

DISTRICT SURVEY REPORT

of

DISTRICT MAU

AS PER NOTIFICATION NO S.O. 141 (E) NEW DELHI

15th JANUARY, 2016

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE
CHANGE (MOEF&CC)

DIRECTORATE OF GEOLOGY AND MINING
Govt. Of Uttar Pradesh

- **Introduction**

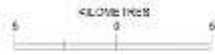
With reference to the gazette notification dated 15th January 2016 of Ministry of Environment, Forest and Climate Change, the entire District divisional commissioner shall constitute- District Environment Impact Assessment Authority (DEIAA) and District Environment Assessment Committee (DEAC) for prior environmental clearance for quarry of minor minerals. The DEIAA and DEAC will scrutinize and recommend the prior environmental clearance to ministry for minor minerals on the basis of district survey report. The main purpose of preparation of District Survey Report is to identify the mineral resources and mining activities along with other relevant data of district. This report shall contain the details of Lease, Sand mining and Revenue which comes from minerals in the district. This report is prepared on the basis of data collected from different concern departments. A survey is carried out by the members of DEIAA with the assistance of Geology Department or Irrigation Department or Forest Department or Public Works Department or Ground Water Boards or Remote Sensing Department or Mining Department etc. in the district

Mau district was carved out of Azamgarh and lies between 25⁰48'35" and 26⁰17'45" north latitude and 83⁰10'50" and 83⁰49'55" east longitude in survey of India Toposheet No. 63 O & 63 N. Total geographical area of the district 1714 Sq.km. District head quarter is at Mau of having (4/four) number of Tehsil and 9 (Nine) number of block. As per the 2011 census the district has population 1493928 of which 747576 males and 746052 females. The decadal growth is 24.28%. Scheduled caste population is 421680 and scheduled tribe population is 430.

The district is surrounded by Ghazipur district on the south, Ballia district in the east and Azamgarh district in the west and north side surrounded by Gorkhpur. Varanasi touches some area in south side. The river Ghagra forms its northern boundary and south

boundary touches Tamsa River.

UTTAR PRADESH DISTRICT MAU



Area (Sq. Km.)	1,772.03
Population	22,05,988
Number of Tahsils	4
Number of Vikas Khands	9
Number of Towns	14
Number of Villages	1,710

G - Part of Gosi Vikas Khand
 Note - District's main headquarters is also the Tahsil/Vikas Khand headquarters.

BOUNDARY - DISTRICT
Tahsil
Vikas Khand
HEADQUARTERS - DISTRICT, TAHSIL, VIKAS KHAND	● ● ●
VILLAGES HAVING 10,000 & ABOVE POPULATION WITH MAJOR URBAN AREA WITH POPULATION SIZE - I, II, III, IV & V	● ● ● ● ●
NAT. CHAL. HIGH-WAY	— NH 23 — NH 24
STATE HIGHWAY
IMPORTANT METALLED ROAD
RAILWAY LINE - BROAD GAUGE
RAILWAY LINE - METRE GAUGE
RIVER AND STREAM

2. Overview of Mining Activity

Mau is situated on the fertile plains of the Ganges–Ghaghara doab. "Khachari" and "Khadar" are types of soil found in the areas of north of Azamgarh - Ballia Road. In some high places "Bangar" soil is also found. In the southern part of the district, river flow is absent, due to which that area has Bangar type of soil, which is not fertile. The river system of the district is dominated by the Tons River and its tributary Choti Sarju.

Only Sand is available as a minor mineral in the district Mau.

3 .List of Mining/Quarry leases with location, area and validity period:

S. No.	Minor Mineral	Tehsil	Village	Gata No	Area (ha)	Validity	Quantity
1	Ordinary Sand	00	00	00	00	00	00

4. Details of Royalty Collected in last 3 years

S. No.	Year	Royalty (in Rs.)
1	2014-15	18943000
2	2015-16	30648000
3	2016-17	40447000

5 (a) .Details of Sand production in district in last 3 years

S.No.	Detail of Sand Mine	Production		
		2014-15	2015-16	2016-17

1	NIL	NIL	NIL	NIL

5(b). Area proposed for e-auction through e-tendering

Name of Minor Mineral	Tehsil	Village	Gata No.	Area (in Ha)	Validity	Reserve	Remarks
Ordinary Sand	Sadar	Sanegpur	01 Mi, 91 Mi, 248 Mi, 249, 250, 251, 252, 253	3.42	00	34260	Mining Area not Cleared
Ordinary Sand	Madhuban	Druhi-Dilia	277 k/18	1.11	00	33450	Mining Area not Cleared

6. Process of Deposition

Weathering cycle of River (Fluvial) comprises of three stages viz. erosion, transportation and deposition.

A river/stream in its course to mouth erodes the country rocks through which it flows. Erosion comprises of mechanical as well as chemical process nowadays man-made erosion also contributes. These eroded sediments then transported by river in suspension or solution until the river runs out of its capacity to transport. When river enters its flood plain or reaches its mouth its velocity gets checked due to widening of its channel

and deposition of sediments takes place. Natural levees, oxbow lakes are depositional features formed by river in its course. Deltas/Alluvial fans/plains are generally formed when a river ends in a ocean/sea. River sediments are generally well sorted and well rounded.

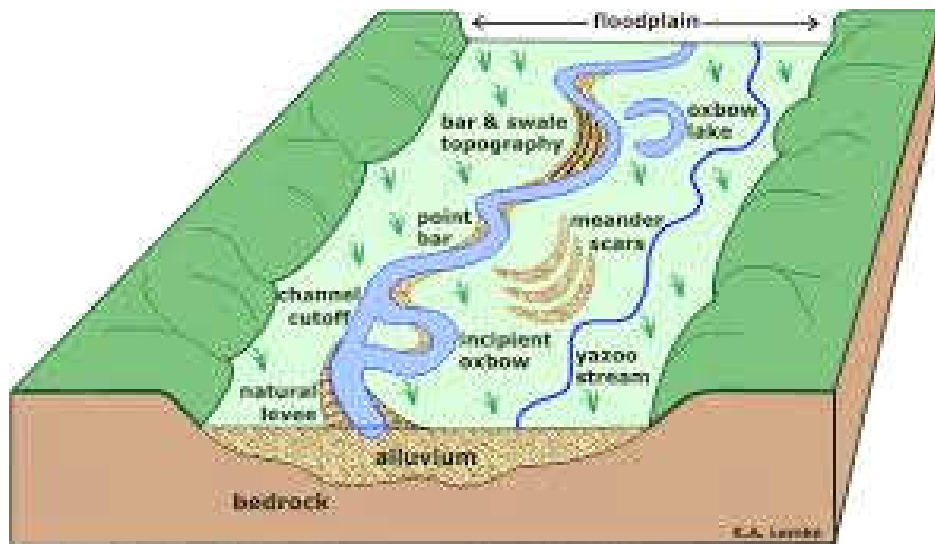


Figure showing process of sedimentation

Following factors impacts river cycle of weathering:

- i. Annual Rainfall
- ii. Geographical Relief
- iii. Geology of the river course
- iv. Discharge of river and its tributaries

v. Activities at nearby rivers (Man-made activities; forestation/deforestation, mining,

ghats)

vi. Engineering structures (Dams, diversions)

vii. Climatic conditions.

7. General Profile of District

S.No	Particular	Year	Unit	
1	Geographical features			
(A)	Geographical Data			
	i) Latitude			24
	ii) Longitude			83
	iii) Geographical Area		Hectares	1,
(B)	Administrative Units			
	i) Sub divisions			0
	ii) Tehsils			4
	iii) Sub-Tehsil			9
	iv) Patwar Circle			0
	v) Panchayat Simitis			92
	vi)Nagar nigam			0
	vii) Nagar Palika			1
	viii) Gram Panchayats			59
	xi) Revenue villages			16
	x) Assembly Area			4
2.	Population			

(A)	Sex-wise			
	i) Male	2011		11
	ii) Female	2011		10
(B)	Rural Population	2011		14
3.	Agriculture			
A.	Land utilization			
	i) Total Area	2010-11	Hectare	1,71,624
	ii) Forest cover	2010-11	“	3,301
	iii) Non Agriculture Land	2010-11	“	2,302
	v) Cultivable Barren land	2010-11	“	13,342
4.	Forest			
	(i) Forest	2010-11	Ha.	
5.	Livestock & Poultry			
A.	Cattle			
	i) Cows	2007	Nos.	
	ii) Buffaloes	2007	Nos.	
B.	Other livestock			
	i) Goats	2007	Nos.	
	ii) Pigs	2007	Nos.	
	iii) Dogs & Bitches	2007	Nos.	
	iv) Railways			

	iv) Railways		
	i) Length of rail line	2010-11	Kms
	V) Roads		
	(a) National Highway	2010-11	Kms
	(b) State Highway	2010-11	Kms
	(c) Main District Highway	2010-11	Kms
	(d) Other district & Rural Roads	2010-11	Kms
	(e) Rural road/ Agriculture Marketing Board Roads	2010-11	Kms

8. Land utilization pattern

Total Area	:	1, 73, 459 Hectares
Forest	:	560 Hectares
Agriculture	:	1, 71,624 Hectares
Mining	:	150 Hectares
Others	:	1125 Hectares

9. Physiography of the district

The district Mau is characterized by various geomorphic units Viz;

- (i) Newer Alluvial Plain
- (ii) Older Alluvial Plain
- (iii) Flood Plain

The master slope of the area is mainly towards north to north-eastern side.

Geographically, the area comprises of quaternary alluvium sediments heterogeneous in nature are deposited over the Vindhayan sandstone and shale in varying thickness. The main and major drainage of district is the river Tons and Chhoti Sarju. The Ghaghara river flowing at the northern flank of district. Its tributaries are small and of an insignificant character.

There are number of Tals / tanks in the district. Agriculture is the main source of economy of the district. Both surface and ground water are used for irrigation. The net irrigated area is 116833 Ha. and the net area sown is 125033 Ha. Length of canal in the district is 397 km. and the number of government tube well is 298.

Mau district is drained by Ganga river system of which Ghaghara, Tons, Chhoti Sarju are tributaries, Ghaghara enters the district through Dohri Ghat block where as the Tons touches the district in extreme west at Mohamadabad block and flows over a length of 60 km. in district.

Flood Plain – The Ghaghara and tones river channel and its adjacent area forming terrace which are subjected to periodic flooding consisting of sand silt clay mainly on old and new flood plain of river. Younger Alluvial plain the area occupied by younger alluvium can be delineated all along Ghaghara river and other tributaries streams draining the district. Newer Alluvium known as ‘Khadar’.

Older Alluival Plain - Older Alluvial remnants largely consisting clay, sand with kankar at depth locally known as 'Bangar'.

Other geomorphic unit is the old mender which occur very gently sloping landform formed by the drying up of abandoned channel, meander loops, these cur-linear channels of the old river preserved as a meander scrolls have good prospect of ground water occurrences.

SOIL:

In Mau district there are three notified type of Soil e.g.

- (i) Inccpti Soils
- (ii) Arid Soils and
- (iii) Enti Soils

(i) Inccpti Soils:

Gray reddish brown soil is the most predominant in the district, there soils are poor in nitrogen, phosphate, potassium and organic matter. This type of soil known as 'Matiyar'.

(ii) Arid Soils:

These soil include black soil and rich in Ca, Mg and also consist of half decomposed organic matter. This type of soil locally known as 'Karail'.

(iii) Enti Soils :

These consist of Alluvial soil occupying the flood plains of major rivers and streams in the district. The older Alluvial soil occurs in the southern parts of river Ghaghara.

Forest

Total area of the Mau district is 1715 sq. Km. Out of which only 1 Sq. Km is dense forest, 15 Sq. Km. moderately dense and 17 sq. km is open forest. Thus, only 1.92% of total geographical area is covered by forest in Mau Districts. The species available in these forests are Mango, Sisam, Mahua, Babool, Neem, Eucalyptus, Palas etc.

10. Rainfall data (Month-wise)

The average annual rain fall in district is 1070 mm, nearly 90% of rain fall received during the month of June to September. The maximum rain fall recorded during month of July and August from south west monsoon. The temperature begins to rise in March and it reaches the peak in the month of May & June when the Mercury touches nearly 45.4⁰C. January is the coldest month when the minimum temperature comes down to

approximately 5⁰C. The relative humidity is highest during south west monsoon ranging between 83% to 87% with lowest around 32% during peak summer of April.

Monthly rainfall data for the year 2016-17

S.No.	Month	Precipitation (in mm)
1	June	147
2	July	322
3	August	363
4	September	227
5	October	48
6	November	06
7	December	03
8	January	21
9	February	07
10	March	13
11	April	05
12	May	14
	Total	1176

11. Geology and Mineral Wealth

(a) Geology of the Ganga Plain

The Indian Subcontinent is subdivided into three major phsiographic subdivisions, the Himalaya, Indo-Gangetic Plain and Peninsular India. The Indo-Gangetic Plain is the extensive alluvial Plain of the Ganga, Indus and Brahmaputra rivers and their tributaries, and sepperates the Himalayan ranges from Peninsular India. The Ganga Plain occupies a central position in the Indo-Gangetic Plain and shows a variety of land forms and drainage system.

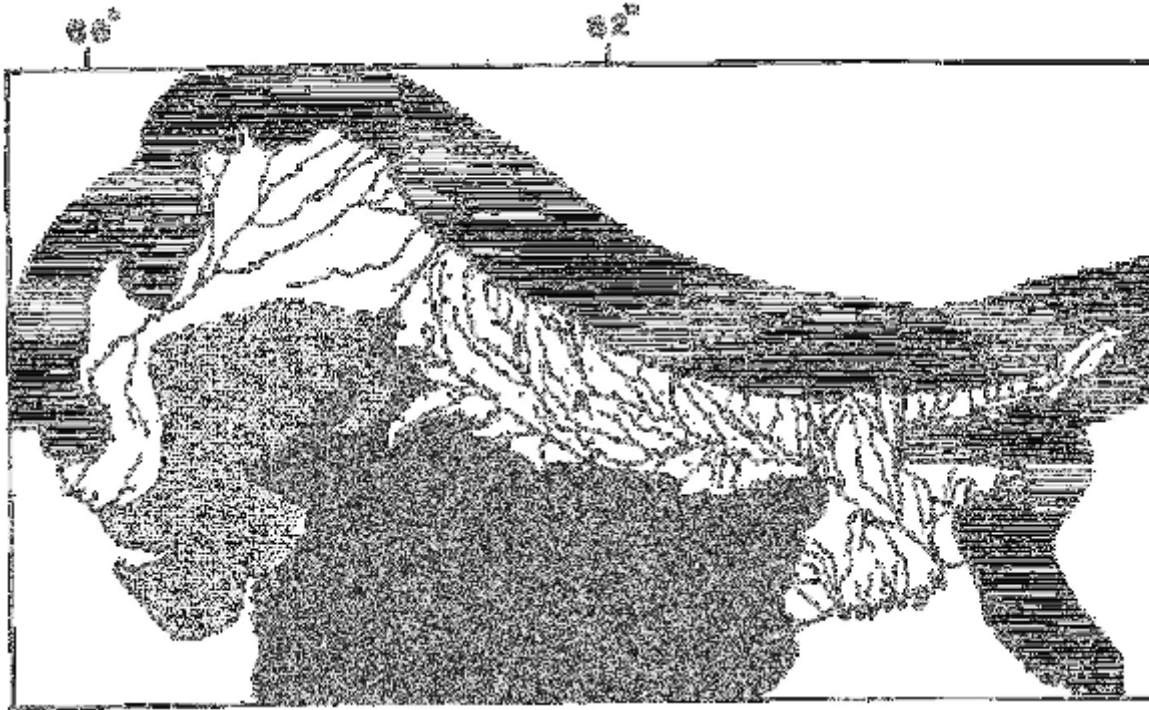


Figure showing the Ganga Plain (A) within the Indo-Gangetic Plain (after Singh, I.B., 1996)

From north to south, the Ganga Plain can be identified into four distinctive regions (Pathaak, 1982).

- *Bhabhar Belt*- This is a 10-30 km wide belt of gravelliferous sediments adjacent to Himalayas with steep slopes and ephemeral streams.
- *Terai Belt*- This is a 10-50 km wide low lying area adjacent to the Bhabhar Belt with extensive development of swamps, ponds, small sandy rivers.

- *Central Alluvial Plain*- This represents the major part of the Ganga Plain, located between the Bhabhar-Terai Belt and the axial river. The drainage is mostly aligned in the SE direction.
- *Marginal Alluvial Plain*- This is the north-sloping surface, located south of the axial river, and characterized by NE-flowing gravelly to coarse sandy rivers showing entrenched meandering. This area is made up of sediments from peninsular craton.

However, it is more practical to identify three broad areas in the Ganga Plain:

- Piedmont Zone (it includes both Bhabhar and Terai Zones)
- Central Alluvial Plain
- Marginal Alluvial Plain

These three areas show distinctive landforms, characteristic deposits, and specific tectonic setting. The areas of Bhabhar and Terai are closely linked. It appears that in the areas where there is intense fan-building Bhabhar is well developed; while in areas of subdued fan building Terai is well developed. With changing fan building activity, Bhabhar can change to Terai and vice-versa. Thus, both are grouped together as piedmont Zone (Singh, I.B., 1996).



Figure showing four –fold subdivision of Ganga Plain in Uttar Pradesh
(After Singh, I.B., 1996)

The Ganga Plain is an active area of sedimentation receiving a huge amount of sediments from the Himalaya, and some from the peninsular craton. Based on borehole data and after identification of gravel, coarse sand, medium sand, fine sand, mud and mud-kankar; The Ganga Plain has been subdivided into the following areas: Doon valley, Bhabhar Zone, Terai Zone, Terai Zone, Terai-ghaghara River, Ghaghara-Gomati interfluve, Gomati-Ganga Interfluve, Ganga-amuna Interfluve and Marginal Alluvial Plain.

The succession in Doon Valley shows about 18% gravel, 16% sand, 66% clay, with gravel horizons increasing in the lower parts. The Bhabhar zone shows 50% gravel, 34% sand, and 16% mud with thicker horizons of gravel in lower part. The Terai zone shows 24% gravel, 36% sand, and 38% mud. The northern part of the Central Alluvial Plain (Terai-Ghaghara zone) shows about 5% gravel, 45% sand and 50% mud. The southern part of the Central Alluvial Plain (Ghaghara-Gomati Interfluve) shows 50% mud-kankar, 20% mud, 20% sand and 10% gravel. The gomati-ganga Interfluve shows 62% mud, 26% gravel, 8% sand, and 4% kankar. The Ganga-Yamuna Interfluve shows 45% gravel-coarse sand, 35% medium to fine sand, 20% mud-kankar. The succession of the lower part is of the craton derived sediments. The Marginal Alluvial Plain shows gravel-coarse sand 65%, fine sand 10%, and mud-kankar 25%. The sediments are essentially derived from Peninsular craton.

(b) Geology of District Mau

The geological setup of the district Mau comprises of quaternary sediments classified into older and newer Alluvial.

The quaternary group of sediments are represented by unconsolidated older and younger alluvial. The older alluvium occupies the central part of district on higher ground (upland) and is known as Bhangar.

The older Alluvial comprises of coarse gravel with calcareous nodular. (Kankar), Reh on the ground. Recent alluvium occupies the lower ground consist of thick sequence of clay, silt & sand.

	Group	Member	Lithology
Quaternary	Upper Pleistocene	Newer Alluvium	Clay silt & sand
	Upper middle Pleistocene	Older Alluvium	Brown clay, loamy sand with Kankar

GEOLOGICAL MAP OF UTTAR PRADESH

Scale 1:250,000



LEGEND

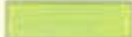









	Recent River Fill Sediment		Bhandar Group
	Younger Alluvium		Rewa Group
	Older Alluvium		Kaimur Group
	Talchar Formation		Sonri Group
			Mahakoshal Group
			Bundelkhand / Dudhwa Granitic Complex

Figure showing generalized geological map of Uttar Pradesh
showing location of Mau

11 (c). Salient features of Important Rivers and Streams

S.No.	Name of River or Stream	Total length in the District (in km)	Place of origin	Altitude at Origin (m)
1	Ghaghara	50	Mapchachungo Glacier, Tibet	3962
2	Tons	56	Bandarpunch, Uttarakhand	6316

11 (d) Mineral Potential in the area

Boulder (MT)	Bajari (MT)	Sand (MT)	Total Mineable Mineral Potential
NIL	NIL	3.25	3.25