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1. INTRODUCTION:
The District was created on 12th July 1994 as 31st district of the State of Rajasthan. Hanumangarh district located between latitudes 28°45'35" and 29°57'25" N and longitudes 74°17'51" and 75°31'04" is the one of the northern most districts of Rajasthan. Occupying an area of around 9656.09 sq km, the district is surrounded by Churu and Sri Ganganagar districts of Rajasthan, Punjab and Haryana in the south, west, north and east respectively. Hanumangarh was known as ‘BHATNER’ in Medieval period of history. In year 1805, Emperor Soorat Singh of Bikaner captured BHATNER from Bhati rulers and Named it Hanumangarh.

For administrative convenience, the district is divided into 7 tehsils Bhadra, Hanumangarh, Nohar, Pilibanga, Rawatsar, Sangaria and Tibi Tehsil. It has a total population of 1774692 as per 2011 Census. The district has 1907 villages and 6 urban towns. Rural and urban population of the district is 14.29 lakh and 3.51 lakh respectively.

<table>
<thead>
<tr>
<th>Location</th>
<th>Area [Sq.Km.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>29° 5' to 30° 6' Total Geographical area 9656.09</td>
</tr>
<tr>
<td>South</td>
<td>74° 3' to 75° 3' Total Forest area 239.46</td>
</tr>
</tbody>
</table>

2. OVERVIEW OF MINING ACTIVITY IN THE DISTRICT:
In hanumangarh district most part of land covered with dune sand and not significant quantity and varities of minerals available here, only some leases of mineral gypsum exist here.

a) Potash(Major Mineral) the potential areas of exploration for potash have been identified in Hanumangarh district by the GSI. Potash mineralization is in the form of polyhalite and sylvite which showing occurrences in the Bharusari and Satipura near Hanumanarh city. At present no mining lease is granted in hanumangarh district.

b) Gypsum Gypsum (gypsumite) occur at a number of places, of which deposit near Rawatsar, Nohar, Bhadra, pilibanga Tehsil are quite promising. These occurrences lie below the surface at depth ranging from 0.3 to 1.5 meter. All these deposits are very small and grade is also variable. At present in Rawatsar tehsil five Gypsum Mining Leases are granted in favour of M/s RSMM Ltd.

c) Saltpeter Saltpeter in the form of efflorescence (Powdery substance after exposure to air) is found on the soil at certain localities in Hanumangarh, Tibbi. Pilibanga tehsil. At present no mining lease is granted in hanumangarh district.

d) Brick Earth Brick earth is available in whole of the district. At present around 320 Brick Earth unit are running in all around district.
### 3. LIST OF MINING LEASES IN DISTRICT WITH LOCATION, AREA, PERIOD OF VALIDITY AND EC:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>ML No.</th>
<th>Name of Leesee</th>
<th>Area (Ha)</th>
<th>Near Village</th>
<th>Period of ML</th>
<th>Level of EC grant (DEIIAA/SEI AA/MEF)</th>
<th>Letter No. of EC grant</th>
<th>Date of issuing EC</th>
<th>Production limit in EC</th>
<th>Apply Date (in case EC not granted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4/69</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>1668</td>
<td>Purabsar</td>
<td>15.02.1977 to 31.03.2020</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>21.03.2013 (MEF)</td>
</tr>
<tr>
<td>2</td>
<td>02/98</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>361.13</td>
<td>Mayla ki dhami</td>
<td>22.04.1997 to 31.03.2020</td>
<td>MOEF</td>
<td>J-1.015/7/2003-IA.II(M)</td>
<td>27.02.2006</td>
<td>11228</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>03/98</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>400</td>
<td>Mayla ki dhami II</td>
<td>27.04.1999 to 31.03.2020</td>
<td>MOEF</td>
<td>J-11016/8/2003-IA.II(M)</td>
<td>02.03.2006</td>
<td>132480</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>02/01</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>191</td>
<td>Nuro ki dhami</td>
<td>15.12.2001 to 30 year</td>
<td>MOEF</td>
<td>J-11015/64/2004-IA.II(M)</td>
<td>15.03.2005</td>
<td>170000</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>07/01</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>303.25</td>
<td>Purabsar II</td>
<td>15.12.2001 to 30 year</td>
<td>MOEF</td>
<td>J-11015/66/2004-IA.II(M)</td>
<td>02.03.2006</td>
<td>106000</td>
<td>--</td>
</tr>
</tbody>
</table>
4. DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS:
In this office all the gypsum leases are not in operation in last 3 years, so revenue form the leases is only Dead Rent. A large no. of brick kilns are running in Hanumangarh district. So revenue generated from them also.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>ML No</th>
<th>Name of Leasee</th>
<th>Area (Ha)</th>
<th>Near Village</th>
<th>Period of ML</th>
<th>Dead Rent (2013-14)</th>
<th>Dead Rent (2014-15)</th>
<th>Dead Rent (2015-16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4/69</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>1668</td>
<td>Purabsar</td>
<td>15.02.1977 to 31.03.2020</td>
<td>1668000</td>
<td>2636811</td>
<td>3336000</td>
</tr>
<tr>
<td>2</td>
<td>02/98</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>361.13</td>
<td>Mayla ki dhan</td>
<td>22.04.1997 to 31.03.2020</td>
<td>361130</td>
<td>570882</td>
<td>722260</td>
</tr>
<tr>
<td>3</td>
<td>03/98</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>400</td>
<td>Mayla ki dhan II</td>
<td>27.04.1999 to 31.03.2020</td>
<td>191000</td>
<td>301937</td>
<td>382000</td>
</tr>
<tr>
<td>4</td>
<td>02/01</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>191</td>
<td>Nuro ki dhan</td>
<td>15.12.2001 to 30 year</td>
<td>303250</td>
<td>502617</td>
<td>606500</td>
</tr>
<tr>
<td>5</td>
<td>07/01</td>
<td>M/s R.S.M.M. Ltd.</td>
<td>303.25</td>
<td>Purabsar II</td>
<td>15.12.2001 to 30 year</td>
<td>400000</td>
<td>632329</td>
<td>800000</td>
</tr>
</tbody>
</table>

5. DETAILS OF PRODUCTION OF SAND OR BAJRI OR MINOR MINERALS IN LAST THREE YEARS:
---Nil---------

6. PROCESS OF DEPOSITION OF SEDIMENTS IN RIVER OF THE DISTRICT:
---Nil---------

7. GENERAL PROFILE OF THE DISTRICT:
   a) Administrative Units (2010-11)
   i) Sub divisions
   7
   ii) Tehsils
   7
   iii) Sub-Tehsil
   8
   iv) Panchayat Simits
   7
   v) Nagar parishad
   1
   vi) Nagar Palika
   5
   vii) Gram Panchayats
   251
   viii) Revenue villages
   1907
   ix) Assembly Constituency
   5
   
   b) Population
   i) Total Population (lac)
   17.75
   ii) Male(lac)
   9.31
   iii) Female (lac)
   8.44
   iv) Rural Population
   14.24
   v) Urban Population
   3.50
   
   c) Agriculture
   i) Total Area
   2010-11
   Hectares
   965609
   ii) Forest cover
   2010-11
   Hectares
   23946
   iii) Non Agriculture Land
   2010-11
   Hectares
   131472
   v) cultivable Barren land
   2010-11
   Hectares
   818089
   
   d) Forest
   i) Forest
   2010-11
   Hectares
   23946
8. LAND UTILIZATION PATTERN IN THE DISTRICT:

About 21% of the total area of the district is cultivated, net area sown, varying 15 to 23% depending on the rainfall occurrence. The percentage of fallow lands in district varies for 7% to 15% again depending on the rainfall characteristics. About 64% of the area constitutes the cultivable waste. Forests and permanent pastures account for 0.3% and 1.00% respectively of the total area and about 4.2% of the area constitute the barren lands.

Land use pattern of the Hanumangarh district

<table>
<thead>
<tr>
<th>Land Use Details</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total Geographical area</td>
<td>965609</td>
</tr>
<tr>
<td>2 Forest</td>
<td>23946</td>
</tr>
<tr>
<td>3 Non agriculture use</td>
<td>56526</td>
</tr>
<tr>
<td>4 Barren &amp; unculturable land</td>
<td>94555</td>
</tr>
<tr>
<td>5 Area unfit for cultivation (3+4)</td>
<td>151081</td>
</tr>
<tr>
<td>6 Cultivable wasteland</td>
<td>4154</td>
</tr>
<tr>
<td>7 Pasture and other grazing lands</td>
<td>3937</td>
</tr>
<tr>
<td>8 Other uncultivated land excluding fallow lands (6+7)</td>
<td>48435</td>
</tr>
<tr>
<td>9 Net Area sown</td>
<td>1121264</td>
</tr>
<tr>
<td>10 Mining area</td>
<td>2923.38</td>
</tr>
</tbody>
</table>
9. PHYSIOGRAPHY OF THE DISTRICT:
The area consist mainly of an extensive former flood plain with remnants of numerous silted up water courses. this plain is buried under Aeolian sand at some places forming small and large dunes. The area is more or less flat with a fine sand overburden.

10. RAINFALL: MONTH-WISE:
The climate of the district is semi-arid to arid except southwest monsoon season during the period June to mid of September, which is followed by post monsoon period till the end of November. The winter season is from December to February and is followed by summer from March to June. The mean daily maximum temperature varies from 20.5°C during January to 42.2°C during June while mean daily minimum temperature in the district varies from 4.7°C during January to 28.1°C during July. The Normal Annual Rainfall of the district during the period 1901-2006 has been 333.27 mm. The Average Annual Rainfall of the district during the last ten years (2002 to 2011) was 312 mm and varied from 400 mm at Sangaria to 224.1 mm at Pilibanga. Annual rainfall data of the district for the past ten years (2002 to 2011) is presented in Table.

Table: Annual rainfall data of Hanumangarh district during the period 2002 to 2011

<table>
<thead>
<tr>
<th>Tehsil</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhadra</td>
<td>240</td>
<td>328</td>
<td>151</td>
<td>404</td>
<td>410</td>
<td>474</td>
<td>520</td>
<td>161</td>
<td>638</td>
<td>445</td>
<td>377.1</td>
</tr>
<tr>
<td>Hanumangarh</td>
<td>117</td>
<td>179</td>
<td>208</td>
<td>312</td>
<td>278</td>
<td>388</td>
<td>234</td>
<td>257</td>
<td>547</td>
<td>297</td>
<td>281.7</td>
</tr>
<tr>
<td>Pilibanga</td>
<td>67</td>
<td>166</td>
<td>133</td>
<td>236</td>
<td>155</td>
<td>340</td>
<td>318</td>
<td>182</td>
<td>293</td>
<td>331</td>
<td>224.1</td>
</tr>
<tr>
<td>Sangria</td>
<td>90</td>
<td>494</td>
<td>337</td>
<td>218</td>
<td>339</td>
<td>530</td>
<td>597</td>
<td>345</td>
<td>444</td>
<td>586</td>
<td>400</td>
</tr>
<tr>
<td>Tibbi</td>
<td>150</td>
<td>216</td>
<td>276</td>
<td>305</td>
<td>272</td>
<td>423</td>
<td>285</td>
<td>221</td>
<td>350</td>
<td>382</td>
<td>288</td>
</tr>
<tr>
<td>Nohar</td>
<td>157</td>
<td>486</td>
<td>155</td>
<td>340</td>
<td>242</td>
<td>384</td>
<td>486</td>
<td>299</td>
<td>502</td>
<td>457</td>
<td>343.8</td>
</tr>
<tr>
<td>Rawatsar</td>
<td>109</td>
<td>219</td>
<td>136</td>
<td>220</td>
<td>283</td>
<td>476</td>
<td>281</td>
<td>253</td>
<td>320</td>
<td>396</td>
<td>269.3</td>
</tr>
</tbody>
</table>
plaster of Paris. Calcined gypsum is extensively employed in the building trade for the production of various types of plasters, sheets and boards and stucco work.

b) Salt petre or Potassium Nitrate KN03 Salt petre occurs as a surface efflorescence in soil in parts of the Hanumangarh, Tibbi, Sangria, Pilibanga, Rawatsar, Nohar and Bhadra tehsils of Hanumangarh district. Potash salts are brought to the surface in solution by capillary action and remain as an efflorescence on the soil on evaporation. Evaporation and simple process of refining which reduces other salts especially the sodium chloride, pure or nearly pure salt petre is produced. It is an essential commodity in manufacture of many chemicals and even in heavy industry. It is also used as fertilizer.

Salt petre occurrences have been noted at Hanumangarh town, Bhadrakali, Tibbi, Fatehgarh, Badopal etc.

Out of the above mentioned deposits, Badopal of tehsil Pilibanga, Massani of tehsil Tibi, Fatehgarh and Amarpura areas in Hanumangarh tehsil have good deposits.

Salt petre is being mined as a top layer of the soil cover, scrapped manually which contains 8 to 10% KN03 at an average. Then the soil is subjected to make brine solution which is sent to drying pans to recover salt petre which is sent to drying pans to recover salt petre which contains 30 to 40% KN03. This concentrated material is further given heat treatment for further beneficiation at the salt petre factory. The final product contains 80 to 98% KN03 content.

c) Halites and Associated Potash Salts G.S.I. has identified halite and associated potash salts in Hanumangarh district. As the potential-area of exploration for 'Potash', having suitable geological environment for deposition of marine potash, has been located in Hanumangarh.

Potassium is one of the three key chemical elements used in fertilizers. The most prevalent form in which it is used is the muriate of Potash (K2O) vaguely called 'Potash' is obtained from thick sequence of halite (rock-salt). India produces a meagre quantity of 'Potash' as a by-product in the manufacture of salt from sea water and imports almost its requirement from Canada and European countries. This import is costing the country a huge amount of foreign exchange.

The area contains a very thick sub-surface evaporite sequence mainly composed of halides (Sodium chloride) included within Marwar Supergroup. Potash mineralisation is in the form of Polyhalite (K2 Mg CS2 (SO4)4 2H2O and Sylvite (Potassium Chloride). Few boreholes drilled around Hanumangarh have intersected these halides (halite & sylvite) and revealed that these occur as specks, pods, stringers, laminae and irregular beds within halite. Thickness of potash bearing zones with in halite varies between 0.50 metre and 15. 31.67 metre and potash contents 0.20. to 19.2% at a depth 16. ranging from 385.83 to 965.58 metre.

GSI has been established 290 MT probable reserves and 1730 MT of possible reserves in Bharusari and Satipura block of Hanumangarh district.

d) Brick Earth A large number of brick kilns are running in Hanumangarh districts at Hanumangarh, Pilibanga, Tibbi, Sangria, Rawatsar, Nohar, and Bhadra localities. Top layer of soil which is admixture of clay, is used for making bricks. 5 to 7 metre thick column of clayey soil is found at different places in the district is used for this purpose. There is no stone quarry in the district so only bricks are used in construction.
The district experiences either mild or normal drought once in two years. Severe drought has also been recorded frequently. The most severe drought has been experienced in the district only once in 1969 at Sangaria.

11. GEOLOGY AND MINERAL WEALTH:
Hanumangarh has plain topography covered with a thick layer of alluvium and wind blown sand. It displays a general slope towards west with the gradient of about 4-5 metre per kilometer. The sand dunes are generally 4 to 5 metres high except in the south western part where they are more intensely developed, being sometimes 10 to 15 metres in height.

Geology is marked by a thick cover of blown sand and alluvium except for a few isolated patches of recent calcareous and sandy sediments associated with gypsum. However, the geological column, built up with the help of sub-surface data obtained from dugwells reveal that the oldest rocks in the area belong to the Aravalli Supergroup which includes phyllite, shale and quartz veins. These are overlain by the rocks of upper Vindhyan which are entirely made up of bright to pale red, fine and medium grained, compact sandstone and siltstone. The wind blown sand of Recent to sub-Recent periods is mainly consists of quartz with minor biotite and magnetite. Gypsum rich beds are found in shallow depression surrounded by sand dunes. Apart from this, scattered occurrences of saltpetre are seen in number of intradunal basins. Stratigraphical succession of the rock formations occurring in both these districts is shown below.

<table>
<thead>
<tr>
<th>Geological Succession</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td><strong>Formation</strong></td>
</tr>
<tr>
<td>Recent to sub-Recent</td>
<td>Blown sand, alluvium, isolated calcareous and sandy sediments associated with gypsum.</td>
</tr>
<tr>
<td>Upper Vindhyan Supergroup</td>
<td>Bright to pale red, fine and medium grained, compact medium grained, compact sandstone and siltstone</td>
</tr>
<tr>
<td>Aravalli Supergroup</td>
<td>Phyllite, shale and quartz veins.</td>
</tr>
</tbody>
</table>

Mineral Resources of Hanumangarh District

Hanumangarh district occupy fairly good position in minerals like gypsum, saltpeter, potash and Brick earth. Mineral wise details are as follows:

a) Gypsum: It is hydrated calcium sulphate CaSO 4. 2H2O. The gypsum/ gypsite deposits of the area occur in a shallow basin and belong to sub-Recent formation, deposited in inland saline lakes and lagoons as a result of evaporation. The main locations are Baramasar, Purabsar, Pallu (Rawatsar), Dhansia, Nimla (Nohar), Bhadi(Bhadra), Badopal (Pilibanga) etc.

Gypsum is an important industrial mineral. It is used as a retarder in cement, as a fertilizer, as a filler in various materials, such as paper, crayons, paints, rubber etc. and in manufacture of
12. DISTRICT WISE DETAIL OF RIVER OR STREAM AND OTHER SAND SOURCE
There is a seasonal river called “Ghaghar” the river not generating Sand/Gravels in the District.

13. DISTRICT WISE AVAILABILITY OF SAND OR GRAVEL OR AGGREGATE RESOURCES
-------Not available-----

14. DISTRICT WISE DETAIL OF EXISTING MINING LEASE OF SAND AND AGGREGATES
-------Not available-----