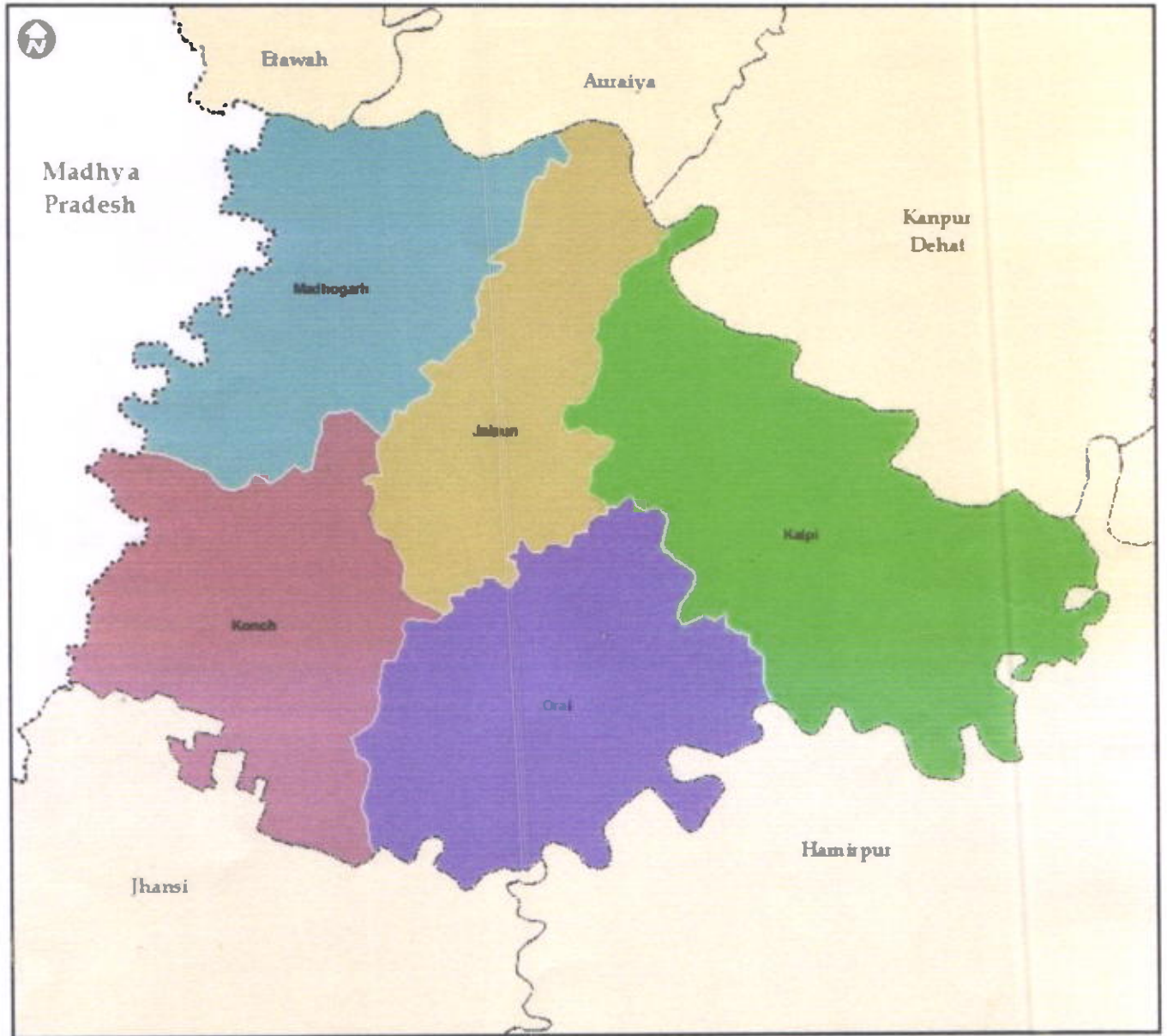




District Survey Report

For

(Planning & Execution of) Minor Mineral Excavation



**Chairman,
District Environmental Impact Assessment Authority,
Jalaun, U.P.**

सदस्य-सचिव
डी०ई०आई०ए०ए०
जालौन

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जालौन

जिलाधिकारी/अध्यक्ष
डी०ई०आई०ए०ए०

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Preface

On 15 January 2016, Ministry of Environment, Forest and Climate Change, Government of India issued a notification and in which Para 7(iii) (a) and Annexure (x) purpose and structure of District Survey Report has been discussed. District Survey report (DSR) will be prepared in every district for each minor mineral. The District Survey Report will guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. The purpose of District Survey report (DSR) *“Identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area”*. The District Survey report (DSR) will contain mainly data published and endorsed by various departments and websites about Geology of the area, Mineral wealth details of rivers, Details of Lease and Mining activity in the District along with Sand mining and revenue of minerals. This report also contains details of Forest, Rivers, Soil, Agriculture, Road, Transportation and climate etc.

District Jalaun is rich in occurrence of natural mineral like Road ballast, Bajri, Boulder, sand and morrow . By the side of major river Betwa & Yamuna morang (sand) is available in abundance, which is a basic raw material for any civil construction work. The area is mostly covered by alluvium with exposures of weathered Bundelkhand Granitic Gneisses



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confined to the southern part. Two sets of lineaments run along the western boundary of the district trending N-S and NE-SW.

Disclaimer: - The data may vary due to flood, heavy rains and other natural calamities. Therefore, it is recommended that DEIAA may take into consideration all its relevant aspects / data while scrutinizing and recommending the application for EC to the concerned Authority.



Introduction

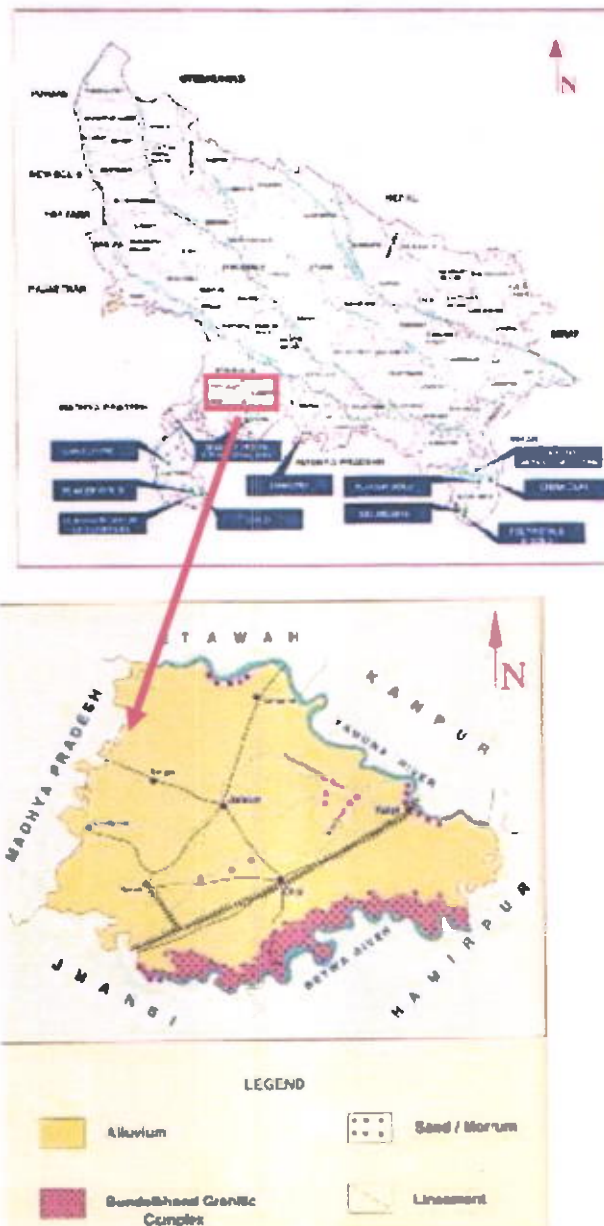
District Jalaun forms the most northerly portion of the Trans Yamuna tract of the country. In the north Yamuna divides it from the districts of Etawah , Kanpur Dehat and Auraiya. On the west it adjoins Madhya Pradesh and to the south-east Betwa separates it from Jhansi and Hamirpur. The area is mostly covered by alluvium with exposures of weathered Bundelkhand Granitic Gneisses confined to the southern part. Two sets of lineaments run along the western boundary of the district trending N-S and NE-SW.

The district is named after town of Jalaun, which was the former headquarters of a Maratha governor, but the administrative headquarters of the district is at Orai. Other large towns in the district are Kalpi, Konch, and Madhogarh. the HQ. of the District is at Orai, a city on the Kanpur-Jhansi NH25. In early times Jalaun seems to have been the home of two Rajput clans, the Chandelas in the east and the Kachwahas in the west. In 1806 Kalpi was made over to the British, and in 1840, on the death of Nana Gobind Ras, his possessions lapsed to them also. Various interchanges of territory took place, and in 1856 the boundaries of the British district were substantially settled, with an area of 1477 square miles. Jalaun was the scene of much violence during the Revolt of 1857. When the news of the rising at Kanpur reached Kalpi, the men of the 53rd Native Infantry deserted their officers, and in June the Jhansi rebels reached the district, and began their murder of Europeans. It was not until September 1858 that the rebels were finally defeated. In the later 19th century, the district suffered much from the invasive kans grass (*Saccharum spontaneum*), owing to the spread of which many villages were abandoned and their land thrown out of cultivation. The population of the district



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was 399,726 in 1901, and the two largest towns are Konch and Kalpi (pop. 10,139 in 1901). The district was traversed by the line of the Indian Midland railway from Jhansi to Kanpur.



Scale 1:25,000

(Source: mineral.up.nic)

Fig 1: Location map of Jalaun

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General Profile of the district

Jalaun district is surrounded in all four directions by rivers Yamuna, Betwa, Pahuj and Dhasan. The normal rainfall is about 862 mm per annum. The net sown area is 3.50 lakh ha and 1.95 lakh ha as net irrigated area with cropping intensity of 118.82%. Small and marginal farmers contribute 74% of total farm holdings. 52.76% of farmers have land holdings less than 1 ha and 21.69% have land holding of 1-2 ha. Jalaun District is a part of Jhansi Division. The district has an area of 4565 km², and a population of 16,89,974 (2011 census), with a population density of 370 persons per km². The district lies entirely within the level plain of Bundelkhand, north of the hill country, and is almost surrounded by the Yamuna River, which forms the northern boundary of the district, and its tributaries the Betwa, which forms the southern boundary of the district, and the Pahuj, which forms the western boundary. The central region thus enclosed is a dead level of cultivated land, almost destitute of trees, and dotted with villages. The southern portion presents an almost unbroken sheet of cultivation. The Non Riverflows through the centre of the district, which it drains by innumerable small ravines.

The districts of Etawah and Kanpur lie to the north across the Yamuna, while Jalaun District lies to the east and southeast, Jhansi District lies to the southeast, and Bhind District of Madhya Pradesh lies to the west cross the Pahuj.

The district has been under severe drought for the last four years with the average rainfall being about 399 mm which is way behind the average of about 800 mm.

Climate Condition:- The average annual normal rainfall in the district is 862 mm. The climate is sub humid and it is characterised by hot summer, humid monsoon and cold winter seasons. About 90% of rainfall takes place during monsoon period



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from the month June to September. During the monsoon surplus water is available for the deep percolation to ground water. After February temperatures begin to increase rapidly. May and early June is hottest part of the year. The mean daily maximum temperature in May is 42.6°C , mean daily minimum temperature is 27.1°C and on individual days the maximum temperature sometimes reaches over 47°C . with the onset of the monsoon in June, the day temperature drop appreciably but nights continue to be warm as in summer season, January is the coldest month with mean daily minimum temperature is 8.4°C The mean monthly maximum temperature is 32.4°C and mean monthly minimum temperature is 18.8°C . Air is very humid in monsoon season and the humidity decreases in the cold season. The mean monthly morning relative humidity is 57% and mean monthly evening relative humidity 42%. The mean wind velocity is 703 Kmph. The potential evapotranspiration is 1603.3 mm.

Topography & Terrain:- The topography of the district also plays a key role in locational analysis for any provision of services and facilities. Jhansi is located in the plateau of central India, an area dominated by rocky reliefs and 6 minerals underneath the soil. It has an average altitude of 284 meters. The city has a natural slope in the north as it lies on the south western border of the vast Tarai plains of Uttar Pradesh. The elevation rises on the south. The land is suitable for citrus species fruits. Main crops grown in the district include wheat, pulses, peas & oilseeds. The region relies heavily on Monsoon rains for irrigation purposes.

Water Course & Hydrology:- The area is chiefly drained by three perennial rivers namely, Yamuna, Betwa, and Phuja. There are many minor ephemeral tributaries, viz. Non Nadi, Kunchamalanga Nadi which drains central parts of the district area. Jamuna and Betwa are flowing towards east and Pahuja from south to



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north. The overall drainage of the area forms dendritic pattern. Besides, there is good network of canal system draining from Betwa river through Kuthaund and Jalaun branches. The entire area of Jalaun district is underlain by quaternary alluvium, comprising mainly clay, Kankar, sand, and gravel over the basement of Bundelkhand granites. The thickness of alluvium increases towards north which has good potential. Ground water potential in granites is poor as they have little porosity. The weathered zone in the granite rock usually hold good quantity of water. The ground water in the alluvium occurs under water table conditions in phreatic zones and under semi confined to confined conditions in the lower zone.

Ground Water Development:- Agriculture is the main source of populace of the district. To meet the requirement of the irrigation, ground water and surface water are being utilized. Ground water irrigation is under operation through 592 state government tube wells, 3014 dug wells. Almost 30.14 % of the area under irrigation is covered by ground water and 68.24 % area is irrigated by canals water and 0.68 % area is irrigated by other sources. Out of the net sown area of 343574 ha, only 209609 ha area has been brought under irrigation and leaving 133965 ha. The average of the stage of ground water development for the district is 38.78 %. The maximum stage of ground water development is in Jalaun block i.e. 51.46 % and minimum in Kadaura block i.e. 23.54 %. Other Seven blocks have the stage of ground water development i.e. Dakore 29.19 %, Konch 48.29 %, Kuthond 47.87 %, Madhogarh 50.43% and Mahewa 46.75%, Nadigaon 35.29% and Rampur 45.85%. Therefore all the 9 blocks are in safe category. So that all blocks having good scope to further develop ground water through shallow and moderately deep tubewells.

Ground Water Quality:

Ground water of the district is colourless, odourless and very slightly alkaline in nature. Electrical conductance ranges from 400-500 micromhos/cm. at 250 C. Out



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of the total samples, 18% of water samples analyzed have high NO₃ (above permissible limit of 45 mg/l). Fluoride is within permissible limit ranging from 0.08-1.0 mg/l. Phosphate is not found in the district. It is observed that ground water quality is suitable for drinking and irrigation purposes. The As (Arsenic) content has been found within permissible limit (10ppb)

Drainage System

The main physical features of the district are largely determined by the three rivers- the Yamuna, the Betwa and the Pahuj, which nearly encircle it. The same characteristics are common to all, varying in proportion to their respective sizes. They are surrounded by a deep network of ravines running one to three kilometers from the streams. These ravines are succeeded by a bank or belt of higher land the surface of which gradually falls the further the river is left behind. The high lands border on the *khadir* Valleys of the Betwa and Pahuj, while the low lands occupy the central tract. The latter is thus a wide flat basin encircled by a narrow rim of higher ground which break up into a network of ravines along the river banks, stretching for some kilometers inland from the streams. The levels are clearly indicated from the situation and direction of the branches of the Betwa canal which follows the watersheds closely. The drainage of the central tract is supplied by two minor streams, the Non and the Melunga which flowing north-eastwards unite some 12 kilometers from the Yamuna bank and join that river at an equal distance to the north of the town of Kalpi, Like the larger rivers they too have carved deep ravines which increase in extent the nearer the Yamuna is approached and as a consequence of their action, the Kalpi Tahsil is cut by a tracery of ravines which have scored the greater portion of soil and having more barren and sterile land than in any other part of the district.



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The natural divisions into which the district falls are clearly marked. Along the outer edge is the ravine belt fringed here and there, by rich alluvial soil, but for most part consisting of low hummocks thickly strewn with *Kankar* . The upland which succeeds the ravines is poor in quality. It has a light coloured hard soil, to the north there is a tract of loam, the characteristics of which resemble those of the doab, but practically the whole of the south and centre of the district beyond the upland, excluding, the area in tahsil Kalpi affected by the Non and Melunga is occupied by the dark *kakar* and the black cotton soil *mar*. With the exception of two rocky outcrops near Saiyidnagar in tahsil Orai, here are no hills in the district and the red soil which is found in the hilly tracts of Jhansi is also absent but in other respects the district is a typical part of Bundelkhand.

Table 1: Drainage System with Description of main rivers

| S.No. | Name of River | Area Covered (Sq.Km.) | % Area Covered |
|-------|---------------|-----------------------|----------------|
| 1. | Yamuna | 21.2 | 0.46 % |
| 2. | Betwa | 14 | 0.30% |
| 3. | Pahuj | 1.65 | 0.036 % |

Table 2: Salient features of Important rivers and streams

| S.No. | Name of River / stream | Total length in the District (in Km) | Place of Origin | Altitude at Origin |
|-------|------------------------|--------------------------------------|--|--------------------|
| 1. | Yamuna | 56 | Yamunotri glacier near Banderpoonch peaks in the Mussourie | 6387 m |



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| | | | | |
|----|--------------|----|------------------------------------|----------|
| | | | range of the lower Himalayas | |
| 2. | Betwa | 28 | Vindhya Range near Bhopal district | 396.24 m |
| 3. | Pahuj | 13 | Jhansi District of Uttar Pradesh | 285 m |

Drainage of Jalaun:-

Yamuna River Yamuna enters in Jalaun District at village Kanjusa It further passes through Marhepura and Shivganj. Subsequently river flows through various villages and the exit from district, near village Ikauna.

Table 3: List of Villages through which River Yamuna passes.

| S.No. | Name of Place/Village | Elevation |
|-------|-----------------------|---------------|
| 1. | Kanjusa | 132 above msl |
| 2. | Marhapura | 132 above msl |
| 3. | Shivganj | 132 above msl |
| 4. | Mahmudpur | 132 above msl |
| 5. | Himmatpur | 132 above msl |
| 6. | Gudha | 132 above msl |
| 7. | Mahtoli | 132 above msl |
| 8. | Patrahi | 132 above msl |
| 9. | Silaua | 132 above msl |
| 10. | Kota Diwara | 132 above msl |
| 11. | Motipur | 131 above msl |
| 12. | Tulakpur | 131 above msl |
| 13. | Bujuwapur | 131 above msl |
| 14. | Paren P.F. | 131 above msl |
| 15. | Romai Dewara | 131 above msl |
| 16. | Khera Mustaqil | 131 above msl |
| 17. | Sipura Mustaqil | 131 above msl |
| 18. | Baghwali Mustaqil | 131 above msl |

