CENTRAL GROUND WATER BOARD

MINISTRY OF WATER RESOURCES,

RIVER DEVELOPMENT AND GANGA REJUVINATION

GOVERNMENT OF INDIA

GROUND WATER YEAR BOOK

PUNJAB AND CHANDIGARH (UT)

2015-2016

North Western Region

Chandigarh

September 2016

CENTRAL GROUND WATER BOARD

MINISTRY OF WATER RESOURCES,

RIVER DEVELOPMENT AND GANGA REJUVINATION

GOVERNMENT OF INDIA

GROUND WATER YEAR BOOK OF PUNJAB AND CHANDIGARH (UT) 2015-2016

Principal Contributors

GROUND WATER DYNAMICS: M. L. Angurala, Scientist- 'D'

GROUND WATER QUALITY: Balinder . P. Singh, Scientist- 'D'

North Western Region
Chandigarh
September 2016

FOREWORD

Central Ground Water Board, the National Apex Organization is regularly monitoring ground water levels and ground water quality since 1968. These are most important aspects to depict the spatial and temporal variation of ground water regime. The changes in water levels and quality are attributed to the development patterns of ground water resources for irrigation and drinking water needs. Analyses of water level fluctuations are aimed at observing seasonal, annual, and decadal variations. Therefore, the accurate monitoring of the ground water levels and its quality, both in space and time, are the main pre-requisites for assessment, scientific development and planning of this vital resource.

Central Ground Water Board, North Western Region, Chandigarh has established numerous Ground Water Observation Wells in Punjab State and in Chandigarh (UT) for monitoring the water levels. During 2015–2016, 914 observation wells (169 dug wells and 745 piezometers) were monitored in Punjab and 17 observation wells (1 dug wells and 16 Piezometers) in Chandigarh installed in phreatic aquifers, besides 38 deep piezometers in Punjab and 7 deep piezometers in Chandigarh to monitor behaviour of deeper aquifers. In order to strengthen the ground water monitoring for better insight into ground water development scenario, additional ground water observation wells were established in Punjab state. As a result, there were 956 Ground Water Observation Wells on 31.03.2016, which included 170 dug wells and 876 piezometers for monitoring phreatic aquifers which include 38 deep piezometers for monitoring deeper aquifers in Punjab. About 80% of the Ground water observation wells fall in the command areas of various canal systems, the areas falling out of the major canal commands is part of Pathankot, Hoshiarpur, Nawanshahr, Ropar and SAS Nagar districts. This report presents the observations and findings for the period May 2015 to January 2016.

Shri M. L. Angurala, Scientist ‘D’ has put concerted efforts to compile and analyse the data and prepare the report. Chapter on Chemical Quality of ground water has been compiled by Mrs Balinder. P. Singh, Scientist ‘D’& Shri Rishi Raj, Asstt.Chemist. The editing and processing, to bring the report, to its present form has been carried out by Shri Tejdeep Singh, Sc D. I sincerely hope that this report presenting various analysis and data on ground water level behaviour and quality will be of immense use to the user agencies and other stakeholders.

(Dr. S. K. Jain)
Regional Director

Ground Water Year Book
Punjab State and Chandigarh (UT)
2015-2016

CONTENTS

Figures

Tables:

Annexure

Plates

GROUND WATER YEAR BOOK
PUNJAB STATE AND CHANDIGARH (UT)
(2015– 2016)

1.0 INTRODUCTION

The Punjab State is located between North latitudes 29^{o} 32' and 32^{o} 28' and East longitudes 73 ^{o} 50' and 77 ^{o} 00'. The total geographical area of the state is 50362 sq. km. It is surrounded by the states of Himachal Pradesh in the northeast, Jammu and Kashmir in the north and Haryana and Rajasthan in the south and southwest respectively. The State has a flat alluvial plain except a narrow belt along the southwestern parts where stable sand dunes are seen dotting the landscape. The area occupied by the mountains (Himalayan foothills) in northeast, is about 1243 sq km. Perennial Rivers Sutlej, Beas, Ravi and ephemeral river Ghaggar drain the state. It has a vast network of canal system. With the inception of canals, the fertile land of the State started converting into green fields and experienced spectacular achievement in agricultural production with emphasis on cultivation of paddy and high yielding varieties of crops, as a consequence demand for water increased manifold resulting in over exploitation of ground water resources.

The State has been divided into four main divisions viz. Jalandhar, Patiala, Ferozpur and Faridkot, which are further sub-divided into 22 districts, which are further divided into 77 sub-divisions /tehsils, 76 Sub- tehsils and 146 community development blocks.

1.1 Physiography

The State forms a part of vast Indo-Genetic alluvial plain. Physiographicaliy, the State can be divided into seven distinct units, which run parallel to each other.

I Hilly area: Siwalik Hills on the north and northeastern part.
Ii Eroded hills with flat land (Plateau): forms top of hills.
Iii Intermountain valleys
IV Piedmont area: (Kandi zone) immediately southwest of hills.
v. Sirowal zone: lies further southwest of Kandi area which merges with the alluvium of Ravi, Beas, Sutlej and Ghaggar rivers.
vi. Alluvial plains:
a) Active/recent flood plains include meanders and present flood plains.
b) Abandoned flood plains include terraces of rivers, abandoned during Recent age.
c) Bar upland areas: Higher elevated land which remained beyond the reach of rivers but are composed of ancient river channels deposits (older alluvium) plains.
vii. Sand Dunes: Covering southwest part.

i) **Hilly area :**

The outermost low lying Siwalik Hills of the Himalayas occupy the NE part. These are the deposits of the Indus River and comprised of alluvial, derived from the higher mountains, which were swept down by their numerous rivers systems and part of Siwalik rock formations have been involved in the latest Himalayan tectonic movements by which they have been folded, faulted and elevated into their outermost foothills. These occupy northern and northeastern part of Gurdaspur, Hoshiarpur, Nawanshahr and Ropar (Roop nagar) districts. These hills traverse NW – SE direction and forms the boundary with neighboring State of Himachal Pradesh. In Gurdaspur district, the hills extend from Ravi River on northwest to Beas River on the southeast. In Hoshiarpur and Nawanshahr districts, the hills cover northeast parts and extend from Beas to Satluj Rivers. These foot hills separate the main Himalayan ranges from the vast Indo- Genetic alluvial plains. The hilly region is intersected with numerous streams which remain dry during major part of the year except during rainy season when these carry flood water. The highest peak in the area is 900 m above M.S.L. The hills present uneven topography and at places are highly eroded. The gradient is varying in the hilly areas.

ii) **Eroded hills with flat land**:

These areas lie within Upper Siwalik formations and locally known as `Beet' meaning waterless. The flat surface lands (plate or table lands) occur in Hoshiarpur district and these are fertile land composed of sandy clay and support irrigational activities.

iii) **Intermountain valleys:**

Intermountain Satluj valleys extend from Nagal to Roper along the Satluj River. It is a longitudinal valley and about 40 Km. in length having an average width of 5 Km. High land river terraces are seem on the north east and eastern part of the area which have been deeply eroded and furrowed to form " bad land" topography. The thickness of valley fill is very limited and here an average of 50 m below ground level. Another valley known as " Soon nadir valley " is an intermountain valley in the outer Himalayas extending from Daulatpur in Himachal Pradesh to Hazipur (Punjab). It runs in southeast-northwest direction and follows the general strike direction of the mountain ranges. It has a length of 20 Km and

width ranges between 1.5 km to 3 km and in Punjab State. This valley portion extend along the left bank of Soon nadir and along its right bank, Siwalik Hills are exposed.

iv) **Piedmont areas:**

The transitional area between the alluvial plains and mountainous range of the Himalayan foot hills forms the Piedmont area shown in Plate-1.2. These consist of alluvial fans which have been dissected by hill torrents and small perennial streams; much of the detritus material has been reworked separately by sheet flooding. The lower southeast slopes of the piedmont forms 'Sirowal zone'. In Punjab State, piedmont area is known as "Kandi", and occupies Southwest part of lower Siwalik Hills. The gradient is steeper near the hills and gentler towards plains. The width of 'Kandi belt' varies from 6-10 km. having rolling type of the topography. In Gurdaspur district, the spring line runs parallel to the southwestern boundary with 'Sirowal zone'. But in Hoshiarpur, and Ropar districts, the spring line (auto flow) do not exist hence boundary between Kandi and Sirowal could not be precisely demarcated.

v) **Sirowal Zone:**

It lies further southwest of Kandi belt. The topographic gradient is gentler as compared to Kandi and presents very low relief. In Gurdaspur district, the Sirowal zones occupy immediately SW of spring line and have an undulating topography.

vi) **Alluvial Plains:**

This forms a dominant physiographic unit and consists of alluvium of the Indus River with its present and ancestral tributaries. The alluvium was deposited by Ravi, Satluj, Beas and Ghaggar rivers. The plains have altitude of less than 300 m above M.S.L. The master slope is towards southwest and matches with the course of the rivers. The alluvial plains have been further divided into three sub-physiographic units based on the present relationship of the surface features to the rivers. These are as follows:

- Recent Flood Plains
- Abandoned Flood Plains
- Bar Upland Areas

Recent Flood Plains: These include the meandering zone and present flood plains of the rivers. The meanders, scars, sandbars, natural levees and back water swamps are the conspicuous features of the flood plains. Along the major rivers, there are low flood plains

locally called 'Bet'. The recent flood plains are often separated from the upland plains by steep slopes. The water levels are shallow in 'Bet' area.

Abandoned Flood Plains: These are parallel to the rivers and are a few meters higher than the recent flood plains. They represent flood plains that have been abandoned in recent times by the major rivers.

Bar Uplands: These are large areas of relatively older alluvium and found in the Upper Bari Doab area and are elevated lands above the bordering flood plains. These remain beyond the reach of flood waters of the present river systems and are termed as "Bar Uplands" These are the most significant physiographic features of the alluvial plain. Typically, the bar uplands rise abruptly from the abandoned flood plains and are bordered by steep scarps. In Gurdaspur district, bar upland areas are characterized by undulating topography, dendritic drainage pattern and predominance of nodular "kankar".

vii) **Sand Dunes:**

These occupy southwestern part of the state which experiences semiarid type of climate and constitute about 28% of the area. These are spread over about 10-15 percent of the area and cover parts of Firozpur, Mansa, Bathinda, Muktsar, Kapurthala, Sangrur, Faridkot and Patiala districts. The area is bounded by $29^{o}33'$ and $30^{o}36'$ north latitudes and $74^{o}18'$ & $76^{o}12'$ east longitudes. These dunes are mostly isolated type and vary in size and height. The sand dunes form a thin layer over the alluvium.

1.2 Drainage:

The Ravi, Beas, Satluj and Ghaggar rivers along with West and East Beins and the non-perennial choes and Khads drain the Punjab State. The Ravi flows along the northwestern boundary and forms the international boundary with the Pakistan. The Satluj forms the international boundary with Pakistan in the south-western part of the State. Ghaggar river flows along the southeast boundary of the State and forms the boundary with Haryana State except at a few places where villages of Punjab lies on the left bank of Ghaggar river and Haryana villages occupy right bank of the river. All rivers flow in the southwest direction except the Satluj River which roughly flows from east to west up to Harike and from Harike it assumes southwesterly trend upto Fazilka. The Satluj and Beas rivers have been damed by construction of Bhakra dam and Pong dam respectively. After the Construction of Ropar headworks barrage, the Satluj River has water only during the

rainy season on downstream of Ropar. At Harike Patten, it carries the flow regenerated by ground water effluent seepages. Soon nadir originates near Daulatpur (H.P) and all the choes from the Western slopes of Chinta Purni range (H.P.) flow into it. The Soan nadir joins the Satluj near village Bhalan. All the rivers rise from Himalayas and after traversing long courses, they debouch into the plains. Apart from the perennial rivers, there are other important seasonal streams, choes and drains. The sub-montainous zone is traversed by a number of choes. Some of them contribute to the rivers while others terminate without merging into any river. These 'choes' remain dry for most part of the year. Their discharge is irregular and runoff during the monsoon period.

In Upper Bari Doab tract, Chakki Khad a perennial tributary of the Beas drains mainly the 'Kandi' belt. The Naumuni and Kiran are two tributaries of the Ravi and drain north western parts of this tract. The Patti nala drains the southwestern part of the area and joins the Satluj River. The Kiran nadir originates in north of village Isarampur in the close vicinity of Keshopur Chhamb. It is fed by ground water seepage and the excess water of Upper Bari Doab canal is also diverted into it. In addition to these tributaries, there are several khads traversing 'Kandi' belt which remain dry except during rainy season. Some of the major Khads like 'Pungotri Khad' traverse even beyond the spring line. Such Khads gain water through ground water effluent seepage. The Bist Doab tract is traversed by about 85 hill torrents known as choes, which debouch into plains. There are two main drainage patterns in this tract and both are perennial.

I) Eastern or White Bein

ii) The Western or Black Bein.

The eastern or White Bein originates near Garhshankar village of Hoshiarpur district and joins Satluj River near Lohian after traversing the Bist Doab tract. The Nasrala, Mehlan wali, Rajni Devi, Mehandpur, Jaijon choes join the east Bein at different places. The Western or Black Bein rises at Chhamb near Dasuya in Hoshiarpur district and joins the Beas river near Durgapur which is located upstream of its confluence with Satluj at Harike. Janauri, Mehngerwala and Kingranwala join the West Bein. In Ropar district Budki Nadi, Haripur nala, Sugh Rao, Siswan Nadi, Jainti Devi Ki Rao and Patiali Ki Rao forms the major drainage system. These all meets Satluj River except Patiali Ki Rao and Jainti Devi Ki Rao which gives water to Ghaggar River. The third zone forming the southeastern part of the

State is drained by Ghaggar River which is perennial. Tangri nadir, Budha nala and Lissara nala are the main seasonal streams in the area. In south western part, some of the important drains are the Phidda drain, Chand Bhanja drain and Jallalabad drain etc.

1.3 Soils

The soils of Punjab have largely developed on alluvium- the material laid by the rivers, under the dominant influence of climate followed by topography and time. The details of the soils found in the state are as follows.

Reddish Chestnut Soils:

These soils occur on stable terraces in the north and north eastern Parts of the state and are found in Pathankot Tehsil of Gurdaspur district, parts of Hoshiarpur, Dasuya and Garh Shankar Tehsil of Hoshiarpur district, Balachaur Tehsil of Nawanshahr district and Ropar, Anandpur Sahib and Kharar Tehsils of Ropar district. These soils are loamy to clay – loamy in nature and are decalcified. Erosion of oils due to water is a very serious problem. The soils are mildly acidic to neutral in reaction. These soils are found in areas having normal rainfall of 800 to 1000mm.

Tropical Arid Brown Soils (Weakly Solonised):

These soils are found in remaining areas of Gurdaspur, Hoshiarpur, Nawanshahr and Ropar districts and most parts of Jalandhar, Kapurthala, Patiala, and whole of Ludhiana, Fatehgarh Sahib Districts and in parts of Amritsar and Sangrur districts. These soils are found in areas having normal annual rainfall of 750 to 1000mm.

Arid Brown Soils, (Solonised):

These soils are found in lower parts of Amritsar, Kapurthala, Jalandhar, Patiala, Sangrur, Ferozpur districts and entire Moga district where the normal rainfall varies from 500 to 700mm. Salinity and alkalinity are the serious problem in these soils. These soils are calcareous in nature and in most cases Kankar layer occurs at 1.0 to 1.5m depth.

Sierozem Soils:

These soils are found in Bathinda, Faridkot, Ferozpur, Mansa and Muktsar districts, where normal rainfall varies 300 500mm. Salinity and alkalinity are the serious problems particularly in the canal irrigated areas. Wind erosion is also a common feature in this soil. These soils are calcareous in nature and usually have a massive Kankar layer at a depth of 0.75 to 1.25m.

Desert Soils:

These soils are found in southern parts of Ferozpur and Muktsar districts where the normal annual rain fall is less than 300mm. Wind erosion is a serious problem here.

2.0 GENERAL GEOLOGY

The great Indo-Gangetic plain with an area of about 8, 50, 00 sq. km lies between the Peninsular India and the Himalayas. On the basis of seismic and borehole data, Rao (1973) divided the Indo-Gangetic Plain into five parts, which from west to east are (I) The Indus Basin in Pakistan, (ii) the Punjab Basin in Punjab and Haryana, (iii) The Ganga Basin in Uttar Pradesh and Bihar, (iv) The Brahmaputra Basin in Assam, and (v) The Ganga-Brahmaputra Basin in West Bengal and Bangladesh. These basins have been delineated on the basis of subsurface ridges or high. In the Punjab Basin the Quaternary alluvium has been deposited at places on semi-consolidated Tertiary rocks (Siwalik Group) or on a basement of metamorphic and igneous rocks of Precambrian age. The alluvial sediments were laid down by the rivers since Pleistocene in the “fore deep” or a down warp formed in front of the rising Himalayan ranges and thus represents the younger geological formation.

2.1 Geological Set Up

The rock formations ranging in age from middle Miocene to Recent are exposed. They are represented by Siwaliks and Alluvium deposits. The Siwaliks (Middle Miocene to Pleistocene) form hilly tract running in northern and northeastern part of the State. The alluvium deposits (Pleistocene to Recent) constitute the plains of Punjab. The Siwaliks are divided into three lower, middle and upper on the basis of lithology and vertebrate fossils. The Siwalik formations have been folded and faulted due to tectonic activities. The various stratigraphic units exposed in the state are given in table as under:

2.1.1 Aeolian Sand (Wind Blown Sand)

These are medium to fine grained and buff colored sand. They occur in the form of

Dunes which are formed as the disintegrated product of the older rocks and found in the southwestern part of the State. The dunes are elongated in shape and are blown sand forming fixed dunes and sandy flats. The dunes are oriented in N-S direction forms ridges which rise from a meter to about ten meters above the surrounding land surface. These sands are brought from the Rajasthan desert and ultimately deposited and shaped by the

southwesterly winds which blow across the area from April to June. Generally, the sand dunes contain loose and unconsolidated sand and at places where vegetation has come up these have been fixed. The sand grains are generally well rounded in shape and mainly consist of quartz and ferromagnesian minerals with flakes of mica.

2.1.2 Alluvium

The greater part of Punjab is occupied by alluvial plains, which are very fertile. The Quaternary alluvial sediments were deposited on semi-consolidated Tertiary rocks and conceals underneath the fringes of Peninsular and extra- Peninsular rocks. Out of the total area of 50362 Km^2. of the State, alluvial cover about 38500 Km^2 spreading over about 76% of the area. This vast expanse of plains is constituted by fluvial sediments of Indus river system. Beneath thick alluvium cover, there are southwestern extensions of Siwalik, which are exposed only in northeastern hilly tract of the State. The Siwalik rocks are expected to extend Bathinda which in fact separates the northeastern Punjab plains form Southwestern Rajasthan plains. Based on O.N.G.C. data, the contact between the plains and the Siwalik Hills is believed to be normal in Gurdaspur district and is faulted in Hoshiarpur and Ropar district areas.

The thickness of alluvium varies from place to places due to irregularities and undulations .The maximum thickness of 4500 m has been reported near Dasuya in Hoshiarpur district. The thickness of alluvium increases towards northeast. It is comparatively less in the southwestern parts where the rocks of Pre- Cambrian age occur as buried ridges. In the intermountain valleys in north east part, the valley fill is estimated to be around 200 m thick underlain by rocks of Siwalik system. The alluvium comprising sand, gravel and clay is deposited by the Indus river system. In accordance with their mode of deposition by large constantly shifting river, the alluvial deposits are heterogeneous in nature and individual strata have limited horizontal and vertical continuity. The alluvial complex of Pleistocene and Recent age represents the latest phase of sedimentation. It consists principally of fine to medium sand, silt and clay. Beds of gravel and coarse sand are uncommon. It is also associated with fine grained strata, concretionary zones or nodules of kankar. The sand gravel or sand bodies embodied in the clay- silt mixture in the alluvial deposits are usually either small or big lentoid bodies with longitudinal part either normal or nearly normal to the Himalayan and Siwalik strike i.e. NW-SE. Sheet like bodies of sand, sand and gravel had

been deposited in the central part of the State and are regionally extensive. In southwestern and southern parts of the State, ground water is brackish to saline. The rivers have deposited their coarser material in higher reaches, so the flood plain deposits developed in southwestern parts were richer in finer sediments. The alluvium is normally divided in two groups viz:

I) Newer Alluvium, ii) Older Alluvium. It is not possible to clearly indicate any distinct /demarcation line of separation Between the two units

I) Newer Alluvium (Khaddar)

It occurs in the active flood plains of present day river courses and is generally confined to the neighborhood of river channels. Along the major rivers in plain areas, there exist low flood plain areas which are locally called khaddar of 'bet'. These flood plains are often separated from upland plains by a steep slope of the order of 1m to 2m per km. The Newer alluvium is light colored and poor in calcareous matter. It consists of coarse gravel near the foot hills and ventricular beds of sand and clay along the old river course and silt and clay in the flatter parts of the river plains. It is of Upper Pleistocene to Recent age. The aquifers comprised of medium to coarse sand and gravel. The clays serve as aquitards. The various aquifers are interconnected. However, the deeper horizons show confined to semi-confined conditions. There is wide variation of the hydraulic conductivity and Transmissivity of the aquifers due to rapid changes in their texture and thickness.

ii) Older Alluvium (Bhangar):

It is confined to the abandoned flood plains and bar upland regions. It consists of sandy clay, clay-silt and fine to medium sand. It consists of pale reddish brown colored beds of clay. Kankar is found disseminated more or less throughout the beds of sand and clays. The kankar bands are generally more in the older alluvium. At places extensive and massive beds of kankar also exist. It is of middle to Upper Pleistocene in age. Older alluvium forms good ground water reservoir/aquifer.

2.1.3 Upper Siwaliks

These formations are exposed throughout the hilly tract starting right from northwest of Pathankot through Hoshiarpur, Ropar to Chandigarh. They are composed of soft grey medium to coarse-grained sandstones, yellowish brown and brown clays. The sandstones are poorly lithified, soft and friable. They are brownish grey in colour and contain a large

proportion of mica flakes and concretions of clay. They also consist of conglomerates, boulders and pebbles of quartzite and yellowish clays. The conglomerates consist mainly of cobbles and pebbles of quartzites. The pebbles of granite limestone, sandstone and lumps of claystones are also present. The conglomerate beds do not show clear stratification and occur as wedge shaped or lenticular bands. The formations of Upper Siwaliks are prone to easy weathering and there is considerable collection of sand as talus cones. These formations yield good to moderate supplies of water.

2.1.4 Middle Siwaliks

These are exposed in Dhar and Dunera area of Pathankot Tehsil of Pathankot district, north and northeast of Kiratpur in Ropar district. These are comprised of grey micaceous, medium grained soft sandstones interbedded with red, orange and yellowish (buff colored) clays. The sandstones occasionally contain pebbles of calcareous clay, shale and quartzite. The Middle Siwaliks are poor in yields of ground water due to poor permeability.

2.1.5 Lower Siwaliks

These are exposed in Dhar and Dunera area of Pathankot Tehsil of Pathankot district, constitute massive grey to light grey, micaceous sandstones interbedded with dark red to maroon clays grading upward in to micaceous sandstone with thick beds of red clays. The rocks of Lower Siwaliks have poor yields of ground water. However small springs of low discharge occur on the hill slopes they confine their position at the bedding contacts where the argillaceous bed is underlain by arenaceous bed.

2.2 Basement Configuration

The Punjab Wedge i.e. the Achaean basement rocks either outcropping or occurring under moderate thickness of alluvium in Lahore- Sargodha area in Pakistan separates the Indus basin in the west, from the Punjab depression in the east. The Punjab depression follows a NW-SE ESE and WNW direction in conformity with the trends of the Siwalik Hills. The seismic surveys by the Oil and Natural Gas Commission, (Data et al., 1964) have indicated that the basement rocks as well as the sediments of the alluvium, dip gently towards the Himalayan foothills. The basement, however, becomes deeper as the foothills are approached with a corresponding increase in the thickness of the sediments. The maximum depth of this depression, about 4500 m was at Dasuya in Punjab State.

Furthermore, the Punjab Basin which is fairly deep and wide in the northwestern portions becomes narrower to the southwest and the basement topography rises gradually in that direction. A basement high occurs in the subsurface corresponding to the present water divide between the rivers of the Punjab and the Yamuna belonging to the Ganga system. According to Rao (1973), it has been long assumed that two ridges extending from Delhi, one to the northwest towards Lahore, and the other to north towards Dehradun are concealed under the alluvium of the plains. These isolated outcrops of Achaean rocks seen at Karana hills, and Sargodha extending in WNW direction from Lahore has been taken to indicate that a subsurface ridge extends under alluvium from Delhi in India to Lahore in Pakistan About 5km north of Jagadhari (near Ambala in Haryana State), the basement was encountered at a depth of 2800 m and it remains fairly flat at that level till the foothills (Nath, 1964, Rao, 1973). This basement high, often referred to as Delhi- Lahore- Sargodha Buried Ridge based on the inference that it represents the northwesterly extension of the Aravalli Mountain system, trending NW - SE . As shown by the contours, the northwestern flank of the ridge dips steeply and the depth to the bedrock increased sharply in that direction. The contours also indicate that the slopes to the southwest are less steep and the average depth of the bedrock over the crest of the ridge is about 400-500 m. The basement in Punjab basin is known to slope from south to north, and it is rather irregular and must locally contain hills and valleys. The basement seems to have a shape of asymmetrical basin. Both longitudinal and transverse faults are present in the basement, which forms a monocline with gentle northeasterly dip and no major structural feature were noticed. Based on seismic surveys carried out by O.N.G.C. indicated that the thickness of unconsolidated sediments in the southern part of the State is 154 m and near Jalandhar it is about 3000m and increases towards north. Near Dasuya it is about 4500 m, being the maximum. The basement rocks have been encountered in number of boreholes drilled by CGWB. The basin is shallowest in the southern part, in Bathinda district and the bed rock was encountered at a depth of 333 m below ground level at Kumharwala. At 333 m depth hard clay top of Palana series was encountered and 416 m claystone of Nagaur series was encountered during drilling of borehole down to 422 depth m. At Kheliwala, the bed rock comprised of Delhi quartzite was encountered at a depth of 533 m below ground level and the borehole was drilled down to 545 m. The thickness of unconsolidated material is maximum in the northeastern part.

3.0 GROUND WATER REGIME MONITORING

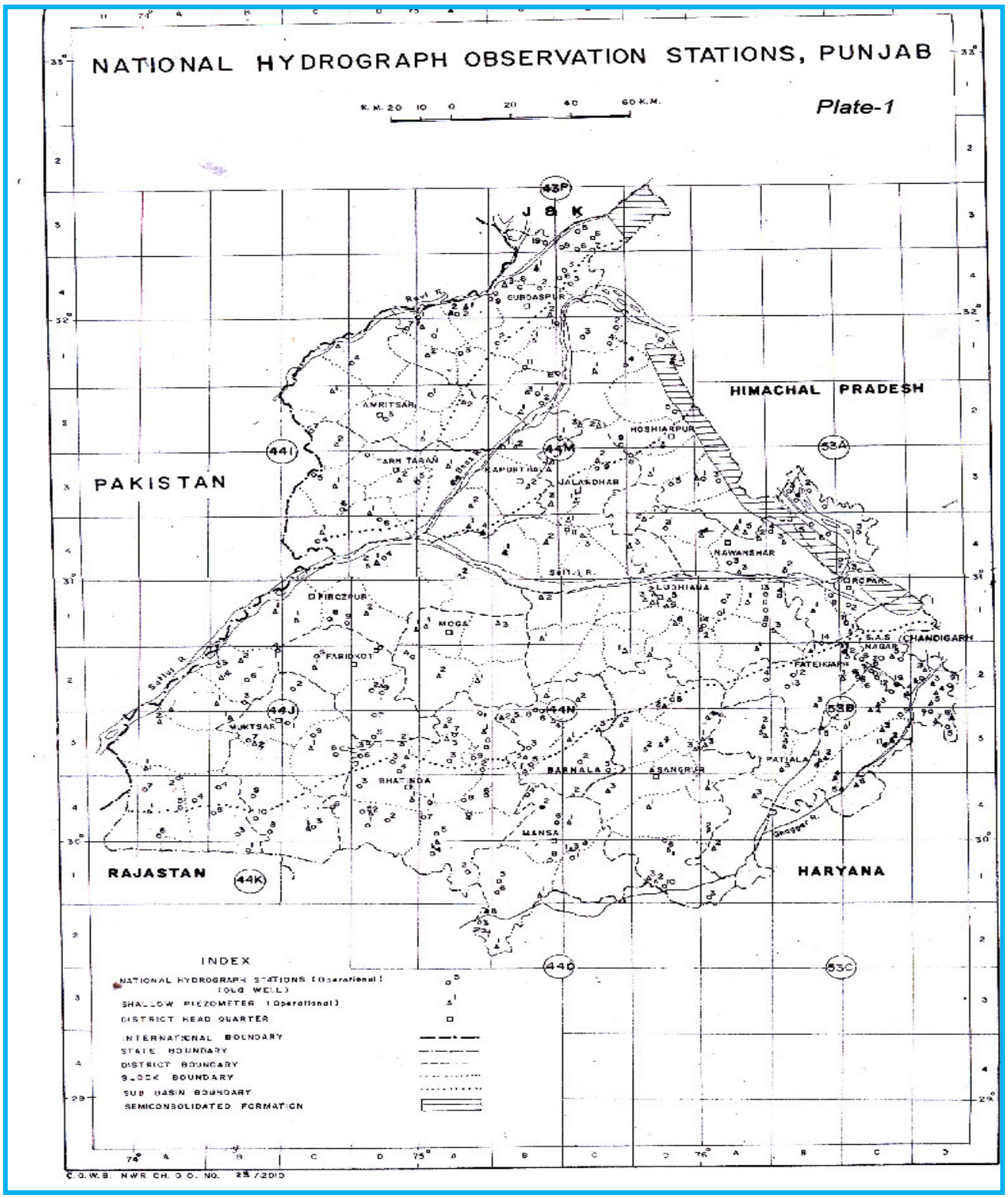
The Central Ground Water Board, North Western Region, has established Ground water observation wells in Punjab State and Union Territory of Chandigarh for monitoring water level. For this purpose, during 2015–2016, 914 observation wells in Punjab (169 dug wells and 745 piezometers) were monitored in Punjab including 38 deep piezometers to monitor behaviour of deeper aquifers. There are 24 observation wells in Chandigarh (1 dug wells and 16 Piezometers for monitoring phreatic aquifer) and 7 deep piezometers to monitor behaviour of deeper aquifers. In order to strengthen the ground water monitoring in Punjab state, additional ground water observation wells were established added to the existing water level monitoring network.

As a result, there were 956 Ground Water Observation Wells in Punjab on 31.03.2016, which included 170 dug wells and 876 piezometers for monitoring phreatic aquifers including 38 deep piezometers for monitoring deeper aquifers in Punjab. About 80% of the Ground water observation wells fall in the canal command areas of various canal systems, the areas falling out of the major command is part of Pathankot, Hoshiarpur, Nawanshahr, Ropar and SAS Nagar districts, parts of Gurdaspur, Jalandhar and Ludhiana districts. The district wise details of Ground water observation wells are given in **Table 1** and location of these Ground water observation wells is shown in Plate 1.

Table- 1 District wise ground water observation wells, Punjab State and Chandigarh

S. No.	Districts	No. of Ground water observation wells as on 31.3.2015			No. of GWOW established during AAP 2016-2016			No. of Ground water observation wells as on 31.3.2016		
		DW	PZ	TOTAL	DW	PZ	TOTAL	DW	PZ	TOTAL
1	Amritsar	6	42	48	0	3	3	6	45	51
2	Bathinda	29	52	81	0	3	3	29	55	84
3	Barnala	0	27	27	0	0	0	0	27	27
4	Faridkot	8	17	25	0	3	3	8	20	28
5	Fatehgarh	5	22	27	0	2	2	5	24	29
6	Fazilka	9	14	23	0	1	36	9	15	59
7	Ferozpur	8	49	57	0	0	0	8	49	57
8	Gurdaspur	17	45	62	0	1	1	17	46	63
9	Hoshiarpur	11	50	61	0	0	0	11	50	61
10	Jalandhar	3	70	73	0	1	1	3	71	74
11	Kapurthala	1	45	46	0	0	0	1	45	46
12	Ludhiana	9	36	45	0	4	4	9	40	49
13	Mansa	7	27	34	0	0	0	7	27	34
14	Moga	1	34	35	0	1	1	1	35	36
15	Mohali	11	12	23	0	5	5	11	17	28
16	Muktsar	10	32	42	0	0	0	10	32	42
17	Nawanshahr	3	21	24	-1	2	1	2	23	25
18	Pathankot	11	6	17	0	3	3	11	9	20
19	Patiala	3	38	41	1	3	4	4	41	45
20	Ropar	9	27	36	1	1	2	10	28	38
21	Sangrur	3	34	37	0	5	5	3	39	42
22	Tarn Taran	5	45	50	0	3	3	5	48	53
	Total	169	745	914	1	41	42	170	786	956
1	Chandigarh	1	23	24	0	0	0	1	23	24
	Total Pun jab & Chandigarh	170	768	938	1	41	42	171	809	980

Plate 1: Location of ground water observation wells in Punjab State.

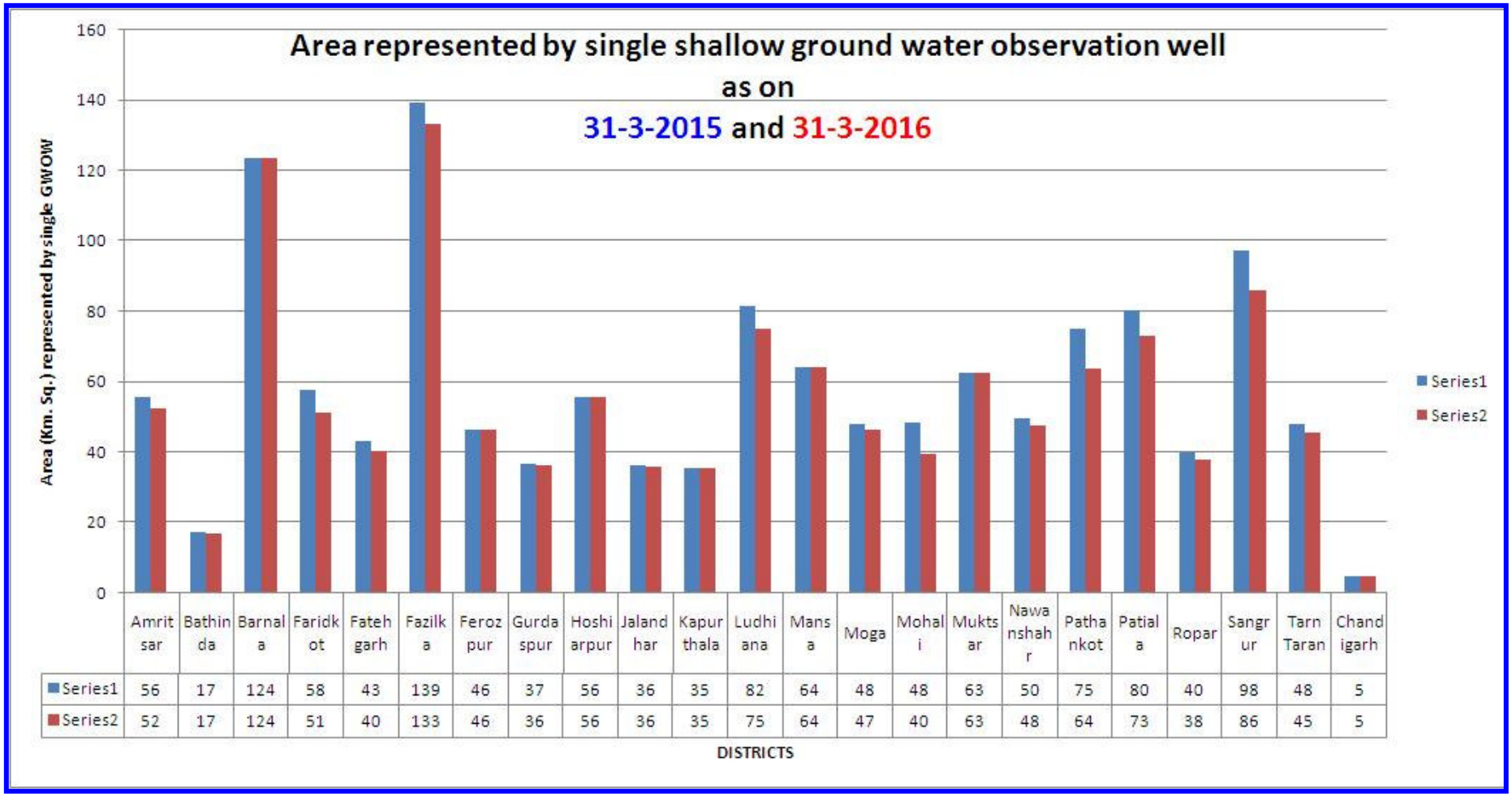


The area represented by single shallow Ground water observation wells being monitored in the state of Punjab and Chandigarh is given in **Table 2** and depicted in Plate **2.**

Table 2. Area represented by single shallow ground water observation well.

S. No.	Districts	Area (km^2)	No. of Shallow Ground water observation wells		Density; Area represented by one GWOW (area/no. of well)	
			as on 31.3.2015	as on 31.3.2016	as on 31.3.2015	as on 31.3.2016
1	Amritsar	2670	48	51	56	52
2	Bathinda	1410	81	84	17	17
3	Barnala	3340	27	27	124	124
4	Faridkot	1440	25	28	58	51
5	Fatehgarh	1170	27	29	43	40
6	Fazilka	3203	23	24	139	133
7	Ferozpur	2647	57	57	46	46
8	Gurdaspur	2284	62	63	37	36
9	Hoshiarpur	3400	61	61	56	56
10	Jalandhar	2660	73	74	36	36
11	Kapurthala	1630	46	46	35	35
12	Ludhiana	3680	45	49	82	75
13	Mansa	2190	34	34	64	64
14	Moga	1680	35	36	48	47
15	Mohali	1112	23	28	48	40
16	Muktsar	2630	42	42	63	63
17	Nawanshahr	1190	24	25	50	48
18	Pathankot	1276	17	20	75	64
19	Patiala	3290	41	45	80	73
20	Ropar	1440	36	38	40	38
21	Sangrur	3610	37	42	98	86
22	Tarn Taran	2410	50	53	48	45
23	Chandigarh	114	24	24	5	5

PLATE 2: DISTRICT WISE AREA REPRESENTED BY SINGLE SHALLOW GROUND WATER OBSERVATION WELL



	Amritsar	Bathinda	Barnala	Faridkot	Fatehgarh	Fazilka	Ferozpur	Gurdaspur	Hoshiarpur	Jalandhar	Kapurthala	Ludhiana	Mansa	Moga	Mohali	Muktsar	Nawanshahr	Pathankot	Patiala	Ropar	Sangrur	Tarn Taran	Chandigarh
Series1	56	17	124	58	43	139	46	37	56	36	35	82	64	48	48	63	50	75	80	40	98	48	5
Series2	52	17	124	51	40	133	46	36	56	36	35	75	64	47	40	63	48	64	73	38	86	45	5

3.1 BEHAVIOUR OF WATER LEVEL

In order to assess the quantitative change in ground water resources, water levels were monitored as a routine of four times in a year. The behaviour of water level in May 2015, August 2015, November 2015 and January 2016 is discussed in following paragraphs. The maximum and minimum water levels recorded in different season is given below in Table 3.

Table3. The maximum and minimum water levels during all four seasons

Range	May 2015	August 2015	November 2015	January 2016
Minimum	0.51 m bgl Kondal (Fazilka district)	0.10 m bgl Khuiyan sarvar (Fazilka district)	0.18m bgl Balocha Khera (Muktsar district)	0.26m bgl Alamagarh (Fazilka district)
Maximum	39.20 m bgl Rajpura (Patiala District)	42.11m bgl Chatamali (Ropar District)	39.67m bgl Chatamali (Ropar District)	59.60m bgl Kharkan (Hoshiarpur district)

It is evident from the above table-3 that shallowest water level conditions prevail in southwest parts mainly in Faridkot, Muktsar and Ferozpur districts, while deepest water level conditions exist in the central and north eastern parts of the state covering Fatehgarh Sahib, Ludhiana, Rupnagar and Sangrur districts. The water level data of all four seasons is discussed below and given in annexure-I:

3.1.1 MAY 2015

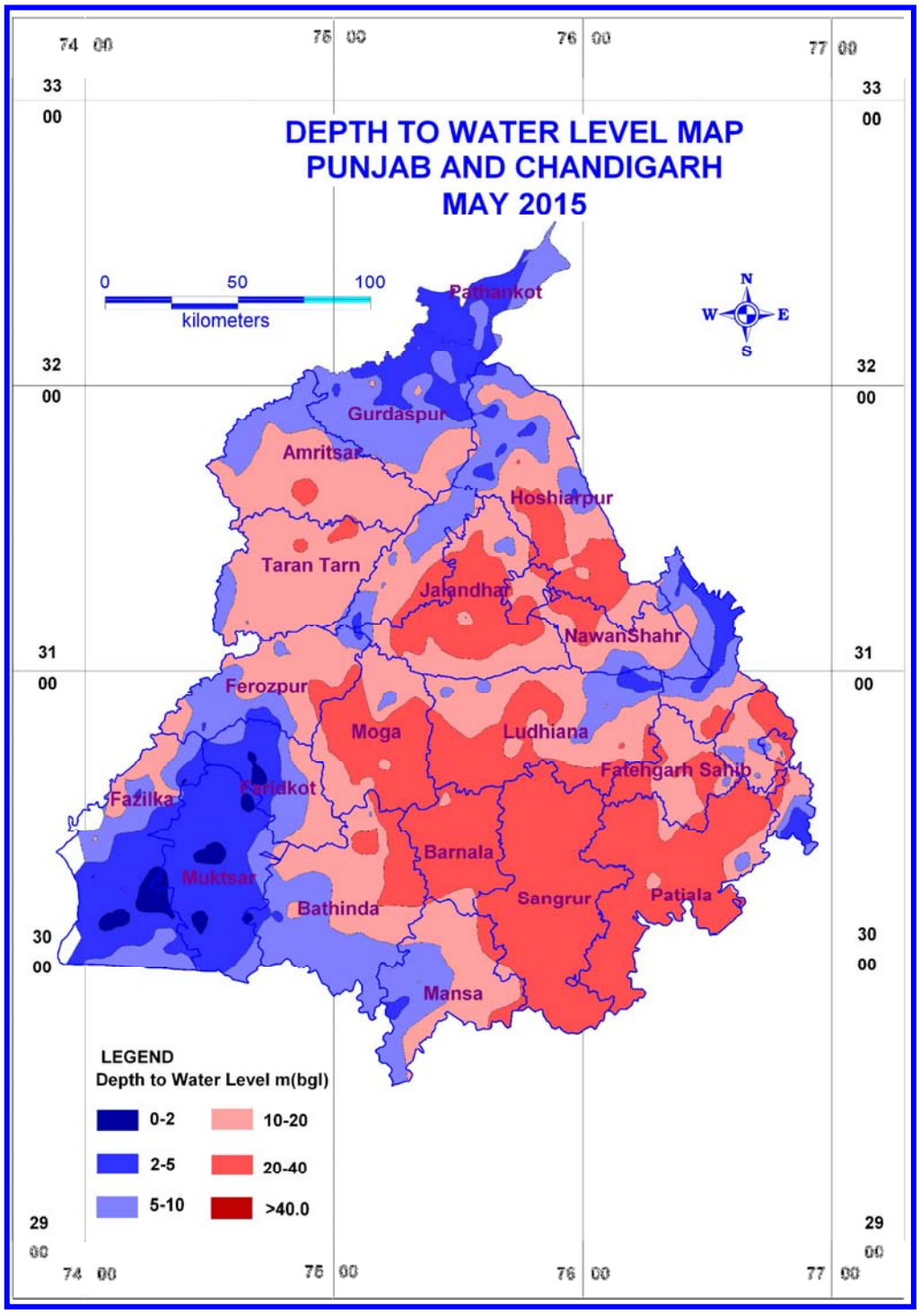
The behavioral pattern of water level in May 2015 along with depth to water level map (Fig. 1) is discussed below and data is presented in Annexure-I (Col. 4).

The depth to water level lies between 0.51m bgl at Kondal in Ferozpur district and 39.20m bgl at Rajpura in Patiala district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 2% of wells and cover nearly 1% area of the state in south western parts in Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 14% of the wells and more than 13% of the total area that lies in south western parts of Muktsar, Fazilka, Faridkot, and in northern parts of Gurdaspur & Pathankot districts and few isolated patches in north eastern parts. These are mainly canal command areas and use canal water for their agricultural needs. The water levels between 5-10 m are observed in the northern parts (Pathankot, Gurdaspur, Amritsar, and Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts), eastern parts of Ropar and SAS Nagar districts. About 22% of wells and 20% of the area fall in this range. Moderately Deep water levels (10-20 m) are predominant and observed in 35% wells covering about 35% area of the State in central parts. Deep water levels (20-40 m) are also observed covering parts of Jalandhar, Moga, Ludhiana, Fatehgarh, Patiala, Sangrur, Barnala and Nawanshahr districts and observed in 27% wells covering about 31% area of the State in central part. Very deep water levels (>40 m) are also observed covering parts of Kandi belt in Hoshiarpur and SAS Nagar districts and observed in <0.5% wells covering about <0.5% area of the State.

Summarized details of depth to water level in different ranges are given in table below.

Summarized details of distribution depth to water level in various ranges						
	Depth to water level(m) ranges					
%age	0-2	2-5	5-10	10-20	20-40	>40
Wells monitored	2	14	22	35	27	<0.5
Area covered	1	13	20	35	31	<0.5

Fig 1


DEPTH TO WATER LEVEL MAP
PUNJAB AND CHANDIGARH
MAY 2015
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Fazilka
Faridkot
Barnala
Muktsar
Sangrur
Patiala
Bathinda
Mansa
LEGEND
Depth to Water Level m(bgl)
0-2
2-5
5-10
10-20
20-40
>40.0

3.1.2 August 2015

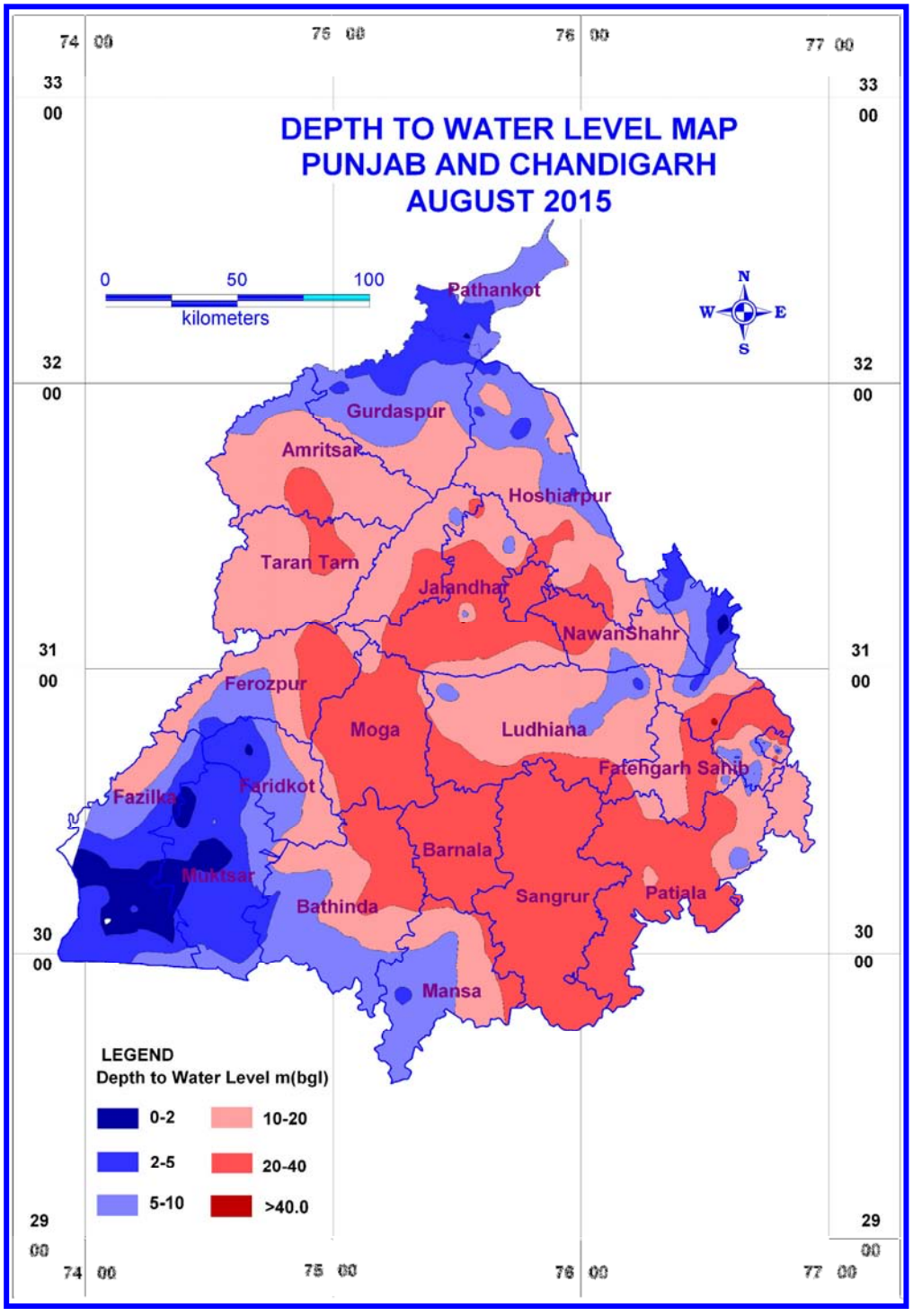
The behavioral pattern of water level in August 2015 along with depth to water level map (Fig.2) is discussed below and data is presented in Annexure-1 (Col. 5).

The depth to water level lies between -0.15m bgl at Khuiyan-Sarvar in Fazilka district and 42.11m bgl in Chatamali- Pz, Rupnagar district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 5% of wells and cover nearly 3% area of the state in south western parts in Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 18% of the wells and more than 10% of the total area that lies in south and south western parts of the state in (Muktsar, Fazilka, Faridkot) and in northern parts (Gurdaspur & Pathankot) districts and few isolated patches in north eastern parts. The water levels between 5-10 m are observed in the northern parts (Gurdaspur, Amritsar, and Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts), eastern parts of Ropar and SAS Nagar districts. About 21% of wells and 18% of the area fall in this range. Moderately Deep water levels (10-20 m) are predominant and observed in 26% wells covering about 36% area of the State in parts Amritsar, Tarntaran, Kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ludhiana, Fatehgarh Sahib, Ropar, Chandigarh, Patiala, Ferozpur, Faridkot, Bathinda and Mansa districts. Deep water levels (20-40 m) are also observed covering parts of Jalandhar, Moga, Ludhiana, Fatehgarh Sahib, Patiala, Sangrur and Nawanshahr districts and observed in 30% wells covering about 34% area of the State in central part. Very deep water levels (>40 m) are also observed covering parts of Kandi belt in Hoshiarpur and SAS Nagar districts and observed in <0.5% wells covering about <0.5% area of the State.

Summarized details of depth to water level in different ranges are given in table below.

Summarized details of distribution depth to water level in various ranges						
	Depth to water level(m) ranges					
%age	0-2	2-5	5-10	10-20	20-40	>40
Wells monitored	5	18	21	26	30	<0.5
Area covered	3	10	18	35	34	<0.5

Fig 2


DEPTH TO WATER LEVEL MAP
PUNJAB AND CHANDIGARH
AUGUST 2015
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Fazilka
Faridkot
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Depth to Water Level m(bgl)
0-2
2-5
5-10
10-20
20-40
>40.0

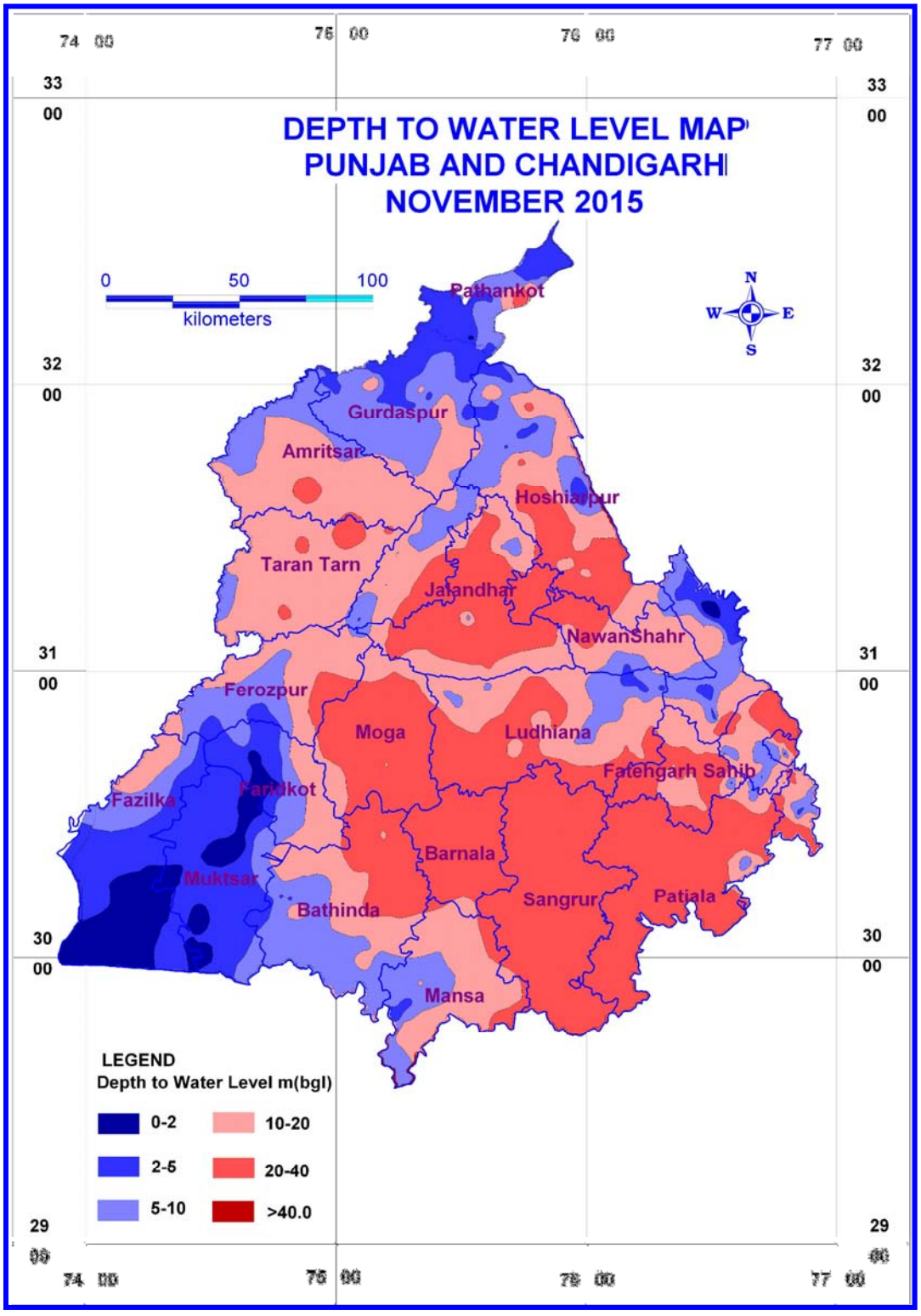
3.1.3 NOVEMBER 2015

The behavioral pattern of water level in November 2015 along with depth to water level map (Fig.3) is discussed below and data is presented in Annexure-I (Col. 6).

The depth to water level lies between 0.18m bgl at Balocha Khera in Muktsar district and 39.52m bgl at Chatamali in Ropar district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 3% of wells and cover nearly 4% area of the state in south western parts in Ferozpur, Faridkot, Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 13% of the wells and 11% of the total area in south western parts of state covering Muktsar, Fazilka, Faridkot, and Ferozpur districts, in north, parts of Gurdaspur & Pathankot districts and few isolated patches in north eastern parts. The water levels in range of 5-10m are observed in north covering Pathankot, Gurdaspur, Amritsar, Kapurthala and Hoshiarpur districts, in south and south west, the Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts and in the east, parts of Ropar and SAS Nagar districts covering 21% of wells and 18% of the area of the state. Moderately Deep water levels (10-20 m) are predominant and observed in 30% wells covering about 32% area of the State in central parts covering Gurdaspur, Amritsar, Tarntaran, Kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ropar, Fatehgarh Sahib, Ludhiana, Moga, Ferozpur, Bathinda, Barnala and Mansa Districts. Deep water levels (20-40 m) are also observed covering parts of Jalandhar, Nawanshahr, Hoshiarpur, Moga, Barnala, Bathinda, Mansa, Sangrur, Ludhiana, Patiala, and Fatehgarh sahib, districts and observed in 32% wells covering about 35% area of the State.

Summarized details of distribution depth to water level in various ranges						
	Depth to water level(m) ranges					
%age	0-2	2-5	5-10	10-20	20-40	>40
Wells monitored	3	13	21	30	32	
Area covered	4	11	18	32	35	

Fig 3

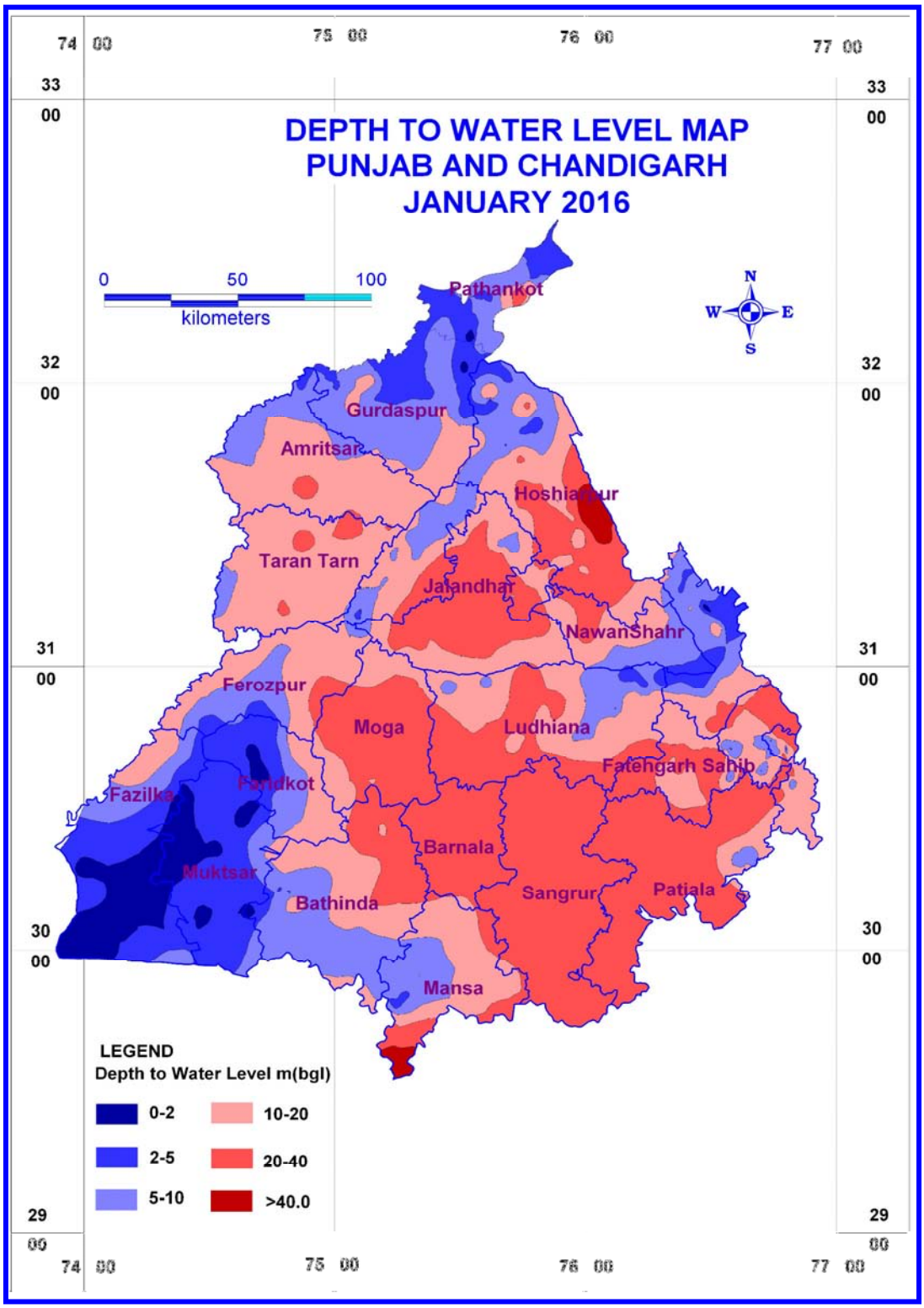

DEPTH TO WATER LEVEL MAP
PUNJAB AND CHANDIGARH
NOVEMBER 2015
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Fazilka
Faridkot
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Depth to Water Level m(bgl)
0-2
2-5
5-10
10-20
20-40
>40.0

3.1.4 January 2016

The behavioral pattern of water level in January 2016 along with depth to water level map (Fig.4) is discussed below and data is presented in Annexure-I (Col. 7). The depth to water level lies between 0.26m bgl at Alamgarh in Fazilka district and 59.60m bgl at Kharkan Pz in Hoshiarpur district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 3% of wells and cover nearly 4% area of the state in south western parts in Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 13% of the wells and 11% of the total area that lies in south western parts of Muktsar, Fazilka, Faridkot, and in northern parts of Gurdaspur & Pathankot districts and few isolated patches in north eastern parts. These are mainly canal command areas and use canal water for their agricultural needs. The water levels between 5-10 m are observed in the northern parts (Pathankot, Gurdaspur, Amritsar, Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts), eastern parts of Ropar and SAS Nagar districts. About 21% of wells and 18% of the area fall in this range. Moderately Deep water levels (10-20 m) are predominant and observed in 32% wells covering about 32% area of the State in parts of Gurdaspur, Amritsar, Tarntaran, kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ropar, Fatehgarh Sahib, Ludhiana, Moga, Ferozpur, Bathinda and Mansa Districts. Deep water levels (20-40 m) are also observed covering parts of Jalandhar, Nawanshahr, Fatehgarh, Moga, Barnala, Ludhiana, Patiala and Sangrur districts and observed in 30% wells covering about 34% area of the State in central part. Very deep water levels (>40 m) are also observed covering parts of Kandi belt in Hoshiarpur and SAS Nagar districts and observed in <0.5% wells covering about <0.5% area of the State.

Summarized details of distribution depth to water level in various ranges						
	Depth to water level(m) ranges					
%age	0-2	2-5	5-10	10-20	20-40	>40
Wells monitored	3	13	21	32	30	<0.5
Area covered	4	11	18	32	34	<0.5

Fig 4


DEPTH TO WATER LEVEL MAP
PUNJAB AND CHANDIGARH
JANUARY 2016
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Fazilka
Faridkot
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Depth to Water Level m(bgl)
0-2
2-5
5-10
10-20
20-40
>40.0

3.2 WATER TABLE ELEVATION

3.2.1 May 2015

The water table elevation (May, 2015) contours have a maximum value of 352.77 m amsl rising in the northeastern part in Pathankot district along the Himalayas to 175.23 m amsl in southwestern part in the Punjab plains (Fazilka district). The map helps in determining the hydraulic gradient and direction of ground water flow. The general ground water flow direction follows the natural slope. There is not much change in the ground water flow direction which still remains northeast to southwest, but the ground water gradient between contour level 190 m and 180 m in Muktsar/Fazilka districts has become gentle indicating slowing of ground water movement resulting in spreading of water logged areas to other districts. The water table elevation map for May 2014 is shown in Map (Fig. 5).

Fig 5

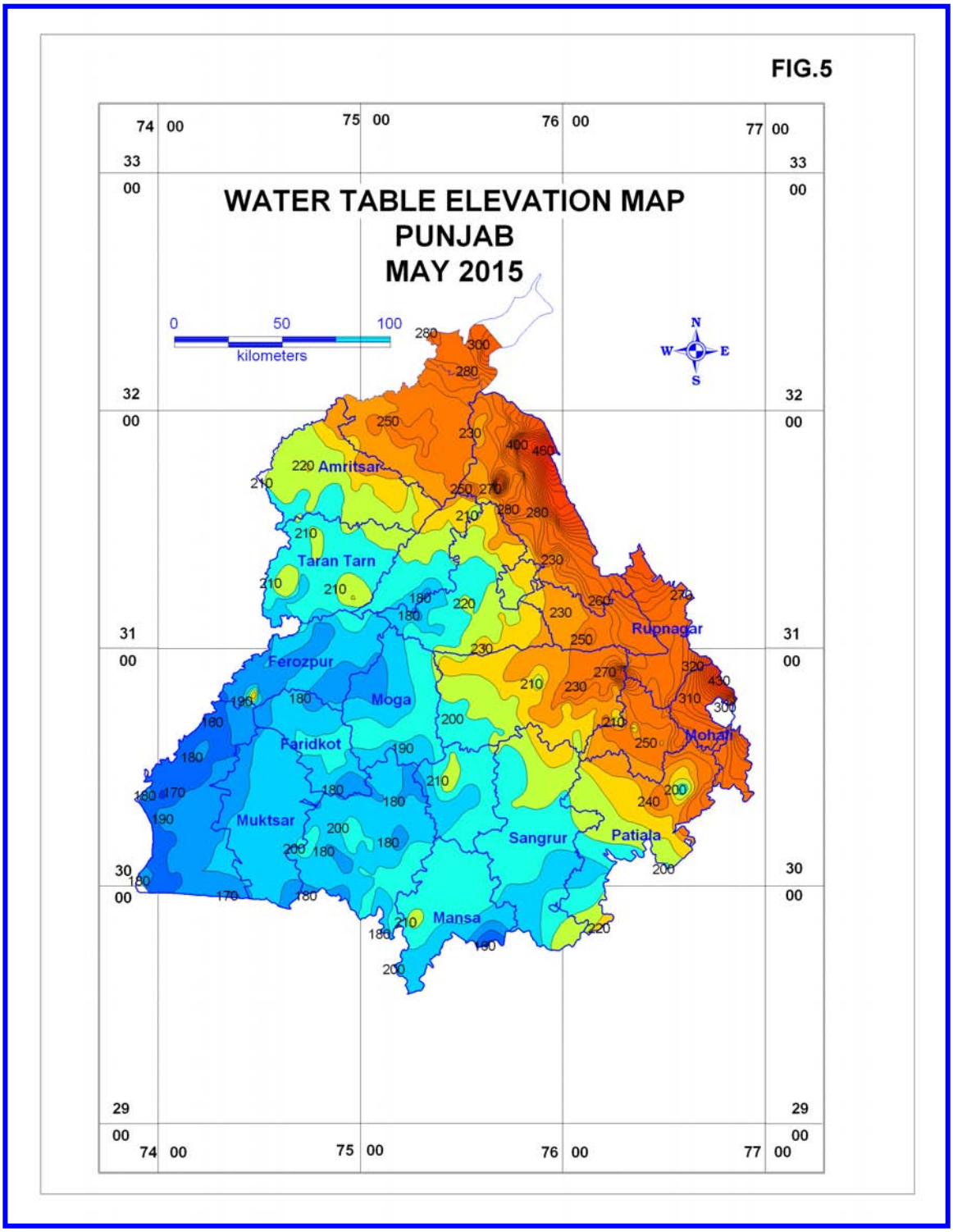


FIG.5
WATER TABLE ELEVATION MAP
PUNJAB
MAY 2015
0 50 100
kilometers
N
W E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Amritsar
Taran Tarn
Ferozpur
Moga
Faridkot
Muktsar
Rupnagar
Mohali
Sangrur
Patiala
Mansa

3.3 SEASONAL FLUCTUATIONS:

On comparing Water level data of current measurement with previous measurement data is termed as seasonal water level fluctuations. The water level data of all four measurements are compared to previous measurement and seasonal water level fluctuations are determined.

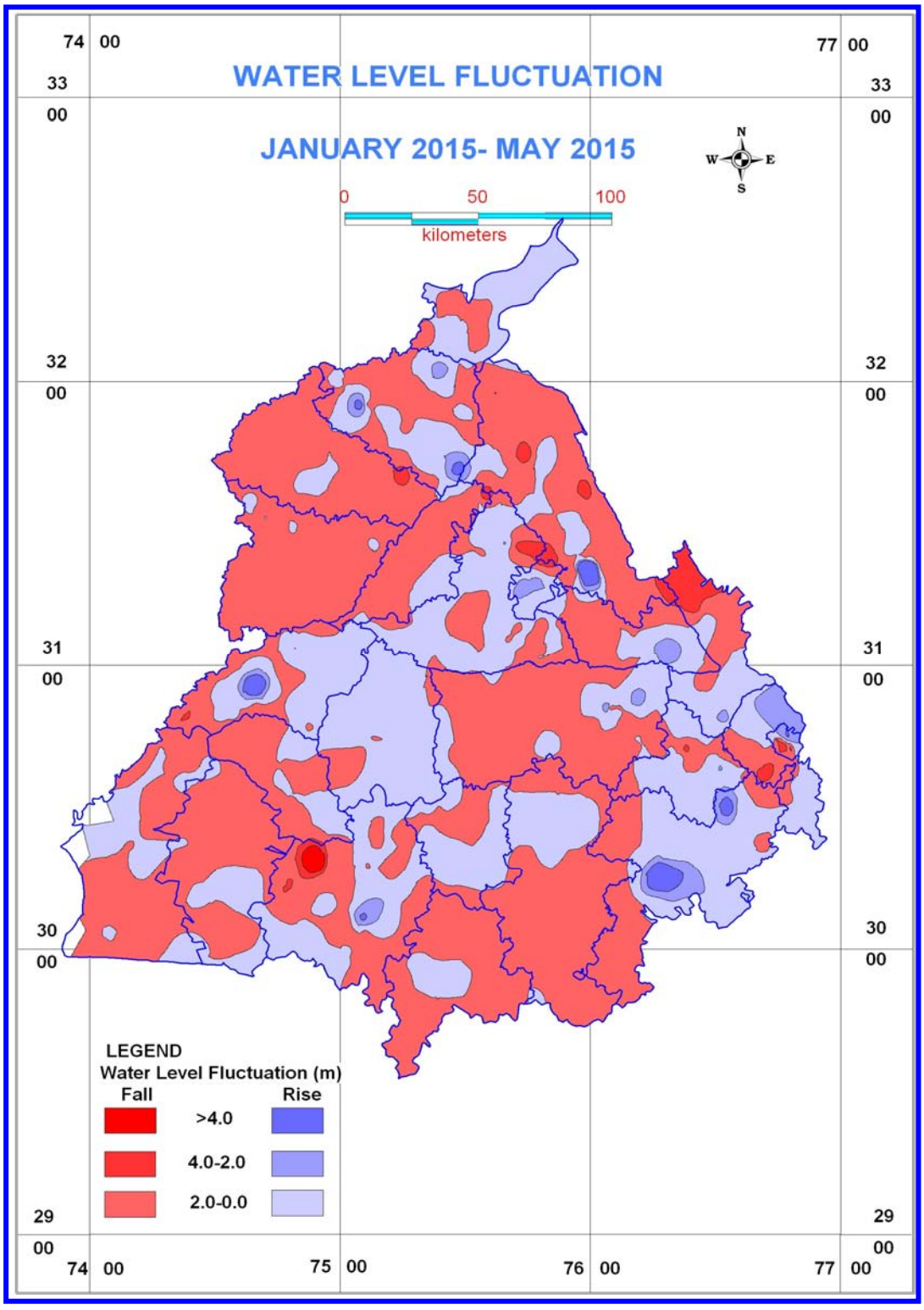
3.3.1 JANUARY 2015 - MAY 2015

The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 6) below and the data are presented in Annexure-II (Col.4). The seasonal fluctuation shows that there is a general decline of water levels in 61% of wells monitored and covering 60% area of the State. The decline has been observed in all districts except some isolated patches scattered over the state. Water level decline in the range of 0-2 m is observed in 58% of wells and 59% of area. Water level decline in the range of 2-4 m is observed in 1% of wells and 3% of area. Water level decline of >4m was not observed during the period.

The water level rise has been recorded in 39% of wells monitored and covering 40% area of the State. Water level rise in the range of 0-2 m is observed in 36% of wells and 37% of the area. Water level rise 2-4m is observed in 2% wells and 2% of area during the period. The water level has been reported in small patches in all districts in south western parts of the state. Water level rise of more than 4m is observed in 1% wells and 1% of area in small patches in all districts in south western parts of the state.

Summarized details of behaviour of depth to water level- JANUARY 2015-MAY 2015								
Water level fluctuation(m)	Decline				Rise			
%age of	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	58	3	0	61	36	2	1	39
Area covered	59	1	0	60	37	2	1	40

Fig 6


WATER LEVEL FLUCTUATION
JANUARY 2015- MAY 2015
N
W
E
S
0
50
100
kilometers
74 00
77 00
33
00
32
00
31
00
30
00
29
00
74 00
75 00
76 00
77 00
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.3.2 MAY 2015 - AUGUST 2015

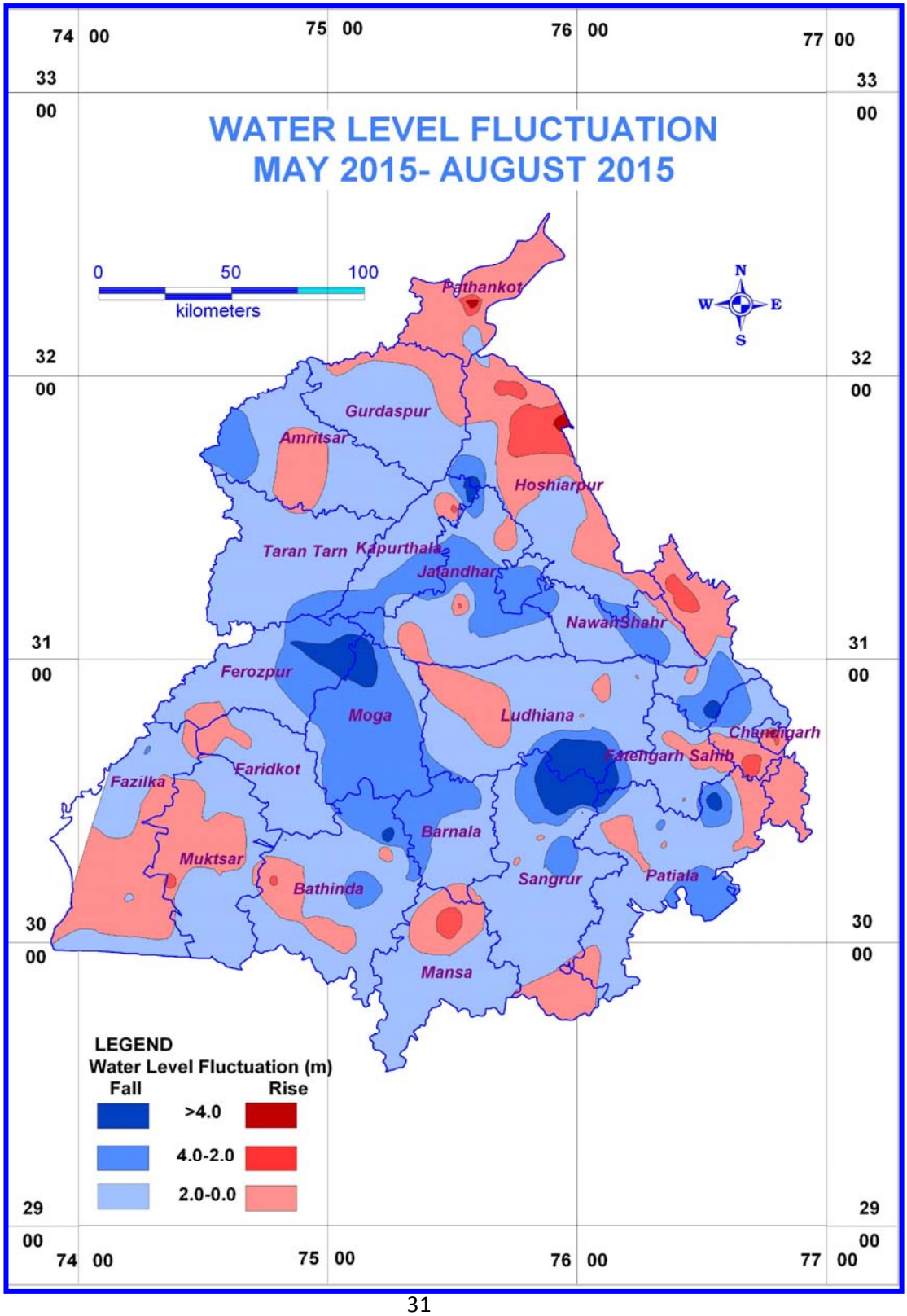
Water level data of August 2015 is compared with water level data of May 2015 to determined seasonal water level fluctuations. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 7) below and the data are presented in Annexure-II (Col.5).

The seasonal fluctuation shows decline of water levels in 68% of wells monitored and covering 57% area of the State. The decline has been observed in all districts of the state. Water level decline in the range of 0-2 m is observed in 55% of wells and 41% of area. Water level decline of 2-4m is observed in 12% of wells and 12% of area. Water level decline more than 4m is observed in 1% wells and 4% of area during the period.

The water level rise has been recorded in 32% of wells monitored and covering 43% area of the State. Water level rise in the range of 0-2 m is observed in 25% of wells and 35% of the area in all districts. Water level rise in the range of 2-4m is observed in 6% wells and 6% of area in parts of Kapurthala, Jalandhar, Nawanshahr, Ludhiana, Moga, Bathinda and Fatehgarh Sahib districts during the period. Water level rise more than 4m is observed in 1% wells and 2% of area during the period. in all districts in south western parts of the state.

Summarized details of behaviour of water level fluctuation MAY 2015- AUGUST 2015								
Water level fluctuation(m)	Decline				Rise			
%age of	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	55	12	1	68	25	6	1	32
Area covered	41	12	4	57	35	6	2	43

Fig 7


WATER LEVEL FLUCTUATION
MAY 2015- AUGUST 2015
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Kapurthala
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Chandigarh
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.3.3 May 2015 - November 2015

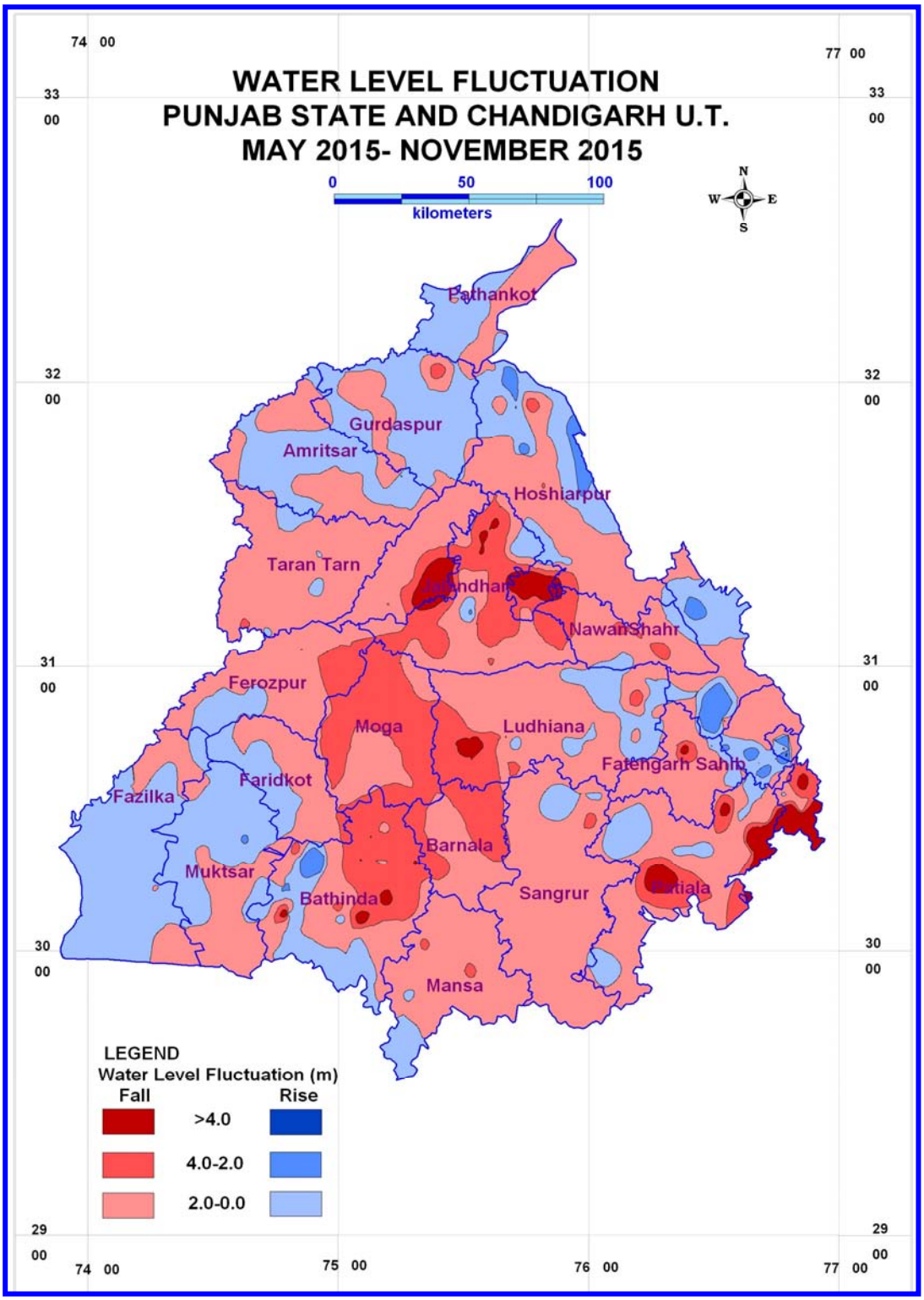
Water level data of November 2015 is compared with Water level data of May 2015 to determine the seasonal water level fluctuation. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 8) below and the data are presented in Annexure-II (Col.6).

The seasonal fluctuation shows a general decline of water levels in 71% of wells monitored and covering 73% area of the State. The decline has been observed in all districts. Water level decline in the range of 0-2 m is observed in 52% of wells and 57% of area. Water level decline in the range of 2-4 m is observed in 15% of wells and 14% of area in parts of Jalandhar, Fatehgarh Sahib, Ludhiana, Sangrur, moga, barnala and Bathinda districts, whereas, water level decline of >4m is observed in 4% of wells and 2% of area during the period.

The water level rise has been recorded in 29% of wells monitored and covering 27% area of the State. Water level rise in the range of 0-2 m is observed in 27% of wells and 25% of the area. Water level rise 2-4m is observed in 1% wells and 1% of area, whereas, water level decline of >4m is observed in 1% of wells and 1% of area during the period.

Summarized details of behaviour of water level fluctuation MAY 2015- NOVEMBER 2015								
Water level fluctuation(m)	Decline				Rise			
%age of	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	52	15	4	71	27	1	1	29
Area covered	57	14	2	73	25	1	1	27

Fig 8


WATER LEVEL FLUCTUATION
PUNJAB STATE AND CHANDIGARH U.T.
MAY 2015- NOVEMBER 2015
0
50
100
kilometers
N
W
E
S
74 00
77 00
33 00
32 00
31 00
30 00
29 00
75 00
76 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
Nawanshahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.3.4 May 2015 - January 2016

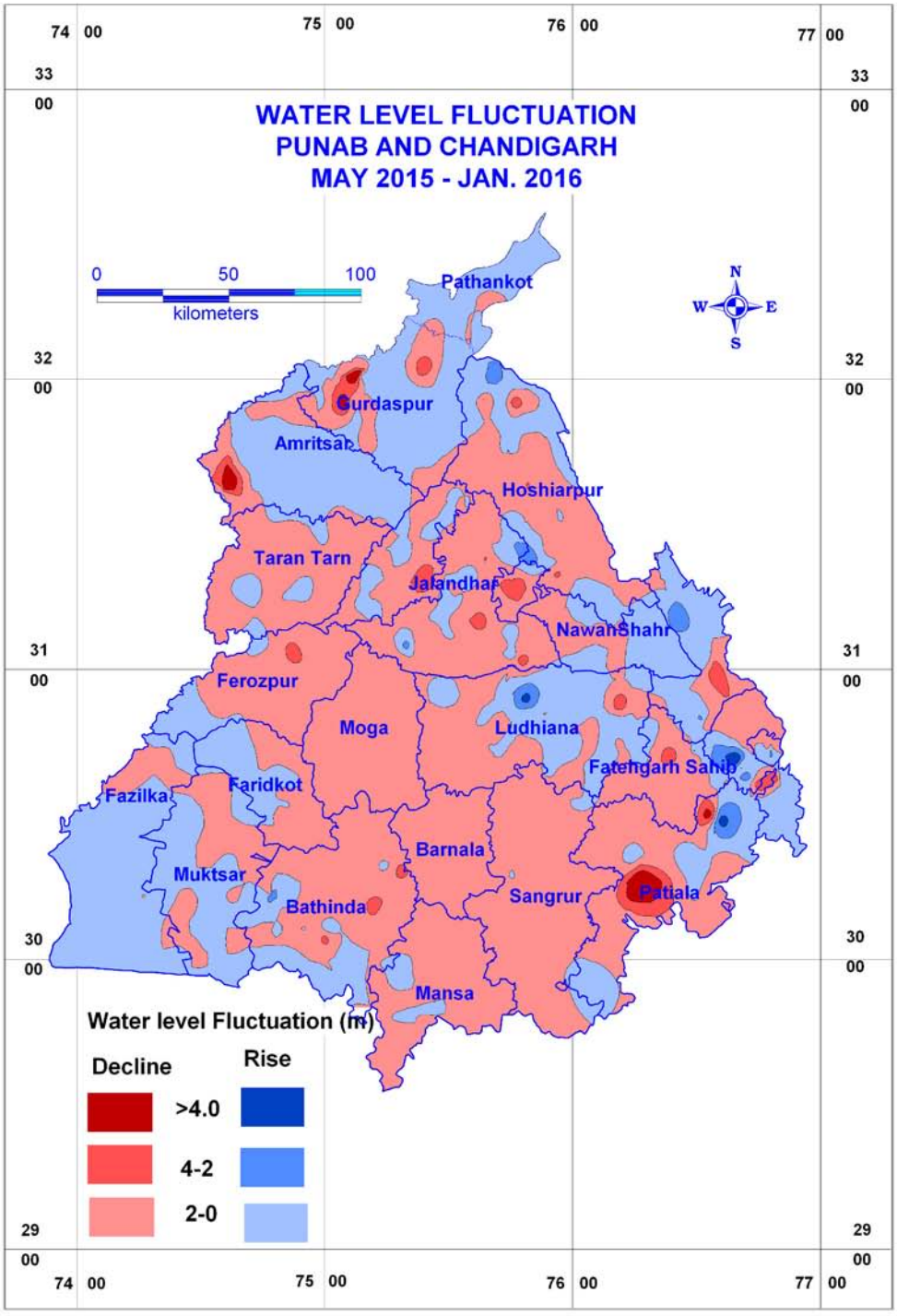
Water level data of January 2015 is compared with Water level data of May 2015 to determine the seasonal water level fluctuation. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 9) below and the data are presented in Annexure-II (Col.7).

The seasonal fluctuation between May 2015 and January 2016 shows that there is a general decline of water levels in 60% of wells monitored and covering 63% area of the State. The decline has been observed in all districts. Water level decline in the range of 0-2 m is observed in 55% of wells and 61% of area. Water level decline in the range of 2-4 m is observed in 4% of wells and 2% of area whereas, water level decline of >4m is observed in 1% of wells and <0.5% of area during the period.

The water level rise has been recorded in 40% of wells monitored and covering 37% area of the State. Water level rise in the range of 0-2 m is observed in 36% of wells and 37% of the area. Water level rise 2-4m is observed in 2% wells and 1% of area, whereas, water level decline of >4m is observed in 1% of wells and <1% of area during the period.

Summarized details of behaviour of water level fluctuation MAY 2015- JANUARY 2016								
Water level fluctuation(m)	Decline				Rise			
%age of	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	55	4	1	60	37	2	1	40
Area covered	61	2	0	63	36	1	0	37

FIG.9


74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
WATER LEVEL FLUCTUATION
PUNAB AND CHANDIGARH
MAY 2015 - JAN. 2016
0 50 100
kilometers
N
W E
S
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Fazilka
Faridkot
Barnala
Muktsar
Sangrur
Patiala
Bathinda
Mansa
Water level Fluctuation (m)
Decline
Rise
>4.0
4-2
2-0

3.4 ANNUAL WATER LEVEL FLUCTUATIONS

In order to know the impact of rainfall and ground water withdrawal during last one year, annual water level fluctuations for given period in current year is compared with water level data of corresponding period of last year and annual water level fluctuations are determined.

3.4.1 MAY 2014 - MAY 2015

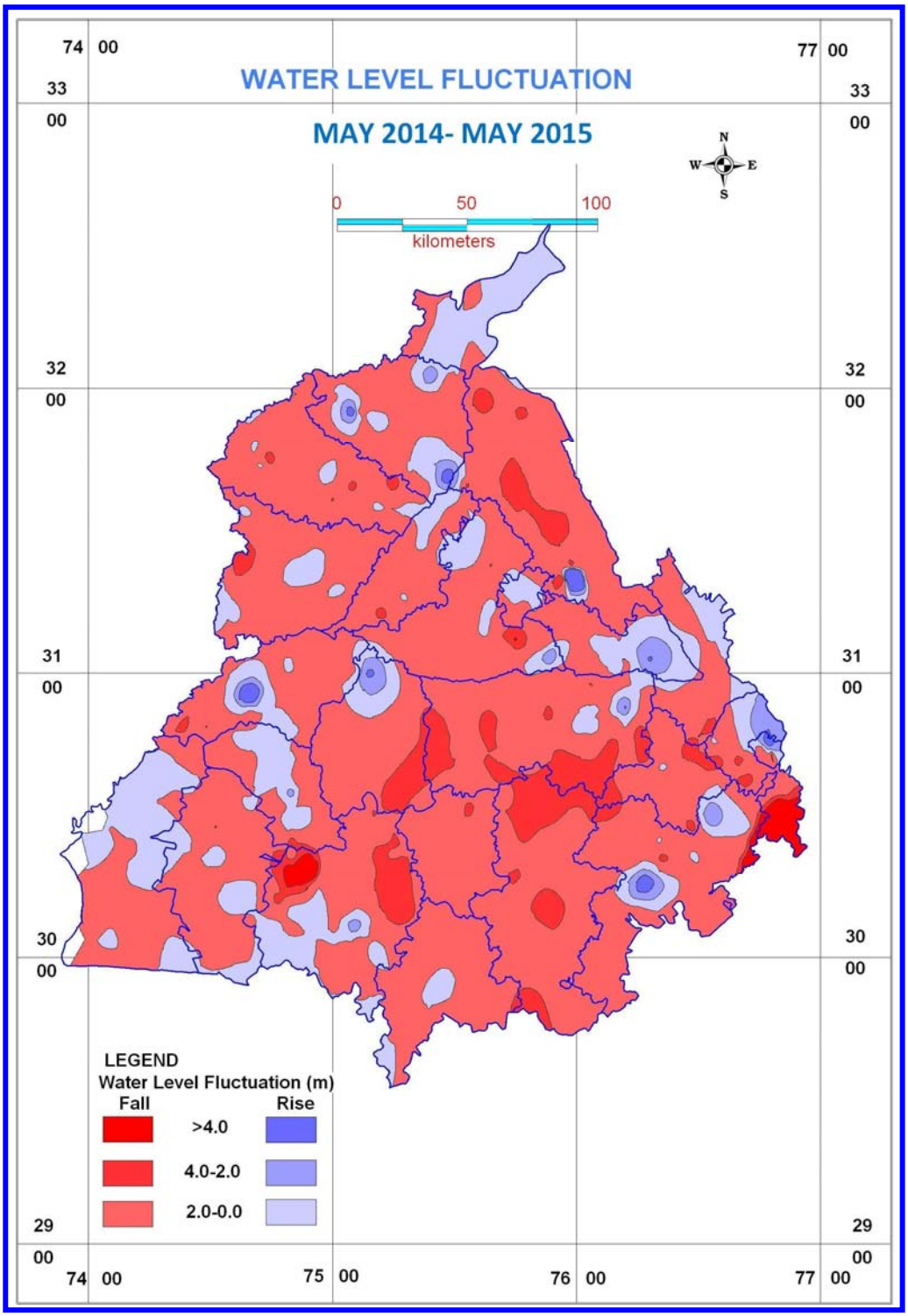
The behavioral pattern of annual fluctuation in Premonsoon season is discussed in the following paragraph along with fluctuation map **(Fig. 10).** Water level fluctuations data are given in the Annexure-III (Col-4).

The annual fluctuation depicts general decline of water levels in 79% of wells monitored and covering 80% area of the State. The decline has been observed in south-central Punjab, covering the parts of Jalandhar, Ludhiana, Fatehgarh Sahib, Moga, Barnala, Sangrur, Patiala and Mansa districts. Water level decline the range of 0-2 m is observed in 68% of wells and 73% of the area. Water level decline in the range of 2-4 m is observed in 11% of wells and 6% of the area, whereas, the water level decline of >4m is observed in <1% of wells and <1% of the area during the period.

The water level rise has been recorded in 21% of wells monitored and covering 20% area of the State. The water levels rise has been observed in Pathankot, Gurdaspur, Amritsar, Tarntaran, Kapurthala, Hoshiarpur, Nawanshahr, Jalandhar, and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in all the districts of south western parts of the state. Water level rise in the range of decline 0-2 m is observed in 19% wells and 18% of area. Water level rise 2-4m is observed in 1% wells and 2% of area. The water level rise of >4m is observed in 1% of wells and 1% of the area during the period.

Summarized details of behaviour of water level fluctuation May 2014-May 2015								
Water level fluctuation(m)	Decline				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	68	11	<1	79	19	>1	<1	21
Area covered	73	6	<1	80	18	2	<1	20

Fig 10


WATER LEVEL FLUCTUATION
MAY 2014- MAY 2015
N
W
E
S
0
50
100
kilometers
74 00
77 00
33
00
32
00
31
00
30
00
29
00
74 00
75 00
76 00
77 00
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.4.2 AUGUST 2014 - AUGUST 2015

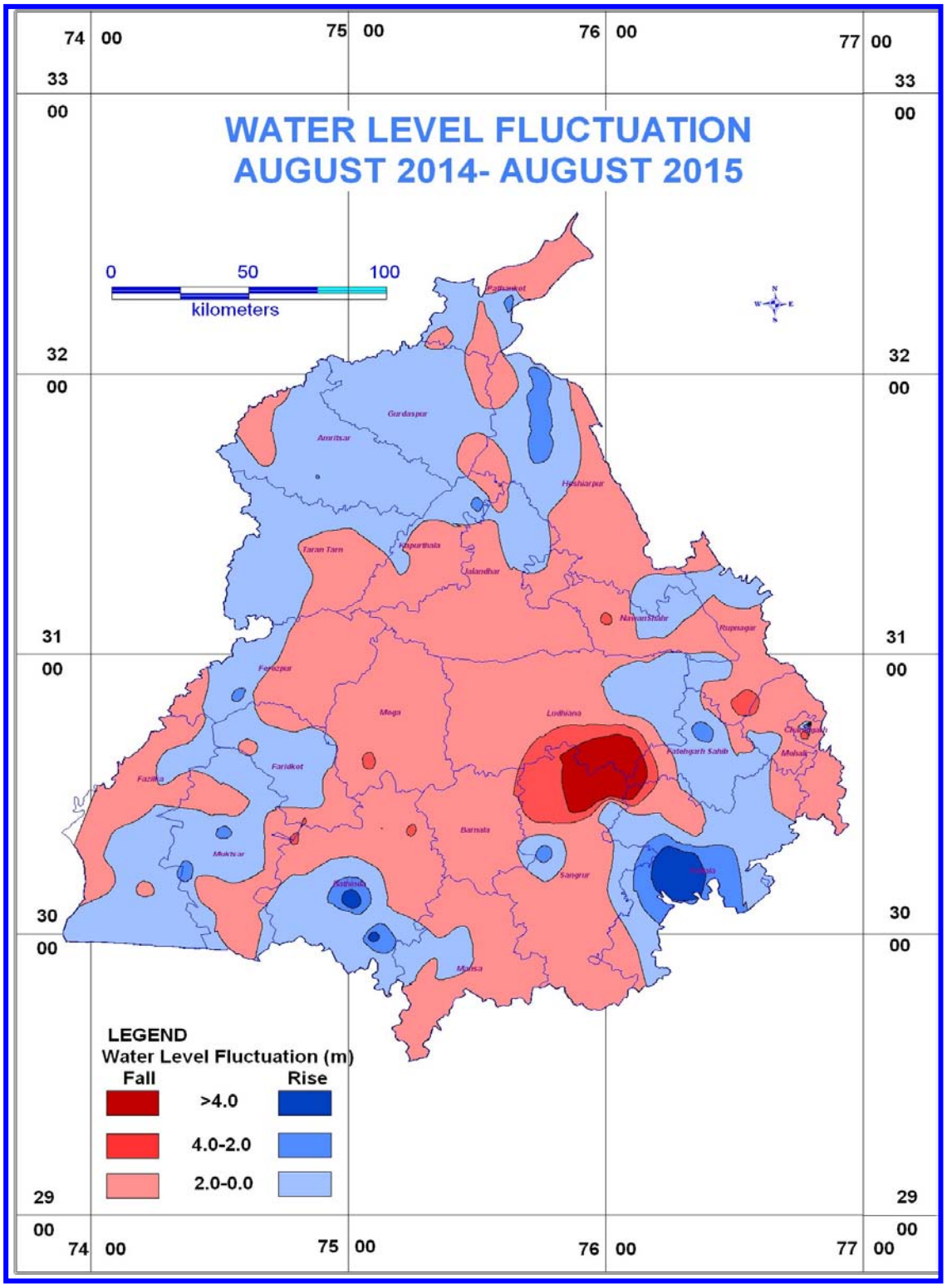
The behavioral pattern of annual fluctuation in Monsoon season is discussed in the following paragraph along with fluctuation map **(Fig. 11).** Water level fluctuations data are given in the Annexure-III (Col-5).

The annual fluctuation depicts general decline of water levels in 53% of wells monitored and covering 56% area of the State. Water level decline the range of 0-2 m is observed in 47% of wells and 53% of the area in all districts in the state. Water level decline in the range of 2-4 m is observed in 5% of wells and 2% of the area covering the parts of Kapurthala, Jalandhar, Hoshiarpur, Ludhiana, Fatehgarh Sahib, Moga, Barnala, Sangrur, Patiala and Mansa districts. Water level decline >4m is observed in 1% of wells and 1% of the area during the period.

The water level rise has been recorded in 47% of wells monitored and covering 44% area of the State. The water levels rise has been observed in Pathankot, Gurdaspur, Amritsar, Tarntaran, Nawanshahr, Ludhiana, Sangrur and Patiala districts. Rise in water level is also observed in all the districts of south western parts of the state. Water level rise in the range of decline 0-2 m is observed in 38% wells and 40% of area. Water level rise 2-4m is observed in 7% wells and 3% of area. The water level rise of >4m is observed in 2% of wells and 1% of the area during the period.

Summarized details of behaviour of water level fluctuation August 2014-August 2015								
Water level fluctuation(m)	Decline				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	47	5	1	53	38	7	2	47
Area covered	53	2	1	56	40	3	1	44

Fig 11


WATER LEVEL FLUCTUATION
AUGUST 2014- AUGUST 2015
0
50
100
kilometers
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Kapurthala
Jalandhar
Nawanshahr
Rupnagar
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Mohali
Faridkot
Fazilka
Barnala
Muktsar
Sangrur
Bathinda
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.4.3 November 2014 - November 2015

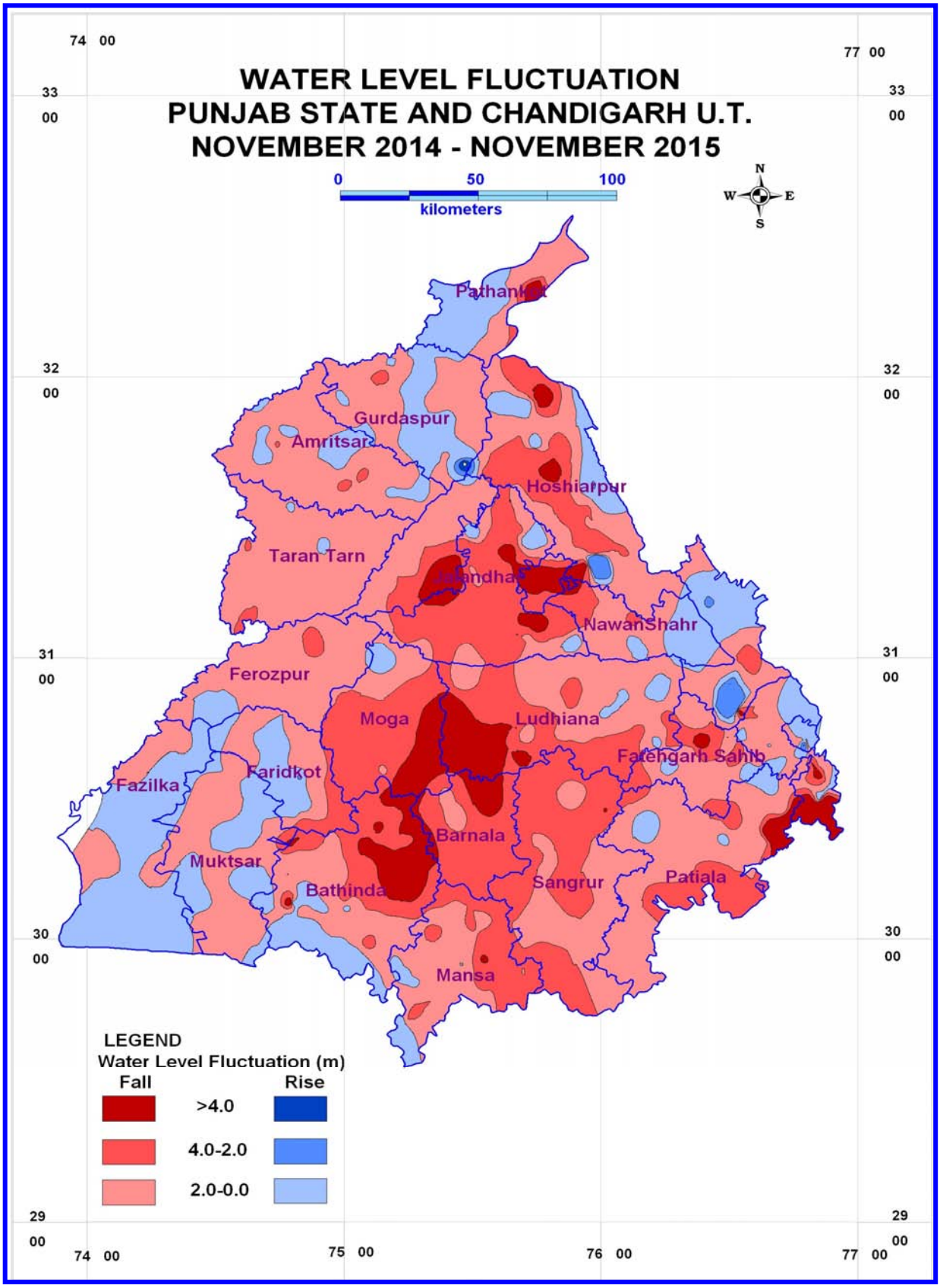
The behavioral pattern of annual fluctuations Post-Monsoon season is discussed in the following paragraph along with fluctuation map **(Fig. 12).** Water level fluctuations data are given in the Annexure-III (Col-6).

The annual fluctuation depicts general decline of water levels in 72% of wells monitored and covering 75% area of the State. The decline has been observed in all districts except in parts of Gurdaspur, Amritsar and Tarntaran in north and Fazilka, Muktsar, Bathinda and Mansa districts in south-western parts of the state. Water level decline the range of 0-2 m is observed in 58% of wells and 68% of the area. Water level decline in the range of 2-4 m is observed in 12% of wells and 6% of the area whereas, water level decline >4m is observed in 2% of wells and <1% of the area during the period.

The water level rise has been recorded in 28% of wells monitored and covering 25% area of the State. The water levels rise has been observed in Pathankot, Gurdaspur, Amritsar, Tarntaran districts in north and Fazilka, Muktsar, Bathinda and Mansa districts in south-western parts of the state. Rise in water level is also observed in all the districts of south western parts of the state. Water level rise in the range of decline 0-2 m is observed in 26% wells and 24% of area. Water level rise of 2-4m is observed in 1% wells and 1% of area. The water level rise of >4m is observed in 1% of wells and <1% of the area during the period.

Summarized details of behaviour of water level fluctuation November 2014- November 2015								
Water level fluctuation(m)	Decline				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	58	12	2	72	26	1	1	28
Area covered	68	6	1	75	24	1	<1	25

Fig 12


WATER LEVEL FLUCTUATION
PUNJAB STATE AND CHANDIGARH U.T.
NOVEMBER 2014 - NOVEMBER 2015
0
50
100
kilometers
N
W
E
S
74 00
77 00
33 00
32 00
31 00
30 00
29 00
75 00
76 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.4.4 January 2015 - January 2016

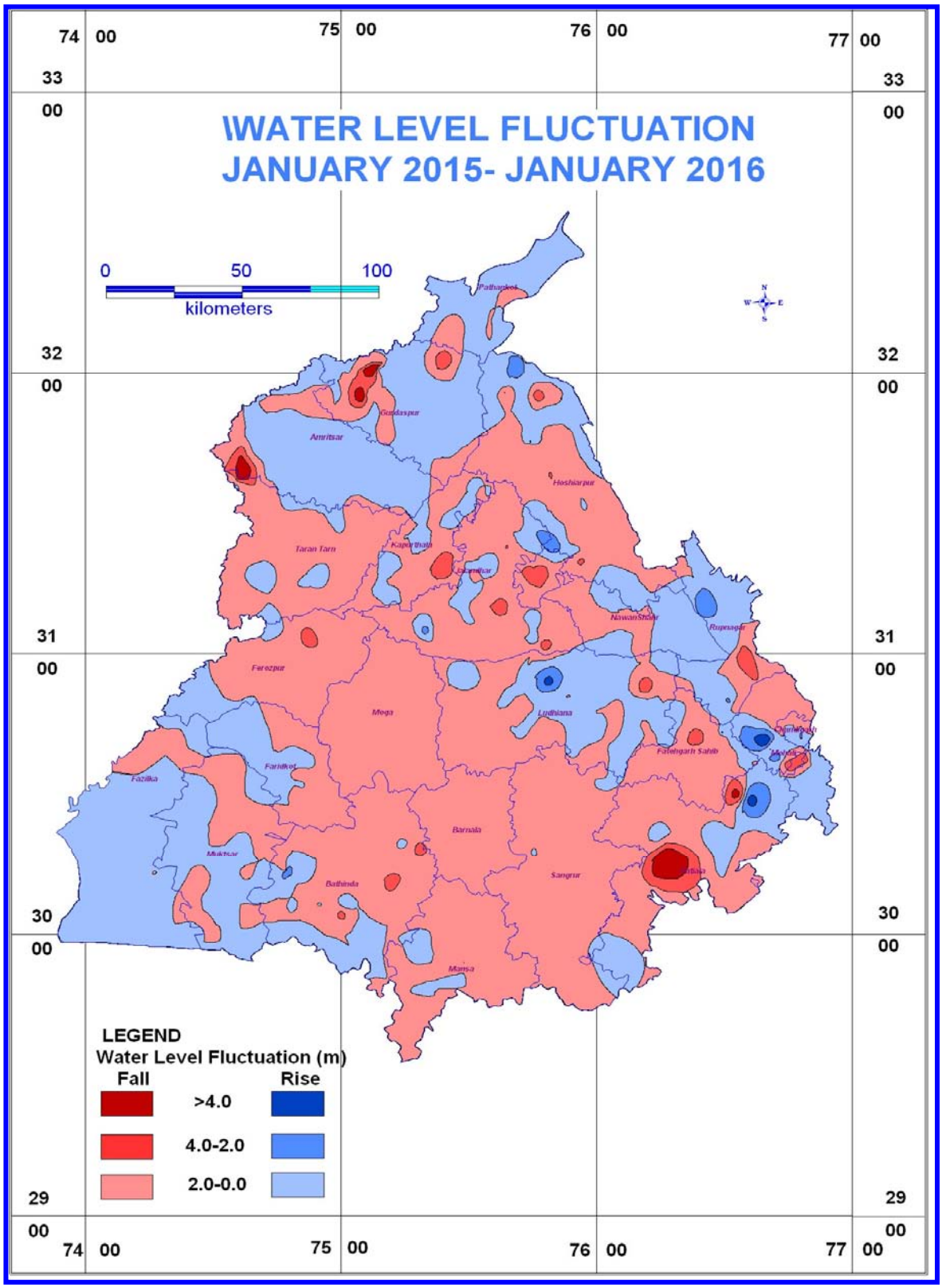
The behavioral pattern of annual fluctuations is discussed in the following paragraph along with fluctuation map **(Fig. 13).** Water level fluctuations data are given in the Annexure-III (Col-7).

The annual fluctuation shows that there is a general decline of water levels in 69% of wells monitored and covering 71% area of the State. The decline has been observed in all districts in the state. Water level decline the range of 0-2 m is observed in 62% of wells and 69% of the area. Water level decline in the range of 2-4 m is observed in 6% of wells and 1% of the area. The water level decline of >4m is observed in 1% of wells and 1% of the area during the period.

The water level rise has been recorded in 29% of wells monitored and covering 27% area of the State. The water levels rise has been observed in Pathankot, Gurdaspur, Amritsar, Hoshiarpur, Nawanshahr, SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in parts of Ferozpur, Fazilka, Muktsar, and Bathinda in south and south western parts of the state. Water level rise in the range of decline 0-2 m is observed in 29% wells and 27% of area. Water level rise 2-4m is observed in 1% wells and 1% of area. The water level decline of >4m is observed in 1% of wells and 1% of the area during the period.

Summarized details of behaviour of water level fluctuation January 2015-January 2016								
Water level fluctuation(m)	Decline				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	62	6	1	69	29	1	1	31
Area covered	69	1	1	71	27	1	1	29

Fig 13


WATER LEVEL FLUCTUATION
JANUARY 2015- JANUARY 2016
0
50
100
kilometers
N
W
E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Tarn Taran
Kapurthala
Jalandhar
Nawanshahr
Rupnagar
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Bathinda
Sangrur
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.5 DECADAL MEAN WATER LEVEL FLUCTUATION

Changes in water level behaviour since last one decade are determined using decadal mean data. Water level mean of past one decade for each ground water observation well is computed and compared with the respective water level data of the given monitoring to determine the decadal mean water level fluctuation.

3.5.1 Mean of May (2005:2014) & May 2015

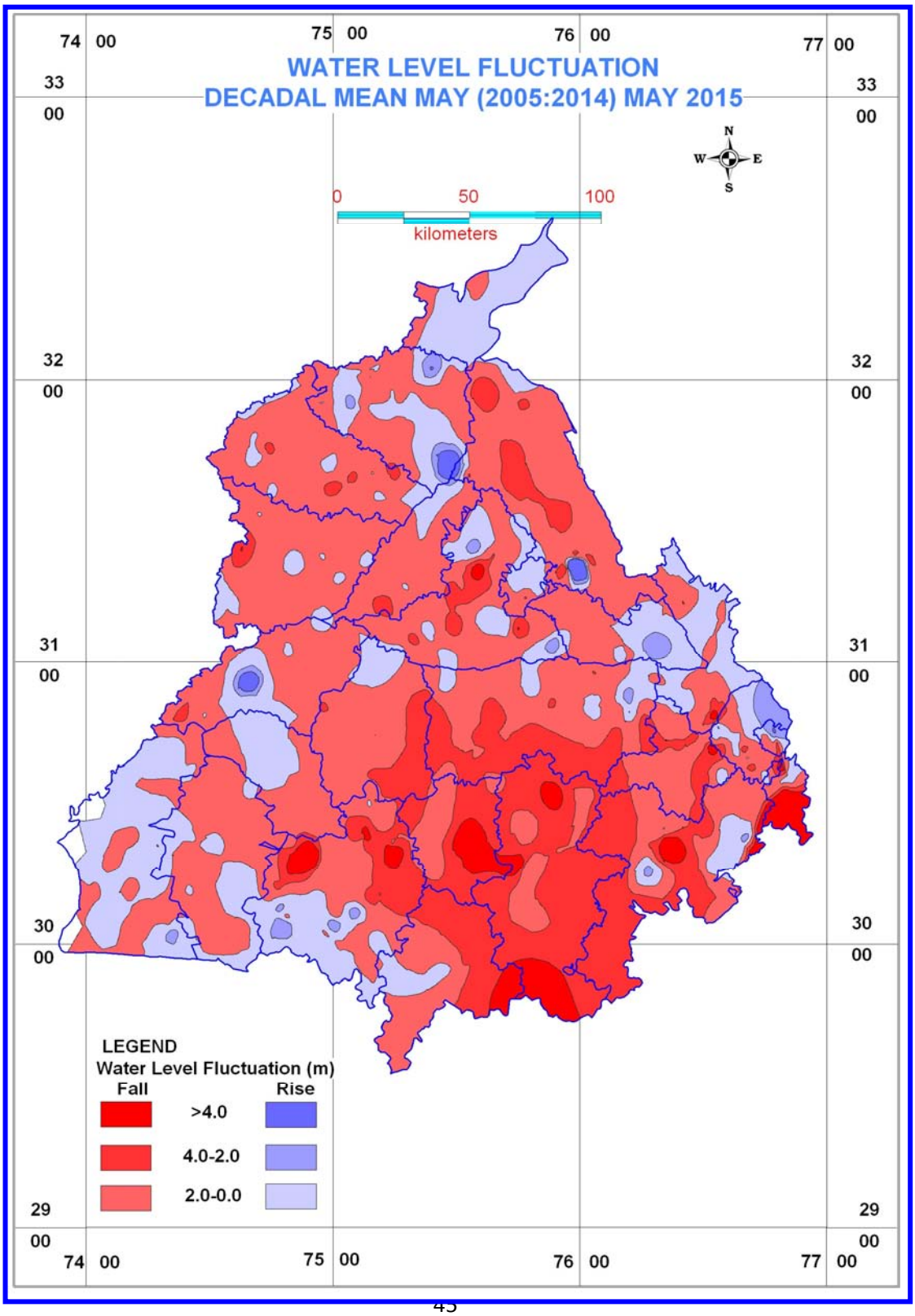
The behavioral pattern of decadal mean fluctuations during of aforesaid period is discussed in the following paragraph along with fluctuation map **(Fig. 14).** Water level fluctuations data are given in the Annexure-IV (Col-4).

The decadal mean fluctuations show that decline in 72% of observation wells monitored covering about 76% area of the state. The decline has been observed in south and central parts of the state covering the parts of Amritsar, Tarntaran, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, Moga, Barnala, Sangrur, Patiala and Mansa districts. The decline of 0-2 m has been observed in about 54% of wells and 57% of area. Water level decline of 2-4 m is observed in 16% of the wells and 17% of the area. Water level decline of >4m is observed in about 2% of the wells and 2% of area.

Rise in water level has also been observed in 28% of wells and 23% of area in Pathankot, Pathankot, Gurdaspur, Amritsar, Tarntaran, Kapurthala, Hoshiarpur, Nawanshahr, Jalandhar, Ropar and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in Ferozpur, Fazilka, Muktsar, Bathinda and Faridkot districts. Water level rise in the range of 0-2 m is observed in 25% of wells and 21% of the area. Water level rise of 2-4m is observed in 2%of wells and 1% of the area. Water level rise of >4m is observed in about 1% of the wells and 1% of area.

Summarized details of behaviour of water level fluctuation Decadal Mean(May 2005:2014)-May 2015								
Water level fluctuation(m)	Fall				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	54	16	2	72	25	2	1	28
Area covered	57	17	2	76	21	2	1	24

Fig 14


WATER LEVEL FLUCTUATION
DECADAL MEAN MAY (2005:2014) MAY 2015
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
N
W
E
S
0
50
100
kilometers
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.5.2 Mean of August (2005:2014) & August 2015

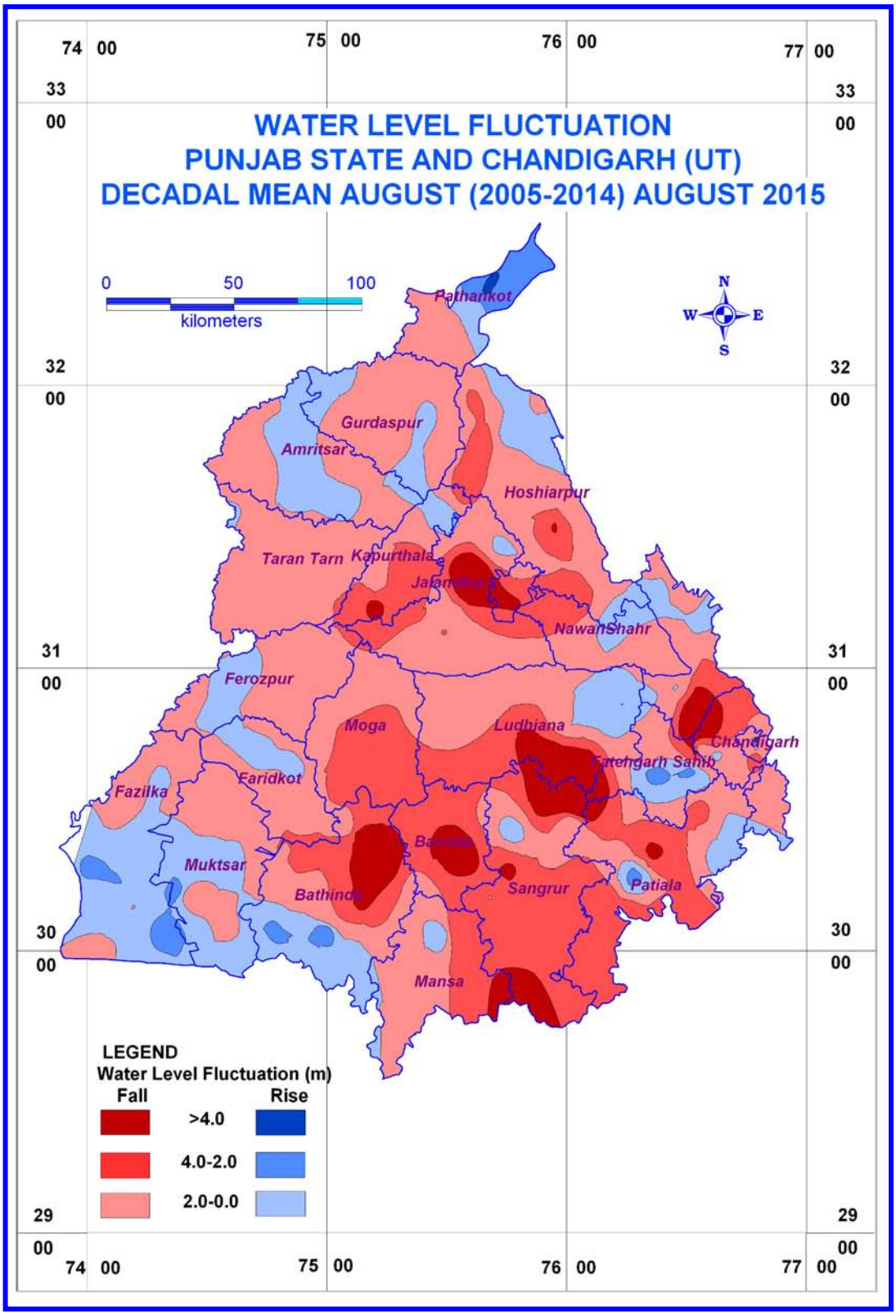
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map **(Fig. 15).** Water level fluctuations data are given in the Annexure-IV (Col-5).

The decadal mean fluctuations show that decline in 69% of observation wells monitored covering about 78% area of the state. The decline has been observed in all districts of the state. The decline of 0-2 m has been observed in about 46% of wells and 48% of area. Water level decline of 2-4 m is observed in 13% of the wells and 24% of the area covering the parts of Hoshiarpur, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, SAS Nagar, Chandigarh, Moga, Barnala, Sangrur, Patiala and Mansa districts.. Water level decline of >4m is observed in about 10% of the wells and 6% of area in isolated patches.

Rise in water level has also been observed in 31% of wells and 22% of area in Pathankot, Hoshiarpur, Ropar and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in Ferozpur, Fazilka, Muktsar, Bathinda and Faridkot districts. Water level rise in the range of 0-2 m is observed in 26% of wells and 20% of the area. Water level rise of 2-4m is observed in 4%of wells and 2% of the area. Water level rise of >4m is observed in about 1% of the wells and 1% of area. Summarized details of seasonal water level fluctuation in different ranges are given in table below

Summarized details of behaviour of water level fluctuation Decadal Mean(August 2005:2014)- August 2015								
Water level fluctuation(m)	Fall				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	46	13	10	69	26	4	1	31
Area covered	48	24	6	78	20	1	1	22

Fig 15


WATER LEVEL FLUCTUATION
PUNJAB STATE AND CHANDIGARH (UT)
DECADAL MEAN AUGUST (2005-2014) AUGUST 2015
0 50 100
kilometers
N
W E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Kapurthala
Jalandhar
Nawanshahr
Ferozpur
Moga
Ludhiana
Chandigarh
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Bathinda
Sangrur
Patiala
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

3.5.3 Decadal Mean November (2005:2014) & November 2015

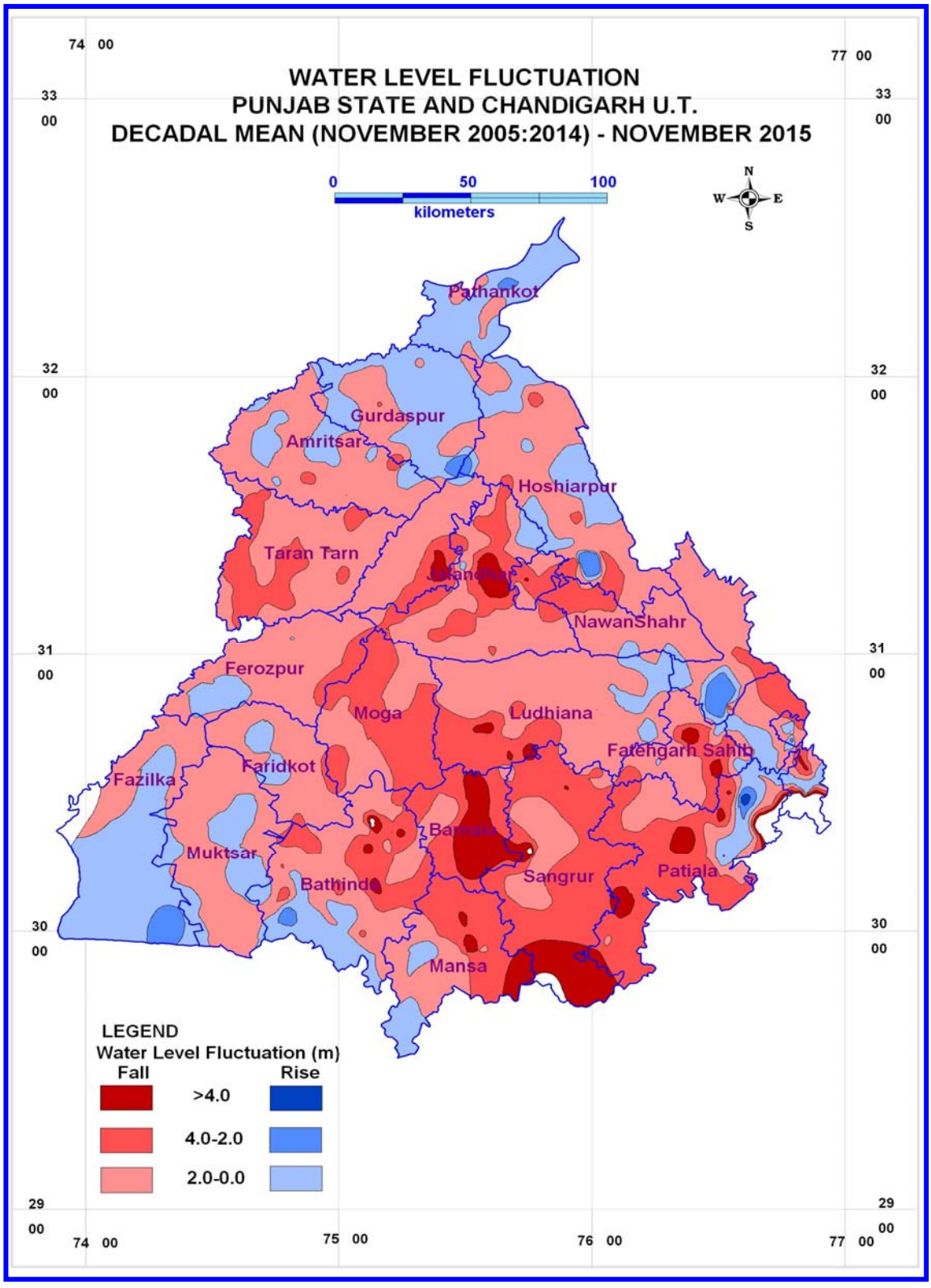
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map **(Fig. 16).** Water level fluctuations data are given in the Annexure-IV (Col-6).

The decadal mean fluctuations show that shows decline in 77% of observation wells monitored covering about 79% area of the state. The decline has been observed in all districts of the state. The water level decline in range of 0-2m has been observed in about 51% of wells and 50% of area. Water level decline in range of 2-4m is observed in 20% of the wells and 24% of the area in parts of Jalandhar, Hoshiarpur, Ludhiana, Moga, barnala, Bathinda, Sangrur, Patiala and Fatehgarh sahib districts. Water level decline of >4m is observed in about 6% of the wells and 5% of area in parts of Ludhiana, Moga, barnala, Bathinda, Sangrur, Patiala and Fatehgarh sahib districts.

Rise in water level has also been observed in 23% of wells and 21% of area in Pathankot, Gurdaspur, Amritsar, Tarntaran districts in north. Rise in water level is also observed in Ferozpur, Fazilka, Faridkot, Muktsar, Bathinda and Mansa districts. Water level rise in the range of 0-2 m is observed in 21% of wells and 19% of the area. Water level rise of 2-4m is observed in 1%of wells and 1% of the area. Water level rise of >4m is observed in about 1% of the wells and 1% of area.

Summarized details of behaviour of water level fluctuation Decadal Mean(November 2005:2014)- November 2015								
Water level fluctuation(m)	Fall				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	46	19	9	74	23	3		26
Area covered	52	22	5	79	19	2		21

Fig 16


WATER LEVEL FLUCTUATION
PUNJAB STATE AND CHANDIGARH U.T.
DECADAL MEAN (NOVEMBER 2005:2014) - NOVEMBER 2015
0
50
100
kilometers
N
W
E
S
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Jalandhar
NawanShahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Sangrur
Patiala
Bathinda
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00

3.5.4 Decadal Mean of January (2006:2015) & January 2016

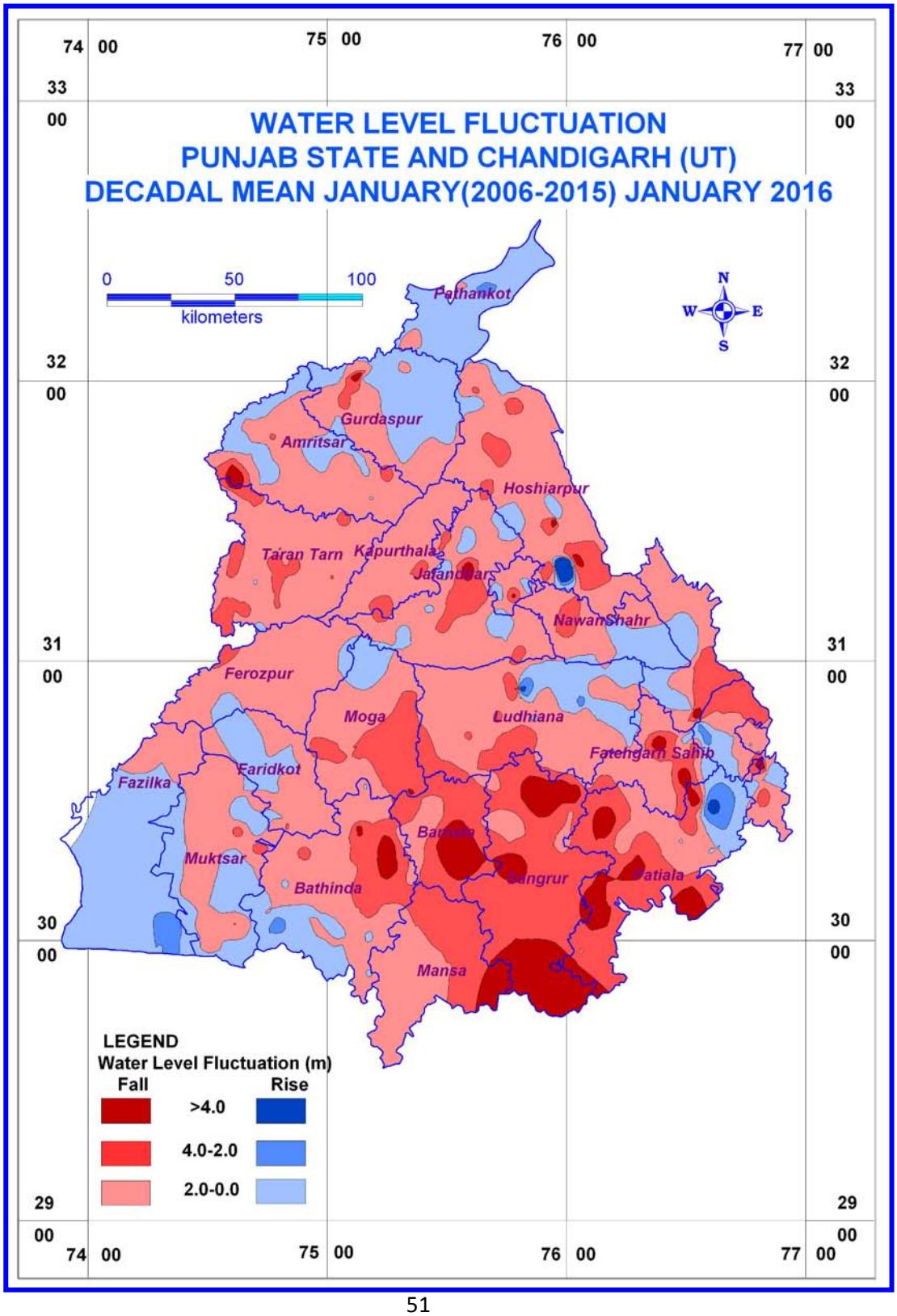
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map **(Fig. 17).** Water level fluctuations data are given in the Annexure-IV (Col-7).

The decadal mean fluctuations show that decline in 73% of observation wells monitored covering about 77% area of the state. The decline has been observed in all districts in the state. The decline of 0-2 m has been observed in about 51% of wells and 52% of area. Water level decline of 2-4 m is observed in 17% of the wells and 20% of the area. Water level decline of >4m is observed in about 6% of the wells and 5% of area.

Rise in water level has also been observed in 27% of wells and 23% of area in Pathankot, Gurdaspur, Amritsar, Tarntaran, Kapurthala, Hoshiarpur, Nawanshahr, Ropar and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in Ferozpur, Fazilka, Muktsar, Bathinda and Faridkot districts. Water level rise in the range of 0-2 m is observed in 25% of wells and 20% of the area. Water level rise of 2-4m is observed in 1%of wells and 2% of the area. Water level rise of >4m is observed in about 1% of the wells and 1% of area.

Summarized details of behaviour of water level fluctuation Decadal Mean(**January** 2006:2015)- **January** 2016								
Water level fluctuation(m)	Fall				Rise			
%age	2-0	4-2	>4	Total	2-0	4-2	>4	Total
Wells monitored	51	17	6	73	25	1	1	27
Area covered	52	20	5	77	20	2	1	23

Fig 17


WATER LEVEL FLUCTUATION
PUNJAB STATE AND CHANDIGARH (UT)
DECADAL MEAN JANUARY(2006-2015) JANUARY 2016
0 50 100
kilometers
N
W E
S
74 00
75 00
76 00
77 00
33 00
32 00
31 00
30 00
29 00
Pathankot
Gurdaspur
Amritsar
Hoshiarpur
Taran Tarn
Kapurthala
Jalandhar
Nawanshahr
Ferozpur
Moga
Ludhiana
Fatehgarh Sahib
Faridkot
Fazilka
Barnala
Muktsar
Sangrur
Patiala
Bathinda
Mansa
LEGEND
Water Level Fluctuation (m)
Fall
Rise
>4.0
4.0-2.0
2.0-0.0

4.0 GROUND WATER QUALITY IN PUNJAB STATE

Evaluation of ground water quality through concentration of its physical, chemical and biological parameters is essential to determine its suitability for the intended use. It helps not only in finding its suitability; it also helps in taking effective remedial measures for its improvement on scientific lines. In most of rural and semi-urban areas of Punjab State, ground water is a major resource for drinking and irrigation uses especially in areas where surface water is inadequate or unavailable. Acknowledging the importance of this aspect of ground water, C.G.W.B., N.W.R., Chandigarh monitors the ground water quality through dedicated Ground Water Monitoring Stations. These stations are either open dug wells or shallow hand pumps or purpose built peizometers of shallow depth (<40m) that are monitored four time in a year for water level measurements and once a year for quality assessment.

During May 2015, ground water samples were collected from these structures spread uniformly over 21 districts of Punjab. Recognizing the enormity and severity of the problem of contamination of ground water by Arsenic and Iron, water samples were also collected from ground water monitoring stations from all the districts of Punjab State for measurement of arsenic concentration under the quality-monitoring program. Therefore, samples were collected in two sets of 1 liter each and one of the sets of samples was acidified '*in situ'* with 1:1 HCl to bring the pH of the sample to below 2.

The water samples were analyzed for major cations (Ca, Mg, Na, K) and anions (CO_3, HCO_3, Cl, NO_3, SO_4 F,PO_4) in addition to pH, EC, SiO_2 and TH as $CaCO_3$ in the Regional Chemical Laboratory by following 'Standard analytical procedures' as given in APHA 2012. Results of chemical analysis of 284 No. water samples are placed in Appendix-I.

The acidified water samples were analyzed for total arsenic (As) and Iron. Arsenic (total) was estimated by atomic absorption using continuous hydride generation technique while Iron was determined by UV-VIS spectrophotometer. Analytical results of are placed in Annexure II.

4.1 Composition of Ground Water

The district-wise concentration range of various chemical components in ground water is depicted in Table 4. The chemical composition of ground water of Punjab state is discussed below.

pH : The ground water is slightly to moderately alkaline in nature. The pH values range from 7.02 at Sibochak, Hazipur block in Hoshiarpur district to 9.51 Mofar , Jhunir block in Mansa district.

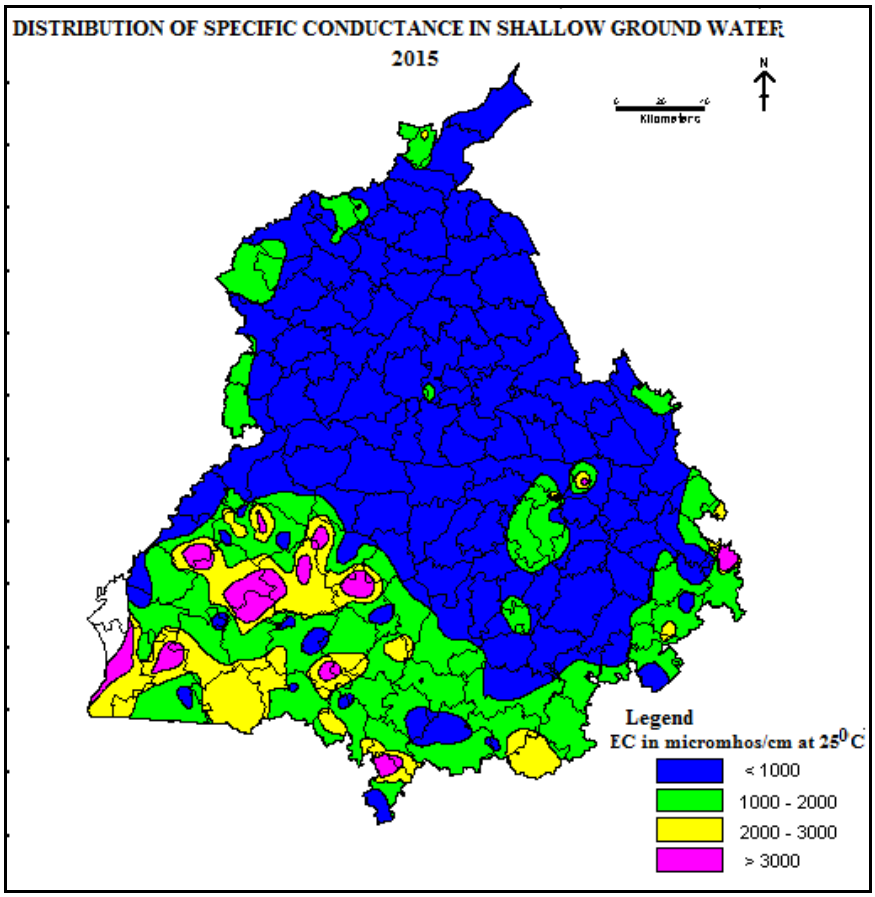
Specific Conductance**:** salinity of ground water is measured in terms of EC ***(***Specific Conductance). The ground water is found to have low to very high salt content as the EC of well water ranges from 180 μS/cm. at Nawapind, Patahnkot block in district Pathankot to 8970 μS/cm at Isarpur, Dera Bassi block in district SAS Nagar.

Grouping water samples based on EC values, it is found that 50.3% have EC less than 750, 42.3% between 750 and 3000 and the remaining 7.4% of the samples have EC above 3000μS/cm. The Plate showing aerial distribution of EC with intervals corresponding to limits assigned for desirable, permissible and unsuitable classes of waters indicates that desirable class of waters occur in northern and central area of the State. The ground water occurring in the southern and southwestern parts comprising of Bhatinda, Faridkot, Ferozepur, and Muktsar districts is mostly saline and not suitable for drinking uses (Fig. 18). Isolated saline patches are also found in Mansa, Moga, Sangrur and SAS Nagar districts.

Table-4 : Range of Chemical Constituents in Groundwater of Punjab State

Sr. No	DISTRICT	No. of	Conc	pH	EC in µS/cm at 25^{0}C	CO_3	HCO_3	Cl	SO_4	NO_3	F	PO_4	Ca	Mg	Na	K	SiO_2	TH as $CaCO_3$	As	Fe
		Samples	Range			(<---------- mg/l----------)														
1	AMRITSAR	8	Min	7.83	363	0	208	9	10	21	0.07	BDL	27	5.6	28	2.8	15	133	BDL	BDL
			Max	8.4	1374	20	554	117	100	76	0.79	0.13	67	46	188	24	22	248	0.06	7.66
2	BARNALA	4	Min	8.51	250	12	109	14	BDL	1.3	0.54	BDL	21	20	5.1	3	14	155	0.001	BDL
			Max	9.18	1140	71	471	84	90	26	0.78	BDL	37	40	220	8.6	26	258	0.003	0.3838
3	BHATHINDA	26	Min	7.92	300	0	97	7	55	BDL	0.10	BDL	4.1	4.9	4.1	2.7	6.6	83	BDL	BDL
			Max	9.46	4880	202	1352	386	680	314	4.5	0.12	99	170	1126	265	128	824	0.004	4.5
4	FARIDKOT	13	Min	7.94	444	0	85	35	50	3.8	0.11	BDL	12	13	57	1.8	4	103	BDL	BDL
			Max	9.17	8653	131	567	1544	3100	140	4.3	0.04	371	328	1603	194	24	2276	0.013	1.7697
5	FATEHGARH SAHIB	9	Min	8.49	456	12	125	10	10	1.1	0.09	BDL	8.2	22	49.0	3.5	17	113	BDL	0.0363
			Max	8.93	1587	41	268	277	135	207	1.15	0.20	25	95	192	8.5	27	421	0.003	13.04
6	FIROZEPUR	32	Min	7.74	517	0	133	14	16	BDL	0.22	BDL	8.2	7.5	23	3.4	1.4	52	BDL	BDL
			Max	9.15	7592	178	809	1769	1730	472	9.11	0.30	128	333	1206	238	25	1556	0.009	6.989
7	GURDASPUR	19	Min	7.76	215	0	117	7	6	2.7	0.10	BDL	25	6.2	6.5	0.8	15	20	BDL	BDL
			Max	8.78	2096	46	517	255	175	259	0.79	2.15	81	62	213	209	33	378	0.027	3.48
8	HOSHIARPUR	25	Min	7.02	202	0	85	3.5	2	1	0.05	BDL	8.2	6.2	9.7	0.8	14	93	BDL	0.0117
			Max	8.65	1031	47	350	112	66	120	0.91	1.88	78	44	107	76	38	335	0.015	10.645
9	JALANDHAR	13	Min	8.1	215	0	107	10	16	1.03	0.03	BDL	8.2	2.5	8.6	1.9	12	31	BDL	0.0464
			Max	8.85	1120	82	286	111	145	55	1.20	0.11	41	42	190	11	27	245	0.007	8.62
10	KAPURTHALA	8	Min	8.1	305	0	107	6.9	21	13	0.13	BDL	16	2.5	21	1.6	16	51	0.001	0.0013
			Max	8.7	810	59	274	124	95	110	0.49	0.07	78	32	165	9.5	29	316	0.007	1.057
11	LUDHIANA	15	Min	8.17	380	0	48	10	18	13	0.12	BDL	10	21	9.1	4	11	123	BDL	0.0644
			Max	8.87	3476	140	464	560	300	392	1.15	0.02	66	197	401	191	26	877	0.002	2.0971
12	MANSA	9	Min	8.63	240	5.9	97	7.0	52	0.6	0.321	BDL	12	7.5	4.4	4	8.9	62	0.001	0.0051
			Max	9.51	5235	125	845	681	1240	229	7.33	0.03	62	110	1141	134	31	608	0.008	0.9132
13	MOGA	7	Min	7.95	270	0	157	14	12	0.37	0.20	BDL	12	27	11	3.6	15	144	BDL	BDL
			Max	9.42	3670	119	568	425	1348	67	2.43	0.08	99	178	566	16	22	979	0.009	0.3155
14	MUKTSAR	8	Min	8.06	1063	0	266	56	128	0.36	0.27	0.02	25	27	101	9.5	5.1	227	BDL	BDL
			Max	8.82	5487	73	997	1260	560	146	6.05	0.11	260	150	848	467	25	1113	0.006	0.78
15	NAWANSHAHR	6	Min	8.29	350	0	121	14	5	12	0.21	BDL	10	22	11	2.1	23	133	0.001	0.023
			Max	8.63	850	30	235	140	78	116	0.38	0.08	21	55	85	44	30	268	0.014	1.5991
16	PATHANKOT	13	Min	7.7	180	0	77	4.0	8.0	2.3	0.03	BDL	16	1.9	2.1	0.7	6	105	0.001	BDL
			Max	8.83	2101	46	289	206	260	267	0.43	0.25	141	50	146	397	39	334	0.003	2.3086
17	PATIALA	19	Min	8.25	322	0	107	6.9	14	0.8	0.14	BDL	4.1	13	8.2	1.5	15	87	BDL	BDL
			Max	9.05	2595	82	416	228	720	203	3.5	0.29	29	84	457	97	25	374	0.003	0.5974
18	ROPAR	10	Min	7.9	350	0	71	6.9	5	0.62	0.01	BDL	12	20	13	0.5	15	144	BDL	BDL
			Max	8.8	1550	59	464	174	135	157	0.70	0.06	74	75	172	14	23	423	0.07	7.166
19	SANGRUR	16	Min	8.39	352	12	173	6.9	9.1	0.2	0.22	BDL	6.2	1.2	22	3.1	17	72	BDL	0.0269
			Max	9.27	3024	216	476	315	450	122	5.16	0.02	41	69	636	38	37	349	0.024	0.6486
20	SAS NAGAR	11	Min	7.75	601	0	71	14	7	2.45	0.28	BDL	17	18	71	1.0	12	144	BDL	BDL
			Max	9.15	8970	140	559	1549	1518	700	2.9	0.04	149	343	1000	600	24	1783	0.005	25.825
21	TARANTARAN	13	Min	8.15	429	0	178	9	10	BDL	0.11	BDL	4.1	2.5	31	5.0	2.0	79	BDL	BDL
			Max	9.13	1457	92	631	96	130	91	6.35	0.54	43	52	344	42	31	360	0.2	5.42

Fig:18



Hardness: It is reported in terms of $CaCO_3$. The hardness value of ground water generally ranges from 20 to 2276 mg/l. The lowest hardness value is found at Salechak, Kalanaur block in district Gurdaspur and highest at Kilanau in district Faridkot.

***Calcium and Magnesium*:** The concentration of calcium ranges between 4.1 and 371mg/l. The lowest concentration was observed at three locations, namely, Kalyan in Patiala district, Khalra in Taran Taran district and Gurusar in Bhatinda district, whereas, highest value is observed at Kilanau in district Faridkot. It is found to be a dominant cation (>50% of the sum of cations) in 8.5% samples. In majority of ground water samples, calcium concentration is less than 100 mg/l (97.5%). Calcium is very low in some districts, though it is very essential element for drinking and irrigation purposes. Magnesium concentration ranges between 1.2 at Bugra, block Dhuri, district Sangrur

and 343 mg/l at Isarpur, Dera Bassi block in district SAS Nagar. However, magnesium is less than the desirable limit of 30 mg/l in 49% samples and less than the maximum permissible limit of 100 mg/l for drinking waters (BIS 2012) in 94.4% samples. In more than half of well waters examined, Ca + Mg are the dominant cations having their concentration almost 50% of the total cation determined.

***Sodium and Potassium*:** Sodium is the dominant cation in majority of ground waters of districts Barnala, Bhathinda, Faridkot, Ferozepur, Mansa, Moga, Muktsar, Patiala, Sangrur, SAS Nagar and Tarantaran. Its concentration varies widely from 2.1 mg/l at Nawapind, district Pathankot to 1603 mg/l at Kilanau in district Faridkot. Sodium concentration is less than 100 mg/l in more than half of well waters under consideration. Potassium is found to be present in low concentration. In majority of the samples analyzed, the potassium content is less than 10 mg/l (69.4%). It ranges from 0.5 mg/l at Brahampur, block Anandpur Sahib, district Ropar to 600 mg/l at Isarpur, Dera Bassi block in district SAS Nagar. High concentration of potassium (>100mg/l) is found in 5.6% samples. Its higher concentration indicates contamination of ground water from various point (industry, sewage) as well as non-point sources (agriculture).

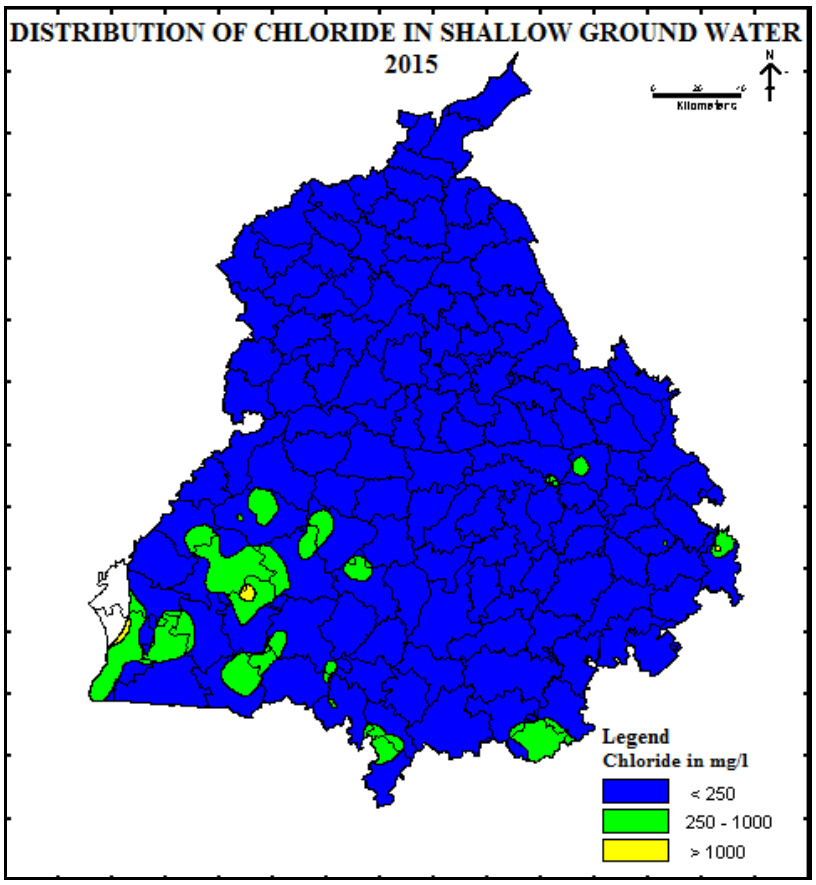
***Carbonate and bicarbonate**:* Carbonate is found in a few samples and it varies from nil to 216 mg/l at Longowal in district Sangrur. Bicarbonate is the dominant anion and it ranges from 48 mg/l at Doraha, district Ludhiana to 1352 mg/l at Gurusar, block Phul, district Bhatinda.

***Chloride*:** The chloride concentration in ground water varies broadly between 3.5 mg/l at Dulmiwal, block Dauya, district Hoshiarpur and 1769 mg/l at Bannawala, block Gurharsahai in district Firozepur.

Chloride concentration above 400 mg/l gives salty taste to water and based on these aesthetic considerations, BIS has recommended a desirable limit of 250 mg/l for chloride in drinking water. This limit can be extended to 1000 mg/l in case of absence of a source with desirable concentration. Grouping of samples in these categories based on chloride content, it is found that Chloride is less than 250 mg/l in 89.4 % of the samples, between 250 and 1000 mg/l in 9.2 % samples and only 1.4% of the samples

are found to have Chloride above 1000 mg/l. Map showing spatial distribution of Cl contents in ground water (Fig. 19) indicates that Cl is below 250 mg/l in most of the districts and its concentration is between 250 and 1000 mg/l in, Gurdaspur, Ludhiana, Fatehgarh Sahib and SAS Nagar district as well as southern and southwestern parts of the State. Cl is more than 1000 mg/l in isolated places in Faridkot,Ferozepur, Muktsar and SAS Nagar district.

Fig: 19

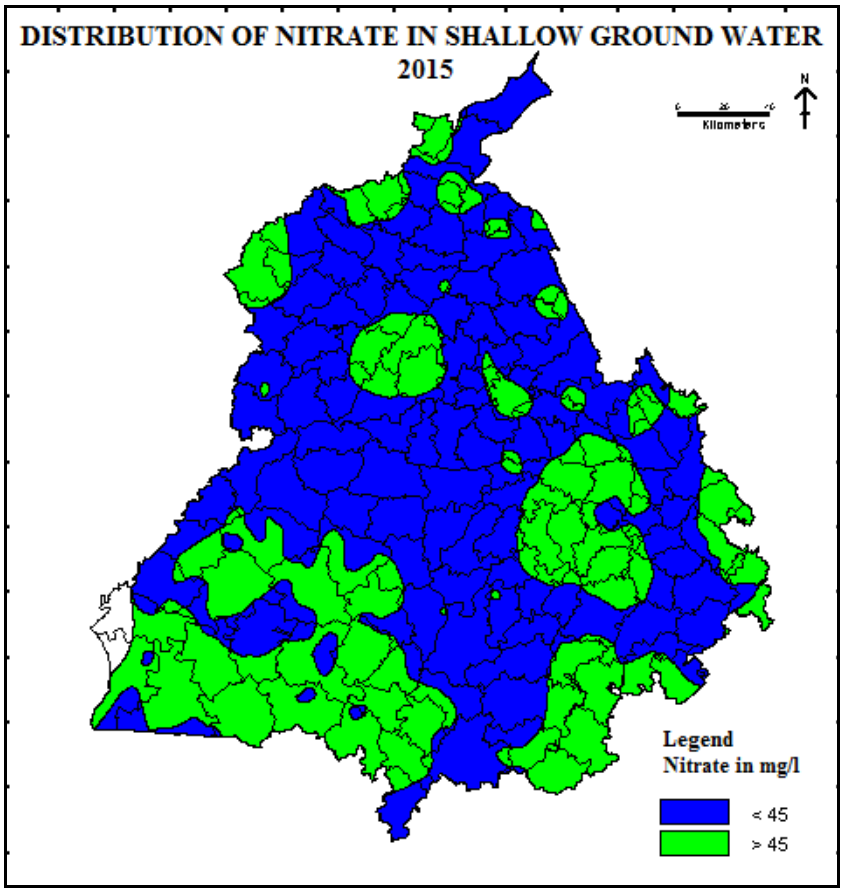


***Sulphate*:** The sulphate (SO_4) content in ground waters was found to be nil at Mahal kalan n district Barnala. The highest value of 3100 mg/l of sulphate has been observed at Kilanau in district Faridkot. In majority of ground water samples (80.3%), the concentration of sulphate is below 200 mg/l.

***Nitrate*:** Nitrate, an indicator of domestic, irrigation and industrial contamination, is found in significant number of samples. Its concentration in groundwater ranges from trace at a few places to 700 mg/l at Isarpur, Dera Bassi block in district SAS Nagar.

Occurrence of nitrate in ground water above 5.0 mg/l reflects contamination at some stage of its percolation and circulation. The probable sources of nitrate contamination of ground water are through excessive application of fertilizers, bacterial nitrification of organic nitrogen, and seepage from animal and human wastes and atmospheric inputs. BIS permits a maximum concentration of 45 mg/l nitrate in drinking water. Considering this limit, it is found that 69.4% of the samples, spread over the entire State, have nitrate below 45 and 30.6% have nitrate more than 45 mg/l. No specific trend of nitrate distribution is observed in the State (Fig. 3). Ground water with nitrate concentration above 45 mg/l is observed in all parts of the State. A considerable area of the southern and southwestern part of the state have nitrate concentration exceeding 45 mg/l (Fig. 20). Furthermore, quite a significant number water samples (15.1%) from Bhatinda, Faridkot, Ferozepur, Ludhiana, Mansa, Muktsar, Ropar, Sangrur and SAS Nagar districts have nitrate above 100 mg/l.

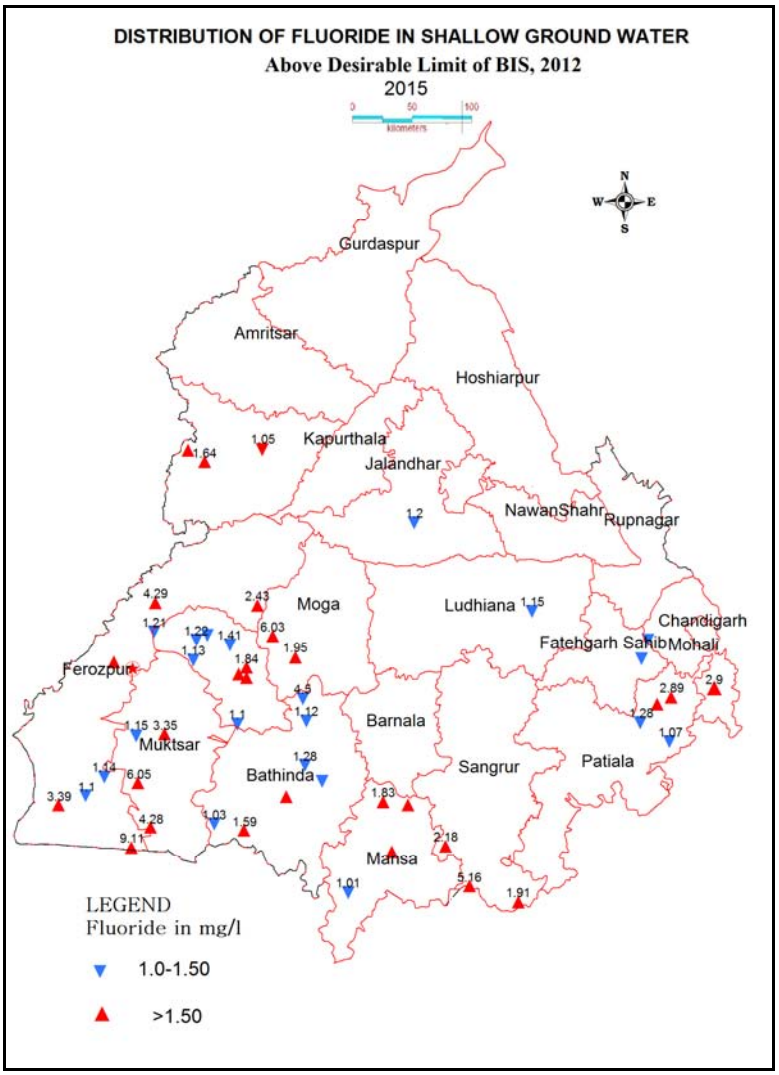
Fig:20



***Fluoride*:** The fluoride (F) content in ground water of the State is generally less than 1.0 mg/l (82%). It ranges from 0.01 at Dumewal, block Nurpur bedi in district Ropar to 9.11 mg/l at Bazidpura, block Abohar, district Firozepur.

Fluoride in small amounts in drinking water is beneficial while in large amounts it is injurious. BIS recommends that fluoride concentration up to 1.0 mg/l in drinking water is desirable, up to 1.5 mg/l is permitted and above 1.5 mg/l is injurious. Classification of samples based on this recommendation, it is found that 82.4% samples have fluoride in desirable range, 8.1% in the permissible and the remaining 9.5% have fluoride above 1.5 mg/l.

Fig 21



Map showing spatial distribution of fluoride contents in ground water (Fig. 21) indicates that ground water in most parts of the State has desirable concentration of fluoride.
Ground waters with fluoride above 1.5 mg/l are found mainly in Bathinda, Faridkot, Ferozepur, Mansa, Muktsar, Patiala and Sangrur districts of the State. Isolated patches of high Fluoride are also observed in Moga and SAS Nagar districts. It is worth mentioning that high fluoride waters are encountered in areas where agriculture activities are predominant. It indicates the possibility that fluoride has come from the phosphatic fertilizers, which have fluoride as impurity.

Phosphate: It is essential nutrient for plant growth and its concentration varies from nil to 0.15 mg/l in the ground water of the area which is much less than the proposed general index of maximum desirable concentration of 0.2 mg/l. High phosphate has been reported only at five locations namely, Bamrota(0.25 mg/l) in district Pathankot, Tuhas(0.29 mg/l) in Pataiala district, Bazidpur bhoma (0.30 mg/l), in Firozepur district, Kalsian Kalan (0.46 mg/l) and Khalra (0.54 mg/l) in district Taran Taran. Exceptionally high values of 1.88 mg/l at Bangala, block Mukerian in district Hoshiarpur and 2.15 mg/l at Pandori Dham, block Dinanagar, in district Patahnkot were also observed. Phosphate has a tendency to get fixed to the soil due to its low mobility, therefore, is rarely found in ground water.

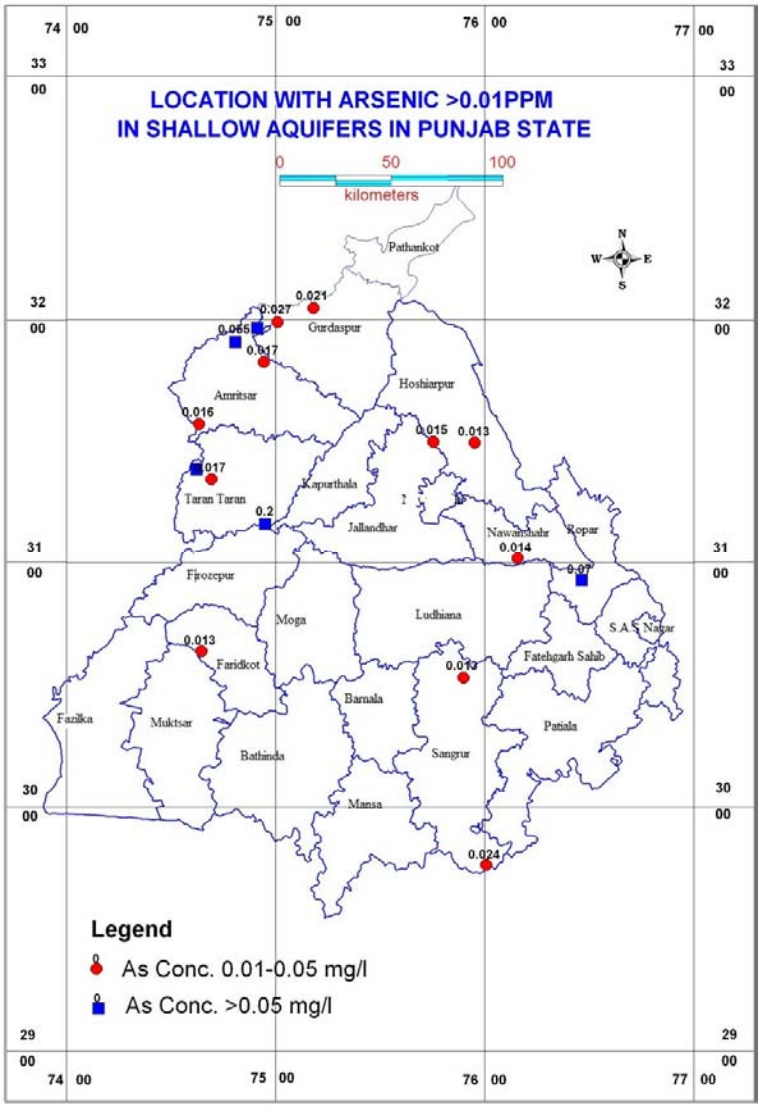
4.2 Trace Elements in Ground Water

Arsenic: As per the analytical data generated the arsenic concentration varies from below detection limit at several places to 0.200 mg/l at village Harike (HP), block Patti in Taran Taran district. Isolated cases from eight districts namely, Amritsar, Faridkot, Gurdaspur, Hoshiarpur, Nawanshahr, Ropar, Sangrur and Taran Taran have Arsenic concentration more than the permissible limit of 0.01mg/l. The locations with arsenic concentration >0.01 mg/l alongwith block details, well depth, water level during May 2015 are tabulated (Table 5) and placed on map of Punjab (Fig 22).

Table 5: Ground Water Monitoring Stations with Arsenic concentration above 0.01 mg/l (2015)

S.No	District	Block	Location	Well Depth	Water Level	Aquifer	As
				in mt	mbgl		>0.01 mg/l
1	Amritsar	Ajnala	Goaggomahal	69.00	5.35	Alluvium	0.055
2	Amritsar	Ajnala	Ramdas	9.50	8.35	Alluvium	0.06
3	Faridkot	Faridkot	Sukhanwala	30.00	3.79	Alluvium	0.013
4	Gurdaspur	Fatehgarh Churian	Madipur	11.80	9.56	Alluvium	0.017
5	Gurdaspur	Kalanam	Salehchak	40.00	3.40	Alluvium	0.021
6	Gurdaspur	Dere Baba Nanak	Mullowali	10.00	3.24	Alluvium	0.027
7	Hoshiarpur	Hoshiarpur-II	Rampur Colony	20.00	21.35	Alluvium	0.013
8	Hoshiarpur	Hoshiarpur-I	Sham Chourasi	14.90	12.05	Alluvium	0.015
9	Nawashahar	Nawanshahr	Bahlore Kalan	62.41	5.01	Alluvium	0.014
10	Ropar	Ropar	Bada Chautta	5.60	4.05	Alluvium	0.070
11	Sangrur	Maler Kotla	Maler Kotla	40.00	34.63	Alluvium	0.013
12	Sangrur	Andana	Bulan	13.50	-	Alluvium	0.024
13	Tarn Taran	Chogawan	Mahawa	23.00	13.08	Alluvium	0.016
14	Tarn Taran	Bhikhiwind	Bhikhiwind	54.00	15.03	Alluvium	0.017
15	Tarn Taran	Bhikhiwind	Khalra	13.00	13.08	Alluvium	0.070
16	Tarn Taran	Patti	Harike	13.10	11.35	Alluvium	0.200

Fig: 22

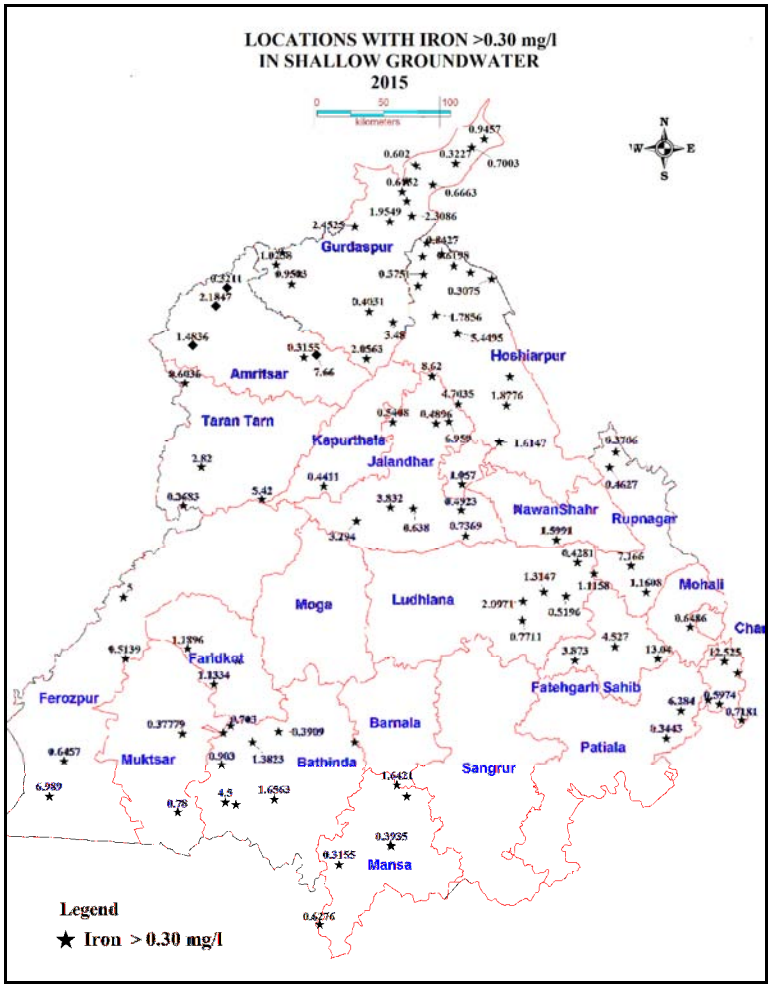


Iron: The concentration of iron (total) in ground water of the study area ranges from below detection limit to 25.825 mg/l in hand pump located at Isarpur village, block Derabassi in SAS Nagar district. The point values of locations with Iron above BIS permissible limit of 0.30 mg/l for drinking water are depicted in Fig 23 and its observed that 34.9% samples have iron concentration exceeding this limit. The high iron concentration in untreated ground water gives it a metallic taste.

Iron is an essential nutrient for man, animal, and plants. It is found in both the ferrous (Fe^{2+}) and ferric (Fe^{3+}) state. Under reducing conditions in water, the mobile ferrous ion

is present but upon exposure to air, it is oxidized to the less mobile form and gets precipitated as the ferric ion. In water, such iron precipitates produce reddish brown stains on porcelain, enamel, plumbing, and clothing. The solubility of iron increases with decreasing pH. Iron bacteria are often associated with foul taste and odour, causes encrustation in pipes and leads to 'red rot' disease. Iron may be present in natural sources in igneous rocks, amphiboles, ferro manganate soils and in combined form i.e. as iron sulphide, iron sulphite, magnetite, iron oxide etc. It may be constituent of sandstone rocks, oxides, carbonates, sulphides or iron clay minerals but these are absent in study area. Anthropogenically, industrial wastes, the burning of coke and coal, acid mine drainage, mineral processing and corrosion of iron and steel may contribute iron to environment.

Fig 23



4.3 Types of Ground Water

Considering the predominance of the cation and anion in the chemical composition of ground water, its type is determined and its relation with its occurrence in an area as well as with its salinity is studied. It is found that no discernible relationship between type of water and its occurrence in any particular area could be established. Nearly all types of waters are available in each district of the State. However, study of relation of water type with salinity of the water clearly indicates that about 42 % ground waters of the State are fresh, have low salinity and predominance of calcium + magnesium cations and bicarbonate as anion. About 50 % ground waters having intermediate salinity and are of mixed type. In these waters, mostly HCO_3 as anion dominates but no individual cation predominates. At some places HCO_3-type of waters with sodium as dominant cation are also encountered in low to moderately saline ground waters. This can be attributed either to precipitation of $CaCO_3$ due to loss of CO_2 or dissolution of Na-salts from the topsoil layers or to ion exchange reaction during the downward percolation of water. At some isolated locations, sulphate is found to be dominant anion. In the remaining ground waters, where salinity is high; mostly Na is the dominant cation and Cl or Cl + SO_4+NO_3 (Mixed anion) are dominant. Nevertheless, a few exceptions have also been found in these simple and well-defined types of ground waters.

4.4 Suitability of Ground Water for Drinking

Salinity, chloride, fluoride and nitrate are the important parameters that are normally considered for evaluating the suitability of ground water for drinking uses. Based on recommendations made for these parameters by BIS, it is found that ground water at quite a few places is not suitable for drinking uses because of either EC/Cl/F/NO_3 or all of them. It is observed that unsuitable quality of ground water occurs in the southern and southwestern regions, while in the northern and central areas ground water is of suitable quality for drinking uses. Table-6 below shows district-wise distribution of ground waters in different classes of suitability based upon EC, Cl, F and NO_3 contents. District-wise availability of potable ground waters is also shown as bar diagram in Plate 3. It (base GWMS-2015) clearly depicts that most of the groundwater occurring in the districts Barnala, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jallandhar, Kapurthala,

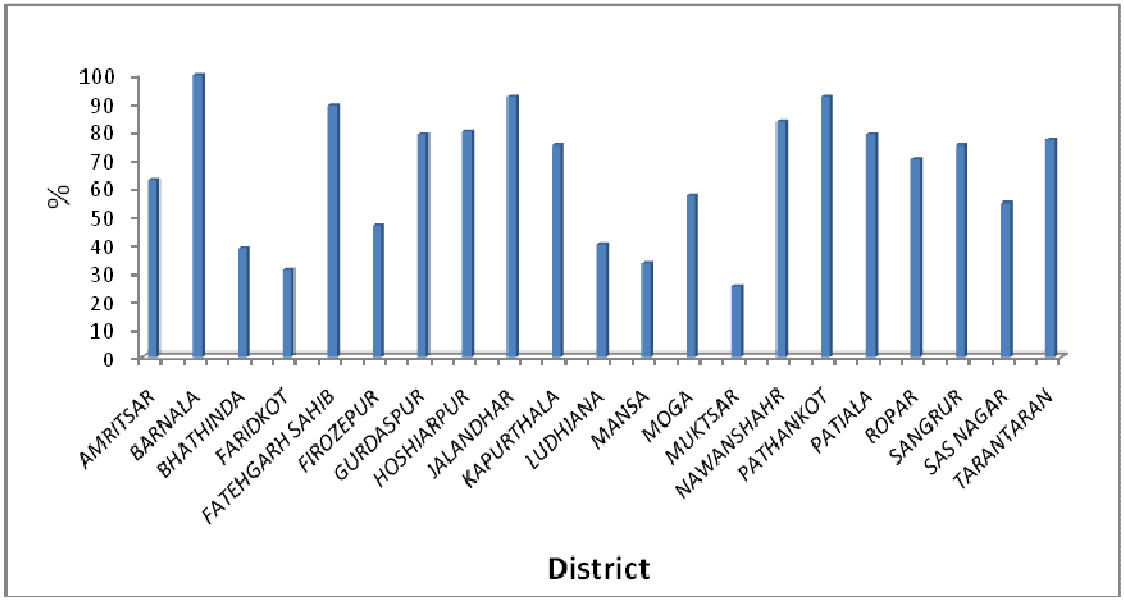
Nawanshar, Pathankot, Patiala, Sangrur and Tarantaran occupy almost 75% length of the bar and has almost all the parameters within desirable limit for drinking purposes, thus can be considered as potable. Amritsar, Moga, Ropar and SAS Nagar have intermediate ground water quality with bar length ranging between 50-75% while ground waters from the districts of Faridkot, Ferozepur and Muktsar have bar length less than 50% indicating low potable rating.

The groundwater is unsuitable for drinking purpose at 16 no. of locations where Arsenic is found to be above 0.01 mg/l. Though iron in drinking water does not pose a health hazard, its high content in groundwater at several places make it unsuitable for domestic use. Thus this ground water should only be used after suitable treatment.

Table-6: Distribution of Well Waters of Punjab State in Different Classes of Drinking Water Suitability

Sr.	District	No. of	EC in 25^0C in µS/cm			Cl in mg/L			NO_3 in mg/L			F in mg/L		
		Samples	<750	750-3000	>3000	<250	250-1000	>1000	<45	45-100	>100	<1.0	1.0-1.5	>1.5
1	Amritsar	8	5	3	0	8	0	0	5	3	0	8	0	0
2	Barnala	4	1	3	0	4	0	0	4	0	0	4	0	0
3	Bhathinda	26	6	17	3	21	5	0	10	8	8	18	5	3
4	Faridkot	13	3	6	4	8	4	1	5	4	4	7	4	2
5	Fatehgarh Sahib	9	6	3	0	8	1	0	8	0	1	8	1	0
6	Firozepur	32	7	18	7	24	7	1	19	7	6	19	5	8
7	Gurdaspur	19	14	5	0	18	1	0	15	3	1	19	0	0
8	Hoshiarpur	25	23	2	0	25	0	0	20	4	1	25	0	0
9	Jalandhar	13	12	1	0	13	0	0	12	1	0	12	1	0
10	Kapurthala	8	6	2	0	8	0	0	6	1	1	8	0	0
11	Ludhiana	15	9	5	1	14	1	0	7	4	4	14	1	0
12	Mansa	9	3	5	1	8	1	0	5	2	2	5	1	3
13	Moga	7	3	3	1	6	1	0	5	2	0	6	0	1
14	Muktsar	8	0	6	2	5	2	1	3	1	4	5	1	2
15	Nawanshahr	6	5	1	0	6	0	0	5	0	1	6	0	0
16	Pathankot	13	11	2	0	13	0	0	12	0	1	13	0	0
17	Patiala	19	7	12	0	19	0	0	17	1	1	15	2	2
18	Ropar	10	7	3	0	10	0	0	7	1	2	10	0	0
19	Sangrur	16	7	8	1	14	2	0	13	1	2	13	0	3
20	SAS Nagar	11	2	8	1	9	1	1	7	0	4	9	1	1
21	Tarantaran	13	6	7	0	13	0	0	12	1	0	10	1	2
	TOTAL	284	143	120	21	254	26	4	197	44	43	234	23	27

Plate 3, District wise Distribution of Potable Waters in Punjab



4.5 Suitability of Ground Water for Irrigation

The suitability of ground water for irrigation is generally assessed considering salinity expressed as EC, sodium in relation to calcium and magnesium in terms of SAR, sodium in relation to carbonate in terms of RSC. Range of EC and Calculated Parameters in Groundwater of Punjab State is given in Table 7. EC and SAR range from 180 to 8970 µS/cm at 25^0C and 0.10 to 35.71 respectively. Waters having high values of EC and SAR causes salinity and sodium hazards respectively when used for customary irrigation.

RSC: Alkali hazards of irrigation ground waters are estimated through the computation of Residual Sodium Carbonate (RSC), also known as Eaton's Index. Waters with RSC value <1.25 meq/L are safe for irrigational uses, RSC between 1.25 and 2.5 are marginal and waters with RSC value >2.5 meq/L are unsafe. Based on RSC values of ground waters, it is found that 66.7% of the waters are safe, 11.9% marginal and the remaining 21.5% are unfit for irrigational uses. RSC of ground waters are found to vary from below zero (-32.78) to 16.12 meq/l. However, exceptionally high RSC values, 23.99, are also encountered at Gurusar district Bathinda.

Table-7 : Range of EC and Calculated Parameters in Groundwater of Punjab State

Sr. No	DISTRICT	No. of Samples	Conc Range	EC in µS/cm at 25^{0}C	SAR	RSC meq/l
1	AMRITSAR	8	Min	363	0.83	-0.25
			Max	1374	4.92	4.17
2	BARNALA	4	Min	250	0.18	-0.91
			Max	1140	6.62	5.51
3	BHATHINDA	26	Min	300	0.12	-9.89
			Max	4880	25.82	21.93
4	FARIDKOT	13	Min	444	2.00	-40.93
			Max	8653	24.01	11.34
5	FATEHGARH SAHIB	9	Min	456	1.36	-2.94
			Max	1587	4.07	3.30
6	FIROZEPUR	32	Min	517	0.62	-25.36
			Max	7592	35.71	14.81
7	GURDASPUR	19	Min	215	0.27	-1.97
			Max	2096	5.35	2.80
8	HOSHIARPUR	25	Min	202	0.40	-2.70
			Max	1031	3.00	1.82
9	JALANDHAR	13	Min	215	0.35	-2.56
			Max	1120	10.69	3.13
10	KAPURTHALA	8	Min	305	0.69	-4.57
			Max	810	8.49	3.77
11	LUDHIANA	15	Min	380	0.30	-10.99
			Max	3476	5.89	5.43
12	MANSA	9	Min	240	0.16	-9.36
			Max	5235	25.71	16.39
13	MOGA	7	Min	270	0.29	-16.41
			Max	3670	14.67	10.17
14	MUKTSAR	8	Min	1063	2.28	-11.93
			Max	5487	12.20	3.44
15	NAWANSHAHR	6	Min	350	0.36	-2.74
			Max	850	2.84	1.70
16	PATHANKOT	13	Min	180	0.10	-2.23
			Max	2101	4.10	1.16
17	PATIALA	19	Min	322	0.30	-1.99
			Max	2595	13.65	6.06
18	ROPAR	10	Min	350	0.35	-2.79
			Max	1550	3.64	2.96
19	SANGRUR	16	Min	352	0.63	-0.62
			Max	3024	18.64	10.25
20	SAS NAGAR	11	Min	601	1.61	-28.03
			Max	8970	10.30	9.52
21	TARANTARAN	13	Min	429	0.98	-0.55
			Max	1457	33.04	13.00

The district wise distribution of ground waters in different categories of suitability for irrigational uses based on USSL and RSC considerations is given in Table-8.

Table No.8 : Irrigation Rating of Well Waters of Punjab
(Based on Eaton's index and USSL Classification)

S.	District	IRRIGATION SUITABILITY			
		EATON's INDEX (RSC in meq/l)			USSL Classification
		Safe	Marginal	Unsafe	
		<1.25	1.25-2.5	>2.5	
1	Amritsar	5	2	1	C2S1, C3S1
2	Barnala	1	0	3	C1S1, C3S1, C3S2
3	Bhathinda	16	0	10	C2S1, C3S1, C3S2,C3S3, C4S1, C4S2, C4S3, C4S4
4	Faridkot	9	2	2	C2S1, C3S1, C3S2,C3S3, C4S3,C4S4
5	Fatehgarh Sahib	5	3	1	C2S1, C3S1
6	Firozepur	18	2	12	C2S1,C3S1, C3S2, C3S3, C4S2, C4S3, C4S4
7	Gurdaspur	14	2	3	C1S1,C2S1, C3S1, C3S2
8	Hoshiarpur	23	2	0	C1S1,C2S1, C3S1
9	Jalandhar	9	2	2	C1S1, C2S1,C2S2, C3S2
10	Kapurthala	5	1	2	C2S1, C2S2, C3S1
11	Ludhiana	13	0	2	C2S1, C3S1, , C4S2
12	Mansa	5	1	3	C1S1, C2S1, C3S1, C3S2, C3S4, C4S4
13	Moga	3	1	3	C2S1, C3S1, C3S2, C3S3, C4S3
14	Muktsar	6	0	2	C3S1, C3S2, C4S2, C4S3
15	Nawanshahr	5	1	0	C2S1, C3S1
16	Pathankot	13	0	0	C1S1, C2S1, C3S1
17	Patiala	8	7	4	C2S1, C3S1, C3S2, C3S3, C4S3
18	Ropar	8	1	1	C2S1, C3S1
19	Sangrur	7	1	8	C2S1,C2S2, C3S1,C3S2, C3S3, C4S3, C4S4
20	SAS Nagar	6	2	3	C2S1,C3S1, C3S2, C4S2, C4S4
21	Tarantaran	3	1	9	C2S1,C3S1,C3S2

Most of ground waters from Amritsar, Barnala, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jallandhar, Kapurthala, Nawnshahr, Pathankot, Ropar and Taran Taran are suitable for irrigation for semi-salt tolerant crops on adequately drained soils. The waters from districts of Bhatinda, Faridkot, Ferozepur, Mansa, Muktsar, Patiala, Sangrur and SAS Nagar show wide variability in irrigation rating.

4.6 Suitability of Ground Water for Industries

Industries, in general, use water for variety of works depending upon the nature and size of the industry. As such specifications for suitability of water for industries vary widely depending upon the process in each industry. Therefore, chemical quality of water and its suitability could not be discussed due to diversified nature of industries.

4.7 Temporal Variation

The temporal changes in ground water quality are studied through percent of well water falling in different categories of suitability criteria based on concentration of important parameters such as salinity (EC), chloride, nitrate and fluoride contents. The percent well waters falling in desirable, permissible and unsuitable classes of BIS-1991 standards during 2012 are compared with percent well waters in same classes during 2011, 2012,2013,2014 and 2015. Table shows both positive and negative change in percent well waters in different suitability classes based on above parameters and overall variation in % wells from 2011 to 2015.

On perusal of the Table-9, it is evident that there is improvement in the quality of ground water from 2014 to 2015 with respect to Specific conductance as there increase by 10.3% in samples falling in low salinity category while there is an decrease in samples falling in medium (8.7%) and high(1.6%) salinity categories. Overall, there has been a decrease in concentration of Chloride indicating improvement by 3.4% in quality of ground water with reference to this parameter. But there is a slight deterioration in ground water quality with respect to Nitrate (by 3.6%) and Fluoride(by 1.6%).

However, when percent samples are compared with those of 2011, it is found that there is considerable improvement in water quality with respect to EC(6.3%), Cl(7.4%), F(3.4%) as indicated by percent increase of water samples falling in desirable class. However, nitrate concentration, in general, has increased by 12.6%, in the State. The cause of deterioration of ground water quality may be anthropogenic as no natural source nitrate is found the State.

Table 9: Periodic Variation in Suitability Classes of Well Waters of Punjab

Parameter	Class	% of Samples					Periodic Variation 2011-2015
		2011 (n=231)	2012 (n=242)	2013 (n=261)	2014 (n=276)	2015 (n=284)	
Salinity as EC	<750 µS/cm	44	44	53	40	50.3	+6.3
	750--3000	51	48	40	51	42.3	-8.7
	>3000	6	8	7	9	7.4	+1.4
Chloride as Cl	<250 mg/l	82	89	90	86	89.4	+7.4
	250 - 1000	17	10	9.5	13	9.2	-7.8
	>1000 mg/l	1	1	1	1	1.4	+0.4
Nitrate as NO_3	< 45 mg/l	82	74	75	74	69.4	-12.6
	> 45 mg/l	18	26	25	26	30.6	+12.6
Fluoride as F	<1.0 mg/l	79	85	87	84	82.4	+3.4
	1.0 - 1.50	8	4	6	5	8.1	+0.1
	>1.50 mg/l	13	11	7	11	9.5	-3.5

4.8 Conclusion & Recommendations on Groundwater Quality

Conclusion drawn for quality evaluations of ground water and its suitability for various uses is based on macro level studies through monitoring stations sampled during 2010. It can be concluded that in Punjab

- Ground water is generally suitable for drinking uses except at few places in the southern and south western parts where it is not suitable due to high EC or high fluoride or nitrate or combination of all.
- Almost all waters are suitable for irrigation on well-drained soils for growing salt tolerant crops like wheat, mustard, rice, barley and maize etc. However, at few places where EC of ground water goes beyond 5000 µS/cm and SAR is more than 10, such waters are not suitable for customary irrigation.
- Elevated Arsenic content in ground water is one of the most serious concerns as it affects large unconsolidated aquifers and the problem is compounded because the drinking water supply in the thickly populated parts is dependent on shallow aquifers which are found to be contaminated.
- It is recommended that areas identified with unsuitable or marginally suitable water quality should be monitored on micro level to effectively delineate such areas and use suitable management measures.

- In addition to various initiatives for preservation of quality of the water resources, following recommendations are made for containment of arsenic contamination of ground water:
    - The arsenic affected wells should be clearly demarcated and not used for drinking purposes if it is not possible to seal.
    - Tapping of Arsenic safe alternate aquifers: this technique advocates to tap safe alternate aquifers right within the affected areas. In most of the cases, shallow aquifers are contaminated by Arsenic as seen in the CGWB study. Accordingly wells should be constructed with proper sealing to tap deeper Arsenic free aquifers.
    - The remedial measures includes variety of options, ranging from removing arsenic from ground water after it is extracted, searching alternative aquifers, reducing the level within the aquifer itself, dilution of the contaminants by artificial recharge, blending with potable water etc.
    - A number of techniques can be used for removal of arsenic in the ground water. The options of first choice should be mitigation or to provide alternative sources of safe water. It is suggested that each individual technique should be applied in each of the pockets on pilot basis. Dedicated monitoring mechanism should be established to know the effectiveness of the technique so as to arrive at the best method suitable for the entire area.

5.0 GROUND WATER QUALITY IN CHANDIGARH, UT

Quality of shallow ground water of Chandigarh is evaluated through three samples collected during May 2015. Recognizing the enormity and severity of the problem of contamination of ground water by Arsenic and Iron, water samples were also collected from ground water monitoring stations. Therefore, samples were collected in two sets of 1 liter each and one of the sets of samples was acidified '*in situ'* with 1:1 HCl to bring the pH of the sample to below 2.

The water samples were analyzed for major cations (Ca, Mg, Na, K) and anions (CO_3, HCO_3, Cl, NO_3, SO_4 F,PO_4) in addition to pH, EC, SiO_2 and TH as $CaCO_3$ in the Regional Chemical Laboratory by following 'Standard analytical procedures' as given in APHA 2012.

5.1 Composition of Ground Water

The results of chemical analysis of ground water sample (Appendix-I) reveals that it is alkaline in nature with pH from 8.65 to 8.84 and moderately mineralized with EC ranging from 440 to 950 µS/cm. at 25^0C. Among anions, carbonate ion is found to vary between 23 and 70 mg/l whereas bicarbonate concentration ranges from 107 to 309 mg/l. The chloride values range from 28 to 58 mg/l, while the sulphate values vary from 21 to 69 mg/l. Nitrate concentrations are found to range between 0.44 to be 24 mg/l. The Fluoride content is low and maximum concentration is 0.43 mg/l which is below the desirable limit of 1.0 mg/l. The cations such as calcium and magnesium are present in low concentration and their highest values are 29 mg/l and 53 mg/l, respectively. The sodium concentration varies between 48 to 108 mg/l. The maximum potassium concentration reported is 50 mg/l. Total hardness of water sample expressed as $CaCO_3$ is found to range between 124 and 289 mg/l.

Arsenic was below detection limit in all the samples but concentration of iron (total) in ground water of the study area ranges 0.0007 to 0.5703 mg/l in hand pump located at Sector 44. The high iron concentration in untreated ground water gives it a metallic taste. The Bureau of Indian standards has assigned a value of 0.3 mg/l as maximum permissible limit with no relaxation for waters used for drinking uses .

The perusal of Trilinear Plot of percentages of major ions represented on Piper Diagram (Plate 4), indicates that different types of water is found in the area, varying from Ca-Mg-HCO3 and mixed type with no particular ion being dominant.

Plate 4

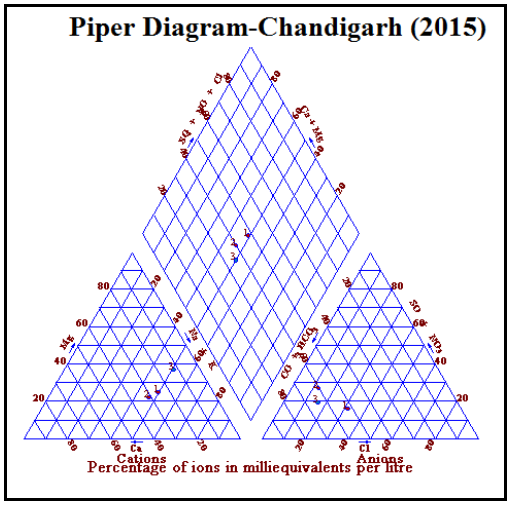
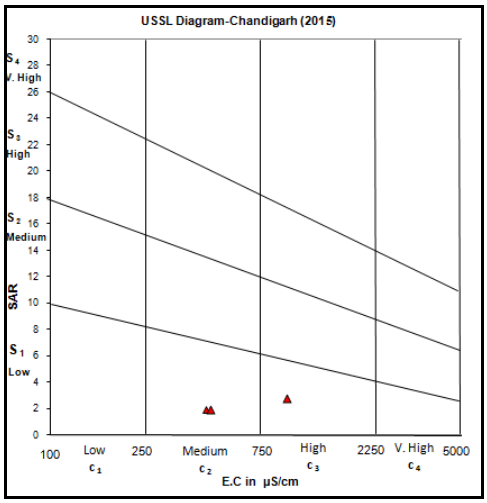


Plate 5



The ground water is suitable for domestic use as all parameters are within the permissible limits of drinking water quality standards prescribed by BIS-2012. Though no guidelines for Potassium in drinking water have been prescribed by BIS, exceptionally high value of 50 mg/l have been observed in sample collected from Burail village.

The suitability of groundwater for irrigational uses is determined by considering the values of salinity (EC), sodium adsorption ratio (SAR) and residual sodium carbonate (RSC). Based on highest reported values for EC (950 µS/cm.), SAR (2.77) and RSC (1.64), it can be concluded that groundwater of Chandigarh is suitable for irrigation. The USSL classification of irrigation waters (Plate 5) indicates that it falls in C2S1 and C3S1 class and can be used for customary irrigation.

5.2 Temporal Variation

On comparison with chemical data of GWMS 2014, it is observed that there has been an improvement in water quality in terms of salinity with maximum EC decreasing from 1188 µS/cm to 950 µS/cm There has been no significant change in Chloride, Nitrate and Fluoride concentration during this period. There has been a considerable

improvement in water quality with respect to Potassium with concentration decreasing from 113 mg/l in 2014 to 50 mg/l in 2015.

5.2 Conclusion & Recommendation

Conclusion drawn for quality evaluations of ground water and its suitability for various uses is based on macro level studies through monitoring stations sampled during 2015. It can be concluded that in Chandigarh ground water is generally suitable for drinking and groundwater is suitable for irrigation purposes.

ANNEXURE-I

S. NO.	District	Location	Depth to water level m(BGL)			
			May 2015	August 2015	November 2015	January 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Chandigarh	BURAIL	3.07	2.44	2.72	2.56
2.	Chandigarh	Csio-combined	21.07			
3.	Chandigarh	CSIO-S	21.71			21.34
4.	Chandigarh	Maloya				9.62
5.	Chandigarh	NEW INDUST AREA	23.07	22.29	18.64	22.27
6.	Chandigarh	Sec-27, Ar Well	38.47	39.26	39.67	39.70
7.	Chandigarh	SECT 10C (D)	26.53	14.97	15.85	15.72
8.	Chandigarh	SECT 10C (S)	15.10	14.97		28.63
9.	Chandigarh	SECT 21D (S)		10.40	10.63	
10.	Chandigarh	SECT 31D (D)	18.84	18.68	19.52	18.09
11.	Chandigarh	SECT 31D (S)	11.13	11.14	11.16	11.27
12.	Chandigarh	SECT 37D (S)	6.43	4.50	4.56	4.58
13.	Chandigarh	SECT 39D (S)	3.55	5.01	5.36	5.23
14.	Chandigarh	SECT 44D (S)	5.34	2.59	3.05	2.57
15.	Chandigarh	Sector-46 (shallow)		7.08	6.52	
16.	Amritsar	Aima Khurd-Pz	13.50	11.58	12.80	13.30
17.	Amritsar	Ajnala	11.23		11.45	11.16
18.	Amritsar	Aminshah Khalra	13.08	23.36		
19.	Amritsar	Amritsar1	24.84		25.90	25.14
20.	Amritsar	Attari-Pz	17.30		17.60	17.20
21.	Amritsar	Bakipur-Pz	20.40		20.90	21.25
22.	Amritsar	Bal Kalan-Pz	17.70		17.00	16.60
23.	Amritsar	Bath-Pz	20.30			20.10
24.	Amritsar	Beas07	14.53		14.78	13.37
25.	Amritsar	Bhagala-Pz	9.18		10.60	10.80
26.	Amritsar	Bhagwanpur-Pz			14.60	15.10
27.	Amritsar	Bhalaipur-Pz	20.30		20.80	20.60
28.	Amritsar	Bhankar Kalan-Pz	14.19		15.70	16.10
29.	Amritsar	Bhattaywad-Pz	12.80		12.50	12.35
30.	Amritsar	Bhikiwind- Pz	15.03		15.85	15.41
31.	Amritsar	Bhura-Pz	13.06		14.10	14.50
32.	Amritsar	Bhure-Pz	16.53		17.30	17.40
33.	Amritsar	Bhusse-Pz	14.90		15.90	15.70

34.	**Amritsar**	Boparai Khurd-Pz	15.80		15.30	15.10
35.	**Amritsar**	Brahmpur-Pz	17.69		18.80	18.90
36.	**Amritsar**	Burjwal-Pz	15.30		15.60	15.60
37.	**Amritsar**	Chabal 07	18.03			
38.	**Amritsar**	Chak Dogra-Pz	9.40		10.20	9.70
39.	**Amritsar**	Chakkare Khan-Pz	18.90		19.60	19.30
40.	**Amritsar**	Chobal Kalan-Pz	15.30	13.20		
41.	**Amritsar**	ChogWan- Pz	10.27	19.27	9.35	9.57
42.	**Amritsar**	Chola Sahib-Pz	17.79		18.15	17.60
43.	**Amritsar**	Choudhary Wala-Pz	18.10		18.10	18.50
44.	**Amritsar**	Chuselawad-Pz	18.12		19.10	19.40
45.	**Amritsar**	Dhariwal-Pz	12.80		12.30	12.10
46.	**Amritsar**	Dholan-Pz	6.12		6.70	7.40
47.	**Amritsar**	Dhottian-Pz	18.02			
48.	**Amritsar**	Dhulika-Pz	16.20		16.10	15.80
49.	**Amritsar**	Dohan-Pz	18.40		18.50	18.10
50.	**Amritsar**	Ekalgoda-Pz	21.30	7.41	23.00	23.30
51.	**Amritsar**	Gago Mahal- Pz	5.53	11.90	5.35	5.49
52.	**Amritsar**	Gandi Wind-Pz	10.75			11.20
53.	**Amritsar**	Gill wali-Pz	20.10	19.91	19.80	19.50
54.	**Amritsar**	Goindwal 07	19.68		19.80	19.70
55.	**Amritsar**	Gujjaran Wali-Pz	8.00			
56.	**Amritsar**	Harike	11.35	19.55		
57.	**Amritsar**	Jandiala Guru-Pz	18.95		18.97	18.73
58.	**Amritsar**	Jandoke-Pz	17.50		18.90	18.80
59.	**Amritsar**	Jasrur-Pz	8.40		8.30	8.10
60.	**Amritsar**	Jethuwal-Pz	14.60		14.70	14.20
61.	**Amritsar**	Kalsia Kalan07	16.20		17.14	14.63
62.	**Amritsar**	Kandowali-Pz	13.10		12.80	12.30
63.	**Amritsar**	Karyal-Pz	8.90		8.70	8.10
64.	**Amritsar**	Khadur Sahib-Pz	18.15		19.20	18.55
65.	**Amritsar**	Khalra-Pz			14.50	14.50
66.	**Amritsar**	Khilchian-Pz	15.70		15.90	15.30
67.	**Amritsar**	Kotbudda-Pz	13.60		13.50	12.50
68.	**Amritsar**	Kotli Sur Singh-Pz			16.20	16.50
69.	**Amritsar**	Mahendipur-Pz	16.18		17.30	17.80

70.	**Amritsar**	Mahima-Pz	16.90		16.90	16.50
71.	**Amritsar**	Majitha- Pz	12.80		12.30	12.20
72.	**Amritsar**	Makhan Windi-Pz	18.40		18.50	18.10
73.	**Amritsar**	Marhona-Pz	18.10		18.80	18.80
74.	**Amritsar**	Mari Kamboke-Pz			9.80	9.70
75.	**Amritsar**	Mehleykey-Pz	6.90		7.00	7.10
76.	**Amritsar**	Mehta	13.10		15.10	
77.	**Amritsar**	Mehta-Pz	15.10		13.00	14.70
78.	**Amritsar**	Miran Chak-Pz	17.80	14.57	17.90	17.40
79.	**Amritsar**	Mohawa	13.08			
80.	**Amritsar**	Nangal Sahaul-Pz	5.20		5.30	4.90
81.	**Amritsar**	Nawan Tanal- Pz	10.85			10.12
82.	**Amritsar**	Pakharpura-Pz	8.70		8.30	7.70
83.	**Amritsar**	Pindan-Pz			17.30	17.10
84.	**Amritsar**	Rajoke-Pz	6.60		7.20	7.00
85.	**Amritsar**	Ramdas-DW		8.25		8.01
86.	**Amritsar**	Rampura-Pz	12.80		12.50	12.05
87.	**Amritsar**	Ratoke-Pz	17.55		20.15	18.20
88.	**Amritsar**	Rupowal Brahmana-Pz	13.70		13.50	12.90
89.	**Amritsar**	Sabran-Pz	19.70		20.90	21.00
90.	**Amritsar**	Sahab Pura- Pz	19.37	20.38	19.27	
91.	**Amritsar**	Sathiala-Pz	15.60		15.40	15.10
92.	**Amritsar**	Shabura-Pz	11.20		11.20	14.88
93.	**Amritsar**	Sham Nagar-Pz	8.10		7.50	7.10
94.	**Amritsar**	Sheron-Pz	18.50		19.10	18.90
95.	**Amritsar**	Sugga-Pz			18.00	18.50
96.	**Amritsar**	Talwandi Dogra-Pz	19.20		19.80	19.10
97.	**Amritsar**	Tarsika-Pz	17.10		16.80	16.55
98.	**Amritsar**	Thatha- Pz	19.17		18.90	18.50
99.	**Amritsar**	Ugar Aulakh-Pz	14.70		14.30	13.80
100.	**Amritsar**	Vadala Kalan-Pz	14.90		14.80	14.40
101.	**Amritsar**	Valtoha	13.29		15.00	
102.	**Amritsar**	Wandala Bittewad-Pz	15.90		15.60	15.00
103.	**Bathinda**	Ablu	13.07	13.72	13.51	13.14
104.	**Bathinda**	Aleke Jalal-Pz	23.74		26.42	25.01

105.	**Bathinda**	Badiala-Pz	26.65	28.95	28.48	27.00
106.	**Bathinda**	Bagher Mohabat Singh-Pz	8.75		9.00	8.72
107.	**Bathinda**	Bahman Kaur Singh-Pz	9.65		9.40	9.40
108.	**Bathinda**	Balianwali-Pz	20.38		25.20	23.40
109.	**Bathinda**	Balluana1	7.20	4.93	4.74	4.77
110.	**Bathinda**	Balluana-Pz	13.07		7.01	6.90
111.	**Bathinda**	Banbhiha-Pz	4.30		3.98	3.65
112.	**Bathinda**	Bandi-Pz				8.24
113.	**Bathinda**	Bhagibandar	8.67	8.33	8.32	27.82
114.	**Bathinda**	Bugran-Pz	25.18		29.30	23.41
115.	**Bathinda**	Burj Gill-Pz	22.25		25.15	9.20
116.	**Bathinda**	Burj-Pz	9.20		10.10	6.07
117.	**Bathinda**	Deratapp	5.97	6.28	6.63	23.00
118.	**Bathinda**	Dhapali1		22.00	21.95	22.26
119.	**Bathinda**	Dhapali-Pz	20.30	25.06	22.78	23.53
120.	**Bathinda**	Dialpur Mirza	22.92	24.47	25.72	24.60
121.	**Bathinda**	Dialpura Bhlaike	23.68	25.88	27.76	28.43
122.	**Bathinda**	Dulle Wala-Pz	27.64		30.05	14.48
123.	**Bathinda**	Ganga-Pz	14.15	16.21	17.52	
124.	**Bathinda**	Ghudda	3.68		9.30	9.60
125.	**Bathinda**	Ghudda-Pz	9.60		9.21	9.10
126.	**Bathinda**	Gill Patti-DW	7.85		9.55	13.60
127.	**Bathinda**	Gulabgarh 2 (s)	12.83		15.72	
128.	**Bathinda**	Gumti-DW	24.04		25.70	25.41
129.	**Bathinda**	Guru Sar-Pz		9.05	11.12	8.86
130.	**Bathinda**	Gurusar	8.85			
131.	**Bathinda**	Harraipur-Pz	16.80		17.50	16.90
132.	**Bathinda**	Jajjal	7.50	7.54	6.30	7.05
133.	**Bathinda**	Jassi Bhagwali	5.77	5.97	5.61	5.87
134.	**Bathinda**	Jassi Paowali-Pz	6.59		7.91	7.57
135.	**Bathinda**	Jhanduke	19.56	22.97	22.87	20.30
136.	**Bathinda**	Jhanduke-Pz				
137.	**Bathinda**	Kahan Singh Wala-DW	15.91		17.55	17.09
138.	**Bathinda**	Kalla Bandar	5.45	5.18	7.24	8.24
139.	**Bathinda**	Kalyan Sukha-Pz	20.85		22.90	22.41

140.	**Bathinda**	Koir Singh Wala-Pz	21.85		23.95	22.02
141.	**Bathinda**	Kot Bhaktu-Pz	5.25		5.85	5.50
142.	**Bathinda**	Kot Guru	6.49		5.76	5.66
143.	**Bathinda**	Kot Shamir	14.61	15.26	13.66	13.81
144.	**Bathinda**	Kothaguru-Pz		22.98	23.15	21.50
145.	**Bathinda**	Lahri				8.28
146.	**Bathinda**	Lalliana-Pz	6.65		6.65	6.55
147.	**Bathinda**	Lehra Dhulkot-Pz	19.78		23.10	20.51
148.	**Bathinda**	Lehra Khanna-Dw	17.50			
149.	**Bathinda**	Maihma Bhagwan-PZ	10.90		11.25	10.88
150.	**Bathinda**	Maisar Khana	13.06	14.17	15.10	14.04
151.	**Bathinda**	Maisar Khana-Pz	13.65		13.43	13.90
152.	**Bathinda**	Maluka-Pz			21.33	20.61
153.	**Bathinda**	Mandi Kalan-Pz	23.35		25.90	25.16
154.	**Bathinda**	Mehraj-Pz	19.10		21.00	20.24
155.	**Bathinda**	Mehta-Pz	6.74		7.02	6.72
156.	**Bathinda**	Multania-Pz	6.57		7.45	6.80
157.	**Bathinda**	Nahinwala	20.80	11.40	11.37	11.23
158.	**Bathinda**	Nathana-Pz	17.66		21.75	18.91
159.	**Bathinda**	Nathena-Pz	5.60		5.95	5.55
160.	**Bathinda**	Phul	25.00	24.02		24.25
161.	**Bathinda**	Phulla	16.03			16.83
162.	**Bathinda**	Phulla1		17.55	20.13	
163.	**Bathinda**	Puhla-Pz	17.68		19.76	18.41
164.	**Bathinda**	Raike Kalan	1.76	3.77		1.44
165.	**Bathinda**	Rajgarh Kubey-Pz	7.85		9.95	8.90
166.	**Bathinda**	Rampura				25.20
167.	**Bathinda**	Rayya-Pz	23.71		26.28	24.04
168.	**Bathinda**	Salabatpur-Pz	27.62		31.00	29.00
169.	**Bathinda**	Sangat -Pz	6.89	6.85	6.80	6.98
170.	**Bathinda**	Seema-DW	15.14		17.85	15.92
171.	**Bathinda**	Sidhana	19.24		22.77	20.53
172.	**Bathinda**	Sooch-Pz	18.99		21.76	19.81
173.	**Bathinda**	Teona-Pz	6.04		4.36	4.65
174.	**Bathinda**	Tungwali-Pz	15.08		16.28	15.47

175.	**Faridkot**	Baja Khana		17.76	18.20	17.40
176.	**Faridkot**	Bead Sikhanwala-Pz	9.10	9.35		8.85
177.	**Faridkot**	Behabal Kalan-Pz	10.60		12.40	11.00
178.	**Faridkot**	Burj Jawahar Singh-Pz	16.00		18.00	16.80
179.	**Faridkot**	Chahd Baja	15.22			15.96
180.	**Faridkot**	Chak Kalan-Pz	2.70		1.60	2.25
181.	**Faridkot**	Devrana-Pz	2.35		1.55	2.20
182.	**Faridkot**	Dhaipai-Pz	7.65		7.50	7.60
183.	**Faridkot**	Dhilwan Kalan	8.22	9.07	9.42	8.50
184.	**Faridkot**	Dhudi-Pz	11.80		13.10	12.20
185.	**Faridkot**	Dipsinghwala	4.65	3.90	3.77	3.05
186.	**Faridkot**	Faridkot-Pz	3.85		4.00	4.08
187.	**Faridkot**	Fatehgarh-Pz	16.00		17.50	16.20
188.	**Faridkot**	Ghuiana-Pz	4.90		5.45	4.40
189.	**Faridkot**	Karirwali	10.38	11.50	11.01	10.75
190.	**Faridkot**	Koharwala- DW	7.50		6.90	7.40
191.	**Faridkot**	Kot Kapura	6.87	7.37	7.22	7.07
192.	**Faridkot**	Matta	7.52	8.24	7.61	8.00
193.	**Faridkot**	Mehmuana	1.75	1.57	1.22	1.20
194.	**Faridkot**	Pahluwala-Pz	3.40		3.90	4.00
195.	**Faridkot**	Ratti Rori-Pz	1.45		1.20	1.15
196.	**Faridkot**	Rorian Kapura-Pz	9.20		8.90	9.20
197.	**Faridkot**	Sandhwan-Pz	5.85		6.55	4.95
198.	**Faridkot**	Sher Singh Wala-Pz	3.44	4.00	3.42	3.25
199.	**Fateh Garh**	Alipur Sodhian-Pz	17.00		17.22	17.34
200.	**Fateh Garh**	Amloh1			21.85	
201.	**Fateh Garh**	Badalialasingh	33.56	33.27	35.78	34.78
202.	**Fateh Garh**	Bagga Kalan	23.35		24.00	24.11
203.	**Fateh Garh**	Bassi Pathana	18.10	17.55	23.15	21.40
204.	**Fateh Garh**	Bhagrana	5.22	4.92	3.50	4.60
205.	**Fateh Garh**	Bhateri1	33.10	32.74	31.62	31.36
206.	**Fateh Garh**	Burj	16.95		17.40	17.45
207.	**Fateh Garh**	Chandiala-Pz	18.50		18.40	18.40
208.	**Fateh Garh**	Chunni Kalan	16.90		14.80	14.77
209.	**Fateh Garh**	Fatehgarh Sahib	20.20			

210.	**Fateh Garh**	Fatehgarh Sahib-Pz	18.30	19.77	19.85	19.63
211.	**Fateh Garh**	Jai Singh Wala	16.55		16.95	17.10
212.	**Fateh Garh**	Jhambela	20.65		21.00	21.05
213.	**Fateh Garh**	Khara	24.40		24.60	24.82
214.	**Fateh Garh**	Lohar Majra	20.45		20.95	21.00
215.	**Fateh Garh**	Mianpur-Pz	19.30		19.55	19.62
216.	**Fateh Garh**	Nalini-Pz	19.64	19.58	20.70	20.07
217.	**Fateh Garh**	Nandpur Kalaur-Pz	28.40		28.80	28.93
218.	**Fateh Garh**	Pawala	12.99	12.53	13.10	
219.	**Fateh Garh**	Sado Majra	17.40		18.00	18.05
220.	**Fateh Garh**	Shahpur	22.55		22.85	23.00
221.	**Fateh Garh**	Sirhind-Pz	20.70		20.90	20.95
222.	**Fateh Garh**	Tahalpur	22.10		22.65	22.70
223.	**Fateh Garh**	Talwara	19.35		19.80	19.82
224.	**Fateh Garh**	Tarkhan Majra		12.45		
225.	**Fateh Garh**	Timber Pur-Pz	24.10		24.35	24.35
226.	**Firozpur**	Abohar	2.15	2.27	1.92	1.86
227.	**Firozpur**	Alamgarh	1.51	0.20	0.96	0.26
228.	**Firozpur**	Asifwala-Pz	6.10			
229.	**Firozpur**	Baman Wali-Pz	12.85			
230.	**Firozpur**	Bannawala	1.88	0.22	2.33	1.63
231.	**Firozpur**	Bara Mansur Wala-Pz	26.25			
232.	**Firozpur**	Bazirdpura	8.20	8.80		7.80
233.	**Firozpur**	Chak Kandhe Shah-Pz	10.80			
234.	**Firozpur**	Chak Khere Wala-Pz	6.70			
235.	**Firozpur**	Chak Pune Wala-Pz	11.15			
236.	**Firozpur**	Chamb-Pz	17.62			
237.	**Firozpur**	Danewal Satkosi	4.34	4.08	3.02	3.12
238.	**Firozpur**	Danger Khera-Pz	2.90			
239.	**Firozpur**	Dipulana-Pz	5.62	6.13	5.15	5.00
240.	**Firozpur**	Dulchi Ke-Pz	8.25			
241.	**Firozpur**	Fattu Wala-Pz	19.20			
242.	**Firozpur**	Fazilka-Pz	9.00			

243.	**Firozpur**	Ghananga Kalan-Pz	3.98			
244.	**Firozpur**	Giddran Wali-Pz	3.50			
245.	**Firozpur**	Godiwala-Pz	4.10			
246.	**Firozpur**	Gogiani-Pz	17.32			
247.	**Firozpur**	Hamed Saidoke-Pz	14.10			
248.	**Firozpur**	Himmatpura-Pz	5.60			
249.	**Firozpur**	Jaimal Singhwala Pz	8.66	10.37	9.16	9.23
250.	**Firozpur**	Jaimal wala-Pz	8.95			
251.	**Firozpur**	Jand Wala Johian-Pz	4.40			
252.	**Firozpur**	Jandwala M Sagla-Pz				
253.	**Firozpur**	Jandwala Watan-Pz	2.70			
254.	**Firozpur**	Jang-Pz	8.05			
255.	**Firozpur**	Jhottian Wali-Pz				
256.	**Firozpur**	Jodhe Wala Bhaini-Pz	12.55			
257.	**Firozpur**	Kahan Singh Wala-Pz	2.00			
258.	**Firozpur**	Kaler Khera-Pz	4.55			
259.	**Firozpur**	Kandh Wala-Pz	3.10			
260.	**Firozpur**	Kathgarh-Pz	13.40			
261.	**Firozpur**	Khan Wala-Pz	4.30			
262.	**Firozpur**	Khere Ki Uttar-Pz	15.94			
263.	**Firozpur**	Khuiansarwar- Pz	1.21	-0.15	0.97	0.64
264.	**Firozpur**	Kundal1	0.51	0.28	0.53	0.53
265.	**Firozpur**	Ladhuwala	2.12	0.67		0.93
266.	**Firozpur**	Lauhke Kalan- Pz	16.96	21.00	18.97	19.25
267.	**Firozpur**	Lohere Khurd-Pz	18.80			
268.	**Firozpur**	Machi Bugra/ Gujran-Pz	12.65			
269.	**Firozpur**	Mallanwala Khas-Pz	11.70			
270.	**Firozpur**	Malluwala-Pz	21.95			
271.	**Firozpur**	Malsian-Pz	12.25	13.05		10.85
272.	**Firozpur**	Malukpur-Pz	1.90			

273.	**Firozpur**	Mana Singh Wala-Pz	4.30			
274.	**Firozpur**	Markhiwa Bhamni-Pz	5.72			
275.	**Firozpur**	Mohkam Khan Wala-Pz	14.30			
276.	**Firozpur**	Mohre Wala-Pz	6.70	6.83	6.57	6.87
277.	**Firozpur**	Motiwala 07pz	10.44		10.80	10.70
278.	**Firozpur**	Mudki-Pz	10.90			
279.	**Firozpur**	Mullian Wali-Pz	2.15			
280.	**Firozpur**	Muradwala Dal-Pz				
281.	**Firozpur**	Nihalkhera	1.97	1.21	1.60	1.24
282.	**Firozpur**	Nure-Ki-Uttar 07pz	14.75	16.83	15.93	15.53
283.	**Firozpur**	Pancha Wali-Pz	10.50			
284.	**Firozpur**	Pattiwalla-Pz	2.80			
285.	**Firozpur**	Piyarana	4.64	5.80	4.41	4.68
286.	**Firozpur**	Rala Hazi- Pz	6.91			
287.	**Firozpur**	Ramsara-Pz	4.00			
288.	**Firozpur**	Roran Wala-pz	3.50			
289.	**Firozpur**	Rukne Wala-Pz	8.10			
290.	**Firozpur**	Sadhusha Wala-Pz	12.10			
291.	**Firozpur**	Sham Singhwala-Pz	4.49	3.40	3.60	4.13
292.	**Firozpur**	Shatriwala-Pz	3.85			
293.	**Firozpur**	Sherewala-Pz	8.60			
294.	**Firozpur**	Singhpura-Pz	2.75			
295.	**Firozpur**	Sitoganno	2.12	1.85	2.23	2.13
296.	**Firozpur**	Sohangarh Ratte	1.63	2.20	2.03	2.13
297.	**Firozpur**	Sultan Khan Wala Urf-Pz	9.90			
298.	**Firozpur**	Swah Wala- Pz	8.80	9.38	8.13	8.75
299.	**Firozpur**	Talwandi Jalle Khan-pz	26.25			
300.	**Firozpur**	Tibbi Kalan-Pz	10.00			
301.	**Firozpur**	Tibbi Taiwan Laluwalla-Pz	3.89			
302.	**Firozpur**	Wage Wala-Pz	9.80			
303.	**Firozpur**	Waryam Khera	3.65	3.76		
304.	**Gurdaspur**	Aulakhkalan	19.51		19.46	18.79

305.	**Gurdaspur**	Bamyal	4.92	4.50	5.00	4.72
306.	**Gurdaspur**	Bhagowal	6.41	7.00	8.00	7.57
307.	**Gurdaspur**	Bham			13.37	13.40
308.	**Gurdaspur**	Bhoa	4.34	3.41	3.89	4.02
309.	**Gurdaspur**	Bilasbal-Pz	15.65		16.40	16.80
310.	**Gurdaspur**	Chahal Kalan-Pz	8.10		7.80	8.00
311.	**Gurdaspur**	Chahgill-Pz	9.00		8.50	8.00
312.	**Gurdaspur**	Chone-Pz	10.30		9.60	10.00
313.	**Gurdaspur**	Dakoha-Pz	13.30	14.28	13.09	13.48
314.	**Gurdaspur**	Dera Baba Nanak	5.36	5.12	6.50	5.83
315.	**Gurdaspur**	Dhar Khurd			2.40	2.30
316.	**Gurdaspur**	Dhianpur	9.57			15.04
317.	**Gurdaspur**	Dinanagar	3.47	2.98	2.88	5.59
318.	**Gurdaspur**	Dostpur-Pz	4.50		3.80	3.70
319.	**Gurdaspur**	Gajikort-Pz	5.30		4.80	4.80
320.	**Gurdaspur**	Galri	5.02	4.52	4.03	4.86
321.	**Gurdaspur**	Ghania Ki bangar-Pz			7.05	7.13
322.	**Gurdaspur**	Gharotakalan	7.00	7.89	7.92	7.11
323.	**Gurdaspur**	Ghoh			9.00	
324.	**Gurdaspur**	Ghoh DW		9.42	6.00	8.45
325.	**Gurdaspur**	Ghumani Khurd-Pz	6.25		8.30	5.90
326.	**Gurdaspur**	Gurdaspur-Pz	4.90			8.30
327.	**Gurdaspur**	Harchowal-Pz			12.60	
328.	**Gurdaspur**	Hargobindpur	13.10		4.00	
329.	**Gurdaspur**	Hargobindpur1	4.50		9.40	
330.	**Gurdaspur**	Hassanpur Kalan-Pz	9.10		25.80	9.95
331.	**Gurdaspur**	Jandwala				25.60
332.	**Gurdaspur**	Jhakolahri	2.56		3.10	2.56
333.	**Gurdaspur**	Jhandalbana-Pz	3.20		16.10	3.00
334.	**Gurdaspur**	Kala Afgana-Pz	8.20		8.70	9.00
335.	**Gurdaspur**	Kalanaur-DW	11.79		13.40	11.22
336.	**Gurdaspur**	Kalanaur-Pz	5.37	5.73		12.80
337.	**Gurdaspur**	Kalerkalan-Pz	3.75			
338.	**Gurdaspur**	Kaure-Pz	13.60		13.90	14.50
339.	**Gurdaspur**	Khan Fatta-Pz			5.70	5.80

340.	**Gurdaspur**	Khanikhui	1.91	1.63	1.64	0.74
341.	**Gurdaspur**	Khanmalik-Pz	9.60		9.30	9.40
342.	**Gurdaspur**	Khatgarh-Pz	3.60		3.40	3.30
343.	**Gurdaspur**	Kiari- DW			2.44	4.35
344.	**Gurdaspur**	Kui-DW			2.99	3.38
345.	**Gurdaspur**	Lakankala-Pz	3.80		3.40	3.30
346.	**Gurdaspur**	Langurwal-Pz	7.60		7.60	7.80
347.	**Gurdaspur**	Madipur Fatehgarhchuria	9.56			9.71
348.	**Gurdaspur**	Malikpur			7.00	6.80
349.	**Gurdaspur**	Malikpur-Pz	9.10		8.30	8.00
350.	**Gurdaspur**	Mallewal-Pz	6.20		5.30	5.40
351.	**Gurdaspur**	Maman-Pz	6.30		6.40	6.50
352.	**Gurdaspur**	Masana-Pz	4.30		3.50	3.40
353.	**Gurdaspur**	Massit-Pz	2.50		2.40	2.40
354.	**Gurdaspur**	Mirthal	3.00		3.20	
355.	**Gurdaspur**	Mirthal-DW			3.60	3.40
356.	**Gurdaspur**	Mirza Jaan-Pz	9.20		8.90	8.90
357.	**Gurdaspur**	Mullowali 1(vs)	3.24	4.16	4.10	3.76
358.	**Gurdaspur**	Mullowali 2(m)		3.20	3.12	3.07
359.	**Gurdaspur**	Muthi	4.30		3.60	3.50
360.	**Gurdaspur**	Nangal-Pz	3.80		3.50	3.40
361.	**Gurdaspur**	Narot Jaimalsingh-Pz	4.80		4.30	4.40
362.	**Gurdaspur**	Nawan Pind			5.30	6.04
363.	**Gurdaspur**	Nishayara	4.57	5.24	4.50	
364.	**Gurdaspur**	Pandoritalab	2.39		3.27	1.40
365.	**Gurdaspur**	Paniar	6.80		6.30	
366.	**Gurdaspur**	Parcha-Pz	6.10		6.30	6.60
367.	**Gurdaspur**	Parmota-DW			5.55	7.80
368.	**Gurdaspur**	Pathankot1	4.50	2.98	5.30	4.97
369.	**Gurdaspur**	Patti Atwal-Pz	11.20		10.90	10.90
370.	**Gurdaspur**	Phulpiara	4.50		3.90	3.80
371.	**Gurdaspur**	Saidowal Kalan-DW				3.67
372.	**Gurdaspur**	Saleh Chak-S	3.40	3.35	2.55	2.92
373.	**Gurdaspur**	Salehchak(vs)	3.04	3.13	2.50	3.25
374.	**Gurdaspur**	Sarna	9.54	4.06	8.90	9.16

375.	**Gurdaspur**	Sarna1				
376.	**Gurdaspur**	Sathial-Pz		11.54		11.01
377.	**Gurdaspur**	Shahpur Jattan-Pz	4.70		5.10	5.35
378.	**Gurdaspur**	Shahpur-Pz	4.50		4.50	4.50
379.	**Gurdaspur**	Shezada Kalan-Pz	5.25		4.80	4.85
380.	**Gurdaspur**	Shikar-Pz	8.20		7.80	7.70
381.	**Gurdaspur**	Sohal	11.80		11.20	
382.	**Gurdaspur**	Tikriwala-Pz	7.60		7.30	7.30
383.	**Hoshiarpur**	Aallo Batti-Pz	2.50		4.50	4.55
384.	**Hoshiarpur**	Adowal Garhi-Pz	19.04	18.43	17.91	17.50
385.	**Hoshiarpur**	Argowal-Pz	21.00		22.50	22.60
386.	**Hoshiarpur**	Badla-Pz	22.00		22.65	22.65
387.	**Hoshiarpur**	Bagpur-Pz			20.80	9.53
388.	**Hoshiarpur**	Baichan-Pz	20.15		18.15	21.05
389.	**Hoshiarpur**	Bajwara	16.00		17.00	
390.	**Hoshiarpur**	Bajwara-Pz	17.10		4.35	17.00
391.	**Hoshiarpur**	Bhalowal Gujjran-Pz	34.00		35.15	35.35
392.	**Hoshiarpur**	Bhamnaur	16.94	12.37	14.20	16.40
393.	**Hoshiarpur**	Bhangala-Chhota-DW	5.31	4.80	5.00	5.20
394.	**Hoshiarpur**	Bhanowal-Pz	13.60		14.75	14.65
395.	**Hoshiarpur**	Bhatolian-Pz	20.50		22.75	22.75
396.	**Hoshiarpur**	Budhi Pind-Pz	15.40		17.20	17.00
397.	**Hoshiarpur**	Chak Sheru-DW	2.98	3.50	3.30	2.95
398.	**Hoshiarpur**	Chohal	3.95	4.52	1.80	
399.	**Hoshiarpur**	Dadan-Pz	34.20		35.45	35.60
400.	**Hoshiarpur**	DAGAN-DW	13.38	9.54	11.10	
401.	**Hoshiarpur**	Dallewal-Pz	16.00		17.45	17.50
402.	**Hoshiarpur**	Dasuya2 (s)	8.39	8.73	7.55	8.64
403.	**Hoshiarpur**	Dharampur1	2.64		3.64	
404.	**Hoshiarpur**	Durimiwal	4.54	2.04	4.15	4.30
405.	**Hoshiarpur**	Fattowal-Pz	23.40		23.90	24.00
406.	**Hoshiarpur**	Garh Di Wala-Pz	14.81	12.45	10.89	12.65
407.	**Hoshiarpur**	Garhshankar (s)	22.20	24.09	22.80	21.67
408.	**Hoshiarpur**	Grahaya-Pz	19.70		23.00	22.75
409.	**Hoshiarpur**	Haler Rampur-DW	3.47		4.00	2.93

410.	**Hoshiarpur**	Hazipur	8.47	5.67		9.64
411.	**Hoshiarpur**	Ittian-Pz	8.60		9.60	9.60
412.	**Hoshiarpur**	Jahidpur-PZ			9.90	
413.	**Hoshiarpur**	Jalalpur-Pz	5.70		6.50	6.70
414.	**Hoshiarpur**	Jattpur-Pz	12.90		13.50	13.50
415.	**Hoshiarpur**	Jhir Da Khuh-DW				5.95
416.	**Hoshiarpur**	Kharkan-Pz				59.60
417.	**Hoshiarpur**	Khera-Pz	17.30		18.30	18.25
418.	**Hoshiarpur**	Mahil Baltohian-Pz	32.45		34.35	34.70
419.	**Hoshiarpur**	Mahilpur-Pz	20.44	20.13	20.55	21.80
420.	**Hoshiarpur**	Maranwali-PZ			16.45	
421.	**Hoshiarpur**	Mianipur-Pz	4.65		5.90	6.50
422.	**Hoshiarpur**	Mukerian Dw			1.23	1.63
423.	**Hoshiarpur**	Naharpur-Pz	3.70		4.65	4.60
424.	**Hoshiarpur**	Namoli-PZ			26.60	
425.	**Hoshiarpur**	Nangal Bihala-DW	11.48	11.05	9.42	10.33
426.	**Hoshiarpur**	Nangal Thathal-Pz	17.70		18.90	18.90
427.	**Hoshiarpur**	Pan Khuh-DW	7.18		3.90	3.60
428.	**Hoshiarpur**	Pandori Mehal-Pz	21.30		22.00	22.00
429.	**Hoshiarpur**	Parshote-Pz	21.60		23.30	23.35
430.	**Hoshiarpur**	Phuglana- Pz	26.34	27.87	24.90	23.47
431.	**Hoshiarpur**	Rampur Colony (HSP) pz-medium		22.41	21.64	23.19
432.	**Hoshiarpur**	Samraj Tanda-DW	4.94	3.84	3.30	3.94
433.	**Hoshiarpur**	Satnoh-PZ.			36.10	
434.	**Hoshiarpur**	Sham Chaurasi	12.05	12.03	11.80	10.85
435.	**Hoshiarpur**	Sibo Chak- DW	8.35	6.72	7.30	7.70
436.	**Hoshiarpur**	Simbli- OW	15.02	18.88	18.40	16.80
437.	**Hoshiarpur**	Simbli-Pz	15.60	17.41	15.80	15.70
438.	**Hoshiarpur**	Talwara1	12.07	11.50	11.45	11.26
439.	**Hoshiarpur**	Tanda	4.20		5.10	
440.	**Hoshiarpur**	Thakarwala	11.26	11.47	10.66	10.66
441.	**Jalandhar**	Adampur 3(s)	8.18	7.24	6.40	6.88
442.	**Jalandhar**	Adarman-Pz	17.00		18.40	17.70
443.	**Jalandhar**	Akalpur-Pz	17.20		18.65	16.40
444.	**Jalandhar**	Allawalpur	6.95		9.30	8.08

445.	**Jalandhar**	Bilga-Pz	18.60		20.30	19.25
446.	**Jalandhar**	Billi Chahrami-Pz	29.80		33.20	31.50
447.	**Jalandhar**	Chania-Pz	21.80		25.25	23.60
448.	**Jalandhar**	Dhanda-Pz	30.10		32.40	30.40
449.	**Jalandhar**	Dhirowal-Pz	8.20		9.50	9.20
450.	**Jalandhar**	Fateh Jalal-Pz	23.00		27.00	25.00
451.	**Jalandhar**	Gehlan-pz	15.40		17.20	15.85
452.	**Jalandhar**	Gillian-Pz	33.20		34.55	33.10
453.	**Jalandhar**	Gohiran	30.81		30.05	30.40
454.	**Jalandhar**	Hardo Pharwal-Pz	25.10		28.30	26.10
455.	**Jalandhar**	Hardo Sheikh-Pz	28.10		30.15	28.20
456.	**Jalandhar**	Jalandhar 3(vs)	34.39	37.82	36.23	33.26
457.	**Jalandhar**	Jalbhe				
458.	**Jalandhar**	Jandiala-Pz	25.52	28.93	29.05	28.45
459.	**Jalandhar**	Jandu Singha-Pz	25.00		28.20	27.10
460.	**Jalandhar**	Janian-Pz	23.60		26.10	24.40
461.	**Jalandhar**	Kakar Kalan-Pz	17.70		21.00	19.40
462.	**Jalandhar**	Kala-Pz	21.70		24.20	22.10
463.	**Jalandhar**	Kalyanpur-Pz	30.90		32.50	31.40
464.	**Jalandhar**	Kang Sahib Rai-Pz	30.00		31.50	29.80
465.	**Jalandhar**	Kartarpur 2(s)	17.13	19.13	17.39	18.09
466.	**Jalandhar**	Kharal Kalan Pz-S	13.70	14.16	14.50	14.50
467.	**Jalandhar**	Kot Wadal Khan-Pz	21.40		23.10	21.60
468.	**Jalandhar**	Kurla-Pz	18.20		20.80	19.50
469.	**Jalandhar**	Lallian kalan Pz-S	32.70	35.20	33.70	31.95
470.	**Jalandhar**	Mahmuwal-Pz	30.00		32.20	30.35
471.	**Jalandhar**	Mehsampur-Pz	19.10		20.55	19.50
472.	**Jalandhar**	Nakodar 2(m)	30.31	31.97	31.86	28.99
473.	**Jalandhar**	Nakodar 3(s)	30.25			31.24
474.	**Jalandhar**	Nangal Shaman	29.10		32.25	30.30
475.	**Jalandhar**	Nasirpur-Pz	8.30		9.50	9.10
476.	**Jalandhar**	Nussi-Pz	26.00		30.10	27.90
477.	**Jalandhar**	Pathial-Pz	14.10		16.25	15.60
478.	**Jalandhar**	Pharwala-Pz	20.70		22.50	20.80
479.	**Jalandhar**	Phillaur 2(s)	15.59	16.10	16.05	18.30
480.	**Jalandhar**	Rahimpur-Pz	23.10		27.30	24.10

481.	**Jalandhar**	Rurka Kalan- Pz	21.70		24.20	21.80
482.	**Jalandhar**	Samarahi-Pz	18.20		20.60	
483.	**Jalandhar**	Shahkot(s)	27.70	26.65		25.06
484.	**Jalandhar**	Shahkot-Pz-Pb	15.30		16.40	15.65
485.	**Jalandhar**	Skarar Pur-Pz	18.40		22.70	19.60
486.	**Jalandhar**	Sultanpur-Pz	16.00		18.10	16.50
487.	**Jalandhar**	Talwandi Bhutial-Pz	20.60			
488.	**Jalandhar**	Talwan-Pz	18.50		20.60	19.00
489.	**Jalandhar**	Thanda-Pz	22.20		23.55	21.75
490.	**Jalandhar**	Udhopur	9.20	6.88	6.85	
491.	**Kapurthala**	Amanipur-Pz	11.25		12.25	11.25
492.	**Kapurthala**	Balera-Pz	26.60		34.30	29.15
493.	**Kapurthala**	Bauril Harnampur-Pz	12.64		13.84	12.84
494.	**Kapurthala**	Begowal-Pz	5.70		6.10	5.30
495.	**Kapurthala**	Bhanoki-Pz	23.50		25.30	23.90
496.	**Kapurthala**	Bhatnura Khurd-S	13.77	19.19	14.52	13.85
497.	**Kapurthala**	Bhawanipur-Pz	8.75		10.70	8.40
498.	**Kapurthala**	Bholath M	7.94		10.70	8.75
499.	**Kapurthala**	Bholath S	9.25	6.60	8.14	8.63
500.	**Kapurthala**	Chakoke-Pz	5.19		6.96	5.65
501.	**Kapurthala**	Dadwindi-Pz			21.80	20.80
502.	**Kapurthala**	Dalla	20.70		9.94	9.24
503.	**Kapurthala**	Hamira-Pz	9.69		5.84	5.24
504.	**Kapurthala**	Hazipur-Pz	5.24	25.83	21.65	20.35
505.	**Kapurthala**	Hussainpura-S Pz	20.95	25.46	21.60	17.92
506.	**Kapurthala**	Kapurthala2 (s)		21.80	22.27	18.77
507.	**Kapurthala**	Karnail Ganju-Pz	6.51		7.61	6.96
508.	**Kapurthala**	Kishanpur	19.25		27.90	22.15
509.	**Kapurthala**	Maheru-Pz	18.70		22.10	19.60
510.	**Kapurthala**	Miani Bola-Pz	8.51		9.81	8.71
511.	**Kapurthala**	Mithra-Pz	13.10		13.90	13.20
512.	**Kapurthala**	Nadala	6.00			
513.	**Kapurthala**	Nathu Chahal-Pz	26.50		33.34	29.29
514.	**Kapurthala**	Nurpur Janoa-Pz	8.13		8.73	8.13
515.	**Kapurthala**	Paazian-Pz	15.70		19.00	17.50

516.	**Kapurthala**	Phagwara2 (s)	25.10	28.84	27.45	27.05
517.	**Kapurthala**	Phulewal-Pz	15.40		16.80	15.40
518.	**Kapurthala**	Rawalpindi-Pz	15.95		23.05	18.95
519.	**Kapurthala**	Saiflabad-Pz	8.15		8.65	8.10
520.	**Kapurthala**	Sangatpur-Pz	16.70		24.60	18.00
521.	**Kapurthala**	Shalapur Dona-Pz	25.60		31.15	26.90
522.	**Kapurthala**	Sheikh Manga-Pz	3.85		4.65	4.15
523.	**Kapurthala**	Sultanpur2 (s)	16.03	18.33	15.98	15.20
524.	**Kapurthala**	Talwandi Chaudary -Pz	9.63	11.46	9.83	9.35
525.	**Kapurthala**	Thikriwali-Pz	7.60		8.30	7.68
526.	**Ludhiana**	Alamgir-Pz	19.50		19.80	18.55
527.	**Ludhiana**	Aliwal-Pz	8.05		8.89	8.34
528.	**Ludhiana**	Begowal	8.80	9.45	9.62	9.64
529.	**Ludhiana**	Bhagwanpur-Pz	15.38		15.10	14.65
530.	**Ludhiana**	Bhahlolpur-DW	11.76	11.92	11.68	12.45
531.	**Ludhiana**	Bharthala Randhawa-Pz	23.15		23.28	22.30
532.	**Ludhiana**	Bhikhi Khatron-Pz	14.10		13.53	13.13
533.	**Ludhiana**	Bilaspur-Pz	9.35		9.55	9.30
534.	**Ludhiana**	Chaminala-Pz	21.30		22.00	21.10
535.	**Ludhiana**	Chankian Khurd-Pz	8.43		8.25	8.00
536.	**Ludhiana**	Chattar Singh Park-ldh				37.73
537.	**Ludhiana**	Chaunta-Pz	7.72		7.55	6.40
538.	**Ludhiana**	Chhapar-Pz	22.87		24.00	22.70
539.	**Ludhiana**	Dinnamder-Pz	20.40		20.80	20.20
540.	**Ludhiana**	Dodpur-Pz	19.25		19.60	19.73
541.	**Ludhiana**	Doraha-Pz	6.75	6.66	6.73	6.84
542.	**Ludhiana**	Galibkalan-Pz	21.79		25.10	23.00
543.	**Ludhiana**	Gohaur-Pz	21.75		21.95	21.65
544.	**Ludhiana**	Gopalpur 2(s)	16.50	18.05	17.15	17.16
545.	**Ludhiana**	Habbowal			7.10	
546.	**Ludhiana**	Hambowal-Pz			19.23	6.15
547.	**Ludhiana**	Harnampur	18.48		18.90	18.03
548.	**Ludhiana**	Hedon-Pz	18.80		19.25	18.92
549.	**Ludhiana**	Ikloha-Pz	20.80	21.95		21.18

550.	**Ludhiana**	Kadon-Pz			28.85	
551.	**Ludhiana**	Kalsian	27.10		9.00	28.10
552.	**Ludhiana**	Katanikalan-Pz	9.40		21.84	8.90
553.	**Ludhiana**	Khandur	20.50		20.10	21.34
554.	**Ludhiana**	Kishangarh-Pz	20.40		26.55	19.60
555.	**Ludhiana**	Kishanpur-Pz	25.30			26.50
556.	**Ludhiana**	Lalan1	7.77	9.48	4.90	5.76
557.	**Ludhiana**	Lelon-Pz	5.18		16.19	4.68
558.	**Ludhiana**	Lil- II Pz	17.76	17.20	9.08	16.56
559.	**Ludhiana**	Lil-Pz III	13.33	13.20	13.33	13.69
560.	**Ludhiana**	Lodhiwal-Pz	11.10		11.73	11.15
561.	**Ludhiana**	Lohara-Pz	28.80		29.30	28.85
562.	**Ludhiana**	Maksudra-Pz	10.33	10.20		
563.	**Ludhiana**	Manak Majra-Pz	21.96		21.90	21.00
564.	**Ludhiana**	Mangat-Pz	11.77		11.60	11.30
565.	**Ludhiana**	Manoke-Pz	25.90		29.60	27.80
566.	**Ludhiana**	Mehma Singh Wala-Pz	20.30		21.50	20.50
567.	**Ludhiana**	Mushkabad	11.72	12.30	11.20	11.76
568.	**Ludhiana**	Nurpur-Pz	26.40		28.60	27.80
569.	**Ludhiana**	P.A.U.Ludhiana 2(s)	26.45		27.37	21.71
570.	**Ludhiana**	Pabbian-Pz	17.00		17.75	17.20
571.	**Ludhiana**	Pandori-Pz	20.16		20.85	20.10
572.	**Ludhiana**	Payal-Pz	16.60		17.30	16.95
573.	**Ludhiana**	Punjeta	10.23	9.41	9.37	9.67
574.	**Ludhiana**	Ragba-Pz	19.50		20.30	19.30
575.	**Ludhiana**	Raikot-Pz	26.20		29.20	26.65
576.	**Ludhiana**	Rajona Khurd	24.20		27.68	24.78
577.	**Ludhiana**	Rashiana-Pz	22.60		23.10	22.20
578.	**Ludhiana**	Rashin	25.25		26.88	26.48
579.	**Ludhiana**	Rattewal-Pz	21.87		23.90	22.77
580.	**Ludhiana**	Roomi-Pz	22.50		27.00	23.90
581.	**Ludhiana**	Sajaywal-Pz	21.70		28.00	22.15
582.	**Ludhiana**	Samrala 2(s)	9.60	10.90	13.44	13.38
583.	**Ludhiana**	Sanewal-Pz	16.12		16.15	16.10
584.	**Ludhiana**	Sangatpura-Pz	20.62		20.38	18.90

585.	**Ludhiana**	Sherian	3.58	3.53	3.44	3.57
586.	**Ludhiana**	Sherpur-Pz	4.33		4.10	3.96
587.	**Ludhiana**	Sidhwan Bet-Pz	8.62	7.98	9.05	7.97
588.	**Ludhiana**	Talwandi Kalan-Pz	17.76		19.25	18.15
589.	**Ludhiana**	Udonwal-Pz	4.12		4.28	4.10
590.	**Ludhiana**	Upplan	9.88		9.45	9.54
591.	**Ludhiana**	Utlan	11.12	12.60		
592.	**Mansa**	Adamke-Pz	13.01			
593.	**Mansa**	Aklia-Pz	19.29		20.90	20.16
594.	**Mansa**	Alampur Mandran-Pz	10.28		10.98	10.04
595.	**Mansa**	Alisher Khurd-Pz	12.34		13.41	12.71
596.	**Mansa**	Bahadur Pur-Pz	14.35		15.20	15.14
597.	**Mansa**	Bareh-Pz	11.65		11.90	11.64
598.	**Mansa**	Behniwala-Pz	6.69		7.21	6.97
599.	**Mansa**	Bhamme Kalan-Pz	6.29		6.74	6.54
600.	**Mansa**	Bhikhi 2 (s)		16.12	16.25	16.21
601.	**Mansa**	Budhlada	12.55	13.56	16.25	13.50
602.	**Mansa**	Budhlada-Pz	13.25		14.11	13.81
603.	**Mansa**	Burj Bhalaike	3.92	4.15	3.69	4.30
604.	**Mansa**	Burj Rathi-Pz	12.30		13.61	13.01
605.	**Mansa**	Fattamaluka	5.68	5.72	5.92	5.67
606.	**Mansa**	Gehlan-Pz	6.18		6.47	7.14
607.	**Mansa**	Gharangne-Pz	7.48		7.68	5.54
608.	**Mansa**	Hera Wala-Pz	10.28		10.75	10.18
609.	**Mansa**	Hero Kalan-Pz	24.50		25.59	24.83
610.	**Mansa**	Hirke-Pz			20.61	19.70
611.	**Mansa**	Jatana Kalan-Pz	6.41		6.24	
612.	**Mansa**	Khiala Kalan-Pz	10.12		10.49	10.31
613.	**Mansa**	Khokhar Kalan-Pz	8.13		10.49	8.21
614.	**Mansa**	Kot Dhamru	6.55	7.55	7.21	7.50
615.	**Mansa**	Kotra	11.32	8.22	12.77	12.52
616.	**Mansa**	Kusla-Pz	3.02		3.71	3.83
617.	**Mansa**	Lakhiwal-Pz	18.27		18.99	18.82
618.	**Mansa**	Mansa	9.01		9.03	
619.	**Mansa**	Phaphare Bhaike-Pz	15.20		16.19	15.32

620.	**Mansa**	Raipur-Pz	7.35		6.94	
621.	**Mansa**	Ralla	10.71		10.89	10.84
622.	**Mansa**	Sangha-Pz				57.14
623.	**Mansa**	Tandian-Pz	7.34		7.70	7.78
624.	**Moga**	Baje Ke-Pz	14.35	19.14	17.87	14.67
625.	**Moga**	Baraghar-Pz	20.80		23.00	21.90
626.	**Moga**	Budh Singh Wala-Pz	20.45	23.79	21.94	21.00
627.	**Moga**	Chogawan-Pz	29.87	33.35	32.72	31.65
628.	**Moga**	Dagru- Pz	30.52	33.10	33.35	32.29
629.	**Moga**	Damru Khurd				19.15
630.	**Moga**	Darapur	23.28		25.11	
631.	**Moga**	Darapur 07pz			25.50	24.22
632.	**Moga**	Daulatpur Niwan-Pz	26.60		28.65	26.90
633.	**Moga**	Ghoha Khurd-Pz	17.60		19.30	
634.	**Moga**	Himatpura-Pz	27.50		29.80	28.70
635.	**Moga**	Indergarh-Pz	17.82			
636.	**Moga**	Jhandewala-Pz	30.10		31.90	30.90
637.	**Moga**	Kamalke-Pz	12.15			
638.	**Moga**	Khokri Kalan-Pz	26.00		28.50	27.10
639.	**Moga**	Khosa Randhir-Pz	27.60			
640.	**Moga**	Mandar-Pz	8.88		23.50	
641.	**Moga**	Mangewala-Pz	21.10		22.50	22.40
642.	**Moga**	Nathu Wala-Pz	20.10		31.94	21.20
643.	**Moga**	Nihalsinghwala-Pz	30.05	32.05	28.40	31.32
644.	**Moga**	Raonke Kalan-Pz	26.50		20.00	27.10
645.	**Moga**	Samad Bhai-Pz	18.10			19.10
646.	**Moga**	Samalsar-Pz	16.00		18.20	16.90
647.	**Moga**	Thathe Bhai-Pz	17.80		19.50	18.10
648.	**Moga**	Tota Singh Wala-Pz	9.31			
649.	**Muktsar**	Abulkharana			2.30	2.00
650.	**Muktsar**	Abulkharana-Pz	2.20			
651.	**Muktsar**	Alam Wala	2.47		2.27	2.07
652.	**Muktsar**	Balocha Khera(rasoolpur)	0.77	0.25	0.18	1.57
653.	**Muktsar**	Bariwala-Pz	1.60		1.41	

654.	**Muktsar**	Bhaliana	8.55	9.31	9.10	9.87
655.	**Muktsar**	Bhamma(bam)				
656.	**Muktsar**	Bhiti Wala-Pz	2.00		2.00	2.10
657.	**Muktsar**	Chaktam Kot-Pz	1.70		2.00	1.42
658.	**Muktsar**	Chotian-Pz				
659.	**Muktsar**	Dhalkot-Pz			7.50	6.65
660.	**Muktsar**	Doda	3.70		1.52	4.43
661.	**Muktsar**	Doda-Pz	3.54	2.32	2.22	2.80
662.	**Muktsar**	Gaga-Pz				
663.	**Muktsar**	Husnar-Pz	2.70		2.77	2.77
664.	**Muktsar**	Jhurar-Pz	2.60		2.80	2.45
665.	**Muktsar**	Kabar Wala	3.04	3.84		3.90
666.	**Muktsar**	Kattianwali-Pz	3.10	0.22	2.65	2.53
667.	**Muktsar**	Khirkian Wala-Pz			1.60	1.10
668.	**Muktsar**	Khunde Halal-Pz	2.46	2.35	2.18	
669.	**Muktsar**	Killian Wali-Pz	6.50		6.65	5.55
670.	**Muktsar**	Kollian Wali-pz	1.50		1.30	1.37
671.	**Muktsar**	Kot Bhai- DW	5.35		5.40	5.35
672.	**Muktsar**	Kuttianwali			1.07	
673.	**Muktsar**	Labanianwali	2.67	3.02	2.67	3.25
674.	**Muktsar**	Lambi	2.52			3.45
675.	**Muktsar**	Lambi-Pz	2.50	2.95	2.70	2.32
676.	**Muktsar**	Muktsar	4.99	5.13	4.00	5.02
677.	**Muktsar**	Phulu Khera-Pz	2.05		2.20	2.10
678.	**Muktsar**	Ratta Khera Chota-Pz	2.30		1.75	1.93
679.	**Muktsar**	Sheikh-Pz	2.70		2.75	2.30
680.	**Muktsar**	Sohiwal-Pz	2.20			
681.	**Nawanshahr**	Alowal-Pz	5.80		6.60	5.80
682.	**Nawanshahr**	Badhwan-Pz	16.30		18.40	16.65
683.	**Nawanshahr**	Baharam-Pz				17.30
684.	**Nawanshahr**	Bahara-Pz	15.00		17.50	15.50
685.	**Nawanshahr**	Bahlora Kallan- Pz	5.01	5.88	4.57	5.33
686.	**Nawanshahr**	Bahua-Pz	20.20		22.50	20.80
687.	**Nawanshahr**	Balachore	15.00	18.71	17.48	
688.	**Nawanshahr**	Hakimpur-Pz	15.60		17.80	16.10
689.	**Nawanshahr**	Kariam-Pz	15.00		15.80	15.10

690.	**Nawanshahr**	Mauhra-Pz	33.05	33.47	33.35	33.60
691.	**Nawanshahr**	Rahon	9.04	9.15	9.14	8.97
692.	**Nawanshahr**	Raipur Dhaba-Pz	14.23	15.95	14.88	15.15
693.	**Patiala**	Ballopur	3.25		3.45	
694.	**Patiala**	Bhankhar-Pz	26.98		28.10	
695.	**Patiala**	Bhojo majri 07pz	22.94	22.21	21.25	24.89
696.	**Patiala**	Binzal-Pz	25.55			
697.	**Patiala**	Birkauli	26.21		28.10	26.78
698.	**Patiala**	Chandiala-Pz	23.15		22.90	22.60
699.	**Patiala**	Chhat			8.75	
700.	**Patiala**	Dera Bassi 07pz	12.50		17.38	11.99
701.	**Patiala**	Devigarh				
702.	**Patiala**	Devigarh 1Pz	30.16	36.03	30.05	31.31
703.	**Patiala**	Devigarh IIPz	29.97	31.24	32.61	32.53
704.	**Patiala**	Devigarh-III Pz	29.64		32.95	32.26
705.	**Patiala**	Dhakdaba 07	17.30	17.24	23.99	25.06
706.	**Patiala**	Gholu majra 07pz			8.31	12.88
707.	**Patiala**	Haluka			7.56	
708.	**Patiala**	Hari Majra				7.23
709.	**Patiala**	Harion Kalan-Pz			37.10	38.00
710.	**Patiala**	Issapur- DW				4.70
711.	**Patiala**	Joli			5.48	
712.	**Patiala**	Kakrala-Pz	34.90		36.10	36.80
713.	**Patiala**	Kalyan 07pz	23.57	24.23	24.45	24.24
714.	**Patiala**	Kami Kalan	12.52	12.32	28.04	12.18
715.	**Patiala**	Kulburcha-Pz	33.70		34.60	35.05
716.	**Patiala**	Kutha Kheri-Pz	31.80		31.95	
717.	**Patiala**	Lacharu Kalan	5.26	5.04	5.71	5.91
718.	**Patiala**	Lachkani-Pz	19.40	21.72	21.25	20.79
719.	**Patiala**	Miranpur- Pz	29.65		31.59	29.21
720.	**Patiala**	Mirpur-Pz	3.35		32.22	
721.	**Patiala**	Nanhera-Pz	23.20		23.80	
722.	**Patiala**	Nariana			9.97	
723.	**Patiala**	Patran-Pz	37.97	37.86	37.73	37.53
724.	**Patiala**	Rajpura Pz M	30.77	30.67	30.30	
725.	**Patiala**	Rajpura-PzSt	39.20		38.95	36.55
726.	**Patiala**	Samana-Pz	32.70	33.59	34.05	33.83

727.	**Patiala**	Samaspur-Pz	24.40		24.10	23.25
728.	**Patiala**	Sangatpura-Pz	26.18			24.89
729.	**Patiala**	Singhpura-Pz	25.80		28.30	28.65
730.	**Patiala**	Thua	28.87	33.97	34.07	33.90
731.	**Rupnagar**	Ahmedpur	5.44	8.30	7.43	8.08
732.	**Rupnagar**	Bains			13.05	13.20
733.	**Rupnagar**	Bera Chauta	4.05	3.70	4.06	4.03
734.	**Rupnagar**	Bhalan	4.45	2.02	3.37	4.45
735.	**Rupnagar**	Braham Pur	4.45	2.95	4.67	4.28
736.	**Rupnagar**	Chakdera	4.65	4.26		2.85
737.	**Rupnagar**	Chatamli- Pz	37.42	42.11	39.52	38.35
738.	**Rupnagar**	Dhair		8.14		9.14
739.	**Rupnagar**	Dheri	8.00	4.88	4.24	4.60
740.	**Rupnagar**	Dumewal	12.63	9.98	9.73	10.13
741.	**Rupnagar**	Dusarna			15.65	14.10
742.	**Rupnagar**	Gharoon	15.05		13.78	5.13
743.	**Rupnagar**	Ghoga	6.58	4.47	2.24	2.34
744.	**Rupnagar**	Hardinamoh	2.84	1.23	3.71	18.48
745.	**Rupnagar**	Kakrali	20.70		0.85	0.70
746.	**Rupnagar**	Kurrha-Pz	17.60		19.50	20.90
747.	**Rupnagar**	Landran			3.25	12.78
748.	**Rupnagar**	Landran-Pz	18.65	17.37	15.21	12.78
749.	**Rupnagar**	Malkpur-Pz	7.50		6.40	4.60
750.	**Rupnagar**	Nurpurbedi	9.80			
751.	**Rupnagar**	Raipur Kalan	16.30		16.35	16.40
752.	**Rupnagar**	Rurki Heeran-Pz	17.85	20.43	17.89	17.59
753.	**Rupnagar**	Soara	5.60	4.20		
754.	**Sangrur**	Bagarian-Pz	28.05	28.01	30.95	29.18
755.	**Sangrur**	Bapla-Pz				31.10
756.	**Sangrur**	Barnala (s)	34.28	35.36	36.13	35.77
757.	**Sangrur**	Bhadaur-Pz	24.39	27.15	26.72	25.86
758.	**Sangrur**	Bhojowali-Pz	32.40	35.32	34.10	33.51
759.	**Sangrur**	Bugra 1	29.51	29.43	30.17	29.32
760.	**Sangrur**	Chural Kalan M	25.61	25.51	27.21	26.81
761.	**Sangrur**	Dhanaula	20.50		22.10	
762.	**Sangrur**	Dharamgarh-Pz	25.58		25.97	26.15
763.	**Sangrur**	Gehlon-Pz	18.60			

764.	**Sangrur**	Ghanauri Kalan-Pz	37.01	38.72	37.60	38.14
765.	**Sangrur**	Haryao-DW				
766.	**Sangrur**	Hassanpur-Pz	26.22		26.60	26.70
767.	**Sangrur**	Isra-Pz	25.95		26.45	26.60
768.	**Sangrur**	Kala Jhar-Pz			29.10	29.25
769.	**Sangrur**	Kuler Khurd-Pz	31.72		32.29	32.80
770.	**Sangrur**	Kurar-Pz	33.00		35.60	34.20
771.	**Sangrur**	Ladda-Pz	30.16	29.97		
772.	**Sangrur**	Lehal Kalan-Pz	24.85		25.22	25.28
773.	**Sangrur**	Lohgarh-Pz	25.44		27.10	25.90
774.	**Sangrur**	Longowal-Pz	25.99	26.80	26.95	27.13
775.	**Sangrur**	Mahal Kalan-Pz	29.52	31.85	33.34	30.02
776.	**Sangrur**	Malerkotla-DW	34.63	34.34	33.73	35.15
777.	**Sangrur**	Manvi-Pz	21.43		21.10	20.94
778.	**Sangrur**	Mastuana-Pz	26.90	37.08	27.35	27.52
779.	**Sangrur**	Mehsampur-Pz	31.86		32.10	32.22
780.	**Sangrur**	Nangal-Pz			36.00	34.90
781.	**Sangrur**	Panjgaraian- Pz	34.78		35.25	35.40
782.	**Sangrur**	Ramgarh-Pz	20.40		21.80	20.60
783.	**Sangrur**	Rampur Channa-Pz	25.90		26.25	26.40
784.	**Sangrur**	Rurki Kalan-Pz	21.78		22.00	22.23
785.	**Sangrur**	Shekha	30.00		32.50	31.20
786.	**Sangrur**	Sunam-Pz	32.31	33.38	32.38	32.97
787.	**Sangrur**	Tappa Mandi-Pz	27.20		29.50	28.20

						ANNEXURE-II
S. NO.	**District**	**Location**	**SEASONAL FLUCTUATIONS**			
			JANUARY 2015-MAY 2015	**MAY 2015 AUGUST 2015**	**MAY 2015-NOVEMBER 2015**	**MAY 2015-JANUARY 2016**
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Chandigarh	BURAIL	-0.15	0.18	0.07	-0.09
2.	Chandigarh	Csio-combined	-0.20			
3.	Chandigarh	CSIO-S	-0.97			-0.46
4.	Chandigarh	Maloya				-0.58
5.	Chandigarh	NEW INDUST AREA	-0.13	-0.93	4.20	0.12
6.	Chandigarh	Sec-27, Ar Well	5.94	-0.55	-1.79	1.16
7.	Chandigarh	SECT 10C (D)	-0.81	11.63	10.43	10.63
8.	Chandigarh	SECT 10C (S)	0.03	-1.49		-14.90
9.	Chandigarh	SECT 21D (S)				
10.	Chandigarh	SECT 31D (D)	-1.17	-0.82	-1.19	0.24
11.	Chandigarh	SECT 31D (S)	-0.34	-6.48	0.25	-0.91
12.	Chandigarh	SECT 37D (S)	-2.12	-0.29	0.20	-0.62
13.	Chandigarh	SECT 39D (S)	0.92	-0.59	-0.21	-0.87
14.	Chandigarh	SECT 44D (S)	-2.54		0.10	0.40
15.	Chandigarh	Sector 52-PZ				
16.	Chandigarh	Sector-46 (shallow)		-0.36		
17.	**Amritsar**	Aima Khurd-Pz	-0.60	0.78	-0.50	0.20
18.	**Amritsar**	Ajnala	-0.04		-0.05	0.07

19.	**Amritsar**	Aminshah Khalra	-3.59	2.04		
20.	**Amritsar**	Amritsar1	-0.67		-2.04	-0.30
21.	**Amritsar**	Attari-Pz	-0.80		-1.70	0.10
22.	**Amritsar**	Bakipur-Pz	-0.35		-1.96	-0.85
23.	**Amritsar**	Bal Kalan-Pz	-0.70		0.50	1.10
24.	**Amritsar**	Bath-Pz	-0.22			0.20
25.	**Amritsar**	Beas07	-0.28		-1.57	1.16
26.	**Amritsar**	Bhagala-Pz	-0.82		-2.80	-1.62
27.	**Amritsar**	Bhagwanpur-Pz			-2.34	
28.	**Amritsar**	Bhalaipur-Pz	-0.34		-1.75	-0.30
29.	**Amritsar**	Bhankar Kalan-Pz	-0.15		-2.76	-1.91
30.	**Amritsar**	Bhattaywad-Pz	0.10		0.50	0.45
31.	**Amritsar**	Bhikiwind-Pz	-0.75		-1.04	-0.38
32.	**Amritsar**	Bhura-Pz	0.32		-2.26	-1.44
33.	**Amritsar**	Bhure-Pz	-0.43		-2.06	-0.87
34.	**Amritsar**	Bhusse-Pz	-0.20		-2.30	-0.80
35.	**Amritsar**	Boparai Khurd-Pz	-1.40		-0.20	0.70
36.	**Amritsar**	Brahmpur-Pz	0.06		-2.25	-1.21
37.	**Amritsar**	Burjwal-Pz	-0.20		-1.60	-0.30
38.	**Amritsar**	Chabal 07	-0.45			
39.	**Amritsar**	Chak Dogra-Pz	0.00		-0.10	-0.30
40.	**Amritsar**	Chakkare Khan-Pz	-0.20		-2.10	-0.40
41.	**Amritsar**	Chobal Kalan-Pz	-0.71	-0.45		
42.	**Amritsar**	ChogWan-Pz	-0.32	0.05	-0.61	0.70
43.	**Amritsar**	Chola Sahib-Pz	-1.10		-1.28	0.19
44.	**Amritsar**	Choudhary Wala-Pz	-0.14		-1.62	-0.40
45.	**Amritsar**	Chuselawad-Pz	-0.64		-2.27	-1.28

46.	**Amritsar**	Dhariwal-Pz	-2.90		0.60	0.70
47.	**Amritsar**	Dholan-Pz	0.38		-1.70	-1.28
48.	**Amritsar**	Dhottian				
49.	**Amritsar**	Dhottian-Pz	-0.53			
50.	**Amritsar**	Dhulika-Pz	0.30		-0.20	0.40
51.	**Amritsar**	Dohan-Pz	-1.10		-0.40	0.30
52.	**Amritsar**	Ekalgoda-Pz	-0.18	-0.67	-2.81	-2.00
53.	**Amritsar**	Gago Mahal- Pz	0.32	0.08	-0.44	0.04
54.	**Amritsar**	Gandi Wind-Pz	-0.46			-0.45
55.	**Amritsar**	Gill wali-Pz	-0.80	0.03	-0.40	0.60
56.	**Amritsar**	Goindwal 07	-0.22		-0.90	-0.02
57.	**Amritsar**	Gujjaran Wali-Pz	0.00			
58.	**Amritsar**	Harike		0.31		
59.	**Amritsar**	Jandiala Guru-Pz	-0.50		-0.15	0.22
60.	**Amritsar**	Jandoke-Pz	0.71		-2.90	-1.30
61.	**Amritsar**	Jasrur-Pz	-0.90		-0.70	0.30
62.	**Amritsar**	Jethuwal-Pz	0.90		0.40	0.40
63.	**Amritsar**	Kalsia Kalan07	-0.88			1.57
64.	**Amritsar**	Kandowali-Pz	-0.40		0.00	0.80
65.	**Amritsar**	Karyal-Pz	0.20		0.10	0.80
66.	**Amritsar**	Khadur Sahib-Pz	-0.37		-0.85	-0.40
67.	**Amritsar**	Khalra-Pz			-2.28	
68.	**Amritsar**	Khilchian-Pz	-1.00		-0.75	0.40
69.	**Amritsar**	Kotbudda-Pz	-0.10		-1.26	1.10
70.	**Amritsar**	Kotli Sur Singh-Pz			-1.88	
71.	**Amritsar**	Mahendipur-Pz	-1.07			-1.62
72.	**Amritsar**	Mahima-Pz	-0.70		-0.50	0.40

73.	**Amritsar**	Majitha- Pz	-0.30		0.40	0.60
74.	**Amritsar**	Makhan Windi-Pz	-0.40		-0.40	0.30
75.	**Amritsar**	Marhona-Pz	0.00		-1.90	-0.70
76.	**Amritsar**	Mari Kamboke-Pz			-3.13	
77.	**Amritsar**	Mehleykey-Pz	-1.15		-0.30	-0.20
78.	**Amritsar**	Mehta			-3.72	
79.	**Amritsar**	Mehta-Pz	-2.70		1.80	0.40
80.	**Amritsar**	Miran Chak-Pz	-2.20	1.50	-0.10	0.40
81.	**Amritsar**	Mohawa	0.37			
82.	**Amritsar**	Nangal Sahaul-Pz	0.00		-0.50	0.30
83.	**Amritsar**	Nawan Tanal- Pz	-0.56			0.73
84.	**Amritsar**	Pakharpura -Pz	-0.10		-0.30	1.00
85.	**Amritsar**	Pindan-Pz			-0.70	
86.	**Amritsar**	Rajoke-Pz	0.23			-0.40
87.	**Amritsar**	Ramdas-DW				
88.	**Amritsar**	Rampura-Pz	-0.40		0.30	0.75
89.	**Amritsar**	Ratoke-Pz	-0.90		-2.82	-0.65
90.	**Amritsar**	Rupowal Brahmana-Pz	-1.20		0.20	0.80
91.	**Amritsar**	Sabran-Pz	0.00		-2.60	-1.30
92.	**Amritsar**	Sahab Pura- Pz	0.45	-0.21	-1.11	
93.	**Amritsar**	Sathiala-Pz	0.20		-0.30	0.50
94.	**Amritsar**	Shabura-Pz	-1.60		-1.30	-3.68
95.	**Amritsar**	Sham Nagar-Pz	-0.10		-0.70	1.00
96.	**Amritsar**	Sheron-Pz	0.10		-2.10	-0.40
97.	**Amritsar**	Sugga-Pz			-2.30	
98.	**Amritsar**	Talwandi Dogra-Pz	-2.10		-1.30	0.10

99.	**Amritsar**	Tarsika-Pz	-1.10		-0.60	0.55
100.	**Amritsar**	Thatha- Pz	-0.27		-0.90	0.67
101.	**Amritsar**	Ugar Aulakh-Pz	0.00		-0.20	0.90
102.	**Amritsar**	Vadala Kalan-Pz	0.00		-0.30	0.50
103.	**Amritsar**	Valtoha			-2.32	
104.	**Amritsar**	Wandala Bittewad-Pz	-1.10		-0.70	0.90
105.	Bathinda	Ablu	-4.07	-1.15	-2.02	-0.07
106.	Bathinda	Aleke Jalal-Pz	-2.08		-1.62	-1.27
107.	Bathinda	Badiala-Pz	-1.71	-0.66	-0.65	-0.35
108.	Bathinda	Bagher Mohabat Singh-Pz	-0.45		-0.31	0.03
109.	Bathinda	Bahman Kaur Singh-Pz	-0.50		0.13	0.25
110.	Bathinda	Balianwali-Pz	-1.98		-1.70	-3.02
111.	Bathinda	Balluana1	-2.93	-0.02	-0.19	2.43
112.	Bathinda	Balluana-Pz	-7.60		-0.63	6.17
113.	Bathinda	Banbhiha-Pz	0.25		0.77	0.65
114.	Bathinda	Bandi-Pz				0.43
115.	Bathinda	Bhagibandar	-0.64	0.36	-0.04	-2.64
116.	Bathinda	Bugran-Pz	-2.08		-1.50	-1.16
117.	Bathinda	Burj Gill-Pz	-2.20		-2.25	0.00
118.	Bathinda	Burj-Pz	0.31		-0.75	-0.10
119.	Bathinda	Deratapp	-0.04	0.11	-0.83	
120.	Bathinda	Dhapali1		-1.63	-1.42	-1.96
121.	Bathinda	Dhapali-Pz	-0.70	-2.75	-1.03	-0.61
122.	Bathinda	Dialpur Mirza	-1.22	-0.47	-2.65	-0.92
123.	Bathinda	Dialpura Bhlaike	-1.28	-1.05	-3.63	-0.79
124.	Bathinda	Dulle Wala-Pz	-1.99		-1.97	-0.33
125.	Bathinda	Ganga-Pz	-0.60	-1.06	0.27	

126.	Bathinda	Ghudda	-0.17		-6.41	0.00
127.	Bathinda	Ghudda-Pz	0.15			-1.25
128.	Bathinda	Gill Patti-DW	-0.40		-1.65	
129.	Bathinda	Gulabgarh 2 (s)	-0.58		-2.83	
130.	Bathinda	Gumti-DW	-1.59		-1.19	-1.37
131.	Bathinda	Guru Sar-Pz		4.85	-2.54	
132.	Bathinda	Gurusar				
133.	Bathinda	Harraipur-Pz	-0.86		-0.78	-0.10
134.	Bathinda	Jajjal	-0.16	0.01	1.09	0.45
135.	Bathinda	Jassi Bhagwali	0.90	1.40	0.82	-0.10
136.	Bathinda	Jassi Paowali-Pz	0.57		-0.19	-0.98
137.	Bathinda	Jhanduke	-0.27	-0.08	-0.55	-0.74
138.	Bathinda	Jhanduke-Pz				
139.	Bathinda	Kahan Singh Wala-DW	-0.51		-0.73	-1.18
140.	Bathinda	Kalla Bandar	0.25	1.22	-1.17	-2.79
141.	Bathinda	Kalyan Sukha-Pz	-1.55		-1.20	-1.56
142.	Bathinda	Koir Singh Wala-Pz	-1.50		-0.35	-0.17
143.	Bathinda	Kot Bhaktu-Pz	-0.15		-0.45	-0.25
144.	Bathinda	Kot Guru	-0.41		0.74	0.83
145.	Bathinda	Kot Shamir	-0.46	5.50	0.20	0.80
146.	Bathinda	Kothaguru-Pz		-0.80	-0.90	
147.	Bathinda	Lalliana-Pz	-0.48		0.05	0.10
148.	Bathinda	Lehra Dhulkot-Pz	-2.63		-2.22	-0.73
149.	Bathinda	Lehra Khanna-Dw	-1.20			
150.	Bathinda	Maihma Bhagwan-PZ	-0.37			0.02

151.	Bathinda	Maisar Khana	-0.54	-0.36	-2.07	-0.98
152.	Bathinda	Maisar Khana-Pz	0.31		0.09	-0.25
153.	Bathinda	Maluka-Pz			-1.13	
154.	Bathinda	Mandi Kalan-Pz	-3.55		-0.83	-1.81
155.	Bathinda	Mehraj-Pz	-2.16		-1.51	-1.14
156.	Bathinda	Mehta-Pz	0.50		-0.24	0.02
157.	Bathinda	Multania-Pz	-0.11		-0.80	-0.23
158.	Bathinda	Nahinwala	-11.16	-1.08	-0.52	9.57
159.	Bathinda	Nathana-Pz	-0.96		-2.70	-1.25
160.	Bathinda	Nathena-Pz	0.09		-0.37	0.05
161.	Bathinda	Phul	-3.90	-1.42		0.75
162.	Bathinda	Phulla				-0.80
163.	Bathinda	Phulla1		-0.65	-3.40	
164.	Bathinda	Puhla-Pz	-0.68		-1.16	-0.73
165.	Bathinda	Raike Kalan	-0.20	-0.21		0.32
166.	Bathinda	Rajgarh Kubey-Pz	1.65		-2.10	-1.05
167.	Bathinda	Rampura				
168.	Bathinda	Rayya-Pz	-1.96		-1.98	-0.33
169.	Bathinda	Salabatpur-Pz	-1.72		-2.30	-1.38
170.	Bathinda	Sangat -Pz	-0.56	0.38	0.22	-0.09
171.	Bathinda	Seema-DW	-0.44		-1.90	-0.78
172.	Bathinda	Sidhana			-1.98	-1.29
173.	Bathinda	Sooch-Pz	-2.04		-2.51	-0.82
174.	Bathinda	Teona-Pz			1.12	1.39
175.	Bathinda	Tungwali-Pz	-1.03		-1.00	-0.39
176.	Faridkot	Bead Sikhanwala - Pz	-0.51	1.24		0.25
177.	Faridkot	Behabal Kalan-Pz	0.00		-0.50	-0.40
178.	Faridkot	Burj Jawahar Singh-Pz	-0.60		-0.60	-0.80
179.	Faridkot	Chahd Baja	-0.27			-0.74

180.	Faridkot	Chak Kalan-Pz	0.00		0.50	0.45
181.	Faridkot	Devrana-Pz	0.00		0.65	0.15
182.	Faridkot	Dhaipai-Pz	0.00		-0.30	0.05
183.	Faridkot	Dhilwan Kalan	-0.47	0.13	0.58	-0.28
184.	Faridkot	Dhudi-Pz	0.00		-0.90	-0.40
185.	Faridkot	Dipsinghwala	-0.30	0.25	-0.22	1.60
186.	Faridkot	Faridkot-Pz	0.45		-0.30	-0.23
187.	Faridkot	Fatehgarh-Pz	-0.60		-0.55	-0.20
188.	Faridkot	Ghuiana-Pz	0.30		-0.60	0.50
189.	Faridkot	Karirwali	-2.49	-2.20	-2.34	-0.37
190.	Faridkot	Koharwala-DW	-0.30			0.10
191.	Faridkot	Kot Kapura	2.73	0.75	0.26	-0.20
192.	Faridkot	Matta	1.28	1.01	0.61	-0.48
193.	Faridkot	Mehmuana	-0.15	0.53	0.04	0.55
194.	Faridkot	Pahluwala-Pz	0.50		-0.30	-0.60
195.	Faridkot	Ratti Rori-Pz	0.30		-0.18	0.30
196.	Faridkot	Rorian Kapura-Pz	-0.10		-0.50	0.00
197.	Faridkot	Sandhwan-Pz	0.20		-0.55	0.90
198.	Faridkot	Sher Singh Wala- Pz	-1.49	-0.30	-0.19	0.19
199.	**Fateh Garh**	Alipur Sodhian-Pz	-0.30			-0.34
200.	**Fateh Garh**	Amloh1				
201.	**Fateh Garh**	Badalialasingh	-1.30		0.10	-1.22
202.	**Fateh Garh**	Bagga Kalan	-2.80		-1.75	-0.76
203.	**Fateh Garh**	Bassi Pathana	-1.01	3.14	-2.10	-3.30
204.	**Fateh Garh**	Bhagrana	0.01	1.00	1.75	0.62
205.	**Fateh Garh**	Bhateri1	-3.98	-1.33	-0.20	1.74
206.	**Fateh Garh**	Burj	-1.05		0.25	-0.50
207.	**Fateh Garh**	Chandiala-	-1.80			0.10

		Pz				
208.	**Fateh Garh**	Chunni Kalan	-2.08		1.35	2.13
209.	**Fateh Garh**	Fatehgarh Sahib	-1.30			
210.	**Fateh Garh**	Fatehgarh Sahib-Pz	0.70	0.51	0.60	-1.33
211.	**Fateh Garh**	Jai Singh Wala	-2.70		-0.20	-0.55
212.	**Fateh Garh**	Jhambela	-1.25		0.45	-0.40
213.	**Fateh Garh**	Khara	-1.20		0.90	-0.42
214.	**Fateh Garh**	Lohar Majra	-1.50		0.00	-0.55
215.	**Fateh Garh**	Mianpur-Pz	-0.70			-0.32
216.	**Fateh Garh**	Nalini-Pz	-0.94	1.57	-0.55	-0.43
217.	**Fateh Garh**	Nandpur Kalaur-Pz	0.00			-0.53
218.	**Fateh Garh**	Pawala	-1.79	0.18	0.22	
219.	**Fateh Garh**	Sado Majra	-1.05		-0.10	-0.65
220.	**Fateh Garh**	Shahpur	-0.55		0.60	-0.45
221.	**Fateh Garh**	Sirhind-Pz	-0.80			-0.25
222.	**Fateh Garh**	Tahalpur	-2.60		-0.45	-0.60
223.	**Fateh Garh**	Talwara	-0.75		0.40	-0.47
224.	**Fateh Garh**	Tarkhan Majra				
225.	**Fateh Garh**	Timber Pur-Pz				-0.25
226.	**Firozpur**	Abohar	-0.09	-0.66	0.04	0.29
227.	**Firozpur**	Alamgarh	-0.19	1.67	0.19	1.25
228.	**Firozpur**	Asifwala-Pz	0.81			
229.	**Firozpur**	Baman Wali-Pz	-0.05			
230.	**Firozpur**	Bannawala	-0.28	-0.12	-0.96	0.25
231.	**Firozpur**	Bara Mansur Wala-Pz	-0.75			
232.	**Firozpur**	Bazirdpura	0.52			0.40
233.	**Firozpur**	Chak Kandhe Shah-Pz	-0.50			
234.	**Firozpur**	Chak Khere Wala-Pz	0.10			

235.	**Firozpur**	Chak Pune Wala-Pz	0.55			
236.	**Firozpur**	Chamb-Pz	-0.12			
237.	**Firozpur**	Danewal Satkosi	-1.24	-0.61	1.25	1.22
238.	**Firozpur**	Danger Khera-Pz	-0.80			
239.	**Firozpur**	Dipulana-Pz	-0.07	-0.38	-0.74	0.62
240.	**Firozpur**	Dulchi Ke-Pz	0.17			
241.	**Firozpur**	Fattu Wala-Pz	-0.23			
242.	**Firozpur**	Fazilka-Pz	0.78			
243.	**Firozpur**	Ghananga Kalan-Pz	0.00			
244.	**Firozpur**	Giddran Wali-Pz	-0.72			
245.	**Firozpur**	Godiwala-Pz	-0.95			
246.	**Firozpur**	Gogiani-Pz	-0.02			
247.	**Firozpur**	Guru Harsahai-Pz				
248.	**Firozpur**	Hamed Saidoke-Pz	0.83			
249.	**Firozpur**	Himmatpura-Pz	0.45			
250.	**Firozpur**	Jaimal Singhwala Pz	-0.21	-0.44	-0.41	-0.57
251.	**Firozpur**	Jaimal wala-Pz	0.15			
252.	**Firozpur**	Jand Wala Johian-Pz	0.10			
253.	**Firozpur**	Jandwala M Sagla-Pz				
254.	**Firozpur**	Jandwala Watan-Pz	0.03			
255.	**Firozpur**	Jang-Pz	-0.05			
256.	**Firozpur**	Jhottian Wali-Pz				
257.	**Firozpur**	Jodhe Wala Bhaini-Pz	0.30			

258.	**Firozpur**	Kahan Singh Wala-Pz	-0.10			
259.	**Firozpur**	Kaler Khera-Pz	-0.60			
260.	**Firozpur**	Kandh Wala-Pz	0.81			
261.	**Firozpur**	Kathgarh-Pz	-0.10			
262.	**Firozpur**	Khan Wala-Pz	0.05			
263.	**Firozpur**	Khere Ki Uttar-Pz	0.57			
264.	**Firozpur**	Khuiansarwar- Pz	-0.06	1.05	-0.22	0.57
265.	**Firozpur**	Kundal1	-0.06	0.62	-0.57	-0.02
266.	**Firozpur**	Ladhuwala	-0.44	-0.42		1.19
267.	**Firozpur**	Lauhke Kalan- Pz	-0.56	-0.51	-0.12	-2.29
268.	**Firozpur**	Lohere Khurd-Pz	-0.25			
269.	**Firozpur**	Machi Bugra/ Gujran-Pz	-0.20			
270.	**Firozpur**	Mallanwala Khas-Pz	0.20			
271.	**Firozpur**	Malluwala-Pz	-0.15			
272.	**Firozpur**	Malsian-Pz	-2.55	-1.17		1.40
273.	**Firozpur**	Malukpur-Pz	-0.69			
274.	**Firozpur**	Mana Singh Wala-Pz	0.00			
275.	**Firozpur**	Markhiwa Bhamni-Pz	0.08			
276.	**Firozpur**	Mohkam Khan Wala-Pz	-2.30			
277.	**Firozpur**	Mohre Wala-Pz	-0.15	2.39	0.56	-0.17
278.	**Firozpur**	Motiwala 07pz	-0.03			-0.26
279.	**Firozpur**	Mudki-Pz	-0.05			
280.	**Firozpur**	Mullian	0.10			

		Wali-Pz				
281.	**Firozpur**	Muradwala Dal-Pz				
282.	**Firozpur**	Nihalkhera	-0.33	1.60	-0.15	0.73
283.	**Firozpur**	Nure-Ki-Uttar 07pz	-0.02	-0.43	-0.89	-0.78
284.	**Firozpur**	Pancha Wali-Pz	0.56			
285.	**Firozpur**	Pattiwalla-Pz	0.46			
286.	**Firozpur**	Piyarana	-0.61	-1.25	-0.42	-0.04
287.	**Firozpur**	Rala Hazi-Pz	-0.01			
288.	**Firozpur**	Ramsara-Pz	-0.89			
289.	**Firozpur**	Roran Wala-pz	-0.50			
290.	**Firozpur**	Rukne Wala-Pz	-0.50			
291.	**Firozpur**	Sadhusha Wala-Pz	-0.30			
292.	**Firozpur**	Sham Singhwala-Pz	0.01	1.20	0.26	0.36
293.	**Firozpur**	Shatriwala-Pz	-0.30			
294.	**Firozpur**	Sherewala-Pz	-0.69			
295.	**Firozpur**	Singhpura-Pz	-0.20			
296.	**Firozpur**	Sitoganno	0.40	0.68	-0.14	-0.01
297.	**Firozpur**	Sohangarh Ratte	0.55	0.09	-0.12	-0.50
298.	**Firozpur**	Sultan Khan Wala Urf-Pz	0.10			
299.	**Firozpur**	Swah Wala- Pz	0.15	0.52	0.42	0.05
300.	**Firozpur**	Talwandi Jalle Khan-pz	0.20			
301.	**Firozpur**	Tibbi Kalan-Pz	-0.02			
302.	**Firozpur**	Tibbi Taiwan	-0.04			

		Laluwalla-Pz				
303.	**Firozpur**	Wage Wala-Pz	-0.70			
304.	**Firozpur**	Waryam Khera				
305.	**Gurdaspur**	Aulakhkalan	-0.86		-0.02	0.72
306.	**Gurdaspur**	Bamyal	0.22	0.42	-0.18	0.21
307.	**Gurdaspur**	Bhagowal	0.87	0.40	-3.68	-1.16
308.	**Gurdaspur**	Bham			-0.35	
309.	**Gurdaspur**	Bhoa	0.02	-0.07	0.22	0.32
310.	**Gurdaspur**	Bilasbal-Pz	0.45		0.00	-1.15
311.	**Gurdaspur**	Chahal Kalan-Pz	-0.10		0.70	0.10
312.	**Gurdaspur**	Chahgill-Pz	-0.10		1.00	1.00
313.	**Gurdaspur**	Chone-Pz	0.35		1.60	0.30
314.	**Gurdaspur**	Dakoha-Pz	-0.54	0.19	0.12	-0.18
315.	**Gurdaspur**	Dera Baba Nanak	0.26	1.10	-1.31	-0.47
316.	**Gurdaspur**	Dhar Khurd			0.50	
317.	**Gurdaspur**	Dhianpur	5.12			-5.47
318.	**Gurdaspur**	Dinanagar	0.58	0.58	-0.12	-2.12
319.	**Gurdaspur**	Dostpur-Pz	-0.80		0.90	0.80
320.	**Gurdaspur**	Gajikort-Pz	-0.70		0.40	0.50
321.	**Gurdaspur**	Galri	-0.21	-0.12	1.53	0.16
322.	**Gurdaspur**	Ghania Ki bangar- Pz			-0.17	
323.	**Gurdaspur**	Gharotakalan	-0.12		-1.83	-0.11
324.	**Gurdaspur**	Ghoh			-1.37	
325.	**Gurdaspur**	Ghoh DW		-1.62	0.50	
326.	**Gurdaspur**	Ghumani Khurd-Pz	-0.15		0.40	0.35
327.	**Gurdaspur**	Gurdaspur-Pz	3.20			-3.40
328.	**Gurdaspur**	Harchowal-Pz			5.71	
329.	**Gurdaspur**	Hargobindpur	5.41			
330.	**Gurdaspur**	Hargobindp			-0.20	

		ur1				
331.	**Gurdaspur**	Hassanpur Kalan-Pz	-0.50		1.10	-0.85
332.	**Gurdaspur**	Jandwala				
333.	**Gurdaspur**	Jhakolahri	0.47		0.60	0.00
334.	**Gurdaspur**	Jhandalbana-Pz	-0.40			0.20
335.	**Gurdaspur**	Kala Afgana-Pz	-0.70		-0.30	-0.80
336.	**Gurdaspur**	Kalanaur-DW	-1.37		-2.31	0.57
337.	**Gurdaspur**	Kalanaur-Pz	-1.82	0.28		-7.43
338.	**Gurdaspur**	Kalerkalan-Pz	-0.85			
339.	**Gurdaspur**	Kaure-Pz	-0.10		0.40	-0.90
340.	**Gurdaspur**	Khan Fatta-Pz				
341.	**Gurdaspur**	Khanikhui	0.04	-0.30		1.17
342.	**Gurdaspur**	Khanmalik-Pz	-0.80		0.60	0.20
343.	**Gurdaspur**	Khatgarh-Pz	-0.10		0.90	0.30
344.	**Gurdaspur**	Kiari- DW				
345.	**Gurdaspur**	Kui-DW				
346.	**Gurdaspur**	Lakankala-Pz	-1.20		0.60	0.50
347.	**Gurdaspur**	Langurwal-Pz	-0.10		0.60	-0.20
348.	**Gurdaspur**	Madipur Fatehgarhchuria	-1.09			-0.15
349.	**Gurdaspur**	Malikpur				
350.	**Gurdaspur**	Malikpur-Pz	-0.40		1.10	1.10
351.	**Gurdaspur**	Mallewal-Pz	-0.30		1.10	0.80
352.	**Gurdaspur**	Maman-Pz	-0.65		-0.10	-0.20
353.	**Gurdaspur**	Masana-Pz	-0.20		1.10	0.90
354.	**Gurdaspur**	Massit-Pz	0.00		0.40	0.10
355.	**Gurdaspur**	Mirthal			1.80	
356.	**Gurdaspur**	Mirthal-DW				
357.	**Gurdaspur**	Mirza Jaan-	-0.50		0.40	0.30

		Pz				
358.	**Gurdaspur**	Mullowali 1(vs)	0.27	0.18	-0.87	-0.52
359.	**Gurdaspur**	Mullowali 2(m)		0.75		
360.	**Gurdaspur**	Muthi	-0.60		1.00	0.80
361.	**Gurdaspur**	Nangal-Pz	-1.00		0.50	0.40
362.	**Gurdaspur**	Narot Jaimalsingh -Pz	0.30		0.40	0.40
363.	**Gurdaspur**	Nawan Pind			0.43	
364.	**Gurdaspur**	Nishayara	-0.04	0.64	-0.18	
365.	**Gurdaspur**	Pandoritala b	0.07		-0.81	0.99
366.	**Gurdaspur**	Paniar	-0.20			
367.	**Gurdaspur**	Parcha-Pz	-0.45		0.00	-0.50
368.	**Gurdaspur**	Parmota-DW				
369.	**Gurdaspur**	Pathankot1	1.52	2.52	-0.59	-0.47
370.	**Gurdaspur**	Patti Atwal-Pz	-0.40			0.30
371.	**Gurdaspur**	Phulpiara	-0.30		1.10	0.70
372.	**Gurdaspur**	Saidowal Kalan-DW				
373.	**Gurdaspur**	Saleh Chak-S	-0.81	0.28		0.48
374.	**Gurdaspur**	Salehchak(vs)	0.10	0.40		-0.21
375.	**Gurdaspur**	Sarna				0.38
376.	**Gurdaspur**	Sarna1				
377.	**Gurdaspur**	Sathial-Pz		0.36		
378.	**Gurdaspur**	Shahpur Jattan-Pz	-0.50		-0.40	-0.65
379.	**Gurdaspur**	Shahpur-Pz	-1.25		-0.70	0.00
380.	**Gurdaspur**	Shezada Kalan-Pz	-0.50		1.10	0.40
381.	**Gurdaspur**	Shikar-Pz	-0.30		0.80	0.50
382.	**Gurdaspur**	Sohal	-0.30			
383.	**Gurdaspur**	Tikriwala-Pz	-0.10		0.70	0.30
384.	**Hoshiarpur**	Aallo Batti-				-2.05

		Pz				
385.	**Hoshiarpur**	Adowal Garhi-Pz	-2.75	-1.09	0.40	1.54
386.	**Hoshiarpur**	Argowal-Pz	-2.40			-1.60
387.	**Hoshiarpur**	Badla-Pz	-1.60		0.35	-0.65
388.	**Hoshiarpur**	Bagpur-Pz			-1.10	
389.	**Hoshiarpur**	Baichan-Pz	-3.15			-0.90
390.	**Hoshiarpur**	Bajwara	-0.20		-1.20	
391.	**Hoshiarpur**	Bajwara-Pz	-3.40			0.10
392.	**Hoshiarpur**	Bhalowal Gujjran-Pz	-1.00			-1.35
393.	**Hoshiarpur**	Bhamnaur	-1.82		1.07	0.54
394.	**Hoshiarpur**	Bhangala-Chhota-DW			-0.40	0.11
395.	**Hoshiarpur**	Bhanowal-Pz	-2.75			-1.05
396.	**Hoshiarpur**	Bhatolian-Pz	-2.10			-2.25
397.	**Hoshiarpur**	Budhi Pind-Pz	-1.95		-1.65	-1.60
398.	**Hoshiarpur**	Chak Sheru-DW			-0.06	0.03
399.	**Hoshiarpur**	Chohal	-0.01	-0.72	2.05	
400.	**Hoshiarpur**	Dadan-Pz	-1.60			-1.40
401.	**Hoshiarpur**	DAGAN-DW			0.59	
402.	**Hoshiarpur**	Dallewal-Pz	-3.80			-1.50
403.	**Hoshiarpur**	Dasuya2 (s)	-1.49			-0.25
404.	**Hoshiarpur**	Dharampur 1	-1.10			
405.	**Hoshiarpur**	Durimiwal	-0.82	2.62	-0.27	0.24
406.	**Hoshiarpur**	Fattowal-Pz	-2.25		-0.10	-0.60
407.	**Hoshiarpur**	Garh Di Wala-Pz	-2.04	2.66	1.49	2.16
408.	**Hoshiarpur**	Garhshankar (s)	-0.69		0.20	0.54
409.	**Hoshiarpur**	Grahaya-Pz	-2.55		-3.15	-3.05
410.	**Hoshiarpur**	Haler Rampur-DW			-0.97	0.54
411.	**Hoshiarpur**	Hazipur	-0.09	2.65		-1.17

412.	**Hoshiarpur**	Ittian-Pz	-2.20			-1.00
413.	**Hoshiarpur**	Jahidpur-PZ				
414.	**Hoshiarpur**	Jalalpur-Pz	-2.15		-0.85	-1.00
415.	**Hoshiarpur**	Jattpur-Pz	-1.20		0.20	-0.60
416.	**Hoshiarpur**	Jhir Da Khuh-DW				
417.	**Hoshiarpur**	Kharkan-Pz				
418.	**Hoshiarpur**	Khera-Pz	23.30		24.70	-0.95
419.	**Hoshiarpur**	Mahil Baltohian-Pz	-3.25		-3.10	-2.25
420.	**Hoshiarpur**	Mahilpur-Pz	-1.25	-0.60	-0.80	-1.36
421.	**Hoshiarpur**	Maranwali-PZ				
422.	**Hoshiarpur**	Mianipur-Pz	-0.85		-0.70	-1.85
423.	**Hoshiarpur**	Mukerian Dw				
424.	**Hoshiarpur**	Naharpur-Pz	-1.40			-0.90
425.	**Hoshiarpur**	Namoli-PZ				
426.	**Hoshiarpur**	Nangal Bihala- DW	-0.79	2.53	2.38	1.15
427.	**Hoshiarpur**	Nangal Thathal-Pz	-1.60		-0.30	-1.20
428.	**Hoshiarpur**	Pan Khuh-DW			0.30	3.58
429.	**Hoshiarpur**	Pandori Mehal-Pz	-2.20		-0.40	-0.70
430.	**Hoshiarpur**	Parshote-Pz	-2.10		-1.55	-1.75
431.	**Hoshiarpur**	Phuglana-Pz	-1.78	-0.67	0.06	2.87
432.	**Hoshiarpur**	Rampur Colony (HSP) pz-medium			-2.31	
433.	**Hoshiarpur**	Samraj Tanda-DW			0.96	1.00
434.	**Hoshiarpur**	Satnoh-PZ.				
435.	**Hoshiarpur**	Sham Chaurasi	-0.29	0.11	0.27	1.20
436.	**Hoshiarpur**	Sibo Chak-DW			0.73	0.65
437.	**Hoshiarpur**	Simbli- OW	0.59	2.04	-0.87	-1.78

438.	**Hoshiarpur**	Simbli-Pz	-0.78	0.61	1.56	-0.10
439.	**Hoshiarpur**	Talwara1	-0.31	-2.01	0.17	0.81
440.	**Hoshiarpur**	Tanda				
441.	**Hoshiarpur**	Thakarwala	-0.59	-0.56	0.60	0.60
442.	**Jalandhar**	Adampur 3(s)	-0.10	1.66	1.03	1.30
443.	**Jalandhar**	Adarman-Pz	-0.20		-0.10	-0.70
444.	**Jalandhar**	Akalpur-Pz	-0.30		-1.95	0.80
445.	**Jalandhar**	Allawalpur	-0.47		-2.15	-1.13
446.	**Jalandhar**	Bilga-Pz	-0.80		-0.50	-0.65
447.	**Jalandhar**	Billi Chahrami-Pz	-0.05		-1.70	-1.70
448.	**Jalandhar**	Chania-Pz	-0.40		-3.65	-1.80
449.	**Jalandhar**	Dhanda-Pz	-0.50		-1.90	-0.30
450.	**Jalandhar**	Dhirowal-Pz	-0.90		-1.10	-1.00
451.	**Jalandhar**	Fateh Jalal-Pz	0.40		-3.50	-2.00
452.	**Jalandhar**	Gehlan-pz	-0.95		-1.40	-0.45
453.	**Jalandhar**	Gillian-Pz	-0.50		0.65	0.10
454.	**Jalandhar**	Gohiran			1.84	0.41
455.	**Jalandhar**	Hardo Pharwal-Pz	0.20		-2.30	-1.00
456.	**Jalandhar**	Hardo Sheikh-Pz	-0.70		-1.65	-0.10
457.	**Jalandhar**	Jalandhar 3(vs)	-1.24		-1.21	1.13
458.	**Jalandhar**	Jalbhe				
459.	**Jalandhar**	Jandiala-Pz	0.33	-1.18	-1.42	-2.93
460.	**Jalandhar**	Jandu Singha-Pz	-2.10		-2.00	-2.10
461.	**Jalandhar**	Janian-Pz	-1.10		-1.50	-0.80
462.	**Jalandhar**	Kakar Kalan-Pz	-0.10		-2.60	-1.70
463.	**Jalandhar**	Kala-Pz	-0.90		-2.40	-0.40
464.	**Jalandhar**	Kalyanpur-Pz	-0.15		-1.40	-0.50
465.	**Jalandhar**	Kang Sahib Rai-Pz	-1.60		-1.40	0.20

466.	**Jalandhar**	Kartarpur 2(s)	1.63	-0.89	-0.62	-0.96
467.	**Jalandhar**	Kharal Kalan Pz-S	-0.71	1.36	-0.67	-0.80
468.	**Jalandhar**	Kot Wadal Khan-Pz	-0.70		-1.50	-0.20
469.	**Jalandhar**	Kurla-Pz	0.40		-1.10	-1.30
470.	**Jalandhar**	Lallian kalan Pz-S	-1.25	-1.36	0.15	0.75
471.	**Jalandhar**	Mahmuwal-Pz	-1.10		-1.90	-0.35
472.	**Jalandhar**	Mehsampur -Pz	-0.30		-0.85	-0.40
473.	**Jalandhar**	Nakodar 2(m)	-1.55	-0.33	-0.72	1.32
474.	**Jalandhar**	Nakodar 3(s)	-1.39			-0.99
475.	**Jalandhar**	Nangal Shaman	-0.60		-2.85	-1.20
476.	**Jalandhar**	Nasirpur-Pz	-0.30		-0.50	-0.80
477.	**Jalandhar**	Nussi-Pz	0.50		-2.70	-1.90
478.	**Jalandhar**	Pathial-Pz	-1.60		-1.65	-1.50
479.	**Jalandhar**	Pharwala-Pz	-0.20		-1.30	-0.10
480.	**Jalandhar**	Phillaur 2(s)	0.07	-0.23	-0.33	-2.71
481.	**Jalandhar**	Rahimpur-Pz			-2.60	-1.00
482.	**Jalandhar**	Rurka Kalan- Pz	-2.10		-2.40	-0.10
483.	**Jalandhar**	Samarahi-Pz	-0.70		-1.80	
484.	**Jalandhar**	Shahkot(s)	-1.80			2.64
485.	**Jalandhar**	Shahkot-Pz-Pb	-0.10			-0.35
486.	**Jalandhar**	Skarar Pur-Pz	1.90		-2.50	-1.20
487.	**Jalandhar**	Sultanpur-Pz	3.70		-1.50	-0.50
488.	**Jalandhar**	Talwandi Bhutial-Pz	-0.60			
489.	**Jalandhar**	Talwan-Pz	0.00		-1.80	-0.50
490.	**Jalandhar**	Thanda-Pz	-4.20		-1.15	0.45
491.	**Jalandhar**	Udhopur			0.83	

492.	**Kapurthala**	Amanipur-Pz	-1.10		-1.00	0.00
493.	**Kapurthala**	Balera-Pz	-0.50		-4.90	-2.55
494.	**Kapurthala**	Bauril Harnampur-Pz	-0.80		-0.70	-0.20
495.	**Kapurthala**	Begowal-Pz	-0.18		-0.60	0.40
496.	**Kapurthala**	Bhanoki-Pz	-1.00		-1.00	-0.40
497.	**Kapurthala**	Bhatnura Khurd- S	-0.94	-2.07	-0.83	-0.08
498.	**Kapurthala**	Bhawanipur-Pz	-0.15		-1.10	0.35
499.	**Kapurthala**	Bholath M	-0.53		-2.66	-0.81
500.	**Kapurthala**	Bholath S	-1.40	2.72	0.49	0.62
501.	**Kapurthala**	Chakoke-Pz	0.20		-1.32	-0.46
502.	**Kapurthala**	Dadwindi-Pz			-0.43	-0.10
503.	**Kapurthala**	Dalla	-1.20		-0.49	0.45
504.	**Kapurthala**	Hamira-Pz	-0.15		-0.40	0.00
505.	**Kapurthala**	Hazipur-Pz	-0.10	-1.45	-1.72	0.60
506.	**Kapurthala**	Hussainpura-S Pz		-1.16	-1.90	
507.	**Kapurthala**	Kapurthala 2 (s)		-0.65	-2.89	
508.	**Kapurthala**	Karnail Ganju-Pz	0.05		-0.35	-0.45
509.	**Kapurthala**	Kishanpur	1.40		-3.45	-2.90
510.	**Kapurthala**	Maheru-Pz	-1.10		-0.95	-0.90
511.	**Kapurthala**	Miani Bola-Pz	-0.10		-1.20	-0.20
512.	**Kapurthala**	Mithra-Pz	-0.70		-0.50	-0.10
513.	**Kapurthala**	Nadala	0.12			
514.	**Kapurthala**	Nathu Chahal-Pz	-0.70		-4.05	-2.79
515.	**Kapurthala**	Nurpur Janoa-Pz	-0.05		-0.25	0.00
516.	**Kapurthala**	Paazian-Pz	0.15		-1.80	-1.80
517.	**Kapurthala**	Phagwara2 (s)	-1.05	-0.51	-0.53	-1.95
518.	**Kapurthala**	Phulewal-Pz	-0.40		-1.60	0.00

519.	**Kapurthala**	Rawalpindi-Pz	1.40		-1.70	-3.00
520.	**Kapurthala**	Saiflabad-Pz	-0.70		-0.50	0.05
521.	**Kapurthala**	Sangatpur-Pz	1.00		-3.40	-1.30
522.	**Kapurthala**	Shalapur Dona-Pz	-0.20		-3.65	-1.30
523.	**Kapurthala**	Sheikh Manga-Pz	-0.95		-0.75	-0.30
524.	**Kapurthala**	Sultanpur2 (s)	-2.60	-1.30	-0.85	0.83
525.	**Kapurthala**	Talwandi Chaudary -Pz	-0.59	0.27	-0.10	0.28
526.	**Kapurthala**	Thikriwali-Pz	0.05		-0.30	-0.08
527.	**Ludhiana**	Alamgir-Pz	-1.29		-0.65	0.95
528.	**Ludhiana**	Aliwal-Pz	-1.48		-0.69	-0.29
529.	**Ludhiana**	Begowal	0.93	1.13	0.58	-0.84
530.	**Ludhiana**	Bhagwanpur-Pz	-1.00		0.40	0.73
531.	**Ludhiana**	Bhahlolpur-DW		1.39	0.75	-0.69
532.	**Ludhiana**	Bharthala Randhawa-Pz	-3.12		-0.98	0.85
533.	**Ludhiana**	Bhikhi Khatron-Pz	-2.36		-0.60	0.97
534.	**Ludhiana**	Bilaspur-Pz	-1.30		-0.68	0.05
535.	**Ludhiana**	Chaminala-Pz	-1.75		-1.40	0.20
536.	**Ludhiana**	Chankian Khurd-Pz	-1.63		-0.93	0.43
537.	**Ludhiana**	Chattar Singh Park-ldh				
538.	**Ludhiana**	Chaunta-Pz	-2.04		-0.15	1.32
539.	**Ludhiana**	Chhapar-Pz	-2.04		-1.20	0.17
540.	**Ludhiana**	Dinnamder-Pz	-2.88		-1.00	0.20
541.	**Ludhiana**	Dodpur-Pz	-1.33		-0.15	-0.48
542.	**Ludhiana**	Doraha-Pz	0.53	-0.09	-0.24	-0.09

543.	**Ludhiana**	Galibkalan-Pz	-2.67		-1.80	-1.21
544.	**Ludhiana**	Gohaur-Pz	-1.24		-0.80	0.10
545.	**Ludhiana**	Gopalpur 2(s)	-0.77		0.87	-0.66
546.	**Ludhiana**	Hambowal-Pz			0.55	
547.	**Ludhiana**	Harnampur	-0.95		-0.30	0.45
548.	**Ludhiana**	Hedon-Pz	-1.51		2.13	-0.12
549.	**Ludhiana**	Ikloha-Pz	-0.23	-0.33		-0.38
550.	**Ludhiana**	Kadon-Pz			-1.50	
551.	**Ludhiana**	Kalsian	-2.45		-0.20	-1.00
552.	**Ludhiana**	Katanikalan-Pz	-0.25		-0.95	0.50
553.	**Ludhiana**	Khandur	-1.01		-0.50	-0.84
554.	**Ludhiana**	Kishangarh-Pz	-2.70		-0.23	0.80
555.	**Ludhiana**	Kishanpur-Pz	-2.40			-1.20
556.	**Ludhiana**	Lalan1	1.80	0.85	0.42	2.01
557.	**Ludhiana**	Lelon-Pz	-0.50		0.04	0.50
558.	**Ludhiana**	Lil- II Pz	-1.67			1.20
559.	**Ludhiana**	Lil-Pz III	-0.40		-0.28	-0.36
560.	**Ludhiana**	Lodhiwal-Pz	-1.50		-1.63	-0.05
561.	**Ludhiana**	Lohara-Pz	-2.30		-1.40	-0.05
562.	**Ludhiana**	Maksudra-Pz	-0.69	0.62		
563.	**Ludhiana**	Manak Majra-Pz	-2.46		0.00	0.96
564.	**Ludhiana**	Mangat-Pz	-1.98		-0.22	0.47
565.	**Ludhiana**	Manoke-Pz	-2.15		-3.00	-1.90
566.	**Ludhiana**	Mehma Singh Wala-Pz	-1.79			-0.20
567.	**Ludhiana**	Mehma-Pz				
568.	**Ludhiana**	Mushkabad	0.84		1.36	-0.04
569.	**Ludhiana**	Nurpur-Pz	-1.97		-2.10	-1.40
570.	**Ludhiana**	P.A.U.Ludhiana 2(s)	-0.86		-0.74	4.74
571.	**Ludhiana**	Pabbian-Pz	-1.15		-1.60	-0.20

572.	**Ludhiana**	Pandori-Pz	-2.00		-1.15	0.06
573.	**Ludhiana**	Payal-Pz	-1.30		-0.90	-0.35
574.	**Ludhiana**	Punjeta	0.05	0.99	0.63	0.56
575.	**Ludhiana**	Ragba-Pz	-2.50		-1.45	0.20
576.	**Ludhiana**	Raikot-Pz	-2.80		-2.90	-0.45
577.	**Ludhiana**	Rajona Khurd	-1.92		-2.70	-0.58
578.	**Ludhiana**	Rashiana-Pz	-2.45		-0.55	0.40
579.	**Ludhiana**	Rashin	-2.04		-1.20	-1.23
580.	**Ludhiana**	Rattewal-Pz	-2.00		-1.74	-0.90
581.	**Ludhiana**	Roomi-Pz	-1.83		-2.35	-1.40
582.	**Ludhiana**	Sajaywal-Pz	-1.80		-4.55	-0.45
583.	**Ludhiana**	Samrala 2(s)	4.22		0.64	-3.78
584.	**Ludhiana**	Sanewal-Pz	-1.56		-0.50	0.02
585.	**Ludhiana**	Sangatpura-Pz	-2.55		-0.20	1.72
586.	**Ludhiana**	Sherian	0.13	0.80		0.01
587.	**Ludhiana**	Sherpur-Pz	-0.51		0.62	0.37
588.	**Ludhiana**	Sidhwan Bet-Pz	-0.61	-0.25	-1.79	0.65
589.	**Ludhiana**	Talwandi Kalan-Pz	-1.78		-1.55	-0.39
590.	**Ludhiana**	Udonwal-Pz	-0.74		0.10	0.02
591.	**Ludhiana**	Upplan	-1.06		0.73	0.34
592.	**Ludhiana**	Utlan	0.26	0.05		
593.	**Mansa**	Adamke-Pz	-0.72			
594.	**Ludhiana**	Aklia-Pz	-1.84			-0.87
595.	**Ludhiana**	Alampur Mandran-Pz	-0.83			0.24
596.	**Ludhiana**	Alisher Khurd-Pz	-0.99			-0.37
597.	**Ludhiana**	Bahadur Pur-Pz	-1.12			-0.79
598.	**Ludhiana**	Bareh-Pz	-0.85			0.01
599.	**Ludhiana**	Behniwala-Pz	0.66			-0.28

600.	**Ludhiana**	Bhamme Kalan-Pz	-0.21			-0.25
601.	**Ludhiana**	Bhikhi 1 (s)				
602.	**Ludhiana**	Bhikhi 2 (s)				
603.	**Ludhiana**	Budhlada	-0.59	-1.15	-8.47	-0.95
604.	**Ludhiana**	Budhlada-Pz			-0.95	-0.56
605.	**Ludhiana**	Burj Bhalaike	0.00	-0.18	-1.52	-0.38
606.	**Ludhiana**	Burj Rathi-Pz	-0.20			-0.71
607.	**Ludhiana**	Fattamaluka	-0.89	-0.09	-0.49	0.01
608.	**Ludhiana**	Gehlan-Pz	-0.48		0.35	-0.96
609.	**Ludhiana**	Gharangne-Pz	-0.68			1.94
610.	**Ludhiana**	Hera Wala-Pz	-1.03			0.10
611.	**Ludhiana**	Hero Kalan-Pz	-1.63			-0.33
612.	**Ludhiana**	Hirke-Pz				
613.	**Ludhiana**	Jatana Kalan-Pz	-1.08		-0.30	
614.	**Ludhiana**	Khiala Kalan-Pz	-0.67			-0.19
615.	**Ludhiana**	Khokhar Kalan-Pz	-0.33			-0.08
616.	**Ludhiana**	Kot Dhamru	0.72	0.35	0.14	-0.95
617.	**Ludhiana**	Kotra	-0.92	-0.05		-1.20
618.	**Ludhiana**	Kusla-Pz	0.03			-0.81
619.	**Ludhiana**	Lakhiwal-Pz	-1.07			-0.55
620.	**Ludhiana**	Mansa				
621.	**Ludhiana**	Phaphare Bhaike-Pz	-0.95			-0.12
622.	**Ludhiana**	Raipur-Pz	0.19		1.35	
623.	**Ludhiana**	Ralla	-1.36			-0.13
624.	**Ludhiana**	Tandian-Pz	0.80			-0.44
625.	**Moga**	Baje Ke-Pz	4.46	-0.84	-1.34	-0.32
626.	**Moga**	Baraghar-Pz	-0.70		-0.50	-1.10
627.	**Moga**	Budh Singh	-1.26	-2.24	-0.75	-0.55

		Wala-Pz				
628.	**Moga**	Chogawan-Pz	-0.95	-1.34		-1.78
629.	**Moga**	Dagru- Pz	-1.04	-0.95	-1.25	-1.77
630.	**Moga**	Damru Khurd				
631.	**Moga**	Darapur	-0.68		1.44	
632.	**Moga**	Darapur 07pz			1.05	
633.	**Moga**	Daulatpur Niwan-Pz	-0.50		-0.65	-0.30
634.	**Moga**	Ghoha Khurd-Pz	-0.50			
635.	**Moga**	Himatpura-Pz	-0.20		-0.40	-1.20
636.	**Moga**	Indergarh-Pz	-0.92			
637.	**Moga**	Jhandewala -Pz	-1.00		-0.55	-0.80
638.	**Moga**	Kamalke-Pz				
639.	**Moga**	Khokri Kalan-Pz	-1.50		-1.00	-1.10
640.	**Moga**	Khosa Randhir-Pz	-0.45			
641.	**Moga**	Khosakotta-Pz				
642.	**Moga**	Mandar-Pz	-0.78		-0.20	
643.	**Moga**	Mangewala -Pz	-0.40			-1.30
644.	**Moga**	Nathu Wala-Pz	-0.60		-0.73	-1.10
645.	**Moga**	Nihalsingh wala-Pz	-1.45	-1.01	-0.20	-1.27
646.	**Moga**	Raonke Kalan-Pz	-4.00			-0.60
647.	**Moga**	Samad Bhai-Pz	0.44			-1.00
648.	**Moga**	Samalsar-Pz	0.00			-0.90
649.	**Moga**	Thathe Bhai-Pz	-0.80			-0.30
650.	**Moga**	Tota Singh Wala-Pz	-0.66			

651.	**Muktsar**	Abulkharana			-0.12	0.20
652.	**Muktsar**	Abulkharana-Pz	-0.21			
653.	**Muktsar**	Alam Wala	-0.05		0.05	0.40
654.	**Muktsar**	Assa Butter-Pz				
655.	**Muktsar**	Balocha Khera(rasoolpur)	0.61	2.50	1.44	-0.80
656.	**Muktsar**	Bariwala-Pz	0.10		-0.31	
657.	**Muktsar**	Bhaliana	-0.72	-0.41	-0.38	-1.32
658.	**Muktsar**	Bhamma(bam)				
659.	**Muktsar**	Bhiti Wala-Pz	-0.20		0.09	-0.10
660.	**Muktsar**	Chaktam Kot-Pz	0.00		-0.58	0.28
661.	**Muktsar**	Chotian-Pz				
662.	**Muktsar**	Dhalkot-Pz			-0.04	
663.	**Muktsar**	Doda	-1.08		1.16	-0.73
664.	**Muktsar**	Doda-Pz	-0.82	0.63	0.15	0.74
665.	**Muktsar**	Gaga-Pz				
666.	**Muktsar**	Husnar-Pz	0.80		0.77	-0.07
667.	**Muktsar**	Jhurar-Pz	-0.20		0.00	0.15
668.	**Muktsar**	Kabar Wala	-0.51	-0.29		-0.86
669.	**Muktsar**	Kattianwali-Pz	-0.30	3.03	-0.60	0.58
670.	**Muktsar**	Khirkian Wala-Pz			0.58	
671.	**Muktsar**	Khunde Halal-Pz	-0.41	0.83	-0.45	
672.	**Muktsar**	Killian Wali-Pz	0.22		0.20	0.95
673.	**Muktsar**	Kollian Wali-pz	-0.05		-0.10	0.13
674.	**Muktsar**	Kot Bhai-DW	-0.10		-0.03	0.00
675.	**Muktsar**	Kuttianwali			-0.80	
676.	**Muktsar**	Labanianwali	-0.01	0.60	-0.08	-0.58
677.	**Muktsar**	Lambi	-1.82			-0.93

678.	**Muktsar**	Lambi-Pz	-0.92	-0.36	-0.35	0.18
679.	**Muktsar**	Muktsar	-2.04	-0.83	-0.41	-0.03
680.	**Muktsar**	Phulu Khera-Pz	-0.20		-0.13	-0.05
681.	**Muktsar**	Ratta Khera Chota-Pz	-0.10		-0.28	0.37
682.	**Muktsar**	Sheikh-Pz	-0.50		-0.02	0.40
683.	**Muktsar**	Sohiwal-Pz	0.90			
684.	**Nawanshahr**	Alowal-Pz	-0.20		-0.70	0.00
685.	**Nawanshahr**	Badhwan-Pz				-0.35
686.	**Nawanshahr**	Baharam-Pz				
687.	**Nawanshahr**	Bahara-Pz	0.00		-1.80	-0.50
688.	**Nawanshahr**	Bahlora Kallan- Pz	0.58	-0.51	0.42	-0.32
689.	**Nawanshahr**	Bahua-Pz	-0.10		-1.10	-0.60
690.	**Nawanshahr**	Balachore	4.20	-0.41		
691.	**Nawanshahr**	Hakimpur-Pz	-0.10		-1.80	-0.50
692.	**Nawanshahr**	Kariam-Pz	0.30		-1.20	-0.10
693.	**Nawanshahr**	Mauhra-Pz	-1.52	-2.07	-1.45	-0.55
694.	**Nawanshahr**	Rahon	0.69	0.15	0.27	0.07
695.	**Nawanshahr**	Raipur Dhaba-Pz	0.74	-2.25	-0.53	-0.92
696.	**Patiala**	Antala				
697.	**Patiala**	Ballopur	1.25		0.70	
698.	**Patiala**	Banur 07pz				
699.	**Patiala**	Bassma Pipla				
700.	**Patiala**	Bhankhar-Pz	-0.48		-0.60	
701.	**Patiala**	Bhojo majri	-0.82	0.19	1.45	-1.95

		07pz				
702.	**Patiala**	Binzal-Pz	-0.10			
703.	**Patiala**	Birkauli	-1.19		-0.60	-0.57
704.	**Patiala**	Chandiala-Pz	-1.80		-0.10	0.55
705.	**Patiala**	Chhat				
706.	**Patiala**	Dera Bassi 07pz	-0.30		-4.38	0.52
707.	**Patiala**	Devigarh				
708.	**Patiala**	Devigarh 1Pz	-1.15		1.96	-1.15
709.	**Patiala**	Devigarh IIPz	-0.97		-0.86	-2.56
710.	**Patiala**	Devigarh-III Pz	-0.35		-1.10	-2.62
711.	**Patiala**	Dhakdaba 07	5.64	6.30	0.81	-7.76
712.	**Patiala**	Haluka			-0.34	
713.	**Patiala**	Harion Kalan-Pz			-1.00	
714.	**Patiala**	Joli			0.12	
715.	**Patiala**	Kakrala-Pz	-0.20		-1.90	-1.90
716.	**Patiala**	Kalyan 07pz	-0.52	0.32	1.62	-0.67
717.	**Patiala**	Kami Kalan	-0.38		-15.39	0.34
718.	**Patiala**	Kulburcha-Pz	-0.10		-0.80	-1.35
719.	**Patiala**	Kutha Kheri-Pz	-0.35		-0.30	
720.	**Patiala**	Lacharu Kalan	-0.47	0.22	-0.14	-0.65
721.	**Patiala**	Lachkani-Pz	0.08	-1.08	-1.00	-1.39
722.	**Patiala**	Miranpur-Pz	-1.35		-0.69	0.44
723.	**Patiala**	Mirpur-Pz	1.30			
724.	**Patiala**	Nanhera-Pz	0.10		0.10	
725.	**Patiala**	Nariana			2.88	
726.	**Patiala**	Patran-Pz	-1.07	-0.62	-1.04	0.44
727.	**Patiala**	Rajpura Pz M	-2.47	-0.02		
728.	**Patiala**	Rajpura-			5.35	2.66

		PzSt				
729.	**Patiala**	Samana-Pz	-1.41		-1.45	-1.13
730.	**Patiala**	Samaspur-Pz	0.25		1.15	1.15
731.	**Patiala**	Sangatpura-Pz	-1.48			1.29
732.	**Patiala**	Singhpura-Pz	-1.50		-3.00	-2.85
733.	**Patiala**	Sirsini				
734.	**Patiala**	Sundran-Pz				
735.	**Patiala**	Thua	3.53	0.23	0.93	-5.03
736.	**Rupnagar**	Ahmedpur	-1.00	-1.36	-1.79	-2.64
737.	**Rupnagar**	Bains				
738.	**Rupnagar**	Bera Chauta	-0.36	0.43	0.39	0.02
739.	**Rupnagar**	Bhalan	-0.54	0.44	0.01	0.00
740.	**Rupnagar**	Braham Pur	-0.09	-0.80	-0.52	0.18
741.	**Rupnagar**	Chakdera	-0.12	-0.66		1.80
742.	**Rupnagar**	Chanalon				
743.	**Rupnagar**	Chatamli-Pz	-3.56	-2.66	-3.07	-0.93
744.	**Rupnagar**	Dhair		1.52		
745.	**Rupnagar**	Dheri	-2.92	-0.48		3.40
746.	**Rupnagar**	Dumewal	-0.75	0.00	1.72	2.50
747.	**Rupnagar**	Dusarna			-0.45	0.95
748.	**Rupnagar**	Gharoon	0.35		0.75	1.45
749.	**Rupnagar**	Ghoga	-1.25	0.41	-0.04	0.50
750.	**Rupnagar**	Hardinamoh	0.32	-0.09	15.85	2.22
751.	**Rupnagar**	Kakrali	-0.89			
752.	**Rupnagar**	Kurrha-Pz	-0.25		-2.15	-3.30
753.	**Rupnagar**	Landran				
754.	**Rupnagar**	Landran-Pz	-3.30			5.87
755.	**Rupnagar**	Malkpur-Pz	-2.00		-0.30	2.90
756.	**Rupnagar**	Nurpurbedi				
757.	**Rupnagar**	Raipur Kalan	-0.50		-0.15	-0.10
758.	**Rupnagar**	Rurki Heeran-Pz	-0.39	-1.89	0.15	0.26
759.	**Rupnagar**	Soara	-1.59	0.60		

760.	**Sangrur**	Bagarian-Pz	-1.27	1.66	-2.18	-1.13
761.	**Sangrur**	Barnala (s)	-1.50	-1.45	-1.72	-1.49
762.	**Sangrur**	Bhadaur-Pz	-1.13	-1.55	-1.54	-1.47
763.	**Sangrur**	Bhojowali-Pz	-1.13	-1.46	-0.98	-1.11
764.	**Sangrur**	Bugra 1	-2.68	2.77	-1.16	0.19
765.	**Sangrur**	Chural Kalan M	-2.19	-1.19	-1.70	-1.20
766.	**Sangrur**	Dhanaula				
767.	**Sangrur**	Dharamgarh-Pz	-1.48		-0.69	-0.57
768.	**Sangrur**	Gahl 07pz				
769.	**Sangrur**	Gehlon-Pz	-0.30			
770.	**Sangrur**	Ghanauri Kalan-Pz	-2.16	-2.49	0.30	-1.13
771.	**Sangrur**	Haryao-DW				
772.	**Sangrur**	Hassanpur-Pz	-1.04		-0.35	-0.48
773.	**Sangrur**	Isra-Pz	-0.57		-0.45	-0.65
774.	**Sangrur**	Kala Jhar-Pz			-0.10	
775.	**Sangrur**	Kuler Khurd-Pz	-2.75		-1.42	-1.08
776.	**Sangrur**	Kurar-Pz	-0.80		0.20	-1.20
777.	**Sangrur**	Ladda-Pz	-1.19			
778.	**Sangrur**	Lehal Kalan-Pz	-1.09		-0.30	-0.43
779.	**Sangrur**	Lohgarh-Pz	-0.60		-0.70	-0.46
780.	**Sangrur**	Longowal-Pz	-1.39	-0.81	-0.96	-1.14
781.	**Sangrur**	Mahal Kalan-Pz	-2.19		-2.94	-0.50
782.	**Sangrur**	Malerkotla-DW	-2.33			-0.52
783.	**Sangrur**	Manvi-Pz				0.49
784.	**Sangrur**	Mastuana-Pz	-0.94	-15.60	-0.53	-0.62
785.	**Sangrur**	Mehsampur 07pz				
786.	**Sangrur**	Mehsampur-Pz	-1.49			-0.36

787.	**Sangrur**	Nangal-Pz			-0.70	
788.	**Sangrur**	Panjgaraian - Pz	-1.99		-0.40	-0.62
789.	**Sangrur**	Ramgarh-Pz	0.00		-0.60	-0.20
790.	**Sangrur**	Rampur Channa-Pz	-1.90		-0.53	-0.50
791.	**Sangrur**	Rurki Kalan-Pz	-3.20		-1.45	-0.45
792.	**Sangrur**	Shekha				-1.20
793.	**Sangrur**	Sunam-Pz	-1.56	-1.15	-0.03	-0.66
794.	**Sangrur**	Tappa Mandi-Pz	-1.00		-0.60	-1.00

						ANNEXURE-III
S. No.	District	Location	Annual Fluctuations			
			May 2014-May 2015	August 2014-August 2015	November 2014-November 2015	January 2015-January 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Chandigarh	BURAIL	-0.60	0.63	0.35	0.51
2.	Chandigarh	Csio-combined	0.62			
3.	Chandigarh	CSIO-S	-0.83			0.37
4.	Chandigarh	NEW INDUST AREA	-0.68	0.78	4.43	0.80
5.	Chandigarh	Sec-27, Ar Well	2.39	-0.79	-1.20	-1.23
6.	Chandigarh	SECT 10C (D)	-0.18	11.56	10.68	10.81
7.	Chandigarh	SECT 10C (S)	-1.37	0.13		-13.53
8.	Chandigarh	SECT 21D (S)				
9.	Chandigarh	SECT 31D (D)	-0.51	0.16	-0.68	0.75
10.	Chandigarh	SECT 31D (S)	-0.77	-0.01	-0.03	-0.14
11.	Chandigarh	SECT 37D (S)	-2.47	1.93	1.87	1.85
12.	Chandigarh	SECT 39D (S)	0.81	-1.46	-1.81	-1.68
13.	Chandigarh	SECT 44D (S)	-2.37	2.75	2.29	2.77
14.	Amritsar	Aima Khurd-Pz		-0.35	0.70	0.20
15.	Amritsar	Ajnala	-0.14		-0.22	0.07
16.	Amritsar	Aminshah Khalra	-1.92	1.48		
17.	Amritsar	Amritsar1	1.46		-1.06	-0.30
18.	Amritsar	Attari-Pz	-0.98		-0.30	0.10
19.	Amritsar	Bakipur-Pz	-1.00		-0.50	-0.85
20.	Amritsar	Bal Kalan-Pz	-0.20		0.70	1.10
21.	Amritsar	Bath-Pz	-0.94			0.20
22.	Amritsar	Beas07	-0.21		-0.25	1.16

23.	Amritsar	Bhagala-Pz	-0.88		-1.42	-1.62
24.	Amritsar	Bhagwanpur-Pz				
25.	Amritsar	Bhalaipur-Pz	-0.90		-0.50	-0.30
26.	Amritsar	Bhankar Kalan-Pz	-0.99		-1.51	-1.91
27.	Amritsar	Bhattaywad-Pz	0.00		0.30	0.45
28.	Amritsar	Bhikiwind- Pz	-0.03		-0.82	-0.38
29.	Amritsar	Bhura-Pz	-0.76		-1.04	-1.44
30.	Amritsar	Bhure-Pz	-0.88		-0.77	-0.87
31.	Amritsar	Bhusse-Pz	-0.90		-1.00	-0.80
32.	Amritsar	Boparai Khurd-Pz	-0.50		0.50	0.70
33.	Amritsar	Brahmpur-Pz	-0.79		-1.11	-1.21
34.	Amritsar	Burjwal-Pz	-0.90		-0.30	-0.30
35.	Amritsar	Chabal 07	0.57			
36.	Amritsar	Chak Dogra-Pz	0.40		-0.80	-0.30
37.	Amritsar	Chakkare Khan-Pz	-0.90		-0.70	-0.40
38.	Amritsar	Chobal Kalan-Pz	-0.90	-2.93		
39.	Amritsar	ChogWan-Pz	-1.02	-1.48	0.92	0.70
40.	Amritsar	Chola Sahib-Pz	-0.81		-0.36	0.19
41.	Amritsar	Choudhary Wala-Pz	-1.00		0.00	-0.40
42.	Amritsar	Chuselawad-Pz	-0.86		-0.98	-1.28
43.	Amritsar	Dhariwal-Pz	-0.10		0.50	0.70
44.	Amritsar	Dholan-Pz	-0.76		-0.58	-1.28
45.	Amritsar	Dhottian				
46.	Amritsar	Dhottian-Pz	-0.97			
47.	Amritsar	Dhulika-Pz	-0.60		0.10	0.40
48.	Amritsar	Dohan-Pz	-0.60		-0.10	0.30
49.	Amritsar	Ekalgoda-Pz	-0.70	-1.88	-1.70	-2.00
50.	Amritsar	Gago Mahal-Pz	-0.02	-1.15	0.18	0.04
51.	Amritsar	Gandi Wind-Pz	0.06			-0.45
52.	Amritsar	Gill wali-Pz	-0.90	-0.23	0.30	0.60

53.	Amritsar	Goindwal 07	-0.18		-0.12	-0.02
54.	Amritsar	Gujjaran Wali-Pz	0.40			
55.	Amritsar	Harike		-0.60		
56.	Amritsar	Jandiala Guru-Pz	-0.09		-0.02	0.22
57.	Amritsar	Jandoke-Pz	-1.00		-1.40	-1.30
58.	Amritsar	Jasrur-Pz	-0.60		0.10	0.30
59.	Amritsar	Jethuwal-Pz	0.10		-0.10	0.40
60.	Amritsar	Kalsia Kalan07			-0.94	1.57
61.	Amritsar	Kandowali-Pz	-0.50		0.30	0.80
62.	Amritsar	Karyal-Pz	-0.40		0.20	0.80
63.	Amritsar	Khadur Sahib-Pz	0.16		-1.05	-0.40
64.	Amritsar	Khalra-Pz				
65.	Amritsar	Khilchian-Pz	-0.40		-0.20	0.40
66.	Amritsar	Kotbudda-Pz	-0.90		0.10	1.10
67.	Amritsar	Kotli Sur Singh-Pz				
68.	Amritsar	Mahendipur-Pz	-1.78		-1.12	-1.62
69.	Amritsar	Mahima-Pz	-0.70		0.00	0.40
70.	Amritsar	Majitha- Pz	0.00		0.50	0.60
71.	Amritsar	Makhan Windi-Pz	-0.80		-0.10	0.30
72.	Amritsar	Marhona-Pz	-0.80		-0.70	-0.70
73.	Amritsar	Mari Kamboke-Pz				
74.	Amritsar	Mehleykey-Pz	-0.40		-0.10	-0.20
75.	Amritsar	Mehta			-2.00	
76.	Amritsar	Mehta-Pz	-3.15		2.10	0.40
77.	Amritsar	Miran Chak-Pz	-0.30	-1.49	-0.10	0.40
78.	Amritsar	Mohawa	1.13			
79.	Amritsar	Nangal Sahaul-Pz	-0.60		-0.10	0.30
80.	Amritsar	Nawan Tanal- Pz	-0.22			0.73
81.	Amritsar	Pakharpura-Pz	-0.70		0.40	1.00
82.	Amritsar	Pindan-Pz				

83.	Amritsar	Rajoke-Pz	-0.80		-0.60	-0.40
84.	Amritsar	Ramdas-DW				
85.	Amritsar	Rampura-Pz	-0.10		0.30	0.75
86.	Amritsar	Ratoke-Pz	-0.34		-2.60	-0.65
87.	Amritsar	Rupowal Brahmana-Pz	-0.30		0.20	0.80
88.	Amritsar	Sabran-Pz	-0.90		-1.20	-1.30
89.	Amritsar	Sahab Pura-Pz	-0.22	-1.01	0.10	
90.	Amritsar	Sathiala-Pz	-0.20		0.20	0.50
91.	Amritsar	Shabura-Pz	-1.10		0.00	-3.68
92.	Amritsar	Sham Nagar-Pz	-1.00		0.60	1.00
93.	Amritsar	Sheron-Pz	-0.90		-0.60	-0.40
94.	Amritsar	Sugga-Pz				
95.	Amritsar	Talwandi Dogra-Pz	-0.70		-0.60	0.10
96.	Amritsar	Tarsika-Pz	-0.90		0.30	0.55
97.	Amritsar	Thatha- Pz	-0.77		0.27	0.67
98.	Amritsar	Ugar Aulakh-Pz	-0.20		0.40	0.90
99.	Amritsar	Vadala Kalan-Pz	-0.20		0.10	0.50
100	Amritsar	Valtoha	-0.37		-1.71	
101	Amritsar	Wandala Bittewad-Pz	-0.70		0.30	0.90
102	Bathinda	Ablu	-0.19	-0.65	-0.44	-0.07
103	Bathinda	Aleke Jalal-Pz	0.16		-2.68	-1.27
104	Bathinda	Badiala-Pz	-0.37	-2.30	-1.83	-0.35
105	Bathinda	Bagher Mohabat Singh-Pz	-0.47		-0.25	0.03
106	Bathinda	Bahman Kaur Singh-Pz	-0.45		0.25	0.25
107	Bathinda	Balianwali-Pz	1.72		-4.82	-3.02
108	Bathinda	Balluana1	-2.37	2.27	2.46	2.43
109	Bathinda	Balluana-Pz	-6.79		6.06	6.17
110	Bathinda	Banbhiha-Pz	0.10		0.32	0.65
111	Bathinda	Bandi-Pz				0.43

112	Bathinda	Bhagibandar	-0.44	0.34	0.35	-2.64
113	Bathinda	Bugran-Pz	1.42		-4.12	-1.16
114	Bathinda	Burj Gill-Pz	-0.94		-2.90	0.00
115	Bathinda	Burj-Pz	-0.03		-0.90	-0.10
116	Bathinda	Deratapp	-0.74	-0.31	-0.66	
117	Bathinda	Dhapali1				-1.96
118	Bathinda	Dhapali-Pz	-0.13	-4.76	-2.48	-0.61
119	Bathinda	Dialpur Mirza	-0.92	-1.55	-2.80	-0.92
120	Bathinda	Dialpura Bhlaike	-0.05	-2.20	-4.08	-0.79
121	Bathinda	Dulle Wala-Pz	-0.11		-2.41	-0.33
122	Bathinda	Ganga-Pz		-2.06	-3.37	
123	Bathinda	Ghudda			-5.62	0.00
124	Bathinda	Ghudda-Pz			0.39	-1.25
125	Bathinda	Gill Patti-DW	-0.11		-1.70	
126	Bathinda	Gulabgarh 2 (s)	-0.28		-2.89	
127	Bathinda	Gumti-DW	-0.44		-1.66	-1.37
128	Bathinda	Guru Sar-Pz				
129	Bathinda	Gurusar				
130	Bathinda	Harraipur-Pz	-0.70		-0.70	-0.10
131	Bathinda	Jajjal	0.04	-0.04	1.20	0.45
132	Bathinda	Jassi Bhagwali	1.00	-0.20	0.16	-0.10
133	Bathinda	Jassi Paowali-Pz	0.80		-1.32	-0.98
134	Bathinda	Jhanduke		-3.41	-3.31	-0.74
135	Bathinda	Jhanduke-Pz				
136	Bathinda	Kahan Singh Wala-DW	0.40		-1.64	-1.18
137	Bathinda	Kalla Bandar		0.27	-1.79	-2.79
138	Bathinda	Kalyan Sukha-Pz	0.12		-2.05	-1.56
139	Bathinda	Koir Singh Wala-Pz	0.34		-2.10	-0.17
140	Bathinda	Kot Bhaktu-Pz	-0.17		-0.60	-0.25
141	Bathinda	Kot Guru	-0.79		0.73	0.83
142	Bathinda	Kot Shamir	-1.84	-0.65	0.95	0.80

143	Bathinda	Kothaguru-Pz				
144	Bathinda	Lahri				
145	Bathinda	Lalliana-Pz	0.20		0.00	0.10
146	Bathinda	Lehra Dhulkot-Pz	-0.18		-3.32	-0.73
147	Bathinda	Lehra Khanna-Dw	0.80			
148	Bathinda	Maihma Bhagwan-PZ	-0.78		-0.35	0.02
149	Bathinda	Maisar Khana		-1.11	-2.04	-0.98
150	Bathinda	Maisar Khana-Pz	-0.25		0.22	-0.25
151	Bathinda	Maluka-Pz				
152	Bathinda	Mandi Kalan-Pz	0.57		-2.55	-1.81
153	Bathinda	Mehraj-Pz	-0.18		-1.90	-1.14
154	Bathinda	Mehta-Pz	-0.04		-0.28	0.02
155	Bathinda	Multania-Pz	-0.49		-0.88	-0.23
156	Bathinda	Nahinwala	-10.10	9.40	9.43	9.57
157	Bathinda	Nathana-Pz	0.25		-4.09	-1.25
158	Bathinda	Nathena-Pz	-0.33		-0.35	0.05
159	Bathinda	Phul	-1.82	0.98		0.75
160	Bathinda	Phulla				-0.80
161	Bathinda	Phulla1				
162	Bathinda	Puhla-Pz	-0.05		-2.08	-0.73
163	Bathinda	Raike Kalan	0.20	-2.01		0.32
164	Bathinda	Rajgarh Kubey-Pz	0.05		-2.10	-1.05
165	Bathinda	Rampura				
166	Bathinda	Rayya-Pz	0.09		-2.57	-0.33
167	Bathinda	Salabatpur-Pz	0.53		-3.38	-1.38
168	Bathinda	Sangat -Pz	0.07	0.04	0.09	-0.09
169	Bathinda	Seema-DW	0.14		-2.71	-0.78
170	Bathinda	Sidhana	0.50		-3.53	-1.29
171	Bathinda	Sooch-Pz	-0.04		-2.77	-0.82
172	Bathinda	Teona-Pz	-0.52		1.68	1.39
173	Bathinda	Tungwali-Pz	-0.18		-1.20	-0.39

174	Faridkot	Baja Khana				
175	Faridkot	Bead Sikhanwala-Pz	-0.74	-0.25		0.25
176	Faridkot	Behabal Kalan-Pz	0.40		-1.80	-0.40
177	Faridkot	Burj Jawahar Singh-Pz	0.20		-2.00	-0.80
178	Faridkot	Chahd Baja	0.35			-0.74
179	Faridkot	Chak Kalan-Pz	-0.20		1.10	0.45
180	Faridkot	Devrana-Pz	0.20		0.80	0.15
181	Faridkot	Dhaipai-Pz	0.05		0.15	0.05
182	Faridkot	Dhilwan Kalan	-0.22	-0.85	-1.20	-0.28
183	Faridkot	Dhudi-Pz	0.45		-1.30	-0.40
184	Faridkot	Dipsinghwala	-0.65	0.75	0.88	1.60
185	Faridkot	Faridkot-Pz	0.05		-0.15	-0.23
186	Faridkot	Fatehgarh-Pz	0.10		-1.50	-0.20
187	Faridkot	Ghuiana-Pz	-0.10		-0.55	0.50
188	Faridkot	Karirwali	-0.15	-1.12	-0.63	-0.37
189	Faridkot	Koharwala-DW	0.00		0.60	0.10
190	Faridkot	Kot Kapura	-0.04	-0.50	-0.35	-0.20
191	Faridkot	Matta	-0.19	-0.72	-0.09	-0.48
192	Faridkot	Mehmuana	-0.41	0.18	0.53	0.55
193	Faridkot	Pahluwala-Pz	-0.10		-0.50	-0.60
194	Faridkot	Ratti Rori-Pz	-0.15		0.25	0.30
195	Faridkot	Rorian Kapura-Pz	0.00		0.30	0.00
196	Faridkot	Sandhwan-Pz	-0.40		-0.70	0.90
197	Faridkot	Sher Singh Wala- Pz	-0.31	-0.56	0.02	0.19
198	Fateh Garh	Alipur Sodhian-Pz			-0.22	-0.34
199	Fateh Garh	Amloh1				
200	Fateh Garh	Badalialasingh	2.23	0.29	-2.22	-1.22
201	Fateh Garh	Bagga Kalan	-0.80		-0.65	-0.76

202	Fateh Garh	Bassi Pathana	-2.43	0.55	-5.05	-3.30
203	Fateh Garh	Bhagrana	0.16	0.30	1.72	0.62
204	Fateh Garh	Bhateri1	-2.28	0.36	1.48	1.74
205	Fateh Garh	Burj	0.45		-0.45	-0.50
206	Fateh Garh	Chandiala-Pz			0.10	0.10
207	Fateh Garh	Chunni Kalan	-0.60		2.10	2.13
208	Fateh Garh	Fatehgarh Sahib	-1.30			
209	Fateh Garh	Fatehgarh Sahib-Pz	1.52	-1.47	-1.55	-1.33
210	Fateh Garh	Jai Singh Wala	0.30		-0.40	-0.55
211	Fateh Garh	Jhambela	0.45		-0.35	-0.40
212	Fateh Garh	Khara	0.70		-0.20	-0.42
213	Fateh Garh	Lohar Majra	0.30		-0.50	-0.55
214	Fateh Garh	Mianpur-Pz			-0.25	-0.32
215	Fateh Garh	Nalini-Pz	0.38	0.06	-1.06	-0.43
216	Fateh Garh	Nandpur Kalaur-Pz			-0.40	-0.53
217	Fateh Garh	Pawala	0.16	0.46	-0.11	
218	Fateh Garh	Sado Majra	0.50		-0.60	-0.65
219	Fateh Garh	Shahpur	0.80		-0.30	-0.45
220	Fateh Garh	Sirhind-Pz			-0.20	-0.25
221	Fateh Garh	Tahalpur	0.25		-0.55	-0.60
222	Fateh Garh	Talwara	0.45		-0.45	-0.47
223	Fateh Garh	Tarkhan Majra				
224	Fateh Garh	Timber Pur-Pz			-0.25	-0.25
225	Firozpur	Abohar	-0.24	-0.12	0.23	0.29
226	Firozpur	Alamgarh	-0.25	1.31	0.55	1.25
227	Firozpur	Asifwala-Pz	0.82			
228	Firozpur	Baman Wali-Pz	-0.45			
229	Firozpur	Bannawala	-0.62	1.66	-0.45	0.25
230	Firozpur	Bara Mansur Wala-Pz	1.05			
231	Firozpur	Bazirdpura	0.17	-0.60		0.40
232	Firozpur	Chak Kandhe	-0.50			

		Shah-Pz				
233	Firozpur	Chak Khere Wala-Pz				
234	Firozpur	Chak Pune Wala-Pz	0.00			
235	Firozpur	Chamb-Pz	0.58			
236	Firozpur	Danewal Satkosi	-0.15	0.26	1.32	1.22
237	Firozpur	Danger Khera-Pz	-0.19			
238	Firozpur	Dipulana-Pz		-0.51	0.47	0.62
239	Firozpur	Dulchi Ke-Pz	-0.05			
240	Firozpur	Fattu Wala-Pz	0.75			
241	Firozpur	Fazilka-Pz	1.12			
242	Firozpur	Ghananga Kalan-Pz	0.01			
243	Firozpur	Giddran Wali-Pz	-0.69			
244	Firozpur	Godiwala-Pz	-0.35			
245	Firozpur	Gogiani-Pz	-0.07			
246	Firozpur	Guru Harsahai-Pz				
247	Firozpur	Hamed Saidoke-Pz	0.40			
248	Firozpur	Himmatpura-Pz	0.90			
249	Firozpur	Jaimal Singhwala Pz	-0.03	-1.71	-0.50	-0.57
250	Firozpur	Jaimal wala-Pz	-0.05			
251	Firozpur	Jand Wala Johian-Pz	-0.55			
252	Firozpur	Jandwala M Sagla-Pz				
253	Firozpur	Jandwala Watan-Pz	-0.30			
254	Firozpur	Jang-Pz	0.15			
255	Firozpur	Jhottian Wali-Pz				
256	Firozpur	Jodhe Wala Bhaini-Pz	0.15			
257	Firozpur	Kahan Singh	0.35			

		Wala-Pz				
258	Firozpur	Kaler Khera-Pz	-0.25			
259	Firozpur	Kandh Wala-Pz	0.45			
260	Firozpur	Kathgarh-Pz	-0.80			
261	Firozpur	Khan Wala-Pz	0.05			
262	Firozpur	Khere Ki Uttar-Pz	0.66			
263	Firozpur	Khuiansarwa r- Pz	-0.50	1.36	0.24	0.57
264	Firozpur	Kundal1	-0.39	0.23	-0.02	-0.02
265	Firozpur	Ladhuwala	-0.82	1.45		1.19
266	Firozpur	Lauhke Kalan- Pz	0.44	-4.04	-2.01	-2.29
267	Firozpur	Lohere Khurd-Pz	0.40			
268	Firozpur	Machi Bugra/ Gujran-Pz	0.45			
269	Firozpur	Mallanwala Khas-Pz	0.40			
270	Firozpur	Malluwala-Pz	1.20			
271	Firozpur	Malsian-Pz	-2.25	-0.80		1.40
272	Firozpur	Malukpur-Pz	-0.48			
273	Firozpur	Mana Singh Wala-Pz	-0.10			
274	Firozpur	Markhiwa Bhamni-Pz	0.04			
275	Firozpur	Mohkam Khan Wala-Pz	-1.45			
276	Firozpur	Mohre Wala-Pz	0.08	-0.13	0.13	-0.17
277	Firozpur	Motiwala 07pz			-0.36	-0.26
278	Firozpur	Mudki-Pz	-0.10			
279	Firozpur	Mullian Wali-Pz	0.10			
280	Firozpur	Muradwala Dal-Pz				
281	Firozpur	Nihalkhera	-0.43	0.76	0.37	0.73
282	Firozpur	Nure-Ki-Uttar	-0.14	-2.08	-1.18	-0.78

		07pz				
283	Firozpur	Pancha Wali-Pz	0.80			
284	Firozpur	Pattiwalla-Pz	0.38			
285	Firozpur	Piyarana	-0.49	-1.16	0.23	-0.04
286	Firozpur	Rala Hazi-Pz	-0.21			
287	Firozpur	Ramsara-Pz	-0.51			
288	Firozpur	Roran Wala-pz	0.03			
289	Firozpur	Rukne Wala-Pz	0.55			
290	Firozpur	Sadhusha Wala-Pz	-0.32			
291	Firozpur	Sham Singhwala-Pz	-0.72	1.09	0.89	0.36
292	Firozpur	Shatriwala-Pz	-0.20			
293	Firozpur	Sherewala-Pz	-0.15			
294	Firozpur	Singhpura-Pz	-0.05			
295	Firozpur	Sitoganno	0.01	0.27	-0.11	-0.01
296	Firozpur	Sohangarh Ratte	0.50	-0.57	-0.40	-0.50
297	Firozpur	Sultan Khan Wala Urf-Pz				
298	Firozpur	Swah Wala-Pz	-0.33	-0.58	0.67	0.05
299	Firozpur	Talwandi Jalle Khan-pz	1.05			
300	Firozpur	Tibbi Kalan-Pz	0.10			
301	Firozpur	Tibbi Taiwan Laluwalla-Pz	0.51			
302	Firozpur	Wage Wala-Pz	0.10			
303	Firozpur	Waryam Khera	-0.06	-0.11		
304	Gurdaspur	Aulakhkalan	-0.35		0.05	0.72
305	Gurdaspur	Bamyal	-0.05	0.42	-0.08	0.21
306	Gurdaspur	Bhagowal	0.47	-0.59	-1.59	-1.16
307	Gurdaspur	Bham				

308	Gurdaspur	Bhoa	-0.20	0.93	0.45	0.32
309	Gurdaspur	Bilasbal-Pz	0.25		-0.75	-1.15
310	Gurdaspur	Chahal Kalan-Pz	0.10		0.30	0.10
311	Gurdaspur	Chahgill-Pz	0.10		0.50	1.00
312	Gurdaspur	Chone-Pz	0.60		0.70	0.30
313	Gurdaspur	Dakoha-Pz	-0.19	-0.98	0.21	-0.18
314	Gurdaspur	Dera Baba Nanak	-0.75	0.24	-1.14	-0.47
315	Gurdaspur	Dhar Khurd				
316	Gurdaspur	Dhianpur	5.08			-5.47
317	Gurdaspur	Dinanagar	0.31	0.49	0.59	-2.12
318	Gurdaspur	Dostpur-Pz	-0.20		0.70	0.80
319	Gurdaspur	Gajikort-Pz	-0.30		0.50	0.50
320	Gurdaspur	Galri	-0.07	0.50	0.99	0.16
321	Gurdaspur	Ghania Ki bangar- Pz				
322	Gurdaspur	Gharotakalan	-0.53	-0.89	-0.92	-0.11
323	Gurdaspur	Ghoh				
324	Gurdaspur	Ghoh DW			0.25	
325	Gurdaspur	Ghumani Khurd-Pz	-0.05		-3.40	0.35
326	Gurdaspur	Gurdaspur-Pz	3.40			-3.40
327	Gurdaspur	Harchowal-Pz			0.50	
328	Gurdaspur	Hargobindpur	5.20		0.50	
329	Gurdaspur	Hargobindpur1			-0.30	
330	Gurdaspur	Hassanpur Kalan-Pz	-0.10			-0.85
331	Gurdaspur	Jandwala				
332	Gurdaspur	Jhakolahri	-0.07		0.10	0.00
333	Gurdaspur	Jhandalbana-Pz	0.10			0.20
334	Gurdaspur	Kala Afgana-Pz	-0.20		-0.50	-0.80
335	Gurdaspur	Kalanaur-DW	-0.66		-1.61	0.57

336	Gurdaspur	Kalanaur-Pz	-1.29	-0.36		-7.43
337	Gurdaspur	Kalerkalan-Pz	-0.35			
338	Gurdaspur	Kaure-Pz	0.30		-0.30	-0.90
339	Gurdaspur	Khan Fatta-Pz				
340	Gurdaspur	Khanikhui	-0.30	0.28	0.27	1.17
341	Gurdaspur	Khanmalik-Pz	-0.10		0.30	0.20
342	Gurdaspur	Khatgarh-Pz	0.30		0.20	0.30
343	Gurdaspur	Kiari- DW				
344	Gurdaspur	Kui-DW				
345	Gurdaspur	Lakankala-Pz	-0.10		0.40	0.50
346	Gurdaspur	Langurwal-Pz	0.40		0.00	-0.20
347	Gurdaspur	Madipur Fatehgarhchuria	0.02			-0.15
348	Gurdaspur	Malikpur				
349	Gurdaspur	Malikpur-Pz	-0.10		0.80	1.10
350	Gurdaspur	Mallewal-Pz	-0.10		0.90	0.80
351	Gurdaspur	Maman-Pz	-0.30		-0.10	-0.20
352	Gurdaspur	Masana-Pz	-0.05		0.80	0.90
353	Gurdaspur	Massit-Pz	0.10		0.10	0.10
354	Gurdaspur	Mirthal	0.60		-0.20	
355	Gurdaspur	Mirthal-DW				
356	Gurdaspur	Mirza Jaan-Pz	-0.20		0.30	0.30
357	Gurdaspur	Mullowali 1(vs)	0.07	-0.92	-0.86	-0.52
358	Gurdaspur	Mullowali 2(m)				
359	Gurdaspur	Muthi	0.10		0.70	0.80
360	Gurdaspur	Nangal-Pz	-0.10		0.30	0.40
361	Gurdaspur	Narot Jaimalsingh-Pz	-0.20		0.50	0.40
362	Gurdaspur	Nawan Pind				
363	Gurdaspur	Nishayara	-0.10	-0.67	0.07	
364	Gurdaspur	Pandoritalab	0.06		-0.88	0.99

365	Gurdaspur	Paniar	0.10		0.50	
366	Gurdaspur	Parcha-Pz	-0.10		-0.20	-0.50
367	Gurdaspur	Parmota-DW				
368	Gurdaspur	Pathankot1	0.45	1.52	-0.80	-0.47
369	Gurdaspur	Patti Atwal-Pz			0.30	0.30
370	Gurdaspur	Phulpiara	0.20		0.60	0.70
371	Gurdaspur	Saidowal Kalan-DW				
372	Gurdaspur	Saleh Chak-S	-0.44	0.05	0.85	0.48
373	Gurdaspur	Salehchak(vs)	0.32	-0.09	0.54	-0.21
374	Gurdaspur	Sarna	-0.38	5.48	0.64	0.38
375	Gurdaspur	Sarna1				
376	Gurdaspur	Sathial-Pz				
377	Gurdaspur	Shahpur Jattan-Pz	-0.20		-0.40	-0.65
378	Gurdaspur	Shahpur-Pz	-1.00		0.00	0.00
379	Gurdaspur	Shezada Kalan-Pz	0.25		0.45	0.40
380	Gurdaspur	Shikar-Pz	0.20		0.40	0.50
381	Gurdaspur	Sohal	-0.10		0.60	
382	Gurdaspur	Tikriwala-Pz	0.00		0.30	0.30
383	Hoshiarpur	Aallo Batti-Pz			-2.00	-2.05
384	Hoshiarpur	Adowal Garhi-Pz	-2.03	0.61	1.13	1.54
385	Hoshiarpur	Argowal-Pz			-1.50	-1.60
386	Hoshiarpur	Badla-Pz	0.55		-0.65	-0.65
387	Hoshiarpur	Bagpur-Pz			-0.65	
388	Hoshiarpur	Baichan-Pz	-0.65		-2.15	-0.90
389	Hoshiarpur	Bajwara			0.10	
390	Hoshiarpur	Bajwara-Pz	0.30			0.10
391	Hoshiarpur	Bhalowal Gujjran-Pz			-1.15	-1.35
392	Hoshiarpur	Bhamnaur	-0.46	4.57	2.74	0.54
393	Hoshiarpur	Bhangala-Chhota-DW		0.51	0.31	0.11
394	Hoshiarpur	Bhanowal-Pz			-1.15	-1.05

395	Hoshiarpur	Bhatolian-Pz			-2.25	-2.25
396	Hoshiarpur	Budhi Pind-Pz	-0.05		-1.80	-1.60
397	Hoshiarpur	Chak Sheru-DW		-0.52	-0.32	0.03
398	Hoshiarpur	Chohal	-2.26	-0.57	2.15	
399	Hoshiarpur	Dadan-Pz			-1.25	-1.40
400	Hoshiarpur	DAGAN-DW		3.84	2.28	
401	Hoshiarpur	Dallewal-Pz			-1.45	-1.50
402	Hoshiarpur	Dasuya2 (s)	-0.91	-0.34	0.84	-0.25
403	Hoshiarpur	Dharampur1	0.60		-1.00	
404	Hoshiarpur	Durimiwal	-0.49	2.50	0.39	0.24
405	Hoshiarpur	Fattowal-Pz	0.15		-0.50	-0.60
406	Hoshiarpur	Garh Di Wala-Pz	-3.56	2.36	3.92	2.16
407	Hoshiarpur	Garhshankar (s)	0.08	-1.89	-0.60	0.54
408	Hoshiarpur	Grahaya-Pz	-0.15		-3.30	-3.05
409	Hoshiarpur	Haler Rampur-DW			-0.53	0.54
410	Hoshiarpur	Hazipur	-0.15	2.80		-1.17
411	Hoshiarpur	Ittian-Pz			-1.00	-1.00
412	Hoshiarpur	Jahidpur-PZ				
413	Hoshiarpur	Jalalpur-Pz	-0.30		-0.80	-1.00
414	Hoshiarpur	Jattpur-Pz	0.40		-0.60	-0.60
415	Hoshiarpur	Jhir Da Khuh-DW				
416	Hoshiarpur	Kharkan-Pz				
417	Hoshiarpur	Khera-Pz	25.50		-1.00	-0.95
418	Hoshiarpur	Mahil Baltohian-Pz	-1.45		-1.90	-2.25
419	Hoshiarpur	Mahilpur-Pz	-0.74	0.31	-0.11	-1.36
420	Hoshiarpur	Maranwali-PZ				
421	Hoshiarpur	Mianipur-Pz	0.30		-1.25	-1.85
422	Hoshiarpur	Mukerian Dw				
423	Hoshiarpur	Naharpur-Pz			-0.95	-0.90
424	Hoshiarpur	Namoli-PZ				
425	Hoshiarpur	Nangal Bihala- DW	-0.23	0.43	2.06	1.15

426	Hoshiarpur	Nangal Thathal-Pz	0.70		-1.20	-1.20
427	Hoshiarpur	Pan Khuh-DW			3.28	3.58
428	Hoshiarpur	Pandori Mehal-Pz	0.10		-0.70	-0.70
429	Hoshiarpur	Parshote-Pz	-0.05		-1.70	-1.75
430	Hoshiarpur	Phuglana-Pz	-3.77	-1.53	1.44	2.87
431	Hoshiarpur	Rampur Colony (HSP) pz-medium				
432	Hoshiarpur	Samraj Tanda-DW		1.10	1.64	1.00
433	Hoshiarpur	Satnoh-PZ.				
434	Hoshiarpur	Sham Chaurasi	0.02	0.02	0.25	1.20
435	Hoshiarpur	Sibo Chak-DW		1.63	1.05	0.65
436	Hoshiarpur	Simbli- OW	0.49	-3.86	-3.38	-1.78
437	Hoshiarpur	Simbli-Pz	-1.03	-1.81	-0.20	-0.10
438	Hoshiarpur	Talwara1	-0.07	0.57	0.62	0.81
439	Hoshiarpur	Tanda	0.20		-0.90	
440	Hoshiarpur	Thakarwala	-0.83	-0.21	0.60	0.60
441	Jalandhar	Adampur 3(s)	-2.37	0.94	1.78	1.30
442	Jalandhar	Adarman-Pz	0.90		-1.40	-0.70
443	Jalandhar	Akalpur-Pz	-0.90		-1.45	0.80
444	Jalandhar	Allawalpur	2.09		-2.35	-1.13
445	Jalandhar	Bilga-Pz	0.50		-1.70	-0.65
446	Jalandhar	Billi Chahrami-Pz	0.05		-3.40	-1.70
447	Jalandhar	Chania-Pz	-0.40		-3.45	-1.80
448	Jalandhar	Dhanda-Pz	0.10		-2.30	-0.30
449	Jalandhar	Dhirowal-Pz	-0.30		-1.30	-1.00
450	Jalandhar	Fateh Jalal-Pz	-0.15		-4.00	-2.00
451	Jalandhar	Gehlan-pz	-0.10		-1.80	-0.45
452	Jalandhar	Gillian-Pz	1.70		-1.35	0.10
453	Jalandhar	Gohiran	-0.67		0.76	0.41
454	Jalandhar	Hardo Pharwal-Pz	0.40		-3.20	-1.00

455	Jalandhar	Hardo Sheikh-Pz	-0.10		-2.05	-0.10
456	Jalandhar	Jalandhar 3(vs)		-3.43	-1.84	1.13
457	Jalandhar	Jalbhe				
458	Jalandhar	Jandiala-Pz	1.51	-3.41	-3.53	-2.93
459	Jalandhar	Jandu Singha-Pz	0.90		-3.20	-2.10
460	Jalandhar	Janian-Pz	0.55		-2.50	-0.80
461	Jalandhar	Kakar Kalan-Pz	0.10		-3.30	-1.70
462	Jalandhar	Kala-Pz	-0.10		-2.50	-0.40
463	Jalandhar	Kalyanpur-Pz	0.25		-1.60	-0.50
464	Jalandhar	Kang Sahib Rai-Pz	-0.10		-1.50	0.20
465	Jalandhar	Kartarpur 2(s)	-0.11	-2.00	-0.26	-0.96
466	Jalandhar	Kharal Kalan Pz-S	-0.52	-0.46	-0.80	-0.80
467	Jalandhar	Kot Wadal Khan-Pz	0.00		-1.70	-0.20
468	Jalandhar	Kurla-Pz	0.80		-2.60	-1.30
469	Jalandhar	Lallian kalan Pz-S	0.08	-2.50	-1.00	0.75
470	Jalandhar	Mahmuwal-Pz	0.10		-2.20	-0.35
471	Jalandhar	Mehsampur-Pz	0.35		-1.45	-0.40
472	Jalandhar	Nakodar 2(m)	0.52	-1.66	-1.55	1.32
473	Jalandhar	Nakodar 3(s)	-1.61			-0.99
474	Jalandhar	Nangal Shaman	0.10		-3.15	-1.20
475	Jalandhar	Nasirpur-Pz	0.50		-1.20	-0.80
476	Jalandhar	Nussi-Pz	-0.10		-4.10	-1.90
477	Jalandhar	Pathial-Pz	-0.10		-2.15	-1.50
478	Jalandhar	Pharwala-Pz	-0.10		-1.80	-0.10
479	Jalandhar	Phillaur 2(s)	0.01	-0.51	-0.46	-2.71
480	Jalandhar	Rahimpur-Pz	1.10		-4.20	-1.00
481	Jalandhar	Rurka Kalan-Pz	-0.10		-2.50	-0.10

482	Jalandhar	Samarahi-Pz	0.20		-2.40	
483	Jalandhar	Sarih Pz-S				
484	Jalandhar	Shahkot(s)		1.05		2.64
485	Jalandhar	Shahkot-Pz-Pb			-1.10	-0.35
486	Jalandhar	Skarar Pur-Pz	1.00		-4.30	-1.20
487	Jalandhar	Sultanpur-Pz	0.00		-2.10	-0.50
488	Jalandhar	Talwandi Bhutial-Pz	1.30			
489	Jalandhar	Talwan-Pz	0.10		-2.10	-0.50
490	Jalandhar	Thanda-Pz	0.05		-1.35	0.45
491	Jalandhar	Udhopur	-1.15	2.32	2.35	
492	Kapurthala	Amanipur-Pz	-0.30		-1.00	0.00
493	Kapurthala	Balera-Pz	1.75		-7.70	-2.55
494	Kapurthala	Bauril Harnampur-Pz	-0.05		-1.20	-0.20
495	Kapurthala	Begowal-Pz	-0.52		-0.40	0.40
496	Kapurthala	Bhanoki-Pz	0.20		-1.80	-0.40
497	Kapurthala	Bhatnura Khurd- S	-3.65	-5.42	-0.75	-0.08
498	Kapurthala	Bhawanipur-Pz	-0.65		-1.95	0.35
499	Kapurthala	Bholath M	-0.26		-2.76	-0.81
500	Kapurthala	Bholath S	-1.21	2.65	1.11	0.62
501	Kapurthala	Chakoke-Pz	-0.05		-1.77	-0.46
502	Kapurthala	Dadwindi-Pz			-1.10	-0.10
503	Kapurthala	Dalla	-0.70		-0.25	0.45
504	Kapurthala	Hamira-Pz	-0.45		-0.60	0.00
505	Kapurthala	Hazipur-Pz	-0.10	-4.88	-0.70	0.60
506	Kapurthala	Hussainpura -S Pz				
507	Kapurthala	Kapurthala2 (s)				
508	Kapurthala	Karnail Ganju-Pz	0.05		-1.10	-0.45
509	Kapurthala	Kishanpur	3.00		-8.65	-2.90
510	Kapurthala	Maheru-Pz	2.60		-3.40	-0.90
511	Kapurthala	Miani Bola-Pz	-0.20		-1.30	-0.20

512	Kapurthala	Mithra-Pz	-0.40		-0.80	-0.10
513	Kapurthala	Nadala	-0.15			
514	Kapurthala	Nathu Chahal-Pz	0.99		-6.84	-2.79
515	Kapurthala	Nurpur Janoa-Pz	-0.05		-0.60	0.00
516	Kapurthala	Paazian-Pz	0.00		-3.30	-1.80
517	Kapurthala	Phagwara2 (s)	0.29	-3.74	-2.35	-1.95
518	Kapurthala	Phulewal-Pz	-0.40		-1.40	0.00
519	Kapurthala	Rawalpindi-Pz	2.90		-7.10	-3.00
520	Kapurthala	Saiflabad-Pz	-0.25		-0.50	0.05
521	Kapurthala	Sangatpur-Pz	1.80		-7.90	-1.30
522	Kapurthala	Shalapur Dona-Pz	1.10		-5.55	-1.30
523	Kapurthala	Sheikh Manga-Pz	0.05		-0.80	-0.30
524	Kapurthala	Sultanpur2 (s)	-1.43	-2.30	0.05	0.83
525	Kapurthala	Talwandi Chaudary - Pz	-0.13	-1.83	-0.20	0.28
526	Kapurthala	Thikriwali-Pz	-0.18		-0.70	-0.08
527	Ludhiana	Alamgir-Pz	-0.73		-0.30	0.95
528	Ludhiana	Aliwal-Pz	0.10		-0.84	-0.29
529	Ludhiana	Begowal	1.30	-0.65	-0.82	-0.84
530	Ludhiana	Bhagwanpur -Pz	-0.08		0.28	0.73
531	Ludhiana	Bhahlolpur-DW	0.59	-0.16	0.08	-0.69
532	Ludhiana	Bharthala Randhawa-Pz	-1.30		-0.13	0.85
533	Ludhiana	Bhikhi Khatron-Pz	-1.17		0.57	0.97
534	Ludhiana	Bilaspur-Pz	-0.35		-0.20	0.05
535	Ludhiana	Chaminala-Pz	-1.40		-0.70	0.20
536	Ludhiana	Chankian Khurd-Pz	-0.93		0.18	0.43
537	Ludhiana	Chattar				

		Singh Park-ldh				
538	Ludhiana	Chaunta-Pz	-0.35		0.17	1.32
539	Ludhiana	Chhapar-Pz	-0.62		-1.13	0.17
540	Ludhiana	Dinnamder-Pz	-0.90		-0.40	0.20
541	Ludhiana	Dodpur-Pz	0.09		-0.35	-0.48
542	Ludhiana	Doraha-Pz	-0.57	0.09	0.02	-0.09
543	Ludhiana	Galibkalan-Pz	0.26		-3.31	-1.21
544	Ludhiana	Gohaur-Pz	-0.90		-0.20	0.10
545	Ludhiana	Gopalpur 2(s)	1.00	-1.55	-0.65	-0.66
546	Ludhiana	Habbowal				
547	Ludhiana	Hambowal-Pz			-0.75	
548	Ludhiana	Harnampur	-0.25		-0.10	0.45
549	Ludhiana	Hedon-Pz	-0.11		1.55	-0.12
550	Ludhiana	Ikloha-Pz	0.46	-1.15		-0.38
551	Ludhiana	Kadon-Pz			-1.75	
552	Ludhiana	Kalsian	-0.35		0.40	-1.00
553	Ludhiana	Katanikalan-Pz	-0.45		-1.34	0.50
554	Ludhiana	Khandur	-0.16		0.30	-0.84
555	Ludhiana	Kishangarh-Pz	-1.40		-1.25	0.80
556	Ludhiana	Kishanpur-Pz	-0.35			-1.20
557	Ludhiana	Lalan1	3.00	-1.71	0.28	2.01
558	Ludhiana	Lelon-Pz	-0.06		1.57	0.50
559	Ludhiana	Lil- II Pz	-1.41	0.56		1.20
560	Ludhiana	Lil-Pz III	-0.26	0.13	0.00	-0.36
561	Ludhiana	Lodhiwal-Pz	-1.06		-0.63	-0.05
562	Ludhiana	Lohara-Pz	-1.00		-0.50	-0.05
563	Ludhiana	Maksudra-Pz	-0.20	0.13		
564	Ludhiana	Manak Majra-Pz	-0.76		0.06	0.96
565	Ludhiana	Mangat-Pz	-0.28		0.17	0.47
566	Ludhiana	Manoke-Pz	-0.05		-3.70	-1.90

567	Ludhiana	Mehma Singh Wala-Pz			-1.20	-0.20
568	Ludhiana	Mehma-Pz				
569	Ludhiana	Mushkabad	0.61	-0.58	0.52	-0.04
570	Ludhiana	Nurpur-Pz	-0.10		-2.20	-1.40
571	Ludhiana	P.A.U.Ludhiana 2(s)	-0.57		-0.92	4.74
572	Ludhiana	Pabbian-Pz	-1.60		-0.75	-0.20
573	Ludhiana	Pandori-Pz	-1.01		-0.69	0.06
574	Ludhiana	Payal-Pz	-0.55		-0.70	-0.35
575	Ludhiana	Punjeta	0.37	0.82	0.86	0.56
576	Ludhiana	Ragba-Pz	-1.30		-0.80	0.20
577	Ludhiana	Raikot-Pz	-1.55		-3.00	-0.45
578	Ludhiana	Rajona Khurd	-0.07		-3.48	-0.58
579	Ludhiana	Rashiana-Pz	-0.65		-0.50	0.40
580	Ludhiana	Rashin	-0.27		-1.63	-1.23
581	Ludhiana	Rattewal-Pz	-0.24		-2.03	-0.90
582	Ludhiana	Roomi-Pz	-0.20		-4.50	-1.40
583	Ludhiana	Sajaywal-Pz	-0.95		-6.30	-0.45
584	Ludhiana	Samrala 2(s)	3.85	-1.30	-3.84	-3.78
585	Ludhiana	Sanewal-Pz	-0.62		-0.03	0.02
586	Ludhiana	Sangatpura-Pz	-0.34		0.24	1.72
587	Ludhiana	Sherian	0.56	0.05	0.14	0.01
588	Ludhiana	Sherpur-Pz	0.09		0.23	0.37
589	Ludhiana	Sidhwan Bet-Pz	-1.26	0.64	-0.43	0.65
590	Ludhiana	Talwandi Kalan-Pz	-0.66		-1.49	-0.39
591	Ludhiana	Udonwal-Pz	0.03		-0.16	0.02
592	Ludhiana	Upplan	0.12		0.43	0.34
593	Ludhiana	Utlan		-1.48		
594	Mansa	Adamke-Pz	-0.80			
595	Mansa	Aklia-Pz			-1.61	-0.87
596	Mansa	Alampur Mandran-Pz			-0.70	0.24
597	Mansa	Alisher Khurd-Pz			-1.07	-0.37
598	Mansa	Bahadur Pur-Pz			-0.85	-0.79

599	Mansa	Bareh-Pz			-0.25	0.01
600	Mansa	Behniwala-Pz			-0.52	-0.28
601	Mansa	Bhamme Kalan-Pz			-0.45	-0.25
602	Mansa	Bhikhi 1 (s)				
603	Mansa	Bhikhi 2 (s)				
604	Mansa	Budhlada		-1.01	-3.70	-0.95
605	Mansa	Budhlada-Pz	-0.24		-0.86	-0.56
606	Mansa	Burj Bhalaike	-0.04	-0.23	0.23	-0.38
607	Mansa	Burj Rathi-Pz			-1.31	-0.71
608	Mansa	Fattamaluka	-0.28	-0.04	-0.24	0.01
609	Mansa	Gehlan-Pz	0.14		-0.29	-0.96
610	Mansa	Gharangne-Pz			-0.20	1.94
611	Mansa	Hera Wala-Pz			-0.47	0.10
612	Mansa	Hero Kalan-Pz			-1.09	-0.33
613	Mansa	Hirke-Pz				
614	Mansa	Jatana Kalan-Pz	-0.74		0.17	
615	Mansa	Khiala Kalan-Pz			-0.37	-0.19
616	Mansa	Khokhar Kalan-Pz			-2.36	-0.08
617	Mansa	Kot Dhamru	0.69	-1.00	-0.66	-0.95
618	Mansa	Kotra		3.10	-1.45	-1.20
619	Mansa	Kusla-Pz			-0.69	-0.81
620	Mansa	Lakhiwal-Pz			-0.72	-0.55
621	Mansa	Mansa	-0.31		-0.02	
622	Mansa	Phaphare Bhaike-Pz			-0.99	-0.12
623	Mansa	Raipur-Pz			0.41	
624	Mansa	Ralla	-0.70		-0.18	-0.13
625	Mansa	Sangha-Pz				
626	Mansa	Tandian-Pz			-0.36	-0.44
627	Moga	Baje Ke-Pz	0.42	-4.79	-3.52	-0.32
628	Moga	Baraghar-Pz	0.60		-2.20	-1.10

629	Moga	Budh Singh Wala-Pz	0.00	-3.34	-1.49	-0.55
630	Moga	Chogawan-Pz	1.04	-3.48	-2.85	-1.78
631	Moga	Dagru- Pz	0.85	-2.58	-2.83	-1.77
632	Moga	Damru Khurd				
633	Moga	Darapur			-1.83	
634	Moga	Darapur 07pz				
635	Moga	Daulatpur Niwan-Pz	0.20		-2.05	-0.30
636	Moga	Ghoha Khurd-Pz	0.30		-1.70	
637	Moga	Himatpura-Pz	0.40		-2.30	-1.20
638	Moga	Indergarh-Pz				
639	Moga	Jhandewala-Pz	0.00		-1.80	-0.80
640	Moga	Kamalke-Pz				
641	Moga	Khokri Kalan-Pz	0.20		-2.50	-1.10
642	Moga	Khosa Randhir-Pz				
643	Moga	Khosakotta-Pz				
644	Moga	Mandar-Pz			-2.40	
645	Moga	Mangewala-Pz	0.85		-2.40	-1.30
646	Moga	Nathu Wala-Pz			-1.89	-1.10
647	Moga	Nihalsinghwala-Pz	0.47	-2.00	-1.90	-1.27
648	Moga	Raonke Kalan-Pz	0.40		-1.90	-0.60
649	Moga	Samad Bhai-Pz				-1.00
650	Moga	Samalsar-Pz	-0.90		-2.20	-0.90
651	Moga	Thathe Bhai-Pz			-1.70	-0.30
652	Moga	Tota Singh Wala-Pz				
653	Muktsar	Abulkharana			-0.10	0.20

654	Muktsar	Abulkharana -Pz	-0.19			
655	Muktsar	Alam Wala	-0.48		0.20	0.40
656	Muktsar	Assa Butter-Pz				
657	Muktsar	Balocha Khera(rasool pur)	-0.57	0.52	0.59	-0.80
658	Muktsar	Bariwala-Pz	-0.35		0.19	
659	Muktsar	Bhaliana	-0.05	-0.76	-0.55	-1.32
660	Muktsar	Bhamma(bam)				
661	Muktsar	Bhiti Wala-Pz	-0.04		0.00	-0.10
662	Muktsar	Chaktam Kot-Pz	-0.40		-0.30	0.28
663	Muktsar	Chotian-Pz				
664	Muktsar	Dhalkot-Pz				
665	Muktsar	Doda			2.18	-0.73
666	Muktsar	Doda-Pz	-0.54	1.22	1.32	0.74
667	Muktsar	Gaga-Pz				
668	Muktsar	Husnar-Pz	0.71		-0.07	-0.07
669	Muktsar	Jhurar-Pz	-0.10		-0.20	0.15
670	Muktsar	Kabar Wala	0.56	-0.80		-0.86
671	Muktsar	Kattianwali-Pz	-0.73	2.88	0.45	0.58
672	Muktsar	Khirkian Wala-Pz				
673	Muktsar	Khunde Halal-Pz		0.11	0.28	
674	Muktsar	Killian Wali-Pz	0.25		-0.15	0.95
675	Muktsar	Kollian Wali-pz	-0.17		0.20	0.13
676	Muktsar	Kot Bhai-DW	-0.08		-0.05	0.00
677	Muktsar	Kuttianwali				
678	Muktsar	Labanianwali	-0.32	-0.35	0.00	-0.58
679	Muktsar	Lambi	-0.42			-0.93
680	Muktsar	Lambi-Pz		-0.45	-0.20	0.18
681	Muktsar	Muktsar	-1.33	-0.14	0.99	-0.03

682	Muktsar	Phulu Khera-Pz	-0.13		-0.15	-0.05
683	Muktsar	Ratta Khera Chota-Pz	-0.75		0.55	0.37
684	Muktsar	Sheikh-Pz	-0.12		-0.05	0.40
685	Muktsar	Sohiwal-Pz	0.05			
686	Nawanshahr	Alowal-Pz	0.00		-0.80	0.00
687	Nawanshahr	Badhwan-Pz			-2.10	-0.35
688	Nawanshahr	Baharam-Pz				
689	Nawanshahr	Bahara-Pz	0.00		-2.50	-0.50
690	Nawanshahr	Bahlora Kallan- Pz	-0.06	-0.87	0.44	-0.32
691	Nawanshahr	Bahua-Pz	0.50		-2.30	-0.60
692	Nawanshahr	Balachore	3.13	-3.71	-2.48	
693	Nawanshahr	Hakimpur-Pz			-2.20	-0.50
694	Nawanshahr	Kariam-Pz	-0.80		-0.80	-0.10
695	Nawanshahr	Mauhra-Pz	-1.99	-0.42	-0.30	-0.55
696	Nawanshahr	Rahon	0.33	-0.11	-0.10	0.07
697	Nawanshahr	Raipur Dhaba-Pz	-0.28	-1.72	-0.65	-0.92
698	Patiala	Antala				
699	Patiala	Ballopur	0.25		-0.20	
700	Patiala	Banur 07pz				
701	Patiala	Bassma Pipla				
702	Patiala	Bhankhar-Pz			-1.12	
703	Patiala	Bhojo majri 07pz	-0.13	0.73	1.69	-1.95
704	Patiala	Binzal-Pz	0.10			
705	Patiala	Birkauli	0.91		-1.89	-0.57
706	Patiala	Chandiala-Pz	-0.35		0.25	0.55
707	Patiala	Dera Bassi 07pz	1.54		-4.88	0.52
708	Patiala	Devigarh				
709	Patiala	Devigarh 1Pz	1.96	-5.87	0.11	-1.15
710	Patiala	Devigarh IIPz	1.82	-1.27	-2.64	-2.56
711	Patiala	Devigarh-III Pz	2.03		-3.31	-2.62

712	Patiala	Dhakdaba 07	7.62	0.06	-6.69	-7.76
713	Patiala	Kakrala-Pz	-0.10		-1.20	-1.90
714	Patiala	Kalyan 07pz	0.10	-0.66	-0.88	-0.67
715	Patiala	Kami Kalan	-0.15	0.20	-15.52	0.34
716	Patiala	Kulburcha-Pz	-0.10		-0.90	-1.35
717	Patiala	Kutha Kheri-Pz	0.30		-0.15	
718	Patiala	Lacharu Kalan	0.25	0.22	-0.45	-0.65
719	Patiala	Lachkani-Pz	0.74	-2.32	-1.85	-1.39
720	Patiala	Miranpur- Pz	1.52		-1.94	0.44
721	Patiala	Mirpur-Pz			-2.87	
722	Patiala	Nanhera-Pz	0.30		-0.60	
723	Patiala	Patran-Pz	-1.40	0.11	0.24	0.44
724	Patiala	Rajpura Pz M		0.10	0.47	
725	Patiala	Rajpura-PzSt	0.85		0.25	2.66
726	Patiala	Samana-Pz	-0.25	-0.89	-1.35	-1.13
727	Patiala	Samaspur-Pz	0.65		0.30	1.15
728	Patiala	Sangatpura-Pz	0.13			1.29
729	Patiala	Singhpura-Pz	-0.55		-2.50	-2.85
730	Patiala	Thua	5.75	-5.10	-5.20	-5.03
731	Rupnagar	Ahmedpur	0.95	-2.86	-1.99	-2.64
732	Rupnagar	Bera Chauta	-0.47	0.35	-0.01	0.02
733	Rupnagar	Bhalan	-2.85	2.43	1.08	0.00
734	Rupnagar	Braham Pur	-2.65	1.50	-0.22	0.18
735	Rupnagar	Chakdera	-1.10	0.39		1.80
736	Rupnagar	Chatamli- Pz	2.28	-4.69	-2.10	-0.93
737	Rupnagar	Dhair				
738	Rupnagar	Dheri	-3.70	3.12	3.76	3.40
739	Rupnagar	Dumewal	-3.00	2.65	2.90	2.50
740	Rupnagar	Dusarna			-0.60	0.95
741	Rupnagar	Gharoon	-0.35		2.80	1.45
742	Rupnagar	Ghoga	-2.00	2.11	0.60	0.50

743	Rupnagar	Hardinamoh	-1.55	1.61	16.99	2.22
744	Rupnagar	Kakrali				
745	Rupnagar	Kurrha-Pz	-0.55		-1.90	-3.30
746	Rupnagar	Landran				
747	Rupnagar	Landran-Pz		1.28	3.44	5.87
748	Rupnagar	Malkpur-Pz	-0.70		1.10	2.90
749	Rupnagar	Nurpurbedi	0.65			
750	Rupnagar	Raipur Kalan	-0.25		-0.05	-0.10
751	Rupnagar	Rurki Heeran-Pz	1.95	-2.58	-0.04	0.26
752	Rupnagar	Soara	-1.00	1.40		
753	Sangrur	Bagarian-Pz	0.63	0.04	-2.90	-1.13
754	Sangrur	Barnala (s)	0.01	-1.08	-1.85	-1.49
755	Sangrur	Bhadaur-Pz	-0.01	-2.76	-2.33	-1.47
756	Sangrur	Bhojowali-Pz	-0.15	-2.92	-1.70	-1.11
757	Sangrur	Bugra 1		0.08	-0.66	0.19
758	Sangrur	Chural Kalan M	0.05	0.10	-1.60	-1.20
759	Sangrur	Dhanaula	0.40		-1.60	
760	Sangrur	Dharamgarh -Pz	-0.24		-0.39	-0.57
761	Sangrur	Gehlon-Pz	0.25			
762	Sangrur	Ghanauri Kalan-Pz	0.43	-1.71	-0.59	-1.13
763	Sangrur	Hassanpur-Pz	-0.12		-0.38	-0.48
764	Sangrur	Isra-Pz	-0.13		-0.50	-0.65
765	Sangrur	Kuler Khurd-Pz	-0.35		-0.57	-1.08
766	Sangrur	Kurar-Pz	0.70		-2.60	-1.20
767	Sangrur	Ladda-Pz	0.80	0.19		
768	Sangrur	Lehal Kalan-Pz	-0.07		-0.37	-0.43
769	Sangrur	Lohgarh-Pz	-0.04		-1.66	-0.46
770	Sangrur	Longowal-Pz	-0.10	-0.81	-0.96	-1.14
771	Sangrur	Mahal Kalan-Pz	-0.50	-2.33	-3.82	-0.50
772	Sangrur	Malerkotla-DW			0.90	-0.52
773	Sangrur	Manvi-Pz			0.33	0.49

774	Sangrur	Mastuana-Pz		-15.65	-0.45	-0.62
775	Sangrur	Mehsampur-Pz	-0.08		-0.24	-0.36
776	Sangrur	Panjgaraian-Pz	0.17		-0.47	-0.62
777	Sangrur	Ramgarh-Pz	0.00		-1.40	-0.20
778	Sangrur	Rampur Channa-Pz	-0.25		-0.35	-0.50
779	Sangrur	Rurki Kalan-Pz	-0.48		-0.22	-0.45
780	Sangrur	Shekha			-2.50	-1.20
781	Sangrur	Sunam-Pz	-0.11	-1.07	-0.07	-0.66
782	Sangrur	Tappa Mandi-Pz	0.60		-2.30	-1.00

						ANNEXURE-IV
S. No.	**District**	**Location**	**Decadal Mean Fluctuations**			
			May (2005-2014)	**August (2005-2014)**	**November (2005-2014)**	**January (2006-2015)**
			May-2015	**August-2015**	**November-2015**	**January-2016**
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Chandigarh	Csio-combined	0.08			
	Chandigarh	CSIO-S	2.65			1.53
	Chandigarh	Maloya				1.62
	Chandigarh	NEW INDUST AREA	1.22	3.07	-2.76	1.35
	Chandigarh	Sec-27, Ar Well	0.19	1.67	2.79	2.04
	Chandigarh	SECT 10C (D)	1.90	-14.58	-9.57	-8.53
	Chandigarh	SECT 10C (S)	-0.29	0.57		12.15
	Chandigarh	SECT 21D (D)			-2.39	
	Chandigarh	SECT 21D (S)		2.37		
	Chandigarh	SECT 31D (D)	0.05	-0.02	1.18	0.33
	Chandigarh	SECT 31D (S)	0.32	0.89	0.47	0.70
	Chandigarh	SECT 37D (S)	1.65	0.58	0.45	0.76
	Chandigarh	SECT 39D (S)	-0.83	1.26	1.35	0.55
	Chandigarh	SECT 44D (S)	2.62	0.34	0.65	-0.03
	Chandigarh	Sector-46 (shallow)			0.56	-0.18
	Amritsar	Aima Khurd-Pz	0.65		0.50	1.29
	Amritsar	Ajnala	0.22	-0.17	-0.13	0.06
	Amritsar	Aminshah Khalra	4.13			
	Amritsar	Amritsar1	1.54	-0.35	2.80	1.29
	Amritsar	Attari-Pz	0.80		1.70	0.88
	Amritsar	Bakipur-Pz	0.35		1.96	1.98
	Amritsar	Bal Kalan-Pz	0.70		-0.50	0.10
	Amritsar	Bath-Pz	0.22			0.78
	Amritsar	Beas07	0.40		1.14	0.49
	Amritsar	Bhagala-Pz	0.82		2.80	2.95
	Amritsar	Bhagwanpur-Pz			2.34	2.40
	Amritsar	Bhalaipur-Pz	0.34		1.75	1.40
	Amritsar	Bhankar Kalan-Pz	0.15		2.76	2.91
	Amritsar	Bhattaywad-Pz	-0.10		-0.50	-0.25
	Amritsar	Bhikiwind- Pz	0.55		0.99	1.08
	Amritsar	Bhura-Pz	-0.32		2.26	2.18
	Amritsar	Bhure-Pz	0.43		2.06	1.98
	Amritsar	Bhusse-Pz	0.20		2.30	1.77
	Amritsar	Boparai Khurd-Pz	1.08		0.20	-0.08
	Amritsar	Brahmpur-Pz	-0.06		2.25	2.05
	Amritsar	Burjwal-Pz	0.20		1.60	1.36

	Amritsar	Chabal 07	0.74			
	Amritsar	Chak Dogra-Pz	0.00		0.10	-0.05
	Amritsar	Chakkare Khan-Pz	0.20		2.10	1.45
	Amritsar	Chobal Kalan-Pz	0.71			
	Amritsar	ChogWan- Pz	-0.54	0.87	-0.11	0.20
	Amritsar	Chola Sahib-Pz	1.14	0.46	1.12	0.86
	Amritsar	Choudhary Wala-Pz	0.14		1.62	1.40
	Amritsar	Chuselawad-Pz	0.83		2.27	2.42
	Amritsar	Dhariwal-Pz	2.90		-0.60	-0.53
	Amritsar	Dholan-Pz	-0.38		1.70	1.95
	Amritsar	Dhottian-Pz	0.53			
	Amritsar	Dhulika-Pz	-0.30		0.20	-0.05
	Amritsar	Dohan-Pz	1.10		0.40	0.60
	Amritsar	Ekalgoda-Pz	0.18		2.81	2.85
	Amritsar	Gago Mahal- Pz	-0.92	0.61	-0.36	-0.62
	Amritsar	Gandi Wind-Pz	-0.06	0.21		0.54
	Amritsar	Gill wali-Pz	0.80		0.40	1.20
	Amritsar	Goindwal 07	-0.08	0.63	0.52	0.55
	Amritsar	Gujjaran Wali-Pz	0.00		-0.02	0.23
	Amritsar	Harike	-0.18		2.90	1.91
	Amritsar	Jandiala Guru-Pz	0.24	-0.17	0.70	0.35
	Amritsar	Jandoke-Pz	-0.71		-0.40	-0.45
	Amritsar	Jasrur-Pz	0.90		1.79	-0.13
	Amritsar	Jethuwal-Pz	-0.90		0.00	-0.05
	Amritsar	Kalsia Kalan07	1.25		-0.10	0.10
	Amritsar	Kandowali-Pz	0.40		0.72	0.64
	Amritsar	Karyal-Pz	-0.20		2.28	2.50
	Amritsar	Khadur Sahib-Pz	0.11		0.75	0.55
	Amritsar	Khilchian-Pz	0.90		1.26	-0.20
	Amritsar	Kotbudda-Pz	0.10		1.88	2.01
	Amritsar	Mahendipur-Pz	1.07		0.50	3.51
	Amritsar	Mahima-Pz	0.70		-0.40	0.20
	Amritsar	Majitha- Pz	0.85		0.40	-0.60
	Amritsar	Makhan Windi-Pz	0.40		1.90	1.15
	Amritsar	Marhona-Pz	0.00		3.13	1.57
	Amritsar	Mehleykey-Pz	1.15		0.30	2.52
	Amritsar	Mehta	2.68		3.99	-1.75
	Amritsar	Mehta-Pz	2.70		-1.80	2.88
	Amritsar	Miran Chak-Pz	2.20		0.10	0.80
	Amritsar	Mohawa	0.20	-0.03	0.50	-0.20
	Amritsar	Nangal Sahaul-Pz	0.00		0.30	-0.43
	Amritsar	Nawan Tanal- Pz	-0.09		0.70	-0.10
	Amritsar	Pakharpura-Pz	0.10		-0.30	0.67
	Amritsar	Rajoke-Pz	-0.23		3.13	1.17

	Amritsar	Rampura-Pz	-0.46		-0.20	0.25
	Amritsar	Ratoke-Pz	0.02		2.60	1.19
	Amritsar	Rupowal Brahmana-Pz	1.43		0.31	-0.18
	Amritsar	Sabran-Pz	0.00		0.30	2.15
	Amritsar	Sahab Pura- Pz	0.58	1.06	1.30	0.00
	Amritsar	Sathiala-Pz	-0.20		0.70	7.85
	Amritsar	Shabura-Pz	1.60		2.10	-0.15
	Amritsar	Sham Nagar-Pz	0.10		2.30	1.21
	Amritsar	Sheron-Pz	-0.10		1.30	2.36
	Amritsar	Talwandi Dogra-Pz	3.35		0.60	1.55
	Amritsar	Tarsika-Pz	1.10		0.90	1.85
	Amritsar	Thatha- Pz	0.60		0.20	0.36
	Amritsar	Ugar Aulakh-Pz	0.00		0.30	2.40
	Amritsar	Vadala Kalan-Pz	0.00		2.32	0.00
	Amritsar	Wandala Bittewad-Pz	1.10		0.70	-0.20
	Bathinda	Ablu	2.10	1.98	2.27	1.98
	Bathinda	Aleke Jalal-Pz	2.08		1.62	1.11
	Bathinda	Badiala-Pz	2.56	1.31	2.27	1.73
	Bathinda	Bagher Mohabat Singh-Pz	0.45		0.31	0.48
	Bathinda	Bahman Kaur Singh-Pz	0.50		-0.13	0.26
	Bathinda	Balianwali-Pz	1.98		1.70	3.24
	Bathinda	Balluana1	3.03	0.62	0.66	0.73
	Bathinda	Balluana-Pz	7.60		0.63	1.13
	Bathinda	Banbhiha-Pz	-0.25		-0.77	-0.76
	Bathinda	Bhagibandar	0.41	-0.14	0.08	-0.05
	Bathinda	Bugran-Pz	2.08		1.50	2.44
	Bathinda	Burj Gill-Pz	2.20		2.25	2.83
	Bathinda	Burj-Pz	-0.31		0.75	-0.05
	Bathinda	Deratapp	0.79	1.29	1.60	1.01
	Bathinda	Dhapali1		7.82	7.27	8.68
	Bathinda	Dhapali-Pz	1.84	4.22	2.56	2.93
	Bathinda	Dialpur Mirza	4.70	5.10	7.07	4.44
	Bathinda	Dialpura Bhlaike	4.81	5.58	7.64	4.88
	Bathinda	Dulle Wala-Pz	1.99		1.97	1.88
	Bathinda	Ganga-Pz	0.65	1.68	2.41	1.08
	Bathinda	Ghudda	-2.62		3.39	
	Bathinda	Ghudda-Pz	-0.15			
	Bathinda	Gill Patti-DW	0.57		2.44	1.98
	Bathinda	Gulabgarh 2 (s)	1.36		4.20	1.78
	Bathinda	Gumti-DW	1.59		1.19	1.81
	Bathinda	Gurusar	-0.29	-1.60	2.35	0.08
	Bathinda	Harraipur-Pz	0.86		0.78	0.98

	Bathinda	Jajjal	-0.83	-0.73	-1.95	-0.24
	Bathinda	Jassi Bhagwali	-3.60	-3.00	-3.46	-3.02
	Bathinda	Jassi Paowali-Pz	-0.57		0.19	0.38
	Bathinda	Jhanduke	2.52	4.50	5.00	2.89
	Bathinda	Kahan Singh Wala-DW	0.71		1.79	1.87
	Bathinda	Kalla Bandar	-3.78	-3.85	-2.00	-0.89
	Bathinda	Kalyan Sukha-Pz	1.55		1.20	2.65
	Bathinda	Koir Singh Wala-Pz	1.50		0.35	-0.17
	Bathinda	Kot Bhaktu-Pz	0.15		0.45	0.47
	Bathinda	Kot Guru	0.41		-0.74	-0.15
	Bathinda	Kothaguru-Pz		1.59	1.81	0.69
	Bathinda	Kot Shamir	1.53	1.58	0.55	0.61
	Bathinda	Lalliana-Pz	0.48		-0.05	-0.04
	Bathinda	Lehra Dhulkot-Pz	2.63		2.22	0.09
	Bathinda	Lehra Khanna-Dw	1.94		3.70	2.50
	Bathinda	Maihma Bhagwan-PZ	0.37			0.76
	Bathinda	Maisar Khana	1.58	2.36		2.97
	Bathinda	Maisar Khana-Pz	-0.20		-0.17	0.29
	Bathinda	Maluka-Pz			1.13	0.87
	Bathinda	Mandi Kalan-Pz	3.55		0.83	3.48
	Bathinda	Mehraj-Pz	2.16		1.51	2.24
	Bathinda	Mehta-Pz	-0.50		0.24	-0.16
	Bathinda	Multania-Pz	0.11		0.80	0.59
	Bathinda	Nahinwala	12.17	3.04	2.62	2.60
	Bathinda	Nathana-Pz	0.96		2.70	1.84
	Bathinda	Nathena-Pz	-0.09		0.37	0.14
	Bathinda	Phul	8.93	6.69		7.43
	Bathinda	Phulla 1		4.21	6.84	
	Bathinda	Phulla	2.00			3.23
	Bathinda	Puhla-Pz	0.76		3.24	1.95
	Bathinda	Raike Kalan	-1.43	-0.31		-1.55
	Bathinda	Rajgarh Kubey-Pz	-1.49		1.98	0.07
	Bathinda	Rampura				7.86
	Bathinda	Rayya-Pz	1.96		1.98	1.47
	Bathinda	Salabatpur-Pz	1.72		2.30	0.85
	Bathinda	Sangat -Pz	-0.13	-0.45	-0.51	-0.29
	Bathinda	Seema-DW	0.50		3.04	1.50
	Bathinda	Sidhana			1.98	2.66
	Bathinda	Sooch-Pz	2.04		2.51	2.11
	Bathinda	Teona-Pz	0.97		-0.51	-0.27
	Bathinda	Tungwali-Pz	1.03		1.00	1.08
	Faridkot	Bead Sikhanwala- Pz	0.01	-0.45		-0.28

	Faridkot	Behabal Kalan-Pz	0.00		0.50	0.05
	Faridkot	Burj Jawahar Singh-Pz	1.15		2.61	2.02
	Faridkot	Chahd Baja	0.60			0.91
	Faridkot	Chak Kalan-Pz	0.00		-0.50	-0.40
	Faridkot	Devrana-Pz	-1.07		-1.04	-0.29
	Faridkot	Dhaipai-Pz	0.14		0.06	0.02
	Faridkot	Dhilwan Kalan	0.92	1.28	1.73	1.29
	Faridkot	Dhudi-Pz	0.00		0.90	-0.03
	Faridkot	Dipsinghwala	1.11	1.13	1.13	0.26
	Faridkot	Faridkot-Pz	-0.45		0.30	0.18
	Faridkot	Fatehgarh-Pz	0.60		0.55	0.15
	Faridkot	Ghuiana-Pz	-0.30		0.60	-0.55
	Faridkot	Karirwali	1.81	2.22	2.49	2.18
	Faridkot	Koharwala- DW	0.30			-0.05
	Faridkot	Kot Kapura	0.15	0.77	0.39	0.51
	Faridkot	Matta	1.19	1.01	0.91	1.54
	Faridkot	Mehmuana	-1.24	-1.00	-1.36	-1.30
	Faridkot	Pahluwala-Pz	-0.50		0.30	0.88
	Faridkot	Ratti Rori-Pz	-0.30		0.18	-0.30
	Faridkot	Rorian Kapura-Pz	0.10		0.50	-0.05
	Faridkot	Sandhwan-Pz	-0.20		0.55	-0.40
	Faridkot	Sher Singh Wala- Pz	0.20	0.57	0.19	-0.19
	Fateh Garh	Alipur Sodhian-Pz	0.30			
	Fateh Garh	Amloh1			-0.25	
	Fateh Garh	Badalialasingh	2.55	-2.33	3.63	2.24
	Fateh Garh	Bagga Kalan	2.90		3.04	3.00
	Fateh Garh	Bassi Pathana	2.37	0.77	6.89	6.04
	Fateh Garh	Bhagrana	-1.17	-1.42	-1.28	-0.80
	Fateh Garh	Bhateri1	6.09	4.58	3.76	3.85
	Fateh Garh	Burj	0.90		1.29	1.50
	Fateh Garh	Chandiala-Pz	1.80			
	Fateh Garh	Chunni Kalan	0.56		-1.11	-0.96
	Fateh Garh	Fatehgarh Sahib	1.55		1.38	2.07
	Fateh Garh	Fatehgarh Sahib-Pz	0.39	1.42		
	Fateh Garh	Jai Singh Wala	2.33		2.15	1.97
	Fateh Garh	Jhambela	1.30		1.30	1.37
	Fateh Garh	Khara	3.16		4.95	5.19
	Fateh Garh	Lohar Majra	2.27		2.13	2.12
	Fateh Garh	Mianpur-Pz	0.70			
	Fateh Garh	Nalini-Pz	1.35	0.49	1.19	0.54
	Fateh Garh	Nandpur Kalaur-Pz	0.00			
	Fateh Garh	Pawala	1.45	1.98	1.48	
	Fateh Garh	Sado Majra	1.24		1.55	1.27

	Fateh Garh	Shahpur	1.53		1.53	1.38
	Fateh Garh	Sirhind-Pz	0.80			
	Fateh Garh	Tahalpur	2.61		2.60	2.35
	Fateh Garh	Talwara	0.91		1.03	1.15
	Fateh Garh	Tarkhan Majra		-2.89		
	Firozpur	Abohar	-0.04	0.11	-0.17	-0.07
	Firozpur	Alamgarh	-0.31	-1.43	-0.78	-1.31
	Firozpur	Asifwala-Pz	-0.78			
	Firozpur	Baman Wali-Pz	0.69			
	Firozpur	Bannawala	-0.61	-2.48	-0.45	-0.80
	Firozpur	Bara Mansur Wala-Pz	0.70			
	Firozpur	Bazirdpura	-1.90	-1.66		-2.03
	Firozpur	Chak Kandhe Shah-Pz	0.50			
	Firozpur	Chak Khere Wala-Pz	-0.10			
	Firozpur	Chak Pune Wala-Pz	-0.55			
	Firozpur	Chamb-Pz	0.96			
	Firozpur	Danewal Satkosi	0.10	-0.54	-1.57	-1.38
	Firozpur	Danger Khera-Pz	0.80			
	Firozpur	Dipulana-Pz	-0.41	0.18	0.20	-0.46
	Firozpur	Dulchi Ke-Pz	-0.17			
	Firozpur	Fattu Wala-Pz	0.08			
	Firozpur	Fazilka-Pz	-1.83			
	Firozpur	Ghananga Kalan-Pz	0.10			
	Firozpur	Giddran Wali-Pz	-0.20			
	Firozpur	Godiwala-Pz	0.95			
	Firozpur	Gogiani-Pz	0.52			
	Firozpur	Hamed Saidoke-Pz	-1.28			
	Firozpur	Himmatpura-Pz	-0.45			
	Firozpur	Jaimal Singhwala Pz	-0.57	0.58	-0.05	0.13
	Firozpur	Jaimal wala-Pz	-0.15			
	Firozpur	Jand Wala Johian-Pz	-0.22			
	Firozpur	Jandwala Watan-Pz	0.05			
	Firozpur	Jang-Pz	0.37			
	Firozpur	Jodhe Wala Bhaini-Pz	-0.22			
	Firozpur	Kahan Singh Wala-Pz	0.10			
	Firozpur	Kaler Khera-Pz	0.60			
	Firozpur	Kandh Wala-Pz	-1.39			
	Firozpur	Kathgarh-Pz	0.10			
	Firozpur	Khan Wala-Pz	-0.05			
	Firozpur	Khere Ki Uttar-Pz	-0.82			
	Firozpur	Khuiansarwar- Pz	-0.14	-1.12	-0.08	-0.38

	Firozpur	Kundal1	-0.64	-0.95	-0.67	-0.48
	Firozpur	Ladhuwala	0.50	0.36		-0.16
	Firozpur	Lauhke Kalan- Pz	0.53	0.56	0.55	1.78
	Firozpur	Lohere Khurd-Pz	0.01			
	Firozpur	Machi Bugra/ Gujran-Pz	0.20			
	Firozpur	Mallanwala Khas-Pz	-0.25			
	Firozpur	Malluwala-Pz	0.90			
	Firozpur	Malsian-Pz	2.75	1.95		1.29
	Firozpur	Malukpur-Pz	0.69			
	Firozpur	Mana Singh Wala-Pz	-0.05			
	Firozpur	Markhiwa Bhamni-Pz	-0.05			
	Firozpur	Mohkam Khan Wala-Pz	2.30			
	Firozpur	Mohre Wala-Pz	-0.26	-1.98	-0.68	-0.42
	Firozpur	Motiwala 07pz	-0.45		0.46	0.66
	Firozpur	Mudki-Pz	0.05			
	Firozpur	Mullian Wali-Pz	0.01			
	Firozpur	Nihalkhera	-1.31	-2.03	-1.65	-1.66
	Firozpur	Nure-Ki-Uttar 07pz	-0.54	0.67	0.40	0.35
	Firozpur	Pancha Wali-Pz	-0.56			
	Firozpur	Pattiwalla-Pz	-0.88			
	Firozpur	Piyarana	-0.19	1.01	0.06	0.31
	Firozpur	Rala Hazi- Pz	0.01			
	Firozpur	Ramsara-Pz	0.89			
	Firozpur	Roran Wala-pz	0.51			
	Firozpur	Rukne Wala-Pz	0.50			
	Firozpur	Sadhusha Wala-Pz	0.30			
	Firozpur	Sham Singhwala-Pz	-0.12	-0.73	-0.49	0.14
	Firozpur	Shatriwala-Pz	-0.29			
	Firozpur	Sherewala-Pz	0.69			
	Firozpur	Singhpura-Pz	0.41			
	Firozpur	Sitoganno	-3.52	-3.36	-2.83	-3.10
	Firozpur	Sohangarh Ratte	-0.64	0.59	0.52	0.57
	Firozpur	Sultan Khan Wala Urf-Pz	-0.10			
	Firozpur	Swah Wala- Pz	-0.41	-0.50	-0.81	-0.02
	Firozpur	Talwandi Jalle Khan-pz	0.00			
	Firozpur	Tibbi Kalan-Pz	0.02			
	Firozpur	Tibbi Taiwan Laluwalla-Pz	0.01			
	Firozpur	Wage Wala-Pz	0.70	0.29		
	Firozpur	Waryam Khera	-0.60			
	Gurdaspur	Aulakhkalan	0.16		0.41	-0.33

	Gurdaspur	Bamyal	-0.81	0.60	0.16	-0.33
	Gurdaspur	Bhagowal	-0.49	1.12	2.24	0.46
	Gurdaspur	Bham			0.87	0.79
	Gurdaspur	Bhoa	-0.31	0.17	-0.23	-0.01
	Gurdaspur	Bilasbal-Pz	-0.95		0.00	0.90
	Gurdaspur	Chahal Kalan-Pz	0.19		-0.21	0.44
	Gurdaspur	Chahgill-Pz	0.10		-1.00	-1.10
	Gurdaspur	Chone-Pz	0.58		-0.16	0.34
	Gurdaspur	Dakoha-Pz	-0.04	-0.26	-0.21	0.70
	Gurdaspur	Dera Baba Nanak	-1.55	-1.36	0.07	-1.41
	Gurdaspur	Dhar Khurd			-0.50	-0.20
	Gurdaspur	Dhianpur	-2.88		-0.12	3.35
	Gurdaspur	Dinanagar	-1.07	0.35		-0.47
	Gurdaspur	Dostpur-Pz	0.80		-0.90	-0.60
	Gurdaspur	Gajikort-Pz	1.10		-0.40	-0.20
	Gurdaspur	Galri	0.02	1.51	-0.19	0.45
	Gurdaspur	Ghania Ki bangar- Pz			-0.22	-0.11
	Gurdaspur	Gharotakalan	-1.63	0.18	0.27	-0.57
	Gurdaspur	Ghoh DW		-4.13	-3.12	-3.59
	Gurdaspur	Ghumani Khurd-Pz	-0.35		-0.50	-0.30
	Gurdaspur	Gurdaspur-Pz	-4.25		-0.40	0.00
	Gurdaspur	Hargobindpur	-5.52		-5.36	
	Gurdaspur	Hargobindpur1	-13.35		-13.23	
	Gurdaspur	Hassanpur Kalan-Pz	0.50		0.20	0.95
	Gurdaspur	Jandwala			-1.10	-0.80
	Gurdaspur	Jhakolahri	-0.13			-0.12
	Gurdaspur	Jhandalbana-Pz	0.25		-0.60	-0.30
	Gurdaspur	Kala Afgana-Pz	0.13		0.30	1.00
	Gurdaspur	Kalanaur-DW	-0.01		1.89	-0.25
	Gurdaspur	Kalanaur-Pz	0.76	0.19		5.87
	Gurdaspur	Kalerkalan-Pz	0.85			
	Gurdaspur	Kaure-Pz	-0.33		-0.40	0.60
	Gurdaspur	Khanikhui	-0.28		-0.14	-0.92
	Gurdaspur	Khanmalik-Pz	-0.10	0.45	-0.60	-0.10
	Gurdaspur	Khatgarh-Pz	-0.20		-0.90	-0.60
	Gurdaspur	Kiari- DW				-0.90
	Gurdaspur	Kui-DW				-1.12
	Gurdaspur	Lakankala-Pz	1.20		-0.60	-0.40
	Gurdaspur	Langurwal-Pz	-0.20		-0.60	-0.20
	Gurdaspur	Madipur Fatehgarhchuria	0.79			0.95
	Gurdaspur	Malikpur-Pz	0.43		0.16	-0.23
	Gurdaspur	Mallewal-Pz	0.48		-0.72	0.21
	Gurdaspur	Maman-Pz	0.65		0.10	0.50

	Gurdaspur	Masana-Pz	-0.11		-0.74	-0.30
	Gurdaspur	Massit-Pz	0.11		0.12	0.10
	Gurdaspur	Mirthal			-1.80	
	Gurdaspur	Mirthal-DW				-1.30
	Gurdaspur	Mirza Jaan-Pz	1.02		0.58	0.82
	Gurdaspur	Mullowali 1(vs)	-0.77	0.34	0.66	-0.26
	Gurdaspur	Mullowali 2(m)		-0.77	-0.69	-0.33
	Gurdaspur	Muthi	0.60		-1.00	-0.90
	Gurdaspur	Nangal-Pz	0.60		-0.50	-0.30
	Gurdaspur	Narot Jaimalsingh-Pz	-0.30		-0.40	-0.20
	Gurdaspur	Nawan Pind			0.24	0.08
	Gurdaspur	Nishayara	-0.73	0.34	-0.09	
	Gurdaspur	Pandoritalab	-0.70		0.36	-1.55
	Gurdaspur	Paniar	0.20			
	Gurdaspur	Parcha-Pz	-0.03		0.00	0.60
	Gurdaspur	Parmota-DW				-0.70
	Gurdaspur	Pathankot1	-0.85	-0.78	0.70	-0.72
	Gurdaspur	Patti Atwal-Pz	0.40			
	Gurdaspur	Phulpiara	0.30		-1.10	-0.90
	Gurdaspur	Saidowal Kalan-DW				-0.40
	Gurdaspur	Saleh Chak-S	0.24	0.94	0.00	0.20
	Gurdaspur	Salehchak(vs)	-0.65	0.50	-0.75	0.09
	Gurdaspur	Sarna	-0.21			0.00
	Gurdaspur	Sathial-Pz		-0.24		-0.19
	Gurdaspur	Shahpur Jattan-Pz	-0.28		0.40	0.85
	Gurdaspur	Shahpur-Pz	1.25		0.70	1.00
	Gurdaspur	Shezada Kalan-Pz	0.50		-1.10	-0.65
	Gurdaspur	Shikar-Pz	-0.40		-0.65	-0.46
	Gurdaspur	Sohal	0.30			
	Gurdaspur	Tikriwala-Pz	-0.43		-0.70	-0.30
	Hoshiarpur	Adowal Garhi-Pz	3.68	2.30	1.81	2.39
	Hoshiarpur	Argowal-Pz	2.40			
	Hoshiarpur	Badla-Pz	1.60		-0.35	0.10
	Hoshiarpur	Baichan-Pz	3.15		1.10	1.55
	Hoshiarpur	Bajwara	0.20			
	Hoshiarpur	Bajwara-Pz	3.40		1.20	-0.40
	Hoshiarpur	Bhalowal Gujjran-Pz	1.00			
	Hoshiarpur	Bhamnaur	1.33	-1.77	0.73	1.64
	Hoshiarpur	Bhangala-Chhota-DW			0.40	
	Hoshiarpur	Bhanowal-Pz	2.75			
	Hoshiarpur	Bhatolian-Pz	2.10			
	Hoshiarpur	Budhi Pind-Pz	1.95		1.65	1.65
	Hoshiarpur	Chak Sheru-DW			0.06	

	Hoshiarpur	Chohal	0.31	0.90	-1.84	
	Hoshiarpur	Dadan-Pz	1.60			
	Hoshiarpur	Dallewal-Pz	3.80			
	Hoshiarpur	DAGAN-DW			-0.59	
	Hoshiarpur	Dasuya2 (s)	1.91	2.45	1.57	2.20
	Hoshiarpur	Dharampur1	1.10			
	Hoshiarpur	Durimiwal	0.55	-1.20	0.91	0.74
	Hoshiarpur	Fattowal-Pz	2.25		0.10	0.45
	Hoshiarpur	Garh Di Wala-Pz	2.74	0.81	-0.42	3.22
	Hoshiarpur	Garhshankar (s)	1.54	3.78	3.27	1.91
	Hoshiarpur	Grahaya-Pz	2.55		3.15	3.20
	Hoshiarpur	Haler Rampur-DW			0.97	
	Hoshiarpur	Hazipur	-0.47	-1.58	0.85	-0.58
	Hoshiarpur	Ittian-Pz	2.20			
	Hoshiarpur	Jalalpur-Pz	2.15			1.30
	Hoshiarpur	Jattpur-Pz	1.20		-0.20	0.20
	Hoshiarpur	Khera-Pz	-23.30		-24.70	-24.55
	Hoshiarpur	Mahil Baltohian-Pz	3.25		3.10	3.70
	Hoshiarpur	Mahilpur-Pz	2.18	1.79	2.17	4.69
	Hoshiarpur	Mianipur-Pz	0.85		0.70	1.55
	Hoshiarpur	Mukerian Dw			-0.64	-0.66
	Hoshiarpur	Naharpur-Pz	1.40			
	Hoshiarpur	Nangal Bihala- DW	0.89	1.04	-0.72	0.38
	Hoshiarpur	Nangal Thathal-Pz	1.60		0.30	0.50
	Hoshiarpur	Pan Khuh-DW			-0.30	
	Hoshiarpur	Pandori Mehal-Pz	2.20		0.40	0.60
	Hoshiarpur	Parshote-Pz	2.10		1.55	1.80
	Hoshiarpur	Phuglana- Pz	-0.57	0.14	-0.26	1.51
	Hoshiarpur	Rampur Colony (HSP) pz-medium		4.27	3.49	5.55
	Hoshiarpur	Samraj Tanda-DW			-0.96	
	Hoshiarpur	Sham Chaurasi	-0.74	0.32	-1.01	-2.06
	Hoshiarpur	Sibo Chak- DW			-0.73	
	Hoshiarpur	Simbli- OW	-0.59	-2.04	0.87	-1.18
	Hoshiarpur	Simbli-Pz	0.14	-0.61	-0.49	0.88
	Hoshiarpur	Talwara1	0.26	0.78	0.19	0.50
	Hoshiarpur	Thakarwala	1.06	1.56	0.68	1.21
	Jalandhar	Adampur 3(s)	0.74	-0.47	-0.51	0.16
	Jalandhar	Adarman-Pz	-0.50		0.78	0.05
	Jalandhar	Akalpur-Pz	0.30		1.95	0.10
	Jalandhar	Allawalpur	0.04		3.52	0.32
	Jalandhar	Bilga-Pz	0.80		0.50	0.15
	Jalandhar	Billi Chahrami-Pz	-1.74		1.60	0.72
	Jalandhar	Chania-Pz	0.40		3.65	2.20

	Jalandhar	Dhanda-Pz	0.50		1.90	0.20
	Jalandhar	Dhirowal-Pz	0.90		1.10	1.30
	Jalandhar	Fateh Jalal-Pz	-0.40		3.50	2.15
	Jalandhar	Gehlan-pz	0.95		1.40	0.55
	Jalandhar	Gillian-Pz	0.50		-0.65	-1.80
	Jalandhar	Gohiran	2.80		3.16	3.03
	Jalandhar	Hardo Pharwal-Pz	1.45		5.10	2.57
	Jalandhar	Hardo Sheikh-Pz	0.70		1.65	0.20
	Jalandhar	Jalandhar 3(vs)	5.73	9.85	6.73	5.66
	Jalandhar	Jandiala-Pz	-1.83	1.98	1.87	1.86
	Jalandhar	Jandu Singha-Pz	2.10		2.00	1.20
	Jalandhar	Janian-Pz	1.10		1.50	0.25
	Jalandhar	Kakar Kalan-Pz	0.10		2.60	1.60
	Jalandhar	Kala-Pz	0.90		2.40	0.50
	Jalandhar	Kalyanpur-Pz	1.52		2.94	1.66
	Jalandhar	Kang Sahib Rai-Pz	1.60		1.40	-0.10
	Jalandhar	Kartarpur 2(s)	0.24	1.01	1.25	2.54
	Jalandhar	Kharal Kalan Pz-S	1.35	1.56	2.74	2.80
	Jalandhar	Kot Wadal Khan-Pz	0.70		1.50	0.20
	Jalandhar	Kurla-Pz	-0.40		1.10	0.50
	Jalandhar	Lallian kalan Pz-S	3.19	1.45	1.07	1.30
	Jalandhar	Mahmuwal-Pz	1.10		1.90	0.25
	Jalandhar	Mehsampur-Pz	0.30		0.85	0.05
	Jalandhar	Nakodar 2(m)	2.63		3.58	1.41
	Jalandhar	Nakodar 3(s)	3.52	2.05		4.08
	Jalandhar	Nangal Shaman	1.26		3.51	1.33
	Jalandhar	Nasirpur-Pz	-0.30		0.88	0.65
	Jalandhar	Nussi-Pz	-3.01		1.04	-0.89
	Jalandhar	Pathial-Pz	1.60		1.65	1.60
	Jalandhar	Pharwala-Pz	0.20		1.30	0.20
	Jalandhar	Phillaur 2(s)	-0.29	0.72	0.81	2.82
	Jalandhar	Rahimpur-Pz			2.60	-0.10
	Jalandhar	Rurka Kalan- Pz	-1.35		1.00	-1.48
	Jalandhar	Samarahi-Pz	0.70		1.80	
	Jalandhar	Shahkot(s)	2.64	1.21		-0.49
	Jalandhar	Shahkot-Pz-Pb	0.10			
	Jalandhar	Skarar Pur-Pz	-1.90		2.50	0.20
	Jalandhar	Sultanpur-Pz	-3.70		1.50	0.50
	Jalandhar	Talwandi Bhutial-Pz	-0.37			
	Jalandhar	Talwan-Pz	0.19		2.43	0.68
	Jalandhar	Thanda-Pz	4.20		1.15	-0.50
	Jalandhar	Udhopur	1.51	0.11	0.04	
	Kapurthala	Amanipur-Pz	1.10		1.00	0.30
	Kapurthala	Balera-Pz	0.50		4.90	0.80

	Kapurthala	Bauril Harnampur-Pz	1.01		1.56	1.14
	Kapurthala	Begowal-Pz	0.18		0.60	0.12
	Kapurthala	Bhanoki-Pz	1.00		1.00	0.20
	Kapurthala	Bhatnura Khurd- S	0.33	3.96	1.74	1.76
	Kapurthala	Bhawanipur-Pz	0.15		1.10	0.30
	Kapurthala	Bholath M	0.37		3.45	0.60
	Kapurthala	Bholath S	1.46	-1.77	0.35	1.26
	Kapurthala	Chakoke-Pz	-0.60		1.60	0.36
	Kapurthala	Dalla	1.99		3.08	3.44
	Kapurthala	Hamira-Pz	0.59		0.94	0.44
	Kapurthala	Hazipur-Pz	0.40		0.57	0.65
	Kapurthala	Hussainpura-S Pz		1.45	1.72	2.35
	Kapurthala	Hussainpura-VS Pz		1.16	1.90	-0.15
	Kapurthala	Karnail Ganju-Pz	0.27		1.04	0.64
	Kapurthala	Kapurthala2 (s)		3.28	4.12	1.54
	Kapurthala	Kishanpur	-1.33		4.26	0.50
	Kapurthala	Maheru-Pz	1.10		0.95	-1.70
	Kapurthala	Miani Bola-Pz	0.30		1.30	0.54
	Kapurthala	Mithra-Pz	0.70		0.50	0.50
	Kapurthala	Nadala	-0.11			
	Kapurthala	Nathu Chahal-Pz	0.77		4.76	3.20
	Kapurthala	Nurpur Janoa-Pz	0.15		0.47	0.18
	Kapurthala	Paazian-Pz	-0.15		1.80	1.80
	Kapurthala	Phagwara2 (s)	2.13	4.27	3.25	4.49
	Kapurthala	Phulewal-Pz	0.40		1.60	0.40
	Kapurthala	Rawalpindi-Pz	-1.40		1.70	0.10
	Kapurthala	Saiflabad-Pz	0.70		0.50	0.20
	Kapurthala	Sangatpur-Pz	-1.00		3.40	-0.50
	Kapurthala	Shalapur Dona-Pz	0.20		3.65	0.20
	Kapurthala	Sheikh Manga-Pz	0.67		1.38	1.15
	Kapurthala	Sultanpur2 (s)	3.47	4.60	0.17	2.05
	Kapurthala	Talwandi Chaudary - Pz	0.29	0.42	0.40	0.30
	Kapurthala	Thikriwali-Pz	-0.05		0.30	0.26
	Ludhiana	Alamgir-Pz	1.29		0.65	-0.22
	Ludhiana	Aliwal-Pz	1.48		0.69	0.19
	Ludhiana	Begowal	-0.61	-0.37	0.24	0.32
	Ludhiana	Bhagwanpur-Pz	1.00		-0.40	-0.65
	Ludhiana	Bhahlolpur-DW	-0.91	-0.50	-0.24	0.33
	Ludhiana	Bharthala Randhawa-Pz	3.12		0.98	0.45
	Ludhiana	Bhikhi Khatron-Pz	2.36		0.60	0.20
	Ludhiana	Bilaspur-Pz	1.30		0.68	0.30
	Ludhiana	Chaminala-Pz	1.75		1.40	1.20

	Ludhiana	Chankian Khurd-Pz	1.63		0.93	0.50
	Ludhiana	Chattar Singh Park-ldh				4.18
	Ludhiana	Chaunta-Pz	2.04		0.15	-0.97
	Ludhiana	Chhapar-Pz	2.04		1.20	0.45
	Ludhiana	Dinnamder-Pz	2.88		1.00	0.70
	Ludhiana	Dodpur-Pz	1.33		0.15	0.39
	Ludhiana	Doraha-Pz	0.45	-0.02	-0.01	0.45
	Ludhiana	Galibkalan-Pz	2.67		1.80	0.95
	Ludhiana	Gohaur-Pz	1.24		0.80	0.80
	Ludhiana	Gopalpur 2(s)	3.14	4.95	3.38	3.43
	Ludhiana	Hambowal-Pz			0.00	-0.95
	Ludhiana	Harnampur	1.05		1.28	0.52
	Ludhiana	Hedon-Pz	1.51		0.30	0.23
	Ludhiana	Ikloha-Pz	0.99	1.37	-1.36	1.38
	Ludhiana	Kalsian	3.97		4.93	3.93
	Ludhiana	Katanikalan-Pz	0.25		0.20	-0.05
	Ludhiana	Khandur	1.95		2.93	2.44
	Ludhiana	Kishangarh-Pz	2.70		0.50	0.60
	Ludhiana	Kishanpur-Pz	2.40		0.23	1.55
	Ludhiana	Lalan1	-1.58	-0.09		-3.20
	Ludhiana	Lelon-Pz	0.50		-0.42	-0.44
	Ludhiana	Lil- II Pz	4.14	5.08	2.71	3.45
	Ludhiana	Lil-Pz III	-0.67	-0.50	-0.76	0.30
	Ludhiana	Lodhiwal-Pz	1.50		1.63	1.11
	Ludhiana	Lohara-Pz	2.30		1.40	1.05
	Ludhiana	Maksudra-Pz	0.01	-0.23		
	Ludhiana	Mushkabad		0.05		
	Ludhiana	Manak Majra-Pz	2.46		0.00	-0.20
	Ludhiana	Mangat-Pz	1.98		0.22	-0.19
	Ludhiana	Manoke-Pz	2.15		3.00	1.95
	Ludhiana	Mehma Singh Wala-Pz	1.79			
	Ludhiana	Mushkabad	-0.58		-0.49	0.24
	Ludhiana	Nurpur-Pz	1.97		2.10	1.50
	Ludhiana	P.A.U.Ludhiana 2(s)	-0.75		1.57	-4.89
	Ludhiana	Pabbian-Pz	1.15		1.60	1.80
	Ludhiana	Pandori-Pz	2.00		1.15	0.95
	Ludhiana	Payal-Pz	1.30		0.90	0.90
	Ludhiana	Punjeta	0.21	-0.79	-0.35	-0.34
	Ludhiana	Ragba-Pz	2.50		1.45	1.10
	Ludhiana	Raikot-Pz	2.80		2.90	2.00
	Ludhiana	Rajona Khurd	2.44		5.13	2.21
	Ludhiana	Rashiana-Pz	2.45		0.55	0.25

	Ludhiana	Rashin	3.44		4.40	3.78
	Ludhiana	Rattewal-Pz	2.00		1.74	1.14
	Ludhiana	Roomi-Pz	1.83		2.35	1.60
	Ludhiana	Sajaywal-Pz	1.80		4.55	1.40
	Ludhiana	Samrala 2(s)	-3.17	-1.49	0.91	0.48
	Ludhiana	Sanewal-Pz	1.56		0.50	0.60
	Ludhiana	Sangatpura-Pz	2.55		0.20	-1.38
	Ludhiana	Sherian	-0.75	-1.30	-0.79	-0.53
	Ludhiana	Sherpur-Pz	0.51		-0.62	-0.46
	Ludhiana	Sidhwan Bet-Pz	-0.63	0.91	1.94	0.96
	Ludhiana	Talwandi Kalan-Pz	1.78		1.55	1.05
	Ludhiana	Udonwal-Pz	0.74		-0.10	-0.05
	Ludhiana	Upplan	1.30		0.64	0.74
	Ludhiana	Utlan	-2.04	-1.15		
	Mansa	Adamke-Pz	0.72			
	Mansa	Aklia-Pz	1.84			
	Mansa	Alampur Mandran-Pz	0.83			
	Mansa	Alisher Khurd-Pz	0.99			
	Mansa	Bahadur Pur-Pz	1.12			
	Mansa	Bareh-Pz	0.85			
	Mansa	Behniwala-Pz	-0.66			
	Mansa	Bhamme Kalan-Pz	0.21			
	Mansa	Bhikhi 2 (s)		3.34	3.12	3.75
	Mansa	Budhlada	2.26	2.79	6.14	3.33
	Mansa	Budhlada-Pz	2.03		1.75	2.07
	Mansa	Burj Bhalaike	-0.54	0.30	-0.02	0.25
	Mansa	Burj Rathi-Pz	0.20			
	Mansa	Fattamaluka	0.41	0.13	0.69	0.16
	Mansa	Gehlan-Pz	0.48		-0.35	0.82
	Mansa	Gharangne-Pz	0.68			
	Mansa	Hera Wala-Pz	1.03			
	Mansa	Hero Kalan-Pz	1.63			
	Mansa	Jatana Kalan-Pz	1.08		0.30	
	Mansa	Khiala Kalan-Pz	0.67			
	Mansa	Khokhar Kalan-Pz	0.33			
	Mansa	Kot Dhamru	-0.43	0.57	0.25	0.71
	Mansa	Kotra	2.59	-0.72	4.17	3.91
	Mansa	Kusla-Pz	-0.03			
	Mansa	Lakhiwal-Pz	1.07			
	Mansa	Mansa	1.25		2.23	
	Mansa	Phaphare Bhaike-Pz	0.95			
	Mansa	Raipur-Pz	0.24		-1.07	
	Mansa	Ralla	2.70		3.18	2.86
	Mansa	Tandian-Pz	-0.80			

	Moga	Baje Ke-Pz	-1.50	1.39	2.63	-1.52
	Moga	Baraghar-Pz	0.70		0.50	0.50
	Moga	Budh Singh Wala-Pz	1.94	3.06	1.60	1.93
	Moga	Chogawan-Pz	1.49	2.12	1.44	1.62
	Moga	Dagru- Pz	1.39	1.86	1.60	1.53
	Moga	Damru Khurd				3.51
	Moga	Darapur	1.83		2.18	
	Moga	Darapur 07pz			2.85	1.94
	Moga	Daulatpur Niwan-Pz	1.43		2.33	1.18
	Moga	Ghoha Khurd-Pz	0.50			
	Moga	Himatpura-Pz	2.22		3.70	4.11
	Moga	Indergarh-Pz	0.92			
	Moga	Jhandewala-Pz	2.00		2.26	2.11
	Moga	Khokri Kalan-Pz	2.66		2.85	3.21
	Moga	Khosa Randhir-Pz	0.45			
	Moga	Mandar-Pz	0.78			
	Moga	Mangewala-Pz	1.30		2.05	1.92
	Moga	Nathu Wala-Pz	0.60			
	Moga	Nihalsinghwala-Pz	2.33	2.12	1.92	1.69
	Moga	Raonke Kalan-Pz	3.34		3.65	3.73
	Moga	Samad Bhai-Pz	-0.44			
	Moga	Samalsar-Pz	0.55		2.43	1.80
	Moga	Thathe Bhai-Pz	0.80			
	Moga	Tota Singh Wala-Pz	0.66			
	Muktsar	Abulkharana-Pz	0.20		0.31	-0.01
	Muktsar	Alam Wala	0.05		-0.05	0.08
	Muktsar	Balocha Khera(rasoolpur)	-0.48	-1.00	-1.18	0.64
	Muktsar	Bariwala-Pz	-0.11		0.31	
	Muktsar	Bhaliana	1.11	1.59	1.93	2.75
	Muktsar	Bhiti Wala-Pz	0.32		0.15	0.35
	Muktsar	Chaktam Kot-Pz	0.00		0.58	0.12
	Muktsar	Dhalkot-Pz			0.41	-0.61
	Muktsar	Doda	1.50		-0.37	2.84
	Muktsar	Doda-Pz	0.73	-0.92	-0.06	0.27
	Muktsar	Husnar-Pz	-0.80		-0.77	-0.64
	Muktsar	Jhurar-Pz	0.30		0.60	0.39
	Muktsar	Kabar Wala	-0.06	0.67		0.93
	Muktsar	Kattianwali-Pz	0.30	-3.03	0.60	-0.19
	Muktsar	Khirkian Wala-Pz			-0.58	-0.93
	Muktsar	Khunde Halal-Pz	0.31	-0.81	0.14	
	Muktsar	Killian Wali-Pz	-0.09		0.09	-0.98
	Muktsar	Kollian Wali-pz	0.13		0.10	0.04
	Muktsar	Kot Bhai- DW	0.10		0.03	0.08

	Muktsar	Kuttianwali			-0.07	
	Muktsar	Labanianwali	0.49	0.49	0.63	1.18
	Muktsar	Lambi	1.08			2.20
	Muktsar	Lambi-Pz	0.25	0.39	0.62	0.19
	Muktsar	Muktsar	1.21	1.71	0.45	1.68
	Muktsar	Phulu Khera-Pz	0.19		0.33	0.23
	Muktsar	Ratta Khera Chota-Pz	0.06		0.28	0.38
	Muktsar	Sheikh-Pz	0.10		0.03	-0.44
	Muktsar	Sohiwal-Pz	-0.90			
	Nawanshahr	Alowal-Pz	0.20		0.70	0.00
	Nawanshahr	Bahara-Pz	0.00		1.80	0.50
	Nawanshahr	Baharam-Pz				0.61
	Nawanshahr	Bahlora Kallan- Pz	-0.48	0.18	-0.81	0.40
	Nawanshahr	Bahua-Pz	0.48		2.43	0.55
	Nawanshahr	Balachore	-3.15	1.77	0.02	
	Nawanshahr	Hakimpur-Pz	0.10		1.80	
	Nawanshahr	Kariam-Pz	0.17		1.33	0.81
	Nawanshahr	Mauhra-Pz	1.58	2.45	2.45	4.15
	Nawanshahr	Rahon	0.09	0.29	0.18	0.26
	Nawanshahr	Raipur Dhaba-Pz	-0.03	1.05	0.39	1.49
	Patiala	Ballopur	-1.25		-0.70	
	Patiala	Bhankhar-Pz	-0.35		-2.08	
	Patiala	Bhojo majri 07pz	3.04	2.27	1.53	5.22
	Patiala	Binzal-Pz	0.82		4.87	3.76
	Patiala	Birkauli	3.70		-0.88	-1.33
	Patiala	Chhat			1.94	
	Patiala	Chandiala-Pz	0.28			
	Patiala	Dera Bassi 07pz	-1.51		4.53	-1.27
	Patiala	Devigarh 1Pz	3.05	5.23	0.80	3.70
	Patiala	Devigarh IIPz	2.78		3.30	4.72
	Patiala	Devigarh-III Pz	2.16	0.28	3.72	4.76
	Patiala	Dhakdaba 07	-2.73	-3.44	3.13	4.57
	Patiala	Gholu majra 07pz			-1.65	2.78
	Patiala	Haluka			0.03	-0.15
	Patiala	Harion Kalan-Pz			4.65	5.25
	Patiala	Joli			-1.65	
	Patiala	Kakrala-Pz	2.75		4.71	4.97
	Patiala	Kalyan 07pz	2.83	3.18	3.36	3.94
	Patiala	Kami Kalan	-2.36	-1.02	14.83	-1.68
	Patiala	Kulburcha-Pz	3.42		3.56	4.12
	Patiala	Kutha Kheri-Pz	-1.44		-2.19	
	Patiala	Lacharu Kalan	-1.34	-1.22	0.01	0.02
	Patiala	Lachkani-Pz	-0.04	3.26	1.75	1.46

	Patiala	Miranpur- Pz	3.71		2.56	2.26
	Patiala	Mirpur-Pz	-2.52		2.64	
	Patiala	Nanhera-Pz	0.76		1.65	
	Patiala	Nariana			-1.19	
	Patiala	Patran-Pz	2.14	2.13	1.68	1.86
	Patiala	Rajpura Pz M	8.60	4.85	6.43	-4.91
	Patiala	Samana-Pz	2.88	3.65	-5.35	3.41
	Patiala	Samaspur-Pz	1.32		3.21	-0.07
	Patiala	Sangatpura-Pz	1.86		0.82	0.02
	Patiala	Singhpura-Pz	5.42		4.63	5.66
	Patiala	Thua	1.23	2.99	4.09	4.69
	Rupnagar	Ahmedpur	-0.45	2.82	2.25	3.17
	Rupnagar	Bera Chauta	0.20	-0.05	0.35	0.29
	Rupnagar	Bhalan	0.26	-1.29	0.19	0.96
	Rupnagar	Braham Pur	-0.23	0.19	0.69	0.19
	Rupnagar	Chakdera	0.26	0.56		-1.11
	Rupnagar	Chatamli- Pz	6.13	9.20	2.87	2.58
	Rupnagar	Dhair		0.42		1.61
	Rupnagar	Dheri	2.49	0.19	-0.52	-0.47
	Rupnagar	Dumewal	2.13	-0.15	0.15	0.60
	Rupnagar	Gharoon	-2.17		-1.04	-2.73
	Rupnagar	Ghoga	0.26	0.59	0.21	0.71
	Rupnagar	Hardinamoh	0.05	-0.19	0.16	0.39
	Rupnagar	Kakrali	0.99		-1.42	-0.52
	Rupnagar	Kotla			0.30	0.08
	Rupnagar	Kurrha-Pz	-0.80		0.18	1.61
	Rupnagar	Landran-Pz	3.40	1.79	-1.56	-1.32
	Rupnagar	Malkpur-Pz	2.00		-1.61	
	Rupnagar	Nurpurbedi	-0.95		0.30	-2.20
	Rupnagar	Raipur Kalan	-0.16		0.00	-0.18
	Rupnagar	Rurki Heeran-Pz	-0.60	0.91	0.06	-0.31
	Rupnagar	Soara	-1.08	-0.84		
	Sangrur	Bagarian-Pz	1.27	0.41	3.40	1.81
	Sangrur	Barnala (s)	5.66	5.68	7.12	1.28
	Sangrur	Bhadaur-Pz	2.86	2.81	3.13	6.64
	Sangrur	Bhojowali-Pz	1.96	1.72	1.69	3.49
	Sangrur	Bugra 1	7.55	4.46	7.38	2.36
	Sangrur	Chural Kalan M	6.45	5.08	6.72	5.39
	Sangrur	Dhanaula	4.49		6.13	7.19
	Sangrur	Dharamgarh-Pz	2.46		2.34	2.51
	Sangrur	Gehlon-Pz	1.00			
	Sangrur	Ghanauri Kalan-Pz	0.50	-1.34	0.13	1.19
	Sangrur	Hassanpur-Pz	2.16		1.91	2.08
	Sangrur	Isra-Pz	0.57		0.45	0.78

	Sangrur	Kuler Khurd-Pz	2.95		2.39	2.61
	Sangrur	Kurar-Pz	2.11		3.11	3.45
	Sangrur	Ladda-Pz	2.63	0.81	2.83	3.00
	Sangrur	Lehal Kalan-Pz	2.20		2.05	2.16
	Sangrur	Lohgarh-Pz	0.60		0.70	0.50
	Sangrur	Longowal-Pz	2.34	1.95	1.68	3.02
	Sangrur	Mahal Kalan-Pz	3.39	2.67	4.90	2.66
	Sangrur	Malerkotla		5.55	4.09	6.34
	Sangrur	Malerkotla-DW	4.76		1.43	8.45
	Sangrur	Manvi-Pz	0.07	16.27	0.53	
	Sangrur	Mastuana-Pz	0.94		2.45	1.42
	Sangrur	Mehsampur-Pz	1.89		2.15	1.89
	Sangrur	Panjgaraian- Pz	2.85		2.57	2.50
	Sangrur	Ramgarh-Pz	1.98		2.29	2.08
	Sangrur	Rampur Channa-Pz	2.75		2.75	2.71
	Sangrur	Rurki Kalan-Pz	3.92		3.63	3.65
	Sangrur	Sunam-Pz	0.96	2.67	1.52	2.83
	Sangrur	Tappa Mandi-Pz	0.40		2.44	1.72

Annexure V

Results of chemical analysis of water samples from NHS in Punjab (2015)

S. No	District	Block	Location	pH	EC in	CO3	HCO3	Cl	SO4	NO3	F	PO4	Ca	Mg	Na	K	SiO2	T.H	SAR	RSC
					µS/cm													as CaCO3		in
					at 250C	(----------mg/l----------)														meq/l
1	Amritsar	Raiya	Beas	8.09	640	nil	235	53	10	52	0.44	BDL	33	26	62	6.7	22	189	1.96	0.07
2	Amritsar	Jandiala	Jandiala Gurn	8.4	648	20	222	60	10	26	0.79	BDL	27	39	44	9.2	19	227	1.27	-0.25
3	Amritsar	Verka	Amritsar	8.21	604	nil	302	37	BDL	27	0.26	BDL	41	24	56	8.4	22	133	1.72	0.93
4	Amritsar	Chogawan	Chogawan	8.15	1374	nil	456	106	100	76	0.49	BDL	35	46	188	24	22	219	4.92	1.94
5	Amritsar	Ajnala	Ajnala	7.83	1094	nil	389	117	25	46	0.17	BDL	65	36	112	12	16	248	2.77	0.17
6	Amritsar	Ajnala	Goaggomahal	8.26	904	nil	554	28	BDL	BDL	0.07	BDL	67	19	119	5.5	21	176	3.30	4.17
7	Amritsar	Ajnala	Ramdas	8.34	363	20	208	9.0	BDL	BDL	0.16	0.13	30	5.6	56	2.8	18	145	2.46	2.12
8	Amritsar	Tarike	Tanel	8.17	521	nil	262	23	31	21	0.19	BDL	50	22	28	9.0	15	186	0.83	-0.01
9	Barnala	Barnala	Barnala	9.18	827	71	302	49	78	10	0.54	BDL	21	30	157	8.6	22	175	5.15	3.80
10	Barnala	Mehal Kalan	Gehl IInd	8.51	250	12	109	14	36	1.3	0.78	BDL	29	20	5.1	3.0	14	155	0.18	-0.91
11	Barnala	Mehal Kalan	Mahal Kalan	8.74	880	59	386	84	BDL	26	0.64	BDL	37	40	131	6.0	26	258	3.56	3.16
12	Barnala	Sehna	Bhadaur	8.74	1140	59	471	63	90	25	0.66	BDL	21	38	220	6.0	24	206	6.62	5.51
13	Bathinda	Bathinda	Nahinwala	7.98	1370	nil	568	112	62	61	0.48	BDL	74	60	87	92	23	433	1.82	0.68
14	Bathinda	Bathinda	Dera Tappa	8.64	375	36	109	7.01	110	BDL	0.52	0.008	49	30	10	6.4	21	247	0.28	-1.93
15	Bathinda	Bathinda	Ablu	8.12	875	nil	266	91	174	28	0.14	BDL	82	40	66	32	23	371	1.49	-3.02
16	Bathinda	Sangat	Raike Kalan	7.95	935	nil	278	77	184	48	0.85	BDL	99	48	52	12	128	443	1.07	-4.33
17	Bathinda	Sangat	Jassibhag Wali	8.24	1574	nil	531	112	144	127	1.03	BDL	78	63	172	19	22	453	3.51	-0.37
18	Bathinda	Bathinda	Balluana	7.92	2315	nil	640	309	214	125	0.72	BDL	91	115	115	265	25	701	1.89	-3.51
19	Bathinda	Sangat	Ghudda	8.05	2512	nil	399	232	660	138	0.94	BDL	49	170	156	230	25	824	2.37	-9.89
20	Bathinda	Phul	Dialpur Bhlaike	8.92	1023	59	459	28	55	18	0.52	BDL	21	7.5	230	6.5	18	83	10.97	7.82
21	Bathinda	Phul	Rampura Phull	8.77	1897	59	592	154	280	80	0.46	BDL	21	60	391	11.5	21	299	9.83	5.69
22	Bathinda	Nathana	Pulla	8.56	1130	36	386	77	122	94	1.28	BDL	25	25	159	144	11	165	5.38	4.22
23	Bathinda	Nathana	Diialpur Mirja	8.91	1845	71	592	105	354	44	1.12	BDL	16	33	450	8.0	21	175	14.77	8.56
24	Bathinda	Phul	Phul	8.43	1594	36	411	218	150	52	0.42	BDL	33	70	242	11	24	371	5.47	0.53
25	Bathinda	Bathinda	Kotshamir	8.22	2770	nil	386	344	680	129	0.101	BDL	49	105	459	54	34	556	8.48	-4.75
26	Bathinda	Talwandi Sabo	Maiserkhanna	8.55	1186	36	350	98	122	77	0.364	BDL	29	75	122	16	22	381	2.72	-0.68

27	Bathinda	Talwandi	Bhagi Bander	8.67	690	36	374	21	70	0.85	0.98	BDL	21	38	63	98	18	206	1.90	3.16
28	Bathinda	Rampura	Kaila Bander	8.12	2150	nil	374	267	400	124	ND	BDL	62	125	183	110	28	670	3.08	-7.24
29	Bathinda	Rampura	Jhanduke	9.13	2490	95	350	175	510	220	1.21	0.015	16	55	518	15	21	268	13.81	3.58
30	Bathinda	Talwandi	Jajjal	8.52	2255	24	181	260	350	314	0.18	BDL	62	63	304	80	23	412	6.50	-4.51
31	Bathinda	Bathinda	Khailiwala	8.75	320	24	109	7	66	11	0.37	BDL	74	4.9	4.1	2.7	6.8	206	0.12	-1.51
32	Bathinda	Bathinda	Gulabgarh	9.46	3950	202	1244	190	560	64	2.16	0.091	25	48	918	13	17	258	24.78	21.93
33	Bathinda	Sangat	Sangat Kalan	9.04	635	24	218	14	165	13	0.55	BDL	45	57	30	7.0	16	350	0.70	-2.56
34	Bathinda	Phul	Gurusar	9.44	4880	190	1352	386	667	183	4.50	0.123	4.1	85	1126	18	21	361	25.82	21.30
35	Bathinda	Phul	Dhapali	9.27	300	12	97	14	102	7.1	0.30	BDL	25	38	5.8	3.1	13	217	0.17	-2.38
36	Bathinda	Bathinda	Ganga	9.02	305	12	121	7.0	58	1.7	0.14	BDL	8.2	38	5.1	4.7	6.6	175	0.17	-1.15
37	Bathinda	Rampura	Badiala	9.24	2420	48	411	225	570	22	0.73	BDL	62	30	491	8.2	18	278	12.81	2.77
38	Bathinda	Rampura	Kotho Guru	9.38	3100	107	737	246	576	84	1.59	0.024	25	55	695	5.1	20	289	17.80	9.87
39	Faridkot	Faridkot	Sher Singh Wala	8.52	1645	36	229	218	208	79	0.26	0.01	25	38	270	28	15	217	7.94	0.58
40	Faridkot	Kotkapura	Wara Dharaka	8.2	3988	nil	278	456	1200	29	0.91	BDL	103	93	692	10	24	639	11.90	-8.23
41	Faridkot	Faridkot	Sukhanwala	8.65	1451	18	157	155	270	136	0.24	0.007	37	53	162	85	18	309	4.00	-3.03
42	Faridkot	Faridkot	Jand Sahib	8.09	476	nil	145	35	106	6.9	0.11	0.022	37	15	57	5.3	9.3	155	2.00	-0.70
43	Faridkot	Faridkot	Nangal	9.08	1293	71	253	84	130	24	1.21	0.012	12	52	157	13	16	247	4.37	1.64
44	Faridkot	Faridkot	Tehna	8.88	550	59	85	35	68	3.8	1.22	0.008	16	15	86	4.3	15	103	3.71	1.33
45	Faridkot	Faridkot	Sadiqe	8.37	2657	36	254	274	690	65	0.89	BDL	54	58	482	16	12	371	10.85	-2.10
46	Faridkot	Momdot	Killi	9.17	2978	131	567	237	480	140	4.29	0.039	25	13	594	194	4	114	24.01	11.34
47	Faridkot	Faridkot	Nathuwala	8.69	3126	24	121	597	560	46	1.13	BDL	45	35	618	10	15	258	16.79	-2.34
48	Faridkot	Faridkot	Mumara	8.71	444	24	109	35	50	3.8	0.28	BDL	16	15	60	1.8	16	103	2.59	0.55
49	Faridkot	Faridkot	Arianwala	8.36	3487	36	181	484	950	104	0.70	BDL	58	103	617	49	22	567	11.26	-7.20
50	Faridkot	Faridkot	Kilanau	7.94	8653	nil	278	1544	3100	118	1.41	BDL	371	328	1603	48	22	2276	14.62	-40.93
51	Faridkot	Kotkapura	Moharewala	8.93	1367	59	362	63	194	89	1.84	0.023	16	18	299	5.0	5.9	114	12.18	5.62
52	Fatehgarh	Bassi	Bassi Pathana	Leaked																
53	Fatehgarh	Fatehgarh	Fatehgarh Sahib	8.78	562	29	208	21	15	33	0.41	BDL	8.2	31	65	7.4	19	149	2.32	1.42
54	Fatehgarh	Amloh	Amloh	8.49	923	12	125	90	10	207	0.16	0.2	23	44	88	8.5	20	236	2.49	-2.28
55	Fatehgarh	Khera	Badliala Singh	8.93	597	35	268	17	15	1.1	1.15	0.02	8.2	22	98	3.6	21	113	4.01	3.30
56	Fatehgarh	Bassi	Bhatria	8.82	456	18	232	10	25	BDL	0.58	BDL	12	29	54	4.3	27	149	1.93	1.42

57	Fatehgarh	Khera	Chunni Kalan	8.64	982	12	208	62	36	38	0.71	BDL	18	49	49	6.4	21	246	1.36	-1.12
58	Fatehgarh	Sirhand	Bir Bhramarsi	8.76	541	29	238	21	15	11	0.34	BDL	16	24	74	6.9	27	138	2.74	2.11
59	Fatehgarh	Khera	Bhgrana	8.7	1587	41	250	277	135	13	0.46	0.02	12	95	192	5	17	421	4.07	-2.94
60	Fatehgarh	Khera	Pawala	8.63	661	23	178	55	34	24	0.27	BDL	10	24	93	3.5	19	123	3.65	1.24
61	Fatehgarh	Sirhand	Nalini	8.84	601	23	208	48	25	23	0.09	BDL	25	22	77	8	23	154	2.70	1.12
62	Firozpur	Abohar	Abohar	7.74	3102	nil	205	295	630	472	1.1	BDL	128	93	359	113	19	700	5.89	-10.68
63	Firozpur	Khuian	Alamgarh	8.22	2199	nil	314	268	324	146	0.28	BDL	33	83	169	238	13	423	3.57	-3.33
64	Firozpur	Kotkapura	Baja Khana	8.54	2872	71	664	211	520	72	2.85	0.03	25	42	608	12	4.7	237	17.25	8.55
65	Firozpur	Muktsar	Balocha	8.58	531	36	193	28	36	11	3.35	BDL	25	48	23	6.7	14	258	0.62	-0.83
66	Firozpur	Guru	Banna Wala	8.41	7592	59	229	1769	1040	374	0.91	BDL	74	333	1108	176	15	1556	12.23	-25.36
67	Firozpur	Abohar	Bazidpurabhoma	9.13	1423	95	640	35	16	8.5	9.11	0.3	25	9.9	324	5.5	1.7	72	13.88	11.59
68	Firozpur	Kotkapura	Beed	8.43	2680	59	507	225	576	32	1.1	0.03	37	43	542	8	4.7	266	14.37	4.89
69	Firozpur	Faridkot	Chahd Baja	8.56	1438	59	423	175	70	7.6	0.28	0.01	20	43	184	117	5.5	227	5.32	4.36
70	Firozpur	Faridkot	Dalsinghwala	8.9	1683	59	290	140	260	79	6.03	0.01	16	20	349	7	9.9	124	13.73	4.28
71	Firozpur	Khuian	Danewal Satkosi	8.00	5814	nil	229	933	1330	240	0.89	BDL	91	195	935	28	15	1030	12.68	-16.82
72	Firozpur	Faridkot	Devi Wala	8.61	3212	47	157	295	1036	6.7	0.27	BDL	41	60	626	6	15	350	14.58	-2.84
73	Firozpur	Kotkapura	Dhilwan Kalan	8.69	3299	59	809	253	486	144	3.33	0.05	29	33	603	186	1.4	206	18.18	11.06
74	Firozpur	Faridkot	Dipsinghwala	8.74	700	36	254	28	68	19	1.06	0.02	21	15	128	4.8	14	114	5.21	3.08
75	Firozpur	Fazilka	Dipulana	8.49	649	24	218	49	112	41	0.22	0.02	29	53	61	15	16	289	1.56	-1.43
76	Firozpur	Kotkapura	Karirwali	8.69	2447	47	290	246	580	2.6	0.5	BDL	45	52	435	11	13	330	10.48	-0.20
77	Firozpur	Khuian	Khuiansarwar	8.76	2170	59	362	211	440	12	3.39	0.01	33	55	392	16	10	309	9.71	1.73
78	Firozpur	Kotkapura	Kot Kapura	8.59	1154	36	242	84	148	66	0.72	0.01	21	45	125	63	20	237	3.53	0.42
79	Firozpur	Abohar	Kundal	8.34	3906	36	386	498	928	221	1.14	0.01	29	163	673	15	25	752	10.74	-7.33
80	Firozpur	Jalalabad	Ladhuwala	8.53	1292	36	157	91	424	31	0.53	BDL	29	65	198	15	22	340	4.67	-3.02
81	Firozpur	Makhu	Lauhke Kalan	8.53	563	24	133	14	138	1.8	0.37	BDL	33	33	42	6.1	21	216	1.24	-1.38
82	Firozpur	Mamdot	Malsian	8.37	545	24	205	21	76	2.1	0.23	BDL	33	33	44	6.7	17	216	1.30	-0.20
83	Firozpur	Kotkapura	Matta	8.92	2777	83	580	211	488	78	1.95	0.03	16	25	617	10	20	144	22.47	9.42
84	Firozpur	Faridkot	Mehmuana	8.25	1759	nil	254	190	390	26	0.58	BDL	78	38	256	7	13	350	5.94	-2.85
85	Firozpur	Khuian	Nihalkhera	8.83	1274	36	278	133	196	6.6	0.46	BDL	16	73	147	24	20	340	3.47	-1.05
86	Firozpur	Gahll Kurd	Piyarana	9.15	761	47	266	42	90	16	0.85	BDL	8.2	35	132	13	14	165	4.48	2.64

87	Firozpur	Fazilka	Sham Singhwala	8.84	787	47	230	21	160	0.4	0.58	0.05	12	15	171	3.4	15	93	7.77	3.50
88	Firozpur	Abohar	Sitoganno	8.58	618	36	205	49	19	51	0.71	BDL	29	48	38	6.7	19	268	1.01	-0.83
89	Firozpur	Guru	Sohangarh Ratte	8.47	5832	59	211	709	1730	93	1.05	BDL	58	100	1206	80	22	556	22.25	-5.69
90	Firozpur	Guru	Swah Wala	9.01	2602	178	604	140	270	61	3.36	0.060	8.2	7.5	588	7	15	52	35.71	14.81
91	Firozpur	Guru	Nureke Uttar	8.93	1012	59	350	35	140	21	0.89	BDL	8.2	33	202	8	7.8	155	7.03	4.58
92	Firozpur	Guru	Motiwala	8.84	760	48	181	35	156	BDL	0.70	BDL	21	33	115	8	11	186	3.65	0.80
93	Firozpur	Makhu	Jamwal	8.7	517	36	193	14	80	BDL	0.56	BDL	21	25	75	4.4	16	155	2.62	1.26
94	Gurdaspur	Fatehgarh	Madipur	7.76	697	nil	403	23	BDL	2.7	0.32	BDL	55	16	78	7.3	22	128	2.38	2.54
95	Gurdaspur	Dere Baba	Mullowali	7.97	608	nil	349	30	BDL	BDL	0.28	BDL	50	20	59	4.9	20	248	1.78	1.58
96	Gurdaspur	Dere Baba	Dera Baba	7.8	1602	nil	490	135	170	45	0.29	BDL	69	50	177	9.3	15	214	3.96	0.48
97	Gurdaspur	Kalanam	Salehchak	8.49	322	20	164	7	BDL	BDL	0.29	BDL	26	6.2	38	2.5	18	20	1.74	1.55
98	Gurdaspur	Kalanam	Kalanam	8.41	2096	46	282	255	175	259	0.21	BDL	37	62	213	209	22	117	4.97	-0.79
99	Gurdaspur	Dhariwal	Bhagowal	8.28	421	nil	171	11	72	2.7	0.38	BDL	46	19	12	6.4	21	281	0.38	-1.06
100	Gurdaspur	Dere Baba	Dhianpur	8.48	1106	46	289	117	130	61	0.23	BDL	25	27	162	99	30	158	5.35	2.80
101	Gurdaspur	Fatehgarh	Ghaniyake	8.29	1094	nil	517	117	BDL	17	0.3	BDL	33	50	122	60	22	202	3.13	2.71
102	Gurdaspur	Sree	Dakoha	8.17	494	nil	225	28	BDL	41	0.1	BDL	52	19	24	5.7	29	276	0.72	-0.47
103	Gurdaspur	Sree	Sri	8.45	430	17	128	25	6.0	53	0.35	BDL	38	19	19	4.6	26	311	0.63	-0.79
104	Gurdaspur	Sree	Bham	8.12	406	nil	255	11	BDL	15	0.34	BDL	47	21	13	5.1	21	202	0.40	0.11
105	Gurdaspur	Qaddian	Aulakhkalan	7.95	569	nil	376	9.0	BDL	22	0.21	BDL	81	25	15	3	23	248	0.37	0.06
106	Gurdaspur	Qaddian	Qaddian	8.11	356	nil	235	7.0	BDL	13	0.39	BDL	42	16	16	1.3	19	97	0.53	0.44
107	Gurdaspur	Kahnuwal	Sathiali	8.69	300	20	128	11	7.0	16	0.33	BDL	25	19	11	2.4	22	207	0.40	-0.05
108	Gurdaspur	Dhariwal	Naushera	8.58	215	10	117	7.0	BDL	4.0	0.79	BDL	26	10	6.5	2.3	16	378	0.27	0.13
109	Gurdaspur	Gurdaspur	Gurdaspur	8.38	707	20	188	83	70	28	0.21	BDL	42	44	49	1.6	17	89	1.26	-1.97
110	Gurdaspur	Dina Nagar	Pandori Dham	8.78	641	26	195	32	19	90	0.21	2.15	79	19	19	21	33	347	0.50	-1.44
111	Gurdaspur	Dina Nagar	Galri	8.48	511	26	238	28	12	4.0	0.21	BDL	35	30	32	1.5	15	191	0.96	0.55
112	Gurdaspur	Dina Nagar	Dina Nagar	8.29	912	nil	359	92	40	37	0.41	BDL	46	53	84	0.8	17	174	2.00	-0.77
113	Hoshiarpur	Hazipur	Hazipur	7.45	531	nil	344	24	2.0	7.6	0.15	0.09	62	17	42	2.6	32	232	1.22	1.15
114	Hoshiarpur	Hazipur	Nangal Bihala	7.78	585	nil	151	49	22	99	0.13	0.05	56	29	18	1.5	26	258	0.49	-2.70
115	Hoshiarpur	Talwara	Talwara	7.92	465	nil	163	35	10	63	0.12	0.12	56	14	23	1.4	38	196	0.71	-1.27
116	Hoshiarpur	Talwara	Bhamnaur	7.96	336	nil	151	28	14	21	0.11	0.06	47	13	12	1.1	30	170	0.40	-0.94

117	Hoshiarpur	Dasua	Dulmiwal	8.17	355	nil	199	3.5	22	22	0.18	0.06	31	24	15	2.6	29	175	0.49	-0.26
118	Hoshiarpur	Hoshiarpur-I	Sham Chourasi	8.05	402	nil	187	14	18	40	BDL	0.04	43	15	25	1.1	28	170	0.84	-0.31
119	Hoshiarpur	Hoshiarpur-I	Chohal	8.08	910	nil	266	112	66	54	0.11	0.02	37	36	107	14	18	242	3.00	-0.45
120	Hoshiarpur	Mahilpur	Thakkarwala	8.35	442	35	242	14	BDL	1.0	0.24	0.03	12	33	54	3.2	19	165	1.83	1.82
121	Hoshiarpur	Mukerian	Mukerian	8.08	391	nil	169	32	32	17	BDL	0.03	41	16	23	9.8	20	170	0.77	-0.59
122	Hoshiarpur	Dasua	Haler Rampur	8.16	349	nil	133	24	32	33	0.21	0.05	33	20	12	3.4	14	165	0.41	-1.11
123	Hoshiarpur	Hazipur	Sibochak	7.02	472	nil	260	21	16	15	0.12	0.05	52	16	34	2.2	22	196	1.06	0.35
124	Hoshiarpur	Mukerian	Pankhuh	7.16	230	nil	96	21	6	9.0	0.05	0.02	29	6.2	9.7	2.6	15	98	0.43	-0.38
125	Hoshiarpur	Mukerian	Chak Sheru	7.31	461	nil	217	35	28	1.0	0.18	0.03	21	30	31	13	17	175	1.02	0.04
126	Hoshiarpur	Mukerian	Bangala	7.55	1031	nil	350	77	50	120	0.12	1.88	78	34	55	76	27	335	1.31	-0.95
127	Hoshiarpur	Mukerian	Samraj Tanda	7.69	433	nil	169	35	12	28	0.09	0.07	47	16	16	2.5	16	186	0.51	-0.89
128	Hoshiarpur	Talwara	Zhir Da Khuh	7.74	202	nil	85	21	10	7.1	0.15	0.04	25	7.8	11	0.8	29	93	0.49	-0.50
129	Hoshiarpur	Hazipur	Dagan	7.72	260	nil	121	32	BDL	19	0.22	0.07	31	6.2	12	1.4	32	129	0.51	-0.07
130	Hoshiarpur	Dasua	Dassuya	7.76	259	nil	157	3.5	14	BDL	BDL	0.04	10	20	18	1.2	28	108	0.76	0.43
131	Hoshiarpur	Hoshiarpur-I	Rampur Colony	7.71	437	nil	181	17	64	BDL	0.25	0.05	47	17	22	2	23	191	0.70	-0.78
132	Hoshiarpur	Garh	Garh Shankar S	7.74	538	nil	206	21	34	63	0.29	0.05	19	39	36	3.5	26	206	1.09	-0.78
133	Hoshiarpur	Bhunga	Adhowal Garhi	7.38	250	nil	127	17	8.0	9.5	0.37	0.04	29	11	12	1.1	22	119	0.48	-0.27
134	Hoshiarpur	Bhunga	Gardhiwala	7.62	426	nil	217	39	16	BDL	0.22	0.07	39	19	34	0.9	26	175	1.12	0.05
135	Hoshiarpur	Hoshiarpur-I	Phuglana	8.03	340	nil	193	21	6	9.1	BDL	0.04	19	15	44	0.9	22	108	1.83	0.98
136	Hoshiarpur	Mahilpur	Mahilpur	8.3	468	nil	223	46	16	8.5	BDL	0.05	16	36	36	3.1	25	191	1.14	-0.10
137	Hoshiarpur	Garh	Simbli	8.65	490	47	242	14	BDL	11	0.91	0.04	8.2	44	43	4.5	28	201	1.32	1.50
138	Jalandhar	Jalandhar	Kartarpur	8.1	400	nil	190	35	25	14	0.15	0.02	27	25	32	6	16	168	1.07	-0.25
139	Jalandhar	Jalandhar	Jalandhar	Leaked																
140	Jalandhar	Adampur	Adampur	8.23	215	nil	119	14	16	BDL	0.03	0.01	29	10	8.6	3.7	12	112	0.35	-0.29
141	Jalandhar	Shahkot	Shahkot	Leaked																
142	Jalandhar	Nakodar	Nakodar	8.32	380	23	167	14	50	3.2	0.55	0.07	25	32	25	4.7	20	194	0.78	-0.37
143	Jalandhar	Phillaur	Phillour	8.59	700	59	226	28	42	55	1	0.04	25	42	81	6.3	25	235	2.30	0.96
144	Jalandhar	Nakodar	Gohiran	8.62	510	47	167	35	16	21	0.5	0.03	20	25	65	6	27	153	2.29	1.23
145	Jalandhar	Rurka	Goraya	8.54	410	35	143	17	42	8.8	0.9	0.04	20	32	30	4.7	24	184	0.96	-0.16
146	Jalandhar	Nurmahal	Sarih	8.38	300	35	107	10	38	1.0	1.2	0.02	25	22	23	2.7	16	153	0.81	-0.13

147	Jalandhar	Bhogpur	Kharal Kalan	8.6	445	59	155	14	32	BDL	0.18	0.07	20	22	60	6.2	21	143	2.18	1.63
148	Jalandhar	Rurka	Lallian Kalan	8.85	1120	82	286	111	90	21	0.46	0.02	20	40	190	11	27	214	5.65	3.13
149	Jalandhar	Jalandhar	Jandiala	8.28	560	nil	143	28	145	2.45	0.07	0.03	41	35	28	7	27	245	0.78	-2.56
150	Jalandhar	Shahkot	Malsian	8.38	555	12	196	41	80	BDL	0.39	0.11	8.2	2.5	136	1.9	14	31	10.69	3.00
151	Jalandhar	Adampur	Allawalpur	8.25	545	nil	173	28	85	45	0.58	0.01	33	32	38	11	18	214	1.13	-1.46
152	Jalandhar	Jalandhar	Udhopur	8.52	415	47	167	28	BDL	14	0.45	0.02	33	12	60	5.5	22	133	2.27	1.64
153	Kapurthala	Sultanpur	Sultanpur Lodhi	8.5	730	47	119	97	95	22	0.3	0.04	25	2	165	2.5	16	71	8.49	2.08
154	Kapurthala	Nadala	Bholath	8.35	560	12	143	55	75	28	BDL	0.02	20	20	80	9.5	17	133	3.02	0.08
155	Kapurthala	Kapurthala	Kapurthala	8.1	780	nil	107	124	43	110	0.49	0.02	78	30	36	6.8	22	316	0.88	-4.57
156	Kapurthala	Phagwara	Phagwara	8.32	810	23	119	111	78	75	0.13	0.03	49	32	79	8.3	29	255	2.15	-2.37
157	Kapurthala	Nadala	Bhatnura Khurd	8.35	380	23	155	14	30	13	0.22	0.03	33	22	21	8.7	22	174	0.69	-0.15
158	Kapurthala	Sultanpur	Talwandi	8.6	375	47	143	6.9	42	BDL	0.13	0.07	16	2	92	1.6	16	51	5.60	2.88
159	Kapurthala	Kapurthala	Hussainpur	8.35	305	23	119	14	21	23	0.18	0.03	33	12	28	4.6	22	133	1.06	0.08
160	Kapurthala	Sultanpur	Dalla	8.7	640	59	274	14	55	13	0.14	0.05	20	20	125	6.4	22	133	4.71	3.77
161	Ludhiana	Khanna	Ikloha	8.63	880	29	250	90	50	52	0.57	BDL	27	36	115	9.5	26	215	3.41	0.76
162	Ludhiana	Doraha	Maksudra	8.64	1845	47	149	214	240	213	0.17	BDL	10	69	168	191	26	308	4.17	-2.15
163	Ludhiana	Doraha	Doraha	8.27	932	nil	48	107	145	119	0.27	BDL	66	40	56	4	16	328	1.34	-5.78
164	Ludhiana	Doraha	Kaddon	8.25	621	nil	137	38	45	119	0.22	BDL	47	21	37	5.2	26	205	1.12	-1.86
165	Ludhiana	Smrala	Begowal	8.87	1196	76.05	464	48	20	52	1.15	0.02	10	51	185	8	23	236	5.24	5.43
166	Ludhiana	Macchiwara	Lalan	8.17	3476	nil	399	560	300	392	0.64	BDL	27	197	401	39	17	877	5.89	-10.99
167	Ludhiana	Smrala	Smrala	8.57	380	12	131	14	20	26	0.65	BDL	23	24	11	6.8	24	154	0.39	-0.54
168	Ludhiana	Smrala	Utlan	8.59	495	12	226	17	20	20	0.12	BDL	18	37	28	8.9	16	200	0.86	0.10
169	Ludhiana	Macchiwara	Mushkabad	8.64	484	12	161	28	20	42	0.19	BDL	12	30	30	21	24	154	1.05	-0.05
170	Ludhiana	Macchiwara	Bhanlolpur	8.41	442	5.8	107	24	50	67	0.15	BDL	37	24	18	5.1	20	190	0.57	-1.84
171	Ludhiana	Macchiwara	Sherian	8.26	1147	nil	411	21	180	70	0.45	BDL	31	56	142	9	11	308	3.52	0.58
172	Ludhiana	Smrala	Punjeta	8.26	398	nil	173	10	18	34	0.22	BDL	27	27	9.1	4.8	26	180	0.30	-0.76
173	Ludhiana	Dehlon	Dehlon	Leaked																
174	Ludhiana	Pakhowal	Lil	8.37	631	140	77	10	35	13	0.13	0.01	12	22	106	6.7	25	123	4.16	3.49
175	Ludhiana	Ludhiana	PAU	8.63	464	23	155	14	50	36	0.65	BDL	16	32	41	6.7	26	174	1.35	-0.17
176	Ludhiana	Jagraon	Jagaon	Leaked																

177	Ludhiana	Sidwabet	Sidwabet	8.46	480	12	155	17	37	35	0.3	BDL	23	36	17	5.2	24	205	0.52	-1.18
178	Mansa	Mansa	Ralla	8.76	980	18	302	77	96	47	1.83	BDL	25	45	52	134	15	247	1.44	0.60
179	Mansa	Bhikhi	Kotra	9.06	1480	48	447	119	150	104	0.58	BDL	21	73	227	12	24	350	5.26	1.87
180	Mansa	Jhunir	Burj Bahlaike	8.63	1882	18	133	239	330	229	0.32	BDL	62	110	179	13	26	608	3.16	-9.36
181	Mansa	Jhunir	Fatta Maluka	9.18	5235	95	555	681	1240	76	1.01	BDL	12	98	1141	14	31	433	23.85	3.60
182	Mansa	Budh Lada	Budhlada	9.09	670	24	205	28	128	12	0.62	BDL	33	48	47	9.3	20	278	1.22	-1.43
183	Mansa	Mansa	Kot Dharmu	9.04	305	18	97	14	52	1.9	0.73	BDL	33	17	14	4.1	9.8	155	0.49	-0.86
184	Mansa	Mansa	Bikhi	9.31	1340	53	495	63	150	13	7.33	0.005	12	7.5	323	4	17	62	18.02	8.66
185	Mansa	Jhunir	Jhanda Khurd	9.09	240	5.9	97	7	56	0.63	0.59	BDL	33	15	4.4	4.1	8.9	144	0.16	-1.09
186	Mansa	Jhunir	Mofar	9.51	2100	125	845	77	190	27	2.32	0.032	16	10	532	4.5	15	82	25.71	16.39
187	Mansa	Jhunir	Raipur	Leaked																
188	Moga	Baga	Dameru	8.35	3670	18	157	425	1348	67	0.67	BDL	99	178	566	15	18	979	7.87	-16.41
189	Moga	Moga I	Darapur	9.42	1775	119	568	42	310	25	2.43	0.081	16	28	420	6	19	155	14.67	10.17
190	Moga	Moga I	Chaugawan	9.12	810	59	326	56	110	25	0.36	BDL	12	85	88	8.8	20	381	1.97	-0.28
191	Moga	Moga II	Dagru	9.19	705	36	290	28	120	4.8	0.63	BDL	12	27	148	3.6	15	144	5.42	3.13
192	Moga	Baga	Budh Singh	9.03	270	48	314	77	110	22	0.26	BDL	16	50	148	9	19	247	4.11	1.84
193	Moga	Nihal Singh	Nihal Singh	8.82	1330	48	568	98	12	53	0.20	0.005	16	48	222	16	22	237	6.27	6.16
194	Moga	Kotishe	Bajeke	7.95	465	nil	157	14	152	0.37	0.51	BDL	62	30	11	4.9	15	278	0.29	-2.99
195	Muktsar	Muktsar	Bhaliana	8.82	1063	48	278	56	174	23	0.71	BDL	25	50	144	9.5	17	268	3.83	0.80
196	Muktsar	Muktsar	Doda	8.08	5487	73	997	1260	227	0.4	0.48	0.02	260	113	848	17	25	1113	11.05	-3.49
197	Muktsar	Malout	Kabar Wala	8.52	2264	47	387	218	348	117	6.05	0.11	45	27	419	33	5.1	227	12.20	3.44
198	Muktsar	Malout	Khunde Halal	8.28	1286	nil	266	203	128	40	1.15	BDL	62	53	101	66	9.9	371	2.28	-3.09
199	Muktsar	Lambi	Kuttianwali	8.44	2571	59	447	211	488	119	4.28	0.02	37	60	205	467	18	340	4.84	2.51
200	Muktsar	Muktsar	Labanianwali	8.11	1803	nil	326	154	318	146	0.27	BDL	62	63	235	15	17	412	5.03	-2.93
201	Muktsar	Lambi	Lambi	8.24	2636	nil	350	323	560	55	0.79	BDL	62	88	377	38	19	515	7.22	-4.59
202	Muktsar	Muktsar	Muktsar	8.06	3020	nil	314	547	518	104	0.96	BDL	95	150	332	60	21	855	4.94	-11.93
203	Nawanshahr	Balachaur	Mauhar	8.38	350	23	167	14	5.0	16	0.25	0.08	16	22	37	2.1	25	133	1.40	0.86
204	Nawashahar	Nawanshahr	Rahon	8.39	850	24	157	77	74	116	BDL	0.06	12	44	85	44	29	211	2.55	-0.84
205	Nawashahar	Balachaur	Balachaur	8.29	378	nil	163	28	BDL	44	0.21	0.08	21	30	11	3.8	23	175	0.36	-0.84
206	Nawashahar	Saroya	Mehandpur	8.46	384	30	199	17	BDL	BDL	0.38	0.08	10	31	34	5.8	30	155	1.20	1.21

207	Nawashahar	Aur	Raipur Dhabba	8.33	638	18	121	140	8.0	12	0.31	0.07	16	55	31	7.5	29	268	0.83	-2.74
208	Nawashahar	Nawanshahr	Bahlore Kalan	8.63	615	30	235	17	78	BDL	BDL	0.04	12	31	82	11	29	160	2.84	1.70
209	Pathankot	Pathankot	Pathankot	8.83	723	46	275	55	38	29	0.03	0.15	79	20	49	29	26	286	1.28	0.45
210	Pathankot	Dharkalan	Kiari	7.70	431	nil	289	14	BDL	4.5	0.33	BDL	49	19	25	0.8	15	214	0.77	0.73
211	Pathankot	Dharkalan	Kui	8.52	837	30	242	126	BDL	17	0.43	BDL	141	1.9	38	2.5	26	209	0.87	-2.23
212	Pathankot	Dharkalan	Barmota	8.53	208	10	101	4	BDL	5.7	0.27	0.25	27	3.1	11	0.7	39	171	0.53	0.39
213	Pathankot	Pathankot	Ghoh	8.74	503	26	218	34	8.0	38	0.42	0.12	58	18	37	1	32	204	1.09	0.06
214	Pathankot	Pathankot	Nawan Pind	8.75	180	10	77	11	BDL	2.3	0.23	BDL	27	5.6	2.1	1.2	6	304	0.10	-0.21
215	Pathankot	Pathankot	Sarna	8.59	200	3.0	87	12	BDL	3.7	0.16	BDL	22	6.8	6.5	1.5	27	171	0.31	-0.13
216	Pathankot	Narot [illegible]	Bhoa	8.22	410	nil	195	21	10	22	0.16	BDL	47	15	15	10	31	138	0.49	-0.38
217	Pathankot	Narot [illegible]	Jhakolari	8.02	445	nil	262	16	BDL	14	0.21	BDL	61	14	11	9.8	30	105	0.33	0.10
218	Pathankot	Narot [illegible]	Khani Khui	8.79	572	26	158	53	100	9.2	0.24	BDL	16	50	52	1.7	18	286	1.44	-1.45
219	Pathankot	Narot [illegible]	Gharota Kalan	8.29	648	nil	268	80	BDL	28	0.32	BDL	55	32	38	2.2	30	276	1.01	-0.98
220	Pathankot	Bamiyal	Bamial	8.68	2101	40	282	206	260	267	0.32	BDL	22	45	146	397	34	212	4.10	1.16
221	Pathankot	Dharkalan	Kui (spring)	8.49	298	10	131	16	BDL	11	0.21	BDL	36	7.4	14	2	11	334	0.56	0.08
222	Patiala	Patran	Patran	8.90	1588	70	351	228	23	81	0.34	0.02	12	84	203	12	25	374	4.57	0.61
223	Patiala	Smana	Smana	8.45	1335	5.9	155	159	150	203	0.53	BDL	27	41	159	97	22	236	4.50	-1.99
224	Patiala	Smana	Dhakraba	8.6	322	5.9	107	6.9	50	2.0	0.33	BDL	29	17	8.2	3.9	18	144	0.30	-0.92
225	Patiala	Nabha	Kalyan	8.79	755	29	238	52	50	26	0.49	BDL	4.1	37	101	15	25	164	3.43	1.60
226	Patiala	Nabha	Sangatpura	8.9	679	23	226	17	BDL	29	0.33	BDL	10	27	ND	ND	ND	138		1.72
227	Patiala	Nabha	Bhojomajri	8.7	503	29	214	24	BDL	14	0.16	0.02	14	30	50	6.9	25	159	1.73	1.31
228	Patiala	Nabha	Chehal	8.82	449	23	202	10	17	BDL	0.34	0.02	12	27	43	8.1	25	144	1.56	1.23
229	Patiala	Patiala	Lacnkani	8.25	1000	nil	357	83	84	22	0.33	0.02	25	45	112	24	25	246	3.11	0.93
230	Patiala	Rajpura	Thuas	9.00	1168	23	416	28	195	2.2	2.89	0.29	16	19	247	1.5	15	118	9.90	5.25
231	Patiala	Rajpura	Rajpura (TTI)	9.05	1367	82	309	48	240	0.8	3.5	0.03	8.2	16	293	5	15	87	13.65	6.06
232	Patiala	Patiala	Birkali	8.85	1060	53	238	69	145	BDL	1.28	0.2	16	32	171	6	22	174	5.63	2.17
233	Patiala	Bhunerheri	Devigarh	8.91	913	53	232	66	75	BDL	0.6	0.03	12	32	135	4.3	21	164	4.59	2.28
234	Patiala	Bhunerheri	Mirpur	8.66	1326	29	208	180	185	BDL	0.85	0.04	21	50	193	7.5	23	256	5.24	-0.74
235	Patiala	Ganaur	Lachrru Kalan	8.8	1310	47	387	187	BDL	BDL	1.07	0.03	16	17	249	3.5	19	113	10.20	5.64
236	Patiala	Ganaur	Hari Majra	8.74	2595	29	232	200	720	9.7	0.57	BDL	21	67	457	5	17	328	10.98	-1.78

237	Patiala	Ganaur	Kami Kalan	8.91	1044	35	268	48	164.74	BDL	0.45	BDL	12	35	159	6.5	19	174	5.24	2.07
238	Patiala	Rajpura	Hulka	8.6	745	47	274	42	55	BDL	0.39	0.02	27	23	120	2	16	160	4.13	2.85
239	Patiala	Rajpura	Chatt	8.59	357	35	131	14	BDL	BDL	0.14	0.03	25	13	32	2.4	21	113	1.31	1.05
240	Patiala	Rajpura	Banur	8.65	390	35	155	14	14	BDL	0.14	0.03	25	13	49	2.3	21	113	2.00	1.44
241	Ropar	Anandpur	Ahmedpur	7.90	1550	nil	345	174	135	157	0.19	0.02	74	58	172	3	17	423	3.64	-2.79
242	Ropar	Ropar	Hardoh Namoh	8.22	535	nil	202	28	65	4.7	0.35	0.02	45	20	32	14	18	196	0.99	-0.60
243	Ropar	Anandpur	Dhair	8.0	1250	nil	464	111	119	3.9	0.25	0.03	25	75	130	13	17	371	2.94	0.19
244	Ropar	Anandpur	Brahampur	7.93	565	nil	238	21	45	27	0.34	0.01	70	23	13	0.5	15	268	0.35	-1.46
245	Ropar	Anandpur	Bhallan	8.7	740	59	131	56	98	60	0.34	0.01	12	65	59	12	22	299	1.48	-1.88
246	Ropar	Nurpur Bedi	Dumewal	8.05	575	nil	143	35	40	101	0.01	0.02	62	20	24	2.5	20	237	0.68	-2.40
247	Ropar	Nurpur Bedi	Nurpur Bedi	8.35	350	47	71	21	22	0.62	0.11	0.02	25	20	20	4.5	20	144	0.72	-0.15
248	Ropar	Ropar	Bada Chautta	8.08	775	nil	464	21	5.0	8.9	0.55	0.06	70	25	61	11	18	278	1.59	2.04
249	Ropar	Chamkaur	Roorkee Heeran	7.95	715	nil	297	49	35	42	0.01	0.02	41	38	53	9	23	258	1.44	-0.28
250	Ropar	Morinda	Chatamali	8.8	625	47	274	7	35	11	0.7	0.02	12	30	93	4.2	19	155	3.25	2.96
251	Ropar	Morinda	Kakrali	Leaked																
252	Sangrur	Dhuri	Ghanauri Kalan	8.98	982	70	422	55	10	19	0.36	0.01	10	12	221	8	23	77	10.96	7.73
253	Sangrur	Dhuri	Bugra	8.45	594	12	268	14	95	4.7	0.58	BDL	12	1	132	3.1	17	72	9.83	4.09
254	Sangrur	Dhuri	Ladda	8.48	856	18	268	35	40	100	0.31	BDL	25	40	93	8	27	226	2.69	0.46
255	Sangrur	Dhuri	Bhujowali	9.03	1312	88	345	190	20	28	0.4	BDL	6	52	230	9.5	27	231	6.59	3.97
256	Sangrur	Maler Kotla	Maler Kotla	8.75	932	35	333	48	72	37	0.75	BDL	12	10	181	38	37	72	9.29	5.19
257	Sangrur	Maler Kotla	Manvi	8.90	450	12	208	17	35	3	0.53	BDL	21	22	48	6.3	22	144	1.74	0.93
258	Sangrur	Maler Kotla	Bhagarian	8.76	427	18	208	7	29	0.7	0.32	BDL	12	22	55	5.6	24	123	2.16	1.54
259	Sangrur	Amargarh	Chhinton	8.56	704	12	292	17	98	1.9	0.22	0.01	41	27	80	6.2	28	215	2.37	0.86
260	Sangrur	Bhwanigarh	Mesampur	8.76	502	12	196	17	74	BDL	0.42	BDL	8	25	75	4.5	20	123	2.94	1.15
261	Sangrur	Sangrur	Longowal	9.03	1398	216	321	55	58	9.8	0.54	0.02	6	35	270	26	21	159	9.32	9.30
262	Sangrur	Sunam	Sunam	8.6	352	12	173	10	9	0.2	0.36	BDL	21	19	24	5.6	25	128	0.92	0.66
263	Sangrur	Andana	Haryao	9.16	3024	117	476	315	450	122	2.18	0.02	8	49	636	8	29	221	18.64	7.29
264	Sangrur	Lehraggaga	Chural Kalan	9.27	1535	129	476	41	132	15	5.16	BDL	14	14	340	5.5	20	92	15.40	10.25
265	Sangrur	Sangrur	Badrukha	8.73	805	35	262	35	100	7	0.50	BDL	25	11	149	5.1	18	108	6.25	3.31
266	Sangrur	Mehal	Sherpur	8.53	526	12	220	17	45	21	0.38	BDL	14	47	22	5.8	22	231	0.63	-0.62

267	Sangrur	Andana	Bulan	8.39	2397	29	393	315	375	112	1.91	0.02	27	69	437	14	25	349	10.18	0.44
268	SAS Nagar	Dera Bassi	Dera Bassi	7.75	2800	nil	309	452	148	440	0.35	0.02	149	105	273	6.5	22	804	4.19	-11.00
269	SAS Nagar	Dera Bassi	Isarpur	7.92	8970	nil	464	1549	1518	700	0.84	0.03	149	343	1000	600	24	1783	10.30	-28.03
270	SAS Nagar	Dera Bassi	Gholu Majra	9.15	1495	140	559	42	42	14	2.9	0.04	17	43	275	3	17	216	8.13	9.52
271	SAS Nagar	Dera Bassi	Sarsini	8.84	1545	70	167	181	285	BDL	0.85	0.02	17	70	220	4.5	17	330	5.27	-1.52
272	SAS Nagar	Dera Bassi	Joli	8.2	965	nil	345	69	102	42	0.28	0.02	37	30	140	3.2	15	216	4.14	1.33
273	SAS Nagar	Dera Bassi	Handesra	8.12	615	nil	309	28	30	2.64	0.39	0.02	37	18	72	6	12	165	2.44	1.77
274	SAS Nagar	Dera Bassi	Antala	8.2	1240	nil	107	181	128	133	0.50	0.02	78	55	76	2	18	423	1.61	-6.69
275	SAS Nagar	Kharar	Dheri	8.07	765	nil	71	63	198	39	0.49	0.03	54	20	80	1	17	216	2.37	-3.16
276	SAS Nagar	Kharar	Landran	8.7	1240	59	119	181	85	118	0.28	0.02	25	28	210	5	16	175	6.90	0.40
277	SAS Nagar	Kharar	Soara	8.58	875	59	286	35	80	2.45	0.81	0.02	25	20	150	1	15	144	5.43	3.75
278	SAS Nagar	Kharar	Ghoga	8.85	601	35	286	14	7.0	BDL	1.33	0.02	29	23	71	5.3	18	165	2.41	2.55
279	Taran Taran	Khadur	Khodun Sahib	9.13	548	46	228	21	BDL	7.4	0.54	BDL	5.1	29	68	12	21	278	2.57	2.63
280	Taran Taran	Khadur	Goindwal Sahib	8.46	720	17	201	69	10	91	0.56	BDL	29	36	69	9.3	20	199	2.02	-0.55
281	Taran Taran	Tarn Taran	Sahabpur	8.86	843	33	483	18	130	0.7	1.05	BDL	28	43	170	5.7	21	360	4.71	4.08
282	Taran Taran	Naushehra	Dhotian	8.36	829	30	503	25	BDL	0	0.90	BDL	22	29	133	8.9	19	79	4.38	5.76
283	Taran Taran	Chohla	Chohla Sahib	8.42	685	26	302	25	12	26	0.60	BDL	32	38	96	6.7	22	219	2.72	1.09
284	Taran Taran	Patti	Harike	8.4	429	23	245	27	BDL	1.7	0.42	BDL	39	22	31	5.4	2	89	0.98	1.03
285	Taran Taran	Valtoha	Rattoke	8.7	1075	46	376	96	36	6.1	0.11	BDL	14	22	203	7	18	84	7.89	5.19
286	Taran Taran	Bhikhiwind	Kalsian Kalan	8.72	804	46	430	50	BDL	6.2	0.88	0.46	25	45	88	42	31	179	2.43	3.63
287	Taran Taran	Bhikhiwind	Bhikhiwind	8.6	1307	79	577	46	24	28	1.64	BDL	43	26	217	7.5	21	212	6.45	7.81
288	Taran Taran	Bhikhiwind	Khalra	9.11	1457	92	631	46	25	7.9	6.35	0.54	4.1	2.5	344	5	16	245	33.04	13.00
289	Taran Taran	Chogawan	Mahawa	9.04	646	33	178	67	38	BDL	0.26	BDL	12	21	93	12	20	271	3.75	1.69
290	Taran Taran	Gandiwind	Gandiwind	8.15	883	nil	591	25	BDL	16	0.85	BDL	27	52	106	27	25	240	2.75	4.06
291	Taran Taran	Gandiwind	Chhabal	8.32	526	26	315	9	BDL	BDL	0.29	BDL	39	15	65	5.5	22	120	2.24	2.85

AnnexureVII

Results of chemical analysis of water samples from NHS in Chandigarh(2015)

S. No	District	Block	Location	pH	EC in	CO3	HCO3	Cl	SO4	NO3	F	PO4	Ca	Mg	Na	K	SiO2	T.H	As	Fe	SAR	RSC
					µS/cm													as CaCO3				in
					at 250C	(----------mg/l----------)																meq/l
1	Chandigarh	Chandigarh	Burail Village	8.84	950	70	309	69	90	24	BDL	0.08	29	53	108	50	33	289	BDL	0.0007	2.77	1.64
2	Chandigarh	Chandigarh	Sector 44	8.65	440	23	119	21	58	1.61	0.43	0.02	29	13	50	0.8	14	124	BDL	0.5703	1.96	0.26
3	Chandigarh	Chandigarh	Maloya	8.70	460	23	107	56	38	0.44	0.05	0.02	25	15	48	15	18	124	BDL	0.1493	1.88	0.06