GROUND WATER QUALITY IN SHALLOW AND DEEPER AQUIFER OF KARNATAKA STATE

Central Ground Water Board,
Department of Water Resources, River Development and Ganga Rejuvenation
Ministry of Jal Shakti
2023

REPORT ON

GROUND WATER QUALITY IN SHALLOW AND DEEPER AQUIFER OF KARNATAKA STATE

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Govt. of India
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1.0 INTRODUCTION

Ground water is the water located in the subsurface in fully saturated porous material. Ground water may occur in a geologic formation, which has confining zones (i.e., thick layers of clay or shale) above and below, where it is termed as confined aquifer, or it may have an unconfined upper boundary where it is called a phreatic or water table aquifer. It may be located above a layer of soil which inhibits downward movement of water. In this case, the water is perched in a region of porous material that is generally unsaturated. It contains a wide variety of dissolved inorganic chemical constituents in various concentrations, resulting from chemical and biochemical interactions between water and the geological materials. Also, the contribution of the atmosphere and surface water bodies and anthropogenic waste are quite considerable as they contribute several elements and determining its quality.

Although hydrologists generally focus on water movement in the subsurface, it is recognized that both ground- and surface-water supplies are important and inseparable parts of our water supply system. In arid areas, lack of rainfall contributes to a reduced amount of surface water. Since surface water is often a source of recharge to ground water, the absence of surface water for a long period of time can cause lowering of ground-water tables and a reduction of ground water supplies. In areas of abundant rainfall, ground water may feed into lakes and streams, keeping the water level in these surface water bodies relatively constant throughout the entire year. Abundant rainfall also provides water, through percolation, that keeps the ground-water level near the surface. It is important to recognize the interaction between ground and surface water when studying the use or contamination of ground water in agricultural areas.
Ground water will often have more dissolved substances than the surface water. The chemical quality of ground water is influenced by various factors, such as acid-base, oxidation reduction and solid phase interactions in the aquifer medium.

A diverse range of dissolved inorganic compounds present in different concentrations characterizes groundwater. These compounds originate from the chemical and biochemical interactions between water and geological substances. Inorganic impurities such as salinity, chloride, fluoride, nitrate, iron, and arsenic play a crucial role in assessing the suitability of groundwater for drinking purposes.

2.0 HYDROGEOLOGY

Behaviour of ground water in the Indian sub-continent is highly complicated due to the occurrence of diversified geological formations with considerable lithological and chronological variations, complex tectonic framework, climatological dissimilarities and various hydrochemical conditions. Broadly two groups of rock formations have been identified, on the basis of Ground Water hydraulics viz. Porous Formations and Fissured Formations.

2.1 POROUS FORMATIONS

Porous formations have been further subdivided into Unconsolidated and Semi – consolidated formations. The areas covered by alluvial sediments of river basins, coastal and deltaic tracts constitute the unconsolidated formations. These are by far the most significant ground water reservoirs for large scale and extensive development. The hydrogeological environment and ground water regime in the Indo-Ganga-Brahmaputra basin indicate the existence of potential aquifers having enormous fresh ground water resources.
The semi-consolidated formations occur mostly in narrow valleys or structurally faulted basins. The Gondwanas, Lathis, Tipams, Cuddalore sandstones and their equivalents are the most extensive productive aquifers. Under favourable situations, these formations give rise to free-flowing wells. In select tracts of northeastern India, these water-bearing formations are quite productive.

2.2 FISSURED FORMATIONS

The Fissured or consolidated formations occupy almost two-thirds of the country. Consolidated formations other than vesicular volcanic rocks have negligible primary porosity. From the hydrogeological point of view, fissured rocks are broadly classified into four types viz. Igneous and metamorphic rocks excluding volcanic and carbonate rocks, volcanic rocks, consolidated sedimentary rocks excluding carbonate rocks and Carbonate rocks.

i) Igneous and metamorphic rocks excluding volcanic and carbonate rocks: -The most common rock types are granites, gneisses, charnockites, khondalites, quartzites, schists and associated phyllites, slates, etc. These rocks possess negligible primary porosity but attain porosity and permeability due to fracturing and weathering, which facilitates the yield from their rocks.

ii) Volcanic rocks: -The predominant types of the volcanic rocks are the basaltic lava flows of Deccan Plateau. Water bearing properties of different flow units control ground water occurrence and movement in Deccan Traps. The Deccan Traps have usually poor to moderate permeabilities depending on the presence of primary and secondary pore spaces including vesicles/fractures.

iii) Consolidated sedimentary rocks excluding carbonate rocks:-Consolidated sedimentary rocks occur in Cuddapahs, Vindhyans and their equivalents. These formations consist of conglomerates, sandstones, shales, slates and quartzites. The presence of bedding planes, joints, contact zones and fractures controls the ground water occurrence, movement and yield potential of aquifers.

iv) Carbonate rocks: - Limestones in the Cuddapah, Vindhyan and Bijawar groups of rocks dominates the carbonate rocks other than the marbles and dolomites. In carbonate rocks, the circulation of water creates solution cavities thereby increasing

the permeability of the aquifers. Solution activity leads to widely contrasting permeability within short distances in such rocks.

The State of Karnataka, confined roughly within 11°35' North and 18°30' North latitudes and 74°5' East and 78°35' East longitudes, is situated on a table land where the Western and Eastern Ghat ranges converge into the Nilgiri Hills Complex. Karnataka is a State in the southern part of India. Karnataka is bordered by the Arabian Sea to the west, Goa to the northwest, Maharashtra to the north, Andhra Pradesh to the east, Tamil Nadu to the southeast, and Kerala to the southwest. The State extends to about 750 km from North to South and about 400 km from East to West.

Ground water resources have not been exploited evenly across the state. In areas where adequate surface water is available, exploitation of ground water resources is minimum. Exploitation of ground water in the dry taluks of North and South interior Karnataka is higher as compared to Coastal, Malnad and irrigation command areas of the state.

2.3 PHYSIOGRAPHY OF KARNATAKA

Physiograpically Karnataka State forms part of two well defined macro regions of Indian Union; the Deccan Plateau and the Coastal plains and Islands. A map showing physiography of the State is given in Fig. 1. The State has four physiographic regions as follows,

a) Northern Karnataka Plateau

Northern Karnataka Plateau comprises the districts of Belgaum, Bidar, Bijapur, Bagalkot and Gulbarga. It is largely composed of Deccan Trap. The general slope is towards east and this region is largely covered with rich black cotton soils.

b) Central Karnataka Plateau

Central Karnataka Plateau covers the districts of Bellary, Chikmagalur, Chitradurga, Davanagere, Dharwad, Gadag, Haveri, Raichur, Koppal and Shimoga. The region represents the transitional surface between the Northern Karnataka Plateau of Deccan Trap and Southern Karnataka Plateau with relatively higher surface. By and large, this region represents the area of Tungabhadra basin. The general elevation varies between 450 and 700 meters. However, this transitional ground is broken by several sets of parallel ridges mainly made up of Dharwar system of rocks. The height of such residual hills is about 900 meters above mean sea level. The general slope of this region is towards the east.

c) Southern Karnataka Plateau

Southern Karnataka Plateau covers the districts of Bangalore, Bangalore Rural, Hassan, Kodagu, Kolar, Mandya, Mysore, Chamarajanagar and Tumkur. This region largely covers the area of the Cauvery river basin lying in Karnataka. It is bounded by 600 meters contour and is characterised by a higher degree of slope. In the west and south it is enclosed by the ranges of Western Ghats and the northern part is an interrupted but clearly identifiable high plateau. In the east the valleys of the Cauvery and its tributaries open out to form undulating plains. The general elevation of the region varies from 600 to 900 meters. However, residual heights of 1,500 to 1,750 meters are found in the Biligirirangan hills of Mysore district and the Brahmagiri range of Kodagu district.

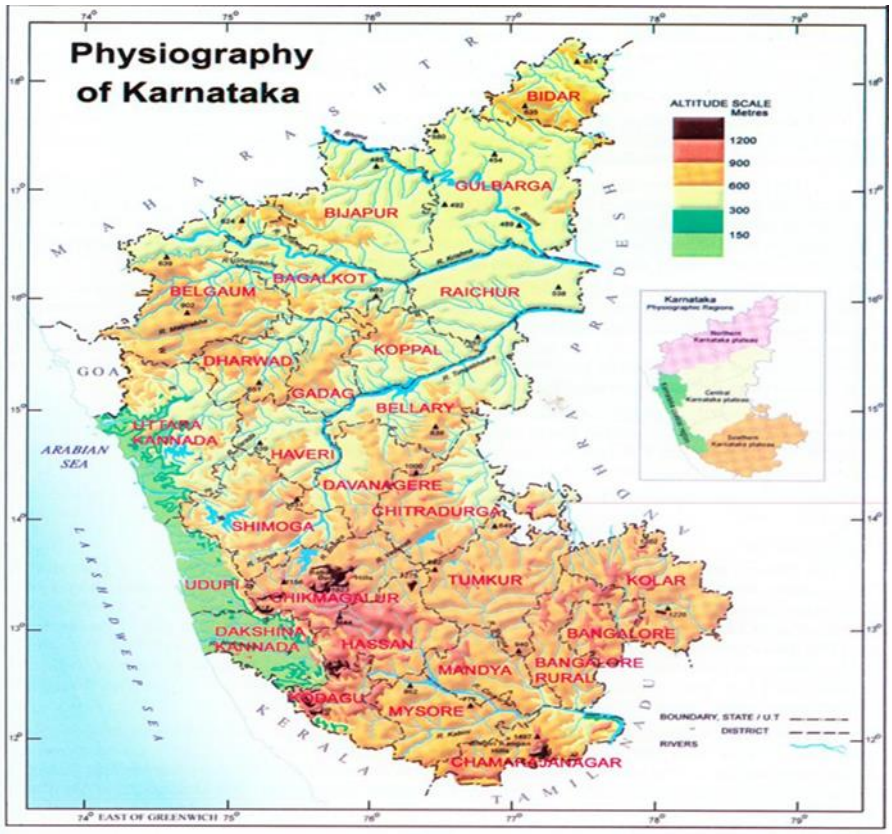

Fig. 1: Physiography of Karnataka

d) Karnataka Coastal Region

Karnataka Coastal Region, which extends between the Western Ghats edge of the Karnataka Plateau in the east and the Arabian Sea in the west, covers Dakshina Kannada, Udupi and Uttara Kannada districts. This region is traversed by several ridges and spurs of Western Ghats. It has difficult terrain full of rivers, creeks, waterfalls, peaks and ranges of hills. The coastal region consists of two broad physical units, the plains and the Western Ghats. The Coastal plains represent a narrow stretch of estuarine and marine plains. The abrupt rise at the eastern flanks forms the Western Ghats. The northern parts of the Ghats are of lower elevation (450-600 meters) as compared to Southern parts (900 to 1,500 meters). The Coastal belt with an average width of 50 to 80 km covers a distance of about 267 kms from north to south. At certain places the crest of adjoining Western Ghats reaches the sea as close as 13 km near Karwar. The average height is generally 75 meters from the mean sea level.

Topography

Karnataka has representatives of all types of variations in topography - high mountains, plateaus, residual hills and coastal plains. The State is enclosed by chains of mountains to its west, east and south. It consists mainly of plateau which has higher elevation of 600 to 900 meters above mean sea level. The entire landscape is undulating and broken up by mountains and deep ravines. Plain land of elevation less than 300 meters above mean sea level is to be found only in the narrow coastal belt, facing the Arabian Sea. There are quite a few high peaks both in Western and Eastern Ghat systems with altitudes more than 1,500 meters. A series of cross-sections drawn from west to east across the Western Ghat generally exhibit, a narrow coastal plain, followed to the east by small and short plateaus at different altitudes, then suddenly rising up to great heights. Then follows the gentle east and east-north-west sloping plateau. Among the tallest peaks of Karnataka are the Mullayyana Giri (1,925 m), Bababudangiri Chandradrona Parvata (1,894 m) and the Kudremukh (1,895 m) all in Chikmagalur district and

the Pushpagiri (1,908 m) in Kodagu district. There are a dozen peaks, which rise above the height of 1,500 meters. The percentage of area coming under different elevations is as follows: less than 150 meters - 5.16%; 150 to 300 meters - 1.95%; 300 to 600 meters - 43.51%; 600 to 1,350 meters - 48.81% and more than 1,350 meters - 0.57%.

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Climate

The State enjoys three main types of climates. For meteorological purposes, the State has been divide into three sub-divisions namely (a) Coastal Karnataka (comprising Dakshina Kannada, Udupi and Uttara Kannada districts), (b) North Interior Karnataka (comprising Belgaum, Bidar, Bijapur, Bagalkot, Dharwad, Gadag, Haveri, Gulbarga, Raichur and Koppal districts) and (c) South Interior Karnataka (the remaining districts of Bangalore Rural, Bangalore, Bellary, Chikmagalur, Chitradurga, Davanagere, Kodagu, Hassan, Kolar, Mysore, Chamarajnagar, Mandya, Shimoga and Tumkur districts). Tropical monsoon climate covers the entire coastal belt and adjoining areas. The climate in this region is hot with excessive rainfall during the monsoon season i.e., June to September. The Southern half of the State experiences hot, seasonally dry tropical Savanna climate while, most of the northern half experiences hot, semi-arid, tropical type of climate. The agro- climatic zones are as follows,

Zone	Districts
NE-Transitional	Bidar, Gulbarga
Northeast Dry	Gulbarga, Yadgir, Raichur
Northern Dry	Bijapur, Bagalkot, Belgaum, Bellary, Dharwar, Gadag, Raichur, Koppal, Davanagere
Central Dry	Chikmagalur, Chitradurga, Hassan, Tumkur, Davanagere
Eastern Dry	Bangalore, Chikballapur, Kolar, Tumkur
Southern Dry	Hassan, Mandya, Mysore, Chamarajanagar, Ramanagara, Tumkur
Southern Transitional	Chikmagalur, Hassan, Mysore, Shimoga, Davanagere
Northern Transitional	Belgaum, Dharwar, Gadag, Haveri
Hilly	Belgaum, Coorg, Chikmagalur, Dharwar, Haveri, Hassan, North Kanara, Shimoga
Coastal	North Kanara, South Kanara, Udupi

3.0 HYDROCHEMISTRY

Hydrochemistry is an interdisciplinary science that deals with the chemistry of water in the natural environment. Professional fields such as chemical hydrology, aqueous chemistry, hydrochemistry, water chemistry and hydro-geochemistry are all more or less synonyms. The classical use of chemical characteristics in chemical hydrology is to provide information about the regional distribution of water qualities. At the same time, hydrochemistry has a potential use for tracing the origin and history of water. The hydrochemistry can also be of immense help in yielding information about the environment through which water has circulated. Hydrochemistry can be helpful in knowing about residence times, flow paths and aquifer characteristics as the chemical reactions are time and space dependent. It is essential to study the entire system like atmospheric water (rainwater), surface water and ground water simultaneously in evaluating their hydrochemistry and pollution effect.

3.1 CHEMISTRY OF RAINWATER

The atmosphere is composed of water vapors, dust particles and various gaseous components such as N_2, O_2, CO_2, CH_4, CO, SO_4, NO_3 etc. Pollutants in the atmosphere can be transported long distances by the wind. These pollutants are mostly washed down by precipitation and partly as dry fall out. Composition of rainwater is determined by the source of water vapors and by the ion, which are taken up during transport through the atmosphere. In general, chemical composition of rainwater shows that rainwater is only slightly mineralized with specific electrical conductance (EC) generally below 50 µS/cm, chloride below 5 mg/l and HCO_3 below 10 mg/l. Among the cations, concentration of Ca, Mg, Na & K vary considerably but the total cations content is generally below 15 mg/l except in samples contaminated with dust. The concentration of sulphates and nitrates in rainwater may be high in areas near industrial hubs.

3.2 CHEMISTRY OF SURFACE WATER

Surface water is found extremely variable in its chemical composition due to variations in relative contributions of ground water and surface water sources. The mineral content in river water usually bears an inverse relationship to discharge. The mineral content of river water tends to increase from source to mouth, although the increase may not be continuous or uniform. Other factors like discharge of city wastewater, industrial waste and mixing of waters can also affect the nature and concentration of minerals in surface water. Among anions, bicarbonates are the most important and constitute over 50% of the total anions in terms of milli equivalent per liter (meq/l). In case of cations, alkaline earths or normally calcium predominates but with increasing salinity the hydrochemical facies tends to change to mixed cations or even to Na-HCO_3 type.

3.3 CHEMISTRY OF GROUND WATER

The downward percolating water is not inactive, and it is enriched in CO_2. It can also act as a strong weathering agent apart from general solution effect. Consequently, the chemical composition of ground water will vary depending upon several factors like frequency of rain, which will leach out the salts, time of stay of rain water in the root-zone and intermediate zone, presence of organic matter etc. It may also be pointed out that the water front does not move in a uniform manner as the soil strata are generally quite heterogeneous. The movement of percolating water through larger pores is much more rapid than through the finer pores. The

overall effect of all these factors is that the composition of ground water varies from time to time and from place to place.

Before reaching the saturated zone, percolating water is charged with oxygen and carbon dioxide and is most aggressive in the initial stages. This water gradually loses its aggressiveness, as free CO_2 associated with the percolating water gets gradually exhausted through interaction of water with minerals.

$$CO_2 + H_2O \longleftrightarrow H_2CO_3 \longleftrightarrow H^+ + HCO_3^-$$

$$H^+ + \text{Feldspar} + H_2O \longrightarrow \text{Clay} + H_4SiO_4 + \text{Cation}$$

The oxygen present in this water is used for the oxidation of organic matter that subsequently generates CO_2 to form H_2CO_3. This process goes on until oxygen is fully consumed.

$$CH_2O + O_2 = CO_2 + H_2O$$
(Organic matter)

Apart from these reactions, there are several other reactions including microbiological mediated reactions, which tend to alter the chemical composition of the percolating water. For example, the bicarbonate present in most waters is derived mostly from CO_2 that has been extracted from the air and liberated in the soil through biochemical activity. Some rocks serve as sources of chloride and sulphate through direct solution. The circulation of sulphur, however, may be greatly influenced by biologically mediated oxidation and reduction reactions. Chloride circulation may be a significant factor influencing the anion content in natural water.

4.0 WATER QUALITY CRITERIA

The available quality of groundwater is the resultant of all the processes and reactions, which taken place since the condensation of water in the atmosphere to the time it is retrieved in the form of groundwater from its source. The water has excellent capability to accumulate substances in soluble form as it moves over and into the land resource, from the biological processes and from human activities. Urbanization, agricultural development and discharges of municipal and industrial residues significantly alter characteristics of groundwater resource. The prevailing climatic conditions, topography, geological formations and use and abuse of this vital resource have significant effect on the characteristics of the water, because of which its quality varies with locations.

The definition of criteria and standards for water quality vary with the type of use. The characteristic of water required for human consumption, livestock, irrigation, industriesetc., have different water quality requirements. The term water quality criteria may be defined as the "Scientific data evaluated to derive recommendations for characteristics of water for specific use'. The term standard applies to any definite rule, principle or measure established by any statutory Authority. The distinction between criteria andstandards is important, as the two are neither interchangeable nor they become synonyms for the objective or goal. Realistic standards are dependent on criteria, designated uses and implementation as well as identification and monitoringprocedure. The changes in all these factors may provide a basis for alteration instandards. In formulation of water quality criteria, the selection of water quality parameters depends on its use. Sayers, et. al. (1976 as quoted in CGWB & CPCB2000) identified the key water quality parameters according to its various uses **(Table 4.0).**

Table 4.0: Water quality criteria parameters for various uses (Sayers et.al., 1976)

Public Water supply	Industrial Water supply	Agricultural water supply	Aquatic life & wild life water supply	Recreation and Aesthetics
Coliform bacteria Turbidity colour,Taste, Odour TDS,CI, F, SO_4 NO_3, CN, Trace Metals,Trace Organics Radioactive substances	**Processing** pH, Turbidity Colour, Alkalinity, Acidity, TDS, Suspended solids, Tracemetals, TraceOrganics **Cooling** PH, Temp,Silica, AI, Fe,Mg, Total hardness, Alkalinity /Acidity Suspended solids, Salinity	Farmstead Same as for public supply Live-stock Same as for public supply Irrigation TDS, EC, Na, Ca, Mg, K, B, CI and Trace metals	Temp, DO, pH, Alkalinity, Acidity, TDS Salinity, pH, DCOs, Turbidity Colour, Settleable materials, Toxic substances, Nutrients, Floating materials	Recreations Tem, Turbidity, Colour, Odour, Floating Materials, Settable Materials Nutrients, Coliforms Aesthetics Same as for Recreation and Substances adversely affecting wild life

4.1 Water Quality Criteria for Drinking Purpose

With the objective of safeguarding water from degradation and to establish a basis forimprovement in water quality, standards / guide lines / regulations have been laid downby various national and international organizations such as; Bureau of Indian Standards(BIS), World Health Organization (WHO), European Economic Community (EEC), Environmental Protection Agency (EPA), United States, and Inland Waters Directorate, Canada. The Bureau of Indian Standards (BIS) earlier known as Indian Standards Institutions (ISI) has laid down the standard specification for drinking water during 1983, which have been revised and updated from time to time. In order to enable the users, to exercise their discretion towards water quality criteria, the maximum permissible limit has been prescribed especially where no alternative sources are available. The national water quality standards describe essential and desirable characteristics required to be evaluated to assess suitability of water for drinking purposes. The important water quality characteristics as laid down in BIS standard (IS 10500: 2012) are summarized in **Table - 4.1**

Table 4.1: Drinking Water Characteristics (IS 10500: 2012)

S. No.	Parameters	Desirable Limits (mg/L)	Permissible limits (mg/L)
Essential Characteristics			
1	Colour Hazen Unit	5	15
2	Odour	Unobjectionable	-
3	Taste	Agreeable	-
4	Turbidity (NTU)	1	5
5	pH	6.5-8.5	No relaxation
6	Total Hardness, $CaCO_3$	200	600
7	Iron (Fe)	1.0	No relaxation
8	Chloride (Cl)	250	1000
9	Residual Free Chlorine	0.2	1
10	Fluoride (F)	1.0	1.5
Desirable Characteristics			
11	Dissolved Solids	500	2000
12	Calcium (Ca)	75	200
13	Magnesium (Mg)	30	100
14	Copper (Cu)	0.05	1.5
15	Manganese (Mn)	0.1	0.3
16	Sulphate (SO_4)	200	400
17	Nitrate (NO_3)	45	No relaxation
18	Phenolic Compounds	0.001	0.002
19	Mercury (Hg)	0.001	No relaxation
20	Cadmium (Cd)	0.003	No relaxation
21	Selenium (Se)	0.01	No relaxation
22	Arsenic (As)	0.01	No relaxation
23	Cyanide (CN)	0.05	No relaxation
24	Lead (Pb)	0.01	No relaxation
25	Zinc (Zn)	5.0	15

26	Hexavalent Chromium	0.05	No relaxation
27	Alkalinity	200	600
28	Aluminum (Al)	0.03	0.2
29	Boron (B)	0.5	2.4
30	Pesticides	Absent	0.001
31	Uranium	0.03	No relaxation

NTU- Nephelometric Turbidity Unit.

N.B. The fluoride limits vary with average annual temperature of the areas. Similarly, the limits for magnesium are based on sulphate contents of water. When sulphate content is 250 mg/L or above, the magnesium should be between 30 and 50 mg/L but ifsulphate is lower, higher content of magnesium is permissible.

4.2 Water Quality Criteria for Irrigation Purpose

Water quality plays a significant role in irrigated agriculture. Many problems originate due to inefficient management of water for agriculture use, especially when it carries high salt loads. The effect of total dissolved salts in irrigation water (measured in terms

of electrical conductance) on crop growth is extremely important. Soil water passes in to the plant through the root zone due to osmotic pressure and the plants root able to assimilate water and nutrients. Thus, the dissolved solid contents of the residual water in the root zone also have to be maintained within limits by proper leaching. These effects are visible in plants by their stunted growth, low yield, discoloration and even leaf burns at margin or top. The safe limits of electrical conductivity for crops of different degrees of salt tolerances under varying soil textures and drainage conditions are presented in **Table - 4.2.**

Table 4.2: Safe Limits for electrical conductivity for irrigation water (IS:11624-1986)

S. No.	Nature of soil	Crop Growth	Upper permissible safe limit of electrical conductivity in water μs/cm at 25°C
1	Deep black soil and alluvial soils having clay content more than 30%; soils that are fairly to moderately well Drained	Semi-tolerant	1500
		Tolerant	2000
2	Textured soils having clay contents of 20-30%; soils that are well drained internally and have good surface drainage system	Semi-tolerant	2000
		Tolerant	4000
3	Medium textured soils having clay 10-20%; internally very well drained and having good surface drainage system	Semi-tolerant	4000
		Tolerant	6000
4	Light textured soils having clay lessthan 10%; soils that have excellent internal and surface drainage system.	Semi-tolerant	6000
		Tolerant	8000

In addition to problems caused by total amount of salts, some of the specific ions like sodium, boron and trace elements, if present in water in excess, also render it unsuitable for agricultural use.

4.2.1 SODIUM ADSORPTION RATIO (SAR) & RESIDUAL SODIUM CARBONATE (RSC)

The clay minerals in the soil adsorb divalent cations like calcium and magnesium ions from irrigation water. Whenever the exchange sites in clay are filled by divalent cations, the soil texture is conducive for plant growth. Sodium reacts with soil to reduce its permeability. In case the irrigation water is sodium dominant, the clay lattice is filled with sodium ions due to ion exchange. Such soils become impermeable and sticky and as such the cultivation becomes difficult to support plant growth. However, the cation exchange process is reversible and can be controlled either by adjusting the composition of water or by soil amendment by application of gypsum, which releases cations (Calcium) to occupy the exchange position. The tendency of water to replace adsorbed calcium and magnesium with sodium can be expressed by the Sodium Adsorption Ratio (SAR), where all the ion concentrations are in milli-equivalents per litre (meq/L).

$$\mathbf{SAR} = \frac{\mathbf{Na}}{\sqrt{(\mathbf{Ca} + \mathbf{Mg})/2}}$$

When, water having high bicarbonates and low calcium and magnesium is used for irrigation purpose, precipitation of calcium and magnesium as carbonate takes place, changing the residual water to high sodium water with sodium bicarbonate in solution. It is termed as Residual Sodium Carbonate (RSC) which is expressed as;

$$\mathbf{RSC} = (\mathbf{HCO3} + \mathbf{CO3}) - (\mathbf{Ca} + \mathbf{Mg})$$

(Where all the ions' concentrations are in milli equivalents / litre).

Percentage sodium (%Na):

Percentage sodium (%Na) is an indication of the soluble sodium content of the groundwater and also used to evaluate Na hazard. In all-natural waters, %Na is a common parameter to assess its suitability for irrigation purposes since sodium reacts with the soil to reduce permeability.

$$\%\mathbf{Na} = \frac{(\mathbf{Na} + \mathbf{K})}{(\mathbf{Ca} + \mathbf{Mg} + \mathbf{Na} + \mathbf{K})} * \mathbf{100}$$

The quality of water is commonly expressed by classes of relative suitability for irrigation with reference to salinity levels. The recommended classification with respect to Electrical Conductivity, Sodium content, Sodium Adsorption Ratio, and Residual Sodium Carbonate, under customary irrigation conditions has been depicted in **Table - 4.2.1.**

Table 4.2.1: Guidelines for evaluation of quality of irrigation water

Water Class	Alkalinity hazards		
	SAR IS:11624-1986	RSC (meq/L) IS:11624-1986	%Na Wilcox
Low	< 10	< 1.5	< 20
Medium	>10 – 18	1.5 – 3	20 - 60
High	>18 – 26	3 - 6	> 60
Very High	> 26	> 6	

4.3 Effects of Water Quality Parameters on Human Health and Distribution for Various Users

It is essential to ensure that various constituents are within prescribed limits in drinkingwater supplies to avoid impact on human health **(Table – 4.2.3)**. Man, life forms and domestic animals are affected by alteration in water quality due to natural or anthropogenic reasons. The effect of these substances depends on the quantity of water consumed per day and their concentration in water.

Table 4.2.3: Effects of water quality parameters on human health when used fordrinking Purpose

Sl. No.	Parameters	Prescribed limits IS:10500, 2012		Probable Effects
		Desirable Limit	Permissible Limit	
1	Colour (Hazen unit)	5	15	Makes water aesthetically undesirable
2	Odour	Essentially free from objectionable odour		Makes water aesthetically undesirable
3	Taste	Agreeable		Makes water aesthetically undesirable
4	Turbidity (NTU)	1	5	High turbidity indicates contamination / Pollution.
5	pH	6.5	8.5	Indicative of acidic or alkalinewaters, affects taste, corrosivity and the water supply system
6	Hardness as $CaCO_3$ (mg/L)	200	600	Affects water supply system (Scaling), Excessive soap consumption, and calcification of arteries. There is no conclusiveproof but it may cause urinary concretions, diseases of kidney or bladder and stomach disorder.
7	Iron (mg/L)	1.0	No relaxation	Gives bitter sweet astringenttaste, causes staining of laundry and porcelain. In traces it isessential for nutrition.
8	Chloride (mg/L)	250	1000	May be injurious to some people suffering from diseases of heart or kidneys. Taste, indigestion, corrosion and palatability are affected.
9	Residual Chlorine (mg/L) Only when water is Chlorinated	0.20	-	Excessive chlorination of drinking water may cause asthma,colitis and eczema.
10	Total Dissolved Solids-TDS (mg/L)	500	2000	Palatability decreases and may cause gastro intestinal irritation in human, may have laxative effect particularly upon transits and corrosion, may damage water system.

Sl. No.	Parameters	Prescribed limits IS:10500, 2012		Probable Effects
		Desirable Limit	Permissible Limit	
11	Calcium (Ca) (mg/L)	75	200	Causes encrustation in water supply system. While in sufficiency causes a severe type of rickets, excess causes concretions in the body such as kidney or bladder stones and irritation in urinary passages.
12	Magnesium (mg) (mg/L)	30	100	Its salts are cathartics and diuretic. High concentration may have laxative effect particularly on new users. Magnesium deficiency is associated with structural and functional changes. It is essential as an activator of many enzyme systems.
13	Copper (Cu) (mg/L)	0.5	1.50	Astringent taste but essential and beneficial element in human metabolism. Deficiency results in nutritional anemia in infants. Large amount may result in liver damage, cause central nervous system irritation and depression. In water supply it enhance corrosion of aluminum in particular
14	Sulphate (SO_4) (mg/L)	200	400	Causes gastro intestinal irritation along with Mg or Na, can have a cathartic effect on users, concentration more than 750 mg/L may have laxative effect along with Magnesium.
15	Nitrate (NO_3) (mg/L)	45	No relaxation	Cause infant methaemoglobinaemia (blue babies) at very high concentration, causes gastriccancer and affects adversely central nervous system and cardiovascular system.
16	Fluoride (F) (mg/L)	1.0	1.50	Reduce dental carries, very high concentration may cause crippling skeletal fluorosis.
17	Cadmium (Cd) (mg/L)	0.003	No relaxation	Acute toxicity may be associated with renal, arterial hypertension, itai-itai disease, (a bone disease).Cadmium salt causes cramps, nausea, vomiting and diarrhea.
18	Lead (Pb) (mg/L)	0.01	No relaxation	Toxic in both acute and chronic exposures. Burning in the mouth, severe inflammation of the gastro-intestinal tract withvomiting and diarrhoea, chronictoxicity produces nausea, severe abdominal pain, paralysis, mental confusion, visual disturbances,

Sl. No.	Parameters	Prescribed limits IS:10500, 2012		Probable Effects
		Desirable Limit	Permissible Limit	
				anaemia etc.
19	Zinc (Zn) (mg/L)	5	15	An essential and beneficial element in human metabolism. Taste threshold for Zn occurs at about 5 mg/L imparts astringent taste to water.
20	Chromium (Cr^6) (mg/L)	0.05	No relaxation	Hexavalent state of Chromium produces lung tumors can produce cutaneous and nasal mucous membrane ulcers and dermatitis.
21	Boron (B) (mg/L)	0.5	2.4	Affects central nervous system itssalt may cause nausea, cramps, convulsions, coma etc.
22	Alkalinity (mg/L) as $CaCO_3$	200	600	Impart distinctly unpleasant taste may be deleterious to human being in presence of high pH, hardness and total dissolved solids.
23	Pesticides: (m g/l)	Absent	0.001	Imparts toxicity and accumulated in different organs of human body affecting immune and nervous systems may be carcinogenic.
24	Phosphate (PO_4) (mg/L)	No guideline		High concentration may causevomiting and diarrhea, stimulate secondary hyperthyroidism andbone loss
25	Sodium (Na) (mg/L)	No guidelines		Harmful to persons suffering From cardiac, renal andcirculatory diseases.
26	Potassium (K) (mg/L)	No guidelines		An essential nutritional elementbut its excessive amounts is cathartic
27	Silica (SiO_2) (mg/L)	No guidelines		-
28	Nickel (Ni) (mg/L)	0.02		Non-toxic element but may becarcinogenic in animals, can react with DNA resulting in DNAdamage in animals.
29	Pathogens (a) Total coliform (per100ml) (b) Faecal Coliform (per 100ml)	nil		Cause water borne diseases like coliform Jaundice, Typhoid, Cholera etc. produce infections involving skin mucous membrane of eyes, ears and throat.

Sl. No.	Parameters	Prescribed limits IS:10500, 2012		Probable Effects
		Desirable Limit	Permissible Limit	
30	Arsenic	0.01	**No relaxation**	Various skin diseases, Carcinogenic
31	Uranium	0.03	**No relaxation**	Kidney disease, Carcinogenic

5.0 GROUND WATER QUALITY MONITORING

The International Standard Organization (ISO) has defined monitoring as," The programmed process of samplings, measurements and subsequent recording or signaling or both, of various water characteristics, often with the aim of assessing, conformity to specified objectives". A systematic plan for conducting water quality monitoring is called Monitoring Programme, which includes monitoring network design, preliminary survey, resource estimation, sampling, analysis, data management & reporting.

Monitoring of ground water quality is an effort to obtain information on chemical quality through representative sampling in different hydrogeological units. Ground Water is commonly tapped from phreatic aquifers through dugwells in a major part of the country and through springs and hand pumps in hilly areas. The main objective of ground water quality monitoring programme is to get information on the distribution of water quality on a regional scale as well as lattice is to create a background data bank of different chemical constituents in ground water.

One of the main objectives of the ground water quality monitoring is to assess the suitability of ground water for drinking purpose. The quality of drinking water is a powerful environmental determinant of the health of a community. The problem of the quality of water resources in general, and groundwater resources in particular, is becoming increasingly important in both industrialized and developing nation. In developing countries like India, the essential concerns as regards water resources are their quantity, availability, sustainability and suitability. Groundwater plays a leading role because it has of fundamental importance to all living beings.

Even though water is the most frequently occurring substance on earth, lack of safe drinking water is more prominent in the developing countries. Due to increasing world population, extraction of groundwater is also increasing for irrigations, industries, municipalities and urban and rural households' day by day. During dry season extensive withdrawal of groundwater for irrigation purpose is lowering the water table in the aquifer and also changing the chemical composition of water.

The physical and chemical quality of ground water is important in deciding its suitability for drinking purposes. Bureau of Indian Standards (BIS) formally known as Indian Standard Institute (ISI) vide its document IS: 10500:2012, Edition 3.2 (2012-15) has recommended the quality standards for drinking water. On this basis of classification, the natural ground water of India has been categorized as desirable, permissible and unfit for human consumption.

From the analytical results, it is seen that majority of water samples collected from observation / monitoring wells of CGWB in a major part of the country fall under desirable or permissible category and hence are suitable for drinking purposes. However, a small percentage of well waters are found to have concentrations of some constituents beyond the permissible limits. Such waters are not fit for human consumption and are likely to be harmful to health on continuous use.

5.1 Data Validation / Data Quality Control

Groundwater quality data validation is an essential step in ensuring the reliability and accuracy of the data. Here are some of the main steps for groundwater quality data validation.

a. Checking of Data Consistency: Checking of the data for consistency by comparing the measurements of a particular parameter over time. This will help identify any changes in the groundwater quality due to measurement methodology or equipment
b. Checking the correlation between EC and TDS:
    a. The relationship between the two parameters is often described by a constant (commonly between 0.55 and 0.95 for freshwaters).
    b. Thus: TDS (mg/l) ~ (0.55 to 0.95) x EC (mS/cm).
    c. The value of the constant varies according to the chemical composition of the water. For freshwaters, the normal range of TDS can be calculated from the following relationship:
    d. 0.55 conductivity (mS/cm) < TDS (mg/l) < 0.95 conductivity (mS/cm).
    e. Typically, the constant is high for chloride rich waters and low for sulphate rich waters.

c. Checking the cation-anion balance

When a water quality sample has been analysed for the major ionic species, one of the most important validation tests can be conducted: the cation-anion balance.

$$\text{Sum of cations} = \text{sum of anions}$$

where:
cations = positively charged species in solution (meq/l)
anions = negatively charged species in solution (meq/l)

The Electronic charge balance is expressed as follows:

$$\text{Electronic Charge Balance (ECB \%)} = \frac{[\sum \text{cations} - \sum \text{anions}]}{[\sum \text{cations} + \sum \text{anions}]} \times 100$$

All concentrations should be in epm. Error charge balance has been computed for the chemical results of 2022-23 and analysis showing more than 10% ECB has not been accepted as it indicates that there has been an error made in at least one of the major cation/anion analyses.

6.0 GROUND WATER QUALITY SCENARIO IN KARNATAKA

The quality of shallow ground water in Karnataka state has been evaluated by sampling and analysis of water sample collected from Ground Water Monitoring wells. About 1224 Ground Water Monitoring wells were monitored for water quality during May 2022 representing pre-monsoon water quality. The district wise chemical analysis data of the samples are given in the Annexure-I. The summarized results of ground water quality ranges are given in Table 6.1.

Table - 6.1. Summarized results of groundwater quality ranges of Karnataka, (May 2022)

Sl. No	Parameters	Category	Range	No. of samples	Percentage
1	Electrical Coductivity µS/cm at 25oc	Fresh	< 750	565	46.16
		Moderate	751- 2250	539	44.04
		Slightly mineralized	2251- 3000	56	4.58
		Highly mineralized	> 3000	64	5.23
2	Chloride mg/L	Desirable limit	< 250	1035	84.56
		Permissible limit	251-1000	173	14.13
		Beyond permissible limit	> 1000	16	1.31
3	Fluoride mg/L	Desirable limit	< 1.00	1019	83.25
		Permissible limit	1.01- 1.50	116	9.48
		Beyond permissible limit	>1.50	89	7.27
4	Nitrate mg/L	Permissible limit	<45	910	74.35
		Beyond permissible limit	> 45	314	25.65

The groundwater samples collected from dug wells and hand pumps tapping phreatic aquifers are analyzed for all the major inorganic parameters. Based on the results, it is found that ground water of the country is mostly of calcium bicarbonate (Ca-HCO3) type when the total dissolved solids of water is below 500 mg/L (corresponding to electrical conductance of 750 µS/cm at 250C). They are of mixed cations and mixed anion type when the electrical conductance is between 750 and 3000 µS/cm and waters with electrical conductance above 3000 µS/cm are of sodium chloride (Na-Cl) type. However, other types of water are also found among these general classifications, which may be due to the local variations in hydro-chemical environments due to anthropogenic activities. Nevertheless, occurrence of high concentrations of some water quality parameters such as salinity, chloride, fluoride, and nitrate have been observed in Karnataka states.

The chloride content is less than 250 mg/L in about 84.6% of the sample analyzed and 1.3% showed more than 1000mg/L which are from the districts of Bagalkot, Belagavi, Bijapur, Dharawad, Gadag, Raichur and Yadgir. The Fluoride content is less than 1.5 mg/L in about 92.7 % of the sample analyzed and about 7.3% of the sample shows more than 1.5 mg/L. The Nitrate content is less than 45mg/L in about 74.3 % of the sample analyzed and and 25.7 % of sample shows more than 45 mg/L.

7.0 GROUND WATER QUALITY HOT SPOTS IN SHALLOW AQUIFERS OF KARNATAKA

Unconfined aquifers are extensively tapped for water supply across the country therefore; its quality is of paramount importance. The chemical parameters like TDS, Chloride, Fluoride, Iron, Arsenic and Nitrate etc are main constituents defining the quality of ground water in unconfined aquifers. Therefore, presence of these parameters in ground water beyond the permissible limit in the absence of alternate source has been considered as groundwater quality hotspots.

Groundwater quality hot spot maps of the country have been prepared depicting six main parameters based on their distribution shown on the separate maps. These maps depict the spatial distribution of the following constituents in ground water tapping the unconfined aquifers.

I. Electrical Conductivity
II. Chloride (> 1000 mg/L)
III. Fluoride (>1.5 mg/L)
IV. Nitrate (>45mg/L)
V. Iron (>1.0mg/L)
VI. Arsenic (>0.01 mg/L)
VII. Uranium (>0.03 mg/L)
VIII. Total Hardness (>600 mg/L)

7.1 ELECTRICAL CONDUCTIVITY

Conductivity measurements are used routinely in many industrial and environmental applications as a fast, inexpensive and reliable way of measuring the ionic content in a solution. For example, the measurement of product conductivity is a typical way to monitor and continuously trend the performance of water purification systems. In many cases, conductivity is linked directly to the total dissolved solids (TDS).

Salinity is the saltiness or dissolved salt contents of a water body. Salt content is an important factor in water use. Salinity can be technically defined as the total mass in grams of all the dissolved substances per Kilogram of water. Different substances dissolve in water giving it taste and odour. In fact, humans and other animals have developed senses which are, to a degree, able to evaluate the potability of water, avoiding water that is too salty or putrid.

Salinity always exists in ground water but in variable amounts. It is mostly influenced by aquifer material, solubility of minerals, duration of contact and factors such as the permeability of soil, drainage facilities, and quantity of rainfall and above all, the climate of the area. The salinity of groundwater in coastal areas in addition to the above may be due to air borne salts originating from air water interface over the sea and also due to over pumping of fresh water which overlays saline water in coastal aquifer systems.

BIS has recommended a drinking water standard for total dissolved solids a limit of 500 mg/L (corresponding to EC of about 750 µS/cm at 250C) that can be extended to a TDS of 2000 mg/L (corresponding to EC of about 3000 µS/cm at 25^0C) in case of no alternate source. Water having TDS more than 2000 mg/L is not suitable for drinking purpose.

In Fig 7.1.1, the EC values (in µS/cm at 25^0C) of ground water from observation/monitoring wells have been used to show distribution patterns of electrical conductivity in different ranges of suitability for drinking purposes. In general, the ground water quality of the state is fresh in about 46.2% of the Ground Water Monitoring wells as indicated by the EC value less than 750 µs/cm at 25^0C. In about 44% of the Ground Water Monitoring wells, the EC varies between 751 - 2250µs/cm at 25^0C and 4.6% of Ground Water Monitoring wells are between 2251-3000 µS/cm at 25^0C indicating that the ground water is slightly mineralized and about 5.2% of Ground Water Monitoring wells the EC is more than 3000 µS/cm at 25^0C indicating that the ground water is highly mineralized. The highest value 10600 µS/cm at 25^0C was observed in Guledagudda, Bagalkot district. Table 7.1.1 shows the list of districts affected by high EC water (EC > 3000 µS/cm) and these areas are water quality hot spots from salinity point of view. District-wise percentage of wells having EC >3000 µS/cm is shown as a bar diagram in Fig 7.1.1 and the occurrences of Electrical Conductivity in ground water beyond permissible limit (>3000 µS/cm) have been shown on the contour map as Fig 7.1.2, the percentage groundwater samples in various EC range is also illustrated in Fig 7.1.3. and locations details are given in Annexure-I. The Table 7.1.2 shows the parts of taluks in different districts of Karnataka having EC >3000 µS/cm.

Table 7.1.1 District-wise percentage of samples having EC >3000 µS/cm

Sr. No	Districts	No. of Samples collected (NHS 2022-23)	No. of Samples (EC >3000 µS/cm)	(%) Samples (EC >3000 µS/cm)
1	Bagalkot	26	11	42.3
2	Ballari	6	1	16.7
3	Belagavi	84	4	4.8
4	Bengaluru Rural	10	0	0.0
5	Bengaluru Urban	15	0	0.0
6	Bidar	18	0	0.0
7	Bijapur	64	13	20.3
8	Chamarajanagara	21	0	0.0
9	Chikballapura	11	0	0.0
10	Chikmagaluru	64	0	0.0
11	Chitradurga	28	3	10.7
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	0	0.0
14	Dharwad	22	4	18.2
15	Gadag	20	9	45.0
16	Gulbarga	32	0	0.0
17	Hassan	71	1	1.4

Sr. No	Districts	No. of Samples collected (NHS 2022-23)	No. of Samples (EC >3000 µS/cm)	(%) Samples (EC >3000 µS/cm)
18	Haveri	26	0	0.0
19	Kodagu	72	0	0.0
20	Kolar	24	1	4.2
21	Kopal	18	3	16.7
22	Mandya	41	0	0.0
23	Mysore	59	0	0.0
24	Raichur	42	3	7.1
25	Ramnagara	26	0	0.0
26	Shivmoga	78	0	0.0
27	Tumkur	44	3	6.8
28	Udupi	74	0	0.0
29	Uttara Kannada	80	0	0.0
30	Vijayanagara	19	3	15.8
31	Yadgir	15	2	13.3
	Total	**1224**	**61**	**5.0**

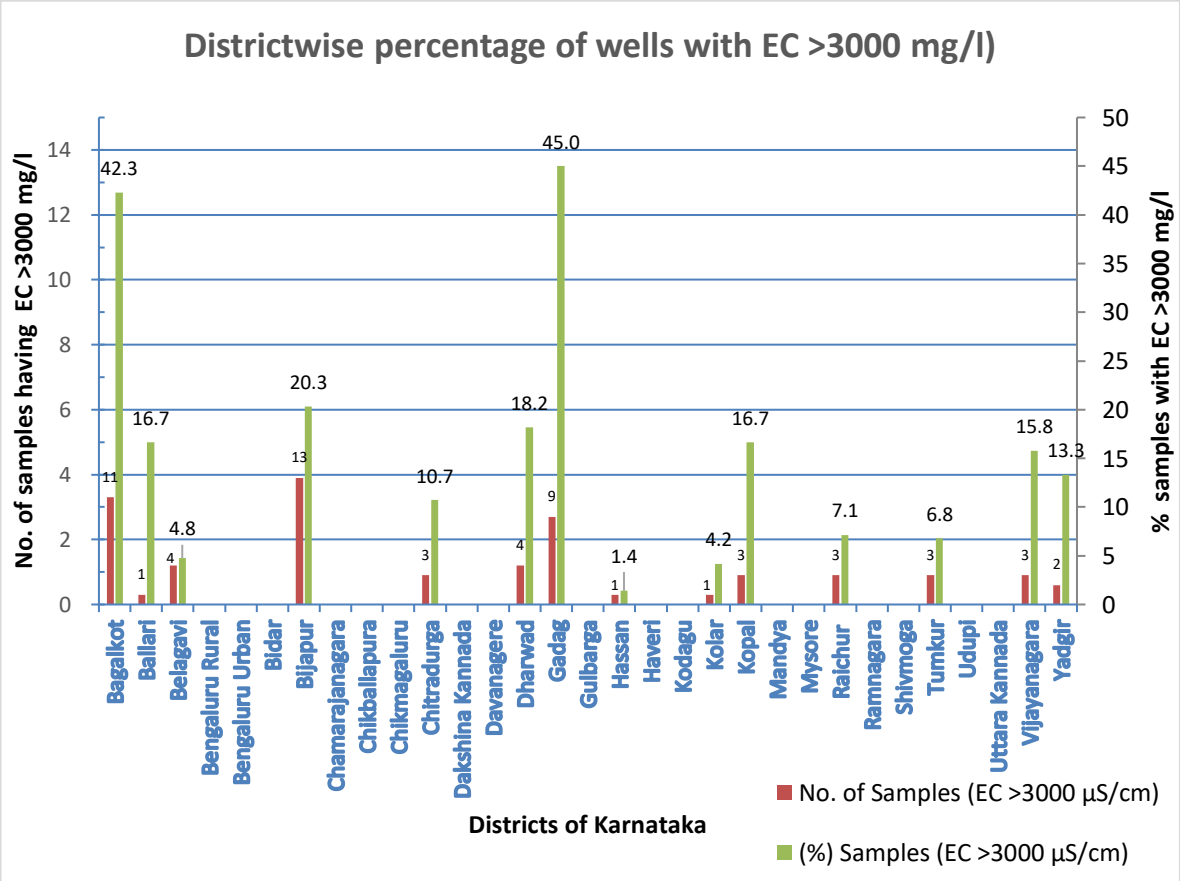

Fig 7.1.1 District-wise percentage of wells having EC >3000 µS/cm.

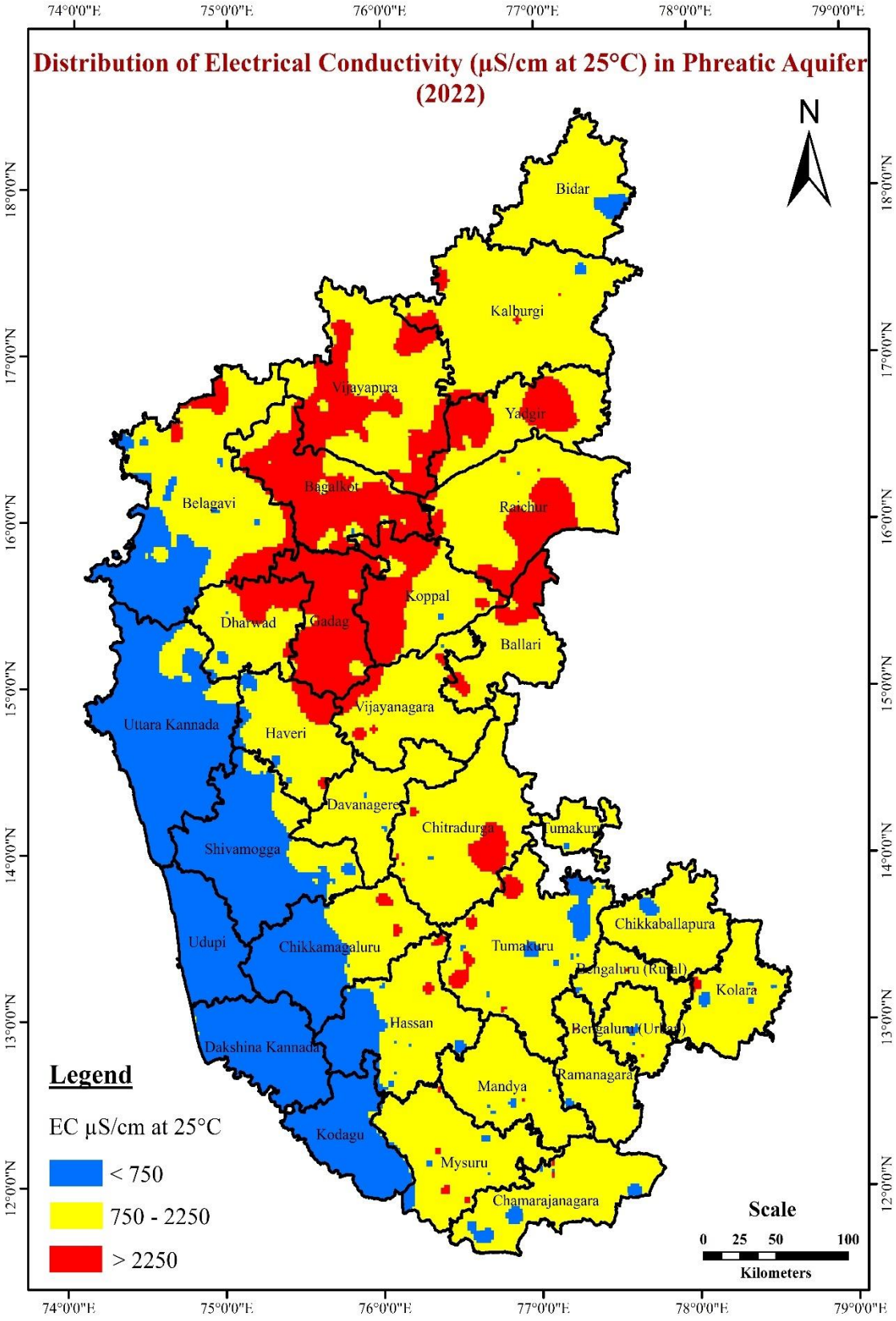

Fig 7.1.2 Spatial distribution of Electrical Conductivity during May 2022.

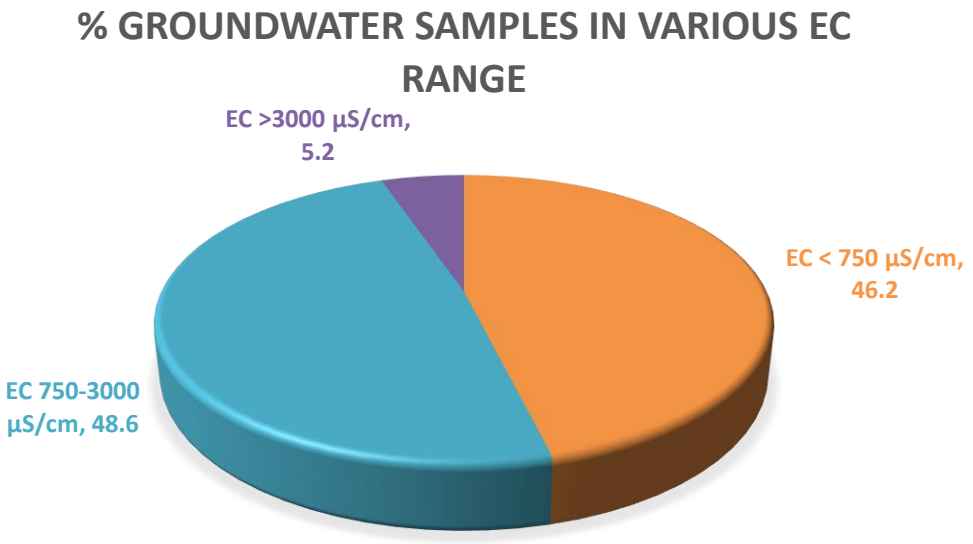

Fig 7.1.3 Percentage groundwater samples in various EC range of Karnataka.

Table 7.1.2: Taluk Affected by High EC in Groundwater in different districts of Karnataka

Sl. No.	Districts	Different Parts of Taluks having EC > 3000 µS/cm.
1.	Bagalkot	Jamkhandi, Bilgi, Hungund, Badami, Mudhol
2.	Ballari	Siruguppa
3.	Belagavi	Kagavada, Athani, Raibag, Chikkodi
4.	Bijapur	Muddebihal, Sindgi, Bijapur, Basavana Bagevadi, Indi
5.	Chitradurga	Hiriyur, Molakalmuru
6.	Dharwad	Dharwad, Navalgund
7.	Gadag	Mundargi, Ron, Shirhatti, Nargund
8.	Hassan	Arsikere
9.	Kolar	Kolar
10.	Koppal	Yelburga, Kushtagi
11.	Raichur	Sindanur, Manvi
12.	Tumkur	Chiknayakanahalli, Tiptur
13.	Vijayanagara	Hospet, Hadagalli, Sandur
14.	Yadgir	Shorapur, Shahapur

7.2 CHLORIDE

Chloride is present in all-natural waters, mostly at low concentrations. It is highly soluble in water and moves freely with water through soil and rock. In ground water the chloride content is mostly below 250 mg/L except in cases where inland salinity is prevalent and in coastal areas.

BIS (Bureau of Indian Standard) have recommended a desirable limit of 250 mg/L of chloride in drinking water; this concentration limit can be extended to 1000 mg/L of chloride in case no alternative source of water with desirable concentration is available. However, ground water having concentration of chloride more than 1000 mg /L are not suitable for drinking purposes.

In Fig 7.2.1, the concentration of chloride (in mg/L) in ground water from observation wells have been used to show distribution patterns of chloride in different ranges of suitability. The chloride content is less than 250 mg/L in about 84.6% of the sample analyzed and 14.1% of the sample are between 251-1000 mg/L and 1.3% shows more than 1000mg/L which are from the districts of Bagalkot, Belagavi, Bijapur, Dharawad and Gadag, Raichur and Yadgir.

Water with chloride ranging between 250 and 1000 mg/L falling under 'permissible' range are confined mostly to districts of Bagalkot, Ballari, Belagavi, Bengaluru Urban, Bijapur, Chamarajanagara, Chikmagaluru, Chitradurga, Dakshina Kannada, Davanagere, Dharwad, Gadag, Gulbarga, Hassan, Haveri, Kolar, Koppal, Mandya, Mysore, Raichur, Ramnagara, Tumkur, Vijayanagara, and Yadgir.

Relatively high values of Chloride (>1000 mg/L) are observed in the districts of Bagalkot, Belagavi, Bijapur, Gadag, Dharwad, Raichur, and Yadgir. Table 7.2.1 shows the Districtwise sample list affected by high chloride water (>1000 mg/L) and these areas are water quality hot spots from high chloride point of view.

The occurrences of chloride in ground water beyond permissible limit (1000 mg/L) have been shown on the contour map as Fig 7.2.1, District-wise percentage of wells having chloride >1000 mg/L is shown as a bar diagram in Fig 7.2.2 and also given location details in **Annexure-II**. The Table 7.2.2 shows the parts of taluks in different districts of Karnataka having Chloride >1000 mg/L.

Table 7.2.1 District-wise percentage of samples having Chloride >1000mg/L

Sl.No.	District	No. of Samples collected (NHS 2022-23)	No. of Samples (Cl >1000 mg/l)	(%) Samples (Cl >1000 mg/l)
1	Bagalkot	26	3	11.5
2	Ballari	6	0	0.0
3	Belagavi	84	2	2.4
4	Bengaluru Rural	10	0	0.0
5	Bengaluru Urban	15	0	0.0
6	Bidar	18	0	0.0
7	Bijapur	64	4	6.3
8	Chamarajanagara	21	0	0.0
9	Chikballapura	11	0	0.0
10	Chikmagaluru	64	0	0.0
11	Chitradurga	28	0	0.0
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	0	0.0
14	Dharwad	22	1	4.6
15	Gadag	20	4	20.0
16	Gulbarga	32	0	0.0
17	Hassan	71	0	0.0
18	Haveri	26	0	0.0
19	Kodagu	72	0	0.0
20	Kolar	24	0	0.0
21	Kopal	18	0	0.0
22	Mandya	41	0	0.0
23	Mysore	59	0	0.0
24	Raichur	42	1	2.4
25	Ramnagara	26	0	0.0
26	Shivmoga	78	0	0.0
27	Tumkur	44	0	0.0
28	Udupi	74	0	0.0
29	Uttara Kannada	80	0	0.0
30	Vijayanagara	19	0	0.0
31	Yadgir	15	1	6.7
Total		**1224**	**16.0**	**1.3**

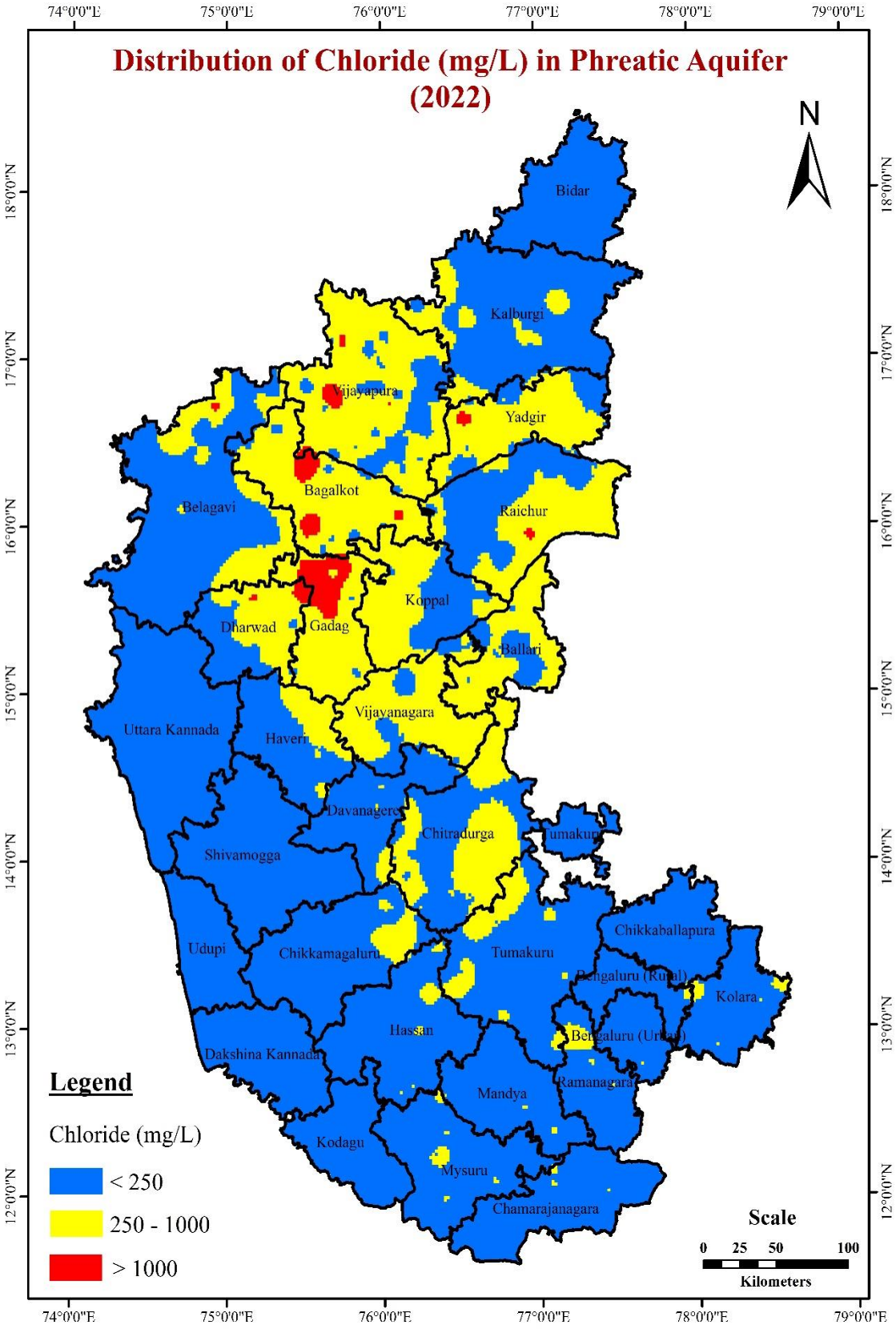

Fig 7.2.1 Spatial Distribution of Chloride in phreatic/shallow aquifer of Karnataka, May 2022

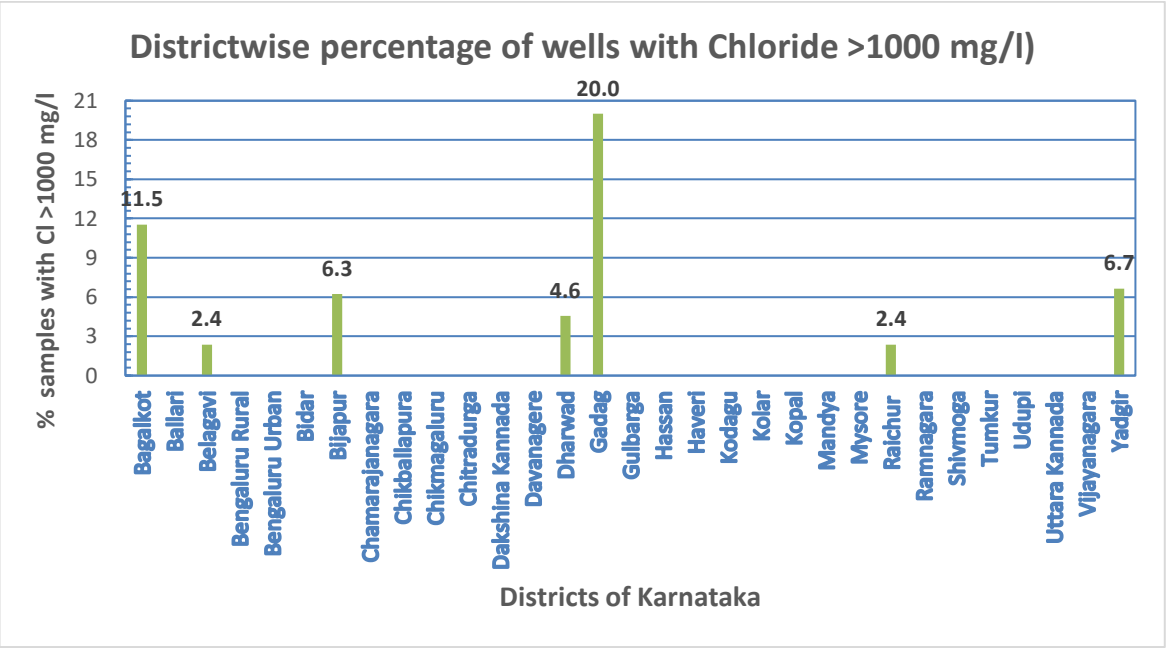

Fig 7.2.2 District-wise percentage of wells having Chloride > 1000 mg/L

Table-7.2.2: Taluks having Chloride concentration (more than 1000 mg/L) in Karnatka (NHS 2022-23)

Sr. No	Districts	Parts of taluks having Chloride > 1000 mg/L
1.	Bagalkot	Jamkhandi, Badami, Hungund
2.	Belagavi	Chikkodi, Kagavada
3.	Bijapur	Bijapur, Basavana bagevadi, Indi
4.	Gadag	Hadagali, Hunugund, Ron
5.	Dharwad	Navalgund
6.	Raichur	Manvi
7.	Yadgir	Shorapur

Techniques Available for Removal of Salinity

Traditionally, distillation has been the method used for desalting water for human consumption or other use. Membrane methods have emerged through the last 50 years and now predominate among the desalination practices. The following describes each of the various methods used for water desalination treatment.

1. Distillation Methods

There are several variations in distillation technology used in desalination. They are all based on the vapourization of liquid water when brought to its boiling point. The nearly pure water vapour produced is condensed and collected for use, while dissolved salts remain behind in the remaining liquid feed water. Some of the methods by which distillation is practiced are as follows:

• Multi-stage flash;
• Multiple effect;
• Vapour compression;
• Membrane distillation; and
• Solar humidification.

2. Membrane Technologies

Membrane processes involve passing of impaired feed water through a semi-permeable material which can filter out unwanted dissolved or undissolved constituents, depending on the size and treatment of the openings. Membrane technologies identified include:

• Reverse Osmosis;
• Microfiltration/Ultrafiltration/Nanofiltration;
• Electrodialysis Reversal; and
• Forward Osmosis.

3. **Hybrid Technology:** A method of reducing overall costs of desalination can be the use of hybrid systems using both RO and distillation processes. Such a system could provide a more suitable match between power and water development needs.

7.3 FLUORIDE

Fluorine is a fairly common element but it does not occur in the elemental state in nature because of its high reactivity. Fluorine is the most electronegative and reactive of all elements that occur naturally within many types of rock. It exists in the form of fluorides in a number of minerals of which fluorspar, cryolite, fluorite and fluorapatite are the most common. Fluorite (CaF_2) is a common fluoride mineral.

Most of the fluoride found in groundwater is naturally occurring from the breakdown of rocks and soils or weathering and deposition of atmospheric particles. Most of the fluorides are sparingly soluble and are present in ground water in small amounts. The occurrence of fluoride in natural water is affected by the type of rocks, climatic conditions, nature of hydrogeological strata and time of contact between rock and the circulating ground water. Presence of other ions, particularly bicarbonate and calcium ions also affect the concentration of fluoride in ground water.

It is well known that small amounts of fluoride (less than 1.0 mg/L) have proven to be beneficial in reducing tooth decay. Community water supplies commonly are treated with NaF or fluorosilicates to maintain fluoride levels ranging from 0.8 to 1.2 mg/L to reduce the incidence of *dental carries*. However, high concentrations such as 1.5 mg/L of F and above have resulted in staining of tooth enamel while at still higher levels of fluoride ranging between 5.0 and 10 mg/L, further pathological changes such as stiffness of the back and difficulty in performing natural movements may take place.

BIS has recommended an upper desirable limit of 1.0 mg/L of F^- as desirable concentration of fluoride in drinking water, which can be extended to 1.5 mg/L of F in case no alternative source

of water is available. Water having fluoride concentration of more than 1.5 mg/L are not suitable for drinking purposes.

The Fluoride content is less than 1.5 mg/L in about 92.7 % of the sample analyzed and about 7.3% of the sample shows more than 1.5 mg/L, which are from the districts of Bagalkot, Ballari, Bijapur, Chitradurga, Chikballapura, Davanagere, Gadag, Gulbarga, Hassan, Kolar, Koppal, Mandya, Mysore, Ramanagara, Raichur, Shivmoga, Tumkur, Vijayanagara and Yadgir. The details of locations where fluoride concentration more than 1.5 mg/l is given in Annexure III. The list of districts showing localized occurrence of fluoride in ground water in excess of 1.5mg/L is given in table 7.3.1. The occurrences of fluoride in groundwater beyond permissible limit (1.5 mg/L) have also been shown on the map as Fig. 7.3.1, District-wise percentage of wells having fluoride >1.5mg/L is shown as a bar diagram in Fig 7.3.2. The Table 7.3.2 shows the parts of taluks in different districts of Karnataka having Fluoride >1.5 mg/L.

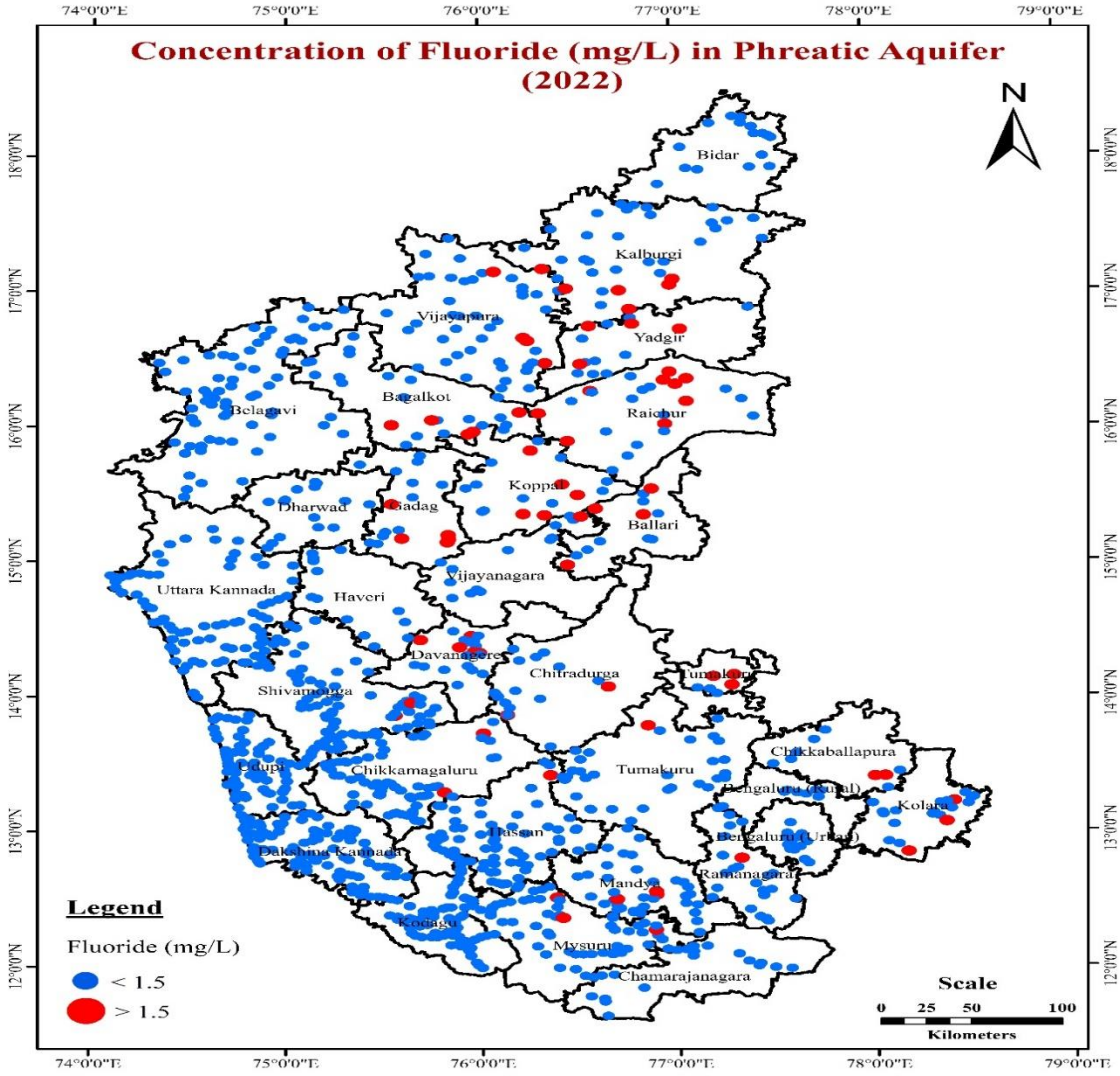

Fig 7.3.1 Locations having Fluoride concentration > 1.5 mg/L in shallow aquifer of Karnataka, May 2022

Table 7.3.1 District-wise percentage of wells having fluoride >1.5mg/L

Sl.No.	District	No. of Samples collected (NHS 2022-23)	No. of Samples (F >1.5 mg/l)	(%) Samples (F >1.5 mg/l)
1	Bagalkot	26	6	23.1
2	Ballari	6	1	16.7
3	Belagavi	84	0	0.0
4	Bengaluru Rural	10	0	0.0
5	Bengaluru Urban	15	0	0.0
6	Bidar	18	0	0.0
7	Bijapur	64	8	12.5
8	Chamarajanagara	21	0	0.0
9	Chikballapura	11	3	27.3
10	Chikmagaluru	64	2	3.1
11	Chitradurga	28	3	10.7
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	6	25.0
14	Dharwad	22	0	0.0
15	Gadag	20	6	30.0
16	Gulbarga	32	4	12.5
17	Hassan	71	1	1.4
18	Haveri	26	0	0.0
19	Kodagu	72	0	0.0
20	Kolar	24	4	16.7
21	Kopal	18	6	33.3
22	Mandya	41	4	9.8
23	Mysore	59	3	5.1
24	Raichur	42	16	38.0
25	Ramnagara	26	1	3.8
26	Shivmoga	78	1	1.3
27	Tumkur	44	5	11.4
28	Udupi	74	0	0.0
29	Uttara Kannada	80	0	0.0
30	Vijayanagara	19	4	21.1
31	Yadgir	15	5	33.3
Total		**1224**	**89**	**7.3**

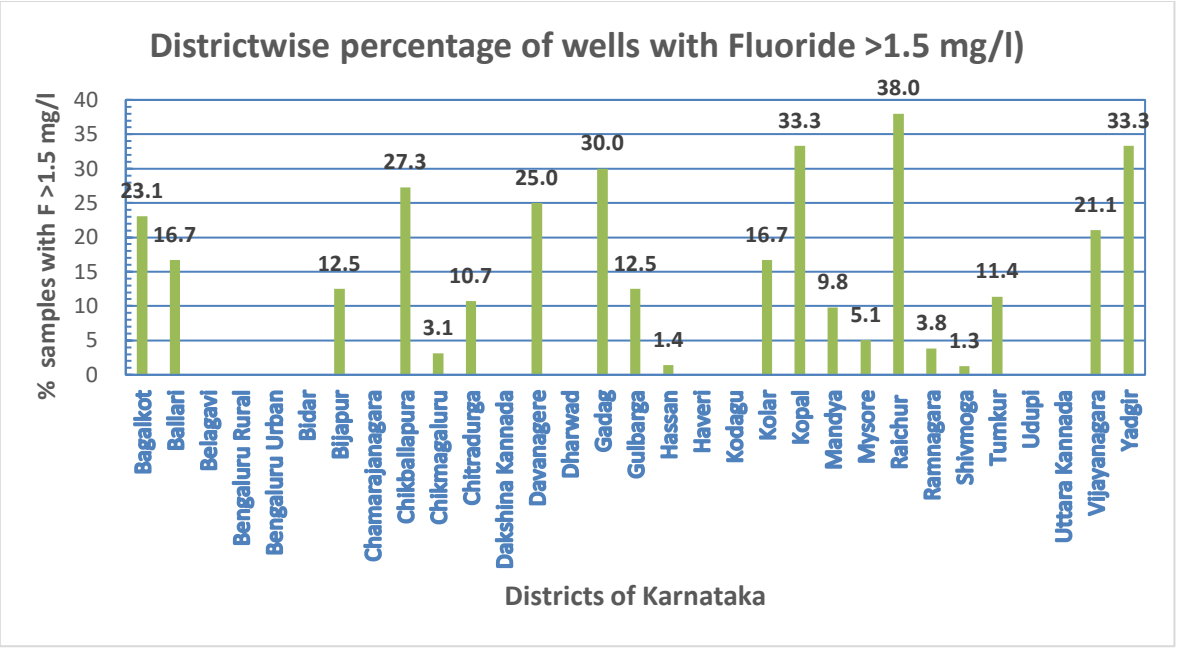

Fig 7.3.2 District-wise percentage of wells having fluoride >1.5 mg/L

Table 7.3.2: Taluks having Fluoride concentration (> 1.5 mg/L) in Karnatka

Sl. No	Districts	Parts of taluks having Fluoride > 1.5 mg/L
1	Bagalkot	Hungund, Bilgi
2	Ballari	Siruguppa
3	Bijapur	Muddebihal, Indi, Sindgi
4	Chikballapura	Chintamani, Chikballapura
5	Chikmagaluru	Tarikere, Chikmagalur, Hosadurga, Holalkere
6	Chitradurga	Hiriyur
7	Davanagere	Davanagere, harihara
8	Gadag	Hungundi, Gadag, Mundargi, Shirhatti
9	Gulbarga	Jevargi, Chincholi
10	Hassan	Arsikere
11	Kolar	Bangerpet, KGF, Mulbagal
12	Kopal	Koppal, Gangawathi, Kushtagi
13	Mandya	Pandavapura, Mandya, Nagamangala
14	Mysore	K R Nagara, T Narasipura
15	Raichur	Lingsugur, Devadurga, Sindanur, Devadurga, Manvi
16	Ramnagara	Ramanagara
17	Shivmoga	Shimoga
18	Tumkur	Pavagada, Madhugiri
19	Vijayanagara	Sandur, Hospet, Kampli, Kurugodu
20	Yadgir	Shahapur, Shorapur, Hunisigi

Remedial Measures for Fluoride

The fluoride remedial measures broadly adopted are ex-situ techniques. They can be classified into three major categories.

(a) Adsorption and ion exchange

This technique functions on the adsorption of fluoride ions onto the surface of an active agent such as activated alumina, red mud, bone char, brick pieces column, mud pot and natural adsorbents where fluoride is removed by ion exchange or surface chemical reaction with the solid bed matrix.

Activated alumina: Activated alumina is a highly porous aluminum oxide exhibiting high surface area. Alumina has a high preference for fluoride compared to other anionic species, and hence is an attractive adsorbent. The crystal structure of alumina contains cation lattice discontinuities giving rise to localized areas of positive charge which makes it attract various anionic species. It also does not shrink, swell, soften nor disintegrate when immersed in water. The maximum absorption capacity of activated alumina for fluoride is found to be 3.6 mg F/g of alumina.

Ion-Exchange resins: Synthetic chemicals, namely, anion and cation exchange resins have been used for fluoride removal. Some of these are Polyanion (NCL), Tul-sion A - 27, Deacedite FF (IP), Amberllte IRA 400, LewatitMIH - 59, and AmberliteXE - 75. These resins have been used in chloride and hydroxy form. The fluoride exchange capacity of these resins depends upon the ratio of fluoride to total anions in water.

(b) Coagulation-precipitation

Precipitation methods are based on the addition of chemicals (coagulants and coagulant aids) and the subsequent precipitation of a sparingly soluble fluoride salt as insoluble. Fluoride removal is accomplished with separation of solids from liquid. Aluminium salts (eg. Alum), lime, Poly Aluminium Chloride, Poly Aluminium Hydroxy sulphate and Brushite are some of the frequently used materials in defluoridation by precipitation technique. The best example for this technique is the famous Nalgonda technique.

Nalgonda Technique

Nalgonda technique involves addition of Aluminium salts, lime and bleaching powder followed by rapid mixing, flocculation, sedimentation, filtration and disinfection. It is opined that this technique is preferable at all levels because of the low price and ease of handling, is highly versatile and can be used in various scales from household level to community scale water supply.

The Nalgonda technique can be used for raw water having fluoride concentration between 1.5 and 20 mg/L and the total dissolved solids should be <1500 mg/L, and total hardness < 600 mg/L. The alkalinity of the water to be treated must be sufficient to ensure complete hydrolysis of alum added to it and to retain a minimum residual alkalinity of 1 - 2 meq/L in the treated water to achieve a pH of 6.5 - 8.5 in treated water. Several researchers have attempted to improve the technique by increasing the removal efficiency of fluoride using Poly Aluminium Chloride (PAC) and Poly Aluminium Hydroxy Sulphate (PAHS).

(c) Membrane techniques

Reverse osmosis, nanofiltration, dialysis and electro dialysis are physical methods that have been tested for defluoridation of water. Though they are effective in removing fluoride salts from water, however, there are certain procedural disadvantages that limit their usage on a large scale.

7.4 NITRATE

Nitrate is a naturally occurring compound that is formed in the soil when nitrogen and oxygen combine. The primary source of all nitrates is atmospheric nitrogen gas. This is converted into organic nitrogen by some plants by a process called nitrogen fixation. Dissolved Nitrogen in the form of Nitrate is the most common contaminant of ground water. Nitrate in groundwater generally originates from non-point sources such as leaching of chemical fertilizers & animal manure, groundwater pollution from septic and sewage discharges etc. It is difficult to identify the natural and man-made sources of nitrogen contamination of ground water. Some chemical and micro-biological processes such as nitrification and denitrification also influence the nitrate concentration in ground water.

As per the BIS Standard for drinking water the maximum desirable limit of Nitrate concentration in ground water is 45 mg/L with no relaxation. Though, Nitrate is considered relatively non-toxic, a high nitrate concentration in drinking water is an environmental health concern arising from increased risks of methemoglobinemia particularly to infants. Adults can tolerate little higher concentrations. The specified limits are not to be exceeded in public water supply. If the limit is exceeded, water is considered to be unfit for human consumption.

The Nitrate content is less than 45mg/L in about 74.3% of the sample analyzed and and 25.7% of sample shows more than 45 mg/L which are from the district of Bagalkot, Bangalore Rural, Bangalore Urban, Belagavi, Bidar, Bellary, Bijapur, Chamarajanagar, Chikballapura, Chickmagalur, Chitradurga, Dharawad, Davanagere, Gadag, Gulbarga, Haveri, Hassan, Kolar, Kodgau, Koppal, Mysore, Raichur, Ramnagara, Shivmoga, Tumkur, Udupi, Vijayanagara and Yadgir. The highest value of 1076 mg/L was observed in Mallasandra, Kolar district.

The occurrences of Nitrate in ground water beyond permissible limit (45 mg /L) have been shown on the map as a point source Fig 7.4.1 and also given in Annexure-IV. Table-7.4.1 shows the districtwise percentage of wells having nitrate >45mg/L in groundwater. District-wise percentage of wells having nitrate >45mg/L is shown as a bar diagram in Fig 7.4.2. The Table 7.4.2 shows the parts of taluks in different districts of Karnataka having Nitrate >45 mg/L.

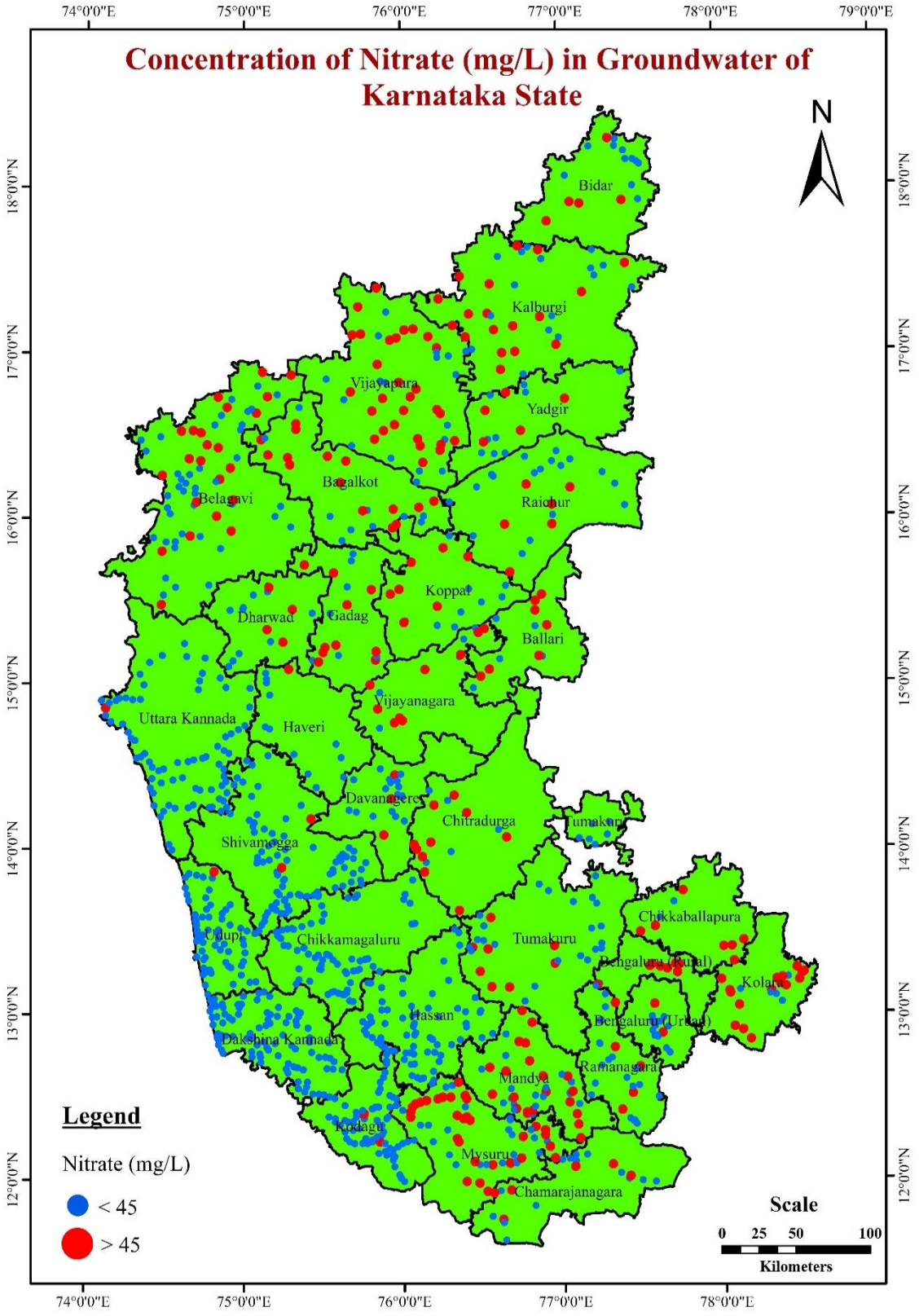

Fig 7.4.1 District-wise percentage of wells having Nitrate concentration > 45 mg/L in shallow aquifer of Karnataka, May 2022

Table 7.4.1: District-wise percentage of wells having Nitrate >45mg/L

Sl. No	District	No. of Samples collected (NHS 2022-23)	No. of Samples (NO3 > 45 mg/L)	(%) Samples (NO3 > 45mg/L)
1	Bagalkot	26	15	57.7
2	Ballari	6	5	83.3
3	Belagavi	84	32	38.1
4	Bengaluru Rural	11	9	81.8
5	Bengaluru Urban	15	2	13.3
6	Bidar	18	7	38.9
7	Bijapur	64	39	60.9
8	Chamarajanagara	21	5	23.8
9	Chikballapura	11	7	63.6
10	Chikmagaluru	64	0	0.0
11	Chitradurga	28	19	67.9
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	4	16.7
14	Dharwad	22	7	31.8
15	Gadag	20	11	55.0
16	Gulbarga	32	17	53.1
17	Hassan	71	0	0.0
18	Haveri	26	5	19.2
19	Kodagu	72	2	2.8
20	Kolar	24	19	79.2
21	Kopal	18	7	38.9
22	Mandya	41	23	56.1
23	Mysore	59	33	55.9
24	Raichur	42	13	31.0
25	Ramnagara	26	4	15.4
26	Shivmoga	78	3	3.8
27	Tumkur	44	9	20.5
28	Udupi	74	2	2.7
29	Uttara Kannada	80	1	1.3
30	Vijayanagara	19	10	52.6
31	Yadgir	15	5	33.3
Total		**1224**	**315**	**25.7**

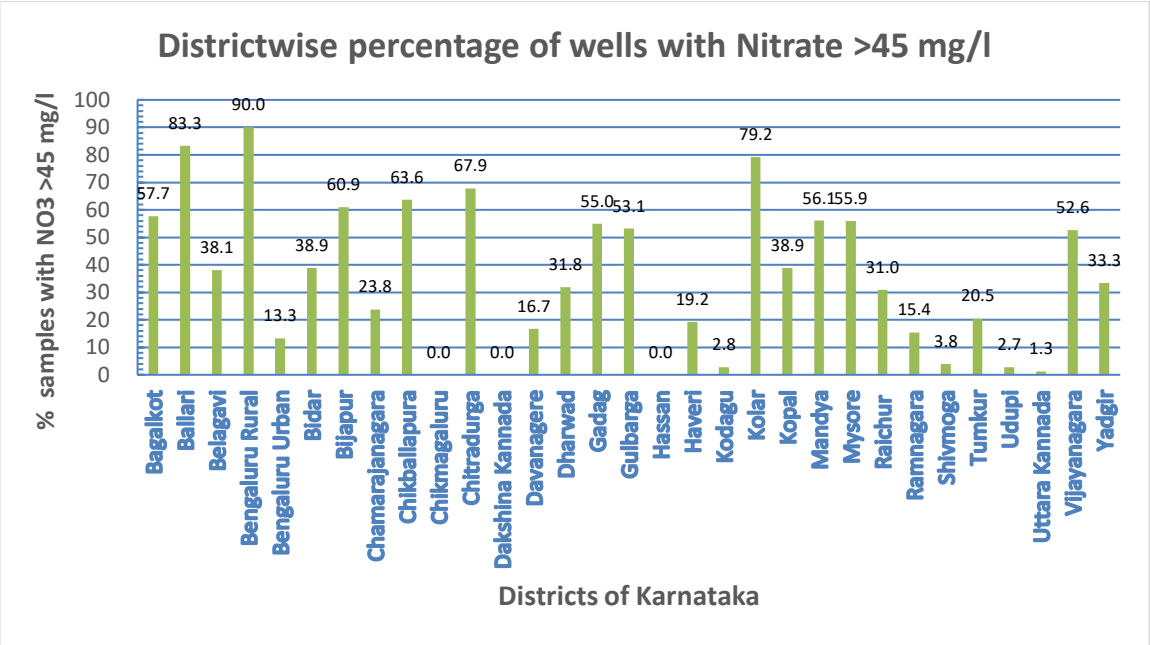

Fig 7.4.2 District-wise samples exceeding Nitrate concentration >45 mg/L (NHS 2022-23)

Table 7.4.2: Taluks having Nitrate concentration (> 45 mg/L) in Karnatka (NHS 2022-23)

Sl. No.	District	Parts of Taluk having Nitrate > 45 mg/L
1.	Bagalkot	Badami, Hungund, Jamkhandi, Bilgi, Mudhol
2.	Ballari	Ballari, Kurugodu, Siruguppa
3.	Belagavi	Hukkeri, Chikkodi, Khanapur, Raibag, Bailhongal, Belagavi, Athani, Mudalagi, Kagavada, Saundatti
4.	Bengaluru Rural	Doddaballapura, Devanahalli, Nelamangala
5.	Bengaluru Urban	Bengaluru South
6.	Bidar	Basavakalyan, Humnabad, Aurad, Bidar
7.	Bijapur	Basavanabagevadi, Bijapur, Indi, Sindagi, Indi, Muddebihal
8.	Chamarajnagar	Kollegala, Gudlupete, Yelandur
9.	Chikballapura	Chintamani, Gauridanur, Gudibande
10.	Chitradurga	Holakere, Hiriyur, Malakalmuru, Hosadurga, Chitradurga
11.	Davanagere	Channagere, Davanagere, Harihara
12.	Dharwad	Navalgund, Kundgol, Hubli
13.	Gadag	Shirahatti, Ron, Nargund, Mundargi
14.	Gulbarga	Jevargi, Yadrami, Aland, Shahadbad, Afzalpur, Gulbarga, Kalagi, Chincholi, Kamaiapura
15.	Haveri	Ranibennur, Hangal, Shiggaon
16.	Kodagu	Madikeri, Virarajendrapet, Somvarpet
17.	Kolar	Mulbagal, Bangerpet, Kolar, Kgf
18.	Koppal	Yelburga, Koppal, Kushtagi
19.	Mandya	Malvalli, Shrirangapattana, Pandavapura, Nagamangala, Mandya, Krishnarajpet, Maddur, Maddur
20.	Mysore	H D Kote, Piriyapatna, T Narasipura, Nanjanagudu, K R Nagara, Hunsur, Mysore
21.	Raichur	Sindanur, Manvi, Devadurga, Lingsugur

22.	Ramanagara	Ramanagara, Kanakapura, Channapatna
23.	Shimoga	Hosanagara, Shikarpura, Shimoga
24.	Tumkur	Tiptur, Gubbi, Chiknayakanahalli, Turuvekere
25.	Udupi	Kundapura
26.	Uttara Kannada	Karwar
27.	Vijayanagar	Hadagalli, Sandur, Hp Halli, Hospet
28.	Yadgir	Shorapur, Shahapur, Hunisigi

Remedial Measures for Nitrate

For removal of nitrate both non-treatment techniques like blending and treatment processes such as ion-exchange, reverse osmosis, biological denitrification and chemical reduction are useful. The most important thing is that neither of these methods is completely effective in removing all the nitrogen from the water.

a) Methods involving no treatment: In order to use any of these options the nitrate problem must be local-scale. Common methods are –

- Raw water source substitution
- Blending with low nitrate waters

This greatly reduces expenses and helps to provide safer drinking water to larger numbers of people.

b) Methods involving Treatment:

They are as follows

- Adsorption/Ion Exchange
- Reverse Osmosis
- Electrodialysis
- Bio-chemical Denitrification **(**By using denitrifying bacteria and microbes)
- Catalytic Reduction/Denitrification (using hydrogen gas)

The mechanism of nitrate pollution in subsurface porous unconfined/confined aquifer is governed by complex biogeochemical processes. Apart from recharge conditions, groundwater chemistry may be impacted by the mineral kinetics of water-rock interactions. Consequently, suitable nitrate removal technologies should be selected. Nitrate is a very soluble ion with limited potential for co-precipitation or adsorption. This makes it difficult such as chemical coagulation, lime softening and filtration which are commonly used for removing most of the chemical pollutants such as fluoride, arsenic and heavy metals. According to King et al., 2012 nitrate treatment technologies can be classified in two categories in two categories, i.e. nitrate reduction and nitrate removal options. Nitrate removal technologies involve physical processes that does not necessarily involve any alteration of the chemical state of nitrate ions. Bio-chemical reduction options aim to reduce nitrate ions to other states of nitrogen, e.g. ammonia, or a more innocuous form as nitrogen gas. In-situ bioremediation is also effectively used in used in nitrate treatment of contaminated groundwater. Reverse Osmosis, catalytic reduction and blending are effective

methods for nitrate removal from groundwater. For nitrate removal, operating trans-membrane pressure of RO unit generally ranges from 20 to 100 bar.

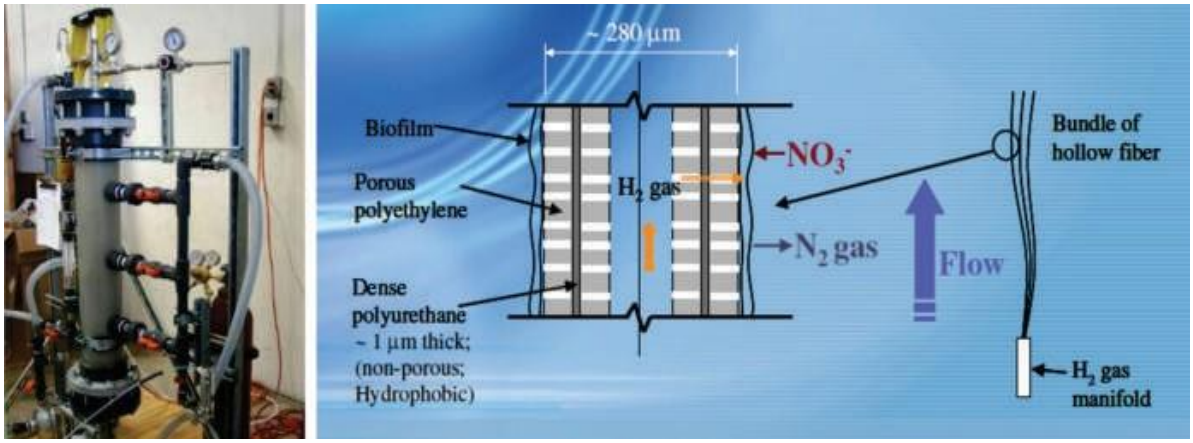

Fig. 7.4.8 Advanced Nitrate Reduction Hollow Fiber Membrane Reactor (Source: Hand Book for Drinking Water Treatment, JJM, Ministry of Jal Shakti, Gov. of India)

7.5 HEAVY METALS

The sampling for heavy metal analysis was not done during May 2022 in Karnataka state However, the samples were collected for Uranium analysis.

7.6 URANIUM

Uranium occurs naturally in groundwater and surface water. Being a radioactive mineral, high uranium concentration can cause impact on water, soil and health. Uranium has both natural and anthropogenic source that could lead to the aquifer. These sources include leaching from natural deposits, release in mill tailings, and emissions from the nuclear industry, combustion of coal and other fuels and the use of phosphate fertilizers that contains uranium and contribute to ground water pollution. Uranium enters in human tissues mainly through drinking water, food, air and other occupational and accidental exposures. Intake of uranium through air and water is normally low, but in circumstances in which uranium is present in a drinking water source, the majority of intake can be through drinking water.

Water with uranium concentration above the recommended maximum permissible concentration of 30 ppb (BIS,10500:2012) is not safe for drinking purposes as it can cause damage to internal organs, on continuous intake. Elevated uranium concentrations in drinking water have been associated with many epidemiological studies such as urinary track cancer as well as kidney toxicity. A recent study, found a strong correlation between uranium concentration in drinking water and uranium in bone, suggesting that bones are good indicators of uranium exposed via ingestion of drinking water. Therefore, such studies trigger further assessment of uranium's adverse health effects on humans and/or the environment for countries where elevated uranium concentration in drinking water has been observed. Hence, it becomes important to study the level of uranium in drinking water for health risk assessment.

Uranium concentration in the shallow ground water varies primarily due to recharge and discharge, which would have dissolved or leached the uranium from the weathered soil to groundwater zone. High uranium concentrations observed in groundwater may be due to local geology, anthropogenic activities, urbanization and use of phosphate fertilizers in huge quantity for agriculture purpose. Studies have shown that phosphate fertilizer possess uranium concentration ranging from 1 mg/kg to 68.5 mg/kg (Brindha K et al., 2011). Hence, the phosphate fertilizers manufactured from phosphate rocks may also contribute uranium to ground water in agriculture region. In ores, uranium is found as uranite (UO_2^{2+}) and pitchblende ($U_3O_8^{2+}$) or in the form of secondary minerals (complex oxides, silicates, phosphates, vanadates).

Table 7.6.1 Summary of uranium concentrations in different types of rocks

Rocks	Range(mg/kg)
Granite	3.4
Limestone/dolomite	2.2
Argillaceous shale	3.7
Sediments	1.4-53
Phosphates	30-100

Table 7.6.2 Standards and guidelines for uranium in drinking water in various countries.

Sl. No	Country / agency	guideline value (µg/L)	Reference
1	Australia	GV 17	NHMRC, Australia (2011)
2	Bulgaria	ML 60	European Food Safety Authority (2009)
3	Canada	MAC 20	Health Canada (2019)
4	Finland	RV 100	European Food Safety Authority (2009)
5	India	RBL 60	AERB, India (2004)
6	India	PL 30	BIS,2012
7	Malaysia	MAV 2	Ministry of Health Malaysia (2004)
8	USA	MCL 30	USEPA (2011)
9	WHO	PGV 30	WHO 2011

GV, Guideline value; ML, Maximum limit; MAC, Most acceptable concentration; RV, Recommended value; RBL, Radiological based limit; PL, Permissible Limit; MAV, Maximum acceptable value; MCL, Maximum contaminant level; PGV, Provisional guideline value

To assess the Uranium concentration and distribution in the ground water, Central Ground Water Board (CGWB) had decided to carry out Uranium sampling of its National Hydrograph Network Stations (NHNS) in Karnataka state during Pre-monsoon monitoring (May, 2022). The sample collection and storage were done according to the standard protocols prescribed by APHA (2017). The groundwater samples were collected in plastic bottles after having been filtered through 0.45-µm filter paper. For the cations and uranium analyses, groundwater samples were immediately acidified below pH 2 by adding nitric acid to prevent precipitation and adsorption to the container

walls. Uranium (U) was detected using LED Fluorimeter. In addition, a trace element standard reference material was examined.

The occurrences of Uranium in ground water beyond permissible limit (>30 µg/l) have been given in Annexure-V. Table-7.6.3 shows the District-wise percentage of wells having Uranium > 30 µg/l in groundwater. District-wise percentage of wells having uranium 30 µg/l is shown as a bar diagram in Fig 7.6.3. The Table 7.6.4 shows the parts of taluks in different districts of Karnataka having having Uranium > 30 µg/l in groundwater.

Table 7.6.3: District-wise percentage of wells having Uranium > 30 µg/l

Sl.No.	District	No. of Samples collected (NHS 2022-23)	No. of Samples (U > 30 µg/l)	(%) Samples (U > 30 µg/l)
1	Bagalkot	26	1	3.8
2	Ballari	6	1	16.7
3	Belagavi	84	22	26.2
4	Bengaluru Rural	10	6	60.0
5	Bengaluru Urban	15	0	0.0
6	Bidar	18	0	0.0
7	Bijapur	64	0	0.0
8	Chamarajanagara	21	0	0.0
9	Chikballapura	11	6	54.5
10	Chikmagaluru	64	0	0.0
11	Chitradurga	28	1	3.6
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	0	0.0
14	Dharwad	22	1	4.5
15	Gadag	20	2	10.0
16	Gulbarga	32	0	0.0
17	Hassan	71	1	1.4
18	Haveri	26	0	0.0
19	Kodagu	72	1	1.4
20	Kolar	24	9	37.5
21	Kopal	17	1	5.9
22	Mandya	41	3	7.3
23	Mysore	59	1	1.7
24	Raichur	42	6	14.3
25	Ramnagara	23	0	0.0
26	Shivmoga	78	0	0.0
27	Tumkur	44	3	6.8
28	Udupi	74	0	0.0
29	Uttara Kannada	80	0	0.0
30	Vijayanagara	19	2	10.5
31	Yadgir	15	0	0.0
Total		**1220**	**67**	**5.5**

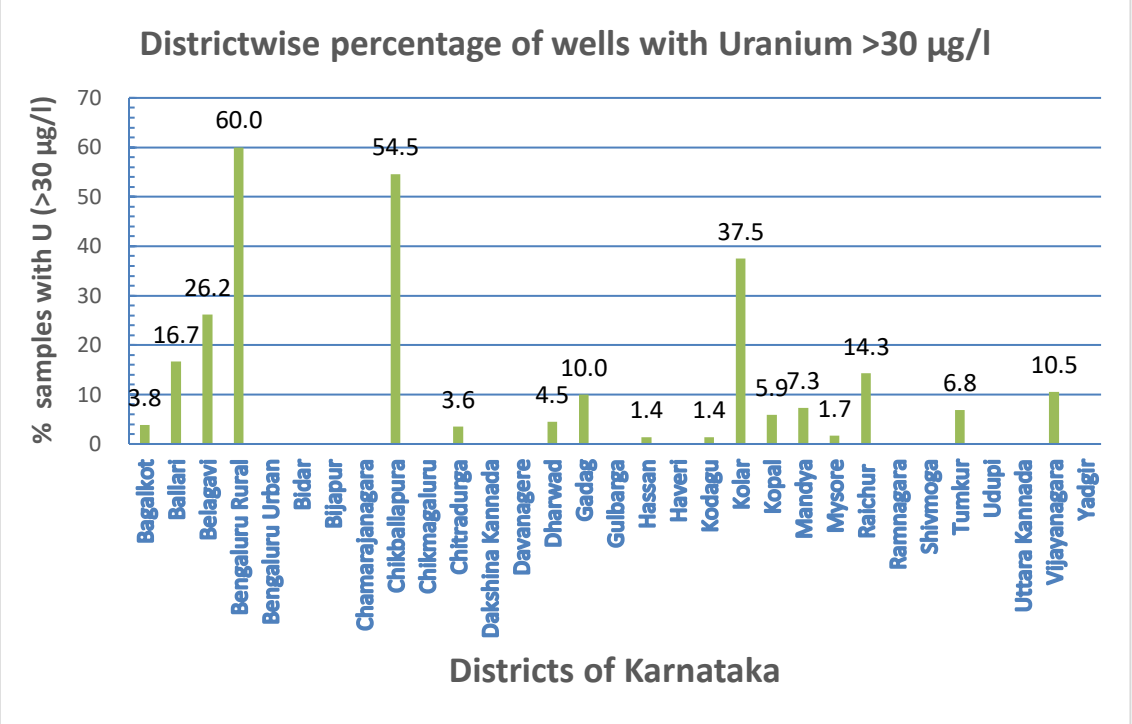

Fig. 7.6.3: District-wise samples exceeding Uranium concentration >30 µg/L (NHS 2022-23)

Table 7.6.4: Taluks having Uranium >30 µg/l in different districts of Karnataka

Sl. No.	Districts	Parts of taluks having Uranium > 30 µg/l
1	Bagalkot	Badami
2	Ballari	Siruguppa
3	Belagavi	Saudatti, Hukkeri, Belagavi, Athani, Kagavada, Mudalagi, Raibag, Chikkodi
4	Bengaluru Rural	Devanahalli, Doddaballapura
5	Chikballapura	Chintamani, Chikballapura, Gudibonde
6	Chitradurga	Molakalmuru
7	Dharwad	Hubli
8	Gadag	Gajendragad
9	Hassan	Hassan
10	Kodagu	Somvarpet
11	Kolar	Bangerpet, KGF, Mulbagal
12	Kopal	Koppal
13	Mandya	Nagamangala, Shrirangapattana
14	Mysore	K R Nagara
15	Raichur	Raichur, Manvi, Devadurga, Sindanur
16	Tumkur	Madhugiri
17	Vijayanagara	Sandur, Hospet

Uranium concentration in ground water of Karnataka state varied from 0.0 to 2249 µg/l during Pre-monsoon monitoring (May,2022), indicating that uranium concentrations in groundwater widely vary by several orders of magnitude. Large variations seen in Uranium concentrations could be due to the hydrogeochemical characteristics of groundwater. The uranium concentration was above permissible limit in districts of Bagalkot, Ballari, Belagavi, Bengaluru Rural, Chikballapura, Chitradurga, Dharwad, Gadag, Hassan, Kodagu, Kolar, Kopal, Mandya, Mysore, Raichur, Tumkur, and Vijayanagara. The highest concentration of 2249 µg/l was recorded in Saligram village of Mysuru district.

REMEDIAL MEASURES

Finding a remedy for the uranium contaminated groundwater effectively and thoroughly, has become need of day. Remediation technologies can be classified into physical, chemical and biological methods. Bioremediation is divided into plant and microorganism methods. Each method consists of both advantages and disadvantages and the appropriate mitigation techniques should be need based.

Adsorption has a high removal efficiency, but costs are also higher. The coagulation process is simple and comparatively economical, but the standard effluent concentration is hard to reach, so there is a need for follow-up treatment. Combined with adsorption, coagulation can remove 99% of U. The extraction process can remove effluent U concentrations of less than 0.05mg / L, but it will produce a lot of sludge. Reverse osmosis is referred as a best technology, but due to its high cost it can not be used on community scale. The evaporation method is simple and effective, the removal rate is high, but there are high costs and sludge needs that must be dealt with. A review of various treatment technologies for Uranium removal from water and their technical achievability as reported by various researchers are given below in Table 7.6.5

7.6.5 Comparison of treatment methods for removal of Uranium.

Treatment Method	Technical Achievability (%)
Coagulation/filtration at high pH (10+)	> 95
Lime softening	85-99
Anion exchange	99
Reverse osmosis	>95
Activated alumina	90
Coagulation/filtration	80-89

(Source: Hand Book for Drinking Water Treatment, JJM, Ministry of Jal Shakti, Gov. of India).

7.7 TOTAL HARDNESS

Total hardness is predominantly caused by cations such as calcium and magnesium and anion such as bicarbonate and sulphate. Total hardness is defined as the sum of calcium and magnesium both expressed as $CaCO_3$ in mg/L. Hardness represents the soap-consuming capacity of water. Species that form insoluble compounds with soap Ca, Mg, Organic compounds etc. Total hardness is sum of Ca and Mg and expresses as CaC03 mg/l. EDTA titration. The two kind of hardness observed in water.

- Temporary hardness is due to Carbonate.
- Permanent hardness is due to Sulphate, Chloride or Nitrate.

The hardness in water is derived largely from contact with the soil and rock formations. Rain water as it falls upon the earth is in capable of dissolving the tremendous amount of solids found in many natural waters. People with kidney and bladder stones should avoid high content of calcium and magnesium in water (K. R. Karanth, 1997). The BIS permissible limit of hardness is 200 – 600 mg/L.

The total hardness in groundwater was observed in a many part of Karnataka state. The majority of the samples of the state falls in very hard class. The Total hardness exceed the BIS permissible limit of 600 mg/L in 6.86% of the samples in the state. The details of locations where total hardness concentration more than 600 mg/l is given in table 7.7.1.

Table 7.7.1: Number of locations having total hardness > 600 mg/L in Karnataka State.

Sl. No.	District	No. of locations having TH> 600 mg/L
1	Bagalkot	11
2	Ballari	2
3	Belagavi	7
4	Bengaluru Rural	1
5	Bijapur	18
6	Chikballapura	1
7	Chikmagaluru	2
8	Dharwad	4
9	Gadag	8
10	Gulbarga	4
11	Hassan	1
12	Haveri	4
13	Kolar	1
14	Koppal	4
15	Mandya	1
16	Mysore	5
17	Raichur	3
18	Ramnagara	1
19	Tumkur	1
20	Vijayanagara	4
21	Yadgir	1
Total		**84**

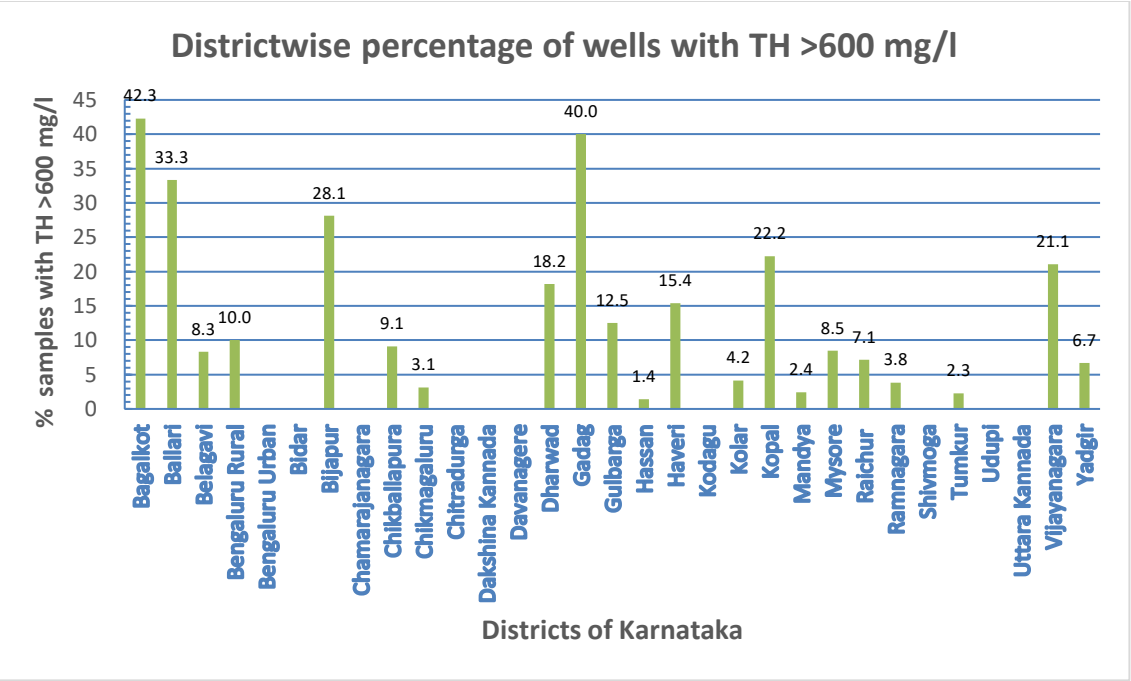

Fig 7.7.1 District-wise percentage of wells having Total hardness > 600 mg/L

Table 7.7.2: Districts having total hardness > 600 mg/L in Ground Water in Different Parts of Karnataka state

Sl.No.	District	Parts of District having Total Hardness > 600 mg/L as $CaCO_3$
1	Bagalkot	Jamkhandi, Hungund, Badami, Mudhol
2	Ballari	Kurugodu, Siruguppa
3	Belagavi	Hukkeri, Chikkodi, Kagavada, Athani, Raibag
4	Bengaluru Rural	Doddaballapura
5	Bijapur	Muddebihal, Bijapur, Sindgi, Basavana Bagevadi, Indi
6	Chikballapura	Chintamani
7	Chikmagaluru	Tarikere
8	Dharwad	Kundgol, Dharwad, Navalgund
9	Gadag	Ron, Shirhatti, Mundargi, Nargund
10	Gulbarga	Afzalpur, Kalagi, Aland, Shahadbad
11	Hassan	Arakalgad
12	Haveri	Hirekerur, Ranibennur
13	Kolar	Mulbagal
14	Koppal	Yelburga
15	Mandya	Malvalli
16	Mysore	H D Kote, K R Nagara, Piriyapatna, Hunsur, NAnjanagudu
17	Raichur	Devadurga, Sindanur, Manvi
18	Ramnagara	Magadi
19	Tumkur	Chiknayakanahalli
20	Vijayanagara	Hospet, Hp Halli, Hadagalli, Sandur
21	Yadgir	Shorapur

Table 7.8.4 Districts-wise percentage of samples having Total hardness >600 mg/L

Sr. No	Districts	No. of Samples collected (NHS 2022-23)	No. of samples having TH > 600 mg/l	% of Samples (TH > 600 mg/L)
1	Bagalkot	26	11	42.3
2	Ballari	6	2	33.3
3	Belagavi	84	7	8.3
4	Bengaluru Rural	10	1	10.0
5	Bengaluru Urban	15	0	0.0
6	Bidar	18	0	0.0
7	Bijapur	64	18	28.1
8	Chamarajanagara	21	0	0.0
9	Chikballapura	11	1	9.1
10	Chikmagaluru	64	2	3.1
11	Chitradurga	28	0	0.0
12	Dakshina Kannada	90	0	0.0
13	Davanagere	24	0	0.0
14	Dharwad	22	4	18.2
15	Gadag	20	8	40.0
16	Gulbarga	32	4	12.5
17	Hassan	71	1	1.4
18	Haveri	26	4	15.4
19	Kodagu	72	0	0.0
20	Kolar	24	1	4.2
21	Kopal	18	4	22.2
22	Mandya	41	1	2.4
23	Mysore	59	5	8.5
24	Raichur	42	3	7.1
25	Ramnagara	26	1	3.8
26	Shivmoga	78	0	0.0
27	Tumkur	44	1	2.3
28	Udupi	74	0	0.0
29	Uttara Kannada	80	0	0.0
30	Vijayanagara	19	4	21.1
31	Yadgir	15	1	6.7
	Total	**1224**	**84**	**6.9**

Removal of total hardness

A few methods to remove hardness from water are,

- Chemical Process of Boiling Hard Water.

- Adding Slaked Lime (Clark's Process)
- Adding Washing Soda.
- Calgon Process.
- Ion Exchange Process.
- Using Ion Exchange Resins.

CARBONATE (TEMPORARY) HARDNESS also known as Ca Bicarbonate

$Ca(HCO_3)_2$ + Mg Bicarbonate $Mg(HCO_3)_2$. Removal by Boiling or adding Lime

NON-CARBONATE (PERMANENT) HARDNESS

Calcium Sulfate $CaSO_4$ + Magnesium Sulfate $MgSO_4$ & Calcium Chloride $CaCl_2$ + Magnesium Chloride $MgCl_2$

Removal by Lime-soda, Zeolite or Demineralization Processes

8.0 SUITABILITY OF GROUNDWATER FOR IRRIGATION PURPOSE

The chemical quality of water is an important factor to be considered in evaluating its usefulness for irrigation purposes. Plants grown by irrigation absorb and transpire water but leave nearly all the salts behind in the soil, where they accumulate and eventually prevent plant growth. Excessive concentrations of solute interfere with the osmotic process by which plant root membranes are able to assimilate water and nutrients. In areas where natural drainage is inadequate, the irrigation water infiltrating the root zone will cause water table to rise excessively. In addition to problems caused by excessive concentration of dissolved solids, certain constituents in irrigation water are especially undesirable and some may be damaging even when present in small concentrations. Irrigation indices viz. Sodium Adsorption Ratio (SAR) and Residual Sodium Carbonate (RSC) have been evaluated to assess the suitability of ground water for irrigation purposes.

8.1 Alkali Hazard

In the irrigation water, it is characterized by absolute and relative concentrations of cations. If the sodium concentrations are high, the alkali hazard is high and if the calcium & magnesium levels are high, this hazard is low. The alkali soils are formed by the accumulation of exchangeable sodium and are characterized by poor tilt and low permeability. The U.S. Salinity laboratory has recommended the use of sodium adsorption ratio (SAR) as it is closely related to adsorption of sodium by the soil.

SAR is derived by the following equation:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{2+}Mg^{2+}}{2}}}$$

The water with regard to SAR is classified into four categories

- **S_1 – Low Sodium Water** (SAR <10)

Such waters can be used on practically all kinds of soils without any risk or increase in exchangeable sodium.

- **S_2 – Medium Sodium Water** (SAR 10-18)

Such waters may produce an appreciable sodium hazard in fine textured soil having high cation exchange capacity under low leaching.

- **S_3 – High Sodium Water** (SAR >18-26)

Such waters indicate harmful concentrations of exchangeable sodium in most of the soil and would require special management, good drainage, high leaching and addition of organic matter to the soil. If such waters are used on gypsiferrous soils the exchangeable sodium could not produce harmful effects.

- **S_4 – Very High Sodium Waters** (SAR >26)

Generally, such waters are unsatisfactory for irrigation purposes except at low or perhaps at medium salinity where the solution of calcium from the soil or addition of gypsum or other amendments makes the use of such waters feasible.

The computed SAR values ranges from 0.14 to 28.3. The maximum SAR value has been found at Algur of Bagalkot district. It is apparent from Fig. 8.1 that 96.37% samples belong to excellent category (S1), 3.26% water samples are associated with Medium sodium category (S2), 0.26% water samples are associated with High sodium category (S3) water samples are associated with

Medium sodium category (S2) and 0.1% water samples are associated with Very high sodium category (S4).

According to SAR classification, 100% of water samples from Bengaluru Rural, Bidar, Bijapur, Chikballapura, Chikmagaluru, Dakshina Kannada, Davanagere, Gadag, Gulbarga, Haveri, Kodagu, Mandya, Mysore, Ramnagara, Shivmoga, Udupi and Uttara Kannada fall in excellent category (S1) (Fig. 8.1.1). The Summary of irrigation quality of the groundwater samples in Karnataka based on SAR classifications is given in Table 8.1.1.

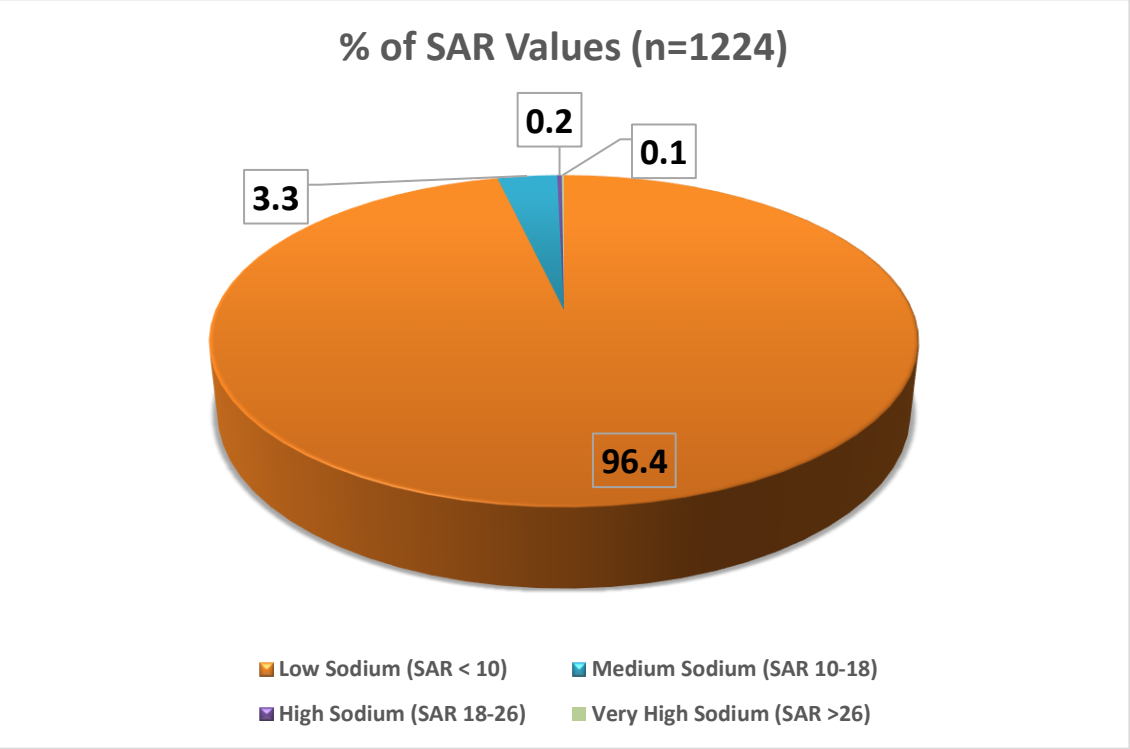

Fig. 8.1.1: Percentage of groundwater samples according to SAR classifications (n=1224).

Table 8.1.1: Summary of irrigation quality of the groundwater samples in Karnataka state based on SAR classifications

District	% of samples in various SAR range			
	(Low Sodium <10)	(Medium Sodium 10-18)	(High Sodium 18-26)	(Very high Sodium >26)
Bagalkot	76.92	11.54	7.7	3.8
Ballari	83.33	16.67	0.00	0.00
Belagavi	97.62	2.38	0.00	0.00
Bengaluru Rural	100	0.00	0.00	0.00
Bengaluru Urban	93.75	6.25	0.00	0.00
Bidar	100	0.00	0.00	0.00
Bijapur	100	0.00	0.00	0.00
Chamarajanagara	85.71	14.29	0.00	0.00
Chikballapura	100	0.00	0.00	0.00
Chikmagaluru	100	0.00	0.00	0.00

Chitradurga	93.75	6.25	0.00	0.00
Dakshina Kannada	100	0.00	0.00	0.00
Davanagere	100	0.00	0.00	0.00
Dharwad	95.45	4.55	0.00	0.00
Gadag	100	0.00	0.00	0.00
Gulbarga	100	0.00	0.00	0.00
Hassan	98.59	1.41	0.00	0.00
Haveri	100.00	0.00	0.00	0.00
Kodagu	100.00	0.00	0.00	0.00
Kolar	95.83	4.17	0.00	0.00
Koppal	94.44	5.56	0.00	0.00
Mandya	100.00	0.00	0.00	0.00
Mysore	100	0.00	0.00	0.00
Raichur	97.62	2.38	0.00	0.00
Ramnagara	100.00	0.00	0.00	0.00
Shivmoga	100.00	0.00	0.00	0.00
Tumkur	86.36	13.64	0.00	0.00
Udupi	100.00	0.00	0.00	0.00
Uttara Kannada	100.00	0.00	0.00	0.00
Vijayanagara	94.74	5.26	0.00	0.00
Yadgir	93.33	6.67	0.00	0.00

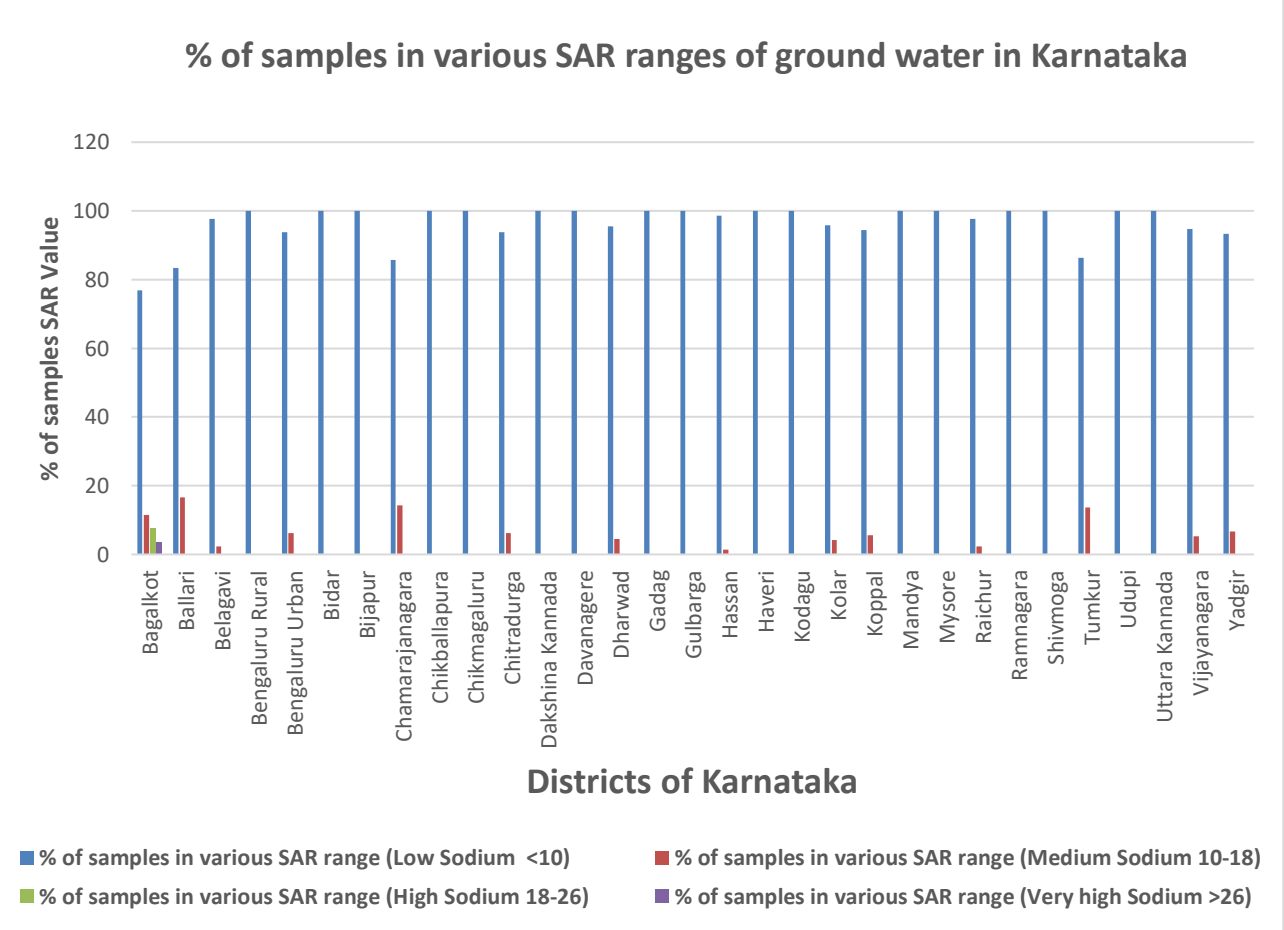

Fig. 8.1.2: percentage of ground water samples with respect to SAR values in Karnataka

8.2 Residual Sodium Carbonate (RSC)

If the enriched carbonate (residual) concentration becomes relatively high, carbonates get together with calcium and magnesium to form precipitates. The relative abundance of sodium in comparison to alkaline earths and the quantity of bicarbonate and carbonate in excess of alkaline earths also influences the suitability of water for irrigation. This excess is represented in terms of "Residual Sodium Carbonate" (RSC). The highly soluble sodium carbonate known as residual sodium carbonate (RSC) is defined as;

$$RSC = (HCO_3^- + CO_3^-) - (Ca^{2+} + Mg^{2+})$$

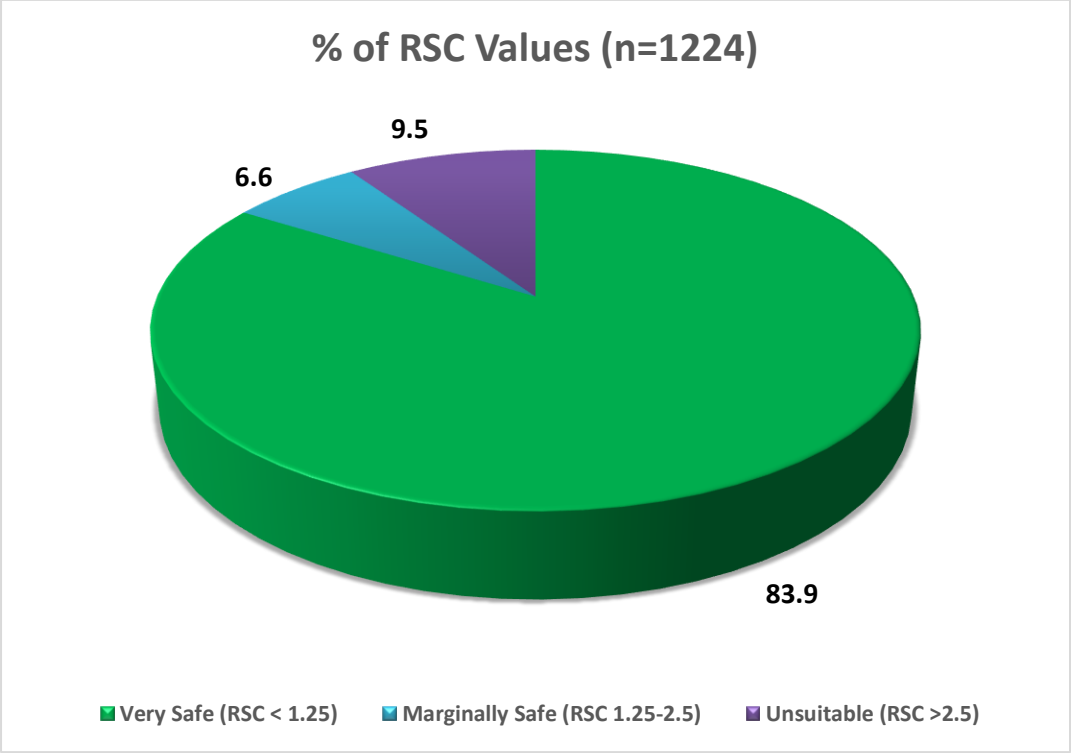

Fig. 8.2.1: Percentage of groundwater samples according to RSC classifications (n=1224)

Waters with high RSC produces harmful effects on plant development and is not suitable for irrigation. Waters associated with RSC < 1.25 are of excellent irrigation quality and can be safely applied for irrigation for almost all crops without the risks associated with residual sodium carbonate (Wilcox et al.,1954). If the RSC values lie between 1.25 and 2.5, the water is of an acceptable quality for irrigation. Waters associated with RSC values higher than 2.5 are not acceptable for irrigation.

In fig. 8.2.1 it can be seen that in Karnataka 83.9% collected water samples are associated with RSC values less than 1.25 and are safe for use in irrigation practices. Only 6.6% water samples are associated with RSC values more than 9.5 and are unsuitable for irrigation. The water with high RSC values if applied for irrigation causes soil to become infertile owing to deposition of sodium. Table 8.2.1 summarizes the irrigation quality of the groundwater samples in various states based on RSC values. According to RSC classification 100% of water samples in Bengaluru

Rural, Chikballapura, Dakshina Kannada, Haveri, Kodagu, Udupi, and Uttara Kannada districts of Karnataka fall in very safe category.

Table 8.2.1: Summary of irrigation quality of the groundwater samples in Karnataka state based on RSC values

Sl.No.	District	%. of samples in various RSC range		
		<1.25	1.25-2.5	>2.5
		(Very safe)	(marginally safe)	Unsuitable
1	Bagalkot	88.5	0.0	11.5
2	Ballari	83.3	0.0	16.7
3	Belagavi	92.9	6.0	1.2
4	Bengaluru Rural	100.0	0.0	0.0
5	Bengaluru Urban	80.0	6.7	13.3
6	Bidar	94.4	0.0	5.6
7	Bijapur	90.6	0.0	9.4
8	Chamarajanagara	57.1	19.0	23.8
9	Chikballapura	100.0	0.0	0.0
10	Chikmagaluru	95.3	0.0	4.7
11	Chitradurga	50.0	17.9	32.1
12	Dakshina Kannada	100.0	0.0	0.0
13	Davanagere	62.5	25.0	12.5
14	Dharwad	86.4	9.1	4.5
15	Gadag	65.0	10.0	25.0
16	Gulbarga	84.4	3.1	12.5
17	Hassan	88.7	5.6	5.6
18	Haveri	100.0	0.0	0.0
19	Kodagu	100.0	0.0	0.0
20	Kolar	95.8	4.2	0.0
21	Kopal	72.2	11.1	16.7
22	Mandya	80.5	9.8	9.8
23	Mysore	78.0	1.7	20.3
24	Raichur	52.4	28.6	19.0
25	Ramnagara	92.3	3.8	3.8
26	Shivmoga	94.9	3.8	1.3
27	Tumkur	63.6	11.4	25.0
28	Udupi	100.0	0.0	0.0
29	Uttara Kannada	100.0	0.0	0.0
30	Vijayanagara	78.9	15.8	5.3
31	Yadgir	73.3	13.3	13.3

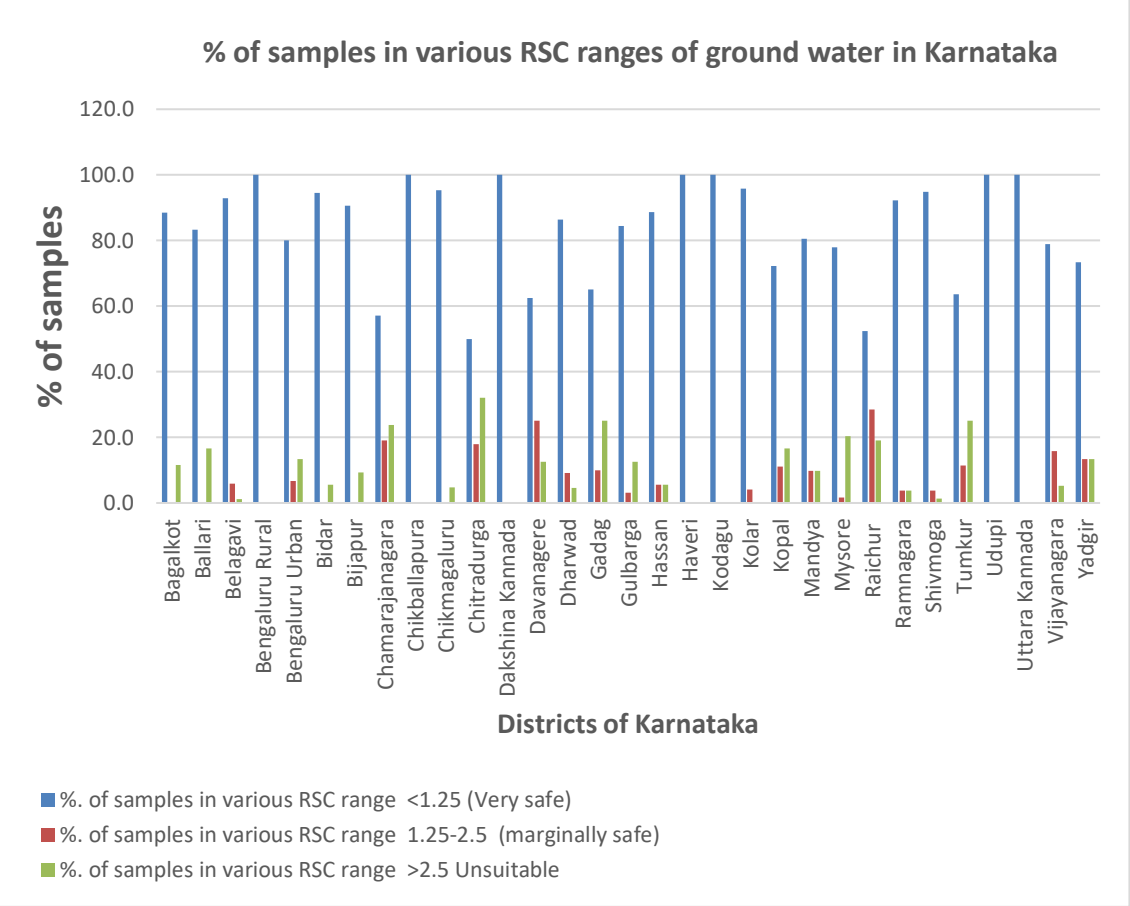

Fig. 8.2.2: Percentage of groundwater samples in various categories according to RSC classifications (n=1224) (Wilcox et al.,1954)

9.0 Piper Diagram:

Piper diagram (Piper 1944) describes the process responsible for the evolution of hydrogeochemical parameter in groundwater. Based on the major cation and major anion content in the water samples and plotting them in the trilinear diagram, hydrochemical facies could be identified. Hydro-chemical facies are very useful in investigating diagnostic chemical character of water in hydrologic systems. Different types of facies within the same group formations are due to characteristic ground water flow through the aquifer system and effect of local recharge. The types of facies are inter-linked with the geology of the area and distribution of facies with the hydrogeological controls. Hydrochemical facies are delineated by plotting percentage reacting value of major ions on tri-linear diagrams know as Piper Diagram.

The facies mapping shows (Fig.9.1) that Ca-Mg-HCO_3 is the dominant hydrogeochemical facies followed by Na-Cl and mixed chemical character of hydrogeochemical facies.

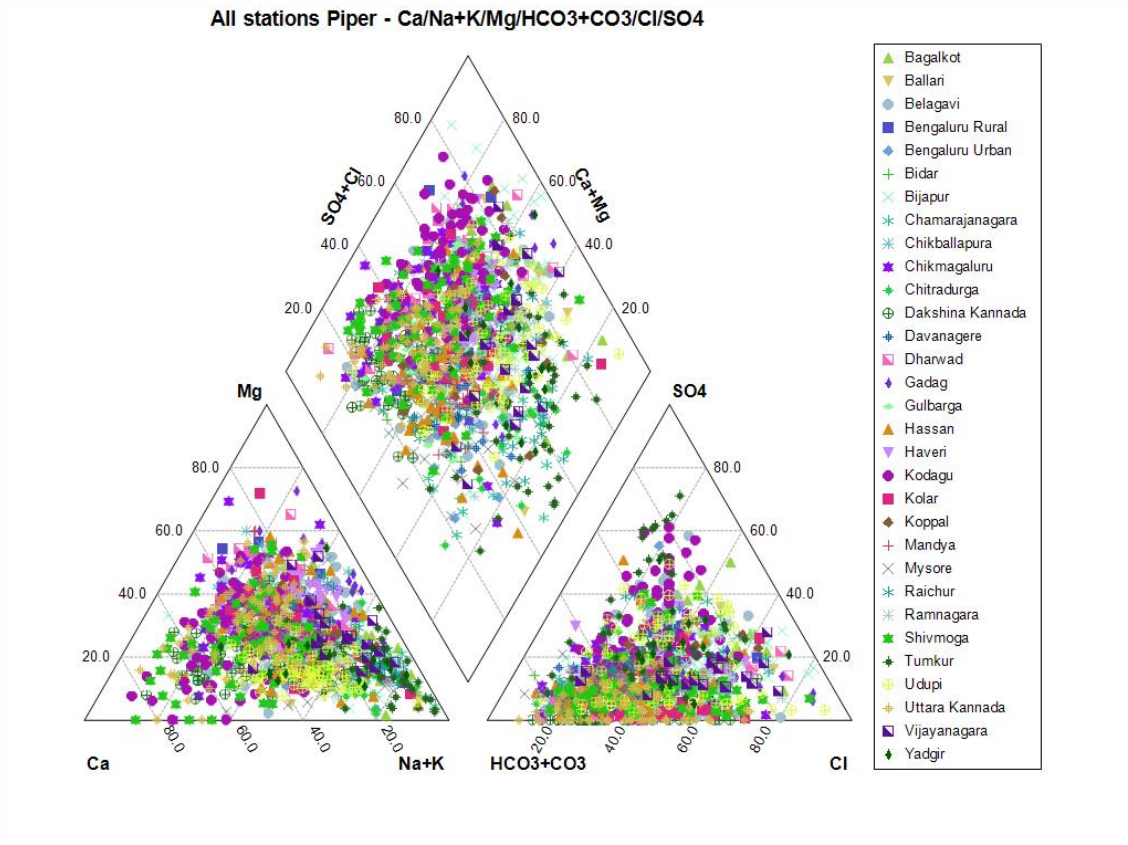

Fig 9.1: Piper diagram of groundwater of Karnatka

10.0 GROUND WATER QUALITY HOT SPOTS IN DEEPER AQUIFERS OF KARNATAKA

The ground water quality of the deeper aquifer has also been assessed by collecting and analyzing 303 number of water samples from bore wells of different depths from 26 taluks of 6 districts of Karnataka state during the year 2022. The sampling area includes the districts of Chikmagalur, Kodagu, Dakhin Kannada, Uttar Kannada, Shivmogga and Udupi limiting to the western part of the state. Fig.10.1 shows different sampling locations of Karnataka.

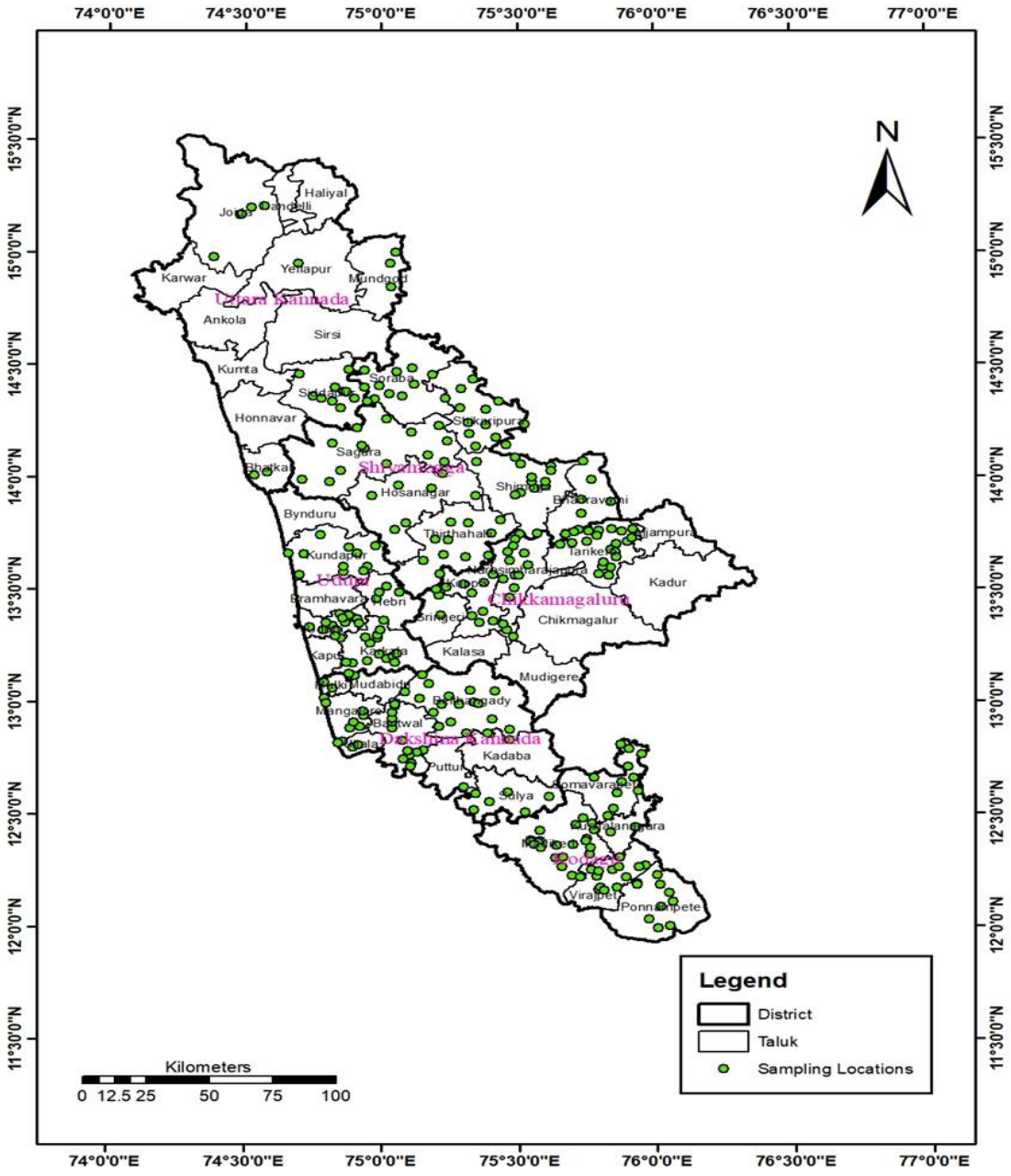

Fig. 10.1: Deeper Aquifer Sampling locations in parts of Karnataka during NAQUIM-2022

The assessment of the ground water quality of the deeper aquifer in Karnataka is carried out based on chemical analysis data of samples. The samples were analysed for various standard basic parameters like pH, EC, TDS, Total Alkalinity, Total Hardness, Ca, Mg, Na, K, CO3, HCO3, Cl SO4, NO3, PO4, SiO2 and F. The water samples were assessed for their suitability for purposes like drinking and irrigation.

10.1 Suitability for drinking purposes:

The chemical analysis data of deeper aquifers show that the waters are slightly acidic to alkaline in nature, pH ranging from 5.32 to 9.62. in 40 (13.2%) of the water samples the pH values falls beyond the permissible limit as per drinking water standards. In the collected water samples Electrical conductivity ranges from 40 - 2650 µS/cm at 250 C. Hence all the samples are well with in the value of 3000 µS/cm which is considered as the threshold limit for drinking purposes with proportion to TDS. A significant portion of the samples, almost 86.14% are found be fresh in nature with EC value falling below 750 µS/cm. Find the categorization of the samples based on a few of the key parameters in Table 10.1.1. Fig. 10.2 shows the distribution of EC in the study area.

Table 10.1.1: Categorization of the water samples

SL. No	Parameters	Category	Range	No. of sample	Percentage
1	EC (µS/cm)	Fresh	Upto 750	261	86.14
		Moderate	751- 2250	41	13.53
		Slightly mineralized	2251- 3000	1	0.33
		Highly mineralized	> 3000	0	0.00
2	Chloride (mg/L)	Desirable limit	0-250	300	99.01
		Permissible limit	251-1000	3	0.99
		Beyond permissible limit	> 1000	0	0.00
3	Fluoride (mg/L)	Desirable limit	0-1.00	293	96.70
		Permissible limit	1.01- 1.50	9	2.97
		Beyond permissible limit	>1.50	1	0.33
4	Nitrate (mg/L)	Permissible limit	<45	276	91.09
		Beyond permissible limit	> 45	27	8.91

In 3 of the locations total hardness has been observed to exceed the the permissible limit of 600 mg/L and it ranges from 15 - 1040 mg/L. The range of Ca and Mg are 2- 297 mg/L and 1- 111 mg/L respectively and 1 location for each of the parameters exceeds the permissible limits. All the analysed samples were found to have Chloride between 7- 539 mg/L and Sulphate with in the permissible limits (0 - 165 mg/L). As many as 27 locations accounting to 8.91% are found to be contaminated with nitrate content more than 45 mg/L. The nitrate concentration varies between 17 to 437 mg/L and the highest

concentration is recorded in Bellavara of Tarikere taluk in Chikmaglur district. Tarikere taluk tops the list with 18 out of the 27 nitrate contaminated locations. The list of locations with nitrate concentration greater than 45 mg/L is depicted in Table 10.1.2 and the Fig. 10.1.1 shows the locations where Nitrate is > 45 mg/L in parts of Karnataka during NAQUIM-2022. The other taluks with one or more locations exceeding the permissible limit of nitrate are NR Pura, Shivmogga, Somwarpet.

Table 10.1.2: Locations with NO_3 concentration greater than 45 mg/L

Sl. No	Locations	Taluk	Districts	NO3 >45 mg/L
1	Gandhi Gramam	NR Pura	Chikkamagalur	64.5
2	Gunduvani (Gonikoppa)	NR Pura	Chikkamagalur	71.3
3	Kanivikare	NR Pura	Chikkamagalur	50.2
4	Mudbagilu	NR Pura	Chikkamagalur	50.9
5	Vittalagrama	NR Pura	Chikkamagalur	76.6
6	Gajeno-Halli	Shimoga	Shivamogga	49.6
7	Hanumathapura	Shimoga	Shivamogga	47.2
8	Banavara	Somwarpet	Kodagu	60.5
9	Nelihudikeri	Somwarpet	Kodagu	63.9
10	A ramanahalli	Tarikere	Chikkamagalur	75.8
11	Bellanahalli	Tarikere	Chikkamagalur	70.7
12	Bellavara	Tarikere	Chikkamagalur	437.2
13	Bettathavarakare	Tarikere	Chikkamagalur	81.4
14	Dodalingadahalli	Tarikere	Chikkamagalur	118.0
15	Doranalu	Tarikere	Chikkamagalur	198.7
16	Gantekanavu	Tarikere	Chikkamagalur	224.1
17	Hunsaghatta	Tarikere	Chikkamagalur	151.1
18	K hosur	Tarikere	Chikkamagalur	58.9
19	Lakkavalli	Tarikere	Chikkamagalur	50.9
20	Linkadahalli	Tarikere	Chikkamagalur	189.1
21	Nandi	Tarikere	Chikkamagalur	177.6
22	Ragibasavanahalli	Tarikere	Chikkamagalur	149.9
23	Rangenahalli	Tarikere	Chikkamagalur	224.7
24	Siddarahalli	Tarikere	Chikkamagalur	183.7
25	Sunnadahalli	Tarikere	Chikkamagalur	312.4
26	Udevu	Tarikere	Chikkamagalur	217.0
27	Vittalapura	Tarikere	Chikkamagalur	45.6

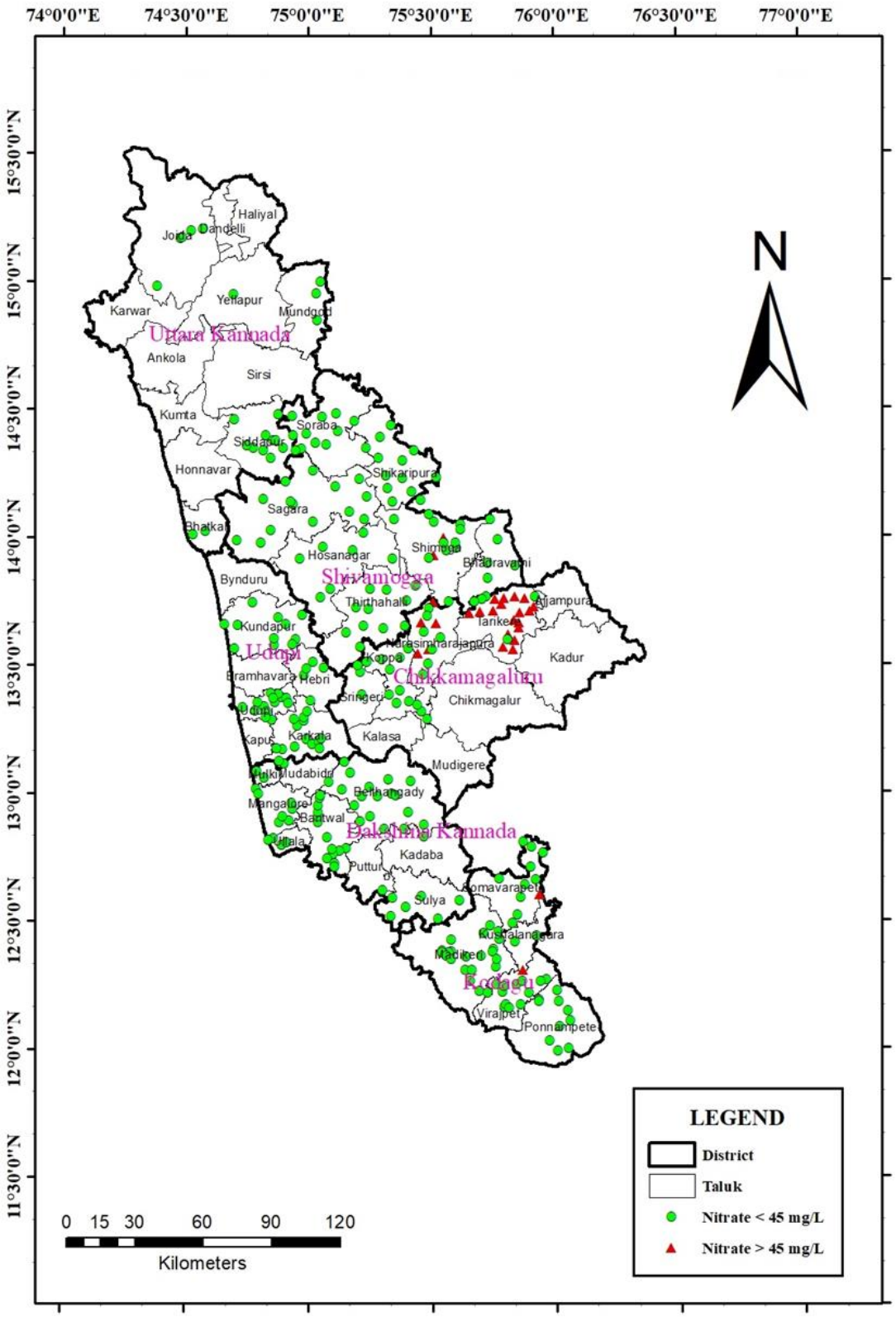

Fig. 10.1.1: Locations having Nitrate in parts of Karnataka during NAQUIM-2022

Fluoride is beneficial when present in the concentrations of 0.8 – 1.0 mg/L which prevents dental carries (tooth decay). It can cause dental and skeletal fluorosis if present in excess of 1.5 mg/L. In all the locations, fluoride content is with in the permissible limit except for Jayanagara of Bhadravathi taluk in Shivamogga district, where a concentration of 1.76 mg/L has been recorded.

The TDS value varies in the range of 28 - 1569 mg/L and that of total alkalinity varies between 5 - 444 mg/L. However, both TDS and Total Alkalinity remains with in the permissible limits of drinking water standards in all the 303 locations. It is found that 77.23% of the samples are suitable for drinking where as the rest needs to be treated before use as per the chemical parameter data. The Table 10.1.3 and Table 10.1.4 summarizes the taluk wise statistical data of all the parameters analysed and taluk wise number of locations exceeding different parameters as per the drinking water standards.

Table 10.1.3: Taluk wise statistical data of different districts of Karnataka

Districts	Taluk	Min/Max/ Avg	pH (6.5-8.5)	EC in µS/cm	TH (600)	Ca (200)	Mg (100)	Na	K	CO_3	HCO_3	Cl (1000)	SO_4 (400)	NO_3 (45)	SiO2	PO4	F (1.5)	TDS (2000)	TA (600)
					<---------- mg/L---------->														
Chikmagaluru	NR Pura	Min	6.62	120	35	8	1	2	0.0	0	18	11	10	0	10.58	0	0.015	112	15
		Max	8.95	810	380	66	52	53	27.8	9	378	71	40	77	54.2	0.49	0.22	474	310
		Avg	7.31	291	104	24	11	14	5.8	1	84	25	16	28	35.2	0.08	0.07	210	70
	Tarikere	Min	7.36	450	120	22	16	5	0.0	0	110	39	3	0	0.0	0.01	0.06	268	140
		Max	9.62	1710	570	168	68	115	31.3	30	458	220	140	437	49.7	0.34	1.50	1059	375
		Avg	7.75	1006	389	83	44	47	6.9	1	289	96	17	131	32.6	0.09	0.32	636	239
	Koppa	Min	6.01	60	20	4	1	3	0.8	0	12	7	2	0	16.0	0.00	0.10	54	10
		Max	6.90	390	125	34	11	30	5.6	0	153	35	10	13	55.0	0.03	0.72	223	125
		Avg	6.56	200	66	15	6	13	3.2	0	78	18	5	3	32.3	0.01	0.29	144	64
	Sringeri	Min	6.36	90	20	6	1	12	1.0	0	43	7	2	0	37.8	0.00	0.09	93	35
		Max	6.85	250	95	26	7	16	6.1	0	116	18	6	3	92.7	0.03	0.18	207	95
		Avg	6.66	177	60	17	4	13	3.2	0	81	13	4	1	61.9	0.02	0.13	167	67
Dakshina Kannada	Sulya	Min	6.58	87	40	4	2	5	2.0	0	37	7	20	0	24.0	0.00	0.02	112	30
		Max	7.67	265	110	20	24	14	5.4	0	110	14	37	1	69.1	0.00	0.11	226	90
		Avg	7.31	177	78	14	10	8	3.0	0	74	11	28	0	45.8	0.00	0.06	165	61
	Bantwal	Min	5.30	80	35	8	4	3	1.0	0	12	7	14	5	19.5	0.00	0.01	74	10
		Max	7.68	350	150	42	17	27	4.3	0	122	28	99	34	100.0	0.22	0.12	271	100
		Avg	6.85	224	84	20	8	11	3.1	0	47	16	44	10	48.3	0.03	0.07	189	39
	Belthangady	Min	6.83	47	20	2	2	2	1.2	0	12	7	5	0	6.0	0.00	0.08	28	10
		Max	9.51	307	130	30	21	16	5.6	9	134	18	45	17	65.0	0.25	0.44	182	110
		Avg	7.61	189	71	15	8	9	3.4	1	70	13	20	1	38.5	0.04	0.29	114	59
	Mangalore	Min	6.13	110	40	8	4	5	1.5	0	18	7	10	5	10.8	0.00	0.03	84	15
		Max	7.90	2650	1040	297	73	127	19.6	0	464	539	165	39	58.3	4.72	0.38	1569	380
		Avg	6.91	496	164	43	14	37	4.4	0	99	77	52	9	36.4	0.61	0.12	334	82

Kodagu	**Somwarpet**	**Min**	6.24	177	75	12	7	4	1.1	0	73	18	0	0	27.5	0.00	0.02	142	60
		Max	8.19	754	290	60	43	81	11.0	0	250	128	103	64	65.8	0.00	0.11	513	205
		Avg	6.91	497	176	36	21	31	3.0	0	154	49	48	21	48.5	0.00	0.05	351	127
	Madikeri	**Min**	6.11	60	20	6	1	4	0.9	0	6	7	6	0	4.7	0.0	0.00	47	5
		Max	8.63	420	140	32	15	25	4.9	9	195	35	15	31	47.3	0.0	1.01	268	175
		Avg	7.45	182	59	12	7	10	2.1	1	62	15	9	4	21.3	0.0	0.49	119	52
	Virajpet	**Min**	6.32	80	30	6	2	1	1.0	0	12	7	4	0	5.7	0.00	0.00	61	10
		Max	8.43	1150	400	104	34	74	11.9	12	439	124	52	39	38.2	0.04	1.20	662	360
		Avg	7.59	360	117	25	13	23	4.3	1	138	27	13	6	24.1	0.00	0.60	220	115
Shivamogga	**Shimoga**	**Min**	7.44	460	126	38	7	29	0.7	0	184	35	7	1	15.8	0.00	0.13	230	152
		Max	8.21	1800	651	137	97	158	18.6	0	540	245	81	50	52.2	0.40	1.02	919	444
		Avg	7.78	1031	372	68	48	57	4.6	0	361	111	36	27	39.2	0.09	0.52	502	297
	Bhadravathi	**Min**	7.81	650	207	26	21	29	1.5	0	252	53	3	1	28.7	0.00	0.00	311	207
		Max	8.02	970	389	48	78	55	40.1	0	430	64	45	16	51.8	0.07	1.76	450	354
		Avg	7.89	812	286	39	45	39	10.4	0	346	61	26	4	42.0	0.03	0.63	390	285
	Shikaripura	**Min**	7.48	250	90	10	13	20	1.7	0	79	25	12	2	28.7	0.00	0.05	195	65
		Max	8.25	1350	480	32	111	117	17.6	0	378	262	92	39	58.0	0.00	1.30	800	310
		Avg	7.85	802	297	19	61	59	4.5	0	236	106	38	28	37.3	0.00	0.33	495	194
	Soraba	**Min**	7.53	190	65	8	7	12	3.9	0	61	11	6	0	36.7	0.00	0.02	171	50
		Max	8.26	630	220	52	30	48	12.9	0	189	124	26	13	62.9	0.31	0.15	412	155
		Avg	7.81	365	130	27	15	27	5.8	0	128	43	18	7	49.4	0.03	0.06	271	105
	Sagara	**Min**	6.03	118	30	8	1	4	0.2	0	63	8	0	0	20.5	0.00	0.00	74	52
		Max	8.50	450	205	50	30	15	12.1	0	236	25	10	5	56.3	24.25	1.15	249	193
		Avg	7.29	256	104	25	10	11	2.6	0	131	17	3	1	39.5	1.75	0.48	148	108
	Tirthahalli	**Min**	6.55	180	35	8	4	12	1.3	0	67	14	2	1	8.0	0.00	0.06	119	55
		Max	7.82	460	115	28	11	70	15.0	0	226	21	20	7	52.0	0.08	0.96	273	185
		Avg	7.06	270	73	17	7	24	4.4	0	124	16	7	3	34.5	0.01	0.52	173	102

	Hosanagara	**Min**	6.48	105	20	4	2	12	0.5	0	37	11	1	2	13.0	0.00	0.23	71	30
		Max	7.53	330	120	26	13	25	3.1	0	159	18	7	8	53.0	0.08	0.90	213	130
		Avg	7.03	216	64	16	6	18	1.6	0	95	12	3	4	29.9	0.01	0.45	137	78
Udupi	**Kundapra**	**Min**	5.38	160	56	10	5	4	0.1	0	31	7	18	0	16.3	0.00	0.01	77	25
		Max	7.27	740	298	77	26	28	8.1	0	172	170	41	13	104.1	0.76	0.15	392	141
		Avg	6.61	321	121	30	11	14	3.9	0	95	36	25	2	64.3	0.16	0.07	167	78
	Udupi	**Min**	5.40	70	30	8	1	4	1.2	0	12	7	10	5	10.9	0.00	0.04	64	10
		Max	8.01	590	250	56	28	23	7.9	0	171	82	68	14	68.0	1.79	0.53	358	140
		Avg	7.04	268	105	26	10	11	3.7	0	67	24	36	7	41.3	0.24	0.13	199	55
	Karkala	**Min**	5.61	40	20	4	1	4	0.3	0	12	7	2	0	9.1	0.00	0.08	56	10
		Max	7.74	370	140	46	7	31	6.1	0	183	18	21	16	90.8	0.04	0.43	296	150
		Avg	6.69	175	63	18	4	11	2.8	0	77	12	5	2	52.4	0.01	0.21	155	64
Uttar Kannada	**Bhatkal**	**Min**	5.72	130	30	8	2	14	1.5	0	25	18	12	1	14.2	0.00	0.01	67	20
		Max	6.99	590	172	42	16	54	3.3	0	160	96	24	3	51.6	0.00	0.18	314	131
		Avg	6.36	360	101	25	9	34	2.4	0	93	57	18	2	32.9	0.00	0.10	191	76
	Siddapura	**Min**	6.31	87	30	6	1	2	0.3	0	53	8	0	0	11.5	0.00	0.00	61	43
		Max	7.84	301	115	30	10	21	8.8	0	183	18	3	0	60.5	0.23	1.04	193	150
		Avg	7.02	176	68	19	5	11	3.1	0	98	13	0	0	42.0	0.07	0.34	111	80
	Mundgod	**Min**	7.86	480	140	34	12	45	2.2	0	220	35	16	0	19.0	0.00	0.37	291	180
		Max	8.08	685	205	62	24	58	4.9	0	317	64	26	16	27.0	0.05	0.48	380	260
		Avg	8.00	595	182	45	17	50	3.2	0	254	46	21	7	22.0	0.03	0.43	337	208
	Yellapur	**Min**	7.96	305	85	16	11	30	1.5	0	134	14	17	0	11.0	0.00	0.08	167	110
		Max	7.96	305	85	16	11	30	1.5	0	134	14	17	0	11.0	0.00	0.08	167	110
		Avg	7.96	305	85	16	11	30	1.5	0	134	14	17	0	11.0	0.00	0.08	167	110
	Supa	**Min**	7.06	90	15	2	1	14	0.4	0	31	11	4	0	1.0	0.00	0.01	50	25
		Max	8.99	1485	445	82	58	115	31.2	12	214	337	27	0	54.0	0.12	0.12	809	175
		Avg	7.88	437	121	24	15	38	9.0	2	84	81	13	0	15.4	0.02	0.05	239	73

Table 10.1.4: Taluk wise number of locations exceeding the permissible limits for various parameters as per BIS-(IS-10500: 2012) for drinking purposes

Number of locations exceeding the permissible limits									
Sl. No.	District	Taluk	Total samples collected	pH (6.5-8.5)	TH (600)	Ca (200)	Mg (100)	NO_3 (45)	F (1.5)
				<---------- mg/L---------->					
1	Chikmagaluru	Tarikere	23	1	-	-	-	18	-
		NR Pura	16	2	-	-	-	5	-
		Koppa	9	3	-	-	-	-	-
		Sringeri	3	1	-	-	-	-	-
2	Dakshina Kannada	Sulya	8	-	-	-	-	-	-
		Bantwal	19	2	-	-	-	-	-
		Belthangady	14	2	-	-	-	-	-
		Mangalore	13	2	1	1	-	-	-
3	Kodagu	Somwarpet	13	4	-	-	-	2	-
		Madikeri	22	3	-	-	-	-	-
		Virajpet	22	1	-	-	-	-	-
4	Shivmoga	Shimoga	13	-	2	-	-	2	-
		Bhadravathi	5	-	-	-	-	-	1
		Shikaripura	12	-	-	-	1	-	-
		Soraba	10	-	-	-	-	-	-
		Sagara	14	1	-	-	-	-	-
		Tirthahalli	11	-	-	-	-	-	-
		Hosanagara	7	1	-	-	-	-	-
5	Udupi	Kundapra	11	3	-	-	-	-	-
		Udupi	15	2	-	-	-	-	-
		Karkala	20	8	-	-	-	-	-
6	Uttara Kannada	Bhatkal	2	1	-	-	-	-	-
		Siddapura	12	2	-	-	-	-	-
		Mundgod	3	-	-	-	-	-	-
		Yellapur	1	-	-	-	-	-	-
		Supa	5	1	-	-	-	-	-

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Annexure I

Locations having Electrical Conductivity > 3000 µS/cm in Ground Water of Karnataka

Sl.No	Long	Lat	District	Block	Location	EC >3000 µs/cm at 25°C
1	76.1075	16.0653	Bagalkot	Jamkhandi	Algur	9620
2	75.9406	15.9426	Bagalkot	Bilgi	Badagandi	3100
3	75.7527	16.0466	Bagalkot		Binjawadige	4290
4	75.5451	16.0108	Bagalkot	Hungund	Gorbal	7900
5	75.5299	16.3760	Bagalkot	Badami	Guledgudda summety	10600
6	75.9657	15.9617	Bagalkot	Hungund	Kodihal	3250
7	75.1518	16.3839	Bagalkot	Jamkhandi	Kumbarhal	3350
8	75.9452	16.0553	Bagalkot	Mudhol	Mudhol	3680
9	75.2908	16.3250	Bagalkot	Badami	Patadkal	3830
10	76.1231	15.9758	Bagalkot	Jamkhandi	Savalgi	3870
11	76.2043	16.1026	Bagalkot	Hungund	Tumb	5030
12	76.8379	15.4405	Ballari	Siruguppa	Sirigeri	4740
13	74.9233	16.7189	Belagavi	Kagavada	Mole	7850
14	75.1284	16.6797	Belagavi	Athani	Nandagaon	4180
15	74.6791	16.5323	Belagavi	Raibag	Naslapur	3160
16	74.6449	16.5067	Belagavi	Chikkodi	Rupnal	5100
17	76.2517	16.4441	Bijapur	Muddebihal	Bavur	4780
18	76.1455	16.7104	Bijapur		Bhudihaldon	4130
19	76.3275	17.1634	Bijapur	Sindgi	Devanagaon	3730
20	75.7337	16.6815	Bijapur	Bijapur	Honaganahalli	5240
21	76.1490	16.8580	Bijapur		Kannolli	3660
22	75.6760	16.7651	Bijapur		Khatijapur	9590
23	76.2263	17.0283	Bijapur	Sindgi	Korahalli	3200
24	76.3386	16.4667	Bijapur		Mileshwara	3210
25	76.2748	16.4725	Bijapur	Muddebihal	Minajigi	3150
26	76.1129	16.2833	Bijapur	Muddebihal	Nebgeri	3110
27	76.0572	16.7332	Bijapur	Basavana bagevadi	Sathihal	5110
28	75.7431	17.1135	Bijapur	Indi	Sawalsanga	5204
29	76.1716	17.0969	Bijapur	Sindgi	Vibhutihalli	4930
30	76.6490	14.0710	Chitradurga	Hiriyur	Hartikote	3750
31	76.6900	13.9880	Chitradurga	Hiriyur	Maskallu	3370
32	76.7500	14.7160	Chitradurga	Molakalmuru	Molakalmuru	3990
33	75.1520	15.5919	Dharwad	Dharwad	Gummagola	3750
34	75.1588	15.5834	Dharwad	Navalgund	Morab	7600

35	75.1492	15.5562	Dharwad		Tale morab	4230
36	74.9258	15.1808	Dharwad	Not given	Kalkurdi	5180
37	75.8339	15.1958	Gadag	Mundargi	Basapur (a)	3580
38	75.5673	15.6705	Gadag	Ron	Belavanki	8550
39	75.6524	15.5849	Gadag		Dass hadagali	5720
40	75.4994	15.1909	Gadag	Shirhatti	Gojanur	4180
41	75.6520	15.4776	Gadag		Hirekoppa	6940
42	75.6901	15.7841	Gadag		Hungundi	7150
43	75.4703	15.1327	Gadag	Shirhatti	Laxmeswar(a)	4810
44	75.8829	15.1983	Gadag	Mundargi	Mundargi	4390
45	75.3818	15.7195	Gadag	Nargund	Nargund	3530
46	76.3449	13.4924	Hassan	Arsikere	Yachegowdanahalli	4890
47	77.9877	13.2042	Kolar	Kolar	Kurugal A	3120
48	76.0100	15.3700	Koppal	Yelburga	Itagi	5110
49	76.2600	15.8200	Koppal	Kushtagi	K Hosur	3310
50	75.9800	15.5700	Koppal	Yelburga	Sanganhal	4710
51	76.6814	15.6722	Raichur	Sindanur	Hanchinal	3650
52	76.9500	15.9600	Raichur	Manvi	Hirekotankal	6100
53	77.0658	16.1822	Raichur	Manvi	Jakkaladinni	4295
54	76.5470	13.5840	Tumkur	Chiknayakanahalli	Huliyar	3180
55	76.5280	13.3950	Tumkur	Chiknayakanahalli	Medihalli	4050
56	76.4790	13.2590	Tumkur	Tiptur	Tiptur	4194
57	76.3678	15.1741	Vijayanagara	Hospet	Danapura	3870
58	75.7955	14.9941	Vijayanagara	Hadagalli	Magala	4070
59	76.4932	15.0432	Vijayanagara	Sandur	Yeshwanthnagar	3710
60	76.5326	16.6483	Yadgir	Shorapur	Khembhavi	6700
61	77.0370	16.7172	Yadgir	Shahapur	Managinahal	4860

Annexure II

Locations having Chloride > 1000 mg/l in Ground Water of Karnataka State

Sl.no	Long	Lat	District	Block	Location	Cl > 1000 mg/L
1	76.1075	16.0653	Bagalkot	Jamkhandi	Algur	1418
2	75.5451	16.0108	Bagalkot	Hungund	Gorbal	1574
3	75.5299	16.376	Bagalkot	Badami	Guledgudda summety	2574
4	74.6449	16.5067	Belagavi	Chikkodi	Rupnal	1347
5	74.9233	16.7189	Belagavi	Kagavada	Mole	1489
6	75.7337	16.6815	Bijapur	Bijapur	Honaganahalli	1167
7	76.0572	16.7332	Bijapur	Basavana bagevadi	Sathihal(santhal)	1047
8	75.676	16.7651	Bijapur		Khatijapur	2482
9	75.7431	17.1135	Bijapur	Indi	Sawalsanga	1396
10	75.1588	15.5834	Dharwad	Navalgund	Morab	1550
11	75.5673	15.6705	Gadag	Ron	Belavanki	2415
12	75.6524	15.5849	Gadag	Ron	Dass hadagali	1385
13	75.6901	15.7841	Gadag	Hungundi	Hungundi	2230
14	75.652	15.4776	Gadag	Hadagali	Hirekoppa	1086
15	76.95	15.96	Raichur	Manvi	Hirekotankal	1276
16	76.5326	16.6483	Yadgir	Shorapur	Khembhavi	1489

Annexure-III

Locations having Fluoride > 1.5 mg/ in Ground Water of Karnataka State

Sl.No.	Long	Lat	District	Block	Location	F (>1.5mg/L)
1	75.7527	16.0466	Bagalkot	HUNGUND	BINJAWADIGE	1.52
2	75.9657	15.9617	Bagalkot	HUNGUND	KODIHAL	1.97
3	76.2043	16.1026	Bagalkot	HUNGUND	TUMB	1.68
4	75.5451	16.0108	Bagalkot	HUNGUND	GORBAL	1.84
5	76.3016	16.0953	Bagalkot	HUNGUND	NAGUR	1.83
6	75.9406	15.9426	Bagalkot	BILGI	BADAGANDI	1.75
7	76.8797	15.5361	Ballari	Siruguppa	Tekalakota(A)	2.00
8	75.9973	16.3540	Bijapur	MUDDEBIHAL	Hullur	2.40
9	75.6614	17.3113	Bijapur	INDI	Chadchan	1.80
10	76.0769	17.1435	Bijapur	INDI	Sattalgaon	1.72
11	76.3275	17.1634	Bijapur	SINDGI	Devanagaon	1.69
12	76.2266	16.6544	Bijapur	SINDGI	Hanchali	1.56
13	76.2469	16.6316	Bijapur	SINDGI	Ambalanur	1.68
14	76.3386	16.4667	Bijapur	SINDGI	Mileshwara(Alternative)	1.84
15	76.2211	16.3092	Bijapur	SINDGI	Hiremural	2.24
16	78.0031	13.4034	Chikballapura	Chintamani	Upparpet	2.38
17	78.0554	13.4055	Chikballapura	Chintamani	Chintamani	2.21
18	77.7543	13.5506	Chikballapura	Chikballapura	Settigere	1.65
19	76.0092	13.7261	Chikmagaluru	TARIKERE	Ajjampura	1.70
20	75.8086	13.2912	Chikmagaluru	CHIKMAGALUR	Karthikere	1.60
21	76.1330	13.8620	Chitradurga	Hosadurga	Hosadurga	2.40
22	76.2720	14.0180	Chitradurga	Holalkere	Talya	2.40
23	76.6490	14.0710	Chitradurga	Hiriyur	Hartikote	1.90
24	75.9485	14.4478	Davanagere	Davanagere	Averegere(A)	1.63
25	75.9650	14.3287	Davanagere	Davanagere	Gopanal	2.77
26	75.9931	14.3220	Davanagere	Davanagere	Attigere	1.99
27	75.8897	14.3646	Davanagere	Davanagere	Hadadi	1.79
28	75.6894	14.4198	Davanagere	Harihara	Kadaranayakanahalli	2.49
29	75.7793	14.4090	Davanagere	Harihara	Nandi Tavare	2.21
30	75.6301	15.4240	Gadag	HUNGUNDI	GADAG	2.30
31	75.5444	15.4245	Gadag	GADAG	HULKOTI	2.20
32	75.8339	15.1958	Gadag	MUNDARGI	BASAPUR (A)	2.60
33	75.8367	15.1639	Gadag	MUNDARGI	KALIKERI(A)	3.90
34	75.8299	15.1435	Gadag	MUNDARGI	VIRUPAPUR	2.70
35	75.5963	15.1712	Gadag	SHIRHATTI	CHABBI	1.70
36	76.7240	17.0034	Gulbarga	Jevargi	Ravanur	1.95
37	76.4494	17.0167	Gulbarga	Jevargi	Jeratgi	1.78
38	77.0014	17.0864	Gulbarga	Chincholi	Ravor	2.01
39	76.9858	17.0437	Gulbarga	Chincholi	Wadi	1.63
40	76.3508	13.4163	Hassan	Arsikere	J.C.Pura	1.56
41	78.1680	12.8430	Kolar	Bangerpet	Bhimganapalli	1.55
42	78.3000	12.9644	Kolar	Kgf	Gadarajahalli	1.52
43	78.3634	13.0658	Kolar	Mulbagal	Angondanahalli	2.04
44	78.4033	13.2175	Kolar	Mulbagal	Sangasandra	1.78
45	75.5581	13.8597	Koppal	Koppal	Hosahalli	2.10
46	76.5000	15.4900	Koppal	Gangawathi	Herur	2.20
47	76.4200	15.5700	Koppal	Gangawathi	Kanakagiri	3.10

48	76.2200	15.3500	Koppal	Koppal	Basapur	2.60
49	76.3300	15.3400	Koppal	Kushtagi	Igalkere	1.70
50	76.2600	15.8200	Koppal	Kushtagi	K Hosur	2.40
51	76.6844	12.4975	Mandya	Pandavapura	Devegowdana Koppalu	2.10
52	76.8847	12.5308	Mandya	Mandya	Mandya Dw	1.80
53	76.8836	12.5528	Mandya	Mandya	Gopalapura	1.60
54	77.1200	12.4728	Mandya	Nagamangala	Anjabhuvanahalli	1.55
55	76.3800	12.5100	Mysore	K R Nagara	Badakanakoppalu	1.99
56	76.4100	12.3600	Mysore	K R Nagara	Hosaramanahalli	1.58
57	76.8800	12.2700	Mysore	T Narasipura	Somnathapura	1.70
58	76.5700	16.2600	Raichur	Lingsugur	Ambereshwar	1.80
59	76.9800	16.4000	Raichur	Devadurga	Vanukuni	2.10
60	76.4583	15.8389	Raichur	Sindanur	Mahampur	1.80
61	76.9800	16.4000	Raichur	Devadurga	Chkkahonakuni	3.10
62	77.0100	16.1710	Raichur	Manvi	Sirwar	2.20
63	76.4500	15.8900	Raichur	Lingsugur	Chhatra	3.30
64	76.4456	16.1792	Raichur	Lingsugur	Echanal	1.60
65	77.0667	16.3500	Raichur	Devadurga	Kakargal	2.20
66	76.9508	16.2750	Raichur	Devadurga	Arakeri	2.20
67	76.9500	16.3400	Raichur	Devadurga	Hemanur	2.80
68	76.4417	15.9519	Raichur	Lingsugur	Ulimeshwar	2.10
69	76.5000	15.8200	Raichur	Sindanur	Gunda	2.00
70	77.0100	16.3100	Raichur	Devadurga	Mustur	3.70
71	76.6122	16.0344	Raichur	Lingsugur	Ankush Doddy	2.30
72	76.9539	16.0153	Raichur	Manvi	Janekal	3.20
73	77.0658	16.1822	Raichur	Manvi	Jakkaladinni	5.40
74	77.3192	12.7994	Ramnagara	Ramanagara	Sugganahalli	1.60
75	75.6431	13.9533	Shivmoga	Shimoga	PILINGIRI	1.60
76	77.1860	14.1460	Tumkur	Pavagada	Kotagudda	1.80
77	77.2920	14.1580	Tumkur	Pavagada	Palivalli	3.20
78	77.2800	14.0820	Tumkur	Pavagada	Pavagada	3.90
79	76.8500	13.7830	Tumkur	Madhugiri	Bidarigere	2.60
80	77.1990	13.7320	Tumkur	Madhugiri	Giriyammana Palya	2.00
81	76.4456	14.9729	Vijayanagara	Sandur	Jogikallu	4.20
82	76.5157	15.3303	Vijayanagara	Hospet	76 Venkatapura	1.60
83	76.5918	15.3891	Vijayanagara	Kampli	No.10 Muddapura	1.70
84	76.8372	15.3441	Vijayanagara	Kurugodu	Kurugodu	2.00
85	76.7761	16.8647	Yadgir	Shahapur	Mudubal	2.00
86	76.7896	16.7555	Yadgir	Shahapur	Hulkal	1.80
87	76.5656	16.7394	Yadgir	Shorapur	Malla K	1.90
88	76.5202	16.4583	Yadgir	Hunisigi	Hunsagi	1.60
89	77.0370	16.7172	Yadgir	Shahapur	Managinahal	2.20

Annexure-IV

Locations having Nitrate > 45 mg/litre in Ground Water of Karnataka State

Sl.no	Long	Lat	District	Block	Location	NO_3 (>45 mg/L)
1	75.3297	16.5720	Bagalkot	Mudhol	Malapura	51
2	75.9452	16.0553	Bagalkot	Mudhol	Mudhol	87
3	75.6466	16.3469	Bagalkot	Mudhol	Belagalli	86
4	75.1518	16.3839	Bagalkot	Jamkhandi	Kumbarhal	52
5	76.1075	16.0653	Bagalkot	Jamkhandi	Algur	167
6	75.7527	16.0466	Bagalkot		Binjawadige	108
7	75.9657	15.9617	Bagalkot	Hungund	Kodihal	170
8	76.2043	16.1026	Bagalkot	Hungund	Tumb	147
9	75.3297	16.5396	Bagalkot	Hungund	Amingarh	205
10	75.2770	16.3674	Bagalkot		Wadageri	211
11	75.2908	16.3250	Bagalkot	Badami	Patadkal	115
12	75.1083	16.4764	Bagalkot	Badami	Kerur a	86
13	75.5299	16.3760	Bagalkot	Badami	Guledgudda summety	314
14	75.9406	15.9426	Bagalkot	Bilgi	Badagandi	89
15	75.6096	16.2178	Bagalkot	Bilgi	Teggi	56
16	76.8391	15.4980	Ballari	Siruguppa	Genikahal	71
17	76.8379	15.4405	Ballari	Siruguppa	Sirigeri	225
18	76.8797	15.5361	Ballari	Siruguppa	Tekalakota(A)	94
19	76.8604	15.1657	Ballari	Ballari	Allipuram I	139
20	76.9129	15.3503	Ballari	Kurugodu	Bailuru	217
21	74.4838	16.2606	Belagavi	Hukkeri	Sankeswar	68
22	74.4920	15.4481	Belagavi	Khanapur	Londa	57
23	74.4784	15.4802	Belagavi	Khanapur	Watre	152
24	74.4818	15.8023	Belagavi	Belagavi	Piranwadi	93
25	74.9194	15.9253	Belagavi	Saundatti	Hallakki	81
26	74.6597	15.8947	Belagavi	Belagavi	Sulibhavi	53
27	74.8470	16.2382	Belagavi	Mudalagi	Sangankeri	61
28	74.6048	16.3214	Belagavi	Hukkeri	Yadgud	71
29	75.1137	15.7644	Belagavi	Saundatti	Saundatti	73
30	71.5929	16.2825	Belagavi	Hukkeri	Hanjamhatti	198
31	74.7671	16.4454	Belagavi	Raibag	Hubruvadi	127
32	74.7776	15.9058	Belagavi	Bailhongal	Nesargi	97
33	75.1188	16.8841	Belagavi	Athani	Mallabad	91
34	74.8271	16.0150	Belagavi	Hukkeri	Khangaon	76
35	74.5768	16.1920	Belagavi	Hukkeri	Gondwad	60
36	75.1494	16.7372	Belagavi	Athani	Badchi	77
37	74.9327	16.1129	Belagavi	Hukkeri	Mamadapur	85
38	74.7266	16.3495	Belagavi	Chikkodi	Kabbur	84
39	74.8936	16.6717	Belagavi	Kagavada	Ainapur	46
40	74.9138	16.3056	Belagavi	Mudalagi	Naganur	85
41	75.3002	16.8668	Belagavi	Athani	Kakmari	78
42	75.0798	16.6370	Belagavi	Athani	Radderhatti	81
43	74.7284	16.5185	Belagavi	Raibag	Yedrav	51
44	74.6040	16.5287	Belagavi	Chikkodi	Eskamba	46
45	74.6537	16.3611	Belagavi	Chikkodi	Belakud	85
46	74.8372	16.4278	Belagavi	Raibag	Bekud	108
47	74.6998	16.1000	Belagavi	Hukkeri	Gumachinemaradi	99
48	74.8374	16.7338	Belagavi	Kagavada	Mangsuli	82

49	74.6510	16.0607	Belagavi	Hukkeri	Basapur	262
50	74.6791	16.5323	Belagavi	Raibag	Naslapur	74
51	75.1284	16.6797	Belagavi	Athani	Nandagaon	230
52	74.6449	16.5067	Belagavi	Chikkodi	Rupnal	235
53	77.7004	13.2999	Bengaluru Rural	Devanahalli	Kodagurki	304
54	77.7122	13.2482	Bengaluru Rural	Devanahalli	Devanahalli	446
55	77.7246	13.2953	Bengaluru Rural	Devanahalli	Avathi	440
56	77.6491	13.2714	Bengaluru Rural	Devanahalli	Vishwanathapura	56
57	77.6046	13.2825	Bengaluru Rural	Devanahalli	Bairasandra	415
58	77.5529	13.2983	Bengaluru Rural	Doddaballapura	Siddanaikanahalli	632
59	77.5384	13.2871	Bengaluru Rural	Doddaballapura	Doddaballapura	372
60	77.2122	13.1759	Bengaluru Rural	Nelamangala	Gangenpura	210
61	77.3218	13.0660	Bengaluru Rural	Nelamangala	Mahadevapura	186
62	77.6169	12.8833	Bengaluru Urban	Bangalore south	Beguru	56
63	77.5675	13.0597	Bengaluru Urban	Bangalore south	Kodigehalli	73
64			Bidar	Basavakalyan	Rajola	95
65			Bidar	Basavakalyan	Islampur	73
66	76.9312	17.7899	Bidar	Basavakalyan	Yerandgi	166
67	77.1420	17.8956	Bidar	Humnabad	Handikerewadi	96
68	77.0791	17.9054	Bidar	Humnabad	Ghatboral	54
69	77.4116	17.9132	Bidar	Bidar	Andur	61
70	77.3252	18.2882	Bidar	Aurad	Danargoan	62
71	75.7302	16.7551	Bijapur		Jumnal	148
72	75.7337	16.6815	Bijapur	Bijapur	Honaganahalli	164
73	75.8287	16.4787	Bijapur	Basavana bagevadi	Telgi	47
74	75.8864	16.5296	Bijapur	Basavana bagevadi	Multagi	147
75	75.9559	16.5651	Bijapur	Basavana bagevadi	Basvan bagewadi	67
76	75.8134	16.6479	Bijapur	Bijapur	Mangoli	147
77	75.8809	16.7246	Bijapur	Basavana bagevadi	Ukkali	189
78	76.0144	16.6509	Bijapur	Basavana bagevadi	Ingleswar	48
79	76.0572	16.7332	Bijapur	Basavana bagevadi	Sathihal (santhal)	147
80	75.9840	16.8207	Bijapur	Bijapur	Shivangi	49
81	75.7165	16.8291	Bijapur	Bijapur	Bijapur	60
82	75.6760	16.7651	Bijapur		Khatijapur	163
83	75.7891	16.8914	Bijapur	Bijapur	Aliabad	53
84	75.8478	16.9308	Bijapur		Nagadhana	105
85	75.9691	17.0891	Bijapur		Rugi	60
86	75.9274	17.0760	Bijapur	Indi	Tadavallanga	152
87	75.7431	17.1135	Bijapur	Indi	Sawalsanga	163
88	75.6890	17.1088	Bijapur	Indi	Incharagi	114
89	75.6719	17.1831	Bijapur		Jagjiwani	157
90	75.6614	17.3113	Bijapur	Indi	Chadchan	119
91	75.7259	17.2782	Bijapur	Indi	Bardol	99
92	75.8443	17.3918	Bijapur	Indi	Newdhulikhed	92
93	76.0192	17.1366	Bijapur		Salotgi	142
94	76.0769	17.1435	Bijapur	Indi	Sattalgaon	84
95	75.1050	17.1204	Bijapur	Indi	Nadkurd	80
96	76.1716	17.0969	Bijapur	Sindgi	Vibhutihalli	115
97	76.3275	17.1634	Bijapur	Sindgi	Devanagaon	69
98	76.2263	17.0283	Bijapur	Sindgi	Korahalli	132
99	76.1490	16.8580	Bijapur		Kannolli	88
100	76.0949	16.7800	Bijapur	Sindgi	Deur tanda	53

101	76.2266	16.6544	Bijapur	Sindgi	Hanchali	89
102	76.2469	16.6316	Bijapur	Sindgi	Ambalanur	50
103	76.3386	16.4667	Bijapur		Mileshwara	91
104	76.2517	16.4441	Bijapur	Muddebihal	Bavur	62
105	76.2440	16.4101	Bijapur	Muddebihal	Devar hulagbal	82
106	76.1354	16.3367	Bijapur	Muddebihal	Muddebihal(a)	64
107	76.1033	16.4792	Bijapur	Muddebihal	Agasabala cross	67
108	76.0768	16.5562	Bijapur	Basavana bagevadi	Huvinahippargi	88
109	76.1186	16.4360	Bijapur	Muddebihal	Dhavalgi	49
110	76.6669	11.9375	Chamarajanagara	Gundlupete	Begur	83
111	77.0667	12.0778	Chamarajanagara	Yelandur	Maddur (Yelandur)	60
112	76.6169	11.7600	Chamarajanagara	Gundlupete	Honnegowdanahalli	47
113	77.3006	12.0917	Chamarajanagara	Kollegala	Hanur	127
114	77.4100	12.0200	Chamarajanagara	Kollegala	Palanimedu	65
115	78.0666	13.3154	Chikballapura	Chintamani	Gajalahalli	406
116	78.0031	13.4034	Chikballapura	Chintamani	Upparpet	372
117	78.0554	13.4055	Chikballapura	Chintamani	Chintamani	732
118	78.1285	13.4413	Chikballapura	Chintamani	Murugumale	360
119	77.7514	13.7430	Chikballapura	Gudibonde	Hampasandra	112
120	77.4834	13.4957	Chikballapura	Gauribidanaur	Bevinahalli	72
121	77.5757	13.5282	Chikballapura	Gauribidanaur	Pura	271
122	76.3510	13.6290	Chitradurga	Hosadurga	Garaga	167
123	76.2930	13.6280	Chitradurga	Hosadurga	Belagur	143
124	76.1330	13.8620	Chitradurga	Hosadurga	Hosadurga	186
125	76.2260	13.8850	Chitradurga	Hosadurga	Gutikatte	91
126	76.1330	13.8620	Chitradurga	Hosadurga	Hosadurga Rs Road	149
127	76.1210	13.9540	Chitradurga	Holalkere	Ramagiri	186
128	77.1220	14.0040	Chitradurga	Holalkere	R Nulenur	112
129	76.0720	14.0203	Chitradurga	Holalkere	Doggenal	124
130	76.0840	13.9990	Chitradurga	Holalkere	Hanumali	112
131	76.0670	14.0290	Chitradurga	Holalkere	Dummi	273
132	76.1730	14.0420	Chitradurga	Holalkere	Arehalli	50
133	76.3990	14.2200	Chitradurga	Chitradurga	Chitradurga	65
134	76.2610	14.2190	Chitradurga	Chitradurga	Bommanahalli	87
135	76.1520	14.1770	Chitradurga	Chitradurga	Kallavana Nagatihalli	81
136	76.1940	14.2660	Chitradurga	Chitradurga	Siddapura	124
137	76.3000	14.2930	Chitradurga	Chitradurga	Biravara	136
138	76.3210	14.3250	Chitradurga	Chitradurga	Siddavanadurga	81
139	76.7500	14.7160	Chitradurga	Molakalmuru	Molakalmuru	192
140	76.6490	14.0710	Chitradurga	Hiriyur	Hartikote	198
141	75.9485	14.4478	Davanagere	Davanagere	Averegere(A)	51
142	75.8780	14.0868	Davanagere	Channagere	Nallur(A)	85
143	75.9264	14.3045	Davanagere	Davanagere	Lokikere	55
144	75.7184	14.3744	Davanagere	Harihara	G. Bevinahally	49
145	75.1588	15.5834	Dharwad	Navalgund	Morab	473
146	75.1783	15.4492	Dharwad	Hubli	Sulla	78
147	75.3057	15.4507	Dharwad		Hebsur	68
148	75.3670	15.1199	Dharwad	Kundgol	Gudgeri	201
149	75.2464	15.2537	Dharwad	Kundgol	Kundgol(a)	259
150	75.1548	15.2843	Dharwad	Hubli	Adaragunj	96
151	75.1463	15.3293	Dharwad	Hubli	Bidnal	92
152	75.3818	15.7195	Gadag	Nargund	Nargund	273
153	75.5673	15.6705	Gadag	Ron	Belavanki	303

154	75.8052	15.5694	Gadag		Naregal(a)	61
155	75.6520	15.4776	Gadag	Hadagali	Hirekoppa	407
156	75.8339	15.1958	Gadag	Mundargi	Basapur (a)	129
157	75.8299	15.1435	Gadag	Mundargi	Virupapur	117
158	76.1409	15.0848	Gadag	Shirhatti	Belhatti	52
159	75.5804	15.2347	Gadag	Shirhatti	Shirhatti	109
160	75.5112	15.2200	Gadag		Magdi	129
161	75.4994	15.1909	Gadag	Shirhatti	Gojanur	67
162	75.4703	15.1327	Gadag	Shirhatti	Laxmeswar(a)	343
163	76.4305	17.2318	Gulbarga	Afzalpur	Mallabad	113
164	76.6318	16.8954	Gulbarga	Yadrami	Alur	171
165	76.7240	17.0034	Gulbarga	Jevargi	Ravanur	171
166	76.6405	16.9968	Gulbarga	Jevargi	Sona	59
167	76.5496	17.2345	Gulbarga	Afzalpur	Chowdapur	112
168	76.7125	17.1575	Gulbarga	Gulbarga	Kawalaga K	96
169	77.1525	17.3597	Gulbarga	Kalagi	Kaalgi	90
170	76.5903	17.1358	Gulbarga	Afzalpur	Hasargundi	164
171	76.4092	17.0929	Gulbarga	Afzalpur	Ghattarga	65
172	76.2384	17.3229	Gulbarga	Afzalpur	Mashal	153
173	76.3749	17.4591	Gulbarga	Aland	M. Hippargi	167
174	76.5645	17.4119	Gulbarga	Aland	Battarga	157
175	76.8836	17.2126	Gulbarga	Shahadbad	Marthur	166
176	76.8763	17.6165	Gulbarga	Kamaiapura	Ladmogili	49
177	76.7446	17.6408	Gulbarga	Aland	Belamagi	110
178	77.4287	17.5329	Gulbarga	Chincholi	Kollur	54
179	76.9858	17.0437	Gulbarga	Chincholi	Wadi	51
180	75.2822	15.0889	Haveri	Shiggaon	Hulgur	46
181	75.1563	14.8469	Haveri	Hangal	Nitiginal Koppa	56
182	74.1249	14.7710	Haveri	Hangal	Hangal	52
183	75.7656	14.5477	Haveri	Ranibennur	Vadarayanahalli	64
184	74.6108	14.4868	Haveri	Ranibennur	Kuppelur	232
185	75.8500	12.2300	Kodagu	Virarajendrapet	Ammatti	46
186	75.7500	12.4000	Kodagu	Madikeri	Neerkolli	46
187	78.0966	13.0477	Kolar	Bangerpet	Vadegere	579
188	78.0680	12.9200	Kolar	Bangerpet	Torlakki	542
189	78.1200	12.9000	Kolar	Bangerpet	Budikote	190
190	78.1200	12.9000	Kolar	Bangerpet	Budikunte A	403
191	78.1680	12.8430	Kolar	Bangerpet	Bhimganapalli	68
192	78.3000	12.9644	Kolar	Kgf	Gadarajahalli	176
193	78.0420	13.1213	Kolar	Kolar	Arabi Kollanuru	62
194	78.0366	13.1343	Kolar	Kolar	Kendatti	93
195	78.2983	13.1341	Kolar	Mulbagal	Devarayasamundra	249
196	78.4591	13.2735	Kolar	Mulbagal	Gudipalli	145
197	78.5027	13.2460	Kolar	Mulbagal	Pethandlahalli	100
198	78.4890	13.2369	Kolar	Mulbagal	Bairukur	56
199	78.4736	13.1984	Kolar	Mulbagal	Tatikallu	155
200	78.3895	13.1610	Kolar	Mulbagal	Mulbagal	330
201	78.3527	13.1786	Kolar	Mulbagal	Mallasandra	1076
202	78.3674	13.2134	Kolar	Mulbagal	Kurudmale	173
203	78.3328	13.2048	Kolar	Mulbagal	Bevahalli	55
204	78.1115	13.1571	Kolar	Kolar	Nelam	142
205	77.9877	13.2042	Kolar	Kolar	Kurugal A	338
206	76.4167	15.7667	Koppal	Kushtagi	Tawargere	78
207	76.0583	15.7333	Koppal	Yelburga	Bandi	86

208	76.2206	15.4672	Koppal	Koppal	Irkalagada	174
209	75.9250	15.5417	Koppal	Yelburga	Rajoors	316
210	76.2600	15.8200	Koppal	Kushtagi	K Hosur	134
211	75.9800	15.5700	Koppal	Yelburga	Sanganhal	225
212	76.0100	15.3700	Koppal	Yelburga	Itagi	295
213	76.8000	12.9500	Mandya	Nagamangala	Nelligere	70
214	76.5500	12.5167	Mandya	Pandavapura	Ankegowdanakoppalu	113
215	76.7181	12.8347	Mandya	Pandavapura	Kyatanahalli	132
216	76.6844	12.4975	Mandya	Pandavapura	Devegowdana Koppalu	111
217	76.8847	12.5308	Mandya	Mandya	Mandya Dw	49
218	76.7381	13.0211	Mandya	Nagamangala	Chunchunahalli	72
219	76.8667	12.6250	Mandya	Mandya	Belidegula	58
220	76.7833	12.7167	Mandya	Mandya	Basaralu	105
221	76.7008	12.4286	Mandya	Shrirangapattana	Sreenivasa Agrahara	50
222	76.7669	12.4086	Mandya	Shrirangapattana	Chikapalya	148
223	76.7667	12.4000	Mandya	Shrirangapattana	Mahadevapura1	47
224	76.8000	12.4167	Mandya	Shrirangapattana	Arakere1	109
225	77.1200	12.4728	Mandya	Nagamangala	Anjabhuvanahalli	61
226	76.7583	12.8250	Mandya	Nagamangala	Nagamangala2	51
227	76.7322	12.8347	Mandya	Nagamangala	Mudlu Koppalu	128
228	76.6347	12.6556	Mandya	Pandavapura	Melukote-1	133
229	76.5344	12.6786	Mandya	Krishnarajpet	Maravanahalli	102
230	77.0997	12.2500	Mandya	Malvalli	Shivanasamudra	60
231	77.0875	12.3328	Mandya	Malvalli	Bachenahalli	84
232	77.0333	12.4675	Mandya	Maddur	Bharati Nagar	67
233	77.0531	12.5314	Mandya	Maddur	Shivapura	86
234	77.0203	12.6222	Mandya	Maddur	Chapura Doddi	79
235	77.0772	12.3953	Mandya	Malvalli	Anchedoddi	151
236	76.0400	12.3800	Mysore	Piriyapatna	Punnadahalli Koppalu	51
237	76.0400	12.4100	Mysore	Piriyapatna	P. Basavanahalli	88
238	76.0500	12.4400	Mysore	Piriyapatna	Konasuru	65
239	76.0700	12.4600	Mysore	Piriyapatna	Dhepura	158
240	76.1000	12.4700	Mysore	Piriyapatna	Bettadapur	213
241	76.1400	12.4800	Mysore	Piriyapatna	Attigod	125
242	76.2100	12.4900	Mysore	Piriyapatna	Kittur	88
243	76.2400	12.5000	Mysore	Piriyapatna	Mayagowadanahalli	88
244	76.2900	12.5000	Mysore	K r nagara	Chunchanakatte	156
245	76.3400	12.5900	Mysore	K r nagara	Bheerya	64
246	76.3800	12.5100	Mysore	K r nagara	Badakanakoppalu	185
247	76.3900	12.4900	Mysore	K r nagara	Hampapura	105
248	76.3300	12.3900	Mysore	K r nagara	Gowdagere	81
249	76.3700	12.3700	Mysore	K r nagara	Hejjodlu	143
250	76.3900	12.3800	Mysore	K r nagara	Shiriyur	115
251	76.4100	12.3600	Mysore	K r nagara	Hosaramanahalli	78
252	76.3300	12.2500	Mysore	Hunsur	Koimuthur Colony	135
253	76.3400	12.2300	Mysore	Hunsur	Rathnapuri	122
254	76.3900	11.9900	Mysore	H d kote	Sargur	277
255	76.4700	11.9800	Mysore	H d kote	Mullur	79
256	76.5200	11.9300	Mysore	H d kote	Beeredevanapura	54
257	76.5600	11.9200	Mysore	H d kote	Kothanahalli	128
258	76.6600	12.1000	Mysore	Nanjanagudu	Devirammanahalli	71
259	76.5500	12.0900	Mysore	Nanjanagudu	Hullahalli	76
260	76.4400	12.1100	Mysore	Nanjanagudu	Ibjala	194
261	76.7300	12.1300	Mysore	Nanjanagudu	Alambur	81

262	76.7400	12.2600	Mysore	Mysore	Varuna	75
263	76.8800	12.2700	Mysore	T narasipura	Somnathapura	96
264	76.8800	12.3000	Mysore	Mysore	Kethupura	108
265	76.8800	12.3000	Mysore	Mysore	Bevinahalli	60
266	76.8200	12.3200	Mysore	Mysore	Ranganathapura	62
267	76.9100	12.2000	Mysore	T narasipura	Alagudu	77
268	76.9400	12.1300	Mysore	T narasipura	Muguru	208
269	76.6372	16.1108	Raichur	Lingsugur	Chikkasarur	47
270	76.7881	16.2011	Raichur	Manvi	Chincherki	58
271	76.7833	16.2000	Raichur	Manvi	Buddinai	52
272	76.4583	15.8389	Raichur	Sindanur	Mahampur	50
273	76.5056	15.7583	Raichur	Sindanur	Chikbhergi	54
274	76.6500	15.9600	Raichur	Lingsugur	Maski	54
275	76.9500	16.0800	Raichur	Manvi	Balatagi	60
276	76.9508	16.2750	Raichur	Devadurga	Arakeri	89
277	76.6700	16.1000	Raichur	Manvi	Pamankallu	49
278	76.4417	15.9519	Raichur	Lingsugur	Ulimeshwar	49
279	76.6814	15.6722	Raichur	Sindanur	Hanchinal	280
280	77.0658	16.1822	Raichur	Manvi	Jakkaladinni	76
281	76.9500	15.9600	Raichur	Manvi	Hirekotankal	208
282	77.4286	12.5219	Ramnagara	Kanakapura	Aralalu	50
283	77.4750	12.6819	Ramnagara	Kanakapura	Harohalli A	46
284	77.3192	12.7994	Ramnagara	Ramanagara	Sugganahalli	187
285	77.3616	12.4209	Ramnagara	Kanakapura	Naikanahalli	63
286	75.2375	13.8903	Shivmoga	Hosanagara	Gartikere	60
287	75.4217	14.1844	Shivmoga	Shikarpura	Arekoppa	46
288	75.4342	14.0111	Shivmoga	Shimoga	Ayanur	45
289	76.6610	13.1630	Tumkur	Turuvekere	Turuvekere	51
290	76.5500	13.1660	Tumkur	Tiptur	Karavadikodi	219
291	76.9470	13.3060	Tumkur	Gubbi	Gubbi	84
292	76.9440	13.4130	Tumkur	Gubbi	Irkasandra	55
293	76.4790	13.2590	Tumkur	Tiptur	Tiptur	198
294	76.5280	13.3950	Tumkur	Chiknayakanahalli	Medihalli	69
295	76.4810	13.4690	Tumkur	Chiknayakanahalli	Mattigatta	47
296	76.4320	13.4050	Tumkur	Tiptur	Suragondanahalli	65
297	76.5470	13.5840	Tumkur	Chiknayakanahalli	Huliyar	64
298	74.6903	13.0508	Udupi	Kundapura	Kundapura	53
299	74.8125	13.8658	Udupi	Kundapura	Kollur	50
300	74.1292	14.8542	Uttara Kannada	Karwar	Sadashivgad	47
301	75.9479	14.7648	Vijayanagara	Hp halli	Ananthanahalli	102
302	75.9985	14.7773	Vijayanagara	Hp halli	D.mallapura	86
303	75.9804	14.7927	Vijayanagara	Hp halli	Harpanahalli	83
304	75.8431	14.8476	Vijayanagara	Hp halli	Harkanalu	168
305	75.7955	14.9941	Vijayanagara	Hadagalli	Magala	217
306	76.4932	15.0432	Vijayanagara	Sandur	Yeshwanthnagar	217
307	76.5479	15.0855	Vijayanagara	Sandur	Sandur	78
308	76.3678	15.1741	Vijayanagara	Hospet	Danapura	120
309	76.4779	15.3072	Vijayanagara	Hospet	Kamalapuram(A)	143
310	76.5157	15.3303	Vijayanagara	Hospet	76 Venkatapura	144
311	76.7557	16.5261	Yadgir	Shorapur	Shahpur	56
312	76.6641	16.7560	Yadgir	Shahapur	Ukkinal	276
313	76.5202	16.4583	Yadgir	Hunisigi	Hunsagi	146
314	77.0370	16.7172	Yadgir	Shahapur	Managinahal	213
315	76.5326	16.6483	Yadgir	Shorapur	Khembhavi	588

Annexure-V

Locations having Uranium > 30 µg/litre in Ground Water of Karnataka State during NHS 2022-23

Sl.no	Long	Lat	District	Block	Location	U (>30 µg/l)
1	75.5299	16.3760	Bagalkot	Badami	Guledgudda	241.1
2	76.8379	15.4405	Ballari	Siruguppa	Sirigeri	30.7
3	75.1181	15.8525	Belagavi	Saundatti	Munavalli	77.5
4	74.9350	15.8912	Belagavi	Saundatti	Murgod	36.1
5	74.6026	16.2359	Belagavi	Hukkeri	Hukkeri	30.6
6	74.6432	15.7730	Belagavi	Belagavi	Hire Bagewadi	45.5
7	75.1188	16.8841	Belagavi	Athani	Mallabad	35.7
8	74.5768	16.1920	Belagavi	Hukkeri	Gondwad	50.1
9	74.9975	16.0163	Belagavi	Saundatti	Yeraganeri	76.3
10	74.8936	16.6717	Belagavi	Kagavada	Ainapur	33.4
11	74.9138	16.3056	Belagavi	Mudalagi	Naganur	48.0
12	75.3002	16.8668	Belagavi	Athani	Kakmari	74.6
13	74.9886	16.5655	Belagavi	Raibag	Koligudde	45.7
14	75.2111	16.7468	Belagavi	Athani	Khotanatti	30.6
15	75.0737	16.7269	Belagavi	Athani	Athani	30.5
16	74.7284	16.5185	Belagavi	Raibag	Yedrav	34.9
17	74.6537	16.3611	Belagavi	Chikkodi	Belakud	40.8
18	74.6998	16.1000	Belagavi	Hukkeri	Gumachinemaradi	33.7
19	74.8374	16.7338	Belagavi	Kagavada	Mangsuli	32.3
20	74.6510	16.0607	Belagavi	Hukkeri	Basapur	67.8
21	74.6791	16.5323	Belagavi	Raibag	Naslapur	38.1
22	75.1284	16.6797	Belagavi	Athani	Nandagaon	135.3
23	74.6449	16.5067	Belagavi	Chikkodi	Rupnal	75.2
24	74.9233	16.7189	Belagavi	Kagavada	Mole	94.1
25	77.7004	13.2999	Bengaluru Rural	Devanahalli	Kodagurki	89.2
26	77.7122	13.2482	Bengaluru Rural	Devanahalli	Devanahalli	125.2
27	77.7246	13.2953	Bengaluru Rural	Devanahalli	Avathi	352.8
28	77.6491	13.2714	Bengaluru Rural	Devanahalli	Vishwanathapura	67.1
29	77.6046	13.2825	Bengaluru Rural	Devanahalli	Bairasandra	43.1
30	77.5384	13.2871	Bengaluru Rural	Doddaballapura	Doddaballapura	32.0
31	78.0666	13.3154	Chikballapura	Chintamani	Gajalahalli	62.2
32	78.0031	13.4034	Chikballapura	Chintamani	Upparpet	66.6
33	78.0554	13.4055	Chikballapura	Chintamani	Chintamani	2191.8
34	78.1285	13.4413	Chikballapura	Chintamani	Murugumale	78.7
35	77.7543	13.5506	Chikballapura	Chikballapura	Settigere	1265.6
36	77.7514	13.7430	Chikballapura	Gudibonde	Hampasandra	55.9
37	76.7500	14.7160	Chitradurga	Molakalmuru	Molakalmuru	128.2
38	75.15875	15.58336	Dharwad	Hubli	Morab	33.2
39	75.49938	15.19083	Gadag	Gajendragad	Gojanur	34.7
40	75.652	15.47762	Gadag	Gajendragad	Hirekoppa	143.3
41	76.1627	12.8591	Hassan	Hassan	Nyamanahalli	112.6
42	75.8700	12.6200	Kodagu	Somvarpet	Khowaikatte	31.3
43	78.1200	12.9000	Kolar	Bangerpet	Budikote	49.0
44	78.1680	12.8430	Kolar	Bangerpet	Bhimganapalli	83.2

45	78.3000	12.9644	Kolar	Kgf	Gadarajahalli	886.8
46	78.4033	13.2175	Kolar	Mulbagal	Sangasandra	746.3
47	78.4591	13.2735	Kolar	Mulbagal	Gudipalli	74.6
48	78.5027	13.2460	Kolar	Mulbagal	Pethandlahalli	69.1
49	78.3527	13.1786	Kolar	Mulbagal	Mallasandra	30.2
50	78.3674	13.2134	Kolar	Mulbagal	Kurudmale	52.0
51	78.1115	13.1571	Kolar	Kolar	Nelam	139.5
52	76.2200	15.3500	Koppal	Koppal	Basapur	252.8
53	76.7381	13.0211	Mandya	Nagamangala	Chunchunahalli	30.1
54	76.6847	12.4208	Mandya	Shrirangapattana	Srirangapatna	64.6
55	76.6361	12.8781	Mandya	Nagamangala	Bindiganavale	43.6
56	76.2600	12.5600	Mysore	K R Nagara	Saligrama	2429.0
57	77.4100	16.0700	Raichur	Raichur	Yeragera	46.0
58	76.8900	16.0500	Raichur	Manvi	Bagalwad	90.0
59	76.9500	16.3400	Raichur	Devadurga	Hemanur	49.0
60	77.3500	16.2000	Raichur	Raichur	Raichur	43.0
61	76.6814	15.6722	Raichur	Sindanur	Hanchinal	250.0
62	77.0658	16.1822	Raichur	Manvi	Jakkaladinni	71.5
63	77.1830	13.7000	Tumkur	Madhugiri	Chilanahalli	34.8
64	77.1990	13.7320	Tumkur	Madhugiri	Giriyammana Palya	59.9
65	77.0630	13.6760	Tumkur	Madhugiri	Badavanahalli	39.7
66	76.4456	14.9729	Vijayanagara	Sandur	Jogikallu	125.0
67	76.5157	15.3303	Vijayanagara	Hospet	76 Venkatapura	35.3

Annexure-VI

Water quality data of NHS 2022-23 for basic parameters for Karnataka State

Sl. No.	Location	District	Latitude	Longitude	pH (6.5-8.5)	EC in µS/cm	TH (600)	Ca (200)	Mg (100)	Na	K	CO_3	HCO_3	Cl (1000)	SO_4 (400)	NO_3 (45)	F (1.5)	U (30 ppb)	TDS (2000)	TA (600)
1	Badami (Alternate Well)	Bagalkot	16.0092	76.0138	8.03	606	124	26	15	31	16.3	84	52	132	7	25	0.71	0.8	334	183
2	Guledagudda	Bagalkot	16.6695	75.3500	7.54	2106	617	123	75	135	24.4	48	544	386	92	42	0.95	12.0	1238	526
3	Yedahalli	Bagalkot	16.0111	76.1375	7.81	1010	208	42	25	64	18.5	52	172	242	23	26	0.66	2.6	577	228
4	Lakhmapur	Bagalkot	15.9495	75.8151	7.54	570	212	42	26	20	9.1	0	178	39	54	23	0.63	1.3	321	146
5	Iihal	Bagalkot	15.8645	75.6204	7.76	860	273	38	43	57	18.2	0	332	53	74	3	0.54	0.8	489	272
6	Malapura	Bagalkot	16.5720	75.3297	7.45	1120	379	59	56	64	1.6	0	246	89	180	51	0.85	0.4	651	202
7	Belagalli	Bagalkot	16.3469	75.6466	7.54	1130	354	53	53	84	1.5	0	239	117	124	86	0.54	0.9	665	196
8	Nagur	Bagalkot	16.0953	76.3016	8.12	1530	273	28	49	220	3.2	0	399	149	200	7	1.83	7.0	900	327
9	Rabakivi	Bagalkot	15.9299	75.6771	7.56	1690	369	46	61	211	1.6	0	276	188	310	30	0.93	0.7	1016	226
10	Kerur A	Bagalkot	16.4764	75.1083	7.46	1690	379	61	55	171	57.1	0	368	255	100	86	0.78	0.9	1010	302
11	Teggi	Bagalkot	16.2178	75.6096	6.97	1710	581	67	100	106	2.1	0	264	262	215	56	0.78	6.5	969	216
12	Banhatti	Bagalkot	16.4846	75.1313	7.40	1750	550	77	86	119	6.8	0	264	213	302	43	0.83	2.5	1008	216
13	Wadageri	Bagalkot	16.3674	75.2770	6.92	2100	631	51	122	157	35.3	0	374	284	190	211	1.20	5.4	1279	307
14	Kardi (Alternate Well)	Bagalkot	16.0472	75.7815	7.50	2410	303	61	36	411	5.3	0	276	294	457	7	1.45	4.5	1440	226
15	Amingarh	Bagalkot	16.5396	75.3297	7.78	2780	576	38	115	369	9.6	0	399	464	225	205	1.44	7.5	1669	327

16	Badagandi	Bagalkot	15.9426	75.9406	8.31	3100	404	38	74	520	2.7	0	706	422	288	89	1.75	6.5	1864	579
17	Kodihal	Bagalkot	15.9617	75.9657	7.09	3250	611	55	114	513	29.9	0	467	514	406	170	1.97	9.6	2087	383
18	Kumbarhal	Bagalkot	16.3839	75.1518	7.48	3350	1212	224	157	210	1.7	0	276	670	420	52	0.85	5.4	1903	226
19	Mudhol	Bagalkot	16.0553	75.9452	7.32	3680	1212	186	180	291	1.6	0	270	720	440	87	0.29	4.1	2071	221
20	Patadkal	Bagalkot	16.3250	75.2908	7.30	3830	853	87	153	406	142.4	0	276	847	375	115	0.67	3.0	2294	226
21	Savalgi	Bagalkot	15.9758	76.1231	7.64	3870	1061	154	163	395	11.6	0	442	737	404	3	0.73	3.7	2137	362
22	Binjawadige	Bagalkot	16.0466	75.7527	7.72	4290	712	182	62	585	103.1	0	497	752	380	108	1.52	6.8	2475	407
23	Tumb	Bagalkot	16.1026	76.2043	7.91	5030	444	32	87	947	8.0	0	1044	617	416	147	1.68	15.3	2891	856
24	Gorbal	Bagalkot	16.0108	75.5451	8.33	7900	1010	40	219	1325	64.0	81	1246	1574	388	10	1.84	6.3	4429	1156
25	Algur	Bagalkot	16.0653	76.1075	7.95	9620	965	354	19	2018	5.2	0	479	1418	2290	167	1.38	8.7	6564	393
26	Guledgudda	Bagalkot	16.3760	75.5299	6.89	10600	2545	113	544	1298	3.8	0	810	2574	412	314	1.19	241.1	5753	664
27	Genikahal	Ballari	15.4980	76.8391	8.35	1370	232	32	36	201	12.3	39	264	167	84	71	1.40	7.1	788	281
28	Sirigeri	Ballari	15.4405	76.8379	7.42	4740	1086	386	29	580	14.3	0	368	915	382	225	0.41	30.7	2755	302
29	Tekalakota(A)	Ballari	15.5361	76.8797	8.14	3060	187	30	27	475	242.4	0	982	280	211	94	2.00	9.8	1958	805
30	Vinayakanagara	Ballari	15.1600	76.8818	8.47	720	167	34	19	78	5.3	9	92	106	88	26	0.45	0.4	418	90
31	Allipuram I	Ballari	15.1657	76.8604	8.15	1680	268	71	22	257	10.2	0	111	340	105	139	0.38	2.3	1013	91
32	Bailuru	Ballari	15.3503	76.9129	7.64	1940	697	182	58	110	17.6	0	160	238	249	217	1.50	14.4	1170	131
33	Gotur	Belagavi	16.2323	74.5108	9.58	130	50	16	2	8	1.5	6	18	18	5	10	0.22	2.6	75	25
34	Gunji	Belagavi	15.5363	74.4917	9.57	180	50	12	5	18	3.0	9	37	25	8	2	0.20	3.7	100	45
35	Khanapur	Belagavi	15.6387	74.5053	8.09	190	75	18	7	12	3.5	0	61	28	6	4	0.15	3.1	116	50
36	Vantamuri	Belagavi	16.0277	74.5327	10.13	260	75	14	10	19	3.0	18	49	25	5	24	0.24	2.5	140	70

37	Uchagaon	Belagavi	15.8827	74.4284	8.91	280	110	26	11	13	1.5	9	24	50	6	34	0.21	0.7	162	35
38	Nandgad	Belagavi	15.5829	74.5676	7.56	350	95	24	9	27	18.0	0	128	46	6	1	0.20	4.4	208	105
39	Madihalli	Belagavi	16.2116	74.6312	8.36	410	60	14	6	47	17.8	6	98	25	60	6	0.24	25.2	239	90
40	Chikka Nandi	Belagavi	16.0877	74.9261	7.82	420	140	36	12	32	1.5	0	159	25	30	10	0.40	10.6	244	130
41	Hulloli	Belagavi	16.2640	74.6552	7.48	420	100	22	11	46	0.9	0	122	32	35	12	0.28	20.2	233	100
42	Hunuru	Belagavi	16.1648	74.6173	8.04	430	160	48	10	20	1.5	0	201	21	4	7	0.52	3.8	234	165
43	Bidi	Belagavi	15.5625	74.6480	7.50	500	110	20	15	57	7.0	0	183	50	4	8	0.16	2.9	272	150
44	Soundalga	Belagavi	16.4722	74.3473	9.85	500	110	10	21	60	3.0	18	61	78	22	25	0.23	17.1	267	80
45	Sutgatti (Nesargi)	Belagavi	16.0634	74.5156	7.67	500	55	10	7	84	7.0	0	98	32	90	24	0.60	9.9	314	80
46	Sankeswar	Belagavi	16.2606	74.4838	9.99	520	80	12	12	77	7.0	9	98	71	10	68	0.23	6.9	321	95
47	Gurlapur	Belagavi	16.3657	74.9560	8.34	530	180	26	28	33	1.5	6	92	50	65	41	0.17	24.1	303	85
48	Kittur	Belagavi	15.5966	74.7779	7.91	540	185	40	21	42	4.0	0	220	64	3	3	0.22	7.2	310	180
49	Sutgatti	Belagavi	15.8904	74.7235	8.06	540	230	44	29	20	1.0	0	244	25	7	37	0.24	0.0	312	200
50	Munavalli	Belagavi	15.8525	75.1181	7.70	570	165	40	16	41	11.0	0	195	67	6	25	0.52	77.5	325	160
51	Londa	Belagavi	15.4481	74.4920	7.47	580	170	38	18	49	4.5	0	140	74	9	57	0.19	4.6	335	115
52	Watre	Belagavi	15.4802	74.4784	6.64	600	240	72	15	15	19.0	0	140	35	11	152	0.17	5.0	405	115
53	Galatga	Belagavi	16.4925	74.4721	8.31	620	205	40	26	52	2.0	9	159	78	10	37	0.25	4.7	347	145
54	Chandgad	Belagavi	15.9060	74.6089	8.25	660	160	40	15	38	57.5	0	226	74	9	0	0.38	0.0	371	185
55	Belgaum	Belagavi	15.8566	74.5072	8.81	680	215	44	26	55	3.5	15	159	106	9	18	0.28	3.3	367	155
56	Bailhongal	Belagavi	15.8171	74.8521	7.62	680	245	46	32	42	2.0	0	311	46	6	22	0.53	15.2	385	255
57	Godache	Belagavi	16.0120	75.1969	8.37	680	195	40	23	51	3.0	6	214	89	4	8	0.57	14.4	352	185

58	Kudichi	Belagavi	15.8579	74.5651	8.05	730	285	54	36	25	1.5	0	183	121	8	24	0.27	0.0	381	150
59	Bellad Bagewadi	Belagavi	16.3015	74.7188	9.53	750	180	12	36	87	1.6	9	171	92	50	42	0.27	27.6	431	155
60	Murgod(Alternate)	Belagavi	15.8912	74.9350	7.93	760	235	36	35	54	18.5	0	256	92	9	23	0.65	36.1	425	210
61	Yabarhatti	Belagavi	16.5347	74.9788	7.96	760	175	44	16	83	1.5	0	183	71	90	24	0.15	18.2	441	150
62	Piranwadi	Belagavi	15.8023	74.4818	8.13	770	195	42	22	57	22.5	0	116	113	7	93	0.18	2.1	427	95
63	Hallakki	Belagavi	15.9253	74.9194	7.65	770	300	66	33	32	2.0	0	317	35	7	81	0.93	8.9	449	260
64	Kundargi	Belagavi	16.0803	74.6843	8.10	770	230	50	26	39	57.0	0	354	53	8	6	0.69	13.0	454	290
65	Ramdurg	Belagavi	15.9479	75.2963	8.39	780	180	26	28	99	11.0	9	275	78	11	26	0.65	24.0	452	240
66	Sulibhavi	Belagavi	15.8947	74.6597	8.41	800	230	50	26	65	5.5	12	110	135	16	53	0.18	0.0	424	110
67	Halyal	Belagavi	16.6468	75.0249	9.57	800	130	20	19	92	28.0	9	122	103	110	2	0.17	13.2	454	115
68	Sangankeri	Belagavi	16.2382	74.8470	7.75	810	200	24	34	92	3.0	0	165	53	135	61	0.20	18.3	503	135
69	Bastwad	Belagavi	16.1902	74.5886	7.91	810	175	30	24	92	18.0	0	171	71	130	32	0.29	15.6	501	140
70	Hukkeri	Belagavi	16.2359	74.6026	8.77	820	175	24	28	97	8.5	6	140	142	55	16	0.36	30.6	459	125
71	Sopadla	Belagavi	15.9994	75.0592	7.52	850	260	36	41	70	9.0	0	281	113	25	0	0.50	15.5	466	230
72	Sindhikurbet	Belagavi	16.2140	74.7930	7.54	870	230	16	46	92	3.5	0	262	78	60	37	0.41	25.5	492	215
73	Nipani	Belagavi	16.4061	74.3783	8.42	880	160	30	21	127	2.0	21	281	99	12	6	0.53	13.6	480	265
74	Kuduchi	Belagavi	16.6216	74.8569	9.40	880	235	42	32	92	1.0	9	61	78	235	11	0.09	20.5	533	65
75	Hattargi	Belagavi	16.1365	74.5170	7.78	910	210	32	32	97	2.0	0	390	53	50	6	0.39	17.7	510	320
76	Islampura	Belagavi	16.0485	74.5746	7.70	950	345	70	41	46	2.0	0	336	106	13	28	0.31	15.6	512	275
77	Raibag	Belagavi	16.4881	74.7808	7.58	960	240	44	32	97	1.0	0	250	85	90	30	0.30	17.6	531	205
78	Halaga	Belagavi	15.8232	74.5630	7.66	990	345	60	47	50	2.0	0	348	131	11	3	0.51	0.0	516	285

79	Salahalli	Belagavi	16.0720	75.2327	8.21	1000	310	82	26	75	5.5	0	293	174	10	3	0.52	22.8	553	240
80	Ghodegeri	Belagavi	16.1826	74.6921	7.72	1020	300	70	30	78	11.0	0	403	110	9	4	0.36	14.6	558	330
81	Yadgud	Belagavi	16.3214	74.6048	7.44	1020	380	82	43	39	1.5	0	305	110	11	71	0.34	7.2	543	250
82	Parthanhalli	Belagavi	16.7988	75.0888	7.86	1050	240	48	29	122	2.0	0	171	89	200	40	0.25	18.4	634	140
83	Arabhavi	Belagavi	16.2225	74.8232	7.70	1090	195	28	30	120	54.0	0	342	96	95	31	0.40	29.3	662	280
84	Saundatti	Belagavi	15.7644	75.1137	7.35	1140	390	48	66	86	3.0	0	415	113	6	73	0.90	13.8	648	340
85	Hanjamhatti	Belagavi	16.2825	71.5929	7.74	1150	400	76	51	71	5.0	0	238	142	9	198	0.33	21.7	697	195
86	Hubruvadi	Belagavi	16.4454	74.7671	7.70	1210	295	60	35	129	2.5	0	232	128	120	127	0.53	17.7	742	190
87	Nesargi	Belagavi	15.9058	74.7776	7.45	1260	490	68	78	60	2.0	0	390	149	11	97	0.49	0.0	703	320
88	Hire Bagewadi	Belagavi	15.7730	74.6432	7.53	1290	360	60	51	116	5.0	0	342	213	8	39	0.57	45.5	701	280
89	Mallabad	Belagavi	16.8841	75.1188	7.63	1360	420	96	44	120	1.0	0	214	135	230	91	0.20	35.7	847	175
90	Khangaon(Alternative)	Belagavi	16.0150	74.8271	7.76	1380	340	56	49	137	48.0	0	458	170	12	76	0.79	9.2	826	375
91	Chinchali	Belagavi	16.5647	74.8153	7.71	1390	295	62	34	173	7.0	0	305	131	210	36	0.32	15.3	839	250
92	Gondwad	Belagavi	16.1920	74.5768	7.64	1430	410	64	61	129	3.0	0	354	135	170	60	0.30	50.1	837	290
93	Badchi	Belagavi	16.7372	75.1494	7.84	1440	370	44	63	143	6.0	0	256	142	221	77	0.20	19.8	852	210
94	Yeraganeri	Belagavi	16.0163	74.9975	7.50	1450	490	84	68	106	1.5	0	390	184	130	4	0.39	76.3	816	320
95	Mamadapur	Belagavi	16.1129	74.9327	7.50	1460	370	44	63	156	9.0	0	317	206	110	85	0.38	23.3	867	260
96	Kabbur	Belagavi	16.3495	74.7266	8.10	1510	310	84	24	186	25.0	0	415	199	17	84	0.49	25.5	872	340
97	Ainapur	Belagavi	16.6717	74.8936	9.12	1510	390	68	53	143	8.0	18	122	248	200	46	0.07	33.4	852	130
98	Naganur	Belagavi	16.3056	74.9138	7.74	1570	420	20	90	156	2.0	0	403	177	130	85	0.22	48.0	906	330
99	Kakmari	Belagavi	16.8668	75.3002	7.71	1600	460	152	19	115	31.0	0	244	248	170	78	0.23	74.6	963	200

100	Koligudde	Belagavi	16.5655	74.9886	8.08	1690	480	40	92	156	3.0	0	281	156	360	22	0.15	45.7	1001	230
101	Yelimunoli	Belagavi	16.2693	74.5807	7.68	1700	500	96	63	150	3.0	0	512	241	22	30	0.29	20.2	918	420
102	Khotanatti	Belagavi	16.7468	75.2111	7.72	1710	470	20	102	156	2.0	0	342	312	72	14	0.25	30.6	886	280
103	Ankeligudiketra	Belagavi	16.1507	74.6901	7.82	1750	480	112	49	106	122.0	0	586	227	9	13	0.45	19.3	995	480
104	Radderhatti	Belagavi	16.6370	75.0798	7.72	1870	660	120	87	106	8.0	0	342	255	221	81	0.22	27.1	1087	280
105	Athani	Belagavi	16.7269	75.0737	7.59	1940	480	184	5	214	4.0	0	415	284	154	43	0.22	30.5	1141	340
106	Yedrav	Belagavi	16.5185	74.7284	7.62	2000	660	200	39	138	6.0	0	342	440	17	51	0.28	34.9	1099	280
107	Eskamba	Belagavi	16.5287	74.6040	8.31	2080	280	40	44	244	196.0	0	683	298	17	46	0.38	17.2	1301	560
108	Belakud	Belagavi	16.3611	74.6537	7.37	2140	620	176	44	206	4.0	0	842	213	29	85	0.52	40.8	1270	690
109	Bekud	Belagavi	16.4278	74.8372	7.94	2200	540	88	78	258	4.0	0	476	425	15	108	0.36	18.0	1266	390
110	Gumachinemaradi	Belagavi	16.1000	74.6998	7.68	2250	400	72	53	214	206.0	0	537	425	10	99	0.75	33.7	1407	440
111	Mangsuli	Belagavi	16.7338	74.8374	8.14	2330	500	120	49	267	6.0	0	366	454	120	82	0.13	32.3	1321	300
112	Basapur	Belagavi	16.0607	74.6510	7.46	2660	710	208	46	230	94.0	0	561	440	11	262	0.41	67.8	1634	460
113	Naslapur	Belagavi	16.5323	74.6791	8.04	3160	600	144	58	426	6.0	0	854	482	26	74	0.40	38.1	1737	700
114	Nandagaon	Belagavi	16.6797	75.1284	7.48	4180	1050	220	122	432	75.0	0	366	851	374	230	0.20	135.3	2527	300
115	Rupnal	Belagavi	16.5067	74.6449	8.13	5100	920	120	151	740	10.0	0	549	1347	16	235	0.58	75.2	2954	450
116	Mole	Belagavi	16.7189	74.9233	7.96	7850	1650	100	340	1005	10.0	0	549	1489	1200	45	0.22	94.1	4524	450
117	Kodagurki	Bengaluru Rural	13.2999	77.7004	8.41	1600	420	56	68	76	140.0	9	256	142	120	304	0.30	89.2	1067	225
118	Devanahalli	Bengaluru Rural	13.2482	77.7122	8.50	1840	540	72	87	90	118.0	24	220	113	140	446	0.82	125.2	1216	220
119	Avathi	Bengaluru Rural	13.2953	77.7246	8.39	1800	480	72	73	72	186.0	18	214	117	140	440	1.42	352.8	1241	205
120	Vishwanathapura	Bengaluru Rural	13.2714	77.6491	8.26	850	290	48	41	46	14.0	0	73	170	70	56	0.60	67.1	490	60

121	Bairasandra	Bengaluru Rural	13.2825	77.6046	8.06	1450	500	112	53	88	10.0	0	146	99	100	415	0.49	43.1	968	120
122	Siddanaikanahalli	Bengaluru Rural	13.2983	77.5529	8.09	2350	1020	160	151	56	2.0	0	244	170	180	632	0.33	11.7	1500	200
123	Doddaballapura	Bengaluru Rural	13.2871	77.5384	8.13	2030	580	48	112	170	34.0	0	317	199	140	372	0.60	32.0	1268	260
124	Shivgange	Bengaluru Rural	13.1814	77.2236	8.59	500	160	36	17	36	3.0	24	165	35	15	8	0.75	0.0	265	175
125	Gangenpura	Bengaluru Rural	13.1759	77.2122	8.40	700	180	40	19	74	0.5	9	92	43	40	210	0.88	0.0	487	90
126	Mahadevapura	Bengaluru Rural	13.0660	77.3218	8.46	740	285	34	49	32	1.0	15	85	57	48	186	1.10	0.3	467	95
127	Basavanagudi	Bengaluru Urban	12.9486	77.5719	8.00	760	145	40	11	94	21.9	0	250	89	39	26	0.35	0.5	474	205
128	Beguru	Bengaluru Urban	12.8833	77.6169	7.57	1110	160	42	13	64	180.6	0	494	53	45	56	0.49	1.2	756	405
129	Gollahalli	Bengaluru Urban	12.8631	77.5656	7.44	1230	290	104	7	117	11.3	0	403	106	99	24	0.44	24.3	715	330
130	Gottigere	Bengaluru Urban	12.8583	77.5842	7.85	610	140	44	7	60	8.6	0	159	64	43	38	0.25	1.0	362	130
131	Jayanagara	Bengaluru Urban	12.8667	77.5833	7.94	550	165	38	17	44	4.7	0	226	53	13	11	0.24	0.2	319	185
132	Kodigehalli	Bengaluru Urban	13.0597	77.5675	8.08	910	210	64	12	97	12.1	0	262	110	45	73	0.45	1.4	572	215
133	Rajajinagara	Bengaluru Urban	12.9819	77.5506	8.28	915	200	28	32	106	3.1	0	244	128	60	23	0.75	2.0	528	200
134	Srinagara	Bengaluru Urban	12.9447	77.5539	8.07	612	150	32	17	71	6.3	0	250	53	19	14	0.40	0.6	366	205
135	Ulsoor	Bengaluru Urban	12.9756	77.6236	7.58	756	170	36	19	76	41.1	0	348	60	12	5	0.88	3.6	461	285
136	Vasanthpur	Bengaluru Urban	12.8950	77.5531	7.76	1662	480	100	56	136	3.9	0	390	220	154	28	0.67	0.5	935	320
137	Wilsongarden	Bengaluru Urban	12.9483	77.5973	8.22	607	125	40	6	67	6.3	0	214	50	36	19	0.52	10.4	355	175
138	H.S.R Layout	Bengaluru Urban	12.9189	77.6503	8.40	900	150	34	16	129	2.7	12	116	64	242	18	0.30	0.6	583	115
139	Seva Kshetra Hospital	Bengaluru Urban	12.9228	77.5689	8.16	463	125	36	9	48	1.2	0	195	39	9	1	0.29	3.7	262	160
140	Haragadde	Bengaluru Urban	12.7617	77.6594	8.23	895	230	42	30	78	4.3	0	146	177	35	23	0.26	8.4	479	120
141	Jigani	Bengaluru Urban	12.7863	77.6371	7.58	2370	260	88	10	429	15.7	0	903	298	40	21	0.78	2.9	1451	740

142	Rajola	Bidar	17.8477		7.34	610	160	44	12	64	0.6	0	110	64	29	95	0.20	0.1	376	90
143	Islampur	Bidar	17.7803		7.40	400	95	24	9	45	0.7	0	67	35	21	73	0.13	BDL	249	55
144	Yerandgi	Bidar	17.7899	76.9312	7.66	1265	280	64	29	155	2.2	0	336	103	40	166	0.91	0.7	764	275
145	Saigoan	Bidar	18.0623	77.0505	7.79	775	190	46	18	87	0.8	0	299	57	31	10	0.77	0.8	432	245
146	Handikerewadi	Bidar	17.8956	77.1420	7.64	1075	295	60	35	104	5.2	0	305	103	34	96	0.70	1.5	623	250
147	Ghatboral	Bidar	17.9054	77.0791	8.24	800	190	52	15	79	20.0	24	134	96	43	54	0.41	0.1	455	150
148	Andur	Bidar	17.9132	77.4116	8.17	725	160	46	11	87	5.2	0	159	89	35	61	0.21	BDL	431	130
149	Bidar	Bidar	17.9154	77.5181	8.60	450	115	26	12	46	4.8	18	122	28	29	9	0.40	0.3	241	130
150	Janawada	Bidar	18.0001	77.4798	7.90	890	330	76	34	48	1.1	0	275	74	64	42	0.44	0.7	507	225
151	Wadgoan	Bidar	18.1314	77.5261	7.81	1260	455	100	50	75	3.3	0	421	124	65	10	0.42	1.2	684	345
152	Borgi	Bidar	18.1453	77.5086	8.05	945	300	62	35	75	1.8	0	409	18	57	36	0.63	0.9	534	335
153	Nagur N	Bidar	18.1588	77.4847	8.20	1065	360	82	38	74	4.4	48	354	67	40	6	0.59	1.0	556	370
154	Santhpur	Bidar	18.1597	77.4388	7.76	1015	380	84	41	55	3.2	0	293	89	64	32	0.37	0.4	547	240
155	Boral	Bidar	18.2116	77.4250	8.49	1080	200	42	23	152	1.6	48	329	99	37	7	0.52	1.1	592	350
156	Kandikere	Bidar	18.2397	77.3685	8.04	1075	340	70	40	65	41.2	0	427	57	58	30	0.45	0.9	622	350
157	Ekamba	Bidar	18.2809	77.3725	7.77	895	275	60	30	75	1.4	0	342	53	34	28	0.32	0.8	490	280
158	Danargoan	Bidar	18.2882	77.3252	7.87	870	305	64	35	56	1.1	0	275	60	53	62	0.36	0.6	499	225
159	Rampur	Bidar	18.2382	77.2033	7.94	825	260	56	29	65	2.4	0	275	60	43	43	0.53	0.5	466	225
160	Sarawad	Bijapur	16.7162	75.6344	8.51	909	150	20	24	144	0.9	108	171	91	18	2	1.30	2.5	469	320
161	Jumnal	Bijapur	16.7551	75.7302	7.58	2640	1190	308	102	38	1.4	0	220	547	206	148	0.19	3.6	1484	180
162	Honaganahalli	Bijapur	16.6815	75.7337	7.88	5240	1610	276	223	474	83.4	0	146	1167	663	164	0.18	12.5	3139	120

163	Kolhar	Bijapur	16.4379	75.6831	8.10	828	330	60	44	27	2.8	0	134	121	100	41	0.31	0.2	477	110
164	Telgi	Bijapur	16.4787	75.8287	8.23	1573	340	60	46	161	3.2	0	183	241	184	47	0.34	0.2	854	150
165	Hullur	Bijapur	16.3540	75.9973	8.17	1184	270	24	51	141	25.9	0	392	135	100	37	2.40	6.2	753	321
166	Nidugundi	Bijapur	16.3622	75.9330	8.28	910	310	32	56	77	3.5	0	183	142	78	17	1.20	3.6	516	150
167	Multagi	Bijapur	16.5296	75.8864	7.87	2680	790	112	123	221	3.4	0	183	518	289	147	0.61	3.6	1526	150
168	Basvan Bagewadi	Bijapur	16.5651	75.9559	8.36	1549	330	20	68	232	1.6	96	207	198	130	67	1.20	1.9	900	330
169	Mangoli	Bijapur	16.6479	75.8134	7.90	2800	1000	160	145	171	64.6	0	171	583	293	147	0.37	3.8	1668	140
170	Ukkali	Bijapur	16.7246	75.8809	7.58	2800	1110	224	133	99	10.2	0	183	602	209	189	0.28	7.1	1578	150
171	Ingleswar	Bijapur	16.6509	76.0144	8.03	1979	570	52	106	185	19.3	0	415	263	175	48	0.73	2.3	1102	340
172	Dindawar	Bijapur	16.6598	75.0488	8.38	1407	430	40	80	133	2.3	72	232	163	160	43	1.10	1.6	806	310
173	Sathihal(Santhal)	Bijapur	16.7332	76.0572	8.36	5110	1150	268	116	462	310.4	84	134	1047	537	147	0.29	8.8	3019	250
174	Shivangi	Bijapur	16.8207	75.9840	8.38	1444	320	32	58	164	5.1	60	159	178	159	49	0.56	3.1	777	230
175	Kumatgi A	Bijapur	16.8181	75.8984	8.20	1238	320	40	53	100	53.8	0	281	178	118	14	0.50	6.2	727	230
176	Honnutagi	Bijapur	16.8270	75.8660	8.02	882	260	44	36	71	15.7	0	195	135	77	44	0.61	0.5	542	160
177	Bijapur(Alternate)	Bijapur	16.8291	75.7165	8.20	1095	220	40	29	122	13.3	0	220	151	101	60	0.29	0.2	651	180
178	Khatijapur	Bijapur	16.7651	75.6760	7.16	9590	2640	424	455	995	0.3	0	110	2482	672	163	0.06	14.0	5258	90
179	Tikota	Bijapur	16.8414	75.5228	8.46	828	220	44	27	97	1.1	48	94	107	99	23	0.28	1.0	484	157
180	Aliabad	Bijapur	16.8914	75.7891	8.20	1282	470	68	73	81	1.2	0	171	185	162	53	0.69	1.0	726	140
181	Nagadhana	Bijapur	16.9308	75.8478	7.88	1946	490	92	63	132	84.1	0	220	383	155	105	0.51	1.4	1148	180
182	Rugi	Bijapur	17.0891	75.9691	7.92	1892	610	96	90	104	45.0	0	238	348	153	60	0.17	0.6	1040	195
183	Tadavallanga	Bijapur	17.0760	75.9274	8.53	773	230	48	27	85	4.4	60	82	67	18	152	0.36	0.8	487	167

184	Nimbal	Bijapur	17.1022	75.8570	8.08	1343	450	60	73	95	1.7	0	171	298	109	9	0.28	8.5	749	140
185	Sawalsanga	Bijapur	17.1135	75.7431	7.75	5204	1730	276	252	347	124.5	0	134	1396	337	163	0.23	0.3	2978	110
186	Incharagi	Bijapur	17.1088	75.6890	8.18	1037	390	56	61	53	0.9	0	134	149	101	114	0.21	1.8	617	110
187	Jagjiwani	Bijapur	17.1831	75.6719	8.31	2850	620	120	77	155	295.2	30	124	474	296	157	0.24	0.9	1668	152
188	Chadchan	Bijapur	17.3113	75.6614	8.25	1028	180	24	29	130	2.0	0	146	156	71	119	1.80	1.5	620	120
189	Bardol	Bijapur	17.2782	75.7259	7.90	1979	480	88	63	211	14.5	0	159	362	205	99	0.32	2.6	1139	130
190	Newdhulikhed	Bijapur	17.3918	75.8443	7.74	2200	640	140	70	178	9.2	0	281	376	221	92	0.45	2.9	1258	230
191	Yelagi	Bijapur	17.3198	75.8331	7.83	2430	780	147	100	206	0.8	0	366	466	249	38	0.37	1.2	1430	300
192	Halsangi	Bijapur	17.3247	75.8591	7.75	1516	440	84	56	126	4.4	0	256	213	203	14	0.36	0.9	856	210
193	Bhudhihala	Bijapur	17.2452	75.9033	7.99	1718	350	40	61	216	2.4	0	342	298	129	36	0.58	0.7	990	280
194	Salotgi	Bijapur	17.1366	76.0192	7.99	1294	440	77	60	110	12.8	0	183	185	119	142	0.96	1.2	817	150
195	Sattalgaon	Bijapur	17.1435	76.0769	7.92	1590	490	64	80	132	0.8	0	256	270	150	84	1.72	2.3	937	210
196	Nadkurd	Bijapur	17.1204	75.1050	7.97	1951	560	84	85	94	27.2	0	195	305	188	80	0.63	6.9	982	160
197	Vibhutihalli	Bijapur	17.0969	76.1716	7.85	4930	1200	244	143	538	1.2	0	476	788	808	115	1.12	3.2	2927	390
198	Devanagaon	Bijapur	17.1634	76.3275	8.35	3730	580	186	28	515	18.8	96	378	582	264	69	1.69	5.3	1951	470
199	Korahalli	Bijapur	17.0283	76.2263	8.02	3200	770	138	103	408	2.4	0	305	586	348	132	0.81	2.9	1904	250
200	Kallolli	Bijapur	17.0005	76.2257	8.23	1450	300	40	48	188	2.8	0	415	170	149	27	0.43	0.9	879	340
201	Rampura	Bijapur	16.9698	76.2269	7.94	1356	360	48	58	141	0.8	0	329	185	117	33	0.91	0.6	783	270
202	Sindagi(Alternative)	Bijapur	16.9166	76.2349	8.01	1292	390	52	63	126	6.8	0	293	241	70	27	0.24	0.4	765	240
203	Ayeri	Bijapur	16.9773	76.3000	8.09	883	220	32	34	63	11.6	0	217	66	87	4	0.51	3.0	430	178
204	Moratgi	Bijapur	17.0037	76.4121	8.10	1755	450	60	73	155	16.0	0	305	298	152	41	0.88	0.7	980	250

205	Yankanchi	Bijapur	16.8644	76.3478	7.97	915	310	52	44	61	1.6	0	171	149	103	18	0.58	7.9	532	140
206	Kannolli	Bijapur	16.8580	76.1490	7.95	3660	760	140	99	436	1.2	0	317	809	213	88	1.01	1.2	1980	260
207	Deur Tanda	Bijapur	16.7800	76.0949	8.11	908	260	42	38	84	5.6	0	232	121	75	53	0.37	1.0	559	190
208	Bhudihaldon	Bijapur	16.7104	76.1455	8.55	4130	850	194	88	512	52.8	120	512	592	396	3	0.85	6.6	2223	620
209	Hanchali	Bijapur	16.6544	76.2266	8.14	1307	190	28	29	167	4.8	0	305	85	152	89	1.56	4.8	741	250
210	Ambalanur	Bijapur	16.6316	76.2469	8.66	1447	220	44	27	230	1.6	96	366	57	125	50	1.68	8.8	815	460
211	Pettepur	Bijapur	16.5593	76.2920	8.62	2160	520	156	31	232	1.2	96	415	142	226	5	1.26	5.6	1105	500
212	Mileshwara(Alternative)	Bijapur	16.4667	76.3386	8.32	3210	610	114	79	418	46.8	44	281	618	242	91	1.84	5.0	1806	303
213	Minajigi	Bijapur	16.4725	76.2748	8.44	3150	510	84	22	327	260.4	84	397	487	257	34	0.96	2.7	1764	465
214	Bavur	Bijapur	16.4441	76.2517	8.42	4780	880	198	53	533	241.2	108	488	853	349	62	1.03	5.7	2652	580
215	Devar Hulagbal	Bijapur	16.4101	76.2440	8.02	1865	380	70	50	168	120.0	0	500	170	171	82	0.96	1.8	1136	410
216	Muddebihal(A)	Bijapur	16.3367	76.1354	8.00	1395	340	44	56	137	13.6	0	329	185	125	64	0.94	2.8	825	270
217	Hiremural	Bijapur	16.3092	76.2211	8.71	1391	280	56	5	177	5.6	120	390	64	89	3	2.24	16.0	709	520
218	Nagarbetta	Bijapur	16.2819	76.2573	8.08	2470	500	40	97	344	23.6	0	512	405	206	21	0.75	3.9	1448	420
219	Agasabala Cross	Bijapur	16.4792	76.1033	8.42	1357	280	24	53	188	3.2	120	293	78	107	67	1.26	3.7	771	440
220	Huvinahippargi	Bijapur	16.5562	76.0768	8.25	2300	220	32	34	261	169.6	0	439	305	167	88	0.65	9.1	1324	360
221	Dhavalgi(Alternative)	Bijapur	16.4360	76.1186	8.34	1911	320	48	48	200	120.0	38	368	178	168	49	0.90	1.3	1059	365
222	Nebgeri	Bijapur	16.2833	76.1129	8.20	3110	440	80	58	315	323.6	0	439	596	228	22	0.93	2.1	1891	360
223	Tangadgi	Bijapur	16.2161	76.0949	8.36	1042	260	40	39	96	2.0	96	134	92	90	22	1.48	3.4	520	270
224	Kurubarahundi	Chamarajanagara	11.9319	76.6008	8.31	982	250	48	32	106	1.6	15	329	99	44	37	0.79	0.0	577	295
225	Begur	Chamarajanagara	11.9375	76.6669	10.13	1470	200	30	30	140	121.2	63	183	188	121	83	0.45	0.0	863	255

226	Thagarapur	Chamarajanagar a	12.1194	76.9842	9.55	356	50	6	9	55	1.2	30	98	25	11	2	0.57	0.0	186	130
227	Kunturu	Chamarajanagar a	12.1250	77.0333	8.56	1004	140	22	21	173	0.8	39	397	43	42	3	0.98	0.0	569	390
228	Uttamballi	Chamarajanagar a	12.1472	77.0675	9.13	2580	300	24	58	442	19.6	60	390	482	140	1	0.56	0.0	1441	420
229	Agara	Chamarajanagar a	12.1100	77.0700	10.20	584	40	6	6	117	1.2	33	85	96	28	22	0.35	0.0	348	125
230	Maddur (Yelandur)	Chamarajanagar a	12.0778	77.0667	10.00	2700	80	8	15	345	395.4	156	439	312	118	60	1.20	0.0	1613	620
231	Yeriyuru	Chamarajanagar a	12.0056	77.4008	8.40	880	190	32	27	110	2.3	27	366	46	32	1	0.49	0.0	490	345
232	Devalapur	Chamarajanagar a	11.8417	76.8167	8.41	491	150	24	22	32	3.5	21	183	25	12	13	0.38	0.0	256	185
233	Maddur(Gundulepet)	Chamarajanagar a	11.7778	76.5500	8.04	525	175	32	23	32	2.7	0	232	32	13	21	0.27	0.0	298	190
234	Honnegowdanahalli	Chamarajanagar a	11.7600	76.6169	7.21	1176	272	54	33	83	19.4	16	248	204	76	47	0.98	0.0	677	230
235	Devarahalli	Chamarajanagar a	11.7400	76.6200	8.66	160	60	12	7	5	0.8	9	31	25	0	0	0.14	0.0	73	40
236	Kekan Halla	Chamarajanagar a	11.6333	76.6342	7.88	766	172	35	20	18	1.5	48	132	192	23	31	0.21	0.0	430	188
237	Muduvanahalli	Chamarajanagar a	12.1500	77.1400	8.31	896	180	18	33	120	0.2	21	384	57	17	12	1.20	0.0	503	350
238	Hanur	Chamarajanagar a	12.0917	77.3006	8.88	1070	290	12	63	434	3.7	72	781	199	165	127	0.73	0.0	1523	760
239	Kurubaradoddi	Chamarajanagar a	12.0375	77.3503	7.81	1530	460	112	44	163	4.7	0	378	255	65	33	0.32	0.0	908	310
240	Ramapura	Chamarajanagar a	12.0028	77.4003	10.15	564	75	6	15	83	11.7	36	104	60	42	9	0.00	0.0	311	145
241	Palanimedu	Chamarajanagar a	12.0200	77.4100	9.80	1910	370	52	58	262	2.4	12	153	326	210	65	0.00	0.0	1077	145
242	Vadekahalla	Chamarajanagar a			8.80	1480	380	12	85	161	11.5	54	317	121	135	36	0.00	0.0	787	350
243	Metitiruvu	Chamarajanagar a	11.9917	77.4847	8.61	1762	500	40	97	168	7.0	24	159	241	295	20	0.00	0.0	979	170
244	Kombutuki	Chamarajanagar a	11.9833	77.5667	10.02	400	45	12	4	44	35.2	21	61	60	14	13	0.00	0.0	232	85
245	Gajalahalli	Chikballapura	13.3154	78.0666	8.23	1630	360	76	41	143	115.0	0	183	113	180	406	1.18	62.2	1187	150
246	Upparpet	Chikballapura	13.4034	78.0031	8.08	1410	500	88	68	84	14.0	0	183	121	80	372	2.38	66.6	938	150

247	Chintamani	Chikballapura	13.4055	78.0554	8.55	2150	720	144	87	98	62.0	27	146	113	140	732	2.21	2191.8	1482	165
248	Murugumale	Chikballapura	13.4413	78.1285	8.65	1780	420	72	58	106	152.0	36	183	135	120	360	0.98	78.7	1136	210
249	Settigere	Chikballapura	13.5506	77.7543	8.47	1080	345	80	35	69	2.0	12	171	106	200	14	1.65	1265.6	618	160
250	Hampasandra	Chikballapura	13.7430	77.7514	8.56	1010	360	80	39	45	19.0	9	183	135	60	112	0.89	55.9	606	165
251	Gudibonde-Ii	Chikballapura	13.6744	77.6936	8.99	260	100	12	17	7	1.5	12	43	21	10	41	1.02	2.4	143	55
252	Bevinahalli	Chikballapura	13.4957	77.4834	8.48	1090	400	48	68	47	3.5	9	244	135	70	72	0.91	22.6	597	215
253	Thondebhavi	Chikballapura	13.5016	77.5152	8.32	810	300	100	12	44	1.5	6	183	96	106	10	1.00	21.7	484	160
254	Pura	Chikballapura	13.5282	77.5757	8.15	1250	400	64	58	83	17.0	0	153	106	106	271	1.08	16.1	798	125
255	Namagondlu	Chikballapura	13.5791	77.6047	8.41	1460	440	96	49	82	70.0	15	305	191	130	22	0.33	18.4	835	275
256	Agalagundi	Chikmagaluru	13.3882	75.3333	6.91	120	40	14	1	4	4.9	0	37	11	5	3	0.10	0.0	65	30
257	Ajjampura	Chikmagaluru	13.7261	76.0092	8.21	3080	621	55	117	385	22.4	0	1130	333	205	19	1.70	28.5	1826	926
258	Aladagudde	Chikmagaluru	13.2730	75.7233	7.27	230	101	20	12	4	1.7	0	98	14	9	3	0.21	0.0	123	80
259	Aldur	Chikmagaluru	13.2488	75.6417	7.04	450	162	71	0	26	1.1	0	104	60	20	40	0.22	0.0	281	85
260	Balehonnur	Chikmagaluru	13.3610	75.4641	6.82	150	35	10	2	12	1.8	0	37	21	2	3	0.06	0.0	74	30
261	Bankal	Chikmagaluru	13.1353	75.5493	6.96	240	81	16	10	9	12.8	0	68	25	18	13	0.06	0.0	146	56
262	Bannur_Ckm (Card)	Chikmagaluru	13.2602	75.6339	7.08	370	131	22	18	22	6.0	0	74	50	15	36	0.07	0.0	213	61
263	Bannur_N.R.Pura	Chikmagaluru	13.3311	75.4918	7.58	280	81	10	13	26	3.8	0	74	28	2	36	0.22	0.0	164	61
264	Begaru	Chikmagaluru	13.5009	75.2016	6.29	110	40	6	6	4	1.0	0	18	18	2	11	0.02	2.1	60	15
265	Bhavikere	Chikmagaluru	13.7226	75.7109	6.98	1310	470	87	61	52	4.6	0	368	191	65	13	0.11	0.0	698	302
266	Bidarahalli	Chikmagaluru	13.1221	75.6162	7.45	250	101	16	15	8	3.3	0	117	11	2	4	0.10	0.0	130	96
267	Bilagula	Chikmagaluru	13.1481	75.6461	7.48	180	51	10	6	13	7.7	0	49	21	7	14	0.07	2.1	109	40

268	Channapura	Chikmagaluru	13.6951	76.0014	7.74	1880	621	16	140	135	15.9	0	724	167	140	30	0.63	0.0	1086	593
269	Chikkamagaluru Town	Chikmagaluru	13.3372	75.7755	7.77	680	232	28	39	33	1.6	0	270	50	28	10	0.24	0.0	354	221
270	Chackmakki	Chikmagaluru	13.1399	75.5639	7.39	180	51	14	4	11	3.1	0	61	18	3	6	0.44	0.0	95	50
271	Gorigundi	Chikmagaluru	13.3577	75.5345	7.22	250	96	20	11	12	0.8	0	43	32	6	32	0.04	0.0	140	35
272	Hale Mudigere	Chikmagaluru	13.1322	75.6429	6.84	220	101	16	15	9	1.9	0	92	25	3	10	0.04	0.0	136	75
273	Halekoppa	Chikmagaluru	13.4608	75.2307	6.42	100	45	6	7	4	1.5	0	25	18	2	2	0.02	0.0	56	20
274	Handi	Chikmagaluru	13.1934	75.6661	7.03	200	66	12	9	11	6.5	0	43	32	6	11	0.02	0.0	114	35
275	Hariharapura	Chikmagaluru	13.5214	75.3011	6.23	100	45	6	7	3	2.4	0	31	14	6	1	0.02	0.0	59	25
276	Hirebyle	Chikmagaluru	13.2026	75.4121	7.16	100	40	8	5	4	0.9	0	43	7	2	1	0.02	0.0	55	35
277	Hirenellur	Chikmagaluru	13.6725	76.0411	8.03	2240	278	36	45	190	279.0	0	841	188	138	33	0.20	0.7	1423	689
278	Horanad	Chikmagaluru	13.2770	75.3441	7.49	120	51	12	5	4	0.9	0	37	14	3	3	0.05	0.0	65	30
279	Horatti	Chikmagaluru	13.1294	75.5901	6.79	220	71	16	7	10	14.0	0	31	32	9	34	0.03	0.0	141	25
280	Hukkunda	Chikmagaluru	13.3248	75.7267	7.60	650	253	38	38	23	5.7	0	252	50	30	17	0.10	0.0	356	207
281	Hunsehalli	Chikmagaluru	13.3311	75.5572	7.25	350	126	20	18	18	3.4	0	74	46	12	22	0.06	0.0	185	61
282	J.N.Bylu	Chikmagaluru	13.0785	75.6818	6.98	360	121	26	13	27	1.9	0	61	60	3	36	0.03	0.0	205	50
283	Jakkanaki	Chikmagaluru	13.3014	75.4843	6.47	400	116	18	17	33	8.9	0	61	71	5	37	0.04	0.0	226	50
284	Jannapura Chiga	Chikmagaluru	13.0842	75.6601	7.22	430	207	22	36	5	0.6	0	141	50	2	31	0.05	0.0	232	116
285	Jayapura	Chikmagaluru	13.4038	75.3754	6.91	120	45	12	4	5	0.6	0	43	7	2	11	0.03	0.0	68	35
286	Kadubugere (Billukoppa)	Chikmagaluru	13.3654	75.5178	7.07	270	96	22	10	13	1.8	0	68	28	8	27	0.03	0.0	152	56
287	Kalanaikana Katte	Chikmagaluru	13.5182	75.2716	6.48	210	61	8	10	14	4.9	0	18	35	1	36	0.03	0.0	120	15
288	Kanati	Chikmagaluru	13.3052	75.5856	6.45	230	71	14	9	16	4.5	0	55	18	22	24	0.11	0.0	141	45

289	Karthikere	Chikmagaluru	13.2912	75.8086	8.18	2150	197	28	30	195	362.0	0	823	170	104	39	1.60	0.3	1430	675
290	Koppa	Chikmagaluru	13.5323	75.3623	7.06	120	35	8	4	8	2.8	0	18	14	17	10	0.06	0.0	75	15
291	Kottigehara	Chikmagaluru	13.1221	75.5247	6.72	220	71	10	11	14	5.4	0	37	21	24	27	0.04	0.0	136	30
292	Kudregundi	Chikmagaluru	13.5515	75.4204	7.79	520	172	59	6	30	5.4	0	252	21	21	4	0.20	3.7	301	207
293	Kooduvalli	Chikmagaluru	13.2636	75.6848	7.29	650	232	59	21	39	3.2	0	153	82	44	38	0.16	0.0	380	125
294	Lakkavalli	Chikmagaluru	13.7049	75.6518	8.45	640	227	44	28	32	31.2	24	233	46	22	1	0.44	0.0	361	231
295	Machcheri	Chikmagaluru	13.5458	76.0524	8.35	2170	525	73	83	268	56.2	18	289	429	162	40	0.41	4.7	1298	267
296	Magadi Kaimara	Chikmagaluru	13.2611	75.8482	7.40	1390	328	65	40	159	9.7	0	301	213	69	41	0.51	5.0	780	247
297	Magundi	Chikmagaluru	13.2727	75.4815	7.67	220	61	16	5	18	0.9	0	31	25	21	29	0.06	0.0	134	25
298	Mahalgodu	Chikmagaluru	13.2767	75.4718	8.02	340	116	28	11	16	6.9	0	135	18	25	4	0.14	0.0	191	111
299	Mallidevihalli	Chikmagaluru	13.5494	76.0706	7.71	2350	535	71	86	244	85.4	0	651	337	123	40	0.98	12.3	1383	534
300	Menase	Chikmagaluru	13.4159	75.2768	7.34	160	61	14	6	9	1.1	0	55	14	16	2	0.07	0.0	95	45
301	Moodavagilu	Chikmagaluru	13.5649	75.4893	7.77	400	157	44	11	17	4.1	0	196	14	21	1	0.14	0.0	232	161
302	Mudigere Handpost	Chikmagaluru	13.1217	75.6285	7.22	320	91	14	13	27	8.2	0	43	46	24	38	0.04	0.0	196	35
303	Muthinakoppa	Chikmagaluru	13.7224	75.4676	7.48	230	86	22	7	13	2.0	0	86	14	20	1	0.05	0.0	131	70
304	N.R.Pura	Chikmagaluru	13.6075	75.5025	7.50	400	111	28	10	32	11.4	0	123	39	32	12	0.07	0.0	239	101
305	Nalluru	Chikmagaluru	13.4764	75.2116	7.43	180	71	18	6	7	3.7	0	61	11	20	2	0.04	0.0	104	50
306	Narve	Chikmagaluru	13.5153	75.3109	6.90	160	56	12	6	7	5.6	0	43	18	12	6	0.02	0.0	93	35
307	Rangenahalli	Chikmagaluru	13.7067	75.6973	7.17	1370	429	85	52	96	4.6	0	325	234	81	3	0.11	0.6	754	266
308	Samse	Chikmagaluru	13.1850	75.3272	7.59	160	61	12	7	5	1.6	0	49	14	12	6	0.03	0.0	87	40
309	Seegodu	Chikmagaluru	13.3437	75.4452	7.29	410	106	18	15	33	18.4	0	74	71	9	38	0.04	0.0	247	61

310	Shankarapura	Chikmagaluru	13.7146	75.4647	6.96	250	91	18	11	16	0.8	0	31	32	28	30	0.02	0.0	154	25
311	Shanuvalli	Chikmagaluru	13.5109	75.2376	6.76	140	51	10	6	6	2.6	0	25	14	19	3	0.02	0.0	76	20
312	Shettikoppa	Chikmagaluru	13.6581	75.4873	7.87	620	237	53	26	28	2.9	0	289	32	25	1	0.12	0.0	345	237
313	Shivani R.S	Chikmagaluru	13.8123	76.0584	7.84	980	263	40	39	99	6.0	0	319	99	55	37	0.92	11.8	570	261
314	Sringeri	Chikmagaluru	13.4189	75.2494	7.61	160	61	18	4	5	1.3	0	55	11	14	2	0.12	0.0	89	45
315	Talihalla	Chikmagaluru	13.3358	75.6754	7.69	280	106	22	12	12	1.7	0	111	18	15	7	0.14	0.0	155	91
316	Thodlu	Chikmagaluru	13.2113	75.3443	7.49	170	71	12	10	4	0.9	0	61	7	17	1	0.03	0.0	89	50
317	Uppali	Chikmagaluru	13.3327	75.7568	7.52	800	258	40	38	59	0.7	0	338	60	30	7	0.15	0.0	441	277
318	Vastra	Chikmagaluru	13.2667	75.7080	7.14	360	141	26	18	14	7.7	0	117	39	20	1	0.12	0.0	196	96
319	Herur	Chikmagaluru	13.3661	75.4034	7.39	200	81	16	10	5	4.6	0	61	18	20	2	0.03	0.0	112	50
320	Garaga	Chitradurga	13.6290	76.3510	10.12	1043	315	40	52	113	9.6	12	171	135	41	167	0.30	4.5	669	160
321	Belagur	Chitradurga	13.6280	76.2930	7.38	3080	530	72	85	368	104.5	0	476	518	103	143	0.19	1.8	1683	390
322	Hosadurga	Chitradurga	13.8620	76.1330	7.45	2300	310	84	24	421	14.5	0	500	390	91	186	2.40	9.4	1516	410
323	Gutikatte	Chitradurga	13.8850	76.2260	8.25	1728	345	26	68	193	81.0	39	305	262	119	91	1.40	27.1	1050	315
324	Hosadurga Rs Road	Chitradurga	13.8620	76.1330	7.81	1319	305	48	45	179	41.8	0	403	103	177	149	0.87	5.4	988	330
325	Gangasamudra	Chitradurga	13.9180	76.1430	8.18	1314	165	22	27	83	215.1	0	293	138	168	27	0.16	2.3	858	240
326	Ramagiri	Chitradurga	13.9540	76.1210	8.40	2370	250	40	36	191	477.4	39	378	542	30	186	1.10	1.6	1757	375
327	R Nulenur	Chitradurga	14.0040	77.1220	7.50	2250	255	92	6	366	130.0	0	476	376	111	112	0.55	2.2	1483	390
328	Doggenal	Chitradurga	14.0203	76.0720	7.61	1735	300	66	33	228	82.0	0	421	181	117	124	0.42	2.1	1087	345
329	Hanumali	Chitradurga	13.9990	76.0840	7.96	2400	490	140	52	255	163.5	0	470	411	81	112	0.56	6.3	1502	385
330	Dummi	Chitradurga	14.0290	76.0670	7.85	2370	380	60	56	202	379.3	0	421	404	65	273	0.30	3.2	1696	345

331	Arehalli	Chitradurga	14.0420	76.1730	7.78	1581	245	62	22	219	101.7	0	482	227	35	50	0.19	5.2	1010	395
332	Talya	Chitradurga	14.0180	76.2720	8.18	629	105	24	11	117	4.7	0	372	28	18	37	2.40	2.5	468	305
333	Kumminghatta	Chitradurga	13.9830	76.3000	7.93	698	120	32	10	94	63.0	0	195	85	53	40	1.40	3.9	496	160
334	Shivaganga	Chitradurga	14.0810	76.2500	7.98	516	150	38	13	74	14.2	0	201	39	86	25	0.87	0.6	412	165
335	Chitradurga	Chitradurga	14.2200	76.3990	8.16	927	190	58	11	90	164.6	0	439	74	32	65	0.60	2.7	763	360
336	Bommanahalli	Chitradurga	14.2190	76.2610	7.74	1484	220	64	15	161	133.3	0	512	117	69	87	0.61	23.6	958	420
337	Kallavana Nagatihalli	Chitradurga	14.1770	76.1520	7.92	1723	245	48	30	143	262.0	0	604	142	67	81	0.24	3.3	1141	495
338	Muttugudaru	Chitradurga	14.2190	76.1180	7.76	547	195	40	23	67	18.4	0	262	43	68	37	0.33	2.3	456	215
339	Siddapura	Chitradurga	14.2660	76.1940	7.94	2560	400	110	30	359	41.8	0	451	390	98	124	0.32	14.1	1429	370
340	Hampanur	Chitradurga	14.3520	76.1640	7.94	1611	340	80	34	163	75.5	0	305	266	89	31	0.33	6.2	925	250
341	Vijapura	Chitradurga	14.2920	76.2800	9.28	1158	285	14	61	115	107.0	15	366	177	80	37	0.34	2.7	823	325
342	Biravara	Chitradurga	14.2930	76.3000	7.70	1802	260	74	18	281	69.0	0	427	195	135	136	1.00	20.6	1169	350
343	Siddavanadurga	Chitradurga	14.3250	76.3210	8.88	1288	100	10	18	228	90.3	45	311	82	132	81	0.92	26.8	857	330
344	Molakalmuru	Chitradurga	14.7160	76.7500	7.44	3990	475	160	18	667	172.8	0	720	780	115	192	0.30	128.2	2545	590
345	Hartikote	Chitradurga	14.0710	76.6490	7.75	3750	205	24	35	692	268.6	0	744	670	144	198	1.90	5.5	2487	610
346	Vaddikere	Chitradurga	14.1150	76.5980	8.20	1820	405	58	63	244	35.5	0	488	248	125	31	0.42	5.2	1102	400
347	Maskallu	Chitradurga	13.9880	76.6900	8.20	3370	400	48	68	538	42.0	0	647	546	144	25	1.50	17.0	1805	530
348	Sampaje	Dakshina Kannada	12.4934	75.5669	6.17	92	50	16	2	6	1.0	0	51	10	0	12	0.20	0.0	79	42
349	Kallugundi	Dakshina Kannada	12.5021	75.5346	6.05	34	30	8	2	3	0.4	0	29	6	0	5	0.90	0.0	42	24
350	Goonadaka	Dakshina Kannada	12 30 52	75 29 58	6.25	181	80	22	6	4	0.6	0	73	18	0	2	0.30	0.0	97	60
351	Aranthodu	Dakshina Kannada	12 31 09	75 28 06	6.21	230	60	14	6	20	7.2	0	85	20	11	9	0.89	0.0	139	70

352	Alletty Mevinadaka	Dakshina Kannada	12 31 58	75 22 47	6.17	110	50	14	4	4	0.4	0	49	11	0	1	0.94	0.0	64	40
353	Ajjavara	Dakshina Kannada	12 33 08	75 20 23	6.33	93	40	10	4	4	2.1	0	47	10	0	2	0.48	0.0	61	39
354	Sulya	Dakshina Kannada	12 33 42	75 23 26	6.10	144	60	16	5	11	1.6	0	37	32	3	10	0.24	0.0	100	30
355	Sonnagiri	Dakshina Kannada	12 35 32	75 23 45	6.50	33	25	8	1	3	0.5	0	24	9	0	2	0.00	0.0	38	20
356	Jalsoor	Dakshina Kannada	12 35 40	75 20 17	5.72	120	40	10	4	11	2.4	0	24	25	0	13	0.70	0.0	80	20
357	Kavu	Dakshina Kannada	12 38 52	75 16 28	6.10	109	60	20	2	9	1.9	0	31	28	5	26	0.00	0.0	112	25
358	Chowdichar	Dakshina Kannada	12 40 15	75 15 51	6.13	166	70	24	2	8	1.1	0	67	18	3	3	0.46	0.0	100	55
359	Thingaladi	Dakshina Kannada	12 42 16	75 16 36	6.57	108	50	20	2	5	2.6	0	43	18	0	4	0.87	0.0	78	35
360	Madavu	Dakshina Kannada	12 41 08	75 18 37	6.44	154	85	28	4	9	1.1	0	85	25	2	4	0.27	0.0	125	70
361	Mannikere	Dakshina Kannada	12 40 47	75 20 03	6.68	104	60	20	2	9	0.9	0	65	14	0	3	0.49	0.0	88	53
362	Bellare	Dakshina Kannada	12 40 00	75 22 13	6.62	134	65	20	4	4	2.4	0	73	14	0	3	0.46	0.0	92	60
363	Balapa	Dakshina Kannada	12 40 23	75 31 05	6.70	121	45	10	5	6	1.0	0	51	11	3	3	0.05	0.0	69	42
364	Yenkal	Dakshina Kannada	12 40 15	75 33 22	6.83	76	30	6	4	4	0.5	0	33	9	0	1	0.64	0.0	45	27
365	Subbramannya	Dakshina Kannada	12 40 02	75 36 45	6.86	44	25	6	2	3	0.6	0	24	7	0	0	0.38	0.0	35	20
366	Bilenele	Dakshina Kannada	12 42 55	75 33 45	6.62	41	20	4	2	3	0.4	0	24	6	0	1	0.21	0.0	31	20
367	Sunkadakatte	Dakshina Kannada	12 44 11	75 32 16	6.56	115	35	12	1	14	1.4	0	55	14	0	6	0.22	0.0	83	45
368	Bantra(Mardala)	Dakshina Kannada	12 44 33	75 30 29	6.49	78	45	12	4	6	1.1	0	43	18	0	4	0.99	0.0	71	35
369	Kadaba	Dakshina Kannada	12 44 30	75 28 07	6.57	110	40	10	4	11	1.5	0	43	17	4	2	0.64	0.0	75	35
370	Balya	Dakshina Kannada	12 46 17	75 2522	6.49	72	25	6	2	7	1.1	0	31	6	0	13	0.00	0.5	54	25
371	Athoor Koyla	Dakshina Kannada	12 47 35	75 19 16	6.38	90	35	10	2	5	1.1	0	43	7	2	4	0.00	0.0	58	35
372	Kemar Hirbenadi	Dakshina Kannada	12 48 47	75 17 53	6.16	232	95	26	7	11	3.7	0	122	14	5	1	0.71	0.0	142	100

373	Nellyadi	Dakshina Kannada	12 50 09	75 24 21	6.23	155	55	16	4	10	4.0	0	78	11	4	6	0.00	0.0	103	64
374	Shiradi	Dakshina Kannada	12 49 49	75 31 50	6.04	64	20	6	1	7	0.6	0	37	5	0	1	0.41	0.0	42	30
375	Addahole	Dakshina Kannada	12 50 04	75 24 44	5.92	61	40	12	2	6	1.7	0	43	11	0	2	0.65	0.0	61	35
376	Kokkada	Dakshina Kannada	12 51 38	75 24 44	6.10	317	90	20	10	25	2.1	0	122	20	10	19	0.39	0.0	180	100
377	Nidle	Dakshina Kannada	12 55 06	75 24 01	6.20	111	35	10	2	8	1.1	0	43	11	2	6	0.00	0.0	66	35
378	Ujjare	Dakshina Kannada	12 59 17	75 20 28	6.12	203	55	12	6	18	1.2	0	55	32	2	11	0.95	0.0	116	45
379	Badanaje Machoor	Dakshina Kannada	12 57 39	75 19 27	6.23	122	45	14	2	6	0.2	0	57	8	0	3	0.88	0.0	68	47
380	Ballalu	Dakshina Kannada	12 56 11	75 19 47	6.21	134	45	12	4	12	2.2	0	67	14	0	1	0.20	0.0	85	55
381	Nidgal	Dakshina Kannada	13 00 40	75 21 10	6.25	97	30	6	4	7	1.0	0	39	7	3	7	0.43	0.0	58	32
382	Surya	Dakshina Kannada	13 01 26	75 19 37	6.31	186	75	18	7	13	3.6	0	81	14	5	13	0.46	0.0	123	66
383	Belthangady	Dakshina Kannada	12 59 22	75 16 51	6.18	125	35	10	2	11	2.7	0	55	9	3	6	0.34	0.0	77	45
384	Gerukatte	Dakshina Kannada	12 57 07	75 15 44	6.23	135	55	20	1	9	0.8	0	69	10	3	9	0.13	0.0	95	57
385	Kalleri	Dakshina Kannada	12 52 35	75 14 36	6.44	83	30	10	1	7	1.5	0	40	8	0	4	0.72	0.0	56	33
386	Adanthadka	Dakshina Kannada	12 05 55	75 15 47	6.38	111	30	10	1	11	2.1	0	46	9	2	8	0.73	0.0	71	38
387	St Prerne	Dakshina Kannada	12 49 33	75 11 42	6.09	136	45	14	2	12	0.6	0	61	15	0	5	0.37	0.0	86	50
388	Mani	Dakshina Kannada	12 50 05	75 07 20	6.32	337	100	20	12	26	2.1	0	98	50	17	3	0.00	0.0	190	80
389	Mittur	Dakshina Kannada	12 48 07	75 08 35	6.21	93	40	12	2	7	0.8	0	51	8	3	2	0.57	0.0	66	42
390	Puttur (A. Well)	Dakshina Kannada	12 45 08	75 12 49	6.20	126	60	12	7	9	2.1	0	49	25	2	1	0.13	0.0	88	40
391	Kabka Puttur	Dakshina Kannada	12 47 09	75 09 12	6.25	140	45	14	2	13	1.0	0	67	16	3	1	0.07	0.0	92	55
392	Ukkada	Dakshina Kannada	12 44 38	75 06 13	6.08	79	35	10	2	3	0.8	0	36	7	3	3	0.43	0.0	51	30
393	Kudupadaru	Dakshina Kannada	12 42 41	75 06 23	6.39	92	40	12	2	9	1.2	0	18	21	0	14	0.41	0.0	71	15

394	Kanyana	Dakshina Kannada	12 44 39	75 03 02	6.21	80	35	8	4	6	1.2	0	18	18	0	6	0.40	0.0	54	15
395	Kuthamugur	Dakshina Kannada	12 46 33	75 02 55	6.49	86	25	4	4	7	0.7	0	31	11	0	2	0.40	0.0	47	25
396	Vittala	Dakshina Kannada	12 45 45	75 05 53	6.37	105	30	8	2	12	1.3	0	31	20	0	10	0.31	0.0	72	25
397	Veerakambha	Dakshina Kannada	12 49 02	75 04 54	7.11	251	65	8	11	27	2.1	0	109	17	0	2	0.30	0.0	133	89
398	Bolangadi	Dakshina Kannada	12 51 29	75 03 24	7.16	253	105	16	16	19	1.4	0	98	36	8	14	0.30	0.0	169	80
399	Subhasnagar	Dakshina Kannada	12 51 21	75 01 13	7.18	258	85	16	11	22	4.8	0	79	43	5	11	0.38	0.0	161	65
400	Bantwal	Dakshina Kannada	12 53 10	75 02 21	7.13	256	90	18	11	15	15.5	0	104	25	20	3	0.41	0.0	170	85
401	Kelaginaogga	Dakshina Kannada	12 55 15	75 05 42	6.91	149	45	6	7	16	2.2	0	43	25	2	21	0.51	0.0	105	35
402	Punjalkatte	Dakshina Kannada	12 56 51	75 09 49	6.72	187	60	14	6	12	3.3	0	84	11	5	11	0.48	0.0	113	69
403	Kavalmaduru	Dakshina Kannada	12 56 04	75 08 16	6.82	84	35	8	4	6	2.1	0	43	10	0	4	0.57	0.1	60	35
404	Nayanadu	Dakshina Kannada	12 58 15	75 09 01	7.14	206	85	28	4	11	5.6	0	110	14	7	5	0.50	0.0	141	90
405	Vennur	Dakshina Kannada	13 00 46	75 08 43	6.60	110	30	6	4	13	2.1	0	37	19	4	5	0.40	0.0	75	30
406	Kukedi	Dakshina Kannada	13 00 03	75 09 55	6.97	76	20	6	1	9	1.1	0	24	14	0	4	0.47	0.0	50	20
407	Padangadi	Dakshina Kannada	12 59 25	75 12 30	7.10	116	50	14	4	7	1.2	0	69	7	0	4	0.39	0.0	80	57
408	Alangadi	Dakshina Kannada	13 02 41	75 12 58	7.00	67	25	6	2	6	0.9	0	24	9	0	4	0.44	0.0	43	20
409	Borgadde	Dakshina Kannada	13 07 50	75 05 38	7.26	194	85	24	6	6	2.3	0	94	14	2	12	0.48	0.0	124	77
410	Shirtadi	Dakshina Kannada	13 05 25	75 04 58	7.68	72	30	8	2	4	1.2	0	43	4	0	1	0.50	0.1	46	35
411	Kesargadde	Dakshina Kannada	13 06 43	74 59 47	7.36	122	60	18	4	3	1.9	0	56	10	8	7	0.55	0.0	86	46
412	Garodi	Dakshina Kannada	13 00 11	74 57 57	7.01	96	35	6	5	5	0.3	0	43	6	0	8	0.43	0.0	56	35
413	Kinni Kambala	Dakshina Kannada	12 58 04	74 5539	7.00	101	40	10	4	7	2.9	0	43	13	6	5	0.55	0.0	74	35
414	Perar	Dakshina Kannada	12 59 00	74 54 25	7.01	113	55	20	1	3	0.7	0	61	11	0	3	0.59	0.0	76	50

415	Permude	Dakshina Kannada	13 00 13	74 52 52	6.82	124	45	14	2	9	2.6	0	43	18	4	9	0.52	0.0	84	35
416	Kenjar	Dakshina Kannada	12 57 04	74 52 04	6.52	126	40	10	4	14	0.9	0	43	20	4	9	0.45	0.0	87	35
417	Adiyar	Dakshina Kannada	12 52 07	74 55 51	7.23	102	45	10	5	5	1.4	0	51	11	2	2	0.43	0.0	67	42
418	Padil	Dakshina Kannada	12 52 16	74 53 09	6.65	106	40	4	7	9	2.8	0	31	18	3	19	0.34	0.0	81	25
419	Thalpady	Dakshina Kannada	12 46 03	74 52 11	7.07	105	40	6	6	8	1.5	0	43	14	1	6	0.56	0.0	69	35
420	Kotekar	Dakshina Kannada	12 47 13	74 51 35	6.87	179	55	12	6	17	2.2	0	61	28	8	3	0.60	0.0	114	50
421	Ullal Beach	Dakshina Kannada	12 49 07	74 50 24	7.43	304	115	34	7	17	5.0	0	116	36	9	22	0.57	0.0	200	95
422	Mangalore -1	Dakshina Kannada	12 52 23	74 51 50	7.16	372	155	46	10	16	6.0	0	146	28	21	26	0.43	0.0	243	120
423	Mangalore -4	Dakshina Kannada	12 51 39	74 50 50	7.05	142	35	10	2	13	4.7	0	24	28	7	6	0.49	0.0	86	20
424	Mangalore - 2	Dakshina Kannada	12 51 03	74 50 59	7.00	116	40	12	2	10	2.3	0	49	14	4	4	0.54	0.0	79	40
425	Mangalore - 3	Dakshina Kannada	12 51 42	74 49 57	6.83	595	210	48	22	31	11.4	0	201	59	21	2	0.63	0.1	318	165
426	Mangalore - 5	Dakshina Kannada	12 53 08	74 50 20	7.37	146	50	12	5	13	2.0	0	43	21	9	8	0.52	0.0	96	35
427	Panembur Beach	Dakshina Kannada	12 56 20	74 48 26	7.31	1057	280	60	31	98	19.3	0	244	188	37	20	0.64	0.0	603	200
428	Surthkal	Dakshina Kannada	12 59 04	74 48 07	6.67	113	40	14	1	9	1.5	0	31	20	2	11	0.45	0.8	77	25
429	Balla	Dakshina Kannada	12 59 16	74 49 48	6.23	258	80	22	6	28	3.9	0	24	50	13	39	0.53	0.0	177	20
430	Mukka	Dakshina Kannada	13 01 19	74 47 12	7.73	1731	295	84	21	206	35.4	0	317	355	95	5	0.37	1.1	994	260
431	Haleyangadi	Dakshina Kannada	13 02 36	74 47 47	7.44	301	110	28	10	22	6.2	0	128	39	11	9	0.52	0.0	203	105
432	Pakkshi Kere	Dakshina Kannada	13 03 02	74 49 33	7.13	142	35	10	2	17	1.6	0	31	32	2	6	0.34	0.0	89	25
433	Kinnigoli	Dakshina Kannada	13 03 51	74 51 52	7.20	73	30	8	2	7	0.8	0	24	18	0	4	0.35	0.0	55	20
434	Kateel	Dakshina Kannada	13 02 40	74 52 14	7.04	210	85	16	11	18	3.1	0	92	32	6	4	0.57	0.0	145	75
435	Kenchana Kere	Dakshina Kannada	13 04 20	74 48 45	7.04	96	35	10	2	7	1.5	0	31	18	2	2	0.65	0.0	61	25

436	Elathur	Dakshina Kannada	13 05 44	74 48 53	7.02	83	30	10	1	4	0.2	0	36	6	2	2	0.42	0.0	48	30
437	Mulki	Dakshina Kannada	13 05 11	74 47 31	7.10	98	40	12	2	6	3.0	0	37	18	0	4	0.67	0.0	68	30
438	Averegere(A)	Davanagere	14.4478	75.9485	7.91	835	210	32	31	77	20.8	0	317	64	38	51	1.63	2.3	507	260
439	Lingada Halli	Davanagere	14.4511	75.9855	8.36	1650	270	44	39	147	165.9	48	207	291	87	36	0.79	5.7	965	250
440	Dodda Bati	Davanagere	14.4843	75.8574	8.04	1080	260	36	41	96	2.6	0	306	107	40	41	0.59	3.1	550	251
441	Tole Hunse	Davanagere	14.4106	75.9623	7.52	1690	280	36	46	155	144.4	0	561	192	72	35	1.06	0.2	1022	460
442	Kurki	Davanagere	14.3757	75.9719	8.42	739	170	28	24	69	1.6	42	188	66	17	3	1.25	8.2	349	224
443	Gopanal	Davanagere	14.3287	75.9650	8.26	2490	320	62	40	361	148.4	0	793	348	112	18	2.77	2.0	1573	650
444	Attigere	Davanagere	14.3220	75.9931	7.89	1293	270	40	41	132	33.2	0	412	121	51	26	1.99	4.9	695	338
445	Ramagondna Halli	Davanagere	14.3119	75.9942	8.08	1602	390	60	58	159	15.6	0	476	213	78	36	0.89	4.7	910	390
446	Santebennur	Davanagere	14.1685	76.0069	8.54	572	140	28	17	61	4.2	30	122	71	19	13	1.13	2.2	306	150
447	Nallur(A)	Davanagere	14.0868	75.8780	8.42	1369	220	56	19	96	147.4	30	354	121	54	85	0.90	1.8	812	340
448	Venkateshwara Camp	Davanagere	14.2268	75.9298	7.90	740	168	35	19	51	10.4	52	132	126	50	11	0.71	0.4	415	195
449	Hirekogalur	Davanagere	14.1967	75.9524	8.36	1575	350	48	56	133	65.8	60	362	206	60	36	0.48	3.6	860	397
450	Lokikere	Davanagere	14.3045	75.9264	8.15	1720	370	67	49	141	100.9	0	598	178	74	55	1.22	2.0	1029	490
451	Belavanoor	Davanagere	14.4010	75.9214	8.11	941	230	36	34	103	5.3	0	366	92	15	8	0.97	3.5	516	300
452	Shiramagowdahalli	Davanagere	14.4197	75.9146	8.31	1092	220	20	41	124	2.3	22	275	92	71	35	1.40	6.7	566	262
453	Hadadi	Davanagere	14.3646	75.8897	8.32	596	210	36	29	49	1.9	36	206	36	24	6	1.79	2.0	328	229
454	Kammaraghatta	Davanagere	14.2237	75.7060	8.13	802	210	24	36	66	36.1	0	336	71	29	6	0.90	0.6	473	275
455	Basavapatna	Davanagere	14.1990	75.8106	8.09	1767	360	36	65	131	99.2	0	561	220	24	17	1.16	2.2	935	460
456	Honnali	Davanagere	14.2349	75.6604	7.92	1277	330	62	42	129	1.7	0	439	142	63	29	0.40	4.2	737	360

457	G. Bevinahally	Davanagere	14.3744	75.7184	8.01	599	220	40	29	24	2.4	0	207	43	24	49	0.33	0.5	338	170
458	Haliyal	Davanagere	14.3839	75.7003	8.00	1126	320	52	46	92	3.7	0	403	121	13	19	0.32	2.7	592	330
459	Vasana	Davanagere	14.4185	75.6512	8.17	1000	290	32	51	87	1.6	0	382	78	87	6	0.82	5.1	575	313
460	Kadaranayakanahalli	Davanagere	14.4198	75.6894	8.19	726	210	40	27	69	3.3	0	309	28	56	6	2.49	5.0	418	253
461	Nandi Tavare	Davanagere	14.4090	75.7793	8.48	1097	190	28	29	152	5.2	54	317	71	66	9	2.21	6.5	586	350
462	Kalghatgi	Dharwad	15° 10' 59.1"	74° 58' 10.4"	7.93	497	160	40	15	12	11.4	0	232	57	30	0	0.23	0.3	306	190
463	Saidur	Dharwad	15° 06' 14.9"	74° 54' 19.2"	7.81	568	250	44	34	9	2.6	0	360	36	3	0	0.22	0.2	347	295
464	Kelageri	Dharwad	15.4596	74.9968	8.42	600	210	48	22	42	8.5	72	232	92	5	9	0.22	0.5	411	310
465	Prabhunagar	Dharwad	15° 26' 41.3"	74° 50' 18.5"	7.77	640	240	32	39	32	1.7	0	354	43	28	6	0.23	1.2	397	290
466	Amminabhavi	Dharwad	15° 32' 13.3"	75° 03' 32.3"	7.73	1015	300	32	53	31	17.8	0	390	135	48	15	0.30	1.2	570	320
467	Dharwad(A) (Alternate Well)	Dharwad	15° 27' 01.0"	74° 59' 34.3"	7.50	1049	200	44	22	64	6.2	0	397	121	72	19	0.25	1.9	590	325
468	Kadabaghatti(Alt To Arvatgi)	Dharwad	15° 26' 51.9"	74° 44' 47.9"	7.52	1080	420	24	87	59	3.0	0	378	156	53	18	0.27	2.2	631	310
469	Nayakana Hulikatte Kere	Dharwad	15° 22' 10.3"	74° 59' 40.5"	7.63	1097	270	36	44	118	2.4	0	360	192	17	14	0.31	1.8	642	295
470	Annigiri (Alternate Well)	Dharwad	15° 25' 33.1"	75° 25' 51.3"	7.74	1154	320	56	44	52	16.0	0	183	199	81	29	0.17	1.2	588	150
471	Mugad	Dharwad	15° 26' 39.8"	74° 54' 46.3"	7.85	1253	410	56	65	40	2.8	0	317	234	58	3	0.20	1.0	653	260
472	Devikoppa	Dharwad	15° 08' 19.0"	74° 55' 51.7"	7.93	1301	360	36	65	63	41.8	0	464	178	66	0	0.24	1.8	732	380
473	Sherewad	Dharwad	15° 15' 19.8"	75° 10' 03.7"	7.49	1304	250	32	41	41	1.3	0	403	192	75	34	0.30	4.0	662	330
474	Hebsur	Dharwad	15° 27' 02.4"	75° 18' 20.4"	8.75	1616	330	36	58	141	19.0	60	49	327	108	68	0.23	2.2	823	140
475	Sulla	Dharwad	15° 26' 57.1"	75° 10' 42.0"	7.52	1703	530	76	82	41	6.5	0	317	312	90	78	0.22	3.2	879	260
476	Adaragunj	Dharwad	15° 17' 03.4"	75° 09' 17.3"	7.25	1819	470	100	53	47	1.6	0	354	334	81	96	0.47	9.7	928	290
477	Bidnal	Dharwad	15° 19' 45.3"	75° 08' 46.6"	7.38	1951	420	44	75	104	4.6	0	464	298	117	92	0.64	10.5	1018	380

478	Kundgol(A)	Dharwad	15° 15' 13.4"	75° 14' 47.0"	7.77	1998	480	64	77	69	103.2	0	256	320	121	259	0.26	6.4	1169	210
479	Gudgeri	Dharwad	15° 07' 11.8"	75° 22' 01.2"	7.39	2040	650	88	104	48	46.8	0	268	298	127	201	0.22	16.0	1077	220
480	Gummagola	Dharwad	15° 35' 30.8"	75° 09' 07.3"	7.54	3750	770	116	116	194	2.6	0	171	809	341	2	0.24	6.6	1686	140
481	Tale Morab	Dharwad	15° 33' 22.3"	75° 08' 57.1"	7.46	4230	650	112	90	801	266.1	0	439	888	313	30	0.21	17.4	2767	360
482	Kalkurdi	Dharwad	15° 10' 50.8"	74° 55' 32.9"	8.17	5180	190	32	27	15	2.5	0	299	36	17	2	0.35	0.8	313	245
483	Morab	Dharwad	15° 35' 00.2"	75° 09' 31.5"	7.60	7600	1430	172	242	728	241.8	0	329	1399	350	473	0.21	33.2	3806	270
484	Ramgeri	Gadag	15° 08' 26.1"	75° 25' 59.1"	9.27	838	210	36	29	15	8.1	120	98	78	43	9	1.00	2.7	349	280
485	Belhatti	Gadag	15° 05' 05.2"	75° 68' 27.2"	7.90	1222	220	32	34	27	44.0	0	415	142	66	52	1.10	8.8	650	340
486	Gadag	Gadag	15° 25' 26.4"	75° 37' 48.3"	8.23	1230	220	16	44	59	1.2	0	439	142	67	17	2.30	7.9	614	360
487	Virupapur	Gadag	15° 08' 36.6"	75° 49' 47.6"	8.16	1252	330	36	58	57	2.2	0	427	114	60	117	2.70	3.6	704	350
488	Hulkoti	Gadag	15° 25' 28.1"	75° 32' 39.8"	8.20	1688	210	24	36	187	1.1	0	671	284	126	33	2.20	7.3	1100	550
489	Naregal(A)	Gadag	15° 34' 09.8"	75° 48' 18.7"	7.80	1706	400	72	53	85	2.6	0	451	206	195	61	0.83	13.9	950	370
490	Kalikeri(A)	Gadag	15° 09' 50.0"	75° 50' 12.1"	9.03	2140	160	12	31	168	3.1	132	439	341	73	6	3.90	6.5	981	580
491	Mudnagudi	Gadag	15° 44' 30.8"	75° 40' 44.4"	7.24	2200	560	60	99	53	6.6	0	256	518	104	11	0.38	4.7	1009	210
492	Shirhatti	Gadag	15° 14' 04.92"	75° 34' 49.4"	7.80	2230	370	16	80	91	16.4	0	647	298	140	109	0.90	3.3	1144	530
493	Magdi	Gadag	15° 13' 12.0"	75° 30' 40.3"	7.58	2350	370	24	75	75	3.7	0	390	383	176	129	1.00	9.2	1105	320
494	Chabbi	Gadag	15° 10' 16.3"	75° 35' 46.6"	8.03	2940	530	20	116	186	149.3	0	683	469	207	18	1.70	6.6	1581	560
495	Nargund	Gadag	15° 43' 10.2"	75° 22' 54.4"	7.45	3530	770	56	152	239	185.9	0	634	391	317	273	0.60	16.2	2000	520
496	Basapur (A)	Gadag	15° 11' 45.0"	75° 50' 01.9"	8.26	3580	390	60	58	262	14.4	0	732	426	327	129	2.60	7.6	1722	600
497	Gojanur	Gadag	15° 11' 27.1"	75° 29' 57.8"	7.44	4180	860	24	194	110	1.9	0	634	909	270	67	1.10	34.7	1962	520
498	Mundargi	Gadag	15° 11' 53.8"	75° 52' 58.4"	7.57	4390	800	20	182	375	2.7	0	464	639	348	31	1.20	25.8	1880	380

499	Laxmeswar(A)	Gadag	15° 07' 57.7"	75° 28' 13.1"	7.74	4810	630	20	140	329	53.5	0	720	760	294	343	1.00	13.9	2378	590
500	Dass Hadagali	Gadag	15° 35' 05.6"	75° 39' 08.6"	7.53	5720	820	132	119	353	9.5	0	390	1385	350	11	0.43	7.2	2597	320
501	Hirekoppa(Alt To Chikkoppa)	Gadag	15° 28' 39.3"	75° 39' 07.2"	7.90	6940	830	36	179	389	2.1	0	793	1086	333	407	1.10	143.3	2916	650
502	Hungundi	Gadag	15° 47' 02.7"	75° 41' 24.3"	6.93	7150	1610	84	339	837	6.3	0	305	2386	319	11	0.40	24.5	4168	250
503	Belavanki	Gadag	15° 40' 13.8"	75° 34' 02.2"	7.13	8550	2740	276	496	939	4.2	0	464	3039	287	303	0.38	18.3	5627	380
504	Mallabad	Gulbarga	17.2318	76.4305	7.77	1197	300	60	36	69	81.0	0	293	142	65	113	1.18	4.9	745	240
505	Alur	Gulbarga	16.8954	76.6318	7.57	1554	530	120	56	48	81.0	0	281	213	83	171	1.48	5.1	942	230
506	Ravanur	Gulbarga	17.0034	76.7240	8.04	1935	470	44	87	198	74.5	0	403	220	141	171	1.95	4.7	1181	330
507	Sona	Gulbarga	16.9968	76.6405	7.78	923	320	64	39	43	81.5	0	281	107	100	59	0.80	1.2	664	230
508	Jeratgi	Gulbarga	17.0167	76.4494	8.21	1469	200	36	27	206	82.2	0	439	185	132	32	1.78	0.9	966	360
509	Chowdapur	Gulbarga	17.2345	76.5496	7.72	1850	600	100	85	110	95.9	0	281	277	228	112	1.30	5.5	1179	230
510	Kawalaga K	Gulbarga	17.1575	76.7125	7.73	921	210	64	12	67	82.8	0	244	99	55	96	1.27	3.0	625	200
511	Kaalgi	Gulbarga	17.3597	77.1525	7.49	2270	850	216	75	62	80.3	0	334	405	180	90	0.84	6.4	1312	274
512	Hasargundi	Gulbarga	17.1358	76.5903	7.60	1593	570	156	44	51	80.3	0	268	162	195	164	0.81	2.9	1015	220
513	Chimmangere	Gulbarga	17.2183	76.5724	7.50	2080	700	184	58	69	81.7	0	366	298	184	33	1.01	7.3	1131	300
514	Ghattarga	Gulbarga	17.0929	76.4092	7.62	1816	550	136	51	118	81.0	0	232	312	231	65	1.50	7.8	1136	190
515	Mashal	Gulbarga	17.3229	76.2384	7.71	1550	500	84	70	75	84.4	0	305	192	132	153	1.02	4.4	976	250
516	M. Hippargi	Gulbarga	17.4591	76.3749	7.59	2680	900	164	119	112	80.3	0	432	426	134	167	1.05	6.3	1465	354
517	Hosahalli	Gulbarga	17.5760	76.6183	8.01	1122	240	48	29	96	117.9	0	525	114	38	9	0.97	1.3	772	430
518	Patna	Gulbarga	17.4036	76.7256	8.17	747	130	36	10	83	80.9	0	220	107	42	7	0.67	0.0	499	180
519	Battarga	Gulbarga	17.4119	76.5645	7.70	1982	500	100	61	125	91.1	0	281	227	233	157	1.11	5.4	1165	230

520	Marthur	Gulbarga	17.2126	76.8836	8.27	2430	690	80	119	132	108.9	0	561	270	165	166	1.29	6.0	1382	460
521	Shahadbad	Gulbarga	17.1297	76.9413	7.74	1726	350	58	50	189	85.5	0	378	348	57	17	1.36	1.8	1034	310
522	Aldihal	Gulbarga	17.2149	76.9606	7.98	1282	380	44	65	90	84.2	0	451	142	72	3	1.19	2.6	776	370
523	Karahari	Gulbarga	17.6030	76.7732	8.02	890	240	32	39	36	82.4	0	255	114	36	35	0.12	0.8	529	209
524	V K Salgar	Gulbarga	17.6337	76.8077	8.04	1291	250	68	19	91	126.0	0	500	107	65	31	0.87	3.3	812	410
525	Ladmogili	Gulbarga	17.6165	76.8763	8.17	1327	260	36	41	94	137.0	0	512	92	67	49	1.17	0.9	828	420
526	Belamagi	Gulbarga	17.6408	76.7446	7.66	1590	330	80	31	132	81.2	0	268	213	125	110	1.07	5.9	936	220
527	Mahagoan	Gulbarga	17.5606	76.8955	7.96	821	280	48	39	66	2.2	0	342	78	33	7	0.98	1.6	481	280
528	Ainapura	Gulbarga	17.6131	77.2188	8.31	1128	370	60	53	60	19.9	66	238	99	34	36	0.60	4.7	547	305
529	Sasargoan	Gulbarga	17.5006	77.2125	8.13	857	210	32	31	61	65.3	0	390	50	48	12	0.79	0.6	537	320
530	Mogha	Gulbarga	17.4584	77.2320	7.85	756	270	48	36	48	1.0	0	256	64	68	21	0.00	2.9	443	210
531	Chimmanchod	Gulbarga	17.5166	77.2928	7.98	573	250	36	39	34	0.4	0	283	36	10	12	0.55	0.4	339	232
532	Kollur	Gulbarga	17.5329	77.4287	7.90	1230	470	56	80	65	1.2	0	342	178	62	54	0.97	2.8	704	280
533	Kallur Road	Gulbarga	17.3844	77.4718	8.13	1118	360	44	61	68	6.2	0	383	107	42	16	0.63	5.7	578	314
534	Ravor	Gulbarga	17.0864	77.0014	8.05	1950	400	78	50	266	7.0	0	403	298	210	6	2.01	1.9	1161	330
535	Wadi	Gulbarga	17.0437	76.9858	7.91	835	210	32	31	77	20.8	0	317	64	38	51	1.63	3.4	507	260
536	Achangi	Hassan	12.9554	75.7989	7.98	370	136	18	22	21	1.8	0	92	43	3	41	0.27	0.1	206	75
537	Agadalu	Hassan	13.1920	75.7767	8.41	830	242	61	22	64	30.6	9	258	82	44	33	0.44	0.0	500	226
538	Alur	Hassan	12.9784	75.9920	8.17	530	126	30	12	52	22.2	0	172	35	36	40	0.98	0.1	331	141
539	Anachihalli	Hassan	12.9920	76.0523	8.22	660	167	30	22	59	27.2	0	252	60	29	5	0.70	2.0	386	207
540	Anemala	Hassan	12.9327	75.7686	7.50	370	106	24	11	30	7.5	0	80	43	12	43	0.23	0.0	219	66

541	Anjaneyapura	Hassan	12.8755	76.0662	7.74	690	263	65	24	36	2.7	0	227	50	54	35	0.54	0.2	405	186
542	Ankihalli	Hassan	13.0269	75.8616	7.80	370	126	20	18	21	11.3	0	55	64	4	40	0.21	0.0	212	45
543	Arakalgud	Hassan	12.7605	76.0608	8.13	980	323	65	39	71	7.9	0	295	124	42	29	0.10	0.4	558	242
544	Arasikere	Hassan	13.3216	76.2502	7.62	1460	293	20	58	193	8.8	0	368	220	109	1	0.73	6.3	834	302
545	Baguru	Hassan	13.0138	76.3851	8.42	1270	278	40	43	119	54.5	9	387	121	92	39	0.94	1.4	750	332
546	Balasinda	Hassan	12.9237	76.3897	7.91	1230	404	77	51	94	6.9	0	503	96	54	10	1.10	0.2	695	412
547	Ballupet	Hassan	12.9453	75.8813	8.26	350	81	22	6	32	15.9	0	43	43	31	35	0.27	0.0	211	35
548	Basavapatna	Hassan	12.6146	76.1212	8.37	490	131	38	9	30	34.9	9	178	35	16	17	0.39	0.1	294	161
549	Belur	Hassan	13.1627	75.8609	9.76	330	91	30	4	17	26.3	36	68	21	9	10	0.45	0.0	180	116
550	Bidirumale Koppalu	Hassan	12.7682	76.0391	8.10	980	273	28	49	69	30.5	0	307	99	66	32	0.60	0.3	561	252
551	Bikkodu	Hassan	13.0777	75.8635	8.18	670	197	36	26	51	16.2	0	209	74	31	26	0.31	0.0	388	171
552	Budanuru (Card)	Hassan	12.6009	76.1843	7.97	1160	308	34	53	118	2.8	0	460	92	65	44	1.00	1.9	690	377
553	Elleshapura	Hassan	12.8169	76.2068	8.08	1370	288	75	24	90	148.2	0	332	163	90	42	0.51	0.2	834	272
554	G.N.Koppalu	Hassan	13.0210	76.4799	8.19	880	313	36	53	51	5.9	0	430	28	35	11	0.61	1.4	483	352
555	Gopalapura	Hassan	12.8145	75.8586	7.99	600	167	38	17	56	4.1	0	270	28	31	3	0.52	0.7	342	221
556	Guddenahalli	Hassan	13.0031	76.0810	7.71	1330	465	101	51	71	1.4	0	276	213	87	41	0.41	2.0	733	226
557	Gulasinda	Hassan	12.9438	76.3886	7.87	1200	394	38	72	72	6.1	0	381	135	56	41	0.56	1.5	653	312
558	Hagare	Hassan	13.1276	75.9919	8.03	990	278	42	41	74	21.5	0	332	96	56	30	0.58	2.0	564	272
559	Halebeedu	Hassan	13.2164	75.9932	8.00	730	232	51	26	50	9.0	0	258	67	44	7	0.47	0.2	411	211
560	Halekote	Hassan	12.8483	76.1778	8.15	1330	298	71	29	95	117.4	0	368	145	89	42	0.40	1.2	813	302
561	Haragowdanahalli	Hassan	12.7144	76.2184	8.35	2230	247	69	18	151	341.7	42	559	202	118	41	0.75	9.2	1307	528

562	Harihalli	Hassan	12.8409	75.8563	8.46	220	61	14	6	20	5.3	6	86	14	1	5	0.38	0.4	121	80
563	Harlekudi	Hassan	12.9568	75.7429	8.88	200	61	16	5	9	11.3	9	61	18	6	0	0.26	0.0	108	65
564	Hennalli	Hassan	12.8311	75.8341	8.76	140	40	8	5	11	2.4	6	43	14	2	0	0.19	0.1	72	45
565	Hethgowdanahalli	Hassan	12.7720	76.1456	7.79	1220	288	57	35	93	55.9	0	344	142	84	42	0.33	5.6	718	282
566	Hirenahalli Koppalu (Kalkere) (Card)	Hassan	12.7698	76.1911	8.16	1210	293	59	35	90	58.8	0	368	128	114	0	0.47	4.6	710	302
567	Honnavara	Hassan	13.1251	76.1781	8.01	880	283	57	34	45	18.8	0	289	89	41	38	0.41	0.2	500	237
568	Hulikal	Hassan	12.6984	76.0432	8.80	1300	384	83	43	77	141.2	51	381	124	64	41	0.42	0.5	836	397
569	Hullahalli	Hassan	12.9036	75.7528	8.99	140	51	16	2	5	1.8	3	37	14	9	2	0.15	0.0	74	35
570	Ichanahalli	Hassan	12.7515	76.2290	8.31	1440	212	71	9	105	172.9	30	448	121	79	39	0.85	1.2	889	417
571	J.C.Pura	Hassan	13.4163	76.3508	7.74	1160	316	64	38	64	10.4	52	244	222	77	11	**1.56**	6.4	666	287
572	K.Mallenahalli	Hassan	13.0347	76.3355	8.34	1230	338	44	55	111	27.3	12	344	222	92	35	0.79	10.4	803	302
573	Kanakatte	Hassan	13.5135	76.3198	8.42	960	242	53	27	102	9.2	21	276	117	33	17	0.77	2.4	539	261
574	Kaniyar	Hassan	12.6997	76.0646	8.48	660	162	42	13	37	51.5	30	172	53	28	29	0.22	0.3	377	191
575	Kattaya	Hassan	12.8885	76.0733	8.25	750	167	34	19	94	5.3	0	246	50	40	40	0.53	0.8	433	202
576	Kelagadale	Hassan	12.9854	75.7890	7.82	170	35	8	4	16	7.0	0	68	18	2	0	0.07	0.6	97	56
577	Kenchammana Hosakote	Hassan	12.8594	75.8553	7.70	210	86	18	10	3	9.7	0	92	14	4	0	0.20	0.0	115	75
578	Keralapura	Hassan	12.5814	76.1746	8.50	680	207	38	27	43	24.1	15	227	53	21	32	0.13	0.0	386	211
579	Konanuru	Hassan	12.6301	76.0496	8.43	490	141	34	13	27	35.9	3	209	39	8	3	0.04	0.3	289	176
580	Kunigal	Hassan	12.8804	75.7668	7.51	110	40	8	5	6	1.6	0	31	14	2	6	0.01	0.0	61	25
581	Kuppalli	Hassan	13.0494	76.0474	7.91	1040	359	57	52	54	9.3	0	276	124	78	44	0.08	0.0	587	226
582	Kuppe	Hassan	12.6559	76.1831	7.93	1460	424	65	63	111	7.8	0	282	255	98	43	0.23	1.8	815	231

583	Lakkammanahalli	Hassan	13.0277	75.8958	8.10	670	222	51	23	36	21.8	0	227	57	30	41	0.13	1.9	398	186
584	Machegowdanahalli (Abburu Machegowdanahalli)	Hassan	12.7273	76.0014	8.05	1090	414	42	74	49	7.7	0	276	152	64	43	0.17	0.5	600	226
585	Mallenahalli	Hassan	12.8822	76.5529	7.99	1200	444	67	67	48	19.5	0	264	50	282	18	0.19	0.8	713	216
586	Mudlahippe	Hassan	12.8161	76.2962	8.96	2010	323	51	47	68	430.3	63	688	128	81	42	0.25	13.8	1305	669
587	Mulahosahalli	Hassan	12.6128	76.1098	7.99	2600	737	46	149	256	11.3	0	276	510	240	23	0.18	1.2	1403	226
588	Mududi	Hassan	13.2043	76.2795	8.58	2590	470	55	80	196	212.8	36	645	326	176	43	0.42	3.3	1504	589
589	Navile	Hassan	13.0999	76.4452	8.03	860	164	34	19	38	11.5	108	84	222	12	35	0.28	6.0	487	249
590	Nuggehalli	Hassan	13.0110	76.4756	8.65	1690	369	30	70	185	62.7	27	393	222	107	40	0.49	0.0	973	367
591	Nyamanahalli	Hassan	12.8591	76.1627	8.65	710	237	46	29	49	4.3	21	246	53	34	0	1.20	112.6	378	237
592	Parasanahalli	Hassan	12.9280	76.0572	8.80	1050	308	55	41	41	100.9	42	301	67	56	31	0.61	13.5	601	317
593	Ramanathapura	Hassan	12.6179	76.0822	8.05	860	268	63	27	55	2.1	0	184	163	33	3	0.16	2.3	459	151
594	Rameshwaranagar (Doddapura)	Hassan	13.0373	76.1518	8.25	750	217	46	24	49	33.4	0	246	64	34	43	0.13	0.7	444	202
595	Sakaleshpura	Hassan	12.9464	75.7845	8.18	590	152	46	9	49	25.2	0	160	67	14	44	0.10	0.8	352	131
596	Shankaranahalli	Hassan	12.9449	76.0643	8.45	850	242	48	29	52	43.9	12	227	74	75	42	0.11	0.0	509	206
597	Shanthigrama	Hassan	12.9847	76.2180	8.21	1650	389	57	60	159	28.9	0	319	326	90	1	0.19	0.8	917	261
598	Sheradanahalli	Hassan	12.6095	76.1009	8.27	350	51	44	15	29	48.0	0	55	43	47	12	0.22	1.9	271	45
599	Shettihalli	Hassan	12.8748	76.0167	8.37	1240	212	51	21	87	155.4	9	246	167	84	42	0.98	0.0	763	217
600	Shravanabelagola	Hassan	12.8571	76.4864	7.72	130	35	10	2	10	4.2	0	49	14	1	0	0.05	0.7	71	40
601	Shukravarasanthe	Hassan	12.8608	75.8007	7.64	350	76	24	4	22	31.3	0	74	39	24	31	0.04	0.0	220	61
602	Singapurpet	Hassan	13.1894	75.7931	8.15	390	96	32	4	32	10.9	0	135	32	5	18	0.09	0.0	217	111
603	Srinivasapura.M.K	Hassan	12.8459	76.3523	8.48	1220	379	34	70	102	9.2	36	368	92	44	44	0.47	1.6	641	362

604	Vaddarahalli	Hassan	12.8061	76.0587	8.60	920	197	57	13	51	115.5	15	301	78	36	37	0.24	0.1	580	272
605	Vijayapura 1St Colony	Hassan	12.7674	76.0112	8.19	1250	374	55	57	109	8.2	24	307	145	63	44	0.24	0.0	683	292
606	Yachegowdanahalli	Hassan	13.4924	76.3449	9.24	4890	258	59	27	764	410.0	102	1443	468	165	42	0.91	3.4	2876	1353
607	Hulgur	Haveri	15° 05' 20.0"	75° 16' 55.9"	7.72	1270	350	40	61	129	4.1	0	342	156	90	46	0.19	0.5	734	280
608	Hosur	Haveri	15° 00' 25.1"	75° 08' 32.2"	8.25	810	160	18	28	57	61.0	0	214	121	50	0	0.14	1.2	465	175
609	Dhundashi	Haveri	15° 01' 43.5"	75° 08' 31.1"	8.45	470	130	18	21	37	3.2	9	85	43	60	2	0.10	0.8	240	85
610	Kunnur	Haveri	15° 03' 46.2"	75° 08' 11.3"	8.42	620	200	24	34	46	3.8	6	195	64	40	0	0.12	0.9	334	170
611	Tadas(A)	Haveri	14° 07' 29.0"	74° 07' 23.5"	8.90	860	230	28	39	87	5.5	15	189	128	50	6	0.13	0.5	468	180
612	Kalkatti	Haveri	14° 55' 54.5"	75° 09' 43.5"	7.96	800	210	20	39	81	2.5	0	293	71	40	6	0.15	4.4	438	240
613	Nitiginal Koppa	Haveri	14° 50' 48.8"	75° 09' 22.7"	7.78	900	250	32	41	92	4.0	0	281	92	45	56	0.15	0.3	534	230
614	Hangal(Allternate Well)	Haveri	14° 46' 15.6"	74° 07' 29.6"	7.85	480	140	36	12	43	1.7	0	61	35	90	52	0.14	0.4	307	50
615	Girisinakoppa	Haveri	14° 44' 24.2"	75° 08' 01.8"	7.83	990	210	22	38	115	1.7	0	244	135	55	5	0.08	0.5	520	200
616	Hanumankoppa	Haveri	14° 42' 04.0"	74° 05' 55.1"	8.20	970	245	22	46	110	1.9	0	195	128	120	14	0.11	6.1	562	160
617	Akki Alur	Haveri	14° 43' 38.3"	75° 09' 40.7"	7.84	810	225	44	28	69	14.0	0	183	89	90	27	0.01	0.8	472	150
618	Hosa Huli Halli	Haveri	14° 38' 06.7"	75° 34' 43.4"	7.40	2130	600	64	107	212	6.0	0	366	255	360	43	0.24	4.2	1270	300
619	Ranebennur(A)	Haveri	14° 36' 52.1"	74° 37' 40.7"	7.61	1790	560	36	114	148	3.8	0	378	213	260	6	0.47	2.8	1012	310
620	Vadarayanahalli	Haveri	14° 32' 51.6"	75° 45' 56.3"	7.67	2160	640	72	112	198	4.4	0	366	255	346	64	0.72	3.7	1274	300
621	Makanur	Haveri	14° 30' 59.2"	75° 44' 49.8"	7.55	2660	830	120	129	212	10.0	0	512	312	400	43	0.72	9.6	1538	420
622	Halgeri	Haveri	14° 33' 12.8"	75° 36' 40.0"	8.33	1200	280	52	36	138	4.3	18	256	142	140	1	0.49	1.9	681	240
623	Kuppelur	Haveri	14° 29' 12.6"	74° 36' 38.9"	7.64	2010	560	56	102	184	9.0	0	366	284	106	232	0.76	10.8	1196	300
624	Mallanayakanahalli	Haveri	14° 26' 08.3"	75° 37' 31.5"	7.81	3000	760	64	146	281	56.8	0	781	411	260	0	0.89	5.7	1695	640

625	Tumminkatti	Haveri	14° 24' 50.2"	75° 36' 59.9"	7.73	1380	390	52	63	129	2.5	0	354	170	115	22	0.84	3.1	770	290
626	Masur(A)	Haveri	14° 22' 22.3"	75° 27' 14.7"	8.03	1140	345	18	73	97	1.2	0	329	124	90	19	0.90	1.0	622	270
627	Hirekerur (Allternate Well)	Haveri	14° 27' 17.1"	75° 24' 08.6"	8.17	700	215	42	27	64	1.4	0	159	78	100	9	0.54	0.7	418	130
628	Sulkanbidri(A)	Haveri	14° 33' 28.9"	75° 31' 43.9"	7.90	740	240	28	41	37	46.5	0	275	25	105	6	1.20	1.8	456	225
629	Satenahalli	Haveri	14° 34' 24.8"	75° 18' 51.8"	7.97	700	205	40	26	51	16.0	0	134	99	70	25	0.36	0.1	408	110
630	Gudde Mallapura	Haveri	14° 36' 00.6"	75° 16' 33.3"	7.72	2280	840	208	78	130	4.4	0	268	482	197	24	0.35	0.2	1287	220
631	Tilavalli	Haveri	14° 37' 32.5"	75° 14' 07.6"	7.83	700	195	48	18	64	3.0	0	165	82	65	30	0.19	0.3	410	135
632	Shadukupee	Haveri	14° 40' 46.2"	75° 11' 21.8"	7.69	1120	280	22	55	124	3.0	0	183	152	155	22	0.29	3.1	644	150
633	Nilvagailo	Kodagu	12.7800	75.9400	7.75	450	130	28	15	35	3.6	0	92	60	35	24	0.54	0.0	256	75
634	Basavanare	Kodagu	12.7800	75.9200	7.69	250	50	16	2	29	1.3	0	49	35	27	7	0.22	0.0	147	40
635	Kodlipet	Kodagu	12.8000	75.8800	7.85	320	95	22	10	25	16.0	0	73	28	39	26	0.32	0.0	211	60
636	Shivaralli	Kodagu	12.7600	75.8900	8.20	370	170	44	15	8	5.3	0	140	25	25	1	0.38	0.0	209	115
637	Gopalapura	Kodagu	12.7000	75.8900	8.11	550	175	36	21	42	4.7	0	128	74	38	39	0.38	0.1	332	105
638	Shanivarasante	Kodagu	12.7200	75.8900	7.79	390	120	28	12	31	2.6	0	73	53	29	39	0.27	0.0	239	60
639	Goudahalli	Kodagu	12.6500	75.8800	7.65	130	50	10	6	7	0.8	0	31	7	28	4	0.23	0.0	81	25
640	Khowaikatte	Kodagu	12.6200	75.8700	7.56	460	130	28	15	41	2.3	0	61	99	46	8	0.21	31.3	276	50
641	Somvarpet	Kodagu	12.5900	75.8500	7.80	370	105	20	13	22	29.5	0	73	35	54	30	0.20	0.8	250	60
642	Beluru	Kodagu	12.5500	75.8500	7.62	90	25	6	2	11	1.1	0	12	7	30	3	0.19	0.0	67	10
643	Igoor	Kodagu	12.5300	75.8400	8.25	550	210	48	22	30	2.0	0	159	57	54	16	0.32	0.0	325	130
644	Huduguru	Kodagu	12.5100	75.9100	8.15	320	105	28	9	23	1.1	0	98	25	31	17	0.43	0.0	193	80
645	Madalapura	Kodagu	12.5000	75.9300	8.16	500	200	46	21	24	3.7	0	183	39	39	1	0.45	0.3	285	150

646	Kodage Koppalu	Kodagu	12.4900	75.9500	8.18	350	110	24	12	30	4.8	0	110	39	32	7	0.33	0.0	216	90
647	Kushal Nagar	Kodagu	12.4500	75.9500	8.32	800	275	36	45	60	1.6	9	305	74	39	2	0.46	0.0	449	265
648	Basavanahalli	Kodagu	12.4400	75.9100	8.32	990	275	38	44	94	1.7	12	214	138	56	40	0.45	0.1	549	195
649	Hosapatna	Kodagu	12.3800	75.9000	8.34	400	160	38	16	16	1.9	9	116	18	37	34	0.35	0.0	236	110
650	Nanjarajpatna	Kodagu	12.3700	75.8900	8.40	450	190	44	19	19	6.2	15	122	43	35	19	0.35	0.1	269	125
651	Thayagathoor	Kodagu	12.3300	75.8600	8.31	740	300	94	16	30	11.5	12	207	60	47	45	0.34	0.4	437	190
652	Abhayath Mangala	Kodagu	12.3300	75.8500	8.37	630	215	46	24	30	16.4	12	183	50	49	24	0.34	0.8	358	170
653	Chattahalli	Kodagu	12.3600	75.8300	8.12	300	120	22	16	7	3.2	0	92	18	27	18	0.24	0.0	167	75
654	Siddapura	Kodagu	12.2900	75.8700	8.34	500	185	36	23	28	1.5	12	104	46	44	42	0.27	0.0	291	105
655	Injalagere	Kodagu	12.2700	75.8600	8.06	260	105	20	13	11	2.4	0	31	39	26	20	0.21	0.0	151	25
656	Ammatti	Kodagu	12.2300	75.8500	7.88	500	120	26	13	38	14.7	0	67	46	43	46	0.19	0.0	267	55
657	Ontiangandi	Kodagu	12.2600	75.8300	7.94	150	65	12	9	8	1.4	0	31	11	28	13	0.17	0.0	100	25
658	Hosuru Betakeri	Kodagu	12.2200	75.8800	7.80	150	60	18	4	6	2.1	0	24	14	27	16	0.16	0.0	102	20
659	Karekkadu	Kodagu	12.1900	75.9100	7.95	300	120	36	7	13	6.8	0	61	35	29	35	0.15	0.0	200	50
660	Gonikoppal	Kodagu	12.1800	75.9300	8.26	410	125	20	18	24	27.1	0	92	43	39	40	0.15	0.0	267	75
661	Jodubeeti	Kodagu	12.1500	75.9300	8.23	190	65	22	2	10	3.7	0	49	14	26	16	0.16	0.0	124	40
662	Ponnampet	Kodagu	12.1400	75.9400	7.78	120	45	10	5	10	4.4	0	12	14	26	19	0.16	0.0	95	10
663	Begur	Kodagu	12.1200	75.9300	8.77	100	40	12	2	7	1.7	3	6	11	27	1	0.12	0.0	68	10
664	Hudukeri	Kodagu	12.0800	75.9400	8.19	180	60	16	5	11	8.4	0	31	18	31	18	0.13	0.4	126	25
665	T.Settigere	Kodagu	12.0300	75.9700	7.74	100	45	10	5	5	3.1	0	18	11	26	8	0.13	0.5	79	15
666	Srimangala	Kodagu	12.0100	75.9800	8.60	190	55	12	6	23	5.7	6	37	28	25	3	0.11	0.1	129	40

667	Kaimane	Kodagu	11.9900	76.0000	7.90	150	60	12	7	5	1.1	0	31	14	28	4	0.14	0.0	90	25
668	Devapura	Kodagu	12.2000	75.9600	8.33	490	115	20	16	31	57.3	12	128	43	43	40	0.38	0.0	335	125
669	Titimathi	Kodagu	12.2200	75.9900	8.31	610	135	24	18	52	22.0	9	85	89	52	37	0.45	0.6	351	85
670	Majiyalla Ana Camp	Kodagu	12.2300	76.0200	8.20	470	170	24	27	19	5.7	0	110	60	29	38	0.28	0.0	270	90
671	Kunda	Kodagu	12.1500	75.8900	8.10	100	50	12	5	4	0.7	0	18	11	28	2	0.18	0.3	73	15
672	Haathuru	Kodagu	12.1700	75.8800	8.04	160	65	20	4	8	3.1	0	49	14	27	1	0.20	0.1	107	40
673	Bittangala	Kodagu	12.1600	75.8400	7.99	190	90	26	6	5	4.4	0	55	11	28	16	0.21	0.0	130	45
674	Chembebellur	Kodagu	12.2300	75.8000	6.80	160	40	16	0	10	2.2	0	24	11	30	3	0.18	0.0	87	20
675	Devanageri	Kodagu	12.2400	75.8000	7.17	120	35	12	1	8	7.5	0	18	11	28	7	0.13	0.0	85	15
676	Kadanur	Kodagu	12.2200	75.7700	7.53	150	50	18	1	12	6.2	0	31	18	29	0	0.15	0.0	103	25
677	Kakotu Parambu	Kodagu	12.2500	75.7600	7.63	90	35	14	0	5	0.5	0	12	7	26	2	0.15	0.0	62	10
678	Kadanga	Kodagu	12.2200	75.7400	7.80	170	65	22	2	12	1.2	0	31	14	30	10	0.15	0.0	111	25
679	Cheyyandane	Kodagu	12.2200	75.6900	7.68	120	55	12	6	8	0.4	0	37	14	0	21	0.12	0.0	83	30
680	Marandoda	Kodagu	12.2300	75.6600	7.86	150	65	22	2	3	1.0	0	31	14	28	3	0.13	0.0	92	25
681	Kakkabe	Kodagu	12.2500	75.6400	7.70	80	30	8	2	4	0.3	0	12	7	14	6	0.11	0.0	51	10
682	Nelaje	Kodagu	12.2900	75.6300	7.88	160	70	26	1	5	2.3	0	37	11	30	5	0.14	0.0	102	30
683	Napoklu	Kodagu	12.3000	75.6800	7.65	150	65	14	7	8	0.8	0	31	18	28	7	0.06	0.0	102	25
684	Hoodur	Kodagu	12.3100	75.7200	7.60	80	40	6	6	3	1.5	0	12	7	5	31	0.07	0.0	67	10
685	Murnad	Kodagu			7.56	90	35	8	4	5	0.9	0	12	7	20	8	0.01	0.0	60	10
686	Khegodu	Kodagu	12.3700	75.7500	8.14	160	55	20	1	8	7.3	0	24	14	29	14	0.02	0.0	108	20
687	Mekari	Kodagu	12.3900	75.7400	8.50	150	65	12	9	6	2.3	6	18	14	20	11	0.03	0.0	88	25

688	Neerkolli	Kodagu	12.4000	75.7500	7.66	440	110	34	6	38	2.5	0	67	53	35	46	0.02	0.4	255	55
689	Ketagal 7Th Main	Kodagu	12.4300	75.8000	8.72	310	100	24	10	18	9.7	9	37	35	30	36	0.02	0.2	190	45
690	Suntikoppa	Kodagu	12.4400	75.8200	8.11	240	95	20	11	13	1.3	0	55	28	30	11	0.03	0.1	148	45
691	Kodagarahalli Grama (Maruthi Nagar)	Kodagu	12.4400	75.8400	8.46	620	225	54	22	20	20.0	15	104	67	45	44	0.10	0.2	344	110
692	Mercara	Kodagu	12.4200	75.7400	9.30	220	80	20	7	11	6.7	15	18	21	29	13	0.14	0.0	128	40
693	Katakeri	Kodagu	12.4100	75.7000	8.00	150	70	18	6	5	1.1	0	49	11	22	0	0.19	0.0	93	40
694	Devarakolli	Kodagu	12.4500	75.6300	7.65	70	30	6	4	4	0.6	0	12	4	21	0	0.17	0.0	46	10
695	Peraje	Kodagu	12.5200	75.4300	7.40	80	30	8	2	4	1.1	0	6	7	19	6	0.12	0.0	51	5
696	Heravanad	Kodagu	12.3800	75.7000	7.08	40	15	4	1	2	0.2	0	12	4	5	1	0.03	0.0	24	10
697	Bettagiri	Kodagu	12.3500	75.6800	8.00	160	65	22	2	7	1.8	0	55	11	20	0	0.42	0.0	97	45
698	Benguru 50 Okallu	Kodagu	12.3500	75.6500	7.85	140	60	22	1	3	0.4	0	18	21	20	3	0.57	0.0	81	15
699	Cheerambane	Kodagu	12.3600	75.6300	7.00	120	40	6	6	6	5.6	0	18	14	5	28	0.30	0.0	82	15
700	Chattamani	Kodagu	12.3700	75.5700	8.78	230	80	20	7	14	4.9	9	12	32	34	24	0.11	0.1	149	25
701	Bhagamandala	Kodagu	12.3800	75.5300	7.87	40	15	2	2	2	0.2	0	12	4	5	1	0.00	0.0	23	10
702	Ayyangeri	Kodagu	12.3500	75.5700	7.41	50	20	6	1	3	0.3	0	12	7	5	3	0.00	0.0	33	10
703	Ballamavathu	Kodagu	12.3300	75.6000	7.50	100	40	14	1	5	0.3	0	12	11	20	7	0.03	0.0	66	10
704	Ponnathumattai	Kodagu	12.3600	75.8300	8.17	440	160	16	29	27	5.6	0	165	39	27	2	0.42	0.3	246	135
705	Vadegere	Kolar	13.0477	78.0966	8.80	1710	400	80	49	86	232.0	18	183	149	22	579	1.43	7.3	1319	180
706	Torlakki	Kolar	12.9200	78.0680	8.34	1660	400	80	49	156	20.0	9	171	160	12	542	1.28	11.6	1128	155
707	Budikote	Kolar	12.9000	78.1200	8.32	1920	540	96	73	128	90.0	48	366	255	7	190	0.96	49.0	1091	380
708	Budikunte A	Kolar	12.9000	78.1200	8.17	1790	510	116	53	128	46.9	0	268	241	17	403	0.83	2.9	1169	220

709	Bhimganapalli	Kolar	12.8430	78.1680	8.22	1400	510	92	68	73	5.0	0	439	174	8	68	1.55	83.2	756	360
710	Gadarajahalli	Kolar	12.9644	78.3000	8.46	1060	250	52	29	104	3.6	15	201	131	10	176	1.52	886.8	637	190
711	Antarganga	Kolar	13.1414	78.1040	8.61	990	215	68	11	107	6.5	27	323	110	4	15	1.12	16.1	535	310
712	Arabi Kollanuru	Kolar	13.1213	78.0420	9.04	190	50	12	5	18	1.5	6	12	11	0	62	0.86	1.4	120	20
713	Kendatti	Kolar	13.1343	78.0366	8.65	260	100	22	11	7	11.0	6	31	11	2	93	0.59	0.7	179	35
714	Devarayasamundra	Kolar	13.1341	78.2983	8.59	1150	380	76	46	54	41.5	15	189	128	10	249	0.83	7.8	728	180
715	Keilolli	Kolar	13.1170	78.2912	8.61	950	225	50	24	104	2.5	18	305	113	5	36	1.32	16.0	532	280
716	Avani A	Kolar	13.1067	78.3270	8.75	350	135	26	17	18	7.0	12	116	28	8	38	0.70	0.4	220	115
717	Angondanahalli	Kolar	13.0658	78.3634	8.45	1070	260	52	32	118	6.0	24	256	163	6	18	2.04	10.5	565	250
718	Sangasandra	Kolar	13.2175	78.4033	8.70	1490	440	82	57	122	22.0	60	390	206	6	13	1.78	746.3	782	420
719	Gudipalli	Kolar	13.2735	78.4591	8.39	1410	440	80	58	106	3.0	30	268	199	12	145	1.04	74.6	785	270
720	Pethandlahalli	Kolar	13.2460	78.5027	8.26	2130	700	88	117	162	24.0	0	366	518	5	100	0.93	69.1	1237	300
721	Bairukur	Kolar	13.2369	78.4890	8.38	1370	380	76	46	106	39.0	30	195	248	8	56	1.18	10.5	717	210
722	Tatikallu	Kolar	13.1984	78.4736	8.68	460	160	36	17	24	3.0	9	43	28	14	155	0.67	1.4	309	50
723	Mulbagal	Kolar	13.1610	78.3895	8.38	2050	410	88	46	177	196.0	30	378	284	14	330	0.52	12.1	1384	360
724	Mallasandra	Kolar	13.1786	78.3527	8.47	2450	560	88	83	296	6.0	24	122	103	60	1076	1.26	30.2	1800	140
725	Kurudmale	Kolar	13.2134	78.3674	8.65	1150	365	70	46	54	92.5	21	159	71	155	173	1.25	52.0	771	165
726	Bevahalli	Kolar	13.2048	78.3328	8.68	400	165	12	33	10	2.0	12	92	39	5	55	0.86	6.5	218	95
727	Nelam	Kolar	13.1571	78.1115	8.15	730	260	40	39	36	2.0	0	98	71	60	142	1.23	139.5	449	80
728	Kurugal A	Kolar	13.2042	77.9877	8.33	3120	230	40	32	614	14.0	48	98	567	320	338	1.14	29.2	2013	160
729	Hosabandi Aralapur	Koppal	15.4300	76.3700	7.68	600	207	51	19	41	2.8	0	239	53	21	2	0.81	1.5	336	196

730	Hosahalli	Koppal	13.8597	75.5581	7.87	1050	242	65	19	118	4.3	0	276	131	84	14	2.10	2.1	603	226
731	Herur	Koppal	15.4900	76.5000	7.03	1080	323	65	39	73	37.4	0	479	67	41	2	2.20	5.6	616	393
732	Jaratgi	Koppal	15.5894	76.6525	7.39	1220	263	40	39	114	65.3	0	387	117	110	5	1.00	3.5	726	317
733	Kengunti	Koppal			7.55	1270	394	75	50	98	5.8	0	332	170	90	24	1.20	1.9	716	272
734	Tawargere	Koppal	15.7667	76.4167	7.30	1320	313	57	41	142	4.1	0	356	113	135	78	1.50	3.3	788	292
735	Kanakagiri	Koppal	15.5700	76.4200	6.81	1380	293	53	39	168	20.1	0	565	135	17	2	3.10	2.6	779	463
736	Bandi	Koppal	15.7333	76.0583	7.21	1390	465	67	72	102	4.8	0	307	216	60	86	1.30	3.9	796	252
737	Basapur	Koppal	15.3500	76.2200	7.80	1460	232	24	41	227	2.9	0	528	124	77	25	2.60	252.8	843	433
738	Igalkere	Koppal	15.3400	76.3300	7.87	1470	354	67	45	162	6.5	0	510	167	70	3	1.70	5.3	832	418
739	Irkalagada	Koppal	15.4672	76.2206	7.20	1770	485	117	46	177	9.4	0	215	291	122	174	0.88	4.3	1068	176
740	Mudenur	Koppal	15.8900	76.3000	7.28	2720	404	83	47	438	5.8	0	417	376	378	23	1.20	10.2	1604	342
741	Siddapur	Koppal	15.5200	76.6300	7.11	2750	535	83	79	310	130.3	0	473	404	284	37	1.10	2.9	1616	388
742	Rajoors	Koppal	15.5417	75.9250	7.28	2860	1369	351	118	211	72.6	0	270	698	341	316	0.30	18.2	2272	221
743	Talakal	Koppal	15.3775	76.0186	7.27	2870	934	158	130	223	13.1	0	264	528	339	40	0.90	11.5	1592	216
744	K Hosur	Koppal	15.8200	76.2600	7.69	3310	328	36	57	518	158.4	0	853	344	305	134	2.40	NA	2073	699
745	Sanganhal	Koppal	15.5700	75.9800	7.38	4710	1101	180	157	335	412.4	0	675	755	367	225	0.86	14.0	2842	553
746	Itagi	Koppal	15.3700	76.0100	7.36	5110	859	145	119	425	564.2	0	626	819	364	295	0.32	5.2	3113	513
747	Nelligere	Mandya	12.9500	76.8000	7.68	806	200	56	15	80	15.0	0	262	78	35	70	0.73	4.3	508	215
748	Krishnarajapet	Mandya	12.6667	76.4833	7.54	909	270	44	39	72	4.9	0	384	52	42	44	1.00	14.4	532	315
749	Ankegowdanakoppalu	Mandya	12.5167	76.5500	7.85	932	310	64	36	53	2.2	0	233	85	57	113	0.94	1.6	553	191
750	Haravoo	Mandya	12.4625	76.6178	7.73	823	220	48	24	59	33.2	0	256	92	71	8	1.10	3.2	492	210

751	Kyatanahalli	Mandya	12.8347	76.7181	7.60	1805	260	48	34	192	158.0	0	415	227	137	132	0.89	9.7	1181	340
752	Darasaguppe	Mandya	12.4533	76.6839	8.21	475	220	40	29	12	4.0	0	188	43	19	17	0.57	1.7	278	154
753	Haralahalli-A	Mandya	12.4903	76.6678	7.93	441	180	44	17	22	10.5	0	207	36	23	2	0.54	1.6	280	170
754	Devegowdana Koppalu	Mandya	12.4975	76.6844	9.00	2000	450	110	42	253	1.0	180	464	121	99	111	2.10	5.6	1128	680
755	Mandya Dw	Mandya	12.5308	76.8847	8.62	2410	440	128	29	323	1.0	126	323	412	133	49	1.80	5.0	1348	475
756	Kallahallimandya	Mandya	12.5000	76.8667	8.22	1345	230	40	31	183	6.8	0	499	64	86	35	1.50	3.5	751	409
757	Gopalapura	Mandya	12.5528	76.8836	7.95	994	260	68	22	76	3.8	0	364	79	40	6	1.60	9.5	517	298
758	Chunchunahalli	Mandya	13.0211	76.7381	8.04	1498	460	60	75	156	20.3	0	430	170	127	72	1.36	30.1	944	352
759	Belidegula	Mandya	12.6250	76.8667	7.97	975	230	60	19	98	5.0	0	293	99	52	58	1.41	5.3	570	240
760	Basaralu	Mandya	12.7167	76.7833	7.93	870	360	40	63	33	1.5	0	266	71	49	105	1.20	5.3	525	218
761	Tirumala Sagara Chatra	Mandya	12.5486	76.6669	8.35	1162	230	56	22	44	220.3	72	268	85	87	44	1.10	4.4	765	340
762	Sreenivasa Agrahara	Mandya	12.4286	76.7008	8.10	968	220	64	15	75	66.3	0	283	71	81	50	0.60	0.2	595	232
763	Srirangapatna	Mandya	12.4208	76.6847	7.76	1105	370	60	53	147	1.8	0	476	85	130	20	1.10	64.6	788	390
764	Chikapalya	Mandya	12.4086	76.7669	8.03	1637	400	76	51	109	163.3	0	464	163	101	148	0.50	3.4	1094	380
765	Mahadevapura1	Mandya	12.4000	76.7667	7.85	871	210	56	17	73	38.1	0	247	85	87	47	0.48	4.2	554	202
766	Mandya Koppalu	Mandya	12.3917	76.8000	8.08	1345	310	64	36	155	20.0	0	466	142	89	33	0.61	1.7	823	382
767	Arakere1	Mandya	12.4167	76.8000	8.16	1674	340	84	31	187	52.0	0	489	178	116	109	1.10	3.1	1056	401
768	Tadagavadi	Mandya	12.4411	76.8178	7.77	767	260	52	31	69	3.7	0	262	85	37	30	1.40	9.8	468	215
769	Anjabhuvanahalli	Mandya	12.4728	77.1200	7.98	1139	350	56	51	88	40.0	0	394	107	86	61	1.55	4.6	729	323
770	Yaliyur	Mandya	12.5083	76.8181	7.28	179	90	20	10	7	3.9	0	73	28	5	15	0.26	0.0	134	60
771	Nagamangala2	Mandya	12.8250	76.7583	8.03	1008	460	52	80	41	2.3	0	323	71	110	51	0.55	0.6	604	265

772	Mudlu Koppalu	Mandya	12.8347	76.7322	8.23	1641	300	60	36	94	254.3	0	525	128	157	128	0.53	0.4	1177	430
773	Bindiganavale	Mandya	12.8781	76.6361	7.86	1613	420	52	70	159	48.1	0	490	220	113	27	1.10	43.6	988	402
774	Melukote-1	Mandya	12.6556	76.6347	7.83	889	190	44	19	42	116.2	0	195	71	58	133	0.51	2.9	603	160
775	Baligatta	Mandya	12.7486	76.6336	7.72	884	300	52	41	58	6.9	0	226	71	89	32	0.80	11.8	487	185
776	Maravanahalli	Mandya	12.6786	76.5344	8.20	1650	370	76	44	110	137.6	0	437	185	103	102	0.56	1.7	1023	358
777	Honnanayakanathalli	Mandya	12.4547	77.0931	8.16	1357	480	52	85	85	19.0	0	482	128	102	40	0.48	2.3	804	395
778	Shivanasamudra	Mandya	12.2500	77.0997	8.18	992	330	100	19	77	11.7	0	376	78	38	60	1.00	1.2	614	308
779	Bachenahalli	Mandya	12.3328	77.0875	8.36	1143	400	96	39	67	44.9	60	140	142	121	84	0.51	3.1	715	215
780	Bharati Nagar	Mandya	12.4675	77.0333	8.03	1158	230	56	22	141	46.7	0	445	99	71	67	0.67	4.3	775	365
781	Chikka Arasinkere	Mandya	12.5175	77.0339	8.01	1256	250	52	29	137	23.1	0	427	116	90	20	0.63	11.9	727	350
782	Hunnada Doddi	Mandya	12.5206	77.0325	8.24	923	260	60	27	99	42.5	0	384	85	79	42	0.34	0.5	669	315
783	Maddur	Mandya	12.5861	77.0431	7.92	723	270	44	39	79	2.0	0	336	71	49	14	0.48	0.6	503	275
784	Shivapura	Mandya	12.5314	77.0531	7.77	1324	350	56	51	136	8.0	0	397	156	88	86	0.55	8.4	823	325
785	Chapura Doddi	Mandya	12.6222	77.0203	7.93	1240	300	68	31	147	5.2	0	433	135	62	79	0.46	20.2	792	355
786	Besegarahalli Cross	Mandya	12.6333	76.9833	7.86	1542	430	64	65	157	25.6	0	541	163	114	37	0.74	5.2	956	443
787	Anchedoddi	Mandya	12.3953	77.0772	7.49	2140	700	104	106	167	26.2	0	415	312	192	151	0.37	4.3	1312	340
788	Anechaukur	Mysore	12.2400	76.0600	8.19	650	195	50	17	48	12.9	0	311	25	22	2	0.46	0.1	367	255
789	Bylakuppe	Mysore	12.4200	75.9900	7.75	1645	620	78	103	86	10.7	0	525	163	102	32	0.58	3.1	895	430
790	Punnadahalli Koppalu	Mysore	12.3800	76.0400	7.26	940	305	76	28	62	18.6	0	348	57	52	51	0.57	0.9	556	285
791	P. Basavanahalli	Mysore	12.4100	76.0400	7.98	975	305	80	26	74	10.7	0	281	78	63	88	0.47	1.1	590	230
792	Konasuru	Mysore	12.4400	76.0500	8.05	1180	225	72	11	65	164.8	0	287	138	85	65	0.71	0.7	776	235

793	Dhepura	Mysore	12.4600	76.0700	8.07	1475	300	104	10	88	181.5	0	397	135	71	158	0.85	0.9	989	325
794	Bettadapur	Mysore	12.4700	76.1000	7.54	1680	400	52	66	178	35.6	0	329	238	50	213	0.94	5.0	1033	270
795	Attigod	Mysore	12.4800	76.1400	7.82	1735	315	82	27	128	206.8	0	634	124	53	125	1.32	0.5	1133	520
796	Kittur	Mysore	12.4900	76.2100	8.16	1195	365	140	4	89	22.5	0	390	89	48	88	0.73	1.2	718	320
797	Mayagowadanahalli	Mysore	12.5000	76.2400	8.16	1875	510	108	58	167	42.9	0	512	227	104	88	0.86	8.6	1108	420
798	Chunchanakatte	Mysore	12.5000	76.2900	7.81	1580	440	96	49	155	5.3	0	451	152	62	156	0.79	6.2	951	370
799	Saligrama	Mysore	12.5600	76.2600	7.97	1285	335	74	36	132	9.2	0	336	170	83	19	0.89	2429.0	728	275
800	Yele Muddanahalli	Mysore	12.5700	76.3000	7.90	1155	370	76	44	89	5.4	0	342	117	98	22	0.68	20.3	660	280
801	Bheerya	Mysore	12.5900	76.3400	8.14	2480	725	68	135	225	11.9	0	567	411	115	64	0.91	16.7	1376	465
802	Badakanakoppalu	Mysore	12.5100	76.3800	8.17	1915	555	30	117	175	11.3	0	598	177	54	185	1.99	3.8	1114	490
803	Hampapura	Mysore	12.4900	76.3900	8.20	1355	130	28	15	142	179.3	18	317	121	69	105	0.59	1.3	863	290
804	K R Nagara	Mysore	12.4400	76.3800	7.87	1160	305	70	32	121	3.1	0	360	135	52	28	0.51	0.5	660	295
805	Gowdagere	Mysore	12.3900	76.3300	7.79	1120	255	92	6	132	6.6	0	348	106	36	81	1.11	0.9	672	285
806	Hejjodlu	Mysore	12.3700	76.3700	7.70	1685	390	100	34	187	29.2	0	403	206	94	143	0.25	0.3	1038	330
807	Shiriyur	Mysore	12.3800	76.3900	7.73	1735	465	96	55	174	13.2	0	305	280	105	115	0.01	3.0	1024	250
808	Hosaramanahalli	Mysore	12.3600	76.4100	7.71	1680	395	88	43	194	14.0	0	445	241	63	78	1.58	9.3	992	365
809	Hunsur	Mysore	12.3000	76.2700	8.22	1885	445	96	50	215	13.7	60	726	124	45	9	0.93	3.1	1031	695
810	Kamalapura	Mysore	12.3300	76.1500	8.45	1510	370	108	24	135	63.8	72	470	117	50	8	0.37	0.9	836	505
811	Piriyapatna	Mysore	12.3300	76.1000	8.04	1295	300	62	35	153	5.2	0	372	174	47	28	0.69	2.3	731	305
812	Hanagod	Mysore	12.2300	76.1800	8.17	820	245	70	17	65	13.1	0	293	57	41	34	0.51	0.5	475	240
813	Koimuthur Colony	Mysore	12.2500	76.3300	7.67	1650	525	116	57	123	20.2	0	360	227	71	135	0.91	7.4	969	295

814	Rathnapuri	Mysore	12.2300	76.3400	7.48	2745	825	102	139	245	3.8	0	421	549	131	122	0.89	4.7	1549	345
815	Nanjanayakanahalli	Mysore	12.1500	76.2800	6.98	520	165	32	21	36	9.2	0	201	18	48	9	0.83	0.4	295	165
816	Heggadevanakote	Mysore	12.0900	76.3200	7.80	785	245	76	13	62	4.1	0	311	43	31	34	0.95	0.2	453	255
817	Sargur	Mysore	11.9900	76.3900	8.15	2685	425	92	47	187	389.0	0	750	269	84	277	0.49	0.7	1804	615
818	Mullur	Mysore	11.9800	76.4700	7.64	1380	490	100	58	78	15.0	0	543	74	51	79	1.15	1.5	787	445
819	Beeredevanapura	Mysore	11.9300	76.5200	8.08	2600	660	94	103	272	30.0	0	1007	248	65	54	1.40	3.2	1480	825
820	Kothanahalli	Mysore	11.9200	76.5600	7.67	1830	390	118	23	215	38.9	0	525	206	59	128	0.69	5.9	1108	430
821	Palya	Mysore	12.0900	76.6600	7.92	570	155	40	13	56	2.1	0	220	32	31	14	0.45	0.1	322	180
822	Devirammanahalli	Mysore	12.1000	76.6600	8.44	1020	270	68	24	85	34.8	78	171	71	52	71	0.70	0.4	557	270
823	Gandhigram	Mysore	12.1000	76.6100	8.48	865	295	48	43	57	3.2	54	256	28	28	29	0.72	0.4	425	300
824	Hullahalli	Mysore	12.0900	76.5500	7.54	1105	375	76	45	74	3.1	0	342	96	42	76	0.64	0.3	620	280
825	Kannenuru	Mysore	12.0900	76.5100	8.24	925	350	74	40	44	6.0	36	372	32	32	7	1.04	0.5	484	365
826	Motha	Mysore	12.0900	76.4700	8.23	1030	340	78	35	75	2.2	30	415	35	47	3	1.13	2.1	547	390
827	Ibjala	Mysore	12.1100	76.4400	8.07	1860	515	110	58	130	98.5	0	519	191	47	194	0.93	0.9	1146	425
828	Chikkayyana Chattra	Mysore	12.1500	76.6800	8.11	805	265	58	29	56	5.0	0	311	43	41	14	0.63	0.3	435	255
829	Guluru	Mysore	12.1100	76.7000	7.81	1485	250	56	27	205	26.7	0	586	110	62	8	0.88	2.3	852	480
830	Vidyapitha	Mysore	12.1000	76.7000	7.37	2475	725	156	81	216	25.8	0	360	475	186	17	0.77	4.7	1377	295
831	Kahalli	Mysore	12.1600	76.8400	7.95	1425	245	74	15	208	1.7	0	458	163	64	19	0.58	0.9	823	375
832	Alambur	Mysore	12.1300	76.7300	8.33	945	260	70	21	85	14.0	42	232	57	54	81	0.83	0.4	548	260
833	Varuna	Mysore	12.2600	76.7400	8.32	1075	275	60	30	99	30.2	36	366	53	27	75	1.16	0.3	620	360
834	Kilanapura	Mysore	12.2500	76.8100	7.71	1585	510	104	61	125	2.3	0	555	123	119	36	1.25	0.1	909	455

835	Gargeshwari	Mysore	12.2300	76.8900	7.91	1130	370	86	38	84	3.1	0	403	85	54	40	0.56	BDL	635	330
836	Somnathapura	Mysore	12.2700	76.8800	8.24	1245	140	30	16	141	132.0	30	403	67	45	96	1.70	4.5	791	380
837	Kethupura	Mysore	12.3000	76.8800	8.13	1210	285	86	17	117	44.5	0	372	99	55	108	0.91	1.3	754	305
838	Bevinahalli	Mysore	12.3000	76.8800	8.12	895	255	66	22	64	35.8	0	275	64	61	60	0.88	1.4	540	225
839	Ranganathapura	Mysore	12.3200	76.8200	8.20	1305	435	92	50	89	8.8	36	439	71	55	62	0.77	2.0	717	420
840	Hunugunahalli	Mysore	12.3000	76.7900	8.13	1125	240	50	28	129	25.9	0	470	53	54	36	1.02	2.2	663	385
841	Chamundi Hill	Mysore	12.2700	76.6700	7.80	855	275	60	30	64	3.2	0	305	78	33	17	0.58	1.1	472	250
842	Mysore	Mysore	12.3000	76.6500	8.06	600	185	44	18	45	8.6	0	214	39	34	21	0.53	0.3	340	175
843	Siddalingapura	Mysore	12.3600	76.6600	7.91	875	220	48	24	94	4.8	0	268	78	45	32	0.65	0.7	490	220
844	Kalasthavadi	Mysore	12.3700	76.6600	7.73	855	210	44	24	54	72.7	0	415	18	31	15	0.53	3.0	512	340
845	Alagudu	Mysore	12.2000	76.9100	8.40	1285	200	42	23	118	137.0	42	427	57	40	77	0.42	0.1	779	420
846	Muguru	Mysore	12.1300	76.9400	7.65	2070	600	130	67	178	30.4	0	476	234	103	208	0.80	1.9	1240	390
847	Gudadur	Raichur	15.9100	76.6700	7.53	555	155	34	17	50	3.8	0	232	39	15	4	0.65	16.4	304	190
848	Vachcnayakamthanda	Raichur	16.2900	76.8800	7.97	720	190	34	26	75	4.5	0	220	78	55	2	0.70	2.3	408	180
849	Chikkasarur	Raichur	16.1108	76.6372	7.60	835	170	42	16	105	8.5	0	299	39	58	47	1.40	0.8	498	245
850	Ambereshwar	Raichur	16.2600	76.5700	7.49	930	200	42	23	119	2.3	0	323	85	73	40	1.80	4.0	582	265
851	Chincherki	Raichur	16.2011	76.7881	7.79	1145	295	24	57	120	4.3	0	458	53	55	58	1.10	10.7	651	375
852	Galharga	Raichur	16.2672	76.8414	7.57	1155	345	56	50	98	8.2	0	256	149	118	30	0.64	2.9	665	210
853	Devarabupur	Raichur	16.2500	76.5800	7.30	1180	370	82	40	95	2.1	0	262	138	125	41	1.10	3.9	683	215
854	Turvihal	Raichur	15.7600	76.5900	7.68	1180	230	36	34	145	28.3	0	390	103	83	16	0.90	4.8	683	320
855	Yeragera	Raichur	16.0700	77.4100	7.26	1185	335	88	28	110	5.6	0	92	255	100	2	0.42	46.0	645	75

856	Buddinai	Raichur	16.2000	76.7833	7.69	1220	330	28	63	115	15.9	0	500	53	68	52	1.00	9.7	700	410
857	Vanukuni	Raichur	16.4000	76.9800	8.76	1260	130	10	26	225	2.9	12	281	142	128	39	2.10	2.6	751	250
858	Mahampur	Raichur	15.8389	76.4583	7.46	1270	270	50	35	160	5.7	0	250	152	149	50	1.80	3.3	755	205
859	Chikbhergi	Raichur	15.7583	76.5056	7.45	1285	375	72	47	105	26.6	0	293	188	82	54	1.00	3.6	754	240
860	Chkkahonakuni	Raichur	16.4000	76.9800	8.01	1310	140	18	23	231	1.0	0	439	103	119	6	3.10	2.8	769	360
861	Sirwar	Raichur	16.1710	77.0100	7.87	1330	250	32	41	185	2.4	0	506	106	100	15	2.20	24.0	791	415
862	Chhatra	Raichur	15.8900	76.4500	7.57	1330	270	42	40	175	2.5	0	445	124	89	10	3.30	12.0	754	365
863	Gabbur	Raichur	16.3000	77.1500	7.38	1360	410	64	61	117	2.5	0	275	149	190	19	0.90	12.7	770	225
864	Sindanur	Raichur	15.7800	76.7600	7.93	1375	165	30	22	235	5.9	0	262	181	246	31	0.82	7.2	911	215
865	Bagalwad	Raichur	16.0500	76.8900	7.63	1435	195	30	29	233	1.8	0	378	96	274	23	1.50	90.0	917	310
866	Maski	Raichur	15.9600	76.6500	7.12	1450	225	60	18	140	146.0	0	390	149	137	54	0.55	6.5	942	320
867	Bommanal	Raichur	16.0700	76.3500	7.67	1460	235	36	35	220	5.5	0	305	184	190	1	0.84	4.6	858	250
868	Echanal	Raichur	16.1792	76.4456	7.62	1480	290	46	43	195	12.1	0	317	174	166	42	1.60	2.8	871	260
869	Gorebal	Raichur	16.1850	76.4736	7.90	1500	250	60	24	225	2.9	0	293	163	221	42	0.72	6.3	917	240
870	Kakargal	Raichur	16.3500	77.0667	7.69	1580	230	26	40	254	1.0	0	464	149	137	28	2.20	19.8	918	380
871	Jawalgere	Raichur	15.8600	76.8100	8.00	1630	175	24	28	285	7.4	0	366	138	270	16	1.00	29.0	992	300
872	Balatagi	Raichur	16.0800	76.9500	8.00	1680	235	34	36	239	59.3	0	183	259	242	60	0.81	11.6	1041	150
873	Rajalabanda	Raichur	15.9583	77.1750	7.54	1705	410	66	60	198	2.5	0	348	206	274	18	1.20	16.0	1036	285
874	Kalamangi	Raichur	16.2708	77.2708	7.93	1730	190	26	30	305	2.1	0	366	174	265	25	1.20	4.7	1050	300
875	Arakeri	Raichur	16.2750	76.9508	7.42	1780	640	104	92	105	5.9	0	488	99	202	89	2.20	0.6	995	400
876	Hemanur	Raichur	16.3400	76.9500	7.81	1800	350	36	63	228	35.3	0	494	238	106	43	2.80	49.0	1050	405

877	Raichur	Raichur	16.2000	77.3500	7.39	1815	395	88	43	227	7.4	0	214	301	240	30	0.74	43.0	1067	175
878	Pamankallu	Raichur	16.1000	76.6700	7.50	1815	520	68	85	172	3.7	0	378	220	297	49	0.79	2.3	1125	310
879	Ulimeshwar	Raichur	15.9519	76.4417	7.73	1940	190	32	27	352	3.9	0	445	135	348	49	2.10	0.7	1218	365
880	Gunda	Raichur	15.8200	76.5000	7.84	2025	170	22	28	379	4.3	0	586	195	165	16	2.00	3.9	1166	480
881	Shakti Nagar	Raichur	16.2708	77.2708	7.33	2195	395	112	28	301	26.1	0	329	308	314	1	0.69	1.5	1291	270
882	Mustur	Raichur	16.3100	77.0100	7.96	2255	285	28	52	380	2.5	0	458	277	302	1	3.70	4.9	1321	375
883	Ankush Doddy	Raichur	16.0344	76.6122	7.83	2285	320	30	60	371	3.4	0	567	238	282	43	2.30	0.5	1373	465
884	Jalahalli	Raichur	16.3681	76.7803	7.84	2415	310	46	47	272	231.5	0	720	308	158	18	0.80	12.0	1520	590
885	Janekal	Raichur	16.0153	76.9539	7.50	2980	730	104	114	340	3.2	0	397	510	280	39	3.20	7.4	1633	325
886	Hanchinal	Raichur	15.6722	76.6814	7.55	3650	750	140	97	350	232.0	0	488	532	265	280	0.63	250.0	2194	400
887	Jakkaladinni	Raichur	16.1822	77.0658	8.00	4295	210	24	36	701	308.8	0	860	581	330	76	5.40	71.5	2582	705
888	Hirekotankal	Raichur	15.9600	76.9500	7.76	6100	575	74	95	380	1270.0	0	476	1276	382	208	1.10	0.5	3975	390
889	Aralalu	Ramnagara	12.5219	77.4286	8.10	1350	315	64	38	117	31.7	0	262	226	88	50	0.12	0.8	775	215
890	Bairanahalli Cross	Ramnagara	12.9564	77.2236	7.47	2820	880	168	112	241	4.5	0	244	709	86	4	0.01	4.4	1473	200
891	Banavadi	Ramnagara	13.1167	77.2583	9.56	880	165	24	26	88	69.2	15	140	124	63	42	0.04	8.8	531	140
892	Gonaldoddi	Ramnagara	12.6111	77.3889	9.02	1160	230	48	27	147	27.3	9	153	202	150	9	0.35	18.3	709	140
893	Harohalli A	Ramnagara	12.6819	77.4750	8.45	1140	260	53	31	129	12.1	12	183	222	48	46	0.34	3.9	660	170
894	Hegganur	Ramnagara	12.3333	77.4500	8.36	1240	244	50	29	140	28.3	9	238	218	64	43	0.85	13.7	723	210
895	Helagalli	Ramnagara	12.3664	77.4106	8.18	1010	216	45	25	113	11.5	0	153	192	59	37	0.03	3.1	576	125
896	Jalamangala A	Ramnagara	12.8200	77.2203	8.15	1000	208	43	24	115	18.3	0	146	188	73	43	1.46	6.5	593	120
897	Kailancha	Ramnagara	12.6667	77.4500	8.06	1220	248	51	29	129	61.4	0	207	228	85	39	0.85	4.5	749	170

898	Kalegowdanadoddi	Ramnagara	12.8175	77.2228	8.10	1010	210	46	23	136	2.1	0	250	160	70	19	0.52	2.4	609	205
899	Kanakapura	Ramnagara	12.5583	77.4250	8.00	1130	244	51	28	120	26.4	0	171	226	71	34	0.21	11.1	661	140
900	Kengel	Ramnagara	12.6867	77.2350	8.05	1170	248	50	30	127	24.6	0	183	224	95	11	0.34	3.1	673	150
901	Kottahalli	Ramnagara	12.5667	77.4667	7.87	1250	310	80	27	127	15.3	0	262	191	100	34	0.34	14.2	734	215
902	Kailancha	Ramnagara	12.6667	77.4500	8.00	1260	440	56	73	87	1.1	0	220	255	67	34	0.53	9.9	707	180
903	Magadi1	Ramnagara	12.9583	77.2333	7.92	1030	270	56	32	93	12.9	0	122	220	65	23	0.31	2.0	576	100
904	Malagalu	Ramnagara	12.5783	77.1914	10.60	1070	255	60	26	99	7.7	30	171	145	65	45	0.45	10.9	570	190
905	Nunnuru	Ramnagara	12.5083	77.1667	8.94	370	100	22	11	33	5.3	9	31	64	45	3	0.47	1.3	208	40
906	Panayan Palya	Ramnagara	13.0386	77.2589	7.87	750	140	30	16	99	4.6	0	73	121	100	35	0.77	1.7	450	60
907	Ramanagara	Ramnagara	12.7197	77.2756	8.08	860	152	30	19	110	21.3	0	122	168	50	42	0.10	2.1	515	100
908	S.B.Doddi	Ramnagara	12.7342	77.2986	7.86	1010	196	40	23	129	19.5	0	183	180	66	31	0.46	1.2	600	150
909	Uyyamballi	Ramnagara	12.3500	77.4333	8.07	440	145	30	17	50	1.8	0	110	57	60	21	0.39	5.1	304	90
910	Veerasagara	Ramnagara	13.1678	77.2014	9.01	1350	280	52	36	59	207.3	36	268	199	74	41	0.53	13.7	853	280
911	Nallahalli Doddi	Ramnagara	12.3531	77.4369	7.95	1320	480	64	78	69	7.6	0	305	213	57	33	1.00	3.7	708	250
912	Sugganahalli	Ramnagara	12.7994	77.3192	6.99	2020	348	107	19	145	270.7	0	424	259	130	187	1.60	NA	1377	348
913	Naikanahalli	Ramnagara	12.4209	77.3616	8.03	1390	187	44	18	78	229.8	0	534	85	82	63	1.00	NA	925	438
914	Kadasivanahalli	Ramnagara	12.4964	77.5885	8.02	730	162	30	21	93	4.3	0	319	39	57	2	1.00	NA	441	261
915	Kempegowdanagara	Shivmoga	13 47 24	75 44 09	7.83	860	212	44	24	72	73.4	0	374	82	41	31	0.84	0.7	595	307
916	Masarahalli	Shivmoga	13 48 44	75 43 50	7.93	800	268	75	19	58	4.0	0	368	43	33	4	0.72	0.8	460	302
917	Hiriyur	Shivmoga	13 48 06	75 40 22	7.92	980	343	67	43	59	0.8	0	368	96	41	5	0.79	0.3	537	302
918	Hunsekatte Junction	Shivmoga	13 46 38	75 37 10	7.85	540	197	44	21	33	1.7	0	209	43	19	19	0.56	0.7	308	171

919	Umblibailu	Shivmoga	13 45 59	75 34 22	7.82	740	232	77	10	44	23.7	0	227	57	65	39	0.56	0.0	454	186
920	Hosahalli	Shivmoga	13 52 34	75 33 30	7.63	460	182	46	16	20	1.6	0	147	43	22	22	0.20	0.4	260	120
921	Gajanur	Shivmoga	13 51 03	75 32 23	7.82	590	177	44	16	25	40.6	0	239	35	22	28	0.37	0.4	356	196
922	Mandagadde	Shivmoga	13 44 30	75 27 34	7.83	460	167	48	11	15	18.9	0	221	25	7	2	0.24	0.2	262	181
923	Nidagalale	Shivmoga	13 43 19	75 26 18	8.10	220	76	18	7	11	5.0	0	86	18	10	4	0.06	0.0	126	70
924	Bagavalli	Shivmoga	13 42 56	75 23 47	6.95	180	40	10	4	15	5.4	0	37	28	6	7	0.04	0.0	98	30
925	Gabadi	Shivmoga	13 43 12	75 21 14	6.76	150	45	12	4	12	1.2	0	25	14	4	32	0.05	0.0	94	20
926	Malur (Shimoga)	Shivmoga	13 43 38	75 20 29	7.15	270	66	12	9	19	14.0	0	74	21	21	22	0.07	0.0	163	61
927	Kudumallige	Shivmoga	13 43 25	75 17 21	6.76	200	45	10	5	18	4.9	0	43	28	9	16	0.04	0.0	117	35
928	Tudki	Shivmoga	13 41 48	75 15 26	6.45	160	40	12	2	14	1.9	0	18	21	3	30	0.03	0.0	95	15
929	Theerthahalli	Shivmoga	13 41 26	75 15 12	7.42	330	86	30	2	24	15.2	0	104	25	18	22	0.04	0.0	200	85
930	Nandikatte	Shivmoga	13 40 36	75 12 16	6.84	220	40	10	4	10	29.2	0	37	21	29	13	0.03	0.0	139	30
931	Kalmane	Shivmoga	13 39 11	75 10 28	6.58	80	25	8	1	5	0.7	0	25	7	3	2	0.02	0.0	42	20
932	Megaravalli	Shivmoga	13 37 03	75 08 50	6.43	60	20	6	1	3	0.9	0	12	7	2	3	0.02	0.0	31	10
933	Naluru	Shivmoga	13 35 36	75 08 01	6.11	140	45	10	5	6	8.0	0	18	25	5	11	0.02	0.0	81	15
934	Guddekeri	Shivmoga	13 33 55	75 07 43	6.01	70	20	8	0	4	1.1	0	12	11	2	5	0.02	0.0	39	10
935	Kavurehakkalu	Shivmoga	13 32 32	75 06 41	7.08	150	61	20	2	3	0.8	0	61	11	5	2	0.13	0.0	81	50
936	Agumbe	Shivmoga	13 30 24	75 05 38	6.41	90	25	12	0	5	1.4	0	18	11	4	7	0.03	0.0	51	15
937	Kodlu	Shivmoga	13 38 30	75 10 54	7.07	120	45	16	1	4	0.3	0	37	14	2	3	0.03	0.0	63	30
938	Mytheri	Shivmoga	13 37 56	75 12 01	7.45	200	76	30	0	5	0.5	0	80	14	4	3	0.05	0.0	106	66
939	Tirthamatthur	Shivmoga	13 36 41	75 14 09	7.36	90	35	10	2	3	0.7	0	25	11	3	2	0.03	0.0	47	20

940	Hulkod	Shivmoga	13 36 40	75 15 40	6.75	130	56	12	6	2	0.8	0	37	14	5	7	0.03	0.0	69	30
941	Devangi	Shivmoga	13 37 50	75 16 57	6.31	90	30	8	2	6	1.4	0	18	11	3	11	0.02	0.0	53	15
942	Taluve	Shivmoga	13 39 27	75 16 15	6.55	170	51	10	6	12	2.8	0	31	21	2	30	0.03	0.0	103	25
943	Ganapathikatte(Surani)	Shivmoga	13 43 28	75 13 18	6.03	90	30	8	2	6	1.8	0	12	14	4	13	0.02	0.0	55	10
944	Araga	Shivmoga	13 44 27	75 12 26	6.72	130	35	10	2	9	2.6	0	18	21	6	10	0.02	0.0	72	15
945	Guddekoppa	Shivmoga	13 46 30	75 14 29	6.94	120	35	12	1	8	3.4	0	43	11	2	2	0.13	0.0	66	35
946	Konandur	Shivmoga	13 48 38	75 14 51	6.47	120	25	6	2	12	1.5	0	18	21	3	10	0.07	0.0	66	15
947	Konandur Ii	Shivmoga	13 49 06	75 15 15	7.47	240	91	30	4	5	2.7	0	98	14	11	2	0.10	0.0	129	80
948	Shankarahalli	Shivmoga	13 50 42	75 12 36	7.21	170	71	22	4	3	0.7	0	61	14	3	9	0.06	0.0	93	50
949	Humacha	Shivmoga	13 51 41	75 12 22	6.96	210	71	18	6	9	6.1	0	68	18	9	9	0.06	0.0	117	56
950	Humchadakatte	Shivmoga	13 52 42	75 14 05	6.80	250	76	18	7	18	1.9	0	25	50	6	31	0.10	0.0	147	20
951	Gartikere	Shivmoga	13 53 25	75 14 15	6.71	360	51	10	6	48	6.4	0	12	74	8	60	0.13	0.0	220	10
952	Heddaripura	Shivmoga	13 56 01	7516 08	7.13	170	61	16	5	9	1.6	0	37	21	4	18	0.12	0.0	97	30
953	Riponpet	Shivmoga	13 59 55	75 15 35	6.90	110	35	8	4	8	0.4	0	18	18	4	10	0.22	0.0	63	15
954	18Th Mile (Kote Kargya)	Shivmoga	13 57 50	75 12 36	6.72	160	35	8	4	15	0.8	0	18	21	6	29	0.26	0.0	94	15
955	Kodur	Shivmoga	13 56 06	75 09 33	6.55	210	71	6	13	15	1.9	0	31	35	1	25	0.15	0.0	116	25
956	Bilehalli	Shivmoga	13 55 22	75 07 11	7.17	200	66	14	7	15	1.4	0	43	21	4	34	0.17	0.0	123	35
957	Hosanagara	Shivmoga	13 55 03	75 04 48	6.95	110	35	6	5	6	1.7	0	31	14	3	1	0.22	0.0	56	25
958	Brahmeeshwara	Shivmoga	13 57 01	75 05 04	7.14	210	76	16	9	6	8.6	0	80	14	6	6	0.23	0.0	114	66
959	Kaijegebulu	Shivmoga	13 59 06	75 06 38	6.94	200	76	8	13	9	2.7	0	68	25	2	2	0.11	0.0	103	56
960	Battemallappa	Shivmoga	14 01 14	75 09 16	6.84	240	86	10	15	12	1.9	0	68	25	4	22	0.12	0.0	131	56

961	Iruvakki	Shivmoga	14 02 39	75 11 32	6.92	210	71	18	6	13	0.8	0	55	21	2	21	0.12	0.0	115	45
962	Chennakoppa	Shivmoga	14 04 45	75 15 06	7.32	350	146	36	13	10	7.8	0	123	25	10	27	0.24	0.2	203	101
963	Hosur	Shivmoga	14 05 45	75 10 39	6.95	180	45	8	6	17	1.8	0	25	25	2	27	0.08	0.0	102	20
964	Ullur(Thyagarthi Cross)	Shivmoga	14 07 20	75 07 38	6.40	120	30	6	4	10	1.5	0	18	18	1	21	0.06	0.0	73	15
965	Ariivadki	Shivmoga	14 08 16	75 03 23	7.22	200	86	24	6	3	2.3	0	86	14	2	3	0.10	0.0	107	70
966	Bheemankone	Shivmoga	14 06 11	75 03 55	6.91	150	51	8	7	9	1.2	0	18	25	2	16	0.16	0.0	80	15
967	Balasagodu	Shivmoga	14 09 34	75 03 54	6.79	170	66	24	1	8	1.0	0	49	14	4	19	0.11	0.0	101	40
968	Sagar	Shivmoga	14 10 30	75 02 03	6.48	200	51	10	6	21	2.7	0	25	35	2	28	0.09	0.0	120	20
969	Madsur Lingadalli	Shivmoga	14 12 36	75 04 56	6.73	110	40	10	4	5	0.2	0	43	11	2	2	0.07	0.0	60	35
970	Hosabale	Shivmoga	14 19 12	75 02 53	6.77	200	71	12	10	10	1.4	0	43	32	2	10	0.08	0.0	103	35
971	Sorab	Shivmoga	14 22 47	75 05 19	7.21	250	81	20	7	11	13.6	0	68	21	21	13	0.26	0.0	148	56
972	Ankaravalli	Shivmoga	14 24 22	74 59 35	7.31	190	81	24	5	4	0.8	0	74	14	2	6	0.19	0.0	101	61
973	Chandraguti	Shivmoga	14 25 56	74 57 28	7.15	360	86	30	2	30	12.3	0	74	57	15	20	0.18	0.0	211	61
974	Talaguppa	Shivmoga	14 12 56	74 54 50	7.11	220	86	24	6	8	1.2	0	55	25	20	2	0.11	0.0	119	45
975	Jaddihalli	Shivmoga	14 30 35	75 03 10	7.57	380	136	38	10	20	2.1	0	129	35	5	23	0.45	0.0	212	106
976	Anavatti	Shivmoga	14 33 57	75 09 05	7.71	1230	369	95	32	84	19.9	0	325	188	65	7	0.62	0.0	689	266
977	Shikaripura(A)	Shivmoga	14 15 54	75 21 34	7.76	1190	414	79	52	71	1.2	0	374	135	65	28	1.10	4.4	660	307
978	Ambligolla	Shivmoga	14 11 04	75 15 48	7.17	440	101	26	9	36	14.2	0	61	92	10	25	0.16	0.0	249	50
979	Arekoppa	Shivmoga	14 1104	75 25 18	7.75	850	298	65	33	51	3.9	0	184	113	69	46	1.10	3.0	493	151
980	Ayanur	Shivmoga	14 00 40	75 2603	7.67	1120	399	73	52	66	12.5	0	227	184	71	45	0.58	0.1	642	186
981	Tavare Chatnihalli	Shivmoga	13 57 00	75 36 02	7.80	1130	343	89	29	69	44.0	0	233	99	189	32	0.49	0.1	693	191

982	Malinahanswadi	Shivmoga	13 58 11	75 37 10	7.72	1470	394	87	43	120	32.0	0	436	206	75	2	0.99	3.2	831	357
983	Sugur	Shivmoga	14 0029	75 39 34	7.91	1640	470	91	58	114	50.5	0	442	223	85	44	0.87	2.1	936	362
984	Shimoga	Shivmoga	13 55 20	75 34 36	8.13	930	187	38	22	49	103.9	0	417	50	40	3	1.40	1.8	560	342
985	Nidigi	Shivmoga	13 53 18	75 37 48	7.87	520	182	36	22	27	14.4	0	68	67	93	2	0.24	0.0	303	56
986	Purale(Alternate To Shimoga)	Shivmoga	13 55 48	75 36 27	7.53	160	61	8	10	6	2.0	0	55	18	5	2	0.21	0.0	84	45
987	Pilingiri	Shivmoga	13 57 12	75 38 35	7.09	980	303	71	30	81	6.9	0	319	131	6	2	1.60	0.2	522	261
988	Holehonnur	Shivmoga	13 59 17	75 41 20	7.57	920	182	48	15	96	48.9	0	313	103	20	35	1.10	0.2	557	257
989	Arabilachi	Shivmoga	13 56 34	75 41 10	7.58	1360	328	61	43	105	90.1	0	522	135	52	1	1.20	1.0	805	428
990	Kudlikere	Shivmoga	13 55 04	75 45 52	7.85	230	71	12	10	13	1.8	0	49	18	42	0	0.18	0.0	126	40
991	Virapur	Shivmoga	13 52 39	75 44 10	7.51	1180	328	87	27	97	31.6	0	442	121	44	11	0.75	1.2	689	362
992	Bhadravati	Shivmoga	13 51 12	75 41 07	7.57	690	227	61	18	52	2.1	0	239	60	36	24	1.10	0.0	399	196
993	Kunigal	Tumkur	13.0240	77.0325	8.34	797	150	32	17	120	18.5	21	67	43	230	30	0.46	1.6	544	90
994	Allappana Gudde	Tumkur	13.0000	76.9500	8.05	1161	120	36	7	242	11.5	0	390	106	110	34	0.36	1.8	785	320
995	Mavinahalli	Tumkur	13.1530	76.9433	7.91	833	215	42	27	87	40.0	0	128	64	204	27	0.27	6.6	570	105
996	Hunchihalli	Tumkur	13.1667	76.8183	8.30	819	140	10	28	129	22.0	18	128	50	173	36	1.00	2.6	536	135
997	Mayasandra	Tumkur	13.0770	76.7570	9.38	2440	130	16	22	469	150.1	39	622	365	149	12	1.20	6.0	1587	575
998	Turuvekere	Tumkur	13.1630	76.6610	10.25	649	40	10	4	152	14.9	12	49	39	189	51	0.34	1.9	496	60
999	Nonavinakere	Tumkur	13.1620	76.5540	9.82	1769	205	8	45	237	209.6	24	311	294	197	19	0.36	1.3	1213	295
1000	Karavadikodi	Tumkur	13.1660	76.5500	7.17	820	160	40	15	127	8.6	0	37	32	177	219	0.16	3.2	640	30
1001	Gubbi	Tumkur	13.3060	76.9470	7.59	1770	320	66	38	267	38.0	0	439	163	206	84	0.38	8.0	1130	360
1002	Singanahalli	Tumkur	13.3200	76.9630	8.28	1921	460	104	49	221	53.2	15	366	227	250	21	0.38	24.2	1156	325

1003	Tumkur	Tumkur	13.3480	77.1060	10.61	531	45	6	7	94	20.3	15	49	28	155	3	0.11	0.6	353	65
1004	Siddaganga	Tumkur	13.3220	77.1500	8.28	1950	295	52	40	336	51.5	12	409	305	221	35	0.19	2.3	1297	355
1005	Irkasandra	Tumkur	13.4130	76.9440	8.28	197	50	10	6	25	10.9	3	18	14	40	55	0.16	0.1	174	20
1006	Tiptur (New Well)	Tumkur	13.2590	76.4790	10.24	4194	170	14	33	573	508.0	84	708	617	115	198	0.29	1.2	2540	720
1007	Medihalli	Tumkur	13.3950	76.5280	9.33	4050	1020	96	190	474	90.7	102	824	542	288	69	0.13	28.4	2313	845
1008	Navile	Tumkur	13.4200	76.5700	8.88	1548	120	8	24	198	220.1	36	415	106	202	41	0.46	7.4	1073	400
1009	Chattasandra	Tumkur	13.4450	76.5000	8.02	337	65	20	4	44	6.3	0	49	18	64	43	0.30	1.5	228	40
1010	Mattigatta	Tumkur	13.4690	76.4810	8.16	778	105	20	13	133	12.9	0	116	32	205	47	0.41	20.4	535	95
1011	Mysorappan Palya	Tumkur	13.4500	76.4620	10.92	892	25	4	4	161	63.3	18	195	43	148	31	0.34	4.3	583	190
1012	Suragondanahalli	Tumkur	13.4050	76.4320	8.85	2090	170	24	27	347	167.3	12	525	287	259	65	0.42	13.0	1504	450
1013	Balavenaralu	Tumkur	13.3830	76.4220	10.57	286	30	4	5	55	9.8	6	104	11	35	25	0.16	0.7	211	95
1014	Rudrapura	Tumkur	13.4050	76.4110	9.51	1384	200	24	34	239	16.4	24	171	135	305	25	1.10	4.0	897	180
1015	Halkurki	Tumkur	13.3860	76.4240	8.23	660	210	40	27	41	39.9	6	55	43	204	18	0.35	3.0	450	55
1016	Lakshmipura	Tumkur	13.5330	76.5020	8.32	657	110	10	21	92	51.6	6	73	124	103	37	0.33	1.6	487	70
1017	Huliyar	Tumkur	13.5840	76.5470	7.87	3180	500	176	15	513	30.5	0	543	546	307	64	0.12	2.7	1982	445
1018	Elanadu	Tumkur	13.5970	76.4780	9.54	1204	215	4	62	189	32.8	18	342	92	207	25	0.68	1.4	831	310
1019	Kotagudda	Tumkur	14.1460	77.1860	8.45	789	110	20	15	124	44.2	6	128	39	225	0	1.80	10.0	548	115
1020	Palivalli	Tumkur	14.1580	77.2920	9.82	1535	140	44	7	271	58.7	78	220	241	105	18	3.20	19.6	926	310
1021	Pavagada	Tumkur	14.0820	77.2800	7.95	794	180	46	16	113	4.5	0	390	35	33	0	3.90	8.4	486	320
1022	Kanmamedi	Tumkur	14.0200	77.2030	9.78	1187	120	16	19	138	164.2	66	122	199	82	38	1.40	1.7	770	210
1023	Channa Kesavapura (Ck Pura)	Tumkur	14.0530	77.1670	8.96	620	155	42	12	69	46.0	24	177	82	43	14	0.52	2.1	429	185

1024	Karekyathanahalli	Tumkur	14.0610	77.1040	8.80	1180	130	20	19	163	86.0	42	244	135	81	38	1.00	7.8	716	270
1025	Bidarigere	Tumkur	13.7830	76.8500	10.68	2960	80	16	10	398	465.3	90	671	411	184	27	2.60	3.2	1974	700
1026	Midigesi	Tumkur	13.8300	77.2040	8.37	215	65	14	7	23	1.9	9	55	14	29	1	1.20	0.0	129	60
1027	Chilanahalli	Tumkur	13.7000	77.1830	7.72	1230	210	12	44	184	5.7	0	329	142	142	1	1.50	34.8	731	270
1028	Giriyammana Palya	Tumkur	13.7320	77.1990	7.82	950	150	12	29	166	13.1	0	275	106	80	27	2.00	59.9	601	225
1029	Madhugiri	Tumkur	13.6650	77.2090	10.61	281	25	6	2	49	5.1	42	43	11	19	1	0.50	0.3	144	105
1030	Koratigere	Tumkur	13.5260	77.2360	8.30	299	60	14	6	46	3.6	9	110	18	19	0	0.55	0.0	179	105
1031	Sira	Tumkur	13.7430	76.9080	9.35	1240	195	8	43	191	11.7	45	311	142	85	16	1.40	12.7	712	330
1032	Badavanahalli	Tumkur	13.6760	77.0630	9.83	1529	140	20	22	260	50.2	27	98	312	186	1	0.16	39.7	926	125
1033	Gattlaholahalli	Tumkur	13.5150	77.1770	8.42	1216	200	36	27	170	59.8	24	183	199	115	24	0.28	6.7	756	190
1034	Neelagondanahalli	Tumkur	13.4240	77.2390	8.00	999	220	38	30	143	4.0	0	311	99	73	34	0.92	4.5	611	255
1035	Durgadahalli	Tumkur	13.3870	77.2000	9.75	692	170	40	17	74	37.0	12	55	117	89	32	0.18	0.1	446	65
1036	Nangenahalli	Tumkur	13.3920	77.2370	9.73	731	150	28	19	99	13.4	12	67	142	61	31	0.56	3.4	442	75
1037	Arsakatte	Udupi	13 06 42	75 09 41	7.86	150	35	10	2	15	2.8	0	37	21	3	3	0.02	BDL	80	30
1038	Hosmar	Udupi	13 08 17	75 07 32	6.97	140	25	8	1	13	9.6	0	37	14	10	3	0.12	BDL	81	30
1039	Modabidri	Udupi	13 03 48	74 59 03	6.57	95	20	4	2	11	1.0	0	18	14	2	8	0.02	BDL	54	15
1040	Sampige	Udupi	13 03 39	74 57 45	6.89	75	25	8	1	5	0.7	0	18	7	8	2	0.04	BDL	43	15
1041	Thodur	Udupi	13 02 33	74 58 13	7.28	150	45	14	2	14	0.5	0	55	14	4	1	0.02	BDL	84	45
1042	Kannagauru	Udupi	13 07 22	74 46 27	7.08	280	65	20	4	31	2.3	0	24	53	3	41	0.10	BDL	169	20
1043	Uchila A	Udupi	13 10 42	74 45 33	6.48	130	25	4	4	17	0.7	0	18	25	3	7	0.02	BDL	71	15
1044	Koup Uliyargoli	Udupi	13 14 33	74 44 40	6.10	175	35	10	2	20	2.8	0	12	21	20	22	0.02	BDL	106	10

1045	Katpadi	Udupi	13 16 56	74 44 55	6.97	110	20	4	2	15	1.2	0	24	14	4	7	0.02	BDL	63	20
1046	Kunjargiri Cross	Udupi	13 15 37	74 46 10	6.46	140	30	8	2	16	1.5	0	24	25	3	3	0.02	BDL	74	20
1047	Bantkal	Udupi	13 15 07	74 47 44	6.55	360	20	4	2	71	2.0	0	12	110	5	3	0.02	BDL	205	10
1048	Kurkal	Udupi	13 16 15	74 47 16	6.78	160	30	6	4	21	0.7	0	37	28	4	1	0.48	BDL	87	30
1049	Malpe	Udupi	13 20 59	74 42 16	7.78	450	185	62	7	18	2.1	0	220	18	14	1	0.02	1.0	256	180
1050	Santekatte	Udupi	13 23 06	74 44 17	7.32	305	50	14	4	40	9.8	0	37	53	7	35	0.02	BDL	185	30
1051	Brahmavara	Udupi	13 26 15	74 44 38	7.13	295	75	22	5	29	3.1	0	91	35	3	8	0.02	BDL	161	75
1052	Barkur	Udupi	13 28 53	74 44 38	7.08	200	40	12	2	24	2.1	0	55	25	5	7	0.02	BDL	111	45
1053	Sabirikatte	Udupi	13 30 43	74 46 32	7.39	155	45	12	4	15	0.8	0	61	14	4	1	0.02	BDL	88	50
1054	Shiroor	Udupi	13 30 46	74 50 26	7.16	140	35	10	2	14	1.1	0	55	11	2	2	0.04	BDL	76	45
1055	Mairkumbe	Udupi	13 29 42	74 49 56	6.87	160	45	12	4	15	1.6	0	37	18	18	7	0.06	BDL	97	30
1056	Mandarthi	Udupi	13 29 52	78 48 42	6.42	145	25	4	4	20	0.9	0	24	28	3	3	0.02	BDL	78	20
1057	Kokkrani	Udupi	13 27 34	74 50 21	6.61	170	25	6	2	22	8.2	0	31	35	4	2	0.04	BDL	99	25
1058	Karje	Udupi	13 25 37	74 52 33	6.86	105	30	6	4	7	1.8	0	31	11	2	3	0.05	BDL	53	25
1059	Pethri	Udupi	13 25 09	74 49 13	7.20	240	65	22	2	23	0.7	0	85	25	5	4	0.02	BDL	134	70
1060	Kukkenahalli	Udupi	13 23 32	74 51 10	7.09	235	65	20	4	18	6.7	0	73	25	6	6	0.75	0.3	130	60
1061	Perdur	Udupi	13 22 54	74 54 12	7.03	110	25	4	4	12	0.9	0	37	11	2	2	0.02	0.4	58	30
1062	Jodukatteguddeangadi	Udupi	13 18 59	74 53 13	6.73	145	30	8	2	16	2.1	0	37	18	3	7	0.02	0.4	79	30
1063	Kunji Bettu	Udupi	13 20 45	74 45 28	6.77	235	35	10	2	31	8.6	0	24	50	8	11	0.04	BDL	136	20
1064	Udipi	Udupi	13 20 03	74 44 53	6.53	215	45	12	4	23	8.2	0	37	28	11	26	0.13	BDL	135	30
1065	Hangarkatta	Udupi	13 26 42	74 42 11	7.62	360	110	34	6	27	4.6	0	122	32	16	8	0.04	BDL	202	100

1066	Airodi	Udupi	13 27 22	74 42 40	7.68	325	95	30	5	28	2.9	0	110	25	22	2	0.55	BDL	182	90
1067	Sasthana	Udupi	13 28 38	74 42 43	6.98	240	60	16	5	23	4.7	0	31	25	29	23	0.05	BDL	144	25
1068	Saligrama	Udupi	13 30 02	74 42 32	7.20	300	55	16	4	32	18.3	0	61	39	19	22	0.10	BDL	187	50
1069	Kota	Udupi	13 30 32	74 42 25	7.31	160	50	14	4	11	3.3	0	55	14	8	2	0.02	0.1	90	45
1070	Mannuru	Udupi	13 32 19	74 42 10	7.20	290	50	12	5	29	22.6	0	67	35	16	19	0.13	0.1	180	55
1071	Thekatte	Udupi	13 33 11	74 42 06	6.70	200	30	8	2	30	0.9	0	12	39	2	27	0.04	0.2	117	10
1072	Kumbhasi	Udupi	13 33 57	74 42 00	6.93	155	35	8	4	17	1.3	0	37	21	3	8	0.06	BDL	85	30
1073	Gopadi	Udupi	13 34 41	74 41 50	6.94	120	25	6	2	15	0.6	0	31	18	3	1	0.02	BDL	64	25
1074	Asod Kalavara	Udupi	13 35 22	74 44 20	8.83	140	35	10	2	14	1.0	12	31	11	3	1	0.04	BDL	68	45
1075	Hunse Makki	Udupi	13 35 23	74 46 53	6.54	75	20	4	2	7	0.4	0	12	11	2	7	0.03	BDL	41	10
1076	Kandlur	Udupi	13 38 15	74 45 59	8.15	365	70	20	5	47	4.8	0	61	46	47	3	0.05	BDL	210	50
1077	Ankadakatte	Udupi	13 36 15	74 41 38	7.29	145	40	12	2	11	3.4	0	18	14	25	6	0.03	BDL	85	15
1078	Kundapura	Udupi	13 3 03	74 41 25	7.21	440	135	44	6	31	9.3	0	67	46	35	53	0.02	BDL	265	55
1079	Trasi	Udupi	13 41 21	74 39 10	7.50	155	40	10	4	15	0.7	0	12	21	20	11	0.02	BDL	89	10
1080	Marvanthe	Udupi	13 43 32	74 38 34	7.16	145	35	10	2	16	0.5	0	12	21	22	5	0.01	BDL	85	10
1081	Kirimanjeshwar	Udupi	13 46 00	74 37 58	6.66	140	40	10	4	12	0.5	0	12	18	21	5	0.01	BDL	77	10
1082	Nadanavana	Udupi	13 49 49	74 37 57	6.67	130	45	12	4	8	0.3	0	18	11	28	1	0.01	BDL	75	15
1083	Baindur	Udupi	13 51 21	74 3 29	7.37	815	145	36	13	115	6.2	0	134	145	61	1	0.04	BDL	460	110
1084	Vastre	Udupi	13 51 10	74 39 20	7.14	180	35	10	2	22	2.4	0	37	18	23	3	0.02	0.4	103	30
1085	Golihole	Udupi	13 50 35	74 42 11	6.98	150	45	12	4	12	0.2	0	31	11	24	2	0.01	0.0	83	25
1086	Areshirur	Udupi	13 49 55	74 44 39	6.56	170	50	12	5	14	0.8	0	18	18	25	12	0.01	BDL	98	15

1087	Halkal	Udupi	13 49 35	74 48 07	6.89	205	50	14	4	22	1.1	0	55	11	27	7	0.01	0.1	119	45
1088	Kollur	Udupi	13 51 57	74 48 45	6.97	395	100	30	6	39	5.7	0	67	35	31	50	0.01	0.0	238	55
1089	Idoor Kunjadi	Udupi	13 45 15	74 46 57	6.78	130	25	6	2	17	0.5	0	24	14	14	5	0.01	BDL	74	20
1090	Vandse	Udupi	13 42 23	74 45 38	7.01	440	85	20	9	52	12.6	0	49	78	45	4	0.01	0.1	250	40
1091	Neralakatte	Udupi	13 39 47	74 47 25	6.94	150	30	8	2	19	1.0	0	31	14	18	6	0.01	0.2	87	25
1092	Siddapura	Udupi	13 39 55	74 54 51	7.13	270	65	22	2	29	2.4	0	92	14	25	7	0.01	0.0	158	75
1093	Kerebailu	Udupi	13 38 08	74 53 11	7.16	300	60	14	6	35	6.0	0	73	25	32	8	0.01	BDL	171	60
1094	Shankaranarayana	Udupi	13 36 43	74 51 51	7.01	210	30	8	2	33	1.1	0	61	14	18	11	0.01	BDL	125	50
1095	Haliyadi Jn	Udupi	13 34 43	74 51 45	6.85	220	40	6	6	30	1.6	0	24	35	14	24	0.01	0.1	132	20
1096	Goliangadi	Udupi	13 32 32	74 54 46	6.56	135	30	8	2	15	2.2	0	12	18	17	13	0.01	BDL	83	10
1097	Aradi	Udupi	13 31 22	74 58 46	6.87	210	45	14	2	24	1.8	0	18	32	24	14	0.01	0.1	123	15
1098	Madamakki	Udupi	13 30 24	75 01 10	7.12	135	35	8	4	12	2.0	0	24	14	18	3	0.01	0.1	76	20
1099	Someshwar	Udupi	13 29 26	75 04 04	6.92	140	45	12	4	10	1.4	0	31	7	24	3	0.01	0.1	80	25
1100	Hebbri	Udupi	13 27 20	74 59 32	6.87	160	50	14	4	11	1.2	0	24	14	25	5	0.01	0.0	89	20
1101	Mudardi	Udupi	13 25 23	74 59 58	7.32	270	65	18	5	29	4.9	0	73	18	33	8	0.10	BDL	160	60
1102	Mata Bettu Maniyala	Udupi	13 22 28	75 00 25	7.03	205	35	10	2	30	1.1	0	37	18	24	15	0.02	BDL	123	30
1103	Ajekar	Udupi	13 19 16	74 59 49	6.87	160	30	8	2	21	1.2	0	37	14	18	6	0.02	BDL	93	30
1104	Yenni Hole	Udupi	13 17 46	74 59 07	7.07	155	40	10	4	17	1.0	0	37	14	21	1	0.01	BDL	90	30
1105	Nitte	Udupi	13 11 02	74 55 59	6.76	160	35	10	2	19	0.5	0	31	11	22	11	0.01	0.1	94	25
1106	Kukandaur	Udupi	13 14 21	74 58 59	6.94	195	45	12	4	22	1.9	0	37	18	26	8	0.01	BDL	114	30
1107	Bailur	Udupi	13 17 02	74 55 09	7.13	300	65	16	6	34	5.4	0	55	32	29	24	0.02	BDL	180	45

1108	Badami Katte	Udupi	13 17 32	74 54 17	6.69	160	35	10	2	19	1.3	0	24	21	22	1	0.02	0.1	92	20
1109	Miyar	Udupi	13 11 46	75 02 14	6.61	190	40	12	2	23	0.9	0	24	28	22	2	0.01	0.1	106	20
1110	Bajgoli	Udupi	13 11 56	75 04 28	7.36	135	45	10	5	8	1.1	0	24	11	8	18	0.01	0.3	75	20
1111	Kanagod	Uttara Kannada	14 23 26	74 56 17	7.33	160	51	4	10	11	3.2	0	31	28	0	15	0.00	0.0	90	25
1112	Siddapura Nk	Uttara Kannada	14 20 29	74 53 34	6.54	340	76	14	10	30	20.7	0	55	43	39	15	0.00	0.0	206	45
1113	Sunkatti	Uttara Kannada	14 18 17	74 50 44	6.79	90	30	8	2	7	1.1	0	18	14	0	11	0.00	0.1	54	15
1114	Golgod	Uttara Kannada	14 17 33	74 52 17	6.86	190	81	22	6	6	1.2	0	86	11	3	4	0.00	0.1	105	70
1115	Hosalli	Uttara Kannada	14 15 17	74 53 31	7.09	110	40	8	5	6	0.5	0	37	14	0	5	0.00	0.0	61	30
1116	Hematemane	Uttara Kannada	14 13 50	74 51 27	7.18	60	20	4	2	4	0.4	0	12	11	0	0	0.00	0.0	28	10
1117	Mavinagundi	Uttara Kannada	14 15 18	74 48 00	6.93	90	30	4	5	5	0.5	0	31	11	0	1	0.00	0.0	46	25
1118	Basvanabail	Uttara Kannada	14 15 14	74 46 59	6.88	90	30	6	4	5	0.7	0	25	11	4	1	0.00	0.0	47	20
1119	Kabbinahakkalu	Uttara Kannada	14 16 06	74 40 54	6.76	130	40	8	5	10	1.1	0	49	14	0	1	0.00	0.0	69	40
1120	Gerusoppa Kpc Colony	Uttara Kannada	14 15 04	74 39 01	6.73	170	51	12	5	15	1.4	0	80	14	0	0	0.00	0.0	97	66
1121	Moodkani (Gudekeri)	Uttara Kannada	14 14 51	74 34 02	6.88	130	45	10	5	8	0.6	0	43	18	0	2	0.00	0.0	70	35
1122	Dibbangal	Uttara Kannada	14 15 54	74 31 44	6.74	280	81	16	10	21	8.2	0	68	32	8	27	0.00	0.0	164	56
1123	Hirematha	Uttara Kannada	14 15 49	74 26 06	6.80	470	141	42	9	35	9.4	0	111	53	24	34	0.00	0.1	274	91
1124	Idagunji	Uttara Kannada	14 13 46	74 29 42	7.20	140	51	8	7	9	1.1	0	43	21	0	3	0.00	0.0	75	35
1125	Shirali	Uttara Kannada	14 01 44	74 31 44	7.39	90	30	2	6	6	0.4	0	31	11	0	1	0.00	0.0	45	25
1126	Bhatkal	Uttara Kannada	13 59 44	74 32 54	7.00	260	86	28	4	16	5.7	0	61	32	21	10	0.00	0.0	154	50
1127	Murudeswar	Uttara Kannada	14 05 38	74 29 05	7.31	300	96	14	15	21	4.0	0	80	35	13	14	1.03	0.0	164	66
1128	Manki	Uttara Kannada	14 11 42	74 28 33	7.61	170	61	20	2	10	1.8	0	43	21	5	10	0.00	0.0	96	35

1129	Haldipur	Uttara Kannada	14 20 22	74 25 46	7.40	190	71	16	7	9	4.1	0	74	18	6	2	0.00	0.0	107	61
1130	Dhareshwara	Uttara Kannada	14 22 11	74 24 39	7.60	100	30	4	5	8	1.6	0	25	14	5	5	0.00	0.0	58	20
1131	Kumta	Uttara Kannada	14 25 38	74 25 16	7.30	170	51	10	6	13	1.9	0	55	18	3	10	0.00	0.0	95	45
1132	Chandavar(Mallapur)	Uttara Kannada	14 24 04	74 28 48	7.23	150	45	8	6	12	1.0	0	37	14	0	25	0.00	0.0	89	30
1133	Deevalli	Uttara Kannada	14 25 06	74 33 12	7.10	130	45	6	7	8	0.5	0	49	11	0	2	0.00	0.0	65	40
1134	Badal	Uttara Kannada	14 25 56	74 36 50	7.06	90	25	6	2	10	0.9	0	25	14	0	3	0.00	0.1	51	20
1135	Dodamane.K	Uttara Kannada	14 22 04	74 41 47	6.94	80	25	2	5	5	0.8	0	25	11	0	2	0.00	0.0	41	20
1136	Vandatte	Uttara Kannada	14 21 28	74 43 25	6.74	120	35	6	5	8	2.5	0	37	14	0	4	0.00	0.4	62	30
1137	Bilgi	Uttara Kannada	14 21 37	74 47 43	6.79	190	51	12	5	15	7.0	0	49	25	6	6	0.00	0.0	106	40
1138	Uppadike-Haladota Cross	Uttara Kannada	14 23 03	74 51 43	6.68	470	212	63	13	8	5.0	0	252	14	0	6	0.00	0.3	263	207
1139	Mandlikoppa	Uttara Kannada	14 24 29	74 53 11	7.49	130	30	6	4	11	2.1	0	37	14	0	5	0.00	0.0	64	30
1140	Sampagod	Uttara Kannada	14 26 29	74 52 30	7.32	210	71	14	9	12	5.4	0	49	25	2	27	0.10	0.1	124	40
1141	Tyagli	Uttara Kannada	14 29 02	74 52 25	7.49	90	30	6	4	5	1.0	0	43	7	0	0	0.00	0.1	49	35
1142	Kansur	Uttara Kannada	14 30 50	74 50 36	7.09	300	91	16	12	22	9.0	0	74	35	23	18	0.00	0.0	180	61
1143	Amminahalli	Uttara Kannada	14 33 03	74 44 22	7.12	120	30	4	5	13	1.4	0	31	21	0	5	0.00	0.0	69	25
1144	Kolgibis	Uttara Kannada	14 33 33	74 45 42	6.89	150	56	12	6	8	1.0	0	49	21	0	2	0.00	0.0	80	40
1145	Kursi	Uttara Kannada	14 32 25	74 41 00	6.96	90	25	4	4	6	1.7	0	18	14	5	0	0.00	0.0	46	15
1146	Bandal	Uttara Kannada	14 31 27	74 35 00	7.01	110	35	6	5	8	0.9	0	18	25	0	4	0.00	0.0	60	15
1147	Ragi Hosalli	Uttara Kannada	14 31 49	74 38 56	6.79	260	81	12	12	17	8.0	0	74	28	12	12	0.00	0.0	145	61
1148	Alakod	Uttara Kannada	14 29 05	74 29 41	6.89	110	30	4	5	7	0.9	0	25	18	0	3	0.00	0.7	53	20
1149	Antarvalli	Uttara Kannada	14 28 27	74 27 47	7.00	90	25	6	2	8	0.6	0	25	14	0	4	0.27	0.0	50	20

1150	Mirjan	Uttara Kannada	14 29 43	74 25 22	7.28	80	25	6	2	6	0.8	0	25	14	0	0	0.00	0.0	44	20
1151	Bargi	Uttara Kannada	14 31 36	74 24 19	7.27	180	45	12	4	12	7.6	0	49	21	2	9	0.54	0.0	97	40
1152	Torke	Uttara Kannada	14 33 25	74 21 04	7.60	240	81	14	11	14	0.5	0	37	57	3	1	0.00	0.0	123	30
1153	Gokarna(A)	Uttara Kannada	14 32 58	74 19 27	7.86	200	61	10	9	15	1.6	0	55	28	6	3	0.10	0.0	106	45
1154	Madangeri	Uttara Kannada	14 34 41	74 22 31	7.91	330	91	22	9	25	1.2	0	68	50	5	35	0.00	0.0	189	56
1155	Ankola	Uttara Kannada	14 39 25	74 18 49	7.73	170	56	12	6	9	0.6	0	49	18	7	8	0.00	0.1	90	40
1156	Keni	Uttara Kannada	14 40 10	74 17 23	7.79	160	61	18	4	6	1.5	0	55	14	8	1	0.00	0.1	85	45
1157	Belikere(Nk)	Uttara Kannada	14 42 24	74 16 18	7.68	160	45	12	4	9	2.7	0	43	18	2	14	0.00	0.0	88	35
1158	Amadalli	Uttara Kannada	14 45 22	74 14 12	8.14	370	116	20	16	26	2.7	0	129	43	11	0	0.00	0.0	197	106
1159	Arge Karwar	Uttara Kannada	14 46 13	74 09 43	7.90	240	71	18	6	18	0.8	0	55	46	6	0	0.22	0.5	129	45
1160	Sadashivgad	Uttara Kannada	14 51 15	74 07 45	8.10	550	212	71	9	18	5.5	0	215	28	18	47	0.00	0.1	328	176
1161	Majalli	Uttara Kannada	14 53 52	74 06 08	8.23	240	146	48	6	4	1.7	0	166	14	4	0	0.00	0.0	179	136
1162	Karwar	Uttara Kannada	14 48 26	74 07 43	7.99	690	258	67	22	27	13.5	0	289	50	32	0	0.31	0.0	388	237
1163	Asnoti	Uttara Kannada	14 52 56	74 09 06	8.21	300	121	32	10	8	1.5	0	111	21	22	0	0.00	0.0	162	91
1164	Honakona	Uttara Kannada	14 53 52	74 11 41	8.26	170	71	16	7	6	0.5	0	74	11	0	6	0.45	0.0	92	61
1165	Gopishitta	Uttara Kannada	14 54 38	74 12 52	8.39	180	66	12	9	9	0.5	3	61	18	0	1	0.18	0.0	89	55
1166	Hapkarni	Uttara Kannada	14 54 50	74 15 23	8.27	120	40	10	4	7	0.5	0	55	11	0	0	0.00	0.0	66	45
1167	Gotegali	Uttara Kannada	14 54 14	74 17 58	8.20	200	66	8	11	13	0.8	0	80	18	0	0	0.40	0.0	100	66
1168	Kadra(Alt)	Uttara Kannada	14 54 19	74 20 49	8.06	330	96	24	9	22	8.4	0	117	35	10	4	0.45	0.0	183	96
1169	Anashi	Uttara Kannada	14 59 36	74 22 10	8.14	240	91	22	9	9	0.9	0	111	18	2	1	0.16	0.0	129	91
1170	Nujje	Uttara Kannada	15 03 27	74 20 42	8.10	160	61	12	7	6	0.8	0	74	7	0	0	0.39	0.0	78	61

1171	Kumbarwada	Uttara Kannada	15 07 45	74 24 18	8.19	160	61	8	10	5	0.8	0	68	11	2	0	0.03	0.0	79	56
1172	Joida	Uttara Kannada	15 10 17	74 29 08	8.14	380	146	42	10	9	2.5	0	166	21	9	1	0.25	0.0	196	136
1173	Dandeli	Uttara Kannada	15 14 36	74 37 31	8.19	750	263	57	29	46	5.1	0	252	78	40	13	0.44	0.0	421	207
1174	Kulgi	Uttara Kannada	15 09 53	74 38 20	8.22	1440	591	91	87	56	2.4	0	424	206	56	1	0.64	0.1	758	348
1175	Bhagavathi	Uttara Kannada	15 09 22	74 45 20	8.59	450	162	83	0	21	4.1	12	141	32	23	15	0.51	0.0	272	136
1176	Douginala	Uttara Kannada	15 03 49	74 44 19	8.44	890	328	75	34	51	2.9	21	264	106	20	15	0.03	0.0	478	251
1177	Kannegeri	Uttara Kannada	15 01 06	74 43 15	7.56	270	96	18	12	17	2.8	0	111	25	0	0	0.22	0.0	142	91
1178	Yellapur	Uttara Kannada	14 57 54	74 42 46	7.91	680	187	51	15	59	12.9	0	178	99	36	13	0.29	0.0	395	146
1179	Madanur	Uttara Kannada	15 02 05	74 51 04	8.24	640	263	87	11	19	8.5	0	227	67	26	12	0.22	0.0	369	186
1180	Mainalli	Uttara Kannada	14 58 41	74 5312	8.06	810	333	75	35	33	2.4	0	270	106	21	12	0.52	0.6	448	221
1181	Mundgod	Uttara Kannada	14 58 22	75 02 18	8.15	1400	515	77	78	83	1.9	0	448	177	62	16	0.48	2.6	768	367
1182	Katur	Uttara Kannada	14 51 35	75 02 10	8.48	360	101	34	4	28	13.4	6	129	35	8	4	0.20	0.0	208	116
1183	Malagi	Uttara Kannada	14 44 50	75 00 21	8.09	240	66	36	0	18	3.5	0	31	46	3	15	0.27	0.0	140	25
1184	Vadageri	Uttara Kannada	14 43 22	74 57 52	8.12	460	126	28	13	28	27.4	0	141	43	41	14	0.00	0.0	281	116
1185	Yekkombe	Uttara Kannada	14 41 53	74 55 09	8.25	310	91	20	10	17	15.7	0	117	28	17	1	0.00	0.0	180	96
1186	Islur	Uttara Kannada	14 40 48	74 53 03	8.24	440	162	48	10	18	14.5	0	153	39	18	23	0.00	0.0	263	125
1187	Sirsi	Uttara Kannada	14 37 20	74 50 05	8.33	220	81	16	10	8	2.5	3	49	25	0	31	0.00	0.0	124	45
1188	Arekoppa	Uttara Kannada	14 35 49	74 52 29	8.51	140	51	18	1	7	0.7	9	25	21	0	3	0.00	0.0	72	35
1189	Unchalli	Uttara Kannada	14 34 45	74 54 19	8.19	280	96	20	11	17	1.6	0	111	32	0	0	0.00	0.0	149	91
1190	Banavasi	Uttara Kannada	14 32 07	75 01 02	8.17	350	131	38	9	9	19.6	0	147	25	10	11	0.00	0.0	212	120
1191	Ittigudi	Vijayanagara	14.7302	75.8535	7.11	2460	818	89	143	175	5.4	0	227	638	105	28	0.72	6.3	1322	186

1192	Ananthanahalli	Vijayanagara	14.7648	75.9479	7.69	2580	444	53	75	386	6.1	0	424	507	118	102	0.48	28.4	1507	348
1193	D.Mallapura	Vijayanagara	14.7773	75.9985	7.84	1450	207	34	29	235	2.1	0	338	177	79	86	1.00	7.3	848	277
1194	Harpanahalli(Alternative)	Vijayanagara	14.7927	75.9804	7.95	1180	192	30	28	183	1.9	0	424	71	61	83	1.50	3.6	716	348
1195	Harkanalu	Vijayanagara	14.8476	75.8431	7.53	1840	566	166	36	157	5.3	0	209	355	102	168	0.72	9.8	1117	171
1196	Magala	Vijayanagara	14.9941	75.7955	7.61	4070	833	123	126	367	318.4	0	190	752	450	217	0.24	7.9	2470	156
1197	Hagaranur	Vijayanagara	14.9458	75.8556	7.73	2110	424	57	68	287	6.4	0	467	337	104	40	1.40	6.5	1184	383
1198	Jogikallu	Vijayanagara	14.9729	76.4456	7.86	1710	268	55	32	264	9.2	0	374	298	100	12	4.20	125.0	998	307
1199	Yeshwanthnagar	Vijayanagara	15.0432	76.4932	7.60	3710	1151	73	233	321	9.5	0	430	783	182	217	1.00	2.3	2081	352
1200	Sandur (Alternate Well)	Vijayanagara	15.0855	76.5479	9.16	1340	247	14	51	160	58.1	36	123	223	89	78	0.42	2.3	770	161
1201	Sotri Ganganpura	Vijayanagara	15.1463	76.6130	8.31	1860	278	30	49	290	17.4	39	356	266	101	41	0.71	0.7	1035	357
1202	Hospet(A)	Vijayanagara	15.2664	76.3864	8.17	710	152	32	17	72	26.5	0	221	99	26	2	0.32	1.2	409	181
1203	Hampi(A)	Vijayanagara	15.3351	76.4607	7.20	590	167	22	27	55	5.3	0	147	78	33	7	0.89	5.4	318	120
1204	Mariyamanhalli(A)	Vijayanagara	15.1605	76.3582	7.78	1030	242	44	32	119	4.2	0	153	191	95	21	0.83	2.7	599	125
1205	Danapura	Vijayanagara	15.1741	76.3678	7.52	3870	1015	145	157	419	8.2	0	338	869	317	120	1.00	18.3	2241	277
1206	Kamalapuram(A)	Vijayanagara	15.3072	76.4779	7.42	1570	379	75	46	181	5.9	0	233	245	114	143	1.10	9.2	952	191
1207	76 Venkatapura	Vijayanagara	15.3303	76.5157	8.46	2130	258	24	47	370	4.2	72	221	326	91	144	1.60	35.3	1184	301
1208	No.10 Muddapura	Vijayanagara	15.3891	76.5918	8.66	750	187	28	28	80	12.2	24	129	103	63	9	1.70	4.2	417	146
1209	Kurugodu	Vijayanagara	15.3441	76.8372	8.02	900	187	26	29	120	1.8	0	344	60	64	13	2.00	7.2	523	282
1210	Madarkki	Yadgir	16.8010	76.7802	7.91	660	170	52	10	64	7.8	0	159	92	75	2	0.75	0.3	400	130
1211	Mudubal	Yadgir	16.8647	76.7761	8.05	900	225	48	26	94	11.7	0	256	103	80	33	2.00	0.2	552	210
1212	Gurmitakal	Yadgir	16.8764	77.3900	7.81	900	320	88	24	51	1.6	0	238	110	107	2	0.27	0.3	528	195

1213	Balashettihalli	Yadgir	16.3913	76.5075	7.77	960	255	58	27	90	3.9	0	268	124	101	0	0.88	0.1	567	220
1214	Wajjal	Yadgir	16.4721	76.5472	7.73	1308	320	92	22	133	3.5	0	195	206	200	7	0.55	1.8	783	160
1215	Kakkeri	Yadgir	16.3852	76.5875	7.85	1388	220	52	22	198	46.9	0	415	156	140	28	1.30	0.5	895	340
1216	Hulkal	Yadgir	16.7555	76.7896	8.37	1800	270	40	41	260	46.9	24	275	255	264	19	1.80	6.6	1108	265
1217	Shahpur	Yadgir	16.5261	76.7557	8.05	1850	360	76	41	205	25.4	0	305	291	190	56	0.32	6.4	1071	250
1218	Shantapura	Yadgir	16.3880	76.6569	8.54	2150	580	24	126	143	49.3	48	415	397	50	4	1.50	2.5	1076	420
1219	Malla K	Yadgir	16.7394	76.5656	8.17	2200	320	80	29	370	2.7	0	366	170	533	32	1.90	6.9	1440	300
1220	Ukkinal	Yadgir	16.7560	76.6641	8.25	2490	300	40	49	276	273.7	0	561	298	100	276	0.94	1.1	1655	460
1221	Hebbal	Yadgir	16.4820	76.5978	8.30	2840	340	40	58	350	161.1	42	464	337	470	17	1.20	7.3	1741	450
1222	Hunsagi	Yadgir	16.4583	76.5202	8.26	2990	440	52	75	336	148.6	0	561	397	320	146	1.60	1.2	1817	460
1223	Managinahal	Yadgir	16.7172	77.0370	8.75	4860	420	40	78	764	125.1	108	1000	716	240	213	2.20	19.6	2850	1000
1224	Khembhavi	Yadgir	16.6483	76.5326	7.49	6700	1860	553	117	566	160.3	0	244	1489	576	588	0.14	14.8	4198	200