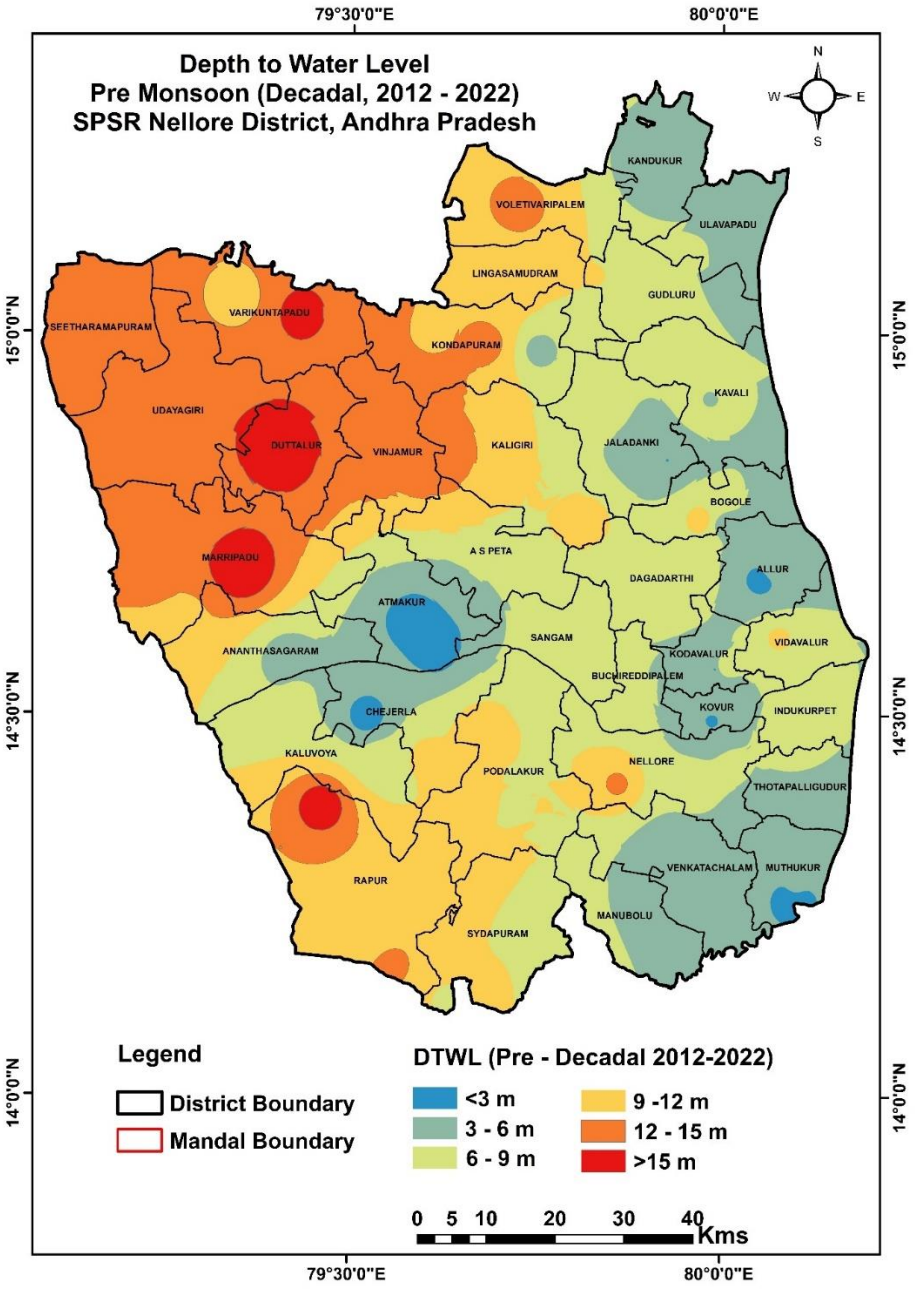



**Fig 3.13 Decadal Average Depth to water level map (Pre monsoon 2012-2022)**

In Majority of the areas, Decadal water level during Pre monsoon 2012-2022, in the range of 6-9 m in 32% of the area, followed by deeper water levels in range of 9-12 m,12-15 m and >15m in 20 %, 21% and 3% of the area respectively and shallow water level ranges < 03m in 1% and 3-6m in 23% of the area. **(Fig 3.13)**

### 3.9.5 Decadal Average Depth to water level map (Post monsoon 2012-2022)

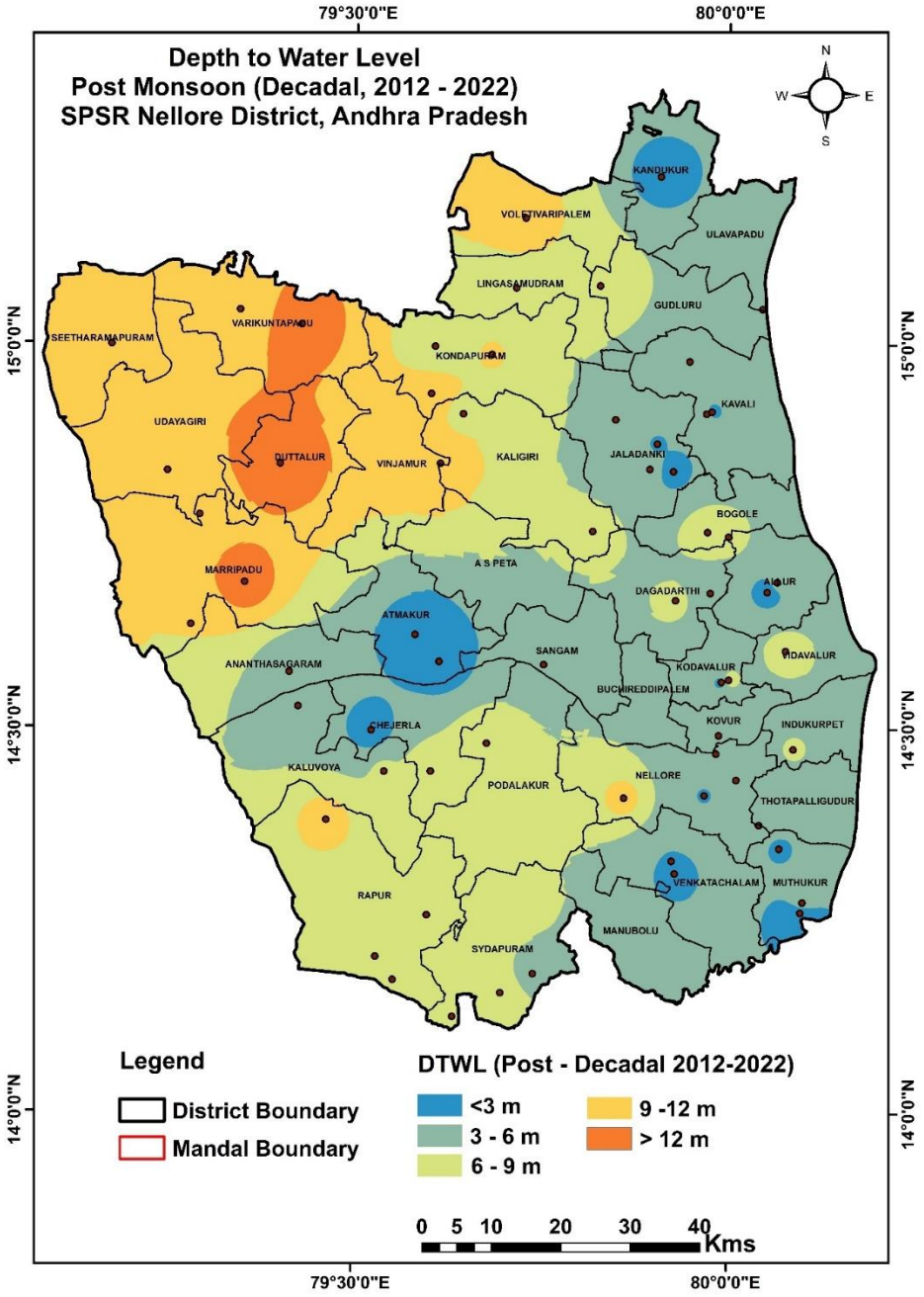



**Fig 3.14 Decadal Average Depth to water level map (Post monsoon 2012-2022)**

In Majority of the areas, Decadal water level during Post monsoon 2012-2022, in the range of 3-6 m in 42% of the area and followed by deeper water levels in range of 6-9 m,9-12m and >12m in 30%,20% and 4 % of the area respectively and shallow water level ranges < 03m in 4% of the area. **(Fig 3.14)**

### 3.9.6 Decadal Water Level Fluctuations (May vs. November 2012-2022)

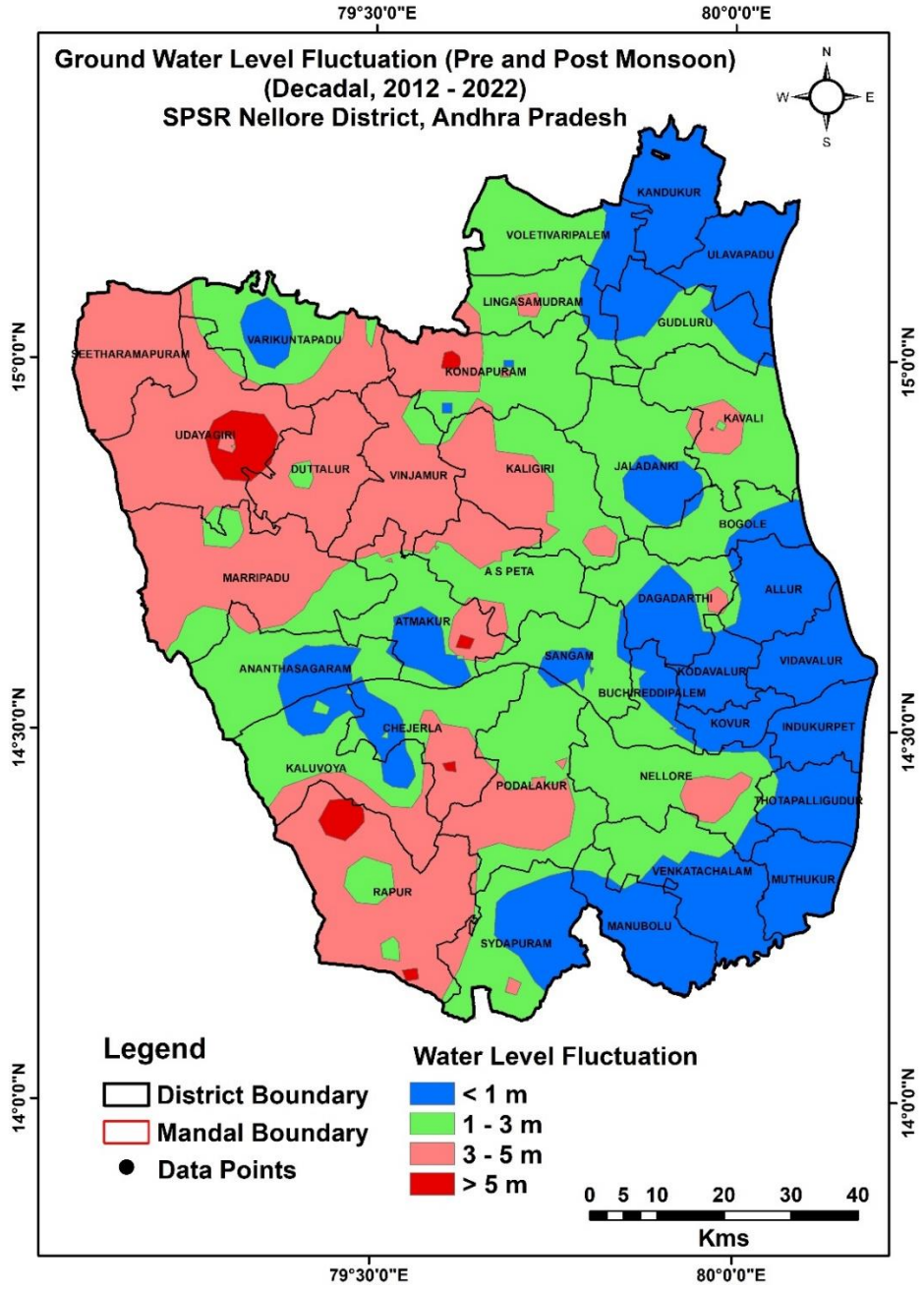



**Fig 3.15 Decadal Water Level Fluctuations (May vs. November 2012-2022)**

Out of 84 wells, 77 wells records water level rise. The water level rise varies from <1 to 05 m in all the wells **(Fig 3.15)**Rise in water level between 1to 3 m is observed in 39% of the area, 3 to 5 m rise is observed in 31% of the area. Rise in water level < 1 m is observed in 28% of area, >5m is observed in 1% of the area. Water level fall is recorded in 7 wells.

**3.9.7 Long term water level trends:** Trend analysis for the last 10 years (2012-2022) is studied from hydrograph stations of CGWB and SGWD. It is observed that during pre-monsoon season, 28 wells shows falling trend in the range of 0.01 m/yr to 1.05 m/yr and 56 wells shows rising trend 0.009 m/yr to 1.38 m/yr. During post-monsoon season 22 wells show falling trend 0.003 to 0.74 m/yr and 62 wells shows rising trends 0.002-1.38 m/yr **(Fig. 3.16 ab).**

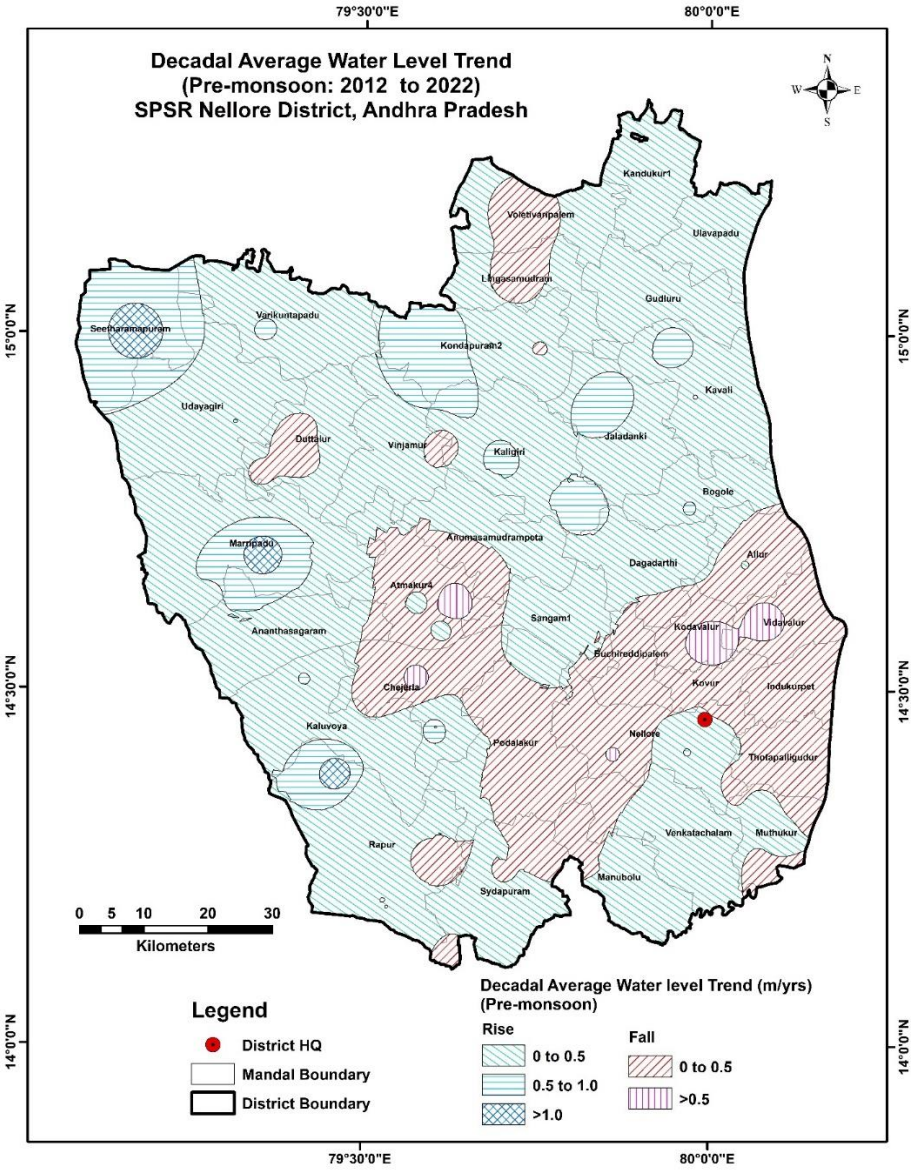



**Fig 3.16 a Pre-Monsoon Long term water level trends (10 yrs)**

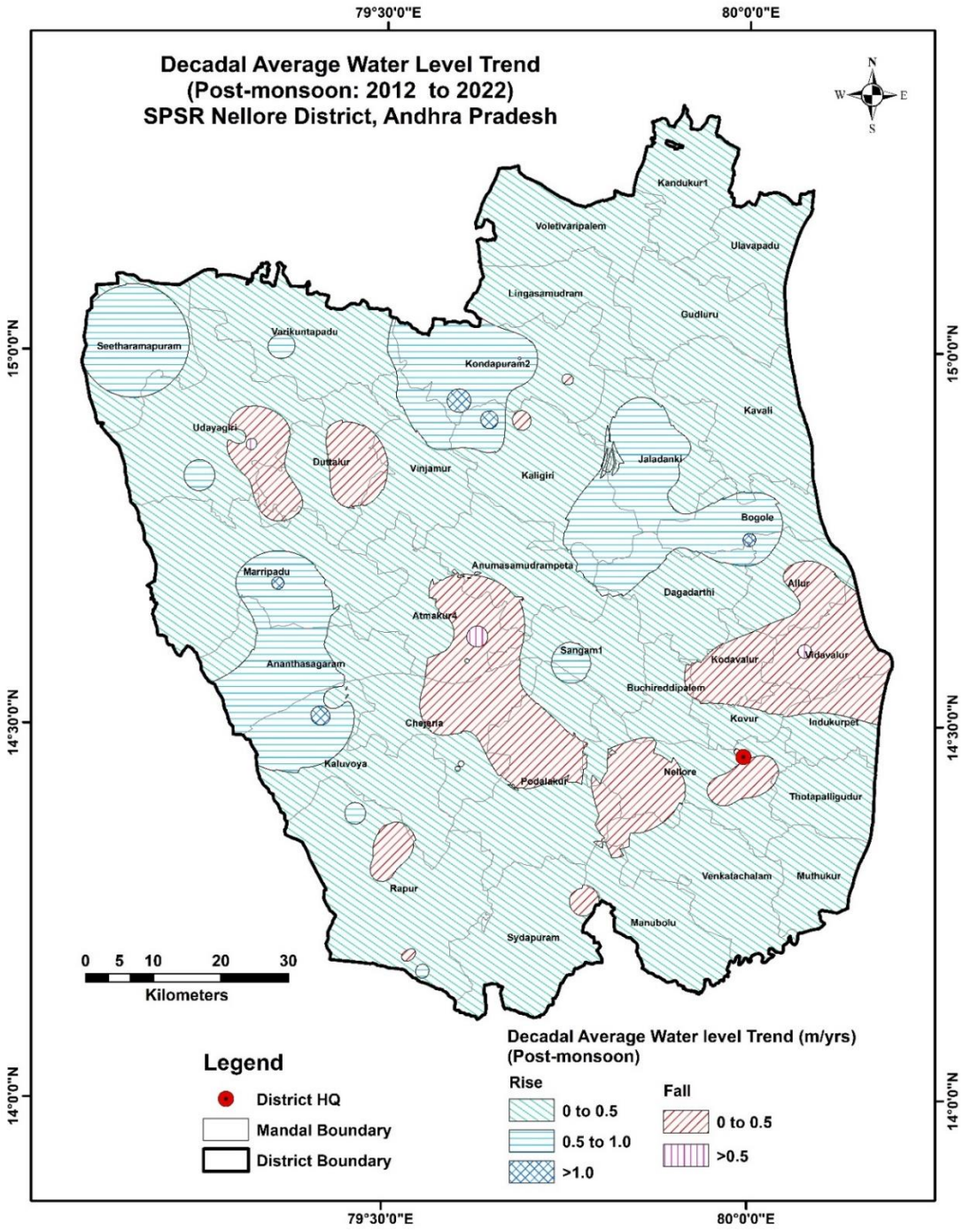



**Fig 3.16 b Post Monsoon Long term water level trend (10 yrs)**

**3.9.8 Water Table Elevation:** During Pre-Monsoon, water-table elevation ranges from 2.10-211.45 meter above mean sea level and in post-monsoon season 2.41-211.45 meter above mean sea level (m amsl). The ground water flow also has the same drainage flow direction. **(Fig.3.17).**

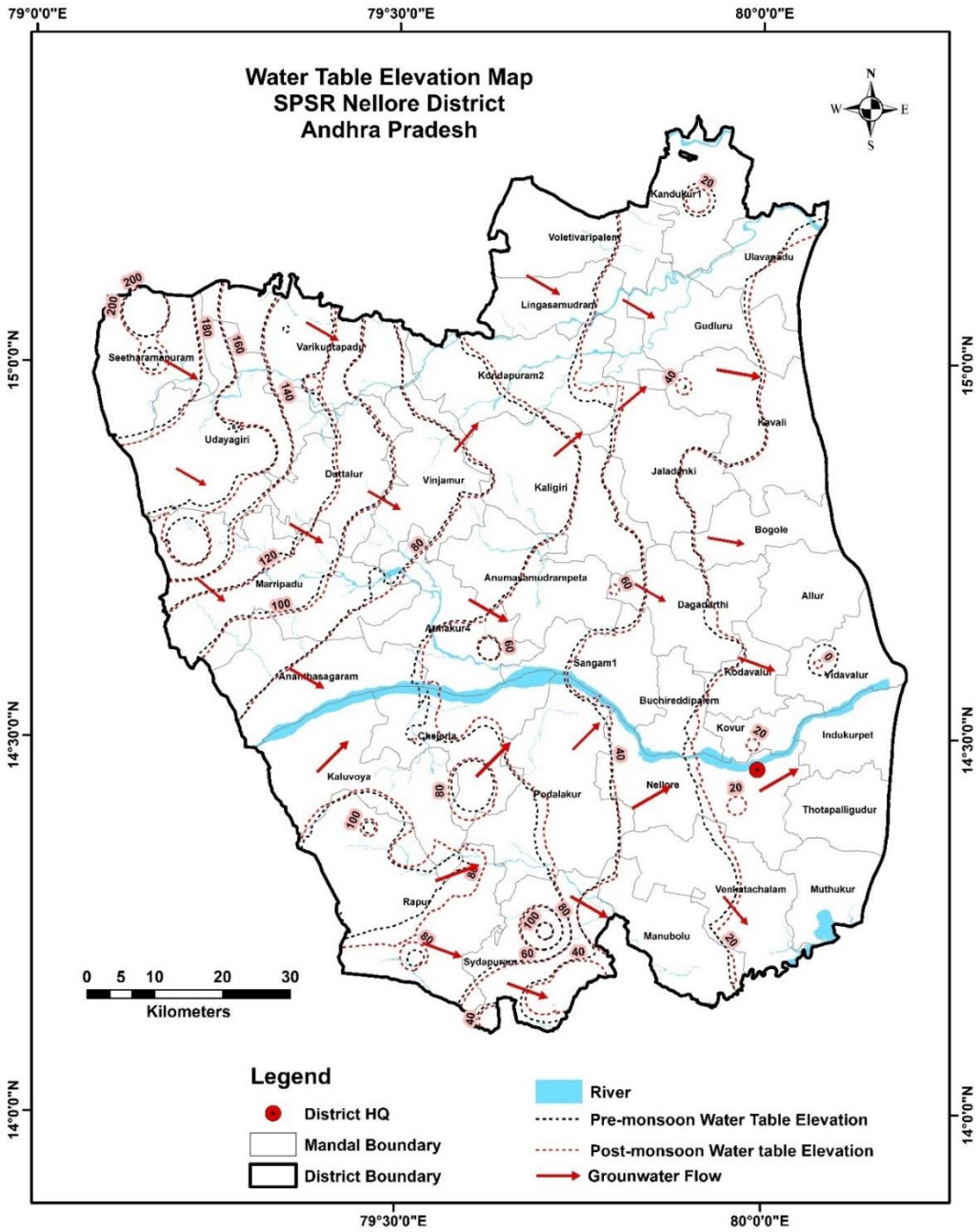



**Fig 3.17 Water Table Elevation**

## 3.10 Ground Water Quality

To understand chemical nature of groundwater, total 177 data points is utilized from ground water monitoring wells, exploratory wells and well inventory. During pre-monsoon season of 2022 (NHS: 49, and Well inventory: 74 wells along with exploratory wells:54 wells (mostly tapping combined aquifers Aq-1 and aq-2) were analyzed.

The groundwater quality in the area is generally good. In all the locations PH is within the acceptable limit and shows mildly alkaline nature. Pre-monsoon: Groundwater is mildly alkaline with pH in the range of 6.42- 8.50 (Avg: 7.59). Electrical conductivity varies from 165-33128 (avg: 1981) µ Siemens/cm. In 66 % of area, EC is within 2000 µ Siemens/cm, in 23 % area, it is between 2000-3000µ Siemens and in 11% of area it is beyond permissible limit. **(Fig.3.18 ab).** Average concentration of TDS is 1248 mg/L and NO3 ranges from 0.3-598 mg/L. Nitrate concentration in 40% of samples is beyond permissible limits of 45 mg/L **(Fig.3.19 a**) &. **(Fig.3.19 b**) Fluoride concentration varies from 0.06-4.98 **(Fig 3.20a) (Fig.3.20b**) with 11% of samples is beyond the permissible limits of BIS and rest is within the permissible limit.

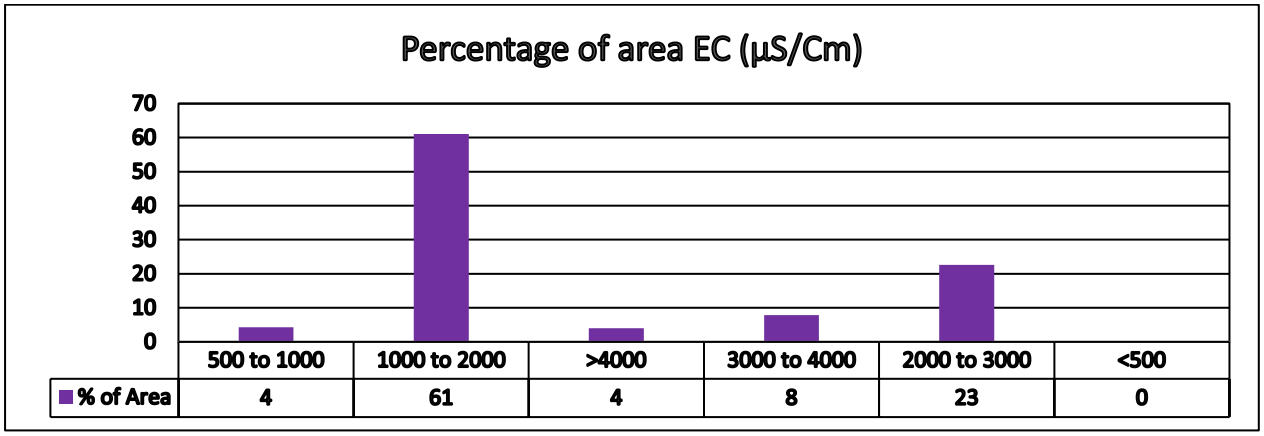



**Fig 3.18 a, Percentage of area EC**

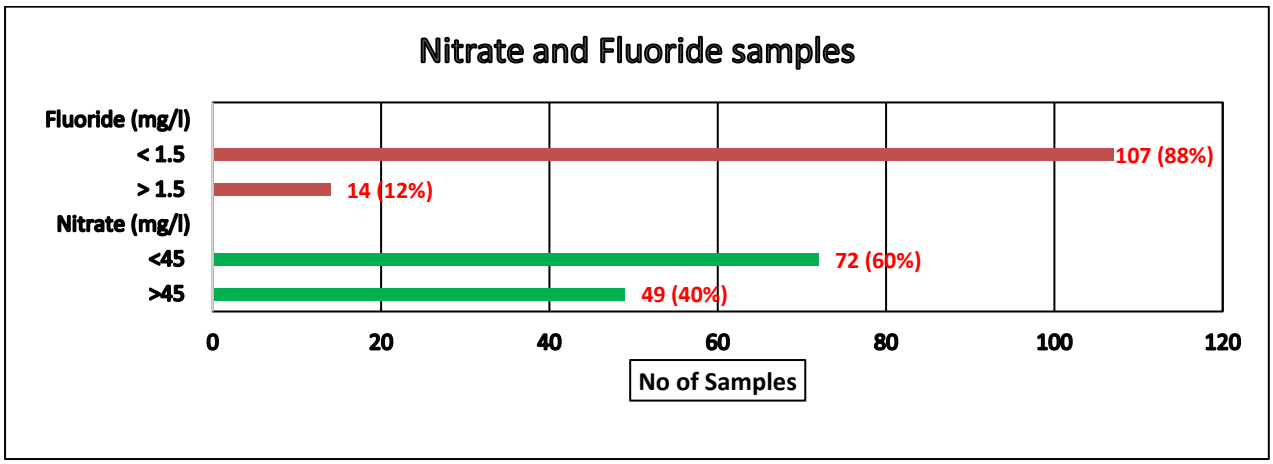



**Fig 3.19 a & Fig 3.20 a Nitrate and Fluoride Samples**

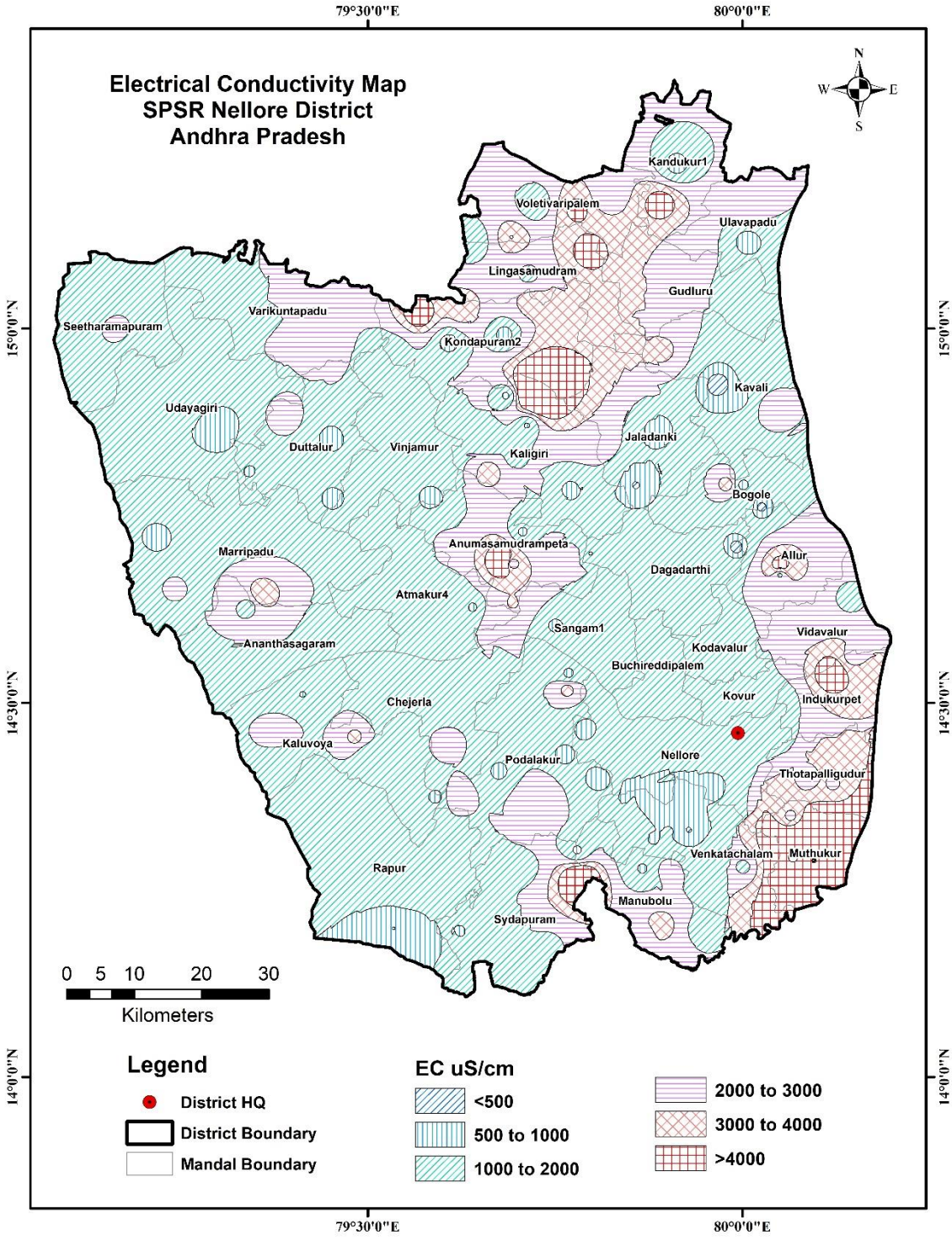



**Fig 3.18 b, Pre monsoon EC distribution**

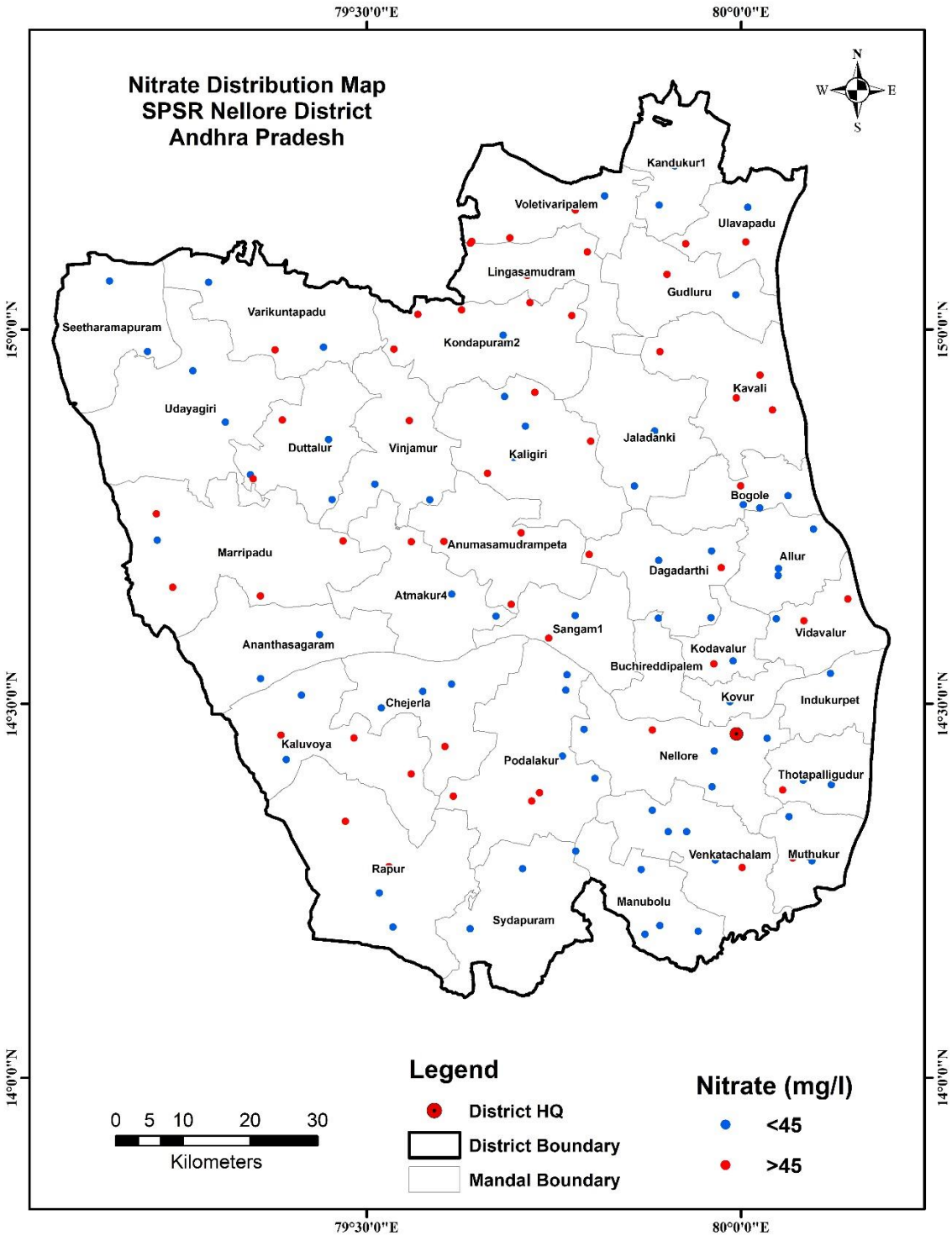



**Fig 3.19 b, Pre monsoon Nitrate distribution**

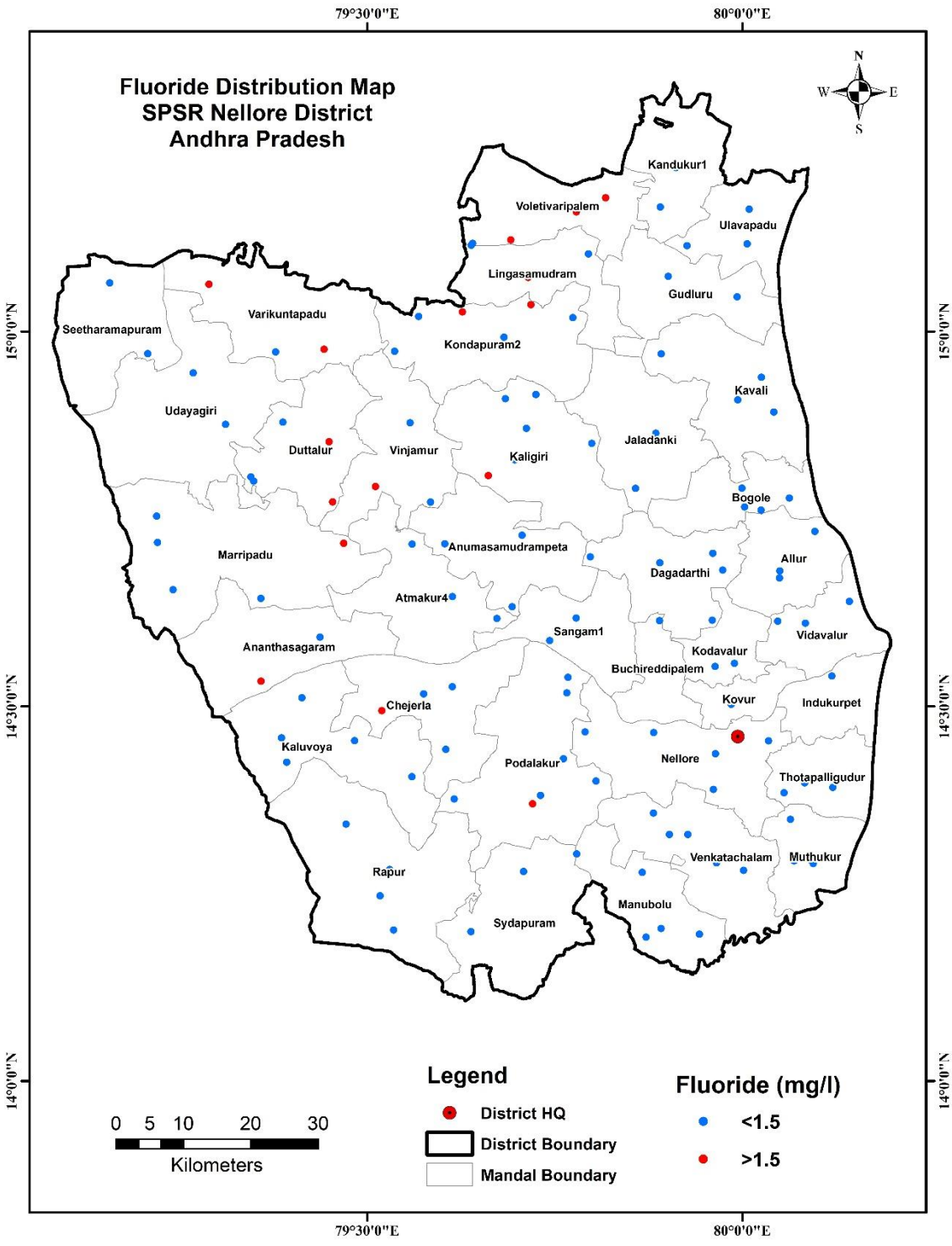



**Fig 3.20 b, Pre monsoon Fluoride distribution**

# 4. GROUND WATER RESOURCES (2022)

In hard rocks, for practical purpose it is very difficult to compute zone wise (aquifer wise) ground water resources, because the weathered zone and fractured zone are inter-connected with fractures/joints and fractured zone gets recharged through weathered zone. Therefore, it is very difficult to demarcate the boundary between two aquifers; hence the resources are estimated considering entire area as a single aquifer system. Village wise dynamic and in-storage ground water resources are computed as per the guidelines laid down in GEC methodology. The mandal wise Dynamic Ground Water Resources of the SPSR Nellore District, Andhra Pradesh (2022) are given in **Annexure No 3.** The summarized dynamic ground water resources of the SPSR Nellore District, Andhra Pradesh (2022) given in **Table-4.1**

| **Parameters** | **Total (MCM)** |
|---|---|
| **Dynamic (Net GWR Availability)** | **2446.39** |
| • Monsoon recharge from rainfall | 726.39 |
| • Monsoon recharge from other sources | 434.04 |
| • Non-monsoon recharge from rainfall | 203.54 |
| • Non-monsoon recharge from other sources | 1211.17 |
| • Total Natural Discharge | 128.76 |
| **Gross GW Draft** | **702.65** |
| ✓ Irrigation | 657.84 |
| ✓ Domestic and Industrial use | 44.81 |
| Allocation of Ground Water Resource for Domestic Utilisation for projected year 2025 | 45.88 |
| Net GW availability for future use | 1752.36 |
| **Stage of GW development (%)** | **28.72** |

### 4.1 Ground Water Recharge

The Annual Ground Water Recharge varies from 18.33 MCM (Seetharamapuram Mandal) to 122.36 MCM (Vidavaluru Mandal). The Gross Annual Ground Water Recharge in the district is 2575.16 MCM. The net available recharge after leaving natural discharge from monsoon period varies from 17.41 MCM (Seetharamapuram Mandal) to 116.24 MCM (Vidavaluru Mandal). The net available recharge in the district is 2446.39 MCM**. (Fig 4.1)**

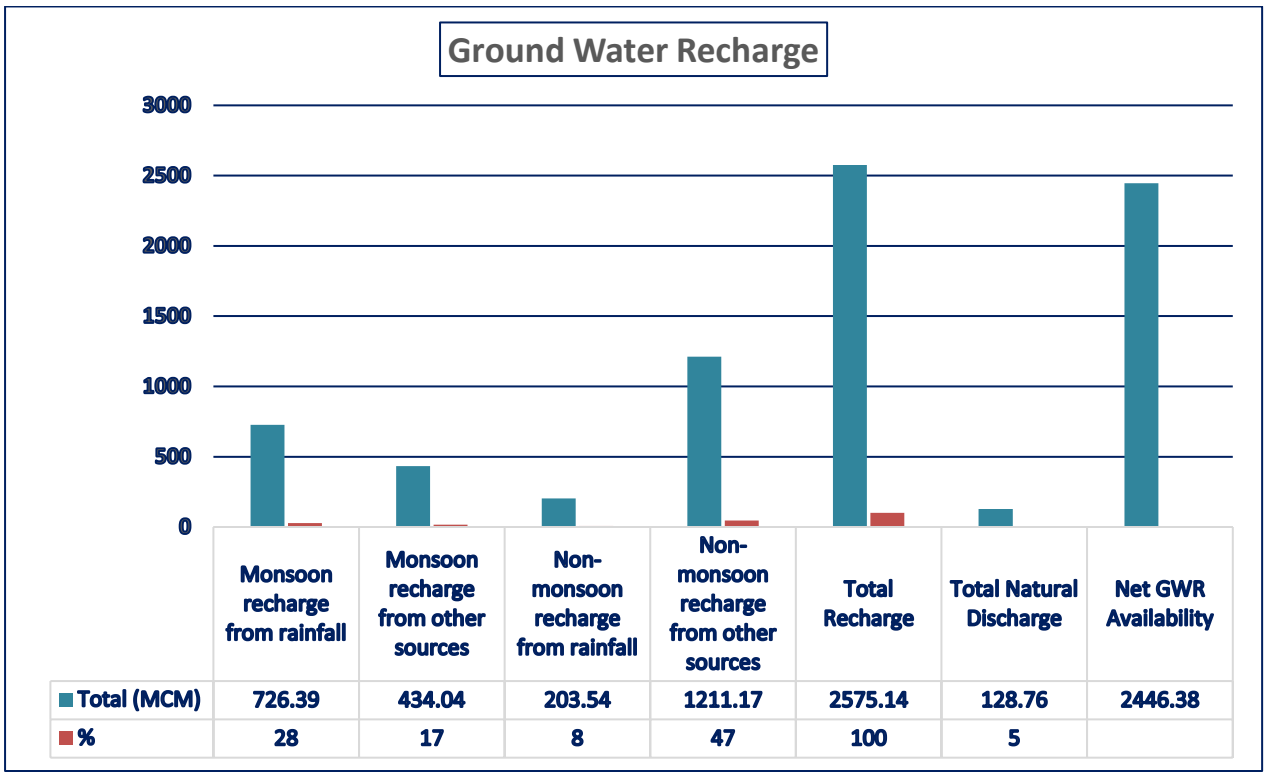



**Fig 4.1 Ground Water Recharge**

### 4.2 Ground Water Draft

The ground water draft from irrigation and Domestic /Industrial sources is presented in **Table:4.1** The Existing Gross Ground Water Draft for all uses varies from 5.16 MCM (Lingasamudram) to 48.35 MCM (Indukurpeta). The Gross Ground Water Draft for All uses in the district is 702.65 MCM. **(Fig 4.2)**

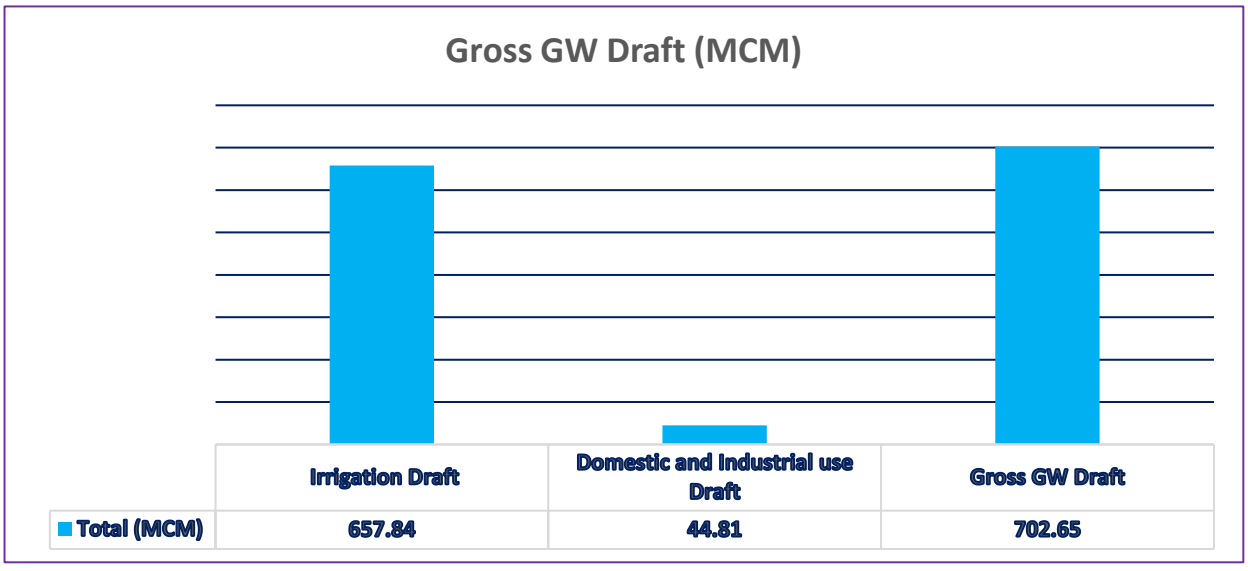



**Fig 4.2 Ground Water Draft**

### 4.3 Stage of Ground Water Development

The stage of ground water development in Nellore district varies from 6.35 % to 56.19 % and all assessment (mandals) units have been categorized as Safe **(Fig 4.3) as per Ground Water Resources Assessment – 2022.** The overall stage of groundwater development of Nellore district is **28.72 %.** The Mandal wise ground water resources and categorization for each assessment unit is presented in table **Annexure No 3.**

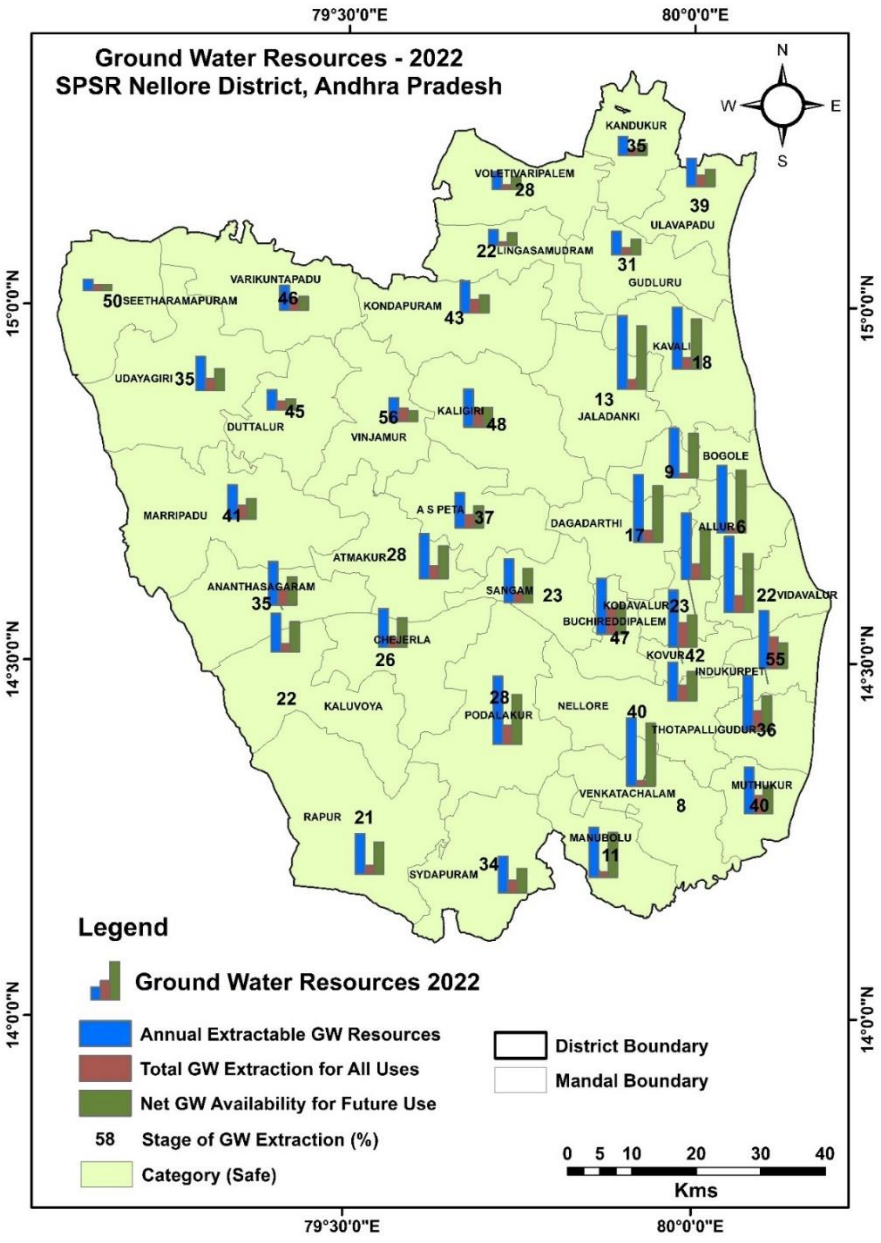



**Fig 4.3 Dynamic Ground Water resources -2022**

# 5. GROUND WATER RELATED ISSUES AND REASONS FOR ISSUES

## 5.1 Deep Water Levels & Declining Trends

- In the North and North West parts of the study area is backward area of SPSR Nellore district comprises Seetharampuram, Varikuntapadu, Voletivaripalem, Udayagiri, Duttaluru, Vinjamuru and Marripadu mandals and water levels are in the range of 10.50 m to 19.36 m bgl during pre-monsoon and 9m to 14.87 m during post monsoon periods. The average water level in the study area is 13.47 and 11.17 during pre and post monsoon periods respectively.

- During pre-monsoon season, 2556 Sq km area (26%) shows declining trend in the range of 0.01 m/yr to 0.50 m/yr and in 116 Sq km Area (1%) declining trend range of 0.50 m/yr to 1.05 m/yr. During post-monsoon season, 1325 Sq km area (13%) shows declining trend 0.003 to 0.74 m/yr.

## 5.2 Ground Water Sustainability

- Low yield (<2 lps) occurs in ~35 % of the area observed in western parts of the study area. The western parts of the study area are mainly comprising of Schist/gneiss and as per ground water exploration data, the general yield of the Schist/gneiss is between 1 to 2 lps. The main aquifers being hard rock the yield depends on the thickness of weathered mantle and persistence of jointing, fracturing which is not uniform in nature.

## 5.3 Ground Water Quality (Geogenic and Anthropogenic)

- Higher concentration of Nitrate is observed in 40% of samples. This is due to unscientific sewage disposal of treated and untreated effluents in urban and rural areas. Use of NPK fertilizers and nitrogen fixation by leguminous crops.
- EC is >2000 µ Siemens/cm covering around 3609 sq.kms (34%) in parts of Ananthasagaram, Anumasamudrampeta, Kandukur, Ulavapadu, Vidavaluru, Venkatachalam, Manubolu, Sydapuram, Voletivaripalem, Marripadu, Thatapalligudur, Kaligiri, Muthukuru, Allur & Indukurpeta mandals.
- Higher concentration of Fluoride (>1.5 mg/l) is observed in 14 samples at localized pockets.

# 6. MANAGEMENT STRATEGIES

The uneven distribution of groundwater availability and its utilization indicates that a single management strategy cannot be adopted and requires integrated hydrogeological aspects along with socio-economic conditions to develop appropriate management strategy. The study suggests notable measures for sustainable groundwater management.

**Management plan**

The management plan comprises of two components namely supply-side management and demand side management. The supply side management is proposed, based on surplus surface water availability and the unsaturated thickness of aquifer whereas the demand side management is proposed by use of micro irrigation techniques.

## 6.1 Supply side management

The supply side management of ground water resources include artificial recharge of available surplus runoff in check dams and percolation tanks. More over repair renovation & restoration of existing tanks will also help in ground water recharge.

The unsaturated volume of the aquifers is estimated based on the average post-monsoon depth to water level (2012-2022) and specific yield. The number of new structures recommended based on the unsaturated volume and existing artificial recharge structures constructed.

Government of Andhra Pradesh had already created a total 1336 recharge structure (748 Check dams and 588 percolations tanks: source: (https://emms.ap.gov.in/nregs_ap/Reports/) though MGNREGS and IWMP scheme **(Fig 6.1)**. Mandal wise Existing Artificial Recharge Structures in the study Area is given below.

**Table 6.1**

| Sr No | Mandal | Check Dam | PTs | Sr No | Mandal | Check Dam | PTs |
|---|---|---|---|---|---|---|---|
| 1 | Ananthasagaram | **0** | **3** | 16 | Manubolu | **0** | **1** |
| 2 | Anumasamudrampeta | **17** | **59** | 17 | Marripadu | **113** | **67** |
| 3 | Atmakur | **10** | **3** | 18 | Podlakur | **16** | **25** |
| 4 | Bogole | **2** | **0** | 19 | Rapur | **40** | **11** |
| 5 | Chejerla | **0** | **11** | 20 | Seetharamapuram | **15** | **8** |
| 6 | Dagadarthi | **14** | **13** | 21 | Sydapuram | **29** | **10** |
| 7 | Duttalur | **48** | **10** | 22 | Udayagiri | **49** | **26** |
| 8 | Gudluru | **49** | **38** | 23 | Ulavapadu | **1** | **33** |
| 9 | Jaladanki | **5** | **10** | 24 | Varikuntapadu | **57** | **3** |
| 10 | Kaligiri | **61** | **24** | 25 | Venkatachalam | **1** | **0** |
| 11 | Kaluvoya | **10** | **7** | 26 | Vinjamur | **22** | **30** |
| 12 | Kandukur | **18** | **55** | 27 | Voletivaripalem | **46** | **68** |
| 13 | Kavali | **11** | **6** | | | | |
| 14 | Kondapuram | **80** | **20** | | | | |
| 15 | Lingasamudram | **34** | **47** | | **Grand Total** | **748** | **588** |

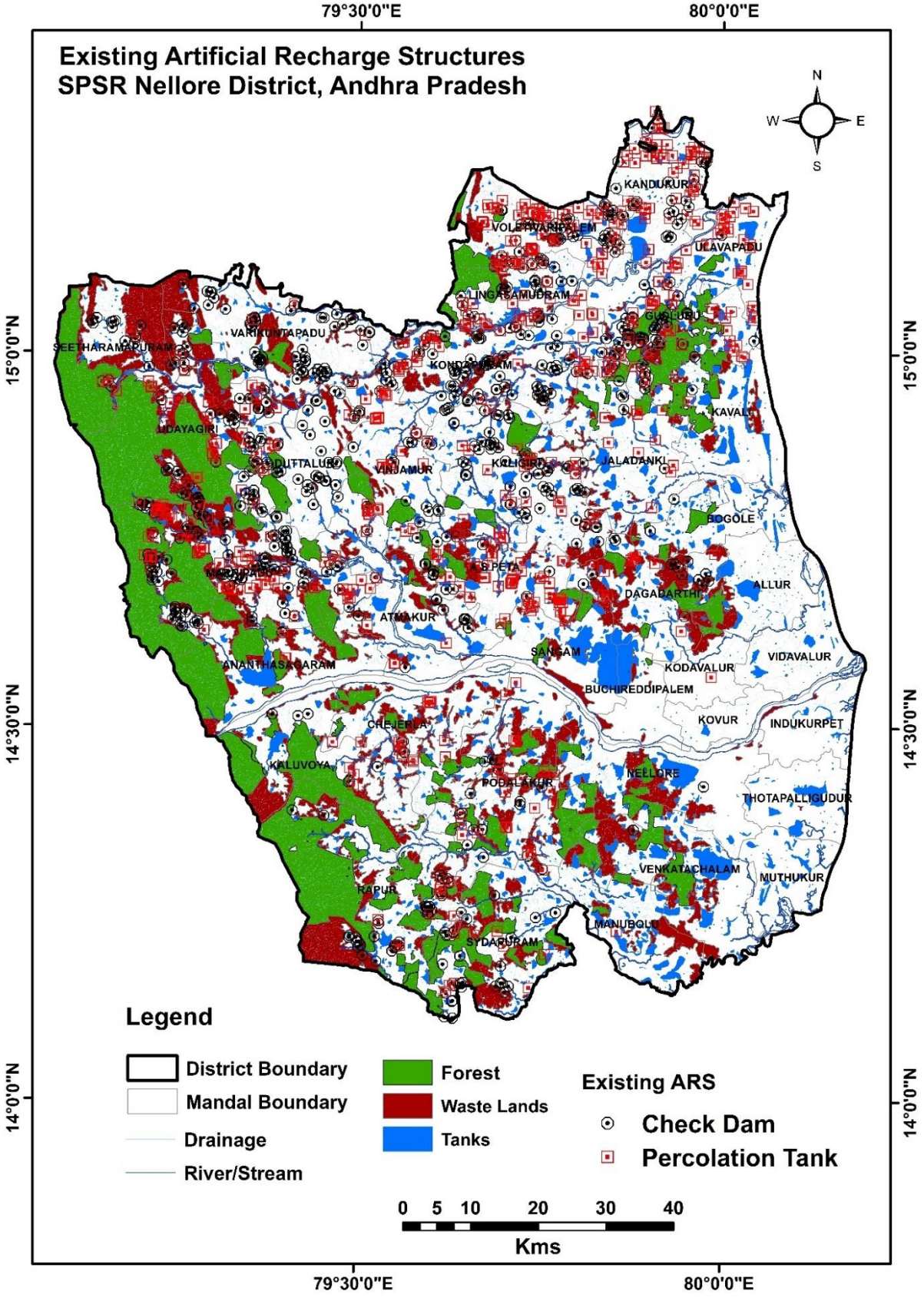



**Fig 6.1 Existing Artificial Recharge Structures in the study Area**

Considering the available run-off and recharge potential, there is a scope for construction of artificial

recharge structures, which can be taken up as per requirement in the district. The availability of sub-surface storage volume of aquifers in entire district is computed as the product of area, thickness of aquifer zone between 5 m. bgl and the average post-monsoon water level. The recharge potential/sub surface space of the aquifers is calculated by multiplying the sub surface storage volume with 3% specific yield. The source water availability is estimated from the rain fall and run off correlations. The runoff was calculated by taking into account of normal monsoon rainfall of the mandal and corresponding runoff yield from Strangers Table for average catchment type. Out of the total run off available in the mandal, 20 % run off yield is considered as non-committed yield and for recommending artificial recharge structures in intermittent areas. The storage required for existing artificial recharge structures by State Govt. departments under different IWMP and MNREGS schemes is deducted to find the available surplus run off for recommending the additional feasible 388 artificial recharge structures (249 Check dams and 139 percolations tanks). Recharge and Runoff available in the study area is given in **Table 6.2.**

**Table 6.2:** Recharge and Runofff available in the district

| | |
|---|---|
| Total geographical area of study area (Sq.km) | **10402.87** |
| Area feasible for recharge (Sq.km) | **6387.7** |
| Run off required to recharge the unsaturated volume (MCM) | **687.7** |
| Surplus runoff available for recharge (MCM) (20% of runoff) | **89.26** |

### 6.1.1 Artificial Recharge Structures in the District:

The area feasible for artificial recharge is 6387.7 sq.kms. The run off required to recharge the unsaturated volume 687.7 MCM. The Surplus runoff available for recharge 89.26 MCM calculated as 20% of the total run off available in the district. The details in this regard are provided in the **Table 6.3.**

**Table 6.3:** Study Area Details

| **SPSR Nellore (Parts) covering 32 Mandals** | |
|---|---|
| Area (Sq. Km) | **10402.87** |
| Recharge worthy area (Sq. Km) | **6387.7** |
| Average of Post Water Level (m bgl) | **7.53** |
| Runoff Village wise (MCM) | **446.33** |
| Uncommitted Runoff (20%) | **89.26** |
| Existing Check Dams | **748** |
| Existing Percolation Tanks | **588** |
| Runoff required for existing ARS(MCM) | **34.41** |
| Runoff considered for New ARS (MCM) (40% Of left Runoff) | **35.70** |
| Number of CDs Feasible | **249** |
| Number of PTs feasible | **139** |

In the district a total of 1336 artificial recharge structures (748 CDs and 588 PTs) are already in existence. Thus, out of 89.36 MCM surplus run off availability, 35.70 MCM is considered for existing ARS and only 40% of the available left surplus runoff considered for recommendation of new artificial recharge structures and thus recommended for construction of total 388 AR structures (249 check dams and 139 percolation tanks) in the study area **(Annexure 4).** In addition, roof top rainwater harvesting structures should be made mandatory to all Government buildings (new and existing). **Fig 6.2**

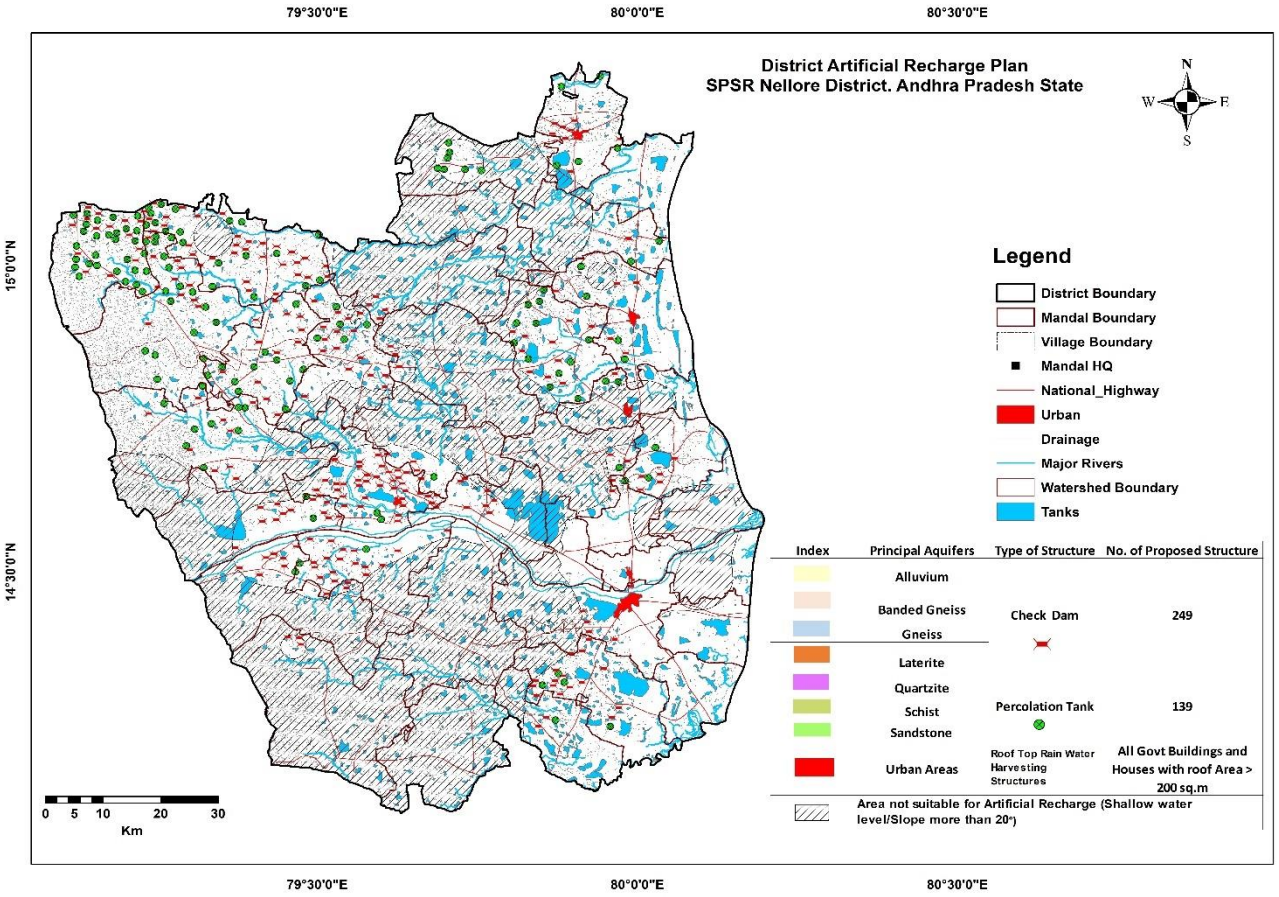



**Fig 6.2 District Recharge Plan**

### 6.1.2 Other supply side measures:

Existing ARS like percolation tanks and check dams and dried dug wells can be de-silted involving people's participation through the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). This will also help in sustainable management of groundwater resources.

## 6.2 Demand side management

- The yield of bore well is <2.0 lps identified in 3661.43 sq.km (35%) of the district. As sustainability of bore well is low, the sprinkler and drip irrigation system with suitable cropping pattern is recommended in where recharge potential is more than the total run off and surplus run off availability. Particularly in North western parts of the district as a measure for groundwater conservation, protection and management.

- The post-monsoon decadal average depth to ground water level is <6 m in 3977.51 sq. kms in east/coastal mandals and Deltaic area of the district. To prevent water logging condition in future, it is recommended to follow the anti-water logging measures for Conjunctive use of surface and ground water in the coastal mandals of the district.

- In SPSR Nellore District there are 968 Minor Irrigation Tanks having a registered ayacut 77478 Hectares and actual irrigated area is 14982 Hectares. Considering low sustainability of bore wells in the district and limited no. of existing MI tanks, it is recommended for de siltation and cascading of existing MI tanks and filling up MI tanks with surface water schemes. This can result in increase in Ayacut/Irrigation area, sustain the bore well yields and decrease the ground water irrigation.

- A participatory groundwater management (PGWM) approach in sharing of groundwater and monitoring resources on a constant basis along with effective implementation of the existing 'Water, Land and Trees Act' of 2002 (WALTA-2002) are the other measures suggested. Subsidy/incentives on cost involved in sharing of groundwater may be given to the concerned farmers.
- In urban and rural area, the sewerage line should be constructed to arrest leaching of nitrate.

## 7. Acknowledgment

The author thanks to Shri. J Siddhardha Kumar, Regional Director, CGWB, Hyderabad and Shri Ravi Kumar Gumma, Scientist- 'D' & OIC, CGWB, APSUO, Visakhapatnam for their encouragement, guidance and support. The author is very much delighted to express his deep sense of gratitude and regards to my colleagues towards Shri. Md. Sarif Khan, Scientist- 'C', Shri Dr. D Anantha Rao, AHG and Smt. Nilima Patra, AHG for their valuable help in preparation of various maps and model generation. The author acknowledges State Ground Water Department, Govt. of Andhra Pradesh for making available of field data. Author also thanks the Executive Engineer and his drilling crew of CGWB for carrying out the exploration activity.

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| Annexures:1 Key Well location and Depth to water level in SPSR Nellore District | | | | | |
|---|---|---|---|---|---|
| **S. N.** | **Location/ Station** | **Mandal** | **Lat** | **Long** | **WL (mbgl)** |
| 1 | R.C. PALEM | KAVALI | 14.9702 | 79.8918 | 7.45 |
| 2 | ANEMADUGU | KAVALI | 14.9390 | 80.0255 | 2.66 |
| 3 | MANNANGIDINNE | KAVALI | 14.8925 | 80.0420 | 3.47 |
| 4 | SIDDANAPALEM | BOGOLE | 14.7777 | 80.0628 | 2.73 |
| 5 | THATAKULA DINNE | KODAVALURU | 14.5531 | 79.9639 | 2.97 |
| 6 | VAVILLA | VIDAVALURU | 14.6109 | 80.0841 | 8.84 |
| 7 | UMAMAHESWARA PURAM | BOGOLE | 14.7616 | 80.0251 | 2.80 |
| 8 | SOMAVARAPPADU | JALDANKI | 14.7908 | 79.8576 | 2.88 |
| 9 | DHARMAVARAM | DAGADARTHI | 14.6915 | 79.8900 | 5.31 |
| 10 | DAMAVARAM | DAGADARTHI | 14.7040 | 79.9607 | 2.59 |
| 11 | UCHAGUNTAPALEM | DAGADARTHI | 14.6148 | 79.9601 | 2.99 |
| 12 | REDDIPALEM | BUCHIREDDIPALEM | 14.6141 | 79.8896 | 3.16 |
| 13 | DUNDIGAM | DAGADARTHI | 14.6994 | 79.7973 | 2.50 |
| 14 | TALUPURUPADU | SANGAM | 14.6177 | 79.7786 | 3.90 |
| 15 | KONDAMEEDI KONDURU | AS PETA | 14.6327 | 79.6932 | 3.89 |
| 16 | RAJAVOLU | AS PETA | 14.7168 | 79.6032 | 5.81 |
| 17 | ARAVEDU | ATMAKUR | 14.7164 | 79.5596 | 4.38 |
| 18 | CHANDRAPADIYA | VINJAMURU | 14.7725 | 79.5842 | 3.96 |
| 19 | SANKAVARAM | VINJAMURU | 14.7932 | 79.5109 | 4.35 |
| 20 | BHYRAVARAM | DUTTALURU | 14.7726 | 79.4538 | 4.50 |
| 21 | NANDIPADU | DUTTALURU | 14.8004 | 79.3485 | 4.99 |
| 22 | BRAHMESWARAM | DUTTALURU | 14.8529 | 79.4490 | 5.47 |
| 23 | MANDALLANAIDUPALLE | DUTTALURU | 14.8791 | 79.3874 | 3.65 |
| 24 | GANNEPALLE | UDAYAGIRI | 14.9447 | 79.2677 | 6.98 |
| 25 | BASINENIPALLE | SEETHARAMPURAM | 14.9705 | 79.2072 | 4.36 |
| 26 | SINGAREDDIPALLE | SEETHARAMPURAM | 15.0012 | 79.1644 | 5.48 |
| 27 | PABBULETIPALLE | SEETHARAMPURAM | 15.0648 | 79.1564 | 8.30 |
| 28 | PEDDIREDDIPALLE | VARIKUNTAPADU | 15.0631 | 79.2887 | 8.13 |
| 29 | ALIVELUMANGAPURAM | VARIKUNTAPADU | 14.9727 | 79.3777 | 10.08 |
| 30 | KANIAMPADU | VARIKUNTAPADU | 14.9763 | 79.4424 | 4.82 |
| 31 | CHALLAGIRIGALA | KONDAPURAMU | 14.9736 | 79.5365 | 7.82 |
| 32 | ISAKADAMERLA | KONDAPURAMU | 15.0200 | 79.5683 | 4.00 |
| 33 | VELIGONDLA | KONDAPURAMU | 15.0262 | 79.6267 | 4.75 |
| 34 | NEKUNAMPETA | KONDAPURAMU | 15.0357 | 79.7181 | 5.28 |
| 35 | BHIMAVARAPPADU | KONDAPURAMU | 15.0185 | 79.7741 | 4.70 |
| 36 | RAVULAKOLLU | KALIGIRI | 14.8707 | 79.7122 | 4.35 |
| 37 | KUMMARAKONDURU | KALIGIRI | 14.8507 | 79.7994 | 4.85 |
| 38 | CHIMALAVARIPALEM | KALIGIRI | 14.8077 | 79.6613 | 5.10 |
| 39 | RAVIPADU | VINJAMURU | 14.8782 | 79.5569 | 7.83 |
| 40 | CHABOLU | MARRIPADU | 14.7536 | 79.2190 | 2.74 |
| 41 | KADIRINAIDUPALLE | MARRIPADU | 14.6555 | 79.2409 | 6.99 |

| | | | | | |
|---|---|---|---|---|---|
| 42 | PALLAVOLU | MARRIPADU | 14.6439 | 79.3581 | 8.34 |
| 43 | UPPALAPADU | A SAGARAM | 14.5335 | 79.3583 | 6.88 |
| 44 | INAGALURU | A SAGARAM | 14.5923 | 79.4369 | 5.60 |
| 45 | NANDAVARAM | MARRIPADU | 14.7174 | 79.4685 | 5.80 |
| 46 | JAMMAVARAM | AS PETA | 14.7282 | 79.7063 | 2.04 |
| 47 | Iskapalem | VENKATACHALAM | 14.281 | 80.0017 | 3 |
| 48 | KANDALAPADU | VENKATACHALAM | 14.3575 | 79.8815 | 0.93 |
| 49 | MUDDUMUDI | MANUBOLU | 14.2785 | 79.8667 | 0.85 |
| 50 | NARIKELLAPALLE | MUTHUKUR | 14.2938 | 80.0692 | 1.45 |
| 51 | THOTAPALLIGUDUR | THOTAPALLIGUDUR | 14.3977 | 80.0833 | 3.51 |
| 52 | EDURU - I | THOTAPALLIGUDUR | 14.3918 | 80.1208 | |
| 53 | DEVARAPALEM | NELLORE | 14.4648 | 79.8819 | 2.53 |
| 54 | KANDAMURU | NELLORE | 14.4657 | 79.7904 | 3.28 |
| 55 | MAHAMMADAPURAM | PODLAKUR | 14.5386 | 79.7676 | 1.12 |
| 56 | BATHULAPALLE | PODLAKUR | 14.2939 | 80.0692 | 4.13 |
| 57 | GOLLAPALLE | CHEJERLA | 14.5262 | 79.6134 | 2.77 |
| 58 | CHEEPINAPI | KALUVOYA | 14.4541 | 79.483 | |
| 59 | CHINTALAPALEM | KALUVOYA | 14.458 | 79.3855 | Dry |
| 60 | MARUPURU | PODLAKUR | 14.4002 | 79.805 | 2.75 |
| 61 | MARRIPALLE | PODLAKUR | 14.3698 | 79.7205 | 2.15 |
| 62 | PULIKALLU | PODLAKUR | 14.3764 | 79.6159 | 3.09 |
| 63 | DACHURU | KALUVOYA | 14.406 | 79.5594 | 5.6 |
| 64 | YERRAPALLEE (Kalluvaya Forest) | KALUVOYA | 14.4253 | 79.3924 | 3.45 |
| 65 | GUNDAVOLU | RAPUR | 14.2823 | 79.5297 | 2.87 |
| 66 | YEPURU ( Rapur Forest) | RAPUR | 14.2471 | 79.5169 | 2.5 |
| 67 | KOLANUKUDURU | MANUBOLU | 14.196 | 79.9428 | 6.1 |
| 68 | MOMIDI | CHILLAKUR | 14.1948 | 80.0456 | 4.8 |
| 69 | THAMMINAPATNAM | CHILLAKUR | 14.2311 | 80.1009 | 2.74 |
| 70 | MUDIVARTHI PALEM | INDUKURPET | 14.54052 | 80.11928 | |
| 71 | PEDDA CHERUKUR | NELLORE | 14.4539 | 80.035 | |
| 72 | VARIGONDA | THOTAPALLIGUDUR | 14.38454 | 80.05583 | |
| 73 | KALLURPALLE | NELLORE | 14.38911 | 79.96128 | 1.8 |
| 74 | PIDURU | MANUBOLU | 14.20346 | 79.89161 | 2.4 |
| 75 | ORUPALLE | SYDAPURAM | 14.27952 | 79.70826 | 1 |
| 76 | KOMMIPADU | SYDAPURAM | 14.19921 | 79.63817 | 4 |

## Annexure: 2 Ground Water Exploration Data in SPSR Nellore District.

| S.No | Location | Mandal | Latitude | Longitude | Well Type EW/ OW | Starding Date | Total Depth | Lithology | Casing | Zone/ Fractures Encountered | Discharge | SWL | Drawdown | Sp Capacity | T | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Kalichedu | Rapur | 14.2972 | 79.6467 | EW | 1997 | 200 | Schist | 10 | 124.5 | 1 | | | | | |
| 2 | Giddalur | Sydapuram | 14.2639 | 79.7833 | EW | 1997 | 109 | Schist | 10 | | 4 | 1.64 | 18.14 | | | |
| 3 | Saidapuram | Sydapuram | 14.1750 | 79.7417 | EW | 1998 | 200 | Schist | 11.7 | 21 | 0.7 | 6.42 | | | 3.43 | |
| 4 | Marlapudi | Sydapuram | 14.1958 | 79.6250 | EW | 1999 | 200 | Schist | 10.5 | 16.3 | 0.13 | 7.95 | | | 14.34 | |
| 5 | Rapur | Rapur | 14.2000 | 79.5347 | EW | 1999 | 200 | Granite | 13 | 76 | 1.2 | 8.76 | 21.54 | 48 | 0.89 | |
| 6 | Podalakur | koluvoya | 14.3750 | 79.5917 | EW | 1999 | 180 | Granite | 23 | 28 | 6 | 6.9 | 7.66 | 46.9 | 55.35 | |
| 7 | Podlakur-I | koluvoya | 14.3750 | 79.5917 | OW | 1999 | 123.5 | Granite | 12 | 28.5 | 6.6 | 6.3 | 5.9 | | 48.6 | 0.0004 |
| 8 | Poddlakur-II | koluvoya | 14.3750 | 79.5917 | OW | 1999 | 30 | Granite | 12 | 27 | 5 | 8.5 | 6.78 | | 42.1 | 0.00048 |
| 9 | Thimmantipa | Sangam | 14.6000 | 79.7500 | EW | 2000 | 130 | Gneiss | 15.7 | 20.30,44.00 | 3.45 | 4.08 | 18.02 | 11.49 | 45.45 | |
| 10 | Adurpalli | Rapur | 14.3000 | 79.6333 | EW | 2000 | 200 | Gneiss | 7 | 48.8 | 2 | 3 | 22.8 | | 1.47 | |
| 11 | Kavali | Kavali | 14.9250 | 79.9681 | EW | 2001 | 50.8 | Laterite | 6 | 10 | 0.73 | | | | | |
| 12 | Kondabitraguntа | Bogole | 14.7917 | 79.9792 | EW | 2001 | 69.1 | Tertiary SST | 6 | 15.4 | 0.44 | 1.68 | | | 0.125 | |
| 13 | Karatampadu | Rapur | 14.2444 | 79.5472 | EW | 2001 | 203 | Schist | 20.5 | 17 | 4.36 | 0.5 | | | 0.587 | |
| 14 | Marripadu | Marripadu | 14.0708 | 79.3528 | EW | 2002 | 185 | Schist | 6.1 | 30 | 0.078 | 11.83 | | | 0.74 | |
| 15 | Budhawada | Marripadu | 14.7681 | 79.2958 | EW | 2002 | 203 | Schist | 12.8 | 30.50,43.70 | 0.78 | 7.73 | | | 1.25 | |
| 16 | Bommavaram Agraharam | Marripadu | 14.6292 | 79.3417 | EW | 2002 | 100.6 | Schist | 7.1 | 16,21,24,30,62 | 12.5 | 9.61 | 5.96 | | 165 | |
| 17 | Bommavaram Agraharam | Marripadu | 14.6292 | 79.3417 | OW | 2002 | 63 | Schist | 7.1 | 22.40,28.50,30.70 | 10.2 | 9.17 | 1.72 | | 165 | 0.003 |
| 18 | Chejerla | Chejerla | 14.5122 | 79.5805 | EW | 1999 | 185 | Gneiss | 10.5 | 24 | | 7.68 | | | | |
| 19 | N.V Kandiriga | koluvoya | 14.4306 | 79.5000 | EW | 2000 | 200 | Schist | 18.5 | 23.40,167 | 2.5 | 3.5 | 22.8 | | 1.47 | |
| 20 | N.V Kandiriga | koluvoya | 14.4306 | 79.5000 | EW | 2000 | 200 | Schist | 18.5 | 23.4,167 | 2.56 | 3.5 | 15.4 | 14.02 | 32.9 | |
| 21 | N.V Kandiriga | koluvoya | 14.4306 | 79.5000 | OW | 2000 | 190 | Schist | 17.5 | 23.10,178.00 | 2 | 3.3 | 4 | | 30.47 | 0.00016 |
| 22 | N.V Kandiriga | koluvoya | 14.4306 | 79.5000 | WT | 2000 | 30 | Schist | 17.5 | 10.20,24.40 | 1 | 3.3 | 6.68 | | 25.37 | 0.00014 |
| 23 | Mogalluru | Podalakur | 14.4083 | 79.6750 | EW | 2000 | 200 | Schist | 12.5 | 14.15 | 0.6 | 5.38 | | | 5.46 | |
| 24 | South Mopur | Nellore | 14.4403 | 79.8250 | EW | 2000 | 164 | Gneiss | 7.5 | 18.50,50.00 | 4.5 | 2.27 | 16.08 | 16.79 | 39.6 | |
| 25 | South Mopur | Nellore | 14.4403 | 79.8250 | OW | 2000 | 120 | Gneiss | 12.26 | 39,56,95.60 | 3.85 | 1.97 | 1.75 | | 59.3 | 0.00018 |
| 26 | Kothur | Nellore | 14.4056 | 79.8333 | EW | 2000 | 185 | Gneiss | 19.5 | 47.35 | 0.4 | 2 | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Kasumur | Venkatachalam | 14.3403 | 79.8611 | EW | 2000 | 200 | Gneiss | 14.2 | 11.2 | 0.4 | 3.4 | | | 10.4 | |
| 28 | Chilkapadu | Marripadu | 14.7486 | 79.3583 | EW | 2002 | 149.4 | Schist | 9 | 19.3,26.40 | 3.3 | 5.1 | 14.57 | | 130.3 | |
| 29 | Venkatachalam-I | Venkatachalam | 14.3250 | 79.9256 | EW | 2002 | 203.3 | Schist | 26 | 9,22,26 | 0.44 | 3.71 | | | 0.85 | |
| 30 | Venkatachalam-II | Venkatachalam | 14.3250 | 79.9256 | EW | 2002 | 70 | Schist | 10.1 | 10 | 0.78 | 1.14 | | | 0.17 | |
| 31 | Chowtapalem-I | Manubolu | 14.2778 | 79.9019 | EW | 2002 | 70 | Schist | 6.1 | 12.70,25,54 | 0.44 | 0.26 | | | 0.45 | |
| 32 | Chowtapalem-II | Manubolu | 14.2778 | 79.9019 | EW | 2002 | 70 | Schist | 10 | 32,48,10 | 1.21 | 0.71 | | | | |
| 33 | Mangalagunta | Venkatachalam | 14.3167 | 79.8806 | EW | 2002 | 200.5 | Schist | 8.1 | 17.3,25,35.10,38.60 | 1.52 | 1.22 | 25.16 | 3.64 | 0.8 | |
| 34 | Woodhousepet | Sangam | 14.5969 | 79.7692 | EW | 2003 | 150 | Schist | 27 | 40,46,98 | 2.09 | 2.19 | 8.62 | 14.54 | 44 | |
| 35 | Dhagadarthi | Kodavalur | 14.5994 | 79.9889 | EW | 2003 | 150 | Schist | 23.9 | 25,35,66 | 2.32 | 1.19 | 26.47 | 5.26 | 12 | |
| 36 | Udayagiri | Duttalur | 14.8603 | 79.3031 | EW | 2003 | 150 | Schist | 17.3 | 114,18.50 | 2.32 | 6.64 | 29.23 | 4.76 | 3 | |
| 37 | Teddupadu | Vinjamur | 14.8533 | 79.4972 | EW | 2003 | 150 | Schist | 11.4 | 37,69 | 0.13 | | | | | |
| 38 | Turupuyerraballi | Kondapuram | 14.9814 | 79.6078 | EW | 2003 | 150 | Schist | 5.4 | 88 | 0.3 | | | | | |
| 39 | Janardhanapuram | Varikuntapadu | 14.9656 | 79.4978 | EW | 2004 | 150 | Schist | 11.5 | 25,46,54 | 0.5 | 4.74 | 36.82 | 0.814 | 0.2 | |
| 40 | Bandlakindipalle | Duttalur | 14.8667 | 79.4833 | EW | 2000 | 200 | Schist | 7 | 26.40,44.70 | 0.44 | 12.24 | | | 0.65 | |
| 41 | Duttaluru | Duttalur | 14.8333 | 79.4167 | EW | 2000 | 200 | Schist | 8.5 | 61.50,88.30,108,155 | 0.73 | 11.6 | | | 0.37 | |
| 42 | Sita Ram Puram | Seetharamapuram | 15.0347 | 79.1372 | EW | 2000 | 103 | Gneiss | 9.5 | 33.60,60 | 1.5 | 15.53 | 15.34 | 8.45 | 1.75 | |
| 43 | Udayagiri | Duttalur | 14.8667 | 79.3000 | EW | 2000 | 200 | Schist | 8.5 | 30,80 | 0 | 14.5 | | | 0.06 | |
| 44 | Charlikonda | Varikuntapadu | 14.9667 | 79.5167 | EW | 2000 | 88 | Schist | 8.5 | 17.80,22.90,35.10,42.20,66.00 | 10.2 | 7.25 | 3.83 | 157 | 288 | |
| 45 | Vinjamuru | Vinjamur | 14.8500 | 79.5833 | EW | 2000 | 151.5 | Schist | 19.7 | 20,42 | 0.73 | 16.24 | | | 0.706 | |
| 46 | Nandigunta | Vinjamur | 14.8500 | 79.5333 | EW | 2000 | 203 | Schist | 22.4 | 2,01,17,122 | 0.44 | 16.24 | | | 0.7 | |
| 47 | Sankavaram | Vinjamur | 14.7667 | 79.5167 | EW | 2000 | 196.7 | Schist | 12.5 | 6.1,12 | 0.07 | 1.06 | | | 0.19 | |
| 48 | Veeranakallu | Kaligiri | 14.8500 | 79.6597 | EW | 2001 | 196.7 | Schist | 7.5 | 34.10,45.30,66.60,120.50 | 3.3 | 3.57 | 16.82 | 11.7 | 104.3 | |
| 49 | N.M.Palem | Vinjamur | 14.8502 | 79.5833 | EW | 2001 | 196.7 | Schist | 7 | 16.80,51.40,85.90,137.80 | 2.2 | 5.75 | 19.44 | 6.8 | 34.8 | |
| 50 | Siddhanakondur | Kaligiri | 14.7847 | 79.7694 | EW | 2001 | 118 | Schist | 11.7 | 13.70,28,20.90 | 20 | 5.12 | 5.7 | 210 | 316 | |
| 51 | Siddhanakondur | Kaligiri | 14.7847 | 79.7694 | OW | 2001 | 40 | Schist | 5.5 | 15.80,20.90,24.90 | 16.4 | 5.14 | 1.54 | | 904 | 0.00099 |
| 52 | Siddhanakondur | Kaligiri | 14.7847 | 79.7694 | OW | 2001 | 45 | Schist | 7.5 | 15.30,18.30,21.40 | 10.2 | 5.03 | 0.43 | | 1978 | 5.34E-06 |
| 53 | Kuditipalem | Indukurupeta | 14.5611 | 80.1458 | EW | 1970 | 193.4 | Alluvium | 45 | 26.85 | 3.8 | 1.98 | 6.18 | 371 | 1685 | 0.007 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Veguru | Kovvur | 14.7080 | 79.9916 | EW | 1970 | 119.78 | Alluvium | 45 | 27 to 32 & 45 to 59 | 33 | 4.4 | 6.14 | | 528.8 | 0.0007 3 |
| 55 | Mypadu | Indukurupeta | 14.0919 | 80.1177 | EW | 1970 | 180 | Alluvium | 77 | 9.72 to 18.80 & 57.60 to 74.20 | 35 | 1.82 | 6.39 | 328 | 152.4 | |
| 56 | Kavali | Kavali | 14.7080 | 79.9916 | EW | 2000 | 33.7 | Alluvium | 32.5 | 13 to 31 | 0.275 | 7.58 | 10.78 | 1.53 | 0.63 | |
| 57 | Padarpalli | Nellore | 14.0919 | 80.1177 | EW | 2000 | 138 | Alluvium | 49 | 28 to 34 & 38 to 47 | 1.7 | 1.45 | 9.69 | 10.46 | 2.97 | |
| 58 | Gowragunta | Allur | 14.7080 | 79.9916 | EW | 2001 | 59 | Alluvium | 52.5 | 20 to 26 & 38 to 50 | 3.38 | 4.98 | 7.14 | 28.4 | 33.82 | |
| 59 | Gattupalle | Jaladanki | 14.9042 | 79.8625 | EW | 2001 | 75 | Tertiary SST | 52.5 | 15,23,24.40,23,41.20 | 7 | 4.8 | 13.23 | 31.75 | 46.1 | |
| 60 | Tikkavaram | Marripadu | 14.6597 | 79.3575 | Pz | 1998 | 31 | Gneiss | 10 | | | 9.85 | | | | |
| 61 | Basinenipalli | Seetharamapuram | 14.2103 | 79.2486 | Pz | 1998 | 34.5 | Gneiss | 12 | | | 4.13 | | | | |
| 62 | Naravada | Udayagiri | 14.8956 | 79.4206 | Pz | 1998 | 36.1 | Gneiss | 12 | | | 7.16 | | | | |
| 63 | Rapur | Rapur | 14.2000 | 79.5278 | Pz | 1998 | 30 | Gneiss | 10 | | | 3.74 | | | | |
| 64 | Podalakur | Podalakur | 14.3864 | 79.7333 | Pz | 1998 | 21.9 | Schist | 15 | | | 4.14 | | | | |
| 65 | Vidavaluru | Kovvur | 14.5011 | 80.0525 | OW | 2013 | 56 | Alluvium | 30 | 9 to 21 | 0.09 | 8.1 | | | | |
| 66 | Vidavaluru | Kovvur | 14.5011 | 80.0525 | EW | 2013 | 48 | Alluvium | 30 | 10 to 22 | 0.12 | 5.07 | | | | |
| 67 | Vidavaluru | Kovvur | 14.5011 | 80.0525 | EW | 2013 | 62 | Alluvium | 60 | 25 to 31, 38 to 48 & 52 to 58 | 0.18 | 11.75 | | | | |
| 68 | Vidavaluru | Kovvur | 14.5011 | 80.0525 | OW | 2013 | 43 | Alluvium | 30 | 9 to 21 | 0.18 | 4.82 | | | | |
| 69 | Alluru | Alluru | 14.6817 | 80.0500 | | | 300 | Alluvium | 46 | 38 to 44 | 9.00 | 7.48 | 17.12 | | 375.21 | |
| 70 | Mutukuru | Indukurupeta | 14.2956 | 80.0900 | EW | | 230 | Alluvium | 56 | 48 to 54 | 13.00 | 18.8 | 9.29 | | 101.95 | |
| 71 | Pajerla | Gudulur | 15.0736 | 79.9556 | EW | 2005 | 150 | Shale | 46.5 | 9,17,43 | 2 | 3.45 | 12.59 | 9.53 | 15.82 | |
| 72 | Oguru | Kandukur | 15.2319 | 79.9458 | EW | 2005 | 130 | Gneiss | 13.75 | 27,29,50,52 | 1.79 | 13 | 11.29 | 6.91 | 8.57 | |
| 73 | Mocherla | Gudulur | 15.0592 | 80.0014 | EW | 2005 | 150 | Schist | 26.6 | 54,55, | 1 | 1.37 | 0.67 | 22.33 | 6.7 | |
| 74 | Polinenicheruvu | Voletivaripalem | 15.1972 | 79.6533 | EW | 2005 | 150 | Granite | 16.8 | 75,77 | 0.32 | | | | | |
| 75 | Veerannapalem | Voletivaripalem | 15.2244 | 79.6756 | EW | 2005 | 150 | Gneiss | 27.5 | 27,37 | 1.5 | 10.55 | 5.95 | 15.13 | 13.18 | |
| 76 | Voletivaripalem | Voletivaripalem | 15.1647 | 79.7233 | Pz | 2019 | 100 | Quartz mica schist and gneiss | 17.5 | 56,59 | 0 | 21.38 | | | 2.83 | 0.001 |
| 77 | Pentrala | Lingasamudram | 15.0722 | 79.7147 | Pz | 2019 | 100 | Quartz mica schist and gneiss | 5 | | 0 | 17.25 | | | 15.97 | 0.001 |
| 78 | Chalamcherla | Kavali | 14.9747 | 79.3497 | EW | 2021 | 200 | schist | 11 | 54.50-55.50 | 0.07 | 1 | | | 15.83 | 0.001 |
| 79 | Gattupalle | Jaladanki | 14.9106 | 79.8650 | EW | 2021 | 184.7 | Granitic gneiss | 28.1 | 89.10-90.10,118.60-120.60 | 0.013,5.39 | 9.39 | | | 35.27 | 5.27E-05 |
| 80 | Gattupalle | Jaladanki | 14.9106 | 79.8650 | OW | 2021 | 129.8 | Granitic gneiss | 67.7 | 95.20-96.20,119.60-122.60 | 0.07,9.86 | 9.71 | | | 41.17 | 5.27E-05 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | Siddanakondur | kaligiri | 14.7933 | 79.7760 | EW | 2021 | 200 | Granitic gneiss | 26.1 | 28.10-29.10,130.80-131.80,168.40-170.40 | 0.07,0.43,1.18 | 5 | | | 7.37 | 0.001 |
| 82 | malavarapadu | kondapuram | 15.0153 | 79.6945 | EW | 2021 | 200 | schist | 21 | 162.30-163.30 | 0.01 | 2.3 | | | 4.04 | 0.001 |
| 83 | Bhimavarapadu | Kondapuram | 15.0205 | 79.7764 | EW | 2021 | 38.3 | schist | 38.3 | 25.0-26.10 | 0.43 | 3.89 | | | 21.96 | 0.001 |
| 84 | veeranakolu | Kaligiri | 14.8357 | 79.6608 | EW | 2021 | 200 | schist | 26.1 | 35.20-36.20,77.90-78.90 | 0.07,0.43 | 2.16 | | | 8.436 | 0.001 |
| 85 | Narrwada | Duttaluru | 14.8972 | 79.4301 | EW | 2021 | 200 | schist | 13.5 | 32.20-33.20,98.20-99.30 | 0.43,0.78 | 6.04 | | | 13.96 | 0.001 |
| 86 | Bonthamarupalli | marripadu | 14.7352 | 79.3391 | EW | 2021 | 200 | schist | 8.5 | 18.90-20.00,66.70-68.80185.70-186.70, | 0.20,0.78,0.78 | 2.48 | | | 5.656 | 0.001 |
| 87 | Yepuru | Rapuru | 14.2570 | 79.5179 | EW | 2022 | 200.00 | Granite Gneiss (grey biotite rich) | 18.5 | Nil | meager | 6.96 | | | | |
| 88 | Althurthy | Podalakur | 14.4427 | 79.6923 | EW | 2022 | 200.00 | Granite Gneiss (hornblend, grey biotite rich) | 24.5 | 28-29 | 0.21 | 0.92 | | | | |
| 89 | Cheekirenipalli | Dakkali | 14.0355 | 79.5382 | EW | 2022 | 200.00 | Granite Gneiss (hornblend, grey biotite rich) | 9.5 | 172-173 | 0.43 | 9.15 | | | | |
| 90 | Yathaluru | Venkatagiri | 13.8887 | 79.6443 | EW | 2022 | 200.00 | Granite Gneiss (hornblend, grey biotite rich) | 14 | 40-41, 45-46m | 0.076 | 5.8 | | | | |
| 91 | Kamakuru | Balayapalle | 13.9711 | 79.7108 | EW | 2022 | 202.00 | Granite Gneiss (hornblend, grey biotite rich) | 19.7 | nil | meager | 4.56 | | | | |
| 92 | Kandra | Gudur | 14.0546 | 79.7881 | EW | 2022 | 200.00 | Meta Basalt (Ig complex dyke) | 15 | 152-153 | 0.43 | 5.06 | | | | |
| 93 | Maddali | Kota | 14.0412 | 79.9572 | pZ | 2022 | 100.00 | Alluvium | 33 | 37-38m | 0.01 | 3.56 | | | | |
| 94 | Kasumuru | Venkatachalam | 14.3413 | 79.8572 | EW | 2022 | 129.60 | Granite Gneiss (hornblend, grey biotite rich) | 26.5 | 30-31m | 0.43 | 5.33 | | | | |
| 95 | Ojili | Ojili | 14.0020 | 79.9068 | pZ | 2022 | 100.00 | Granite Gneiss (hornblend, grey biotite rich) | 24.5 | 30-31m | 0.21 | 3.7 | | | | |
| 96 | Sydapuram | Sydapuram | 14.1846 | 79.7375 | EW | 2022 | 200.00 | Granite Gneiss (hornblend, grey biotite rich) | 20.5 | 25-26, 88-89, 142-143m | 0.43 | 6.15 | | | | |
| 97 | Rapuru | Rapuru | 14.1989 | 79.5621 | EW | 2022 | 119.40 | Granite (Orbicular Granite) | 14.5 | 116-117m | 11.72 | 8.12 | | | | |
| 98 | Rapuru | Rapuru | 14.1991 | 79.5621 | OW | 2022 | 117.40 | Granite (Orbicular Granite) | 14.5 | 29-30, 65-66, 115-116m | 11.72 | 8.15 | | | | |
| 99 | Gonupalli | Rapur | 14.3412 | 79.4704 | EW | 2022 | 191.60 | Granite Gneiss (grey biotite rich) | 12.5 | 48-49, 153-154, 189-190m | 0.076 | 4.50 | | | | |
| 100 | Korimerla | Sangam | 14.6306 | 79.7562 | EW | 2022 | 200.00 | Migmatites after Khondalite/Charnockite (GG) | 16.5 | 22-23 | 0.43 | 2.51 | | | | |
| 101 | Kondapuram | Kondapuram | 14.9854 | 79.6808 | pZ | 2022 | 160.00 | Granite Gneiss (grey biotite rich) | 20.5 | 21-22 | 0.076 | | | | | |
| 102 | Nandavaram | Marripadu | 14.6920 | 79.4803 | pZ | 2022 | 117.00 | Granite Gneiss (grey biotite rich) | 20.5 | 28-29 | 0.076 | | | | | |
| 103 | Marripadu | Marripadu | 14.6947 | 79.3497 | pZ | 2022 | 101.00 | Schist (Quart-Clorite rich) | 24.5 | Nil | meager | 10.68 | | | | |
| 104 | Chilakalamarru | Anantasagaram | 14.5862 | 79.3323 | pZ | 2022 | 102.00 | Schist (Quart-Clorite rich) | 12.5 | 23-24 | meager | | | | | |
| 105 | Kakarlapadu | A S Peta | 14.7279 | 79.7091 | EW | 2022 | 200.00 | Migmatite (rich with biotite, hyperthene. Hornblend) (Granite Gneiss) | 6 | 22-23 | 0.076 | 6.28 | | | | |
| 106 | Boyala Chiruvella | Atmakuru | 14.6799 | 79.5606 | EW | 2022 | 200.00 | Migmatite (rich with biotite, hyperthene. Hornblend) (Granite Gneiss) | 19 | 78-79 | 0.21 | 4.2 | | | | |
| 107 | Pallavolu | Marripadu | 14.6447 | 79.3597 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 20.00 | 32-33 | 0.21 | 7.51 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 108 | Budawada (Krishnapuram) | Marripadu | 14.7640 | 79.2723 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 17.50 | 31-32 | 0.43 | 8.22 | | | | |
| 109 | Gannepalli | Udayagiri | 14.9441 | 79.2780 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 8.00 | 14-15, 75-76 | 0.21 | 7.23 | | | | |
| 110 | Chintalapalem | Vinjamuru | 14.7685 | 79.5516 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 19.50 | 20-21 | nil | 8.35 | | | | |
| 111 | Bhyravaram | Vinjamuru | 14.7745 | 79.4569 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 20.50 | 21-22 | nil | 5.83 | | | | |
| 112 | Chakalakonda | Vinjamuru | 14.9575 | 79.5102 | EW | 2022 | 200.00 | Migmatities after Khondalites (Granite Gneiss) | 14.50 | 37-38, 80-81, 159-160m | 3.25 | 7.19 | | | | |
| 113 | Chakalakonda | Vinjamuru | 14.9575 | 79.5102 | OW | 2022 | 200.00 | Migmatities after Khondalites (Granite Gneiss) | 14.50 | 26-27, 49-50, 122-123 m | 2.43 | 6.58 | | | | |
| 114 | Turpu Rompidodla | Varikuntapadu | 15.0360 | 79.5046 | pZ | 2022 | 100.30 | Migmatities after Khondalites (Granite Gneiss) | 10.50 | 31-32 m | meager to 0.014 | 6.40 | | | | |
| 115 | Peddareddipalli | Varikuntapadu | 15.0631 | 79.2903 | pZ | 2022 | 100.30 | Schist (Quart-Clorite rich) | 6.50 | 14-15 m | 0.43 | 9.66 | | | | |
| 116 | Somalaregada | Duttaluru | 14.8582 | 79.3667 | EW | 2022 | 200.00 | Schist (Quart-Clorite rich) | 9.00 | 9-10, 13-14, 24-25, 121-122, 149-150m | 4.80 | | | | | |
| 117 | Somalaregada | Duttaluru | 14.8582 | 79.3667 | OW | 2022 | 117.60 | Schist (Quart-Clorite rich) | 9.00 | 13-14, 25-26, 92-93, 108-109m | 6.00 | | | | | |
| 118 | Bata (Naginenigunta GP) | Marripadu | 14.7178 | 79.2191 | pZ | 2022 | 200.00 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 14.40 | 13-14, 18-19, 25-26m | 0.43 | 6.96 | | | | |
| 119 | Jirravaripalem | Kaligiri | 14.8349 | 79.6748 | EW | 2022 | 114.50 | Migmatities after Charnockites | 14.90 | 29-30, 35-36, 50-51, 99-100m | 6.71 | | | | | |
| 120 | Jirravaripalem | Kaligiri | 14.8349 | 79.6748 | OW | 2022 | 148.10 | Migmatities after Charnockites (Granite Gneiss) | 21.00 | 31-32, 123-124, 147-148m | 8.2 | | | | | |
| 121 | Laxmipuram | Kaligiri | 14.8012 | 79.7987 | pZ | 2022 | 100.00 | Migmatities after Khondalite (Granite Gneiss) | 13.50 | nil | 0.07 | 3.29 | | | | |
| 122 | Thimmaredipalli | Varikuntapadu | 15.0485 | 79.4290 | EW | 2022 | 160 | Schist (Quart-Clorite rich) | 12.70 | 46-47 | 6.71 | | | | | |
| 123 | Thimmaredipalli | Varikuntapadu | 15.0485 | 79.4290 | OW | 2022 | 200 | Schist (Quart-Clorite rich) | 8.30 | 24-25, 91-92 | 3.25 | | | | | |
| 124 | Chinna Annaluru | Kaligiri | 14.9147 | 79.6881 | EW | 2022 | 160 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 14.50 | 16-17, 20-21, 25-26 | 8.2 | | | | | |
| 125 | Chinna Annaluru | Kaligiri | 14.9147 | 79.6881 | OW | 2022 | 75 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 14.50 | 16-17, 25-26 | 8.2 | | | | | |
| 126 | Velagapadu | Kaligiri | 14.7834 | 79.7248 | pZ | 2022 | 100 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 19.50 | 20-21 | 0.58 | | | | | |
| 127 | Gotti Gundala | Kondapuram | 14.9448 | 79.6061 | EW | 2022 | 75 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 9.50 | 14-15, 29-30 | 6.7 | | | | | |
| 128 | Gotti Gundala | Kondapuram | 14.9448 | 79.6061 | OW | 2022 | 32 | Granite Gneiss (grey biotite rich) with Quartz vien presence | 9.90 | 15-16 | 6.7 | | | | | |

## Annexure-3 Mandal Wise Ground Water Resources, Availability, Utilization and Stage of Ground Water Development of SPSR Nellore District (2022)

| Sr No | Assessment Unit Name | Total area of assessment unit (Ha) | Recharge worthy area (Ha) | Recharge from Rainfall-MON | Recharge from Other Sources-MON | Recharge from Rainfall-NM | Recharge from Other Sources-NM | Total Annual Ground Water (Ha.m) Recharge | Total Natural Discharges (Ha.m) | Annual Extractable Ground Water Resource (Ham) | Irrigation Use (Ham) | Industrial Use (Ham) | Domestic Use (Ham) | Total Extraction (Ham) | Annual GW Allocation for Domestic Use as on 2025 (Ham) | Net Ground Water Availability for future use (Ham) | Stage of Ground Water Extraction (%) | Categorization |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ALLUR | 19114 | 19114 | 1921.11 | 501.62 | 507.64 | 7903.48 | 10833.85 | 541.72 | 10292.13 | 601.30 | 5.8 | 46.45 | 653.55 | 60.92 | 9624.12 | 6.35 | safe |
| 2 | ANANTHASAGARAM | 30374 | 25820 | 1408.61 | 1077.71 | 340.46 | 4084.5 | 6911.28 | 345.61 | 6565.67 | 2220.19 | 22.15 | 49.05 | 2291.38 | 66.19 | 4313.35 | 34.90 | safe |
| 3 | ANUMASAMUDRAMPETA | 28922.25 | 28466.25 | 1407.88 | 685.46 | 399.94 | 3205.68 | 5698.96 | 284.94 | 5414.02 | 1938.40 | 11.1 | 60.82 | 2010.37 | 65.38 | 3432.66 | 37.13 | safe |
| 4 | ATMAKUR (NELLORE) | 29504.81 | 28940.81 | 1336.49 | 980.06 | 422.56 | 4544.92 | 7284.03 | 364.23 | 6919.81 | 1854.65 | 57.6 | 53.96 | 1966.21 | 63.74 | 4983.93 | 28.41 | safe |
| 5 | BOGOLE | 17835 | 17749 | 1571.51 | 948.53 | 456.77 | 4972.4 | 7949.21 | 397.47 | 7551.75 | 661.70 | 0 | 40.22 | 701.92 | 57.23 | 6832.84 | 9.29 | safe |
| 6 | BUCCHIREDDIPALEM | 11848 | 11738 | 889.03 | 3645.55 | 266.37 | 4190.04 | 8990.99 | 449.57 | 8541.42 | 3969.33 | 0 | 42.13 | 4011.45 | 99.23 | 4472.86 | 46.96 | safe |
| 7 | CHEJERLA | 31032 | 30950 | 1401.06 | 975.4 | 457.44 | 3343.67 | 6177.57 | 308.92 | 5868.66 | 1461.15 | 5.55 | 46.31 | 1513 | 50.49 | 4467.27 | 25.78 | safe |
| 8 | DAGADARTHI | 25284 | 25134 | 1458.26 | 2662.33 | 398.92 | 6315.13 | 10834.64 | 541.73 | 10292.91 | 1668.41 | 64.75 | 60.34 | 1793.53 | 63.94 | 8638.28 | 17.42 | safe |
| 9 | DUTTALUR | 28211 | 28055 | 1790.65 | 418.79 | 576.66 | 495.51 | 3281.61 | 164.07 | 3117.54 | 1330.23 | 12.95 | 46.07 | 1389.22 | 54.42 | 1719.97 | 44.56 | safe |
| 10 | GUDLURU | 26172 | 26172 | 2576.29 | 249.94 | 686.39 | 243.97 | 3756.59 | 187.85 | 3568.74 | 1052.43 | 0 | 50.43 | 1102.88 | 76.66 | 2440.52 | 30.90 | safe |
| 11 | INDUKURPET | 14420 | 14420 | 1916.12 | 2824.48 | 490.73 | 4040.82 | 9272.15 | 463.6 | 8808.53 | 4793.80 | 0 | 41.69 | 4835.48 | 73.86 | 3940.88 | 54.90 | safe |
| 12 | JALADANKI | 30867 | 30779 | 2437.65 | 1199.57 | 655.61 | 7524.98 | 11817.81 | 590.91 | 11226.9 | 1415.10 | 12.95 | 41.74 | 1469.78 | 64.37 | 9734.49 | 13.09 | safe |
| 13 | KALIGIRI | 39800.40 | 39190.40 | 2405.07 | 868.36 | 761.89 | 2025.7 | 6061.02 | 303.06 | 5757.95 | 2674.55 | 33.3 | 64.68 | 2772.5 | 86.43 | 2972.22 | 48.15 | safe |
| 14 | KALUVOYA | 44349 | 41858 | 2699.44 | 744.58 | 751.43 | 2066.71 | 6262.16 | 313.16 | 5949 | 1249.90 | 1.85 | 70.48 | 1322.25 | 76.95 | 4637.49 | 22.23 | safe |
| 15 | KANDUKUR | 23066 | 23066 | 1888.47 | 204.2 | 584.7 | 337.93 | 3015.3 | 150.76 | 2864.54 | 793.05 | 0 | 222.16 | 1015.21 | 258.75 | 1812.74 | 35.44 | safe |
| 16 | KAVALI | 32547 | 32066 | 3131.06 | 640.88 | 841.05 | 5231 | 9843.99 | 492.2 | 9351.81 | 1466.38 | 22.2 | 231.65 | 1720.23 | 302.65 | 7632.45 | 18.39 | safe |
| 17 | KODAVALUR | 11100 | 11100 | 994.73 | 3484.08 | 193.24 | 5960.24 | 10632.29 | 531.64 | 10100.65 | 2281.20 | 0 | 48.70 | 2329.89 | 71.2 | 7748.25 | 23.07 | safe |
| 18 | KONDAPURAM (NELLORE) | 35359 | 35339 | 2354.71 | 508.68 | 603.53 | 1642.43 | 5109.35 | 255.44 | 4853.92 | 1982.32 | 9.25 | 86.32 | 2077.94 | 96.34 | 2794.65 | 42.81 | safe |
| 19 | KOVUR | 8822 | 8822 | 1081.39 | 3399.31 | 240.43 | 4426.08 | 9147.21 | 457.37 | 8689.83 | 3626.25 | 23.2 | 36.26 | 3685.7 | 94.02 | 4946.37 | 42.41 | safe |
| 20 | LINGASAMUDRAM | 20673 | 19843 | 1449.75 | 308.38 | 412.18 | 334.53 | 2504.84 | 125.26 | 2379.58 | 490.59 | 0 | 26.39 | 516.99 | 30.19 | 1859.54 | 21.73 | safe |
| 21 | MANUBOLU | 22596 | 22580 | 1443.3 | 489.7 | 319.7 | 5777.59 | 8030.29 | 401.54 | 7628.74 | 734.50 | 25.6 | 52.19 | 812.3 | 57.65 | 6817.78 | 10.65 | safe |
| 22 | MARRIPADU | 48212 | 46627 | 2807.61 | 613.5 | 720.69 | 1356.54 | 5498.34 | 274.9 | 5223.44 | 2035.38 | 24.05 | 73.24 | 2132.64 | 85.33 | 3078.7 | 40.83 | safe |
| 23 | MUTHUKUR | 17834.53 | 17834.53 | 1953.85 | 401.51 | 670.89 | 4459.39 | 7485.64 | 374.3 | 7111.33 | 2734.08 | 37.7 | 53.97 | 2825.77 | 77.3 | 4262.23 | 39.74 | safe |
| 24 | NELLORE MANDAL | 35171.17 | 34611.17 | 2936.01 | 1445.56 | 681.12 | 1143.95 | 6206.64 | 310.37 | 5896.27 | 971.75 | 187.9 | 1200.15 | 2359.83 | 1418.81 | 4452.56 | 40.02 | safe |
| 25 | PODLAKUR | 43660.77 | 43386.77 | 3149.97 | 1852.01 | 924.63 | 4999.74 | 10926.35 | 546.3 | 10380.02 | 2716.09 | 42.55 | 99.19 | 2857.81 | 121.29 | 7550.19 | 27.53 | safe |
| 26 | RAPUR | 52229.12 | 47491.12 | 2996.76 | 1197.75 | 851.93 | 1429.82 | 6476.26 | 323.8 | 6152.46 | 1127.28 | 20.35 | 125.54 | 1273.17 | 144.06 | 4864.04 | 20.69 | safe |
| 27 | SANGAM | 20793.47 | 20793.47 | 998.58 | 1738.13 | 297.69 | 4001.04 | 7035.44 | 351.78 | 6683.65 | 1454.97 | 22.15 | 56.90 | 1534.03 | 61.67 | 5159.07 | 22.95 | safe |
| 28 | SEETHARAMAPURAM | 28770.17 | 16414.17 | 850.16 | 263.11 | 413.48 | 306.25 | 1833 | 91.64 | 1741.36 | 791.80 | 1.85 | 69.91 | 863.54 | 72.68 | 882.23 | 49.59 | safe |
| 29 | SYDAPURAM | 34435.48 | 34102.48 | 2028.01 | 926.55 | 581.06 | 2348.77 | 5884.39 | 294.21 | 5590.18 | 1779.24 | 37 | 110.91 | 1927.17 | 122.8 | 3676.4 | 34.47 | safe |
| 30 | THOTAPALLIGUDUR | 15680.45 | 15680.45 | 1755.96 | 1730.78 | 507.69 | 4982.53 | 8976.96 | 448.87 | 8528.09 | 3041.48 | 5.8 | 60.86 | 3108.13 | 72.36 | 5408.46 | 36.45 | safe |
| 31 | UDAYAGIRI | 65807 | 47934 | 2978.88 | 658.37 | 1047.58 | 745.96 | 5430.79 | 271.57 | 5159.22 | 1753.55 | 16.65 | 58.01 | 1828.23 | 83.75 | 3331.49 | 35.44 | safe |
| 32 | ULAVAPADU | 18774 | 18774 | 2878.96 | 557.58 | 660.79 | 443.67 | 4541 | 227.04 | 4313.96 | 1577.27 | 66.6 | 29.13 | 1673.01 | 79.61 | 2590.47 | 38.78 | safe |
| 33 | VARIKUNTAPADU | 34208.99 | 33148.99 | 1817.79 | 883.77 | 596.5 | 747.11 | 4045.17 | 202.22 | 3842.95 | 1660.78 | 7.4 | 94.31 | 1762.49 | 99.55 | 2078.34 | 45.86 | safe |
| 34 | VENKATACHALAM | 30056 | 30026 | 2432.43 | 869.7 | 593.12 | 7029.67 | 10924.92 | 546.26 | 10378.66 | 718.60 | 16.35 | 69.90 | 804.85 | 76.88 | 9566.85 | 7.75 | safe |
| 35 | VIDAVALUR | 15771 | 15771 | 2193.02 | 2538.41 | 451.81 | 7052.87 | 12236.11 | 611.8 | 11624.31 | 2516.65 | 0 | 43.94 | 2560.59 | 62.15 | 9045.51 | 22.03 | safe |
| 36 | VINJAMUR | 28253 | 27985 | 1681.8 | 554.36 | 489.51 | 1083.91 | 3809.58 | 190.49 | 3619.09 | 1949.15 | 33.3 | 51.17 | 2033.64 | 75.33 | 1571.52 | 56.19 | safe |
| 37 | VOLETIVARIPALEM | 23581 | 22395 | 1617.16 | 356.07 | 498.26 | 318.81 | 2790.3 | 139.52 | 2650.78 | 690.74 | 0 | 38.25 | 729 | 64.66 | 1895.38 | 27.50 | safe |
| | Total | 1045134.61 | 994177.61 | 72639.53 | 43404.77 | 20354.39 | 121117.34 | 257516.03 | 12876.12 | 244639.87 | 65784.19 | 827.90 | 3653.42 | 70265.68 | 4588.84 | 175236.10 | 28.72 | safe |

| ANNEXURE-4 Pin pointed locations of recommended AR Structures of SPSR Nellore District | | | | | | |
|---|---|---|---|---|---|---|
| **Sl_no** | **Village Name** | **Mandal Name** | **District Name** | **Lat** | **Long** | **ARS_Type** |
| 1 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.232 | 79.8709 | Check dam |
| 2 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2372 | 79.9018 | Check dam |
| 3 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2265 | 79.8837 | Check dam |
| 4 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2217 | 79.8966 | Check dam |
| 5 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2084 | 79.8876 | Check dam |
| 6 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2159 | 79.8674 | Check dam |
| 7 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2198 | 79.9194 | Check dam |
| 8 | CHEVURU | GUDLURU | NELLORE | 15.0069 | 79.99 | Percolation Tank |
| 9 | BUDAMGUNTA | KAVALI | NELLORE | 14.8784 | 79.97 | Percolation Tank |
| 10 | S.V. PALEM | BOGOLE | NELLORE | 14.8108 | 79.9702 | Percolation Tank |
| 11 | RUDRAKOTA | KAVALI | NELLORE | 14.9724 | 79.9985 | Check dam |
| 12 | KANTEPALLE | VENKATACHALAM | NELLORE | 14.343 | 79.9476 | Check dam |
| 13 | MOCHARLA | GUDLURU | NELLORE | 15.045 | 79.9857 | Check dam |
| 14 | RAVUR | GUDLURU | NELLORE | 15.0402 | 80.0342 | Percolation Tank |
| 15 | GARIMENAPENTA | RAPUR | NELLORE | 14.3943 | 79.4541 | Check dam |
| 16 | GARIMENAPENTA | RAPUR | NELLORE | 14.3824 | 79.4748 | Check dam |
| 17 | GARIMENAPENTA | RAPUR | NELLORE | 14.3929 | 79.4717 | Check dam |
| 18 | THOTALACHERUVUPALLE | VARIKUNTAPADU | NELLORE | 15.0335 | 79.2993 | Check dam |
| 19 | THOTALACHERUVUPALLE | VARIKUNTAPADU | NELLORE | 15.0189 | 79.3057 | Check dam |
| 20 | THODUGUPALLE | VARIKUNTAPADU | NELLORE | 15.0812 | 79.3133 | Check dam |
| 21 | VEMPADU | VARIKUNTAPADU | NELLORE | 15.0396 | 79.393 | Check dam |
| 22 | VIRUVOORU | VARIKUNTAPADU | NELLORE | 15.0855 | 79.3519 | Check dam |
| 23 | VIRUVOORU | VARIKUNTAPADU | NELLORE | 15.0714 | 79.3823 | Percolation Tank |
| 24 | ARLAPADIYA | UDAYAGIRI | NELLORE | 15.0153 | 79.2609 | Percolation Tank |
| 25 | RAMACHANDRAPURAM | VOLETIVARIPALEM | NELLORE | 15.2007 | 79.7053 | Percolation Tank |
| 26 | ALLURUPETA | ALLUR | NELLORE | 14.6863 | 80.0585 | Check dam |
| 27 | KOTAYAPALLE | UDAYAGIRI | NELLORE | 15.0456 | 79.2724 | Percolation Tank |
| 28 | THOTALACHERUVUPALLE | VARIKUNTAPADU | NELLORE | 15.0379 | 79.2902 | Percolation Tank |
| 29 | KURICHERLAPADU | VENKATACHALAM | NELLORE | 14.3146 | 79.8369 | Check dam |
| 30 | KURICHERLAPADU | VENKATACHALAM | NELLORE | 14.2987 | 79.8424 | Check dam |
| 31 | MARAMREDDIPALLE | SEETHARAMPURAM | NELLORE | 15.0324 | 79.1241 | Percolation Tank |
| 32 | MARAMREDDIPALLE | SEETHARAMPURAM | NELLORE | 15.0499 | 79.175 | Percolation Tank |
| 33 | GUNDUPALLE | SEETHARAMPURAM | NELLORE | 15.0484 | 79.1554 | Percolation Tank |
| 34 | DAMANCHERLA (U.I) | VARIKUNTAPADU | NELLORE | 15.032 | 79.4366 | Check dam |
| 35 | DAMANCHERLA (U.I) | VARIKUNTAPADU | NELLORE | 15.0149 | 79.4149 | Check dam |
| 36 | DAMANCHERLA (U.I) | VARIKUNTAPADU | NELLORE | 15.0201 | 79.4369 | Percolation Tank |
| 37 | FOREST | UDAYAGIRI | NELLORE | 15.0463 | 79.236 | Check dam |
| 38 | FOREST | UDAYAGIRI | NELLORE | 15.0154 | 79.244 | Check dam |
| 39 | FOREST | UDAYAGIRI | NELLORE | 15.0393 | 79.2326 | Percolation Tank |
| 40 | FOREST | UDAYAGIRI | NELLORE | 15.0388 | 79.2465 | Percolation Tank |
| 41 | PAPPULAVARIPALLE | UDAYAGIRI | NELLORE | 15.0472 | 79.2481 | Percolation Tank |

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| 42 | CHALAMCHERLA | KAVALI | NELLORE | 14.9713 | 79.9681 | Check dam |
| 43 | CHALAMCHERLA | KAVALI | NELLORE | 14.999 | 79.9121 | Percolation Tank |
| 44 | GUVVADI | VARIKUNTAPADU | NELLORE | 15.0048 | 79.346 | Percolation Tank |
| 45 | GUVVADI | VARIKUNTAPADU | NELLORE | 14.9664 | 79.3363 | Percolation Tank |
| 46 | KANIAMPADU | VARIKUNTAPADU | NELLORE | 14.986 | 79.4698 | Check dam |
| 47 | KANIAMPADU | VARIKUNTAPADU | NELLORE | 15.0054 | 79.4685 | Check dam |
| 48 | KANIAMPADU | VARIKUNTAPADU | NELLORE | 14.9538 | 79.4354 | Check dam |
| 49 | BALAYAPALLE | SEETHARAMPURAM | NELLORE | 14.9923 | 79.2157 | Percolation Tank |
| 50 | BALAYAPALLE | SEETHARAMPURAM | NELLORE | 14.9742 | 79.2006 | Percolation Tank |
| 51 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 15.0202 | 79.1265 | Check dam |
| 52 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 15.0033 | 79.1441 | Percolation Tank |
| 53 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 15.0004 | 79.156 | Percolation Tank |
| 54 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 15.0105 | 79.1234 | Percolation Tank |
| 55 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 14.9978 | 79.1218 | Percolation Tank |
| 56 | SEETHARAMAPURAM | SEETHARAMPURAM | NELLORE | 15.0171 | 79.1539 | Percolation Tank |
| 57 | KANCHERUVU | VARIKUNTAPADU | NELLORE | 15.0216 | 79.3704 | Check dam |
| 58 | GANGAVARAM | SEETHARAMPURAM | NELLORE | 14.984 | 79.1767 | Check dam |
| 59 | GANGAVARAM | SEETHARAMPURAM | NELLORE | 14.9908 | 79.1872 | Percolation Tank |
| 60 | ISAKAPALLE | VARIKUNTAPADU | NELLORE | 15.013 | 79.3366 | Check dam |
| 61 | KRISHNAMPALLE | UDAYAGIRI | NELLORE | 14.997 | 79.2685 | Percolation Tank |
| 62 | CHOWDEPALLE (U.I) | UDAYAGIRI | NELLORE | 15.0083 | 79.2816 | Check dam |
| 63 | CHOWDEPALLE (U.I) | UDAYAGIRI | NELLORE | 14.9965 | 79.2878 | Check dam |
| 64 | CHOWDEPALLE (U.I) | UDAYAGIRI | NELLORE | 14.9787 | 79.2775 | Check dam |
| 65 | CHOWDEPALLE (U.I) | UDAYAGIRI | NELLORE | 14.9684 | 79.3009 | Check dam |
| 66 | CHOWDEPALLE (U.I) | UDAYAGIRI | NELLORE | 14.9666 | 79.286 | Percolation Tank |
| 67 | GANDIPALEM | UDAYAGIRI | NELLORE | 15.0006 | 79.317 | Check dam |
| 68 | BHASKARAPURAM | VARIKUNTAPADU | NELLORE | 15.002 | 79.4472 | Check dam |
| 69 | BRAHMANAPALLE | MARRIPADU | NELLORE | 14.7593 | 79.2369 | Check dam |
| 70 | KADIRINENIPALLE | MARRIPADU | NELLORE | 14.7485 | 79.3533 | Check dam |
| 71 | GATTUPALLI | JALADANKI | NELLORE | 14.9063 | 79.8419 | Percolation Tank |
| 72 | GATTUPALLI | JALADANKI | NELLORE | 14.9418 | 79.8473 | Percolation Tank |
| 73 | GATTUPALLI | JALADANKI | NELLORE | 14.9604 | 79.8539 | Percolation Tank |
| 74 | KOTHAPETA | DUTTALUR | NELLORE | 14.9176 | 79.4736 | Check dam |
| 75 | KOTHAPETA | DUTTALUR | NELLORE | 14.9371 | 79.467 | Percolation Tank |
| 76 | VINJAMUR | VINJAMUR | NELLORE | 14.8214 | 79.5836 | Check dam |
| 77 | VINJAMUR | VINJAMUR | NELLORE | 14.8503 | 79.5678 | Check dam |
| 78 | VINJAMUR | VINJAMUR | NELLORE | 14.821 | 79.6063 | Check dam |
| 79 | VINJAMUR | VINJAMUR | NELLORE | 14.8027 | 79.6057 | Check dam |
| 80 | VENKATAMPETA | DUTTALUR | NELLORE | 14.8483 | 79.3227 | Percolation Tank |
| 81 | VENKATAMPETA | DUTTALUR | NELLORE | 14.8348 | 79.3515 | Percolation Tank |
| 82 | VENKATAMPETA | DUTTALUR | NELLORE | 14.8213 | 79.329 | Percolation Tank |
| 83 | BHYRAVARAM | DUTTALUR | NELLORE | 14.7834 | 79.4205 | Check dam |
| 84 | BHYRAVARAM | DUTTALUR | NELLORE | 14.7568 | 79.438 | Check dam |
| 85 | BHYRAVARAM | DUTTALUR | NELLORE | 14.7662 | 79.4507 | Percolation Tank |
| 86 | UTUKURU | VINJAMUR | NELLORE | 14.9004 | 79.5097 | Check dam |
| 87 | UTUKURU | VINJAMUR | NELLORE | 14.8802 | 79.5116 | Check dam |

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| 88 | UTUKURU | VINJAMUR | NELLORE | 14.8612 | 79.509 | Check dam |
| 89 | UTUKURU | VINJAMUR | NELLORE | 14.8655 | 79.5298 | Check dam |
| 90 | UTUKURU | VINJAMUR | NELLORE | 14.8822 | 79.5 | Percolation Tank |
| 91 | BANDAGANIPALLE | UDAYAGIRI | NELLORE | 14.8612 | 79.2315 | Percolation Tank |
| 92 | BANDAGANIPALLE | UDAYAGIRI | NELLORE | 14.8543 | 79.2469 | Percolation Tank |
| 93 | BANDE PALLE | MANUBOLU | NELLORE | 14.2588 | 79.8724 | Percolation Tank |
| 94 | IDIMEPALLE | VENKATACHALAM | NELLORE | 14.2486 | 79.9577 | Percolation Tank |
| 95 | ATMAKUR | ULAVAPADU | NELLORE | 15.1923 | 79.9689 | Percolation Tank |
| 96 | VOLETIVARIPALEM | VOLETIVARIPALEM | NELLORE | 15.185 | 79.7068 | Percolation Tank |
| 97 | VOLETIVARIPALEM | VOLETIVARIPALEM | NELLORE | 15.1573 | 79.731 | Percolation Tank |
| 98 | VOLETIVARIPALEM | VOLETIVARIPALEM | NELLORE | 15.1553 | 79.7564 | Percolation Tank |
| 99 | BUDAMGUNTA | KAVALI | NELLORE | 14.8811 | 79.9578 | Check dam |
| 100 | PARLAPADU | MANUBOLU | NELLORE | 14.2638 | 79.8577 | Check dam |
| 101 | KAKUTURU | VENKATACHALAM | NELLORE | 14.3904 | 79.9241 | Check dam |
| 102 | BUDAWADA | MARRIPADU | NELLORE | 14.7845 | 79.3138 | Check dam |
| 103 | BUDAWADA | MARRIPADU | NELLORE | 14.7754 | 79.2608 | Percolation Tank |
| 104 | S.V. PALEM | BOGOLE | NELLORE | 14.8242 | 79.9647 | Check dam |
| 105 | CHILAKAPADU | MARRIPADU | NELLORE | 14.8036 | 79.3212 | Percolation Tank |
| 106 | CHILAKAPADU | MARRIPADU | NELLORE | 14.7424 | 79.3347 | Percolation Tank |
| 107 | BANDARUPALLI | ATMAKUR | NELLORE | 14.607 | 79.5678 | Check dam |
| 108 | BANDARUPALLI | ATMAKUR | NELLORE | 14.5972 | 79.5934 | Percolation Tank |
| 109 | NAGASAMUDRAM | KALIGIR | NELLORE | 14.8356 | 79.6283 | Check dam |
| 110 | GUNDEMADAKALA | VINJAMUR | NELLORE | 14.7869 | 79.4797 | Check dam |
| 111 | PAPAMPALLE | DUTTALUR | NELLORE | 14.8265 | 79.352 | Check dam |
| 112 | PAPAMPALLE | DUTTALUR | NELLORE | 14.811 | 79.3715 | Percolation Tank |
| 113 | ALLAMPADU | MARRIPADU | NELLORE | 14.7307 | 79.3643 | Check dam |
| 114 | ALLAMPADU | MARRIPADU | NELLORE | 14.7311 | 79.3771 | Percolation Tank |
| 115 | IRALAPADU | MARRIPADU | NELLORE | 14.7004 | 79.3008 | Check dam |
| 116 | IRALAPADU | MARRIPADU | NELLORE | 14.7332 | 79.3085 | Percolation Tank |
| 117 | IRALAPADU | MARRIPADU | NELLORE | 14.7061 | 79.2956 | Percolation Tank |
| 118 | DAMAVARAM | DAGADARTHI | NELLORE | 14.692 | 79.9579 | Check dam |
| 119 | KATEPALLE | VINJAMUR | NELLORE | 14.9223 | 79.5673 | Check dam |
| 120 | KATEPALLE | VINJAMUR | NELLORE | 14.904 | 79.5777 | Percolation Tank |
| 121 | NARRAWADA | DUTTALUR | NELLORE | 14.8759 | 79.4699 | Check dam |
| 122 | NARRAWADA | DUTTALUR | NELLORE | 14.8951 | 79.4757 | Check dam |
| 123 | JALADANKI | JALADANKI | NELLORE | 14.9011 | 79.9284 | Check dam |
| 124 | JALADANKI | JALADANKI | NELLORE | 14.9104 | 79.8937 | Check dam |
| 125 | JALADANKI | JALADANKI | NELLORE | 14.8792 | 79.9241 | Percolation Tank |
| 126 | THAMIDAPADU | VINJAMUR | NELLORE | 14.8931 | 79.5308 | Check dam |
| 127 | THAMIDAPADU | VINJAMUR | NELLORE | 14.9145 | 79.5483 | Check dam |
| 128 | THAMIDAPADU | VINJAMUR | NELLORE | 14.8945 | 79.557 | Check dam |
| 129 | THAMIDAPADU | VINJAMUR | NELLORE | 14.9047 | 79.5358 | Percolation Tank |
| 130 | SURVEPALLE BIT - I | VENKATACHALAM | NELLORE | 14.2791 | 79.9707 | Check dam |
| 131 | SURVEPALLE BIT - I | VENKATACHALAM | NELLORE | 14.2635 | 79.9598 | Check dam |
| 132 | GANESWARAPURAM | VARIKUNTAPADU | NELLORE | 14.9826 | 79.5159 | Check dam |
| 133 | GANESWARAPURAM | VARIKUNTAPADU | NELLORE | 14.9767 | 79.5042 | Percolation Tank |

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| 134 | RAMADEVULAPADU | VARIKUNTAPADU | NELLORE | 14.9811 | 79.4853 | Check dam |
| 135 | RAMADEVULAPADU | VARIKUNTAPADU | NELLORE | 14.9676 | 79.4817 | Percolation Tank |
| 136 | FOREST | SEETHARAMPURAM | NELLORE | 15.0743 | 79.1996 | Check dam |
| 137 | FOREST | SEETHARAMPURAM | NELLORE | 15.0505 | 79.2061 | Check dam |
| 138 | FOREST | SEETHARAMPURAM | NELLORE | 15.0732 | 79.2242 | Check dam |
| 139 | FOREST | SEETHARAMPURAM | NELLORE | 15.0091 | 79.2161 | Check dam |
| 140 | FOREST | SEETHARAMPURAM | NELLORE | 15.0275 | 79.2222 | Check dam |
| 141 | FOREST | SEETHARAMPURAM | NELLORE | 14.9652 | 79.2509 | Check dam |
| 142 | FOREST | SEETHARAMPURAM | NELLORE | 15.0792 | 79.1813 | Percolation Tank |
| 143 | FOREST | SEETHARAMPURAM | NELLORE | 15.0602 | 79.2017 | Percolation Tank |
| 144 | FOREST | SEETHARAMPURAM | NELLORE | 15.0812 | 79.2193 | Percolation Tank |
| 145 | FOREST | SEETHARAMPURAM | NELLORE | 15.057 | 79.2185 | Percolation Tank |
| 146 | FOREST | SEETHARAMPURAM | NELLORE | 15.0405 | 79.2157 | Percolation Tank |
| 147 | FOREST | SEETHARAMPURAM | NELLORE | 15.0429 | 79.1853 | Percolation Tank |
| 148 | FOREST | SEETHARAMPURAM | NELLORE | 15.0536 | 79.187 | Percolation Tank |
| 149 | FOREST | SEETHARAMPURAM | NELLORE | 14.9911 | 79.2333 | Percolation Tank |
| 150 | FOREST | SEETHARAMPURAM | NELLORE | 15.0199 | 79.2303 | Percolation Tank |
| 151 | FOREST | SEETHARAMPURAM | NELLORE | 15.0104 | 79.2033 | Percolation Tank |
| 152 | FOREST | SEETHARAMPURAM | NELLORE | 14.9581 | 79.227 | Percolation Tank |
| 153 | CHINA NAGAMPALLE | SEETHARAMPURAM | NELLORE | 15.0857 | 79.1582 | Check dam |
| 154 | KANUPURU BIT-I | VENKATACHALAM | NELLORE | 14.3013 | 79.8793 | Check dam |
| 155 | KANUPURU BIT-I | VENKATACHALAM | NELLORE | 14.3313 | 79.8843 | Check dam |
| 156 | KANUPURU BIT-I | VENKATACHALAM | NELLORE | 14.3126 | 79.8946 | Check dam |
| 157 | KANUPURU BIT-I | VENKATACHALAM | NELLORE | 14.3207 | 79.9131 | Check dam |
| 158 | KANUPURU BIT-I | VENKATACHALAM | NELLORE | 14.3204 | 79.8859 | Percolation Tank |
| 159 | KASUMURU | VENKATACHALAM | NELLORE | 14.3403 | 79.8728 | Check dam |
| 160 | KASUMURU | VENKATACHALAM | NELLORE | 14.3235 | 79.8409 | Check dam |
| 161 | KASUMURU | VENKATACHALAM | NELLORE | 14.323 | 79.8712 | Check dam |
| 162 | KASUMURU | VENKATACHALAM | NELLORE | 14.3154 | 79.8686 | Check dam |
| 163 | KASUMURU | VENKATACHALAM | NELLORE | 14.3158 | 79.8518 | Percolation Tank |
| 164 | KASUMURU | VENKATACHALAM | NELLORE | 14.3348 | 79.8767 | Percolation Tank |
| 165 | KUMKUMPUDI | VENKATACHALAM | NELLORE | 14.3715 | 79.9132 | Check dam |
| 166 | GANNEPALLE | UDAYAGIRI | NELLORE | 14.9528 | 79.2869 | Check dam |
| 167 | GANNEPALLE | UDAYAGIRI | NELLORE | 14.9422 | 79.2713 | Percolation Tank |
| 168 | KOTHAPALLE | KAVALI | NELLORE | 14.9501 | 79.9208 | Percolation Tank |
| 169 | THALLURU | BOGOLE | NELLORE | 14.8118 | 79.9506 | Percolation Tank |
| 170 | SOMAVARAPPADU | JALADANKI | NELLORE | 14.8023 | 79.8637 | Percolation Tank |
| 171 | CHAMADALA | JALADANKI | NELLORE | 14.7834 | 79.9074 | Percolation Tank |
| 172 | CHINAMACHANURU | MARRIPADU | NELLORE | 14.7771 | 79.3995 | Check dam |
| 173 | CHINAMACHANURU | MARRIPADU | NELLORE | 14.7682 | 79.3874 | Percolation Tank |
| 174 | CHINAMACHANURU | MARRIPADU | NELLORE | 14.7687 | 79.3772 | Percolation Tank |
| 175 | AKKACHERUVUPADU | NELLORE | NELLORE | 14.4367 | 79.9142 | Check dam |
| 176 | AMBAPURAM | NELLORE | NELLORE | 14.419 | 79.9211 | Check dam |
| 177 | PADARUPALLE (M) | NELLORE | NELLORE | 14.3904 | 79.9647 | Check dam |
| 178 | DONTHALI | NELLORE | NELLORE | 14.3677 | 79.8959 | Check dam |
| 179 | CHAKALAKONDA | VINJAMUR | NELLORE | 14.9428 | 79.4954 | Check dam |

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| 180 | CHAKALAKONDA | VINJAMUR | NELLORE | 14.9243 | 79.5323 | Check dam |
| 181 | CHAKALAKONDA | VINJAMUR | NELLORE | 14.933 | 79.5302 | Percolation Tank |
| 182 | ALIVELUMANGAPURAM | VARIKUNTAPADU | NELLORE | 14.9601 | 79.393 | Check dam |
| 183 | GUDINARAVA | UDAYAGIRI | NELLORE | 14.9444 | 79.3074 | Check dam |
| 184 | GUDINARAVA | UDAYAGIRI | NELLORE | 14.9569 | 79.3054 | Percolation Tank |
| 185 | KONDAYAPALLE | UDAYAGIRI | NELLORE | 14.8911 | 79.3077 | Percolation Tank |
| 186 | KONDAYAPALLE | UDAYAGIRI | NELLORE | 14.9077 | 79.3422 | Percolation Tank |
| 187 | KESAVARAM | JALADANKI | NELLORE | 14.8928 | 79.8051 | Check dam |
| 188 | KESAVARAM | JALADANKI | NELLORE | 14.9067 | 79.8116 | Percolation Tank |
| 189 | PULLAYAPALLE | UDAYAGIRI | NELLORE | 14.9054 | 79.2357 | Check dam |
| 190 | APPASAMUDRAM | UDAYAGIRI | NELLORE | 14.9119 | 79.4039 | Check dam |
| 191 | CHINA ANNALURU | KALIGIR | NELLORE | 14.8555 | 79.6219 | Check dam |
| 192 | CHINA ANNALURU | KALIGIR | NELLORE | 14.8691 | 79.6141 | Check dam |
| 193 | SINGAPETA | ALLUR | NELLORE | 14.7033 | 80.0283 | Percolation Tank |
| 194 | BASINENIPALLE | SEETHARAMPURAM | NELLORE | 14.969 | 79.2177 | Percolation Tank |
| 195 | JADADEVI | VARIKUNTAPADU | NELLORE | 14.9494 | 79.4014 | Percolation Tank |
| 196 | R.C. PALEM | KAVALI | NELLORE | 14.959 | 79.8733 | Check dam |
| 197 | THURPU BOYAMADUGULA | VARIKUNTAPADU | NELLORE | 14.974 | 79.3892 | Check dam |
| 198 | ANNAVARAM | JALADANKI | NELLORE | 14.8609 | 79.8201 | Check dam |
| 199 | ANNAVARAM | JALADANKI | NELLORE | 14.8853 | 79.8243 | Check dam |
| 200 | ANNAVARAM | JALADANKI | NELLORE | 14.8754 | 79.8674 | Check dam |
| 201 | ANNAVARAM | JALADANKI | NELLORE | 14.874 | 79.8075 | Percolation Tank |
| 202 | MUSUNURU | KAVALI | NELLORE | 14.8578 | 79.9818 | Check dam |
| 203 | RAVIPADU | VINJAMUR | NELLORE | 14.8802 | 79.5423 | Percolation Tank |
| 204 | DUTTALUR | DUTTALUR | NELLORE | 14.8755 | 79.4084 | Check dam |
| 205 | DUTTALUR | DUTTALUR | NELLORE | 14.8584 | 79.4369 | Check dam |
| 206 | DUTTALUR | DUTTALUR | NELLORE | 14.8105 | 79.4072 | Check dam |
| 207 | DUTTALUR | DUTTALUR | NELLORE | 14.8588 | 79.4188 | Percolation Tank |
| 208 | DUTTALUR | DUTTALUR | NELLORE | 14.8461 | 79.4367 | Percolation Tank |
| 209 | DUTTALUR | DUTTALUR | NELLORE | 14.835 | 79.4013 | Percolation Tank |
| 210 | DUTTALUR | DUTTALUR | NELLORE | 14.7952 | 79.3771 | Percolation Tank |
| 211 | BOILA CHIRUVELLA | ATMAKUR | NELLORE | 14.68 | 79.5659 | Check dam |
| 212 | NAGULAPADU | ATMAKUR | NELLORE | 14.6416 | 79.5652 | Check dam |
| 213 | NAGULAPADU | ATMAKUR | NELLORE | 14.6484 | 79.5767 | Check dam |
| 214 | NAGULAPADU | ATMAKUR | NELLORE | 14.6212 | 79.5745 | Check dam |
| 215 | PERAMANA | SANGAM | NELLORE | 14.653 | 79.7304 | Check dam |
| 216 | PERAMANA | SANGAM | NELLORE | 14.6489 | 79.724 | Check dam |
| 217 | PERAMANA | SANGAM | NELLORE | 14.6059 | 79.7332 | Check dam |
| 218 | GOTTIGUNDALA | KONDAPURAM | NELLORE | 14.9498 | 79.5913 | Check dam |
| 219 | GOTTIGUNDALA | KONDAPURAM | NELLORE | 14.9366 | 79.581 | Check dam |
| 220 | GOTTIGUNDALA | KONDAPURAM | NELLORE | 14.9139 | 79.5973 | Check dam |
| 221 | GOTTIGUNDALA | KONDAPURAM | NELLORE | 14.9281 | 79.6058 | Check dam |
| 222 | CHODAVARAM | JALADANKI | NELLORE | 14.9364 | 79.8297 | Percolation Tank |
| 223 | KURRAPALLE | UDAYAGIRI | NELLORE | 14.9585 | 79.2631 | Percolation Tank |
| 224 | ATMAKUR | ATMAKUR | NELLORE | 14.6558 | 79.5926 | Check dam |
| 225 | ATMAKUR | ATMAKUR | NELLORE | 14.6418 | 79.5979 | Check dam |

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| 226 | ATMAKUR | ATMAKUR | NELLORE | 14.6631 | 79.6389 | Check dam |
| 227 | ATMAKUR | ATMAKUR | NELLORE | 14.6374 | 79.6197 | Check dam |
| 228 | ATMAKUR | ATMAKUR | NELLORE | 14.6452 | 79.6329 | Check dam |
| 229 | ATMAKUR | ATMAKUR | NELLORE | 14.6331 | 79.6374 | Check dam |
| 230 | ATMAKUR | ATMAKUR | NELLORE | 14.6206 | 79.6328 | Check dam |
| 231 | ATMAKUR | ATMAKUR | NELLORE | 14.653 | 79.6622 | Check dam |
| 232 | ATMAKUR | ATMAKUR | NELLORE | 14.6092 | 79.6343 | Check dam |
| 233 | NEELOREPALEM | ATMAKUR | NELLORE | 14.6637 | 79.612 | Check dam |
| 234 | NEELOREPALEM | ATMAKUR | NELLORE | 14.6664 | 79.6256 | Check dam |
| 235 | NEELOREPALEM | ATMAKUR | NELLORE | 14.6548 | 79.6265 | Check dam |
| 236 | NEELOREPALEM | ATMAKUR | NELLORE | 14.6494 | 79.6192 | Check dam |
| 237 | MAHIMALUR | ATMAKUR | NELLORE | 14.6502 | 79.5126 | Check dam |
| 238 | MAHIMALUR | ATMAKUR | NELLORE | 14.6345 | 79.4992 | Check dam |
| 239 | MAHIMALUR | ATMAKUR | NELLORE | 14.6253 | 79.5046 | Check dam |
| 240 | MAHIMALUR | ATMAKUR | NELLORE | 14.6444 | 79.5297 | Check dam |
| 241 | MAHIMALUR | ATMAKUR | NELLORE | 14.6349 | 79.5314 | Check dam |
| 242 | MAHIMALUR | ATMAKUR | NELLORE | 14.6237 | 79.5393 | Check dam |
| 243 | MAHIMALUR | ATMAKUR | NELLORE | 14.6438 | 79.5409 | Check dam |
| 244 | MAHIMALUR | ATMAKUR | NELLORE | 14.6237 | 79.4828 | Percolation Tank |
| 245 | NARAMPETA | ATMAKUR | NELLORE | 14.6507 | 79.5645 | Check dam |
| 246 | NARAMPETA | ATMAKUR | NELLORE | 14.6588 | 79.5778 | Check dam |
| 247 | GRADDAGUNTA | ALLUR | NELLORE | 14.6598 | 80.0354 | Check dam |
| 248 | BATRAKAGOLLU | ALLUR | NELLORE | 14.6563 | 80.007 | Check dam |
| 249 | BATRAKAGOLLU | ALLUR | NELLORE | 14.6541 | 80.0176 | Percolation Tank |
| 250 | TALUPURUPADU | SANGAM | NELLORE | 14.6178 | 79.7763 | Check dam |
| 251 | AMANICHIRUVELLA | ANANTHASAGARAM | NELLORE | 14.6118 | 79.4379 | Check dam |
| 252 | VASILI | ATMAKUR | NELLORE | 14.6286 | 79.6613 | Check dam |
| 253 | VASILI | ATMAKUR | NELLORE | 14.6245 | 79.6736 | Check dam |
| 254 | VASILI | ATMAKUR | NELLORE | 14.6133 | 79.6787 | Check dam |
| 255 | VASILI | ATMAKUR | NELLORE | 14.6058 | 79.6856 | Check dam |
| 256 | MINAGALLU | ANANTHASAGARAM | NELLORE | 14.6193 | 79.4936 | Check dam |
| 257 | MINAGALLU | ANANTHASAGARAM | NELLORE | 14.6145 | 79.5155 | Check dam |
| 258 | MINAGALLU | ANANTHASAGARAM | NELLORE | 14.5883 | 79.4939 | Percolation Tank |
| 259 | PERUMALLAPADU | CHEJERLA | NELLORE | 14.5353 | 79.6254 | Check dam |
| 260 | KOTTIHEERTHAM | CHEJERLA | NELLORE | 14.537 | 79.5404 | Check dam |
| 261 | KOTTIHEERTHAM | CHEJERLA | NELLORE | 14.5541 | 79.4886 | Check dam |
| 262 | KOTTIHEERTHAM | CHEJERLA | NELLORE | 14.5511 | 79.5215 | Check dam |
| 263 | CHEJERLA | CHEJERLA | NELLORE | 14.4958 | 79.5764 | Check dam |
| 264 | CHEJERLA | CHEJERLA | NELLORE | 14.5083 | 79.5749 | Check dam |
| 265 | CHEJERLA | CHEJERLA | NELLORE | 14.5144 | 79.5596 | Check dam |
| 266 | CHEJERLA | CHEJERLA | NELLORE | 14.5353 | 79.5572 | Check dam |
| 267 | CHEJERLA | CHEJERLA | NELLORE | 14.5376 | 79.5764 | Percolation Tank |
| 268 | CHINA GOPAVARAM | KALUVOYA | NELLORE | 14.4748 | 79.5456 | Check dam |
| 269 | CHINA GOPAVARAM | KALUVOYA | NELLORE | 14.4827 | 79.5476 | Check dam |
| 270 | NELLORE BIT-I(R) | NELLORE | NELLORE | 14.4037 | 79.924 | Check dam |
| 271 | MAMUDURU | CHEJERLA | NELLORE | 14.5682 | 79.7031 | Check dam |

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|---|---|---|---|---|---|---|
| 272 | THOPUGUNTA | KALUVOYA | NELLORE | 14.5005 | 79.466 | Percolation Tank |
| 273 | KAKIVAYA | CHEJERLA | NELLORE | 14.5081 | 79.4958 | Check dam |
| 274 | NORTH MOPURU | ALLUR | NELLORE | 14.6477 | 80.0354 | Check dam |
| 275 | KONDAMEEDI KONDURU | ANUMASAMUDRAMPETA | NELLORE | 14.6263 | 79.6872 | Check dam |
| 276 | TALAMANCHI | KODAVALUR | NELLORE | 14.6496 | 79.9612 | Check dam |
| 277 | TALAMANCHI | KODAVALUR | NELLORE | 14.6491 | 79.981 | Percolation Tank |
| 278 | CHOUTAPUTHEDU | DAGADARTHI | NELLORE | 14.6328 | 79.9604 | Check dam |
| 279 | KORIMERLA | SANGAM | NELLORE | 14.6333 | 79.7659 | Check dam |
| 280 | NORTH AMULURU | ALLUR | NELLORE | 14.6351 | 80.0044 | Check dam |
| 281 | BATTEPADU | ATMAKUR | NELLORE | 14.5838 | 79.6254 | Check dam |
| 282 | BATTEPADU | ATMAKUR | NELLORE | 14.5928 | 79.6271 | Check dam |
| 283 | BATTEPADU | ATMAKUR | NELLORE | 14.5864 | 79.5999 | Percolation Tank |
| 284 | PAMIDIPADU | ATMAKUR | NELLORE | 14.6735 | 79.6009 | Check dam |
| 285 | CHIRUVELLA KHANDRIKA | ATMAKUR | NELLORE | 14.6727 | 79.5653 | Check dam |
| 286 | K.K. GUNTA | DAGADARTHI | NELLORE | 14.6817 | 79.9842 | Check dam |
| 287 | K.K. GUNTA | DAGADARTHI | NELLORE | 14.6709 | 79.9722 | Percolation Tank |
| 288 | SANGAM | SANGAM | NELLORE | 14.6084 | 79.7636 | Check dam |
| 289 | THARUNAVAYA | SANGAM | NELLORE | 14.5972 | 79.7689 | Check dam |
| 290 | ANANTHASAGARAM | ANANTHASAGARAM | NELLORE | 14.5831 | 79.4142 | Check dam |
| 291 | PALLAVOLU | MARRIPADU | NELLORE | 14.6723 | 79.364 | Check dam |
| 292 | PALLAVOLU | MARRIPADU | NELLORE | 14.6661 | 79.3398 | Check dam |
| 293 | PALLAVOLU | MARRIPADU | NELLORE | 14.6704 | 79.3228 | Percolation Tank |
| 294 | ANUMASAMUDRAM | ANUMASAMUDRAMPETA | NELLORE | 14.6665 | 79.6559 | Check dam |
| 295 | ANUMASAMUDRAM | ANUMASAMUDRAMPETA | NELLORE | 14.6809 | 79.6502 | Check dam |
| 296 | ANUMASAMUDRAM | ANUMASAMUDRAMPETA | NELLORE | 14.6557 | 79.6824 | Percolation Tank |
| 297 | INAGALUR | ANANTHASAGARAM | NELLORE | 14.5956 | 79.4467 | Check dam |
| 298 | INAGALUR | ANANTHASAGARAM | NELLORE | 14.6017 | 79.4587 | Check dam |
| 299 | INAGALUR | ANANTHASAGARAM | NELLORE | 14.5864 | 79.4358 | Check dam |
| 300 | INAGALUR | ANANTHASAGARAM | NELLORE | 14.6059 | 79.4114 | Check dam |
| 301 | DEPURU | ATMAKUR | NELLORE | 14.6088 | 79.5422 | Check dam |
| 302 | NABBINAGARAM | ATMAKUR | NELLORE | 14.6914 | 79.5949 | Check dam |
| 303 | NABBINAGARAM | ATMAKUR | NELLORE | 14.6931 | 79.6094 | Check dam |
| 304 | KARATAMPADU | ATMAKUR | NELLORE | 14.6842 | 79.5278 | Check dam |
| 305 | PONGURU | MARRIPADU | NELLORE | 14.6531 | 79.3734 | Check dam |
| 306 | TELUGURAYAPURAM | KALUVOYA | NELLORE | 14.5235 | 79.4471 | Check dam |
| 307 | TELUGURAYAPURAM | KALUVOYA | NELLORE | 14.5422 | 79.4671 | Check dam |
| 308 | TELUGURAYAPURAM | KALUVOYA | NELLORE | 14.5146 | 79.4724 | Percolation Tank |
| 309 | VAREKUNTAPADU | ANANTHASAGARAM | NELLORE | 14.5397 | 79.3723 | Check dam |
| 310 | NUKANAPALLE | KALUVOYA | NELLORE | 14.5304 | 79.4318 | Check dam |
| 311 | KULLURU | KALUVOYA | NELLORE | 14.5075 | 79.3783 | Check dam |
| 312 | THIMMAPURAM | DUTTALUR | NELLORE | 14.9218 | 79.4528 | Check dam |
| 313 | S.V. CHINTALA | UDAYAGIRI | NELLORE | 14.9337 | 79.3142 | Check dam |
| 314 | S.V. CHINTALA | UDAYAGIRI | NELLORE | 14.9327 | 79.3256 | Percolation Tank |
| 315 | THEDDUPADU | DUTTALUR | NELLORE | 14.9427 | 79.4341 | Check dam |
| 316 | BILLUPADU | CHEJERLA | NELLORE | 14.5159 | 79.4947 | Check dam |
| 317 | PADERU | CHEJERLA | NELLORE | 14.5113 | 79.6018 | Check dam |

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| 318 | THOPUGUNTA AGRAHARAM(UI | KALUVOYA | NELLORE | 14.5102 | 79.4487 | Check dam |
| 319 | NAGULAVELLATURU | CHEJERLA | NELLORE | 14.5007 | 79.5244 | Check dam |
| 320 | NAGULAVELLATURU | CHEJERLA | NELLORE | 14.4917 | 79.505 | Check dam |
| 321 | NAGULAVELLATURU | CHEJERLA | NELLORE | 14.4856 | 79.5276 | Check dam |
| 322 | NAGULAVELLATURU | CHEJERLA | NELLORE | 14.4652 | 79.5149 | Check dam |
| 323 | YERUKOLLU | DUTTALUR | NELLORE | 14.8311 | 79.4784 | Percolation Tank |
| 324 | YERUKOLLU | DUTTALUR | NELLORE | 14.8123 | 79.4574 | Percolation Tank |
| 325 | BRAHMANAKRAKA | JALADANKI | NELLORE | 14.8451 | 79.8764 | Check dam |
| 326 | BRAHMANAKRAKA | JALADANKI | NELLORE | 14.8186 | 79.8599 | Check dam |
| 327 | BRAHMANAKRAKA | JALADANKI | NELLORE | 14.8088 | 79.8836 | Check dam |
| 328 | BRAHMANAKRAKA | JALADANKI | NELLORE | 14.8428 | 79.896 | Percolation Tank |
| 329 | BRAHMANAKRAKA | JALADANKI | NELLORE | 14.8245 | 79.8777 | Percolation Tank |
| 330 | CHINA KRAKA | JALADANKI | NELLORE | 14.827 | 79.8321 | Check dam |
| 331 | CHINA KRAKA | JALADANKI | NELLORE | 14.8481 | 79.8297 | Percolation Tank |
| 332 | G. CHERUVU PALLE | UDAYAGIRI | NELLORE | 14.8151 | 79.2502 | Percolation Tank |
| 333 | GOWRAVARAM | KAVALI | NELLORE | 14.8477 | 79.9804 | Percolation Tank |
| 334 | KALUVOYA | KALUVOYA | NELLORE | 14.524 | 79.4199 | Check dam |
| 335 | KALUVOYA | KALUVOYA | NELLORE | 14.4964 | 79.4102 | Check dam |
| 336 | REVURU | ANANTHASAGARAM | NELLORE | 14.5975 | 79.5104 | Check dam |
| 337 | REVURU | ANANTHASAGARAM | NELLORE | 14.5886 | 79.518 | Check dam |
| 338 | REVURU | ANANTHASAGARAM | NELLORE | 14.5909 | 79.5343 | Check dam |
| 339 | NANDIGUNTA | VINJAMUR | NELLORE | 14.8314 | 79.5493 | Check dam |
| 340 | PEDDA NAGAMPALLE | SEETHARAMPURAM | NELLORE | 15.0645 | 79.176 | Check dam |
| 341 | YANANADALA | CHEJERLA | NELLORE | 14.5216 | 79.5353 | Check dam |
| 342 | YANANADALA | CHEJERLA | NELLORE | 14.523 | 79.5151 | Check dam |
| 343 | MADAMANURU | MANUBOLU | NELLORE | 14.249 | 79.8449 | Check dam |
| 344 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.1534 | 79.8955 | Check dam |
| 345 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2072 | 79.9728 | Check dam |
| 346 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.2922 | 79.8814 | Percolation Tank |
| 347 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.1701 | 79.9081 | Percolation Tank |
| 348 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.1636 | 79.8744 | Percolation Tank |
| 349 | ANANTHISAGARAM | KANDUKUR | NELLORE | 15.3093 | 79.942 | Percolation Tank |
| 350 | CHUNDI | VOLETIVARIPALEM | NELLORE | 15.1759 | 79.7036 | Percolation Tank |
| 351 | CHUNDI | VOLETIVARIPALEM | NELLORE | 15.1575 | 79.6982 | Percolation Tank |
| 352 | CHUNDI | VOLETIVARIPALEM | NELLORE | 15.1591 | 79.6884 | Percolation Tank |
| 353 | THURPU ROMPIDODLA | VARIKUNTAPADU | NELLORE | 15.0125 | 79.481 | Check dam |
| 354 | THURPU ROMPIDODLA | VARIKUNTAPADU | NELLORE | 15.0003 | 79.5143 | Check dam |
| 355 | THURPU ROMPIDODLA | VARIKUNTAPADU | NELLORE | 15.0508 | 79.5028 | Percolation Tank |
| 356 | DAKKANUR | VARIKUNTAPADU | NELLORE | 15.0226 | 79.4603 | Check dam |
| 357 | VEMPADU | VARIKUNTAPADU | NELLORE | 15.0268 | 79.3884 | Check dam |
| 358 | VEMPADU | VARIKUNTAPADU | NELLORE | 15.037 | 79.415 | Check dam |
| 359 | VEMPADU | VARIKUNTAPADU | NELLORE | 15.0166 | 79.3887 | Percolation Tank |
| 360 | VIRUVOORU | VARIKUNTAPADU | NELLORE | 15.0479 | 79.3755 | Check dam |
| 361 | VIRUVOORU | VARIKUNTAPADU | NELLORE | 15.0341 | 79.3736 | Check dam |
| 362 | VIRUVOORU | VARIKUNTAPADU | NELLORE | 15.0733 | 79.3632 | Percolation Tank |
| 363 | PAMURUPALLE | VARIKUNTAPADU | NELLORE | 15.095 | 79.2887 | Check dam |

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| 364 | PAMURUPALLE | VARIKUNTAPADU | NELLORE | 15.0924 | 79.2787 | Percolation Tank |
| 365 | A.KOTHAPALLI | CHADRASEKARAPURAM | NELLORE | 15.1023 | 79.245 | Check dam |
| 366 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0766 | 79.1405 | Check dam |
| 367 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0612 | 79.1548 | Check dam |
| 368 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0951 | 79.1423 | Check dam |
| 369 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0741 | 79.1568 | Percolation Tank |
| 370 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0675 | 79.1396 | Percolation Tank |
| 371 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.0562 | 79.1352 | Percolation Tank |
| 372 | PABBULETIPALLE | SEETHARAMPURAM | NELLORE | 15.085 | 79.1406 | Percolation Tank |
| 373 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0888 | 79.2294 | Check dam |
| 374 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0768 | 79.2375 | Check dam |
| 375 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0799 | 79.2639 | Check dam |
| 376 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0563 | 79.2454 | Check dam |
| 377 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.066 | 79.2609 | Check dam |
| 378 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0857 | 79.2403 | Percolation Tank |
| 379 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.1003 | 79.2564 | Percolation Tank |
| 380 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0704 | 79.2471 | Percolation Tank |
| 381 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0665 | 79.2331 | Percolation Tank |
| 382 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0552 | 79.2859 | Percolation Tank |
| 383 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0954 | 79.2368 | Percolation Tank |
| 384 | PEDDAREDDIPALLE | VARIKUNTAPADU | NELLORE | 15.0563 | 79.2634 | Percolation Tank |
| 385 | FOREST | SEETHARAMPURAM | NELLORE | 15.0662 | 79.1177 | Check dam |
| 386 | FOREST | SEETHARAMPURAM | NELLORE | 14.9903 | 79.1382 | Check dam |
| 387 | FOREST | SEETHARAMPURAM | NELLORE | 15.0824 | 79.1193 | Percolation Tank |
| 388 | FOREST | SEETHARAMPURAM | NELLORE | 14.9825 | 79.1281 | Percolation Tank |