BEFORE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 427/2025
(IA NO. 573/2025)

IN THE MATTER OF:

AMEEL KHAN **....APPLICANT**

VERSUS

STATE OF UTTAR PRADESH & ORS. **....RESPONDENT(S)**

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DATED: - 13.04.2026

FILED THROUGH

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BEFORE NATIONAL GREEN TRIBUNAL
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ORIGINAL APPLICATION NO. 427/2025
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IN THE MATTER OF:

AMEEL KHAN **....APPLICANT**

VERSUS

STATE OF UTTAR PRADESH & ORS. **....RESPONDENT(S)**

SUPPLEMENTARY AFFIDAVIT OF DISTRICT MAGISTRATE, SAHARANPUR, UTTAR PRADESH

I, **Manish Bansal** aged about **36** years, S/o Shri **Ram Avtar Bansal**, posted as District Magistrate, Saharanpur, Uttar Pradesh do hereby solemnly affirm and state as under:

1. That, I the Deponent in the above captioned matter, am fully conversant with the facts of the case and am competent and authorized to swear the present reply.

2. That, I state that the contents of this reply have been drafted by my counsel on my instructions, and the contents of the same are true to my knowledge and nothing material has been concealed therefrom.

3. That the Deponent had earlier filed a Reply Affidavit on 11.11.2025, in compliance of the order dated 26.08.2025 passed by this Hon'ble Tribunal, commencing from Page No. 775 to Page No. 804, wherein a detailed Reply to the present Original Application was filed, however certain important facts incumbent for proper adjudication of the present Original Application were left to be mentioned in the said Reply Affidavit, which are brought on record vide the present Supplementary Affidavit.

4. That it is respectfully submitted that the present Original Application is not a bona fide Application, but is a misconceived and motivated attempt to stall and obstruct a duly established statutory process. The Applicant has neither participated in the statutory procedure of inviting objections to the District Survey Report (DSR), nor has placed on record any credible scientific or technical material to substantiate the sweeping allegations made therein. The challenge raised is founded upon selective reading, misinterpretation, and suppression of material facts, including the due consideration of replenishment studies and compliance with applicable guidelines by competent authorities. The timing of the present Application, coupled with

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the nature of averments made, clearly indicates that the same has been instituted with an ulterior intent to delay and to create unwarranted impediments in administrative functioning.

I. INITIAL DISTRICT SURVEY REPORT, SAHARANPUR

5. That, the District Survey Report (DSR) for District Saharanpur was duly prepared and approved in the year 2017 under the then prevailing DEAC/DEIAA regime, in accordance with *Appendix-X* of the MoEF&CC Notification dated **15.01.2016**, for a validity period of ***five (5) years***. A copy of EIA Notification, 2006 and MoEF&CC Notification dated 15.01.2016 are collectively being annexed as **Annexure No. SA 1** to this affidavit.

6. That the Hon'ble Tribunal, vide order dated **13.09.2018** in **O.A. No. 186/2016**, ***Satendra Pandey v. Ministry of Environment, Forest and Climate Change &Anr.***, **abolished DEIAA/DEAC** and held that the Notification dated 15.01.2016, amending the EIA Notification, 2006 and permitting grant of Environmental Clearance (EC) by DEIAA for 'B-2' category projects (0–25 hectares) without public consultation, resulted in a gross dilution of the EIA Notification dated 14.09.2006 and was in contravention of the judgment of the Hon'ble Supreme Court in ***Deepak***

***Kumar v. State of Haryana*, (2012) 4 SCC 629**. The Hon'ble Tribunal further directed that the procedure prescribed under the Notification dated **15.01.2016** be brought in consonance with the directions issued in ***Deepak Kumar* (supra)**, and that Form-1M be made more comprehensive for areas up to 5 hectares, with appraisal to be undertaken by SEAC and recommendation for grant of EC to be made to SEIAA, instead of DEAC/DEIAA. A copy of the order dated 13.09.2018 passed by this Hon'ble Tribunal is being annexed as**Annexure No. SA 2** to this affidavit.

7. That pursuant to the ***Satendra Pandey Judgement***, Secretary, Mining and Geologyvide letter dated **01.06.2020**constituted a **State Level Technical Committee for evaluation and approval of the DSRs**. The said letter records that, in terms of *Clause 4.1.1(a)* of the EMGSM Guidelines, 2020, the DSR is required to be prepared by the State Government prior to auction/e-auction or grant of mining lease/Letter of Intent (LoI), **and that proposals for modified/updated/new DSRs received from various districts were pending approval.It was, therefore, decided that the State Level Technical Committee shall evaluate/appraise and Director, Geology and Mining will approve such DSRs till issuance of a formal notification by MoEF&CC, Government of India**. A copy of the letter dated 01.06.2020 along with a copy of SSMG, 2016 and the EMGSM, 2020 are collectively being annexed as**Annexure No. SA 3** to this affidavit.

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8. That vide letter dated **03.12.2021**, the District Magistrate, Saharanpur sought approval from the Director, Mining and Geology Department, Uttar Pradesh for inclusion of 10 newly proposed lease areas in the DSR. The said amended DSR dated **03.12.2021**, which formed the basis for the proposed auction of new lease areas, was subsequently challenged before this Hon'ble Tribunal in **O.A. No. 403/2022, *Daljeet Singh v. State of Uttar Pradesh & Ors.***, wherein the Hon'ble Tribunal, vide order dated **30.05.2022**, was pleased to issue notice to the respondents. A copy of the letter dated 03.12.2021 is being annexed as**Annexure No. SA 4** to this Affidavit.

II. PREPARATION OF DSR SAHARANPUR, 2022 BY THE SDC

9. That in compliance with the order dated **10.11.2021** passed by the Hon'ble Supreme Court in ***State of Bihar & Ors. v. Pawan Kumar & Ors.*,Civil Appeal Nos. 3661–3662 of 2020**, as well as the **SSMG, 2016** and the **EMGSM, 2020** the District Magistrate, Saharanpur, vide letter dated **02.05.2022**, constituted a **Sub-Divisional Committee** (SDC) for conducting the replenishment study and preparing the DSR for the district Saharanpur.A copy of the letter dated 02.05.2022 is being annexed as **Annexure No. SA 5** to this affidavit.

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10. That it is most humbly submitted, after the constitution of the SDC, detailed preparatory work, including pre-monsoon and post-monsoon replenishment studies for year 2022, along with field investigations and other compliance exercises for preparation of the DSR, were carried out over a period of around seven months by the SDC along with technical equipment assistance from firm M/s Green India Consulting Private Ltd., Vaishali, Ghaziabad, Uttar Pradesh.

11. That, the facts regarding the conduction of replenishment studies and preparation of the Draft DSR were disclosed in pleadings before this Hon'ble Tribunal by way of affidavit **in O.A. No. 403/2022, *Daljeet Singh v. State of Uttar Pradesh & Ors.*** The Hon'ble Tribunal, vide order dated **25.01.2023**, while acknowledging that a Draft DSR (2022) for District Saharanpur had been prepared and that replenishment studies had been conducted prior thereto, was pleased to pass the following directions:

"...3. Reply has been filed by the Mining Department, U.P to the effect that replenishment study had been conducted prior to the Draft Survey Report for Saharanpur River Bed Mining 2022. The DSR is at draft stage and is yet to be finalized.

4. In view of above, no further order is necessary. The application is disposed of. All IAs also stand disposed of..."

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A copy of the Hon'ble NGT order dated 25.01.2023 in O.A. 403/2022 is being annexed as**Annexure No. SA 6** to this affidavit.

12. That, it is respectfully submitted that the allegation of the Applicant that the EMGSM Guidelines, 2020 have not been followed while preparing the DSR is wholly erroneous, misconceived, vague and misleading. It is submitted that the draft DSR was duly uploaded on the district website for public notice, and objections/suggestions, including those pertaining to compliance with EMGSM, 2020, were received, considered and duly addressed by the District Magistrate/SDC. The same was duly communicated by the District Magistrate to the Director, Mining and Geology vide letter no. **89/DSR** dated **18.04.2024**. It is further submitted that the Applicant failed to avail the opportunity to raise any objections during the prescribed period of 30 days. Notably, identical objections were raised by one Sumit Singh Rana S/o Kanwar Pal Singh during the 30 days objection period, which were duly considered and resolved at that stage. The present allegations, therefore, appear to be an afterthought and are being raised only to protract the proceedings and create unwarranted impediments in the implementation process. A copy of letter dated 18.04.2024 is being annexed as **Annexure No. SA 7** to this affidavit.

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III. APPROVAL OF DSR 2022 BY DIRECTOR, GEOLOGY AND MINING DEPARTMENT, UTTAR PRADESH

13. That, vide letter dated **01.02.2023**, the District Magistrate, Saharanpur sought approval of the DSR from the Director, Geology and Mining Department, Uttar Pradesh. That, thereafter, the DSR was placed before the State Level Technical Expert Committee in its meeting dated **10.03.2023** for appraisal and consideration. That, pursuant to the recommendations of the said Committee, the DSR was formally approved by the Geology and Mining Department on **27.03.2023**. A copy of letters dated 01.02.2023, 10.03.2023 and 27.03.2023 are collectively being annexed as **Annexure No. SA 8** to this affidavit.

IV. CLARIFICATION SOUGHT BY SEIAA FROM MoEF&CC REGARDING THE MECHANISM AND COMPETENT AUTHORITY FOR APPROVAL OF THE DSRs POST ABOLITION OF DIEAA/DEAC VIDE HON'BLE NGT ORDER IN SATENDRA PANDEY

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14. That, vide letter dated **16.11.2023**, the Member Secretary, SEIAA addressed a communication to MoEF&CC seeking clarification regarding the proper mechanism, competent authority and proper stage for approval of District

Survey Reports. In the said communication, it was, inter alia, stated that the EIA Notification, 2006 (as amended) does not expressly provide for approval of DSR by SEIAA/SEAC; that the Notification dated **15.01.2016** mandates preparation of DSR but the DEIAA mechanism is no longer in existence vide Hon'ble NGT Order in *Satendra Pandey* matter;and that, while EMGSM, 2020 mandates preparation of DSR prior to auction/LoI, there existed ambiguity as to the competent approving authority in the absence of a specific notification.A copy of letter dated 16.11.2023 is being annexed as **Annexure No. SA 9** to this affidavit.

15. That in response thereto, the MoEF&CC, vide letter dated **04.12.2024**, clarified that the DSR is required to be appraised and approved by SEAC/SEIAA in terms of the judgments of the Hon'ble Supreme Court in ***Pawan Kumar*** and ***Subhash Bhai Parmar*** matters.A copy of letter dated 04.12.2023 is being annexed as **Annexure No. SA 10** to this affidavit.

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V. APPROVAL OF THE DSR2022 BY THE SEIAA FOR THE BALANCE PERIOD OF 3 YEARS

16. That, it is most humbly submitted that pursuant to the clarification issued by MoEF&CC vide letter dated **04.12.2023** mentioned in the para above, the District Magistrate, Saharanpur, vide letter dated **18.12.2023**, (within 15

days of MoEF&CC clarification) sought appraisal of the DSR (2022) for District Saharanpur from the Member Secretary, SEAC (for 22 mining sites). That, thereafter, the DSR was appraised by SEAC in its meeting dated **03.05.2024, wherein SEAC acknowledged the existence and validity of the DSR since 2022 and the Replenishment Studies 2022,2023 and recommended its approval for the balance remaining period of three years** (with respect to 21 out of 22 mining sites). A copy of the Letter dated 18.12.2024 and M.O.M. dated 03.05.2024 are collectively being annexed as **Annexure No. SA 11** to this affidavit.

17. That pursuant thereto, the DSR (2022) was approved by SEIAA on **24.05.2024**, and a formal approval letter in respect of the DSR for District Saharanpur was issued by the Member Secretary, SEIAA on **07.06.2024**. A copy of the letters dated 24.**05.2024** and **07.06.2024** are collectively being annexed as **Annexure No. SA 12** to this affidavit.

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VI. REGARDING REPLENISHMENT STUDIES CARRIED OUT IN YEARS 2022,2023, 2024AND THE E-AUCTION NOTICES

18. That, it is respectfully submitted that the replenishment studies for District Saharanpur were duly conducted by the SDC during both pre-monsoon and post-monsoon seasons for the years 2022, 2023 and 2024, in strict

compliance with the MoEF&CC Notifications of 2016 and 2018, the SSMG, 2016 and the EMGSM, 2020. It is further submitted that the said studies were respectively uploaded on the district website in compliance with the conditions stipulated in the Minutes of Meeting dated 24.05.2024 of the 814th Meeting of SEIAA. A copy of Replenishment Studies 2022, 2023 and 2024 are being collectively annexed as **Annexure No. SA 13** to this affidavit.

A copy of SIEAA 814th Meeting SOP/MOM dated 24.05.2024 is being annexed as **Annexure No. SA 14** to this affidavit.

19. That, it is humbly submitted that the Applicant has, on a selective and incorrect reading of the record, alleged that the replenishment study of 2022, on the basis of which the DSR has been prepared, was not considered by SEAC/SEIAA while approving the DSR, and further that the replenishment study of the year 2023 was neither considered nor perused by SEAC/SEIAA at the time of approval of the DSR, 2022 in May, 2024. It is respectfully submitted that the said allegations are wholly misconceived, baseless and misleading. In support of such averments, the Applicant has relied upon an erroneous and misconceived interpretation of documents, including the Minutes of Meeting of SEAC dated 03.05.2024 (*kindly refer to Annexure-12A of the present affidavit*). However, a bare perusal of the said Minutes of Meeting clearly demonstrates that the replenishment studies for both the

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years 2022 and 2023 were duly placed before SEAC, along with a detailed presentation made by the District Mining Officer (Member, SDC, Saharanpur). The relevant extracts of the Minutes of Meeting are reproduced hereinbelow:

"...The District Magistrate, Saharanpur submitted the draft DSR vide its letter no. 2613/kha anu/DSR/2023-24, dated 18/12/2023 for evaluation /appraisal/approval before SEIAA/SEAC. The draft DSR was forwarded to the Director – Geology & Mining by Secretariat for comments and suggestions. The Director, Geology & Mining has provided his comments and suggestions vide letter no. 85/DSR, dated 19/04/2024 and mentioned as follows:

उत्तर प्रदेश शासन द्वारा गठित तकनीकी समिति एवं निदेशालय स्तर पर गठित समिति द्वारा जनपद सहारनपुर द्वारा प्रस्तुत ड्राफ्ट डी०एस०आर० का परीक्षण किया गया । परीक्षण में प्रस्ताव *Sustainable Sand Mining Management Guideline-2016,* पर्यावरण वन एवं जलवायु परिवर्त नमंत्रालय की अधिसूचना दिनांक *15-01-2016* एवं दिनाक*25-4-2018 Enforcement and Monitoring Guidelines for Sand Mining-2020* एवं *SEIAA/SEAC* द्वारा जारी *SOP* के अनुरूप पाया गया... "

*"...**Evaluation/Appraisal in Joint Meeting of SEAC-1 & SEAC-2 on 03/05/2024***

Joint meeting of SEAC-1 & SEAC-2 was convened on 03/05/2024 for evaluation/appraisal of DSR of District-Saharanpur. Based on the documents submitted, a presentation on DSR Saharanpur for minor mineral River Bed Material - RBM (Sand/Bajri/Boulder) / Sand Mining-

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2022 was made by Shri Subhash Singh, District Mining Officer-Saharanpur along with Senior Officials of D.G.M. –UP..."

*"...**SEAC Deliberation:***

1 SEAC asked about the current scenario/status of the leases as DSR was updated in year- 2022?

District Mining Officer, Saharanpur vide letter dated 03/05/2024 informed the DSR of district Saharanpur was prepared in year-2022 after conducting replenishment studies in which the reserves were calculated on the basis of replenishment in the post-monsoon – 2022 scenario. Lease wise replenishment studies were also conducted in year – 2023 which depicts that the rate of replenishment is good in the area. Geologically the area is part of shivalik region and there is no significant change in the formation of leases. The leases are getting over replenished and requires removal of deposits to maintain channel of river. The maximum leases are fresh for which LoI has been issued to project proponents who are in the process of securing E.C..."

20. That, it is written in the MOM dated 03.05.2024 that the DSR (2022) was duly forwarded by SEAC to the Director, Geology and Mining Department for comments and suggestions, and was thereafter examined by the Technical Committees constituted at the level of the Government of Uttar Pradesh as well as the Geology and Mining Department**, which found the same to be in conformity with the SSMG, 2016, EMGSM, 2020 and the applicable SEIAA/SEAC SOP.It is further submitted that the EMGSM,**

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2020 specifically provides for replenishment studies under Clause 5.0, along with the generic structure and methodology thereof under Clauses 5.1 and 5.2.In view thereof, it is implicit from the findings and approvals of the aforesaid Committees that the replenishment studies 2022 and 2023 had been duly carried out and were placed before the concerned authorities at the time of appraisal and approval of the DSR.

21. That, in furtherance of the aforesaid, it is respectfully submitted that the MOM dated **03.05.2024** also record that the District Mining Officer, Saharanpur, vide letter dated 03.05.2024, categorically informed that **the DSR for District Saharanpur had been prepared in the year 2022 after conducting replenishment studies, wherein the reserves were assessed on the basis of post-monsoon replenishment for the year 2022, and that further lease-wise replenishment studies were also undertaken in the year 2023, indicating a satisfactory rate of replenishment in the area.The said position was also placed before SEAC through a detailed presentation on the DSR (2022) by the District Mining Officer, Saharanpur, along with supporting documents**, thereby clearly evidencing that the replenishment studies forming the basis of the DSR, including subsequent study inputs, were duly placed before the Committee at the time of appraisal.

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22. That, the Applicant, on a wholly selective, misleading and self-serving reading of the record has place reliance on **letter no. 80/Kj.An./Replenishment-Study/2023-24 dated 09.04.2025** issued by the ADM, Saharanpur to SEIAA, U.P in order to allege that the replenishment study for the year 2023 was not submitted to SEIAA/SEAC at the time of appraisal/approval. It is submitted that the said allegation is not only misconceived but is demonstrably false and based on a deliberate misinterpretation of the record. The Applicant has failed to place any material on record to substantiate the bald assertion that replenishment studies were not before the competent authorities at the relevant time, and instead seeks to draw an untenable inference from a subsequent communication dated **09.04.2025**. It is further submitted that the said letter dated **09.04.2025** was part of a normal administrative exercise and does not, in any manner, indicate first-time submission of the replenishment study of 2023. **On the contrary, pursuant to oral directions of SEIAA, not only was the replenishment study for the year 2023 forwarded, but the replenishment study for the year 2024 was also submitted on the same date, i.e., 09.04.2025, vide letter no. 126/Kh.An./Replenishment-Study/2023-24.** The Applicant has, therefore, attempted to mislead this Hon'ble Tribunal by suppressing material facts and by placing reliance on a document wholly out of context, and the allegations so made deserve to be

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rejected outright. A copy of both letters dated 09.04.2025 are collectively being annexed as **Annexure No. SA 15** to this affidavit.

23. That, it is most humbly submitted that the Applicant has falsely and erroneously alleged that the replenishment studies for District Saharanpur were not conducted by a credible institution. The said allegation is wholly misconceived and an afterthought. It is submitted that the replenishment studies, which form an integral and foundational basis of the DSR, were duly conducted by the Sub-Divisional Committee (SDC), comprising officers of the State Government from various departments, in strict compliance with the MoEF&CC Notifications of 2016 and 2018, the SSMG, 2016 and the EMGSM, 2020, and thus constitute a competent and credible process. The said process stands duly recognized and supported by the judgment of the **Hon'ble Supreme Court vide order dated 10.11.2021 in Civil Appeal Nos. 3661–3662 of 2020, *State of Bihar & Ors. v. Pawan Kumar & Ors.*,** wherein the Hon'ble Supreme Court was pleased to observe as follows:

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"13. We further find that when the 2020 guidelines as well as the notification issued by MoEF and CC of 2016 itself provide for constitution of subdivisional committees comprising of the officers of the

State Government from various Departments for identification of the potential sites for mining, there would be no necessity of the DSRs being prepared through private consultants as directed by the Tribunal in the impugned order. The subdivisional committee consists of various officers from Revenue Department, Irrigation Department, State Pollution Control Board, Forest Department and Geology Mining Department of the State Government. They are better equipped to visit the sites and prepare the draft DSR for the concerned district. Apart from that, preparation of DSR through private consultants would also unnecessarily burden the public exchequer. We are therefore of the view that the direction in that regard issued by the Tribunal requires to be modified..."

A copy of the Hon'ble Supreme Court order dated 10.11.2021 is being annexed as**Annexure No. SA 16** to this Affidavit.

24. That, the Applicant has wrongly alleged that since the DSR (2022) has been approved by SEIAA for a balance period of three years, the issuance of auction notices for a period of five years is impermissible. It is respectfully submitted that such an allegation is wholly misconceived and proceeds on a fundamental misunderstanding of the statutory scheme governing DSR and the mining lease process. **The DSR is a planning document for minor minerals, required to be updated periodically (ordinarily once in five years), and upon its approval, it forms the basis for subsequent**

processes such as e-auction, grant of Letter of Intent (LoI), preparation of mining plan, Terms of Reference (ToR), public hearing and grant of Environmental Clearance (EC). The validity and operation of a DSR is not, and cannot be, always coterminous with the tenure of individual mining leases or EC, as the process of DSR preparation itself involves pre- and post-monsoon replenishment studies and takes considerable time, followed by further stages post-auction which independently require several months for completion. The auction and EC processes, therefore, operate sequentially and not in a strictly parallel or coterminous manner. It is further submitted that, in practice, the district administration ensures continuity of mining operations by conducting auctions promptly after DSR approval; however, timelines may vary due to practical contingencies such as unsuccessful auctions, forfeiture or surrender by bidders, necessitating re-auction of the same leases. Similarly, instances may arise where a leaseholder exits before completion of the EC tenure, in which case fresh auctions are conducted for the remaining period without requiring preparation of a fresh DSR mid-cycle. In the present case, the DSR for District Saharanpur was approved in June 2024 for the balance period up to June 2027, and the SDC is duly conscious of the requirement to ensure continuity by preparing and obtaining approval of the next DSR before expiry of the current one. The existing DSR presently covers 21 leases, which, subject to replenishment studies and viability assessment, will be

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considered in the subsequent DSR as per applicable guidelines. Hence, the Applicant's attempt to equate the validity of the DSR with the tenure of auction or EC is legally untenable and factually incorrect.

25. That, it is most humbly submitted that the Applicant has alleged that the Replenishment Study for the year 2024 has not been conducted in compliance with the EMGSM, 2020, inter alia Clause 5.2.4 thereof, on the ground that certain requisite details have not been included. It is respectfully submitted that the said allegation is wholly false, misleading and baseless. A bare perusal of the replenishment study report for the year 2024 clearly demonstrates that the details falsely alleged to be omitted are, in fact, duly incorporated therein, specifically at ***page no. 2 and pages 73–163 of the said report***, the voluminous contents whereof are not reproduced herein for the sake of brevity.

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VII. ASSESSMENT OF MINEABLE QUANTITY UNDER THE REPLENISHMENT STUDIES

26. That, it is respectfully submitted that the allegation of the Applicant that the quantities auctioned for the sand ghats exceed the replenishment rates of the year 2024 is wholly misconceived, factually incorrect and based on a fundamental misunderstanding of the methodology prescribed under the

SSMG, 2016 and EMGSM, 2020. **The determination of mineable quantity is not solely dependent on the replenishment figure of a single year, but is based on a scientific assessment of overall mineral potential, replenishment behaviour and regulatory extraction limits. At the outset, potential mineral-bearing lease areas are identified and demarcated. Thereafter, prior to initiating any pre-monsoon and post-monsoon assessment exercise, the Sub-Divisional Committee (SDC) ascertains the maximum annual extractable quantity for the proposed lease by applying the principles of SSMG, 2016 and EMGSM, 2020.**

27. That, it is submitted that, for such determination, the SDC specifically follows the principles under EMGSM, 2020, including Section 4.3(r), which provides that the area for removal of minerals shall generally not exceed 60% of the mine lease area, unless supported by a scientific report. **The SDC also takes into account that mining at any point of time is not permitted beyond a depth of 3 meters under the applicable guidelines. Accordingly, the maximum extractable quantity is determined by applying these constraints, i.e., up to 60% of the lease area and a depth of 3 meters. Once such maximum extractable quantity is ascertained, the SDC proceeds to undertake the actual assessment exercise to determine whether sufficient mineral exists in the lease. For this purpose, pre-monsoon reserves are calculated, followed by post-**

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monsoon replenishment studies. The results of pre-monsoon reserves and post-monsoon replenishment are then aggregated to determine the overall mineral available in the lease in the post-monsoon scenario. It is only where such overall mineral availability is equal to or greater than the maximum extractable quantity (as determined on the basis of 60% area and 3 meters depth) that the lease is proposed in the DSR.

28. That further it is pertinent to mention in addition to the aforementioned paragraphs that that during the period from 2017 to 2022, no mining activities were undertaken in the said fourteen (14) areas. As stated hereinabove, the District Survey Report (DSR) prepared in the year 2017 remained in force for the period up to the year 2022.

NOTARY PUBLIC GOVT. OF INDIA Kalesh Annam Advocate & Notary Distt. Sanarpur Reg.-8288/11

29. That in the year 2022, the process for preparation of a fresh District Survey Report (DSR) was duly undertaken in accordance with the applicable statutory framework. Replenishment Studies were conducted biannually, i.e., during the pre-monsoon and post-monsoon periods, and the data so generated was systematically tabulated and incorporated into the District Survey Report (DSR). The said District Survey Report (DSR) was thus prepared on the basis of comprehensive Replenishment Studies and in strict conformity with the Enforcement & Monitoring Guidelines for Sand Mining, 2020 (EMGSM, 2020). The findings of such studies formed the foundational basis of the DSR prepared in the year 2022.

30. That the said District Survey Report (DSR) was thereafter duly placed in the public domain inviting objections, as mandated under law. Upon consideration of the objections received from stakeholders, the same was forwarded to the State Environment Impact Assessment Authority (SEIAA) for further appraisal.

31. That the process of inviting objections and considering stakeholder inputs ensures adherence to the principles of natural justice, transparency, and participatory decision-making, thereby negating any allegation of arbitrariness or lack of application of mind.

32. That the entire process unequivocally reflects due diligence and judicious application of mind by the concerned authorities at every stage.

NOTARY PUBLIC GOVT. OF INDIA Kareem Ammad Advocate & Notary Distt. Sangareddy Regd. No. 2/2021

33. That it is further submitted that in matters relating to mining, particularly sand mining within a district, the assessment of mineral availability, identification of viable mining areas, and determination of their potential are dynamic processes dependent upon multiple factors, including environmental considerations, geological characteristics, hydrological conditions, and local community requirements. Consequently, the preparation of Replenishment Studies and their incorporation into the District Survey Report (DSR) are subject to scrutiny by expert bodies such

as the SEIAA and the State Expert Appraisal Committee (SEAC), which take into account the demographic and ecological nuances of the region.

34. That in view of the aforesaid, it becomes imperative that the Replenishment Studies, preparation of the District Survey Report (DSR), and its eventual approval are undertaken with due application of scientific and administrative expertise, which has been duly adhered to in the present case.

35. That the District Survey Report (DSR) of 2022 was prepared on the basis of Replenishment Studies conducted prior to and up to the year 2022 and was intended to remain operative for the period 2022–2027. It is pertinent to note that Replenishment Studies are conducted periodically, twice a year, and based on such studies, as well as other relevant factors such as geological attributes and mineral potential, the areas identified for mining may be revised, either by inclusion or exclusion, by the competent authorities. All such revisions are subject to scrutiny and approval by the SEIAA, which remains seized of the matter.

NOTARY PUBLIC GOVT. OF INDIA

36. That as a matter of record, when the SEIAA accorded final approval to the DSR for the period 2022–2027 on 07-06-2024, it had before it the Replenishment Study reports for the years 2022 and 2023. The approval was thus granted after due consideration of the most recent and relevant scientific data, for the remaining period up to the year 2027.

37. That it is respectfully submitted that this Hon'ble Tribunal, while exercising its jurisdiction, examines the decision-making process and is required to ascertain whether the District Survey Report (DSR) has been prepared in accordance with law and established guidelines.

38. That it is a settled proposition of law that policy decisions and technical determinations made by expert bodies such as SEIAA and SEAC, particularly in environmental and mining matters, are entitled to a presumption of correctness and are not to be interfered with lightly, unless shown to be manifestly arbitrary, perverse, or in violation of statutory provisions. The Applicant have failed to demonstrate any such illegality or procedural impropriety in the present case.

NOTARY PUBLIC GOVT. OF INDIA Kailash Anand Advocate & Notary Distt. Gautam Budh Nagar Reg. No. R2/6/11

39. That, in response to the specific averments made by the applicant, it is pertinent to advert to Paragraph 6 at Page 21 of Original Application No. 119 of 2026, wherein the applicant have alleged that the quantities mentioned in the auction notices pertaining to ten (10) sand/RBM blocks, as well as sub-auction notices dated 28.02.2025, have been issued mechanically without application of mind and without conducting Replenishment Studies.

40. That such allegations are wholly misconceived. At the outset, it appears that the applicant have failed to appreciate the statutory framework governing

sand mining and the object and purpose underlying the conduct of Replenishment Studies and preparation of the DSR. Sand mining operations are regulated in accordance with applicable guidelines, wherein the Sub-Divisional Committee is entrusted with the responsibility of determining the maximum permissible annual extraction, taking into account statutory constraints, including those embodied in Paragraphs 27 and 28 of the applicable guidelines.

41. That the burden lies upon the Applicant to substantiate their allegations with cogent material evidence. Bald and unsubstantiated averments, devoid of any expert analysis or scientific data, cannot form the basis for impugning a duly prepared and approved District Survey Report (DSR).

NOTARY PUBLIC Kaleem Ahmad Advocate & Notary Distt. Saharanpur Reg. 828/16 GOVT. OF INDIA

42. That it is evident from the aforesaid that even in cases where Replenishment Studies may indicate higher availability of sand, the extractable quantity is strictly regulated by the State authorities by prescribing limits on depth, area, and other parameters, all of which are based on scientific methodology. The mere availability of larger quantities of sand at particular ghats does not entitle indiscriminate or unregulated extraction.

43. That the Applicanthave failed to demonstrate as to how any alleged procedural irregularity, even if assumed (though not admitted), has caused any prejudice either to the environment or to any legally protected right. In

the absence of demonstrable prejudice, the present challenge is liable to be dismissed.

44. That in view of the foregoing, the contention advanced by the Applicant that the mere similarity in quantities reflected in the auction notices, *ipso facto*, renders the District Survey Report (DSR) arbitrary or liable to be set aside, is wholly misconceived, devoid of merit, and untenable in law. The said plea further betrays a lack of bona fides on the part of the Applicant and reflects an attempt to mislead this Hon'ble Tribunal, thereby disentitling them from any equitable relief on account of their failure to approach with clean hands. It is further submitted that the challenge to the impugned DSR is *ex facie* barred by limitation. Consequently, the present Original Application deserves to be dismissed *in limine* on this ground alone.

NOTARY PUBLIC GOVT. OF INDIA

DEPONENT

VERIFICATION

Verified at _____ on this ____ day of April 2026, that the contents of the above affidavit from paragraphs 1 to __ are true and correct to the best of my knowledge and belief. No part of it is false and nothing material has been concealed therefrom.

DEPONENT

IDENTIFIED BY

KALEEM AHMAD
Advocate
Reg. No.-10533/01
Ch-63, Civil Court, SRE
Mob.-9359206230

12/4/2026

Annexure SA 1

रजिस्ट्री सं० डी० एल०-33004/99

REGD.NO.DL.-33004/99

सत्यमेव जयते

भारत का राजपत्र

The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

No.1067 NEW DELHI, THURSDAY, SEPTEMBER 14, 2006/BHADRA 23, 1928

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 14th September, 2006

S.O. 1533(E).– Whereas, a draft notification under Sub-rule (3) of Rules 5 of the Environment (Protection) Rules, 1986 for imposing certain restrictions and prohibitions on new projects or activities, or on the expansion or modernization of existing projects or activities based on their potential environmental impacts as indicated in the Schedule to the notification, being undertaken in any part of India[1], unless prior environmental clearance has been accorded in accordance with the objectives of National Environment Policy as approved by the Union Cabinet on 18th May, 2006 and the procedure specified in the notification, by the Central Government or the State or Union territory Level Environment Impact Assessment Authority (SEIAA), to be constituted by the Central Government in consultation with the State Government or the Union territory Administration concerned under Sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 for the purpose of this notification, was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) *vide* number S.O. 1324 (E), dated the 15th September, 2005 inviting objections and suggestions from all persons likely to be affected thereby within a period of 60 (sixty) days from the date on which copies of Gazette containing the said notification were made available to the public:

And whereas, copies of the said notification were made available to the public on 15th September, 2005;

And whereas, all objections and suggestions received in response to the above mentioned draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986, read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 and in supersession of the notification number S.O. 60 (E) dated the 27th January, 1994, except

in respect of things done or omitted to be done before such supersession, the Central Government hereby directs that on and from the date of its publication the required construction of new projects or activities or the expansion or modernization of existing projects or activities listed in the Schedule to this notification entailing capacity addition with change in process and or technology shall be undertaken in any part of India only after the prior environmental clearance from the Central Government or as the case may be, by the State Level Environment Impact Assessment Authority, duly constituted by the Central Government under sub-section (3) of section 3 of the said Act, in accordance with the procedure specified hereinafter in this notification.

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[1] Includes the territorial waters

2. Requirement of prior Environmental Clearance (EC):

The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category-'A' in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category-'B' in the said Schedule, before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity.

(i) All new projects or activities listed in the Schedule to this notification.

(ii) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities, which cross the threshold limits given in the Schedule, after expansion or modernization.

(ii) Any change in product – mix in an existing manufacturing unit included in Schedule beyond the specified range.

3. State Level Environment Impact Assessment Authority:

(1) A State Level Environment Impact Assessment Authority hereinafter referred to as the SEIAA shall be constituted by the Central Government under sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 comprising of three Members including a Chairman and a Member–Secretary to be nominated by the State Government of the Union territory Administration concerned.

(2) The Member–Secretary shall be a serving officer of the concerned State Government or Union territory administration familiar with environmental laws.

(3) The other two Members shall be either a professional or expert fulfilling the eligibility criteria given in Appendix VI to this notification.

(4) One of the specified Members in sub-paragraph (3) above who is an expert in the Environmental Impact Assessment process shall be the Chairman of the SEIAA.

(5) The State Government of Union territory Administration shall forward the names of the Members and the Chairman referred in sub-paragraph 3 to 4 above to the Central Government and the Central Government shall constitute the SEIAA as an authority for the purposes of this notification within 30 (thirty) days of the date of receipt of the names.

(6) The non-official Member and the Chairman shall have a fixed term of 3 (three) years (from the date of the publication of the notification by the Central Government constituting the authority).

(7) All decisions of the SEIAA shall be unanimous and taken in a meeting.

4. Categorization of projects and activities:

(i) All projects and activities are broadly categorized into two categories – Category-'A' and Category-'B', based on the spatial extent of potential impacts and potential impacts on human health and natural and man made resources.

(ii) All projects or activities included as Category-'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, shall require prior and environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification;

(iii) All projects or activities included as Category-'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfill the General Conditions (GC) stipulated in the Schedule, *will* require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In the absence of a duly constituted SEIAA or SEAC, a Category-'B' project shall be treated as a Category-'A' project.

5. Screening, Scoping and Appraisal Committee:

The same Expert Appraisal Committees (EACs) at the Central Government and SEACs [*hereinafter referred to as the (EAC) and (SEAC) at the State or the Union territory level*] shall screen, scope and appraise projects or activities in Category-'A' and Category-'B' respectively EAC and SEAC's shall meet at least once every month.

(a) The composition of the EAC shall be as given in Appendix VI. The SEAC at the State or the Union territory level shall be constituted by the Central Government in consultation with the concerned State Government or the Union territory Administration with identical composition.

(b) The Central Government may, with the prior concurrence of the concerned State Governments or the Union territory Administrations, constitutes one

SEAC for more than one State or Union territory for reasons of administrative convenience and cost.

(c) The EAC and SEAC shall be reconstituted after every 3 (three) years.

(d) The authorised members of the EAC and SEAC, concerned, may inspect any site(s) connected with the project or activity in respect of which the prior environmental clearance is sought, for the purposes of screening or scoping or appraisal, with prior notice of at least 7 (seven) days to the applicant, who shall provide necessary facilities for the inspection.

(e) The EAC and SEACs shall function on the principle of collective responsibility. The Chairperson shall endeavour to reach a consensus in each case, and if consensus cannot be reached, the view of the majority shall prevail.

6. Application for Prior Environmental Clearance (EC):

An application seeking prior environmental clearance in all cases shall be made in the prescribed Form 1 annexed herewith and Supplementary Form 1A, if applicable, as given in Appendix II, after the identification of prospective site(s) for the project and/or activities to which the application relates, before commencing any construction activity, or preparation of land, at the site by the applicant. The applicant shall furnish, alongwith the application, a copy of the pre-feasibility project report except that, in case of construction projects or activities (item 8 of the Schedule) in addition to Form 1 and the Supplementary Form 1A, a copy of the conceptual plan shall be provided, instead of the pre-feasibility report.

7. Stages in the Prior Environmental Clearance (EC) Process for New Projects:

(i) The environmental clearance process for new projects will comprise of a maximum of four stages, all of which may not apply to particular cases as set forth below in this notification. These four stages in sequential order are:-

- Stage (1) Screening (Only for Category-'B' projects and activities)
- Stage (2) Scoping
- Stage (3) Public Consultation
- Stage (4) Appraisal

I. Stage (1) – Screening:

In case of Category-'B' projects or activities, this stage will entail the scrutiny of an application seeking prior environmental clearance made in Form 1 by the concerned State Level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of an Environment Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending upon the nature and location specificity of the project. The projects requiring an Environmental Impact Assessment report shall be termed Category-'B1' and remaining projects shall be termed Category-'B2' and will not require and environment Impact Assessment report. For categorization of projects into B1 or B2 except item 8(b), the Ministry of Environment and Forests shall issue appropriate guidelines from time to time.

II. Stage (2) – Scoping:

(i) "Scoping": refers to the process by which the Expert Appraisal Committee (EAC) in the case of Category-'A' projects or activities, and State Level Expert Appraisal Committee (SEAC) in the case of Category-'B1' projects or activities, including applications for expansion and/or modernization and/or change in product mix of existing projects or activities, determine detailed and comprehensive Terms of Reference (TOR) addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report in respect of the project or activity for which prior environment clearance is sought. The Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned shall determine the Terms of Reference on the basis of the information furnished in the prescribed application Form 1/Form 1A including Terms of Reference proposed by the applicant, a site visit by a sub-group of Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned only if considered necessary by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned, Terms of Reference suggested by the applicant if furnished and other information that may be available with the expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned. All projects and activities list as Category-'B' in Item 8 of the Schedule (Construction / Township / Commercial Complexes / Housing) shall not require Scoping and will be appraised on the basis of Form 1/Form 1A and the conceptual plan.

(ii) The Terms of Reference (TOR) shall be conveyed to the applicant by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) as concerned within 60 (sixty) days of the receipt of Form 1. In the case of Category-'A' Hydroelectric projects Item 1(c) (i) of the Schedule the Terms of Reference shall be conveyed alongwith the clearance for pre-construction activities. If the Terms of Reference are not finalized and conveyed to the applicant within 60 (sixty) days of the receipt of Form 1, the Terms of Reference suggested by the applicant shall be deemed as the final Terms of Reference approved for the EIA studies. The approved Terms of Reference shall be displayed on the website of the Ministry of Environment and Forests and the concerned State Level Environment Impact Assessment Authority.

(iii) Applications for prior environmental clearance may be rejected by the regulatory authority concerned on the recommendation of the EAC or SEAC concerned at this stage itself. In case of such rejection, the decision together with reasons for the same shall be

communicated to the applicant in writing within 60 (sixty) days of the receipt of the application.

III. Stage 3 – Public Consultation:

(i) "Public Consultation" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view of taking into account all the material concerns in the project or activity design as appropriate. All Category-'A' and Category-B1 projects or activities shall undertake Public Consultation, except the following:-

(a) modernization of irrigation projects [*item 1 (c) (ii) of the Schedule*].

(b) all projects or activities located within industrial estates or parks *[item 7(c) of the Schedule]* approved by the concerned authorities, and which are not disallowed in such approvals.

(c) Expansion of Roads in Highways *[item 7(f) of the Schedule]* which do not involve any further acquisition of land.

(d) all Building /Construction projects/Area Development projects and Townships (item 8).

(e) all Category-'B2' projects and activities.

(f) all projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government.

(ii) The Public Consultation shall ordinarily have two components comprising of:-

(a) a public hearing at the site or in its close proximity – district-wise, to be carried out in the manner prescribed in Appendix IV, for ascertaining concerned of local affected persons;

(b) obtain response in writing from other persons having a plausible stake in the environmental aspects of the project or activity.

(iii) The public hearing at, or in close proximity to, the site(s) in all cases shall be conducted by the State Pollution Control board (SPCB) or the Union territory Pollution Control Committee (UTPCC) concerned in the specified manner and forward the proceedings to the regulatory authority concerned within 45 (forty five) days of a request to the effect from the applicant.

(iv) In case the State Pollution Control Board or the Union territory Pollution Control Committee concerned does not undertake and complete the public hearing within the specified period, and /or does not convey the proceeding of the public hearing within the prescribed period directly to the regulatory authority concerned as above, the regulatory authority shall engage another public agency

or authority which is not subordinate to the regulatory authority, to complete the process within a further period of 45 (forty five) days.

(v) If the public agency or authority nominated under the sub paragraph (iii) above reports to the regulatory authority concerned that owing to the local situation, it is not possible to conduct the public hearing in a manner which will enable the views of the concerned local persons to be freely expressed, it shall report the facts n detail to the concerned regulatory authority, which may, after due consideration of the report and other reliable information that it may have, decide that the public consultation in the case need not include the public hearing.

(vi) For obtaining responses in writing from other concerned persons having a plausible stake in the environmental aspects of the projects or activity, the concerned regulatory authority and the State Pollution Control Board (SPCD) or the Union territory Pollution Control Committee (UTPCC) shall invite responses from such concerned persons by placing on their website the Summary EIA report prepared in the format given in Appendix III A by the applicant alongwith a copy of the application in the prescribed form, within 7 (seven) days of the receipt of a written request for arranging the public hearing. Confidential information including non-disclosable or legally privileged information involving Intellectual Property Right, source specified in the application shall not be placed on the website. The regulatory authority concerned may also use other appropriate media for ensuring wide publicity about the project or activity. The regulatory authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours till the date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the applicant through the quickest available means.

(vii) After completion of the public consultation, the applicant shall address all the material environmental concerns expressed during this process, and make appropriate changes in he draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant to the concerned regulatory authority for appraisal. The applicant may alternatively submit a supplementary report to draft EIA and EMP addressing all the concerns expressed during the public consultation.

IV. Stage (4) – Appraisal:

(i) Appraisal means the detailed security by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) of the of the application and other documents like the Final EIA report, outcome of the public consultation including

public hearing proceedings, submitted by the applicant to the regulatory authority concerned for grant of environmental clearance. This appraisal shall be made by Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned in a transparent manner in a proceeding to which the applicant shall be invited for furnishing necessary clarifications in person or through an authorized representative. On conclusion of this proceeding, the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned shall make categorical recommendations to the regulatory authority concerned either for grant of prior environmental clearance on stipulated terms and conditions, or rejection of the application for prior environmental clearance, together with reasons for the same.

(ii) The appraisal of all projects or activities which are not required to undergo public consultation, or submit an Environmental Impact Assessment report, shall be carried out on the basis of the prescribed application Form 1 and Form 1A as applicable, any other relevant validated information available and the site visit wherever the same is considered as necessary by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned.

(iii) The appraisal of an application be shall be completed by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned within 60 (sixty) days of the receipt of the final Environment Impact Assessment report and other documents or the receipt of Form 1 and Form 1A, where public consultation is not necessary and the recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) shall be placed before the competent authority for a final decision within the next 15 (fifteen) days. The prescribed procedure for appraisal is given in Appendix V;

(ii) Prior Environmental Clearance (EC) process for Expansion or Modernization or Change of product mix in existing projects:

All applications seeking prior environmental clearance for expansion with increase in the production capacity beyond the capacity for which environmental clearance has been granted under this notification or with increase in either lease area or production capacity in the case of mining projects or for the modernization of an existing unit with increase in the total production capacity beyond the threshold limit prescribed in the Schedule to this notification through change in process and or technology or involving a change in the product – mix shall be made in Form 1 and they shall be considered by the concerned Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) within 60 (sixty) days, who will decide on the due diligence necessary including preparation of EIA and

public consultations and the application shall be appraised accordingly for grant of environmental clearance.

8. Grant of Rejection of Prior Environment Clearance (EC):

(i) The regulatory authority shall consider recommendations of the EAC or SEAC concerned and convey its decision to the applicant within 45 (forty five) days of the receipt of the recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned or in other words within 105 (one hundred and five) days of the receipt of the final Environment Impact Assessment Report, and where Environment Impact Assessment is not required, within 105 (one hundred and five) days of the receipt of the complete application with requisite documents, except as provided below.

(ii) The regulatory authority shall normally accept the recommendation of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned. In cases where it disagrees with the recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned, the regulatory authority shall request reconsideration by the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned within 45 (forty five) days of the receipt of the recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned while stating the reasons for the disagreement. An intimation of this decision shall be simultaneously conveyed to the applicant. The Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned, in turn, shall consider the observations of the regulatory authority and furnish its views on the same within a further period of 60 (sixty) days. The decision of the regulatory authority after considering the view of the Expert Appraisal Committee (EAC) or State level Expert Appraisal Committee (SEAC) concerned shall be final and conveyed to the applicant by the regulatory authority concerned within the next 30 (thirty) days.

(iii) In the event that the decision of the regulatory authority is not communicated to the applicant within the period specified in sub-paragraphs (i) or (ii) above, as applicable, the applicant may proceed as if the environment clearance sought for has been granted or denied by the regulatory authority in terms of the final recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned.

(iv) On expiry of the period specified for decision by the regulatory authority under paragraphs (i) and (ii) above, as applicable, the decision of the regulatory authority, and the final recommendations of the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned shall be public documents.

(v) Clearances from other regulatory bodies or authorities shall not be required prior to receipt of applications for prior environmental clearance of projects or activities, or screening or scoping, or appraisal, or decision by the

regulatory authority concerned, unless any of these is sequentially dependent on such clearance either due to a requirement of law, or for necessary technical reasons.

(vi) Deliberate concealment and/or submission of false or misleading information or data which is material to screening or scoping or appraisal or decision on the application shall make the application liable for rejection, and cancellation of the prior environmental clearance granted on that basis. Rejection of an application or cancellation of a prior environmental clearance already granted, on such ground, shall be decided by the regulatory authority, after giving a personal hearing to the applicant, and following the principles of natural justice.

9. Validity of Environmental Clearance (EC):

The "Validity of Environment Clearance" is meant the period from which a prior environment clearance is granted by the regulatory authority, or may be presumed by the applicant to have been granted under sub paragraphs (iv) of paragraph 7 above, to the start of production operations by the project activity, or completion of all construction operations in case of construction projects (item 8 of the Schedule), to which the application for prior environmental clearance refers. The prior environmental clearance granted for a project or activity shall be valid for a period of 10 (ten) years in the case of River Valley projects [item 1(c) of the Schedule], project life as estimated by Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) subject to a maximum of 30 (thirty) years for mining project and 5 (five) years in case of all other projects and activities. However, in the case of Area Development projects and Townships [item 8(b)], the validity period shall be limited only to such activities as may be the responsibility of the applicant as a developer. This period of validity may be extended by the regulatory authority concerned by a maximum period of 5 (five) years provided an application is made to the regulatory authority by the applicant within the validity period, together with an updated Form 1, and supplementary Form 1A, for Construction projects or activities (item 8 of the Schedule). In this regard the regulatory authority may also consult the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) as the case may be.

10. Post Environmental Clearance Monitoring:

(i) It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned on 1st June and 1st December of each calendar year.

(ii) All such compliance reports submitted by the project management shall be public documents. Copies of the same shall be given to any person on application to the concerned regulatory authority. The latest such compliance report shall also be displayed on the website of the concerned regulatory authority.

11. Transferability of Environmental Clearance (EC):

A prior environmental Clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor, or by the transferee with a written "no objection" by the transferor, to, and by the regulatory authority concerned, in the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period. No reference to the Expert Appraisal Committee (EAC) or State Level Expert Appraisal Committee (SEAC) concerned is necessary in such cases.

12. Operations of EIA Notification, 1994, till disposal of pending cases:

From the date of final publication of this notification the Environment Impact Assessment (EIA) notification number S.O. 60 (E) dated 27th January, 1994 is hereby superseded, except in suppression of the things done or omitted to be done before such suppression to the extent that in case of all or some types of applications made for prior environment clearance and pending on the date of final publication of this notification, the Central Government may relax any one or all provisions of this notification except the list of the projects or activities requiring prior environmental clearance in Schedule 1, or continue operation of some or all provisions of the said notification, for a period not exceeding 1 (one) year from the date of issue of this notification.

SCHEDULE

(See paragraph 2 and 7)

LIST OF PROJECTS OR ACTIVITIES REQUIRING PRIOR ENVIRONMENTAL CLEARANCE

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
1	**Mining, extraction of natural resources and power generation (for a specified production capacity)**			
1(a)	Mining of minerals	≥ 50 hectares of mining lease area Asbestos mining irrespective of mining area	< 50 hectares ≥ 5 hectares of mining lease area.	General Condition shall apply Note Mineral prospecting (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey
1(b)	Offshore and onshore oil and gas exploration, development & production	All projects		Note Exploration Surveys (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey
1(c)	River valley projects	i) ≥ 50 MW hydroelectric power generation; ii) 10,000 hectares of culturable command area	i) < 50 MW ≥ 25 MW hydroelectric power generation; ii) < 10,000 hectares of culturable command area	General Condition shall apply
1(d)	Thermal Power Plants	≥ 500 MW (coal/ lignite/ naptha & gas based); ≥ 50 MW (Pet coke,	< 500 MW (coal/ lignite/ naptha & gas based); ≥ 5 MW (Pet	General Condition shall apply

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
		diesel and all other fuels)	coke, diesel and all other fuels)	
1(e)	Nuclear power projects and processing of nuclear fuel	All projects		
2	**Primary processing**			
2(b)	Coal washeries	≥ 1 million ton/annum throughput of coal	< million ton/annum throughput of coal	General Condition shall apply (If located within mining area the proposal shall be appraised together with the mining proposal)
2(b)	Mineral beneficiation	≥ 0.1 million ton/annum mineral throughput	< 0.1 million ton/annum mineral throughput	General Condition shall apply (Mining proposal with Mineral beneficiation shall be appraised together for grant of clearance)
3	**Material production**			
3(a)	Metallurgical industries (ferrous & non ferrous)	a) Primary metallurgical industry All projects b) Sponge iron manufacturing ≥ 200 TPD c) Secondary metallurgical processing industry All toxic and heavy metal producing units ≥ 20,000 tonnes/ annum	Sponge manufacturing < 20 TPD Secondary metallurgical processing industry i) All toxic and heavy metal producing units < 20,000	General Condition shall apply for Sponge iron manufacturing

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
			tonnes/ annum ii) All other non-toxic secondary metallurgical processing industries > 5000 tonnes/ annum	
3(b)	Cement plants	≥ 1.00 million tonnes/ annum production capacity	< 1.0 million tonnes/ annum production capacity. All Stand alone grinding units	General Condition shall apply
4	**Mineral Processing**			
4(a)	Petroleum refining industry	All projects	–	–
4(b)	Coke oven plants	≥ 2,50,000 tonnes /annum	< 2,50,000 & ≥ 25,000 tonnes /annum	–
4(c)	Asbestos milling and asbestos based products	All projects	–	–
4(d)	Chlor-alkali industry	≥ 300 TDP production capacity or a unit located out side the notified industrial area/ estate	< 300 TPD production capacity and located within a notified industrial area/ estate	Specific Condition shall apply No new Mercury Cell based plants will be permitted and existing units converting to membrane cell technology are exempted from this Notification
4(e)	Soda ash industry	All projects	–	–
4(f)	Leather/ Skin/ hide processing industry	New projects outside the industrial area or expansion of existing units outside the industrial area	All new or expansion of projects located within a notified industrial area/ estate	Specific condition shall apply

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
5	**Manufacturing/Fabrication**			
5(a)	Chemical fertilizers	All projects	–	–
5(b)	Pesticide industry and pesticide specific intermediates (excluding formulations)	All units producing technical grade pesticides	–	–
5(c)	Petro-chemical complexes (industries based on processing of petroleum fraction & natural gas and/or aromatics)	All projects	–	–
5(d)	Manmade fibers manufacturing	Rayon	Others	General Condition shall apply
5(e)	Petro-chemical based processing (processes other than cracking & reformation and not covered under the complexes)	Located outside the notified industrial area/ estate	Located in a notified industrial area/ estate	Specific Condition shall apply
5(f)	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	Located outside the notified industrial area/ estate	Located in a notified industrial area / estate	Specific Condition shall apply
5(g)	Distilleries	i) All Molasses based distilleries ii) All Cane juice/ non-molasses based distilleries ≥ 30 KLD	All Cane juice/ non-molasses based distilleries – < 30 KLD	General Condition shall apply
5(h)	Integrated paint industry	–	All projects	General Condition shall apply

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
5(i)	Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp without bleaching	Pulp manufacturing and Pulp & Paper manufacturing industry	Paper manufacturing industry without pulp manufacturing	General Condition shall apply
5(j)	Sugar Industry	–	≥ 5,000 tcd cane crushing capacity	General Condition shall apply
5(k)	Induction/ arc furnaces / cupola furnaces 5 TPH or more	–	All projects	General Condition shall apply
6	**Service Sectors**			
6(a)	Oil & gas transportation pipe line (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/ coral reefs / ecologically sensitive areas including LNG Terminal	All projects	–	–
6(b)	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989, amended 2000)	–	All projects	General Condition shall apply
7	**Physical Infrastructure including Environmental Services**			
7(a)	Airports	All projects	–	–
7(b)	All ship breaking yards including ship breaking units	All projects	–	–
7(c)	Industrial estates/ parks/ complexes/ areas, Export Processing Zones (EPZs), Special	If at least one industry in the proposed industrial estate falls under the Category-'A', entire industrial	Industrial estate housing at least one Category-'B' industry and area < 500	Special condition shall apply

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
	Economic Zones (SEZs), Biotech Parks, Leather Complexes	area shall be treated as Category-'A', irrespective of the area. Industrial estates with area greater 500 hectares and housing at least one Category-'B' industry	hectares. Industrial estates of area > 500 hectares and not housing any industry belonging to Category-'A' or 'B'	Note: Industrial Estate of area below 500 hectares and not housing any industry of Category-'A' or 'B' does not require clearance.
7(d)	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All integrated facilities having incineration & landfill or incineration alone.	All facilities having land fill only	General Condition shall apply
7(e)	Ports, Harbour	≥ 5 million TPA of cargo handling capacity (excluding fishing harbours)	< 5 million TPA of cargo handling capacity and/or ports/ harbours ≥ 10,000 TPA of fish handling capacity	General Condition shall apply
7(f)	Highways	i) New National Highways; and ii) Expansion of National Highways greater than 30 km, involving additional right of way greater than 20m involving land acquisition and passing through more than one State.	i) New State Highways; and ii) Expansion of National Highways greater than 30 km involving additional right of way greater than 20m involving land acquisition	General Condition shall apply
7(g)	Aerial ropeways	–	All projects	General Condition shall apply
7(h)	Common Effluent Treatment Plants (CETPs)	–	All projects	General Condition shall apply

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
(1)	(2)	(3)	(4)	(5)
7(i)	Common Municipal Solid Waste management Facility (CMSEMF)	–	All projects	General Condition shall apply
8(a)	Building and Construction projects	–	≥ 20,000 sq-m and < 1,50,000 sq-m of built-up area[(I)]	[(I)] (built up area for covered construction; in the case of facilities open to the sky, it will be the activity area)
8(b)	Township and Area Development projects	–	Covering an area ≥ 50 hectares and or built up area ≥ 1,50,000 aq-m [(++)]	[(++)] All projects under item 8(b) shall be appraised as Category-'B1'

Note:

General Condition (GC):

Any project or activity specified in Category-'B' will be treated as Category-'A', if located whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wildlife (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

Specific Condition (SC):

If any Industrial Estate /Complex /Export processing Zones/ Special Economic Zones/ Biotech Parks/ Leather Complex with homogeneous type of industries such as Items 4(d), 4(f), 5(e), 5(f), or those Industrial estates with pre-defined set of activities (not necessarily homogenous, obtains prior environmental clearance, individual industries including proposed industrial housing within such estates/complexes will not be required to take prior environmental clearance, so long as the Terms and Conditions for the industrial estate/complex are complied with (Such estates/complexes must have a clearly identified management with the legal responsibility of ensuring adherence to the Terms and Conditions of prior environmental clearance, who may be held responsible for violation throughout the life of the complex/estate).

[No. J-11013/56/2004-IA-II(I)]
R. CHANDRAMOHAN, Jt. Secy.

APPENDIX I

(See paragraph – 6)

FORM 1

(I)	**Basic Information**		
	Name of the Project	:	
	Location/site alternatives under consideration	:	
	Size of the project *	:	
	Expected cost of the project	:	
	Contact Information	:	
	Screening Category	:	

* *Capacity corresponding to sectoral activity (such as production capacity for manufacturing mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.)*

(II)	**Activity** **1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**		
Sl. No.	**Information/Check list confirmation**	**Yes/No**	**Details thereof (with approximate quantities / rates, wherever possible) with source of information data**
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)		
1.2	Clearance of existing land, vegetation and buildings?		
1.3	Creation of new land uses?		
1.4	Pre-construction investigation e.g. bore houses, soil testing?		
1.5	Construction works?		
1.6	Demolition works?		
1.7	Temporary sites used for construction works or housing of construction workers?		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations		
1.9	Underground works including mining or tunneling?		
1.10	Reclamation works?		
1.11	Dredging?		
1.12	Offshore structures?		
1.13	Production and manufacturing processes?		
1.14	Facilities for storage of goods or materials?		
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?		
1.16	Facilities for long term housing of operational works?		
1.17	New road, rail or sea traffic during construction or operation?		
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?		
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?		
1.20	New or diverted transmission lines or pipelines?		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourse or aquifers?		
1.22	Stream crossings?		
1.23	Abstraction or transfers of water from ground or surface waters?		
1.24	Changes in water bodies or the land surface affecting drainage or run-off?		
1.25	Transport of personnel or materials for construction, operation or decommissioning?		
1.26	Long-term dismantling or decommissioning or restoration works?		
1.27	Ongoing activity during decommissioning which could have an impact on the environment?		
1.28	Influx of people to an area in either temporarily or permanently?		
1.29	Introduction of alien species?		
1.30	Loss of native species or genetic diversity?		
1.31	Any other actions?		
	2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):		
2.1	Land especially undeveloped or agricultural land (Hectares)		
2.2	Water (expected source & competing users) unit : KLD		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
2.3	Minerals (MT)		
2.4	Construction material – stone, aggregates, and / soil (expected source – MT)		
2.5	Forests and timber (source – MT)		
2.6	Energy including electricity and fuels (source, competing users) Units: fuel (MT), energy (MW)		
2.7	Any other natural resources (use appropriate standard units)		
	3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health:		
3.1	Use of substance or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)		
3.2	Changes in occurrences of disease or affect disease vectors (e.g. insect or water borne diseases)		
3.3	Affect the welfare of people e.g. by changing living conditions?		
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.		
3.5	Any other causes		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	4. Production of solid wastes during construction or operation or decommissioning (MT/month):		
4.1	Spoil, overburden or mine wastes		
4.2	Municipal waster (domestic and or commercial wastes)		
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)		
4.4	Other Industrial process wastes		
4.5	Surplus product		
4.6	Swage sludge or other sludge from effluent treatment		
4.7	Construction or demolition wastes		
4.8	Redundant machinery or equipment		
4.9	Contaminated soils or other materials		
4.10	Agricultural wastes		
4.11	Other solid wastes		
	5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr):		
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources		
5.2	Emissions from production process		
5.3	Emissions from materials handling including plant and equipment		
5.4	Emissions from construction activities including plant and equipment		
5.5	Dust or colours from		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	handling of materials including construction materials, sewage and waste		
5.6	Emission from incineration of waste		
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)		
5.8	Emissions from any other sources		
	6. Generation of Noise and Vibration, and Emissions of Light and Heat:		
6.1	From operation of equipment e.g. engines, ventilation plant, crushers		
6.2	From industrial of similar processes		
6.3	From construction or demolition		
6.4	From blasting or piling		
6.5	From construction or operational traffic		
6.6	From lighting or cooling systems		
6.7	From any other sources		
	7. Risks of contamination of land or water from release of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:		
7.1	From handling, storage, use or spillage of hazardous materials		
7.2	From discharge of swage or other effluents to water or the land (expected mode and place of discharge)		
7.3	By deposition of pollutants to air into the land or into water		
7.4	From any other sources		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?		
	8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment:		
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances		
8.2	From any other causes		
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.)?		
	9. Factors which should be considered (such as consequential development) which cold lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality:		
9.1	Lead to development of support. Lities, ancillary development or development stimulated by the project which could have impact on the environment e.g: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other		
9.2	Lead to after-use of the site, which could have an		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	impact on the environment		
9.3	Set a precedent for later development		
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects		
	10. Environmental Sensitivity:		
10.1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or related value		
10.2	Areas which are important or sensitive for ecological reasons – Wetlands, watercourses or other water bodies, coastal zones, biospheres, mountains, forests		
10.3	Areas used by protected important or sensitive species of flora or fauna for breeding, nesting, foraging, nesting, over wintering, migration		
10.4	Inland, coastal, marine or underground waters		
10.5	State, National boundaries		
10.6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas		
10.7	Defence installation		
10.8	Densely populated or built-up area		
10.9	Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship,*		

Sl. No.	Information/Check list confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	community facilities)		
10.10	Areas containing important high quality or scarce resources *(ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)*		
10.11	Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)*		
10.12	Areas susceptible to natural hazard which could cause the project to present environmental problems *(earthquake, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)*		
(IV)	**Proposed Terms of Reference for EIA studies.**		

APPENDIX II

(See paragraph 6)

FORM – 1 A (only for construction projects listed under item 8 of the Schedule)

CHICK LIST OF ENVIRONMENTAL IMPACTS

(Projects proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit alongwith proposed environmental management plan & monitoring programme)

1. LAND ENVIRONMENT

1.1 Will the existing land-use get significantly altered from the project that is not consistent with the surroundings? (Proposed land-use must conform to the approved Master Pan/ Development Plan of the area. Change of land-use if any and the statutory approval from the competent authority be submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 5000 meters) and (iii) the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.

1.2 List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.

1.3 What are the likely impacts on the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing land-use disturbance to the local ecology).

1.4 Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc. may be given.)

1.5 Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site).

1.6 What are the quantities of earthwork involved in the construction activity – cutting, filling, reclamation etc. (Give details of the quantities of earthwork in involved, transport of fill materials from outside the site etc.)

1.7 Give details regarding water supply, waste handling etc. during the construction period.

1.8 Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified form the proposed activity).

1.9 Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal).

2. WATER ENVIRONMENT

2.1 Give the total quantity of water requirement for the proposed project with the breakup of requirements for various sues. Howe will the water requirement met? State the source & quantities and furnish a water balance treatment.

2.2 What is the capacity (dependable flow or yield) of the proposed source of water?

2.3 What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality).

2.4 How much of water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage).

2.5 Will there be diversion of water form other users? (Please assess the impacts of the project on others existing users and quantities of consumption).

2.6 What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity).

2.7 Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

2.8 What could be the impact of the land-use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?

2.9 What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)

2.10 What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (give details of quantities and the measures taken to avoid the adverse impacts)

2.11 How is the storm water from within the site managed? (State the provisions made to avoid flooding of the area, details of the drainage facilities provided alongwith a site layout indication contour levels)

2.12 Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper examination)

2.13 What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)

2.14 Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.

3. VEGETATION

3.1 Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with it's unique features, if any)

3.2 Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)

3.3 What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc. alongwith a layout plan to an appropriate scale)

4. FAUNA

4.1 Is there likely to be any displacement of fauna – both terrestrial and aquatic or creation of barriers for their movement? Provide the details.

4.2 Any direct or indirect impacts on the avifauna of the area? Provide details.

4.3 Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna

5. AIR ENVIRONMENT

5.1 Will the increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted value based on dispersion models taking into account the increased traffic generation as a result of the proposed construction)

5.2 What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.

5.3 Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.

5.4 Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.

5.5 Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.

5.6 What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.

6. AESTHETICS

6.1 Will the proposed construction in any way result in the obstruction of view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?

6.2 Will there be any adverse impacts from new constructions on the existing structure? What are the considerations taken into account?

6.3 Whether there are any local considerations of urban form & urban design influencing the design-criteria? They may explicitly spelt out.

6.4 Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.

7. SOCIO-ECONOMIC ASPECTS

7.1 Will the proposal result in any changes to the demographic structure of local population? Provide details.

7.2 Give details of the existing social infrastructure around the proposed project.

7.3 Will the project cause adverse effect on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?

8. BUILDING MATERIALS

8.1 May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? Give details of energy conservation measures in the selection of building materials and their energy efficiency)

8.2 Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?

8.3 Are recycled materials used in roads and structures? State the extent of saving achieved?

8.4 Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

9. ENERGY CONSERVATION

9.1 Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?

9.2 What type of and capacity of, power back-up to your plan to provide?

9.3 What are the characteristics features are being used in the building? Illustrate the applications made in the proposed projects.

9.4 What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.

9.5 Does the layout of streets & buildings maximize the potential for solar energy devices? Have our considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details.

9.6 Is shading effectively sued to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?

9.7 Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.

9.8 What are the likely effects of the buildings activity in altering the micro-climates? Provide a self assessment of the likely impacts of the proposed construction on creation of heat island & inversion effects.

9.9 What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R-values of the individual components.

9.10 What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.

9.11 If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.

9.12 What is the rate of infiltration into the building? Provide details of how you are mitigating the effects of infiltration.

9.13 To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies uses.

10. ENVIRONMENT MANAGEMENT PLAN

The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

APPENDIX III

(See paragraph 7)

GENERIC STRUCTURE OF ENVIRONMENTAL IMPACT ASSESSMENT DOCUMENT

Sl. No.	EIA Structure	Contents
1.	Introduction	• Purpose of the report • Identification of project & proponent • Brief description of nature, size, location of the project and its importance to the country, region. • Scope of the study – details of regulatory scoping carried as (As per Terms of Reference)
2.	Project Description	• Condensed description of those aspects of the project (based on project feasibility study). Likely to cause environmental effects. Details should be provided to give clear picture of the following. • type of project • Need for the project

		• Location (maps showing general location specific location, project boundary & site layout) • Size or magnitude operation (including associated activities required by or for the project. • Technology and process description • Project description including drawings showing project layout, components of project etc. Schematic representations of the feasibility drawings which give information important for EIA purpose. • Description of mitigation measures incorporated into the project to meet environmental standards, environmental operating conditions, or other EIA requirements (as required by the scope) • Assessment of New & untested technology for the risk of technological failure.
3.	Description of the Environment	• Study area, period, component & methodology • Establishment of baseline for valued environmental components, as identified in the scope • Base maps of all environmental components
4.	Anticipated Environmental impacts & Mitigation Measures	• Details of Investigated Environmental Impacts due to project location, possible accidents, project design, project construction, regular operations, final decommissioning or rehabilitation of a completed project • Measures for minimizing and/or offsetting adverse impacts identified • Irreversible and Irretrievable commitments of environmental components • Assessment of significance of impacts (Criteria for determining significance, Assigning significance) • Mitigation measures
5.	Analysis of Alternative (Technology & Site)	• In case, the scoping exercise results in need for alternatives • Description of each alternative • Summary of adverse impacts of each alternative • Mitigation measures proposed for each alternative and • Selection of alternative
6.	Environmental Monitoring Programme	• Technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, frequency, location, data

		analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules)
7.	Additional Studies	• Public consultation • Risk assessment • Social Impact Assessment, R&R Action Plans
8.	Project Benefits	• Improvements in the physical infrastructure • Improvements in the social infrastructure • Employment potential – skilled; semi-skilled • Other tangible benefits
9.	Environmental Cost Benefit Analysis	If recommended at the Scoping stage
10.	EMP	• Description of the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitors, after approval of the EIA
11.	Summary & Conclusion (This will constitute the summary of the EIA Report)	• Overall justification for implementation of the project • Explanation of how, adverse effects have been mitigated
12.	Disclosure Consultants engaged	• the names of the Consultants engaged with their brief resume and nature of Consultancy rendered

APPENDIX III A

(See paragraph 7)

CONTENTS OF SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT

The summary EIA shall be a summary of the full EIA Report condensed to ten A-4 size papers at the maximum. It should necessarily cover in brief the following Chapters of the EIA Report:-

1. Project Description
2. Description of the Environment
3. Anticipated Environmental impacts and mitigation measures
4. Environmental Monitoring Programme
5. Additional Studies
6. Project Benefits
7. Environmental Management Plan

APPENDIX IV

(See paragraph 7)

PROCEDURE FOR CONDUCT OF PUBLIC HEARING

1.0 The Public Hearing shall be arranged in a systematic, time bound and transparent manner ensuring widest possible participation at the project site(s) or in its close proximity District – wise, by the concerned State Pollution Control Board (SPCB) or the Union territory Pollution Control Committee (UTPCC).

2.0 The Process:

2.1 The Applicant shall make a request through a simple letter to the member Secretary of the SPCB or Union territory Pollution Control Committee, in whose jurisdiction the project is located, to arrange the public hearing within the prescribed statutory period. In case the project site is extending beyond a State or Union territory, the public hearing is mandated in each State or Union territory in which the project is sited and the Applicant shall make separate requests to each concerned SPCB or UTPCC for holding the public hearing as per this procedure.

(a) District Magistrate(s)
(b) Zilla Parishad or Municipal Corporation
(c) District Industries Office
(d) Concerned Regional Office of the Ministry of Environment and Forests

2.3 On receiving the draft Environmental Impact Assessment Report, the above-mentioned authorities except the MoEF, shall arrange to widely publicize it within their respective jurisdiction requesting the interested persons to sent their comments to the concerned regulatory authorities. They shall also make available the draft EIA Report for inspection electronically or otherwise to the public during normal office hours till the Public Hearing is over. The Ministry of Environment and Forests shall promptly display the Summary of the draft Environment Impact Assessment report on its website, and also make the full draft EIA available to reference at a notified place during normal office hours in the Ministry at Delhi.

2.4 The SPCB or UTPCC concerned shall also make similar arrangements for giving publicity about the project within the State/Union territory and make available the Summary of the draft Environmental Impact Assessment report (Appendix III A) for inspection in select officers or public libraries or Panchayats etc. They shall also additionally make available a copy of the draft Environmental Impact Assessment Report to the above five authorities/offices viz; Ministry of Environment and Forests, District magistrate etc.

3.0 Notice of Public Hearing:

3.1 The Member-Secretary of the concerned SPCB or UTPCC shall finalize the date, time and exact venue for the conduct of public hearing within 7 (seven) days of the date of receipt of the draft Environmental Impact Assessment report from the project proponent, and advertise the same in one major National Daily and one Regional vernacular Daily. A minimum notice period of 30(thirty) days shall be provided to the public for furnishing their responses;

3.2 The advertisement shall also inform the public abut the places or offices where the public could access the draft Environmental Impact Assessment report and the Summary Environmental Impact Assessment report before the public hearing.

3.3 No postponement of the date, time, venue of the public hearing shall be undertaken, unless me untoward emergency situation occurs and only on the recommendation of the concerned District Magistrate the postponement shall be notified to the public through the same National and Regional vernacular dailies and also prominently displayed at all the identified offices by the concerned SPCB or Union territory Pollution Control Committee.

3.4 In the above exceptional circumstances fresh date, time and venue for the public consultation shall be decided by the Member-Secretary of the concerned SPCB or UTPCC only in consultation with the District Magistrate and notified afresh as per procedure under 3.1 above.

4.0 The Panel:

4.1 The District Magistrate or his or her representative not below the rank of an Additional District magistrate assisted by a representative of SPCB or UTPCC, shall supervise and preside over the entire public hearing process.

5.0 Videography:

5.1 The SPCB or UTPCC shall arrange to video film the entire proceedings. A copy of the videotape or a CD shall be enclosed with the public hearing proceedings while forwarding it to the Regulatory Authority concerned.

6.0 Proceedings:

6.1 The attendance of all those who are present at the venue shall be noted and annexed with the final proceedings.

6.2 There shall be no quorum required for attendance for starting the proceedings.

6.3 A representative of of the applicant shall initiate the proceedings with a presentation on the project and the Summary EIA report.

6.4 Every persons present at the venue shall be granted the opportunity to seek information or clarifications on the project from the Applicant. The summary of the public hearing proceedings accurately reflecting all the views and concerns expressed shall be recorded by the representative of the SPCB or UTPCC and read over to the audience at the end of the proceedings explaining the contents in the vernacular language and the agreed minutes shall be signed by the District Magistrate or his or her representative on the same day and forward to the SPCB /UTPCC concerned.

6.5 A Statement of the issues raised by the public and the comments of the Applicant shall also be prepared in the local language and in English and annexed to the proceedings.

6.6 The proceedings of the public shall be conspicuously displayed at the office of the Panchayats within whose jurisdiction the project is located, office of the concerned Zilla Parishad, District Magistrate, and the SPCB or UTPCC. The SPCB or UTPCC shall also display the proceedings on its website for general information. Comments, if any, on the proceedings which may be sent directly to the concerned regulatory authorities and the Applicant concerned.

7.0 Time period for completion of public hearing:

7.1 The public hearing shall be completed within a period of 45 (forty five) days from date of receipt of the request letter from the Applicant. Therefore the SPCB or UTPCC concerned shall send the public hearing proceedings to the concerned regulatory authority within 8 (eight) days of the completion of the public hearing. The applicant may also directly forward a copy of the approved public hearing proceedings to the regulatory authority concerned alongwith the final Environmental Impact Assessment report or supplementary report to the draft EIA report prepared after the public hearing and public consultations.

7.2 If the SPCB or UTPCC fails to hold the public hearing within the stipulated 45 (forty five) days, the Central Government in Ministry of Environment and Forests for Category-'A' project or activity and the State Government or Union territory Administration for Category-'B' or activity at the request of the SEIAA, sall engage any other agency or authority to complete the process, as per procedure laid down in this notification.

APPENDIX – V

(See paragraphs 7)

PROCEDURE PRESCRIBED FOR APPRAISAL

1. The applicant shall apply to the concerned regulatory authority through a simple communication enclosing the following documents where public consultations are mandatory:-

   - Final Environment Impact Assessment Report [20 (twenty) hard copies and 1 (one) soft copy]
   - A copy of the video tape or CD of the public hearing proceedings.
   - A copy of the final layout plan (20 copies)
   - A copy of the project feasibility report (1 copy)

2. The final EIA Report and the other relevant documents submitted by the applicant shall be scrutinized in office within 30 (thirty) days from the date of its receipt by the concerned Regulatory Authority strictly with reference to the TOR and the inadequacies noted shall be communicated electronically or otherwise in a single set to the Members of the EAC /SEAC enclosing a copy each of the Final EIA Report including the public hearing proceedings and other public responses received alongwith a copy of Form–1 or Form–1 A and scheduled date of the EAC/SEAC meeting for considering the proposal.

3. Where a public consultation is not mandatory and therefore a formal EIA study is not required, the appraisal shall be made on the basis of the prescribed application Form 1 and a pre-feasibility report in the case of all projects and activities other than Item 8 of the Schedule. In the case of Item 8 of the Schedule, considering its unique project cycle, the EAC or SEAC concerned shall appraise all Category-'B' projects or activities on the basis of Form 1, Form 1A and the conceptual plan and stipulate the condition for environmental clearance. As and when the applicant submits the approved scheme / building plans complying with the stipulated environmental clearance conditions with all other necessary statutory approvals, the EAC/SEAC shall recommend the grant of environmental clearance to the competent authority.

4. Every application shall be placed before the EAC/ SEAC and its appraisal completed with 60 (sixty) days of its receipt with requisite documents/ details in the prescribed manner.

5. The applicant shall be informed at least 15 (fifteen) days prior to the schedule date of the EAC/SEAC meeting for considering the project proposal.

6. The minutes of the EAC/SEAC meeting shall be finalized within 5 (five) working days of the meeting and displayed on the website of the concerned regulatory authority. In case the project or activity is recommended for grant of EC, then the minutes shall clearly list out the specific environmental safeguards and conditions. In case the recommendations are for rejection, the reasons for the same shall also be explicitly stated.

APPENDIX VI

(See paragraph 5)

COMPOSITION OF THE SECTOR/ PROJECT SPECIFIC EXPERT APPRAISAL COMMITTEE (EAC) FOR CATEGORY-'A' PROJECTS AND THE STATE /UNION TERRITORY LEVEL EXPERT APPRAISAL COMMITTEES (SEACs) FOR CATEGORY-'B' PROJECTS TO BE CONSTITUTED BY THE CENTRAL GOVERNMENT

1. The Expert Appraisal Committees (EACs) and the State/Union territory Level Expert Appraisal Committees (SEACs) shall consist of only professionals and experts fulfilling the following eligibility criteria:

   Professional: The persons should have at least (i) 5 years of formal University training in the concerned discipline leading to a MA/M.Sc. Degree, or (ii) in case of Engineering / Technology/ Architecture disciplines, 4 years formal training in a professional training course together with prescribed training in the field leading to a B.Tech /B.E./ B. Arch. Degree, or (iii) Other professional degree (e.g. Law) involving a total of 5 years for formal University training and prescribed practical training, or (iv) Prescribed apprenticeship /article ship and pass examinations conducted by the concerned professional association (e.g. Chartered Accountancy), or (v) a University degree, followed by 2 years of formal training in a University or Service Academy (e.g. MBA/IAS/IFS). In selecting the individual

professionals, experience gained by them in their respective fields will be taken note of.

Expert: A professional fulfilling the above eligibility criteria with at least 15 years of relevant experience in the field, or with an advanced degree (e.g. Ph.D.) in a concerned field and at least 10 years of relevant experience.

Age: Below 70 years. However, the event of the non-availability of/paucity of experts in a given field, the maximum age of a member of the Expert Appraisal Committee (EAC) may be allowed upto 75 years.

2. The Members of the EAC shall be Experts with the requisite expertise and experience in the following fields //disciplines. In the event that persons fulfilling the criteria of "Experts" are not available, Professionals in the same field with sufficient experience may be considered.

- Environment Quality Experts: Experts in measurement/ Monitoring analysis and interpretation of data in relation to environment quality.
- **Sectoral Experts in Project Management**: Experts in Project Management or Management of Process/ Operations / Facilities in the relevant sectors.
- **Environmental Impact Assessment Process Experts**: Experts in conducting and carrying out Environmental Impact Assessments (EIAs) and preparation of Environmental Management Plan (EMPs) and other Management Plans and who have wide expertise and knowledge of predictive techniques and tools used in the EIA process.
- **Risk Assessment Experts**
- **Life Science Experts in floral and faunal management**
- **Forestry and Wildlife Experts**
- **Environmental Economics Expert with experience in project appraisal**

3. The Membership of the EAC shall not exceed 15 (fifteen) regular Members. However the Chairperson may co-opt an expert as a Member in a relevant field for a particular meeting of the Committee.

4. The Chairperson shall be an outstanding and experienced environmental policy expert or expert in management of public administration with wide experience in the relevant development sector.

5. The Chairperson shall nominate one of the Members as the Vice Chairperson who shall preside over the EAC in the absence of the Chairman/Chairperson.

6. A representative of the Ministry of Environment and Forests shall assist the Committee as its Secretary.

7. The maximum tenure of a Member, including Chairperson, shall be 2 (two) terms of 3 (three) years each.

8. The Chairman/Members may not be removed prior to expiry of the tenure without cause and proper enquiry.

10 का.आ. 562(अ) तारीख 26 फ़रवरी 2014;

11. का.आ. 637(अ) तारीख 28 फ़रवरी 2014;

12. का.आ. 1599(अ) तारीख 25 जून 2014;

13. का.आ. 2601(अ) तारीख 7 अक्टूबर 2014;

14. का.आ. 2600(अ) तारीख 9 अक्टूबर 2014

15. का.आ. 3252(अ) तारीख 22 दिसम्बर 2014;

16. का.आ. 382(अ) तारीख 3 फरवरी, 2015;

17. का.आ. 811(अ) तारीख 23 मार्च, 2015;

18. का.आ. 996(अ) तारीख 10 अप्रैल 2015;

19. का.आ. 1142(अ) तारीख 17 अप्रैल 2015;

20. का.आ. 1141(अ) तारीख 29 अप्रैल 2015;

21. का.आ. 1834(अ) तारीख 6 जुलाई 2015;

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 15th January, 2016

S.O. 141(E).—Whereas in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986), a draft notification for making certain amendments in the Environment Impact Assessment Notification, 2006, issued *vide* number S.O. 1533(E), dated the 14th September 2006, was published under sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, vide number S.O. 2588(E), dated 22nd September, 2015, inviting objections and suggestions from all persons likely to be affected thereby, within a period of sixty days from the date of publication on which copies of Gazette containing the said notification were available to the public;

And whereas, copies of said notification were made available to the public on 22nd September 2015;

And whereas, all objections and suggestions received in response to the above mentioned draft notification have been duly considered by the Central Government;

And whereas, in pursuance to the order of Hon'ble Supreme Court dated the 27th February, 2012 in I.A. No.12-13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., prior environmental clearance has now become mandatory for mining of minor minerals irrespective of the area of mining lease;

And whereas, as a result of the above said Order of Hon'ble Supreme Court, the number of cases which are now required to obtain prior environmental clearance has increased substantially;

And whereas, the Hon'ble National Green Tribunal, *vide* its order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor minerals;

And whereas, the State Governments have represented for streamlining the process of environmental clearance for mining of minor mineral;

And whereas, the Ministry of Environment, Forest and Climate Change in consultation with State Governments has prepared Guidelines on Sustainable Sand Mining detailing the provisions on environmental clearance for cluster, creation of District Environment Impact Assessment Authority and proper monitoring of sand mining using information technology and information technology enabled services to track the mined out material from source to destination;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments in the said notification, namely:-

In the said notification,-

(a) in paragraph 2, after the words "in the said Schedule", the following words shall be inserted, namely:-

"and at District level, the District Environment Impact Assessment Authority (DEIAA) for matters falling under Category 'B2' for mining of minor minerals in the said Schedule";

(b) after paragraph 3, the following paragraph shall be inserted, namely:-

"3 A. District Level Environment Impact Assessment Authority:-

(1) A District Level Environment Impact Assessment Authority hereinafter referred to as the DEIAA shall be constituted by the Central Government under sub-section (3) of section 3 of the Environment (Protection) Act, 1986 comprising of four members including a Chairperson and a Member-Secretary.

(2) The District Magistrate or District Collector shall be the Chairperson of the DEIAA.

(3) The Sub-Divisional Magistrate or Sub-Divisional Officer of the district head quarter of the concerned district of the State shall be the Member-Secretary of the DEIAA.

(4) The other two members of the DEIAA shall be the senior most Divisional Forest Officer and one expert. The expert shall be nominated by the Divisional Commissioner of the Division or Chief Conservator of Forest, as the case may be. The term and qualifications of the expert fulfilling the eligibility criteria are given in Appendix VII to this notification.

(5) The members of the DEIAA who are serving officers of the concerned State Government or the Union territory Administration shall be *ex-officio* members except the expert member.

(6) The District Level Expert Appraisal Committee hereinafter referred to as the DEAC shall comprise of eleven members, including a Chairman and a Member-Secretary.

(7) The senior most Executive Engineer, Irrigation Department in the district of respective State Governments or Union territory Administration shall be the Chairperson of the DEAC.

(8) The Assistant Director or Deputy Director of the Department of Mines and Geology or District Mines Officer or Geologist of the district shall be the Member-Secretary of the DEAC in that order.

(9) A representative of the State Pollution Control Board or Committee, senior most Sub-Divisional Officer (Forest) in the district, representative of Remote Sensing Department or Geology Department or State Ground Water Department, one occupational health expert or Medical Officer to be nominated by the District Magistrate or District Collector, Engineer from Zila Parishad, and three expert members to be nominated by the Divisional Commissioner or Chief Conservator of Forest, as the case may be, shall be the other members of the DEAC. The term and qualifications of the experts fulfilling the eligibility criteria are given in Appendix VII to this notification.

(10) The members of the DEAC who are serving officers of the concerned State Government or the Union territory Administration shall be *ex-officio* members except the expert members.

(11) The District Magistrate or District Collector shall notify an agency to act as Secretariat for the DEIAA and the DEAC and shall provide all financial and logistic support for their statutory functions.

(12) The DEIAA and DEAC shall exercise the powers and follow the procedure as specified in the said notification, as amended from time to time.

(13) The DEAC shall function on the principle of collective responsibility and the Chairman shall endeavor to reach a consensus in each case and if consensus cannot be reached, the view of the majority shall prevail. ";

(c) in paragraph 4, after sub-paragraph (iii), the following sub-paragraph shall be inserted, namely:-

"(iv) The 'B2' Category projects pertaining to mining of minor mineral of lease area less than or equal to five hectare shall require prior environmental clearance from DEIAA. The DEIAA shall base its decision on the recommendations of DEAC, as constituted for this notification." ;

(d) for paragraph 5, the following paragraph shall be substituted, namely:-

"5. Screening, Scoping and Appraisal Committees:-

The same Expert Appraisal Committees (EACs) at the Central Government, SEACs at the State or Union territory level and DEAC at the district level shall screen, scope and appraise projects or activity in category 'A', 'B1 and B2' and 'B2' projects for mining of minor minerals of lease area less than and equal to five hectare respectively. EAC, SEACs and DEACs shall meet at least once every month.

(a) The composition of the EAC shall be as given in Appendix VI. The SEAC at the State or the Union territory level shall be constituted by the Central Government in consultation with the concerned State Government or the Union

territory Administration with identical composition. DEAC at the district level shall be constituted by the Central Government as per the composition given in paragraph 3 A.

(b) The Central Government may with the prior concurrence of the concerned State Governments or the Union territory Administration constitute one SEAC for more than one State or Union territory for reasons of administrative convenience and cost.

(c) The EAC and SEAC shall be reconstituted after every three years.

(d) The authorised members of the EAC, SEACs and DEACs concerned, may inspect any site connected with the project or activity in respect of which the prior environmental clearance is sought for the purpose of screening or scoping or appraisal with prior notice of at least seven days to the project proponent who shall provide necessary facilities for the inspection.

(e) The EAC, SEACs and DEACs shall function on the principle of collective responsibility. The Chairperson shall endeavor to reach a consensus in each case and if consensus cannot be reached the view of the majority shall prevail.";

(e) for paragraph 6, the following paragraph shall be substituted, namely:-

"6. Application for Prior Environmental Clearance (EC):-

An application seeking prior environmental clearance in all cases shall be made by the project proponent in the prescribed Form 1 annexed herewith and Supplementary Form 1A, if applicable, as given in Appendix II after the identification of prospective site (s) for the project and/or activities to which the application relates; and in Form 1M for mining of minor minerals up to five hectare under Category 'B2' projects, as given in Appendix VIII, before commencing any construction activity, or preparation of land, or mining at the site by the project proponent. The project proponent shall furnish along with the application, a copy of the pre-feasibility project report, in addition to Form 1, Form 1A, and Form 1M; and in case of construction projects or activities (item 8 of the Schedule), a copy of the conceptual plan shall be provided instead of pre-feasibility report.";

(f) in paragraph 7,-

(i) in sub-paragraph (i), under the heading "I. Stage (1)- Screening:", the existing sub-paragraph shall be lettered as sub-paragraph "(A)" and after sub-paragraph as so lettered, the following sub-paragraph shall be inserted, namely:-

"(B) The cases as specified in Appendix IX shall be exempted from prior environmental clearance." ;

(ii) after sub-paragraph 7 (ii), the following sub-paragraph shall be inserted, namely:-

"7 (iii) Preparation of District Survey Report for Sand Mining or River Bed Mining and Mining of other Minor Minerals:

(a) The prescribed procedure for preparation of District Survey Report for sand mining or river bed mining and mining of other minor minerals is given in Appendix X.

(b) The prescribed procedure for environmental clearance for mining of minor minerals including cluster situation is given in Appendix XI.";

(g) in paragraph 8,-

(i) for the letters and word "EAC or SEAC", the words and letters "EAC or SEAC or DEAC" shall be substituted;

(ii) for the words "Expert Appraisal Committee or State Level Expert Appraisal Committee" wherever they occur, the words "Expert Appraisal Committee or State Level Expert Appraisal Committee or District Level Expert Appraisal Committee" shall be substituted;

(h) in paragraph 9, in sub-paragraph (i),-

for the words "Expert Appraisal Committee or State Level Expert Appraisal Committee", the words "Expert Appraisal Committee or State Level Expert Appraisal Committee or District Level Expert Appraisal Committee" shall be substituted;

(i) in paragraph 10, after sub-paragraph (iii), the following sub-paragraph shall be inserted, namely:-

"(iv) The prescribed procedure for sand mining or river bed mining and monitoring is given in Appendix XII.";

(j) in paragraph 11, -

for the words "Expert Appraisal Committee or State Level Expert Appraisal Committee", the words "Expert Appraisal Committee or State Level Expert Appraisal Committee or District Level Expert Appraisal Committee" shall be substituted;

(k) in the Schedule,-

(i) for item 1 (a) and the entries relating thereto, the following item and entries shall be substituted, namely:-

(1)	(2)	(3)	(4)	(5)
"1(a)	(i) Mining of minerals	≥50 ha of mining lease area in respect of non-coal mine lease >150 ha of mining lease area in respect of coal mine lease Asbestos mining	<50 ha of mining lease area in respect of non-coal mine lease ≤150 ha of mining lease area in respect of coal mine lease	General Conditions shall apply except: (i) for project or activity of mining of minor minerals of Category 'B2' (up to 25 ha of mining lease area); (ii) River bed mining projects on account of inter-state boundary.

		irrespective of mining area		**Note:** (1) Mineral prospecting is exempted. ''; (2) The prescribed procedure for environmental clearance for mining of minor minerals including cluster situation is given in Appendix XI."; (3) The mining leases which have obtained environmental clearance under Environment Impact Assessment Notification, 1994 and Environment Impact Assessment Notification, 2006 shall not require fresh environmental clearance during renewal provided the project has valid and subsisting environmental clearance.
	(ii) Slurry pipelines (coal lignite and other ores) passing through national parks or sanctuaries or coral reefs, ecologically sensitive areas.	All projects.		

(I) after Appendix VI, the following appendices shall be inserted, namely:-

"APPENDIX VII

(See paragraph 3 A)

Qualifications and terms for the Experts in DEIAA and DEAC

1. **Qualification:** The person should have at least (i) 5 years of formal University training in the concerned discipline leading to a MA or M Sc Degree or (ii) in case of Engineering/ Technology/ Architectural discipline, 4 years formal training course together with prescribed practical training in the field leading to a B. Tech/ B.E./ B. Arch. Degree, or (iii) Other professional degree (e.g. MBA etc.) involving a total of 5 years of formal University training and prescribed practical training, or (iv) Prescribed apprenticeship/ article ship and pass examinations conducted by the concerned professional associations (e.g. Chartered Accountancy) or (v) a University degree, followed by two years of formal training in a University or Service Academy (e.g. MBA/MPA etc.). In selecting the individual professionals, experience gained by them in their respective fields will be taken note of.
2. **Expert:** A professional fulfilling the above eligibility criteria with at least 10 years of relevant experience in the field or with an advanced degree (e.g. Ph. D) in a concerned field with at least 5 years of relevant experience.
3. **Age:** Below 70 years. However, in the event of non-availability of paucity of experts in a given field, the maximum age of a member may be allowed up to 75 years.
4. **Fields:** Experts in Mining, Geology, Hydrology, Remote Sensing, Environment Quality, Environment Impact Assessment Process, Risk Assessment, Life Sciences, Marine Sciences, Forestry and Wildlife, Environmental Economics, Bio-diversity, and River Ecology.

5. **Tenure:** The maximum tenure of expert members shall be for two terms of three years each.

6. The Expert Members may not be removed prior to expiry of the tenure without cause and proper enquiry.

APPENDIX VIII
(See paragraph 6)
FORM 1 M
APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE

(II) Basic Information

(viii) Name of the Mining Lease site:
(ix) Location / site (GPS Co-ordinates):
(x) Size of the Mining Lease (Hectare):
(xi) Capacity of Mining Lease (TPA):
(xii) Period of Mining Lease:
(xiii) Expected cost of the Project:
(xiv) Contact Information:

Environmental Sensitivity

Sl. No.	Areas	Distance in kilometer / Details
1.	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	
2.	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	
3.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	
4.	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	
5.	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	
6.	Inland, coastal, marine or underground waters	
7.	State, National boundaries	
8.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	
9.	Defence installations	
10.	Densely populated or built-up area, distance from nearest human habitation	
11.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	
12.	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	
13.	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	
14.	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	

15.	Is proposed mining site located over or near fissure / fracture for ground water recharge	
16.	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	
17.	Forest land involved (hectares)	
18.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	

(Signature of Project Proponent
Along with name and address)

APPENDIX – IX

[See paragraph 7(i) (B)]

EXEMPTION OF CERTAIN CASES FROM REQUIREMENT OF ENVIRONMENTAL CLEARANCE

The following cases shall not require prior environmental clearance, namely:-

1. Extraction of ordinary clay or sand, manually, by the Kumhars (Potter) to prepare earthen pots, lamp, toys, etc. as per their customs.
2. Extraction of ordinary clay or sand, manually, by earthen tile makers who prepare earthen tiles.
3. Removal of sand deposits on agricultural field after flood by farmers.
4. Customary extraction of sand and ordinary earth from sources situated in Gram Panchayat for personal use or community work in village.
5. Community works like de-silting of village ponds or tanks, construction of village roads, ponds, bunds undertaken in Mahatama Gandhi National Rural Employment and Guarantee Schemes, other Government sponsored schemes, and community efforts.
6. Dredging and de-silting of dams, reservoirs, weirs, barrages, river, and canals for the purpose of their maintenance, upkeep and disaster management.
7. Traditional occupational work of sand by Vanjara and Oads in Gujarat *vide* notification number GU/90(16)/ MCR-2189(68)/5-CHH, dated the 14th February, 1990 of the Government of Gujarat.
8. Digging of well for irrigation or drinking water.
9. Digging of foundation for buildings not requiring prior environmental clearance.
10. Excavation of ordinary earth or clay for plugging of any breach caused in canal, nala, drain, water body, etc., to deal with any disaster or flood like situation upon orders of District Collector or District Magistrate.
11. Activities declared by State Government under legislations or rules as non-mining activity with concurrence of the Ministry of Environment, Forest and Climate Change, Government of India.

APPENDIX - X

[See paragraph 7 (iii) (a)]

PROCEDURE FOR PREPARATION OF DISTRICT SURVEY REPORT

The main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following:

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 report shall have the following structure:

1. Introduction
2. Overview of Mining Activity in the District
3. The List of Mining Leases in the District with location, area and period of validity
4. Details of Royalty or Revenue received in last three years
5. Detail of Production of Sand or Bajari or minor mineral in last three years
6. Process of Deposition of Sediments in the rivers of the District
7. General Profile of the District
8. Land Utilization Pattern in the district: Forest, Agriculture, Horticulture, Mining etc.

9. Physiography of the District
10. Rainfall: month-wise
11. Geology and Mineral Wealth

In addition to the above, the report shall contain the following:

(a) District wise detail of river or stream and other sand source.
(b) District wise availability of sand or gravel or aggregate resources.
(c) District wise detail of existing mining leases of sand and aggregates.

A survey shall be carried out by the 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.

Drainage system with description of main rivers

S. No.	Name of the River	Area drained (Sq. Km)	% Area drained in the District

Salient Features of Important Rivers and Streams:

S. No.	Name of the River or Stream	Total Length in the District (in Km)	Place of origin	Altitude at Origin

Portion of the River or Stream Recommended for Mineral Concession	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)

Mineral Potential

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

Annual Deposition

S. No.	River or Stream	Portion of the river or stream recommended for mineral concession	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
Total for the District						

A Sub-Divisional Committee comprising of Sub-Divisional Magistrate, Officers from Irrigation department, State Pollution Control Board or Committee, Forest department, Geology or mining officer shall visit each site for which environmental clearance has been applied for and make recommendation on suitability of site for mining or prohibition thereof.

Methodology adopted for calculation of Mineral Potential:

The mineral potential is calculated based on field investigation and geology of the catchment area of the river or streams. As per the site conditions and location, depth of minable mineral is defined. The area for removal of the mineral in a river or stream can be decided depending on geo-morphology and other factors, it can be 50 % to 60 % of the area of a particular river or stream. For example in some hill States mineral constituents like boulders, river born Bajri, sand up

to a depth of one meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river or stream.

The District Survey Report shall be prepared for each minor mineral in the district separately and its draft shall be placed in the public domain by keeping its copy in Collectorate and posting it on district's website for twenty one days. The comments received shall be considered and if found fit, shall be incorporated in the final Report to be finalised within six months by the DEIAA.

The District Survey Report shall form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The Report shall be updated once every five years.

APPENDIX - XI

[See paragraph 7 (iii) (b)]

PROCEDURE FOR ENVIRONMENTAL CLEARANCE FOR MINING OF MINOR MINERALS INCLUDING CLUSTER

The following policy shall be followed for environmental clearance of mining of minor minerals including cluster situation:-

(1). The data provided by the States (Sustainable Sand Mining Guidelines) shows that most of the mining leases for minor minerals are of lease area less than 5 hectare. It is also reported that in hill States getting a stretch in river with area more than 5 hectare is very uncommon. So the size of lease for minor minerals including river sand mining will be determined by the States as per their circumstances.

(2). The mining of minor minerals is mostly in clusters. The Environment Impact Assessment or Environment Management Plan are required to be prepared for the entire cluster in order to capture all the possible externalities. These reports shall capture carrying capacity of the cluster, transportation and related issues, replenishment and recharge issues, geo-hydrological study of the cluster area. The Environment Impact Assessment or Environment Management Plan shall be prepared by the State or State nominated Agency or group of project proponents in the Cluster or the project proponent in the cluster.

(3). There shall be one public consultation for entire cluster after which the final Environment Impact Assessment or Environment Management Plan report for the cluster shall be prepared.

(4). Environmental clearance shall be applied for and issued to the individual project proponent. The individual lease holders in cluster can use the same Environment Impact Assessment or Environment Management Plan for application for environmental clearance. The cluster Environment Impact Assessment or Environment Management Plan shall be updated as per need keeping in view any significant change.

(5). The details of cluster Environment Impact Assessment or Environment Management Plan shall be reflected in each environmental clearance in that cluster and DEAC, SEAC, and EAC shall ensure that the mitigative measures emanating from the Environment Impact Assessment or Environment Management Plan study are fully reflected as environmental clearance conditions in the environmental clearance's of individual project proponents in that cluster.

(6). A cluster shall be formed when the distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in a homogeneous mineral area.

(7). Form 1M, Pre-Feasibility Report and mine plan for Category 'B2' projects for mining of minor minerals shall be prepared by the Registered Qualified Person or Accredited Consultants of Quality Council of India, National Accreditation Board for Education and Training. The Environment Impact Assessment or Environment Management Plan for Category 'A' and Category 'B1' projects shall be prepared by the accredited consultants of Quality Council of India, National Accreditation Board for Education and Training.

(8). The SEIAAs shall have supervisory jurisdiction over the DEIAAs and decisions of DEIAA shall be reviewed by the SEIAA without prejudice to any provisions under any existing law.

Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation

Area of Lease (Hectare)	Category of Project	Require-ment of EIA / EMP	Require-ment of Public Hearing	Require-ment of EC	Who can prepare EIA/ EMP	Who will apply for EC	Authority to appraise/ grant EC	Authority to monitor EC compliance
EC Proposal of Sand Mining and other Minor Mineral Mining on the basis of individual mine lease								
0 – 5ha	**'B2'**	Form –1M, PFR and Approved Mine Plan	No	Yes	Project Proponent	Project Proponent	DEAC/ DEIAA	DEIAA SEIAA SPCB CPCB MoEFCC Agency

> 5 ha and < 25 ha	**'B2'**	Form –I, PFR and Approved Mine Plan and EMP	No	Yes	Project Proponent	Project Proponent	SEAC / SEIAA	nominated by MoEFCC
≥ 25ha and < 50ha	**'B1'**	Yes	Yes	Yes	Project Proponent	Project Proponent	SEAC/ SEIAA	
≥ 50 ha	**'A'**	Yes	Yes	Yes	Project Proponent	Project Proponent	EAC/ MoEFCC	
EC Proposal of Sand Mining and other Minor Mineral Mining in cluster situation								
Cluster area of mine leases up to 5 ha	**'B2'**	Form –1M, PFR and Approved Mine Plan	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	DEIAA SEIAA SPCB CPCB MoEFCC Agency nominated by MoEFCC
Cluster area of Mine leases > 5 ha and < 25 ha with no individual lease > 5 ha	**'B2'**	Form –I, PFR and Approved Mine Plan and one EMP for all leases in the Cluster	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	
Cluster of mine leases of area ≥ 25 hectares with individual lease size < 50ha	**'B1'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	SEAC/ SEIAA	
Cluster of any size with any of the individual lease ≥ 50ha	**'A'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	EAC/ MoEFCC	

APPENDIX - XII

[See paragraph 10 (iv)]

PROCEDURE FOR MONITORING OF SAND MINING OR RIVER BED MINING

1. The security feature of Transport Permit shall be as under:

   (a) Printed on Indian Banks' Association (IBA) approved Magnetic Ink Character Recognition (MICR) Code paper.

   (b) Unique Barcode.

   (c) Unique Quick Response (QR) code.

   (d) Fugitive Ink Background.

   (e) Invisible Ink Mark.

   (f) Void Pantograph.

   (g) Watermark.

2. Requirement at Mine Lease Site:

   (a) Small Size Plot (Up to 5 hectare): Android Based Smart Phone.

(b) Large Size Plots (More than 5 hectare): CCTV camera, Personal Computer (PC), Internet Connection, Power Back up.

(c) Access control of mine lease site.

(d) Arrangement for weight or approximation of weight of mined out mineral on basis of volume of the trailer of vehicle used.

3. Scanning of Transport Permit or Receipt and Uploading on Server:

(a) Website: Scanning of receipt on mining site can be done through barcode scanner and computer using the software;

(b) Android Application: Scanning on mining site can be done using Android Application using smart phone. It will require internet availability on SIM card;

(c) SMS: Transport Permit or Receipt shall be uploaded on server even by sending SMS through mobile. Once Transport Permit or Receipt get uploaded, an unique invoice code gets generated with its validity period.

4. Proposed working of the system:

The State Mining Department should print the Transport Permit or Receipt with security features enumerated at Paragraph 1 above and issue them to the mine lease holder through the District Collector. Once these Transport Permits or Receipts are issued, they would be uploaded on the server against that mine lease area. Each receipt should be preferably with pre-fixed quantity, so the total quantity gets determined for the receipts issued.

When the Transport Permit or Receipt barcode gets scanned and invoice is generated, that particular barcode gets used and its validity time is recorded on the server. So all the details of transporting of mined out material can be captured on the server and the Transport Permit or Receipt cannot be reused.

5. Checking On Route:

The staff deployed for the purpose of checking of vehicles carrying mined mineral should be in a position to check the validity of Transport Permit or Receipt by scanning them using website, Android Application and SMS.

6. Breakdown of Vehicle:

In case the Vehicle breakdown, the validity of Transport Permit or Receipt shall be extended by sending SMS by driver in specific format to report breakdown of vehicle. The server will register this information and register the breakdown. The State can also establish a call centre, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server or call centre.

7. Tracking of Vehicles:

The route of vehicle from source to destination can be tracked through the system using check points, RFID Tags, and GPS tracking.

8. Alerts or Report Generation and Action Review:

The system will enable the authorities to develop periodic report on different parameters like daily lifting report, vehicle log or history, lifting against allocation, and total lifting. The system can be used to generate auto mails or SMS. This will enable the District Collector or District Magistrate to get all the relevant details and shall enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle shall be tracked.

The monitoring of mined out mineral, environmental clearance conditions and enforcement of Environment Management Plan will be ensured by the DEIAA, SEIAA and the State Pollution Control Board or Committee. The monitoring arrangements envisaged above shall be put in place not later than three months. The monitoring of enforcement of environmental clearance conditions shall be done by the Central Pollution Control Board, Ministry of Environment, Forest and Climate Change and the agency nominated by the Ministry for the purpose.".

[No. Z-11013/98/2014-IA-II (M)]

MANOJ KUMAR SINGH, Jt. Secy.

Note: The principal rules were published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) *vide* number S.O. 1533 (E), dated the 14th September, 2006 and subsequently amended *vide* the following numbers :-

1. S.O. 1737 (E) dated the 11th October, 2007;
2. S.O. 3067 (E) dated the 1st December, 2009;
3. S.O. 695 (E) dated the 4th April, 2011;
4. S.O. 2896 (E) dated the 13th December, 2012;
5. S.O. 674 (E) dated the 13th March, 2013;
6. S.O. 2204 (E) dated the 19th July 2013;
7. S.O. 2555 (E) dated the 21st August, 2013;
8. S.O. 2559 (E) dated the 22nd August, 2013;
9. S.O. 2731 (E) dated the 9th September, 2013;
10. S.O. 562 (E) dated the 26th February, 2014;
11. S.O. 637 (E) dated the 28th February, 2014;
12. S.O. 1599 (E) dated the 25th June, 2014;
13. S.O. 2601 (E) dated the 7th October, 2014;
14. S.O. 2600 (E) dated the 9th October, 2014
15. S.O. 3252 (E) dated the 22nd December, 2014;
16. S.O. 382 (E) dated the 3rd. February, 2015;
17. S.O. 811 (E) dated the 23rd March, 2015;
18. S.O. 996 (E) dated the 10th April, 2015;
19. S.O. 1142 (E) dated the 17th April, 2015;
20. S.O. 1141 (E) dated the 29th April, 2015;
21. S.O. 1834 (E) dated the 6th July, 2015.

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Annexure No. SA 2

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 186/2016
(M.A. No. 350/2016)
And
Original Application No. 200/2016
And
Original Application No. 580/2016
(M.A. No. 1182/2016)
And
Original Application No. 102/2017
And
Original Application No. 404/2016
(M.A. No. 758/2016, M.A. No. 920/2016,
M.A. No. 1122/2016, M.A. No. 12/2017 & M.A. No. 843/2017)
And
Original Application No. 405/2016
And
Original Application No. 520 of 2016
(M.A. No. 981/2016, M.A. No. 982/2016 & M.A. No. 384/2017)

IN THE MATTERS OF:

Satendra Pandey
Vs.
Ministry of Environment, Forest & Climate Change & Anr.
And
Rajeev Suri Vs. Union of India
And
Badal Singh Vs. Union of India & Ors.
And
Nature Club of Rajasthan (NGO) Vs. Union of India & Ors.
And
Naresh Zargar Vs. Ministry of Environment & Forest and Anr.
And
Rajeev Suri Vs. Union of India & Anr.
And
Vikrant Tongad Vs. Union of India

CORAM : HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE DR. JUSTICE JAWAD RAHIM, JUDICIAL MEMBER
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Present: Applicant: Mr. Rahul Choudhary and Ms. Meera Gopal, Advs. in Original Application No. 388/2018

Respondents Mr. Divya Prakash Pande, Adv. for Ministry of Environment, Forest and Climate Change
Dr. Abhishek Atrey, Adv. for Ministry of Environment, Forest and Climate Change
Mr. Amit Tiwari, Adv. for State of Uttar Pradesh
Mr. Ashok Kumar Sharma and Mr. Kshitij Mudgal, Advs.
Mr. V.K. Shukla, and Ms. Vijay Lakshmi, Advs. for State of MP, State Environment Impact Assessment Authority & Mining Corporation
Mr. Rahul Pratap, Adv. for Ministry of Environment, Forest and Climate Change
Mr. Shiv Mangal Sharma, AAG with Mr. Saurabh Rajpal and Mr. Vikramjeet Singh, Advs. for State of Rajasthan

	Date and Remarks	Orders of the Tribunal
	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	1. By this application, the applicant has sought to assail Notifications dated 15.01.2016, 20.01.2016 and 01.07.2016 amending the EIA Notification dated 14.09.2006 on the ground that the procedure for obtaining Environmental Clearance in respect of mining of minor minerals for areas from 0 to 25 ha has been diluted by bringing it within B-2 category projects and exempting such category from Public Consultation, Environment Impact Assessment (EIA) and Environment Management Plan (EMP) which was in contravention of the judgment of the Hon'ble Supreme Court in *Deepak Kumar Vs. State of Haryana & Ors.: (2012) 4SCC 629* and also of this Tribunal in *Original Application No. 123 of 2014* dated 13.01.2015. 2. The crux of the case of the applicant is that while in *Deepak Kumar* case (supra) it had been held that all mining leases in respect of its size would require to obtain Environmental Clearance and be subjected to strict regulatory framework as that of all major minerals, the impugned Notifications, more particularly 15.01.2016, exempts the necessity of having EIA and Public Consultation for areas upto 25 ha. 3. According to the applicant the impugned Notification dated 15.01.2016 provided exemption of the rigors of the necessity of EIA and EMP even for areas ranging from 5 to 25 ha when in the earlier Notifications it was necessary from 5 to 50 ha. It was contended that the Hon'ble Supreme Court had expressed its concern on

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	dispensing with the necessity of obtaining Environmental Clearance and the other requirements cognate thereto for areas less than 5 ha in the case of *Deepak Kumar* (supra). 4. Further contention was that B-category as it stood originally, was broken to B-1 and B-2 categories by bringing areas of mining of minerals from 25 ha to 50 ha within B-1 category and 0 to 25 ha as B-2 category. For B-2 category, the authority prescribed for grant of Environmental Clearance is now the District Environment Impact Assessment Authority (DEIAA) which would base its decision on the recommendations of District Expert Appraisal Committee (DEAC). 5. Further contentions of the applicant in assailing the Notification dated 15.01.2016 are as follows: a) Form-1M prescribed in the impugned Notification dated 15.01.2016, required to be submitted for mining of minor minerals upto 5 ha under Category B-2 projects provided in Appendix-VII, is generic seeking only basic details pertaining to the lease holder and the mine with perfunctory information on the environmental effect of the project which was in contrast to Form-1 which is required to be filled up for all other categories which is comprehensive seeking detailed information on environmental implications of the project. b) B-2 projects of 0 – 5 ha under individual and cluster category are exempted from requirements of preparing an Environment Impact Assessment

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	Report (EIA) and Environment Management Plan (EMP) and those greater than 5 ha and less than or equal to 25 ha are exempted from preparing Environment Impact Assessment Report (EIA) both with respect to individual Mine Lease and cluster situation. No such exemption has been provided in para 7 (i) of the EIA Notification, 2006 under Stage (2) - Scoping which stipulates such requirement, but it has been done away with now at Appendix-XI of Notification dated 15.01.2016. c) EIA/EMP is an integral and most critical component of Environmental Clearance as it is only through the EIA that the potential impacts and risks of a project can be assessed and mitigation measures formulated and adopted in the EMP. By exempting EIA/EMP, critical environmental aspects like anticipated environmental impacts, mitigation measures and additional studies involving public consultation, risk assessment, social impact assessment and rehabilitation and resettlement action plans, stand exempted. These requirements provided under Appendix-III, defeats the very purpose of the Notification and the Environment (Protection) Act, 1986. d) The District Level Environment Impact Assessment Authority (DEIAA) and District Level Expert Appraisal Committee (DEAC) comprises mostly of officers/bureaucrats who have no

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	expertise and scientific knowledge to assess environmental implications, and have been conferred with excessive and uncanalized power devoid of any guidelines. Even the power to appoint the Expert Members vested upon the authorities in the DEIAA and DEAC are unguided whereas there is an extensive elaborations with regard to qualifications, skill sets and competencies for the members of SEAC and SEIAA. 6. Based, *inter-alia*, upon the aforesaid grounds, the applicant seeks a direction for quashing the impugned Notifications. 7. Mr. Divya Prakash Pande, Ld. Counsel for MoEF&CC in his arguments, at the outset, raised objection as to the maintainability of the application on the ground of jurisdiction of the Tribunal to grant relief for quashing the impugned notifications. It is contended that the decision of this Court in the case of *S.P. Muthuraman v. Union of India*, in O.A. No. 676 of 2017 (Earlier O.A. No. 37/2015) whereby the Tribunal has held that it had the jurisdiction to pass such orders has since been challenged before the Hon'ble Supreme Court in Civil Appeal No. 7191-7192 of 2015 and is yet to be decided and, by implication of the orders passed by the Hon'ble Supreme Court, operation of the impugned judgement stands stayed. 8. On the merits of the application, it is submitted that Notification dated 15th January, 2016 which is sought to

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	be assailed, had been passed by the MoEF&CC in exercise of its powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 read with clause (d) of sub-rule (3) of Rule 5 of the Environment (Protection) Rules, 1986. The notification was issued after due deliberations with various stakeholders and the State Governments over the draft notification in respect thereof issued on 22nd September, 2015 and, after a committee constituted *vide* letter dated 3rd December, 2015 to examine the comments/suggestions submitted by them, had submitted its report. The impugned Notification provides for DIEAA/DEAC in the districts which also includes appointment of Officers/bureaucrats as experts in the two bodies. The impugned Notification is further justified by the Learned Counsel contending that as the Executive Engineer, Irrigation Department has been made part of the DEAC as he deals with the rivers and canals in the district and, therefore, has the best information and knowledge about sand and gravel deposits in the districts. The Forest Department officials are also part of these committees who have the ability to do value addition in forest areas or areas adjoining the forest having deposits of minor minerals. 9. Upon consideration of the fact and circumstances set out in the original application and upon hearing the Ld. Counsel for parties, we find that the impugned Notification dated 15th January, 2016 is not consistent with the decision of the Hon'ble Supreme Court in the case of *Deepak Kumar (supra).* We find substance in the

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	submissions of the Ld. Counsel for the applicant that while breaking category B of the mines to B-1 & B-2 may not *per se* be bad, it certainly dilutes the stringent requirement of lease areas upto 25 ha being exempted from the necessity of submitting EIA and EMP for grant of Environmental Clearance. It is undisputed that the impugned Notification is issued with the object to comply with the directions passed in the case of *Deepak Kumar (supra).* This case had arisen as the EIA Notification dated 14th September, 2006 was being flouted by breaking homogenous areas into pieces of less than 5 ha in the States of Uttar Pradesh, Rajasthan and Haryana, as the notification then did not require Environmental Clearance for areas less than 5 ha. The Hon'ble Supreme Court after noting the serious deleterious effect of quarrying, mining and removal of sand in-stream and up-stream of rivers to the environment, in paragraphs 9 and 10 (of SCC), held as follows: *"9. Extraction of alluvial material from within or near a streambed has a direct impact on the stream's physical habitat characteristics. These characteristics include bed elevation, substrate composition and stability, in-stream roughness elements, depth, velocity, turbidity, sediment transport, stream discharge and temperature. Altering these habitat characteristics can have deleterious impacts on both in-stream biota and the associated riparian habitat. The demand for sand continues to increase day by day as building and construction of new infrastructures and expansion of existing ones is continuous thereby placing immense pressure on the supply of the sand resource and hence mining activities are going on legally and illegally without any restrictions. Lack of proper planning and sand management cause disturbance of marine ecosystem and also upset the ability of natural marine processes to replenish the sand.* *10. We are expressing our deep concern since we are faced with a situation where the*

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	*auction notices dated 3-6-2011 and 8-8-2011 have permitted quarrying mining and removal of sand from in-stream and upstream of several rivers, which may have serious environmental impact on ephemeral, seasonal and perennial rivers and river beds and sand extraction may have an adverse effect on bio-diversity as well. Further it may also lead to bed degradation and sedimentation having a negative effect on the aquatic life. The rivers mentioned in the auction notices are on the foothills of the fragile Shivalik hills. Shivalik hills are the source of rivers like Ghaggar, Tangri, Markanda etc. River Ghaggar is a seasonal river which rises up in the outer Himalayas between Yamuna and Satluj and enters Haryana near Pinjore, District Panchkula, which passes through Ambala and Hissar and reaches Bikaner in Rajasthan. River Markanda is also a seasonal river like Ghaggar, which also originates from the lower Shivalik hills and enters Haryana near Ambala. During monsoon, this stream swells up into a raging torrent, notorious for its devastating power, as also, river Yamuna.* *11. We find that it is without conducting any study on the possible environmental impact on/in the river beds and elsewhere the auction notices have been issued. We are of the considered view that when we are faced with a situation where extraction of alluvial material within or near a riverbed has an impact on the rivers physical habitat characteristics, like river stability, flood risk, environmental degradation, loss of habitat, decline in biodiversity, it is not an answer to say that the extraction is in blocks of less than 5 hectares, separated by 1 km, because their collective impact may be significant, hence the necessity of a proper environmental assessment plan."* 10. The Hon'ble Supreme Court also took note of the fact that the MoEF&CC had constituted a Core Group under the Chairmanship of the Secretary (Environment & Forest) to look into the environment aspects associated with mining of the minor minerals *vide* order dated 24th March, 2009 with specific terms and conditions. The Core Group after consideration of various issues including cluster of mine approach for addressing and implementing EMP in case of small mines, submitted a report on 29th

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	January, 2010 with the recommendation to permit mining of minor minerals under strict regulatory regime and carried out only under an approved framework of mining plan which should provide for reclamation and rehabilitation of mine areas. For smaller mine lease areas a cluster approach was recommended. It was directed that the States should adopt the recommendations and the model guidelines framed by the Ministry of Mines, namely the Model Rules, 2010. 11. In pursuance of the directions, the impugned Notification dated 15th January, 2016 was ultimately issued. The MoEF&CC Notification dated 14th December, 2006 as it stood earlier prescribed for two categories of projects and activities as Category A and Category B based on the spatial extent of potential impacts, potential impacts on human health and natural and man-made resources. Stage (1)-Screening that provides for Category 'B' projects or activities, entail scrutiny of an application seeking prior Environment Clearance made in Form 1 by the concerned State Level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of EIA for appraisal prior to grant of Environment Clearance depending upon the nature and location specificity of the project. It further provides that the project requiring EIA report would be termed as Category 'B-1' and remaining projects as Category 'B-2' that would not require EIA report. Discretion to make such categorization was left upon the MoEF&CC and to issue appropriate guidelines from time to time. This

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	provision was a subject matter of challenge in the case of *Himmat Singh Shekhawat v. State of Rajasthan,* 2015 ALL (I) NGT Reporter (1) DEL 44 by which it was upheld as having been issued by the Ministry as a Subordinate Legislation. However, the office memorandums dated 24th June, 2013 and 24th December, 2013 prohibiting grant of Environment Clearance to the mine areas of less than 5 ha was quashed as being in conflict with the aforesaid provision. 12. The only contention that require for us to consider in this case is as to whether the Notification dated 15th January, 2016 would satisfy the spirit of the directions issued in the case of *Deepak Kumar (supra).* As already noted, EIA Notification dated 14th September, 2006 under the Schedule provided thereto require all mining lease area of equal to and up to 50 ha to seek Environment Clearance requiring to submit EIA for appraisal from the SEIAA. 13. The impugned Notification dated 15th January, 2016, however, would clearly indicate that Category B has been split into category B1 and B2 and again, category B2 has been further split into areas of 0-5 ha and 5-25 ha. While 0-5 ha has been exempted from the requirement of EIA/Public Consultation, such exemption has also been provided even for mining areas of 5 ha to 25 ha with the DEAC and the DEIAA as the prescribed authority for evaluation and grant of Environmental Clearance. Category B-1 being mining areas of 25 ha to 50 ha, the authorities prescribed are the SEAC and SEIAA. For falling in excess of 50 ha being Category-A, it is the EAC and the

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	MoEF&CC. 14. The procedure for grant of the Environment Clearance by the DEIAA for areas between 0 to 5 ha falling under Category 'B-2' is found prescribed in paragraphs 6, 7(iii) (a) and 7(iii) (b) of the impugned Notification read with appendices VIII, X and XI. The Schematic Presentation of Requirement of Environment Clearance of Minor Minerals including cluster situation provided in a table to Appendix XI would substantiate indubitably that even for areas between 5 to 25 ha, no EIA and Public Hearing is required and in cluster situation also, the requirement of EIA and Public Hearing have been exempted. 15. Introduction of such procedure, in our view, is clearly not consistent with the directions contained in the case of *Deepak Kumar (supra)* and the spirit behind such direction. By the provision, mining area upto from 5 ha to 25 ha has been completely exempted from the EIA and Public Consultation. For areas of 5 ha and below, apart from the exemption, it has been made only subject to a separate procedure of preparing a District Survey Report (DSR). These provisions quite apparently are more mine-centric rather than striving a balance between mining and environment especially with regard to Form-1M which needs to be made more elaborate incorporating environment related aspects. 16. The Sustainable Sand Mining Management Guidelines, 2016 prepared by the MoEF&CC has also deprecated the procedure as will appear from below which

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	is contained in the chapter on "The Issues and Management of Mining in Cluster":- "It is seen that the categorization of mines into 'B1' and 'B2' category in which Category 'B2' leases are being exempted from the requirement of Environment Impact Assessment, Environment Management Plan, and Public Consultation for grant of EC, in many cases now the mining leases are being given for 25 hectares or less. This defeats the purpose and intent of Hon'ble Supreme Court Judgment which orders environment clearance for all mining leases irrespective of size. The environment clearance without Environment Impact Assessment, Environment Management Plan, and Public Consultation does not serve the purpose of environment clearance which is to ensure environmentally sustainable and socially responsible mining. So if a cluster or individual lease size exceeds 5 hectare, the EIA/ EMP should be completed in the process of grant of prior environment clearance." 17. Thus, even according to the Sustainable Sand Mining Management Policy issued by the MoEF&CC by dispensing with Public Hearing, the judgment of the Hon'ble Supreme Court in the case of *Deepak Kumar (supra)* will stand defeated. 18. We also find that parameters for consideration while preparing District Mining Plan (DMP) and District Survey Report (DSR) are only for the purpose of ascertaining whether an area is fit for mining which are quite different from the parameters laid down for EIA. The consideration of the view point of the public by keeping DSR in public domain is not a substitute of Public Hearing for consideration of the view point of the public for EIA. 19. With specific reference to mining in cluster, the Report of the Committee of Secretaries, Ministry of Environment, Forest and Climate Change, 2010 recommended as follows:

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	*"Considering the nature of occurrence of minor mineral, economic condition of the lessee and the likely difficulties to be faced by Regulatory Authorities in monitoring the environmental impacts and implementation of necessary mitigation measures, it may be desirable to adopt cluster approach in case of smaller mine leases being operated presently."* 20. This report which is a part of the Sustainable Sand Mining Management Guidelines, 2016 finds reinforcement in the Chapter "The Issues and Management of Mining in Cluster" referred to earlier where it has inter-alia been recommended as under: *"The Hon'ble Supreme Court, NGT, SEAC/EAC and the Project Proponents have raised issue of cluster in mine lease allotment and environment clearance for the same, so following conditions need to be ensured for cluster of mines:* *1. To address the concern of adverse impact of minor mineral mining on environment it is proposed that all mining activity including river sand mining (above 5 hectare individual or cluster) will need to prepare Environment Impact Assessment Report and Environment Management Plan before grant of environment clearance. These reports (EIA /EMP) can be prepared by the State or State nominated Agency / the Project Proponent (s).* *2. As can be seen from the data provided by the States most of the mining leases for minor minerals are of lease area less than 5 hectare. It is also reported that in hill states getting a stretch in river with area more than 5 hectare is very uncommon. So the size of lease for minor minerals including river sand mining will be determined by the States as per their circumstances.* *3. The EIA Notification, 2006 does not provide for cluster EC, it provides for issuance of EC to individual project proponents and the same has also been upheld in the judgment of Hon'ble Supreme Court in Vijay Bansal vs. State of Haryana case. So EC will have to be applied for and issued to the individual project proponent.* *4. A cluster shall be formed when the distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in a homogeneous mineral area.* *5. The mining of minor minerals is mostly in clusters. The Environment Impact Assessment or Environment Management*

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	*Plan are required to be prepared for the entire cluster in order to capture all the possible externalities. These reports shall capture carrying capacity of the cluster, transportation and related issues, replenishment and recharge issues, geo-hydrological study of the cluster area. The Environment Impact Assessment or Environment Management Plan shall be prepared by the State or State nominated Agency or group of project proponents in the Cluster or the project proponent in the cluster.* 6. *The individual lease holders in cluster can use the same Environment Impact Assessment or Environment Management Plan for application for environmental clearance. The cluster Environment Impact Assessment or Environment Management Plan shall be updated as per need keeping in view any significant change.* 7. *There shall be one public consultation for entire cluster after which the final Environment Impact Assessment or Environment Management Plan report for the cluster shall be prepared.* 8. *The details of cluster Environment Impact Assessment or Environment Management Plan shall be reflected in each environmental clearance in that cluster and District Expert Appraisal Committee (DEAC), SEAC, and EAC shall ensure that the mitigative measures emanating from the Environment Impact Assessment or Environment Management Plan study are fully reflected as environmental clearance conditions in the environmental clearance's of individual project proponents in that cluster.* *9. .....* *10. .....* *11. ....."* 21. Dispensing with the requirement of Public Hearing which forms a part of the Public Consultation under Stage-III of the Environmental Clearance process under EIA Notification, 2006 for areas measuring 0 to 25 ha for individual mine areas and in cluster situation where public hearing has been provided, has resulted in gross dilution of EIA Notification dated 14th September, 2006. Such dilution would, in our view, result in its misuse by unscrupulous elements and the situation would revert

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	back to the lawless state prevailing prior to the decision in the case of *Deepak Kumar (supra).* Stringent measures are, therefore, necessary if the rampant exploitation of the minor minerals is to be curbed. This apparently was also the view of the Hon'ble Supreme Court in the case of *Deepak Kumar (supra).* 22. For all these reasons, we direct that the procedure laid down in the impugned Notification be brought in consonance and in accord with the directions passed in the case of *Deepak Kumar (supra)* by (i) providing for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling under Category B-2 at par with Category B-1 by SEAC/ SIEAA as well as for cluster situation wherever it is not provided; (ii) Form-1M be made more comprehensive for areas of 0 to 5 ha by dispensing with the requirement for Public Consultation to be evaluated by SEAC for recommendation of grant EC by SEIAA instead of DEAC/DEIAA; (iii) if a cluster or an individual lease size exceeds 5 ha the EIA/EMP be made applicable in the process of grant of prior environmental clearance; (iv) EIA and/or EMP be prepared for the entire cluster in terms of recommendation 5 (supra) of the Guidelines for the purpose of recommendations 6, 7 and 8 thereof; (v) revise the procedure to also incorporate procedure with respect to annual rate of replenishment and timeframe for replenishment after mining closure in an area; (vi) the MoEF&CC to prepare guidelines for calculation of the cost of restitution of damage caused to mined-out areas along with the Net Present Value of Ecological Services forgone because of illegal or unscientific mining.

	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	23. We have permitted retention of 0-5 ha as a category keeping in view that some States grant isolated single lease of 5 ha and less not falling in cluster situation for which stringent requirements in Form-1M will serve the purpose of providing safeguards for protection of the environment and sustainable mining of minor minerals. This is particularly true in smaller and mountainous States as will also appear from condition no. 2 under "The Issues and Management of Mining in Cluster" referred to earlier in para 20 of this order. 24. It is reiterated that any attempt to split the lease area for the purpose of avoiding the applicable regulatory regime shall be viewed seriously. This in our view will be in the interest of the environment as deliberated in detail in the case of *Deepak Kumar (supra)* and would also satisfy the Precautionary Principle and the Principle of Sustainable Development contemplated under Section 20 of the National Green Tribunal Act, 2010. 25. The MoEF&CC shall, therefore, take appropriate steps to revise the procedure laid down in the impugned Notification dated 15th January, 2016 in terms of the above directions and observations so that it is conformity with the letter and spirit of the directions passed by the Hon'ble Supreme Court in *Deepak Kumar (supra).* The applications stand disposed of. ....., CP (Adarsh Kumar Goel) ....., JM (Dr. Jawad Rahim)

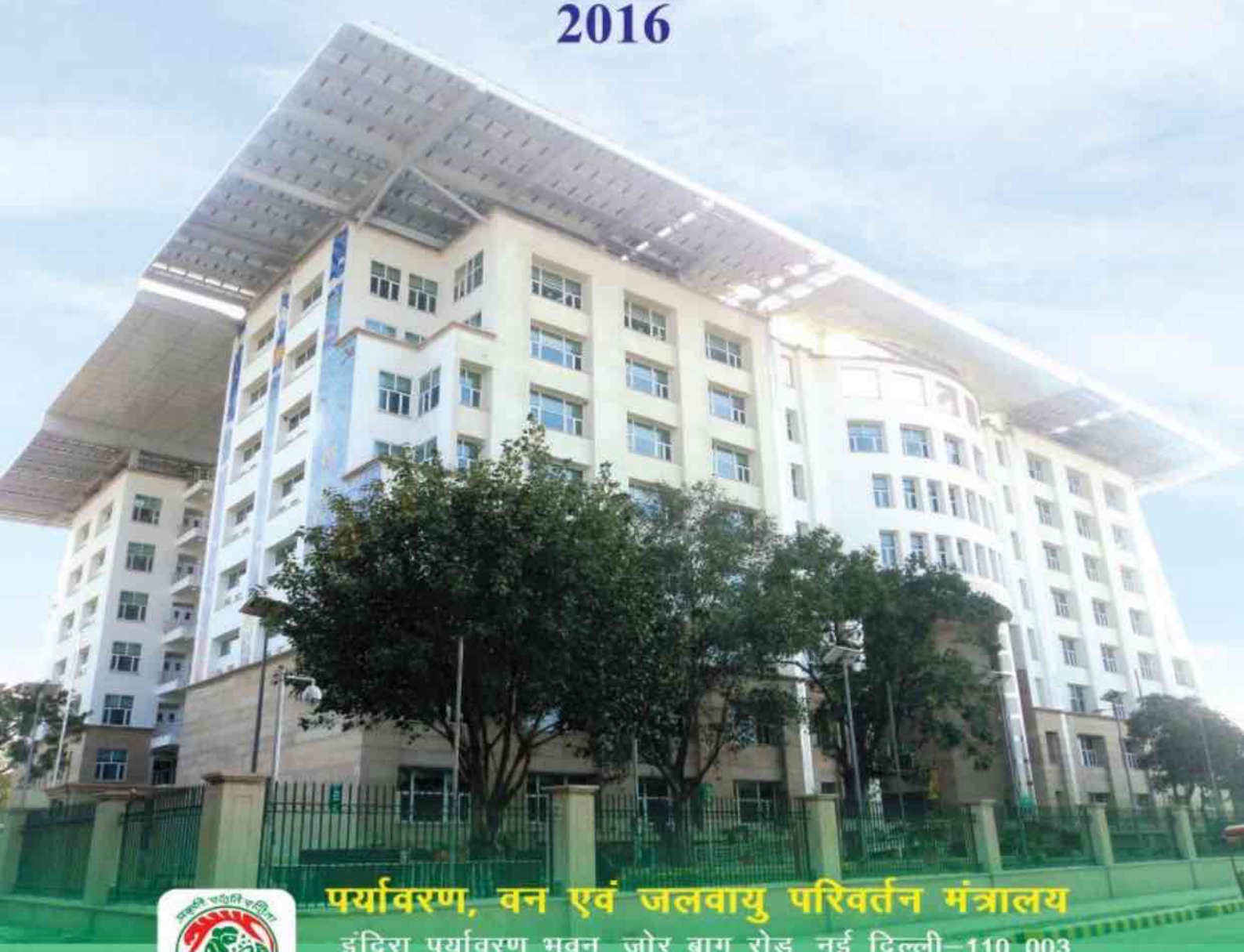
	Item Nos. 07 to 14 **September 13, 2018** **DV & AT**	.....,JM (S.P. Wangdi) .....,EM (Dr. Nagin Nanda) 13.09.2018

NATIONAL GREEN TRIBUNAL, NEW DELHI

Annexure SA 3

सत्यमेव जयते

SUSTAINABLE SAND MINING MANAGEMENT GUIDELINES 2016



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Acknowledgment

The Sustainable Sand Mining Management Guidelines 2016, has been prepared after extensive consultation with the States and stakeholders over a period of last one year. The Guideline assimilates the knowledge and experience of stakeholder. The main objective of the Guidelines is to ensure sustainable sand mining and environment friendly management practices in order to restore and maintain the ecology of river and other sand sources. The team of the officers of Ministry of Environment, Forest and Climate Change who have worked for preparing these Guidelines comprised of following:

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2. Dr. U. Sridharan, Scientist 'F'
3. Dr. R.B. Lal, Scientist 'D'
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SUSTAINABLE SAND MINING MANAGEMENT GUIDELINES

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प्रकाश जावडेकर
Prakash Javadekar

सत्यमेव जयते

राज्य मंत्री (स्वतंत्र प्रभार)
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ENVIRONMENT, FOREST & CLIMATE CHANGE
भारत सरकार / GOVERNMENT OF INDIA

FOREWORD

Environmental Protection and Sustainable Development have been the cornerstones of the policies and procedures governing the industrial and other developmental activities in India. The Ministry of Environment, Forest and Climate Change has taken several policy initiatives and enacted environmental and pollution control legislations to prevent indiscriminate exploitation of natural resources and to promote integration of environmental concerns in developmental projects. One such initiative is the Notification on Environmental Impact Assessment (EIA) of developmental projects issued on 14th September, 2006 under the provisions of Environment (Protection) Act, 1986, making EIA mandatory for certain categories of developmental projects.

Another land mark decision has been taken with the new notifications dated 15.01.2016 and 20.01.2016 on mining of minor minerals and constitution of District Level Environment Impact Assessment Authority and District Level Environment Appraisal Committee. This will ensure environmentally sustainable mining especially for sand and gravel under close supervision of district authorities. Use of information technology and information technology enabled services for scientific monitoring of mining and transportation of mined out material is another important feature of above notification.

Sand and gravel are one of the most important construction materials. Ensuring their availability is vital for the development of the infrastructure in the country. There are different sources of sand and gravel, the most important among them is the river. As the requirement of these construction materials is on rise, they also are very vital for the health, physical character of the river and the different important functions of the river. The extraction of sand and gravel from the river bodies has to be regulated and done with adoption of required environmental safeguards.

In view of evolving scenario in industry and development sector, My Ministry has prepared a "Sustainable Sand Mining Management Guidelines". The Guidelines *inter-alia* focus on preparation of District Survey Report; Management Plan; Marine Sand Mining and Impact on Marine Biodiversity; Issues and Management of Mining in Cluster; Management of Sand Deposited after Flood on Agricultural Field of Farmers; Mining of Sand from Agricultural Field; Monitoring System for Sustainable Sand Mining using Information Technology System; Creation of District Level Environment Impact Assessment Authority (DEIAA) and District Level Expert Appraisal Committee (DEAC) for granting Environment Clearance for Mining of Minor Minerals; Exemption of certain cases for requirement of Environment Clearance and Standard Environmental Conditions for Sustainable Sand Mining.

The Guidelines will help the Departments of Mines and Geology, State Pollution Control Boards/Committees, Industries, Regulators, Authorities and various Stakeholders to ensure environmentally sustainable mining in the Country.

(Prakash Javadekar)

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PREFACE

Sand is naturally occurring granular material composed of finely divided rock and mineral particles. Sand and gravel together known as aggregate, represent the highest volume of raw material used on earth. The mining of aggregate has been continuing for many years. Now the mining of aggregates has reached a level threatening the environment and ecosystem besides also reaching a level of scarcity that would threaten the economy. It is recommended that sand and aggregate mining, and quarrying should be done only after sound scientific assessment and adopting best practices to limit the impact on the environment.

The main objectives of the Guidelines, inter-alia, includes to ensure that sand and gravel mining is done in environmentally sustainable and socially responsible manner; availability of adequate quantity of aggregate in sustainable manner; improve the effectiveness of monitoring of mining and transportation of mined out material; conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system; avoid aggradation at the *downstream* reach especially those with hydraulic structures such as jetties, water intakes etc.; to ensure the rivers are protected from bank and bed erosion beyond its stable profile; no obstruction to the river flow, water transport and restoring the riparian rights and in-stream habitats; to avoid pollution of river water leading to water quality deterioration; to prevent depletion of ground water reserves due to excessive draining out of ground water; and streamlining the process for grant of environmental clearance (EC) for sustainable mining.

The recommendations for management of sustainable sand extraction are the key objectives of the Guidelines. Emphasis is given to the setting up of monitoring plans that will provide data on profile changes and sediment transport capacity to enable the authorities to evaluate the long-term effect of the mining activities both upstream and downstream of sand extraction sites. Special emphasis is given on monitoring of the mined out material, which is key to the success of environment management plan. So use of IT and IT enabled services for effective monitoring of the quantity of mined out material and transportation along with process reengineering has been made a part of the Guideline. The Guidelines propose delegation of responsibility and authority to the cutting edge level i.e. the District Environment Impact Assessment Authority along with streamlining the process of impact assessment, environment management plan and environment clearance in cluster situation.

(Ashok Lavasa)

New Delhi
Date: 15-03-2016

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EXECUTIVE SUMMARY

The sand and gravel are one of the most important construction materials. Ensuring their availability is vital for the development of the infrastructure in the country. There are different sources of sand and gravel, the most important among them is the river. As the requirement of these construction materials is on rise, they also are very vital for the health, physical character of the river and the different important functions of the river. The extraction of sand and gravel from the river bodies has to be regulated and done with adoption of required environmental safeguards.

For making available these resources, a mapping of these resources at the district level, identification of appropriate sites for extraction, appraisal of the extraction process, putting in place the required environmental safeguards, and rigorous monitoring of the volume of extracted material is required to ensure sustainability of the entire process.

The district is the unit of administration which is best placed to do the mapping of these resources, adopt the best environmental practices for extraction of these materials and monitor its extraction and movement. The large number of leases which are awarded, the scattered geographical location of the availability of these materials and decentralized requirement and usage of the sand and aggregates also places districts in a unique position to play a vital role in adoption of environmental safeguards needed for sustainable extraction of river sand and gravel.

Recommendations for management of sustainable sand extraction are the key objective of the Guidelines. Emphasis is given to the setting up of monitoring plans that will provide data on profile changes and sediment transport capacity to enable the authorities to evaluate the long-term effect of the mining activities both upstream and downstream of sand extraction sites.

Special emphasis is given on monitoring of the mined out material, which is key to the success of environment management plan. So use of IT and IT enabled services for effective monitoring of the quantity of mined out material and transportation along with process reengineering has been made a part of the Guideliness. The Guidelines proposes delegation of responsibility and authority to the cutting edge level i.e. the District Environment Impact Assessment Authority along with streamlining the process of impact assessment, environment management plan and environment clearance in cluster situation.

Promotion of manufactured sand, artificial sand and alternative technologies in construction materials and processes are also required for reducing the dependence and demand on naturally occurring sand and gravel. Development of slag sand, sand from stone chips and there certification under BIS is an important step in this direction.

INTRODUCTION

Sustainable Development is built on three pillars - environmental, social and economic. Sustainable development cannot be achieved if the environment is protected but poverty is prevalent in a significant part of the population. Similarly, sustainable development cannot be achieved through inappropriate economic growth, if it undermines the environment in which people and businesses exists. These Guideliness support that fundamental concept, promoting environmental protection, limiting negative physiological, hydrological and social impacts under pinning sustainable economic growth.

Sand and gravel have long been used as aggregate for construction of roads and building. Today, the demand for these materials continues to rise. In India, the main sources of sand are river flood plain, coastal sand, paleo channel sand, and sand from agricultural fields.

River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost. River sand mining can damage private and public properties as well as aquatic habitats. Excessive removal of sand may significantly distort the natural equilibrium of a stream channel.

Removing sediment from the active channel bed in river interrupt the continuity of sediment transport through the river system, disrupting the sediment mass balance in the river downstream and induces channel adjustments (usually incision) extending considerable distances (commonly one kilometer or more) beyond the extraction site.

The magnitude of the impact basically depends on the magnitudes of the extraction relative to bed load sediment supply and transport through the reach. Implementation of the principles and processes outlined in this Guidelines will limit the negative externalities of sand and gravel mining.

NEED FOR POLICY GUIDELINES

Sand is naturally occurring granular material composed of finely divided rock and mineral particles between 150 micron to 4.75 mm in diameter (IS 383-1970). Sand is formed due to weathering of rocks due to mechanical forces. In the process the weathered rocks forms gravel and then sand.

Sand and gravel together known as aggregate, represent the highest volume of raw material used on earth after water. The mining of aggregate has been continuing for many years. Now the mining of aggregates has reached a level threatening the environment and ecosystem besides also reaching a level of scarcity that would threaten the economy. It is recommended that sand & aggregate mining, and quarrying should be done only after sound scientific assessment and adopting best practices to limit the impact on the environment.

It is also felt that the greater use of substitute material (Manufactured Sand, artificial sand etc.) & construction technology, and sustainable use of the resource could drastically reduce adverse impact of mining on the environment.

OBJECTIVE OF THE GUIDELINES

The Guideliness has been based on the following principles:

- Uncontrolled sand mining is not sustainable.
- Compliance with present and future legislation and regulations on the subject is mandatory and not voluntary.
- Each lease holder should be given the opportunity to self-regulate to the extent that it can demonstrate compliance with legislation and regulations.
- Where self- regulation fails to deliver compliance with legislation and regulations, increased formal enforcement and monitoring should be implemented with punitive measures applied in line with the legal framework.
- There is a need to protect the environment and the right of the population to live in clean and safe surroundings, with the need to use natural resources in a way that will make a positive and sustainable contribution to the economy.

The main objectives of the Guidelines

- To ensure that sand and gravel mining is done in environmentally sustainable and socially responsible manner.
- To ensure availability of adequate quantity of aggregate in sustainable manner.
- To improve the effectiveness of monitoring of mining and transportation of mined out material.

- Ensure conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system.
- Avoid aggradation at the downstream reach especially those with hydraulic structures such as jetties, water intakes etc.
- Ensure that the rivers are protected from bank and bed erosion beyond its stable profile.
- No obstruction to the river flow, water transport and restoring the riparian rights and in-stream habitats.
- Avoid pollution of river water leading to water quality deterioration.
- To prevent depletion of ground water reserves due to excessive draining out of ground water.
- To prevent ground water pollution by prohibiting sand mining on fissures where it works as filter prior to ground water recharge.
- To maintain the river equilibrium with the application of sediment transport principles in determining the locations, period and quantity to be extracted.
- Streamlining and simplifying the process for grant of environmental clearance (EC) for sustainable mining.

THE EFFECT OF SAND AND GRAVEL MINING

Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause hazardous impact on ecological equilibrium of riverine regime. This may also cause adverse impact on in-stream biota and riparian habitats. This disturbance may also cause changes in channel configuration and flow-paths.

The effects of sand and gravel mining are as follows:

a) Extraction of bed material in excess of replenishment by transport from upstream causes the bed to lower (degrade) upstream and downstream of the site of removal.

b) In-stream habitat is impacted by increase in river gradient, suspended load, sediment transport and sediment deposition. Excessive sediment deposition for replenishment increases turbidity which prevents penetration of light required for photosynthesis and reduces food availability of aquatic fauna.

c) Riparian habitat including vegetative cover on and adjacent to the river banks it controls erosion, provide nutrient inputs into the stream and prevents intrusion of pollutants in the stream through runoff. Bank erosion and change of morphology of the river can destroy the riparian vegetative cover.

d) Bed degradation are responsible for channel shifting, causing loss of properties and degradation of landscape, it can also undermine bridge supports, pipe lines or other structures.

e) Degradation may change the morphology of the river bed, which constitutes one aspect of the aquatic habitat.

f) Degradation can deplete the entire depth of gravelly bed material, exposing other substrates that may underlie the gravel, which could in turn affect the quality of aquatic habitat. Lowering of ground water table in the flood plain because of lowering of riverbed level as well as river water level takes place because of extraction and draining out of excessive ground water from the adjacent areas. So, if a floodplain aquifer drains to the stream, groundwater levels can be lowered as a result of bed degradation.

g) Lowering of the water table can destroy riparian vegetation.

h) Excessive pumping of ground water in the process of mining in abandoned channels depletes ground water causing scarcity of irrigation and drinking water. In extreme cases it may create ground fissures and subsidence in adjacent areas.

i) Flooding is reduced as bed elevations and flood heights decrease, reducing hazard for human occupancy of floodplains and the possibility of damage to engineering works.

j) The supply of overbank sediments to floodplains is reduced as flood heights decrease.

k) An un-scientific and unregulated sand and gravel mining tends to increase channel bank

scouring and erosion. This causes a large degree of meandering of rivers and sometimes it could be in kms.

l) Rapid bed degradation may induce bank collapse and erosion by increasing the heights of banks.

m) Polluting ground water by reducing the thickness of the filter material especially if mining is taking place at top of recharge fissures.

n) Choking of sand layer which acts as filter for ingress of ground water from river by dumping of finer material, compaction of filter zone due to movement of heavy vehicles. It also reduces the permeability and porosity of the filter material.

o) Removal of gravel from bars may cause downstream bars to erode if they subsequently receive less bed material than is carried downstream from them by fluvial transport.

p) Ecological effects on bird nesting, fish migration, angling, etc.

q) Indiscrete mining activities lead to increased concentration of suspended sediment in the river which in turn causes siltation of water resources projects.

r) Un-scientific and unregulated sand and gravel mining leads to the severe health hazards like air quality degradation and dust fog.

s) Direct destruction from heavy equipment operation; discharges from equipment and refueling.

t) Biosecurity and pest risks.

u) Impacts on coastal processes.

The other deleterious impacts of indiscrete mining include

Loss of riparian habitat resulting from direct removal of vegetation along the stream bank to facilitate the use of a dragline or through the process of lowering the water table, bank undercutting, and channel incision. The physical composition and stability of substrates are altered as a result of in-stream mining and most of these physical effects may exacerbate sediment entrainment in the channel.

Furthermore, the process of in-stream mining and gravel washing produces fine sediments under all flow conditions, resulting in a deposition of fine sediment in riffles as well as other habitats at low discharge. Excess sediment is considered the greatest pollutant in waters and constitutes one of the major environmental factors in the degradation of stream fisheries.

However, in-stream mining may contribute additional sediment to downstream reaches due to the disruption of substrate stability. Once sediment enters the stream, it is best to let natural geomorphological and hydrological processes reach a dynamic equilibrium, rather than further exacerbating the situation by additional disturbance.

All other things being equal:

a) Extracting gravel from an excavation that does not penetrate the water table and is located away from an active stream channel should cause little or no change to the natural hydrological processes unless the stream captures the pit during periods of flooding.

b) In-stream extraction of gravel from below the water level of a stream generally causes more changes to the natural hydrologic processes than limiting extraction to a reference point above the water level.

c) In-stream extraction of gravel below the deepest part of the channel (the thalweg) generally causes more changes to the natural hydrological processes than limiting extraction to a reference point above the thalweg.

d) Excavating sand and gravel from a small straight channel with a narrow floodplain generally will have a greater impact on the natural hydrological processes than excavations on a braided channel with a wide floodplain.

e) Extracting sand and gravel from a large river or stream will generally create less impact than extracting the same amount of material from a smaller river or stream.

f) Over-extraction of gravel can destabilise channels and banks, and/or affect the ecologic functioning of rivers particularly if undertaken at the wrong time, or in the wrong place, or in a way that damages the river bed or margins.

GENERAL APPROACH TO SUSTAINABLE SAND AND GRAVEL MINING

Following considerations should be kept in mind for sand / gravel mining:

a) Parts of the river reach that experience deposition or aggradation shall be identified first. The Lease holder/ Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.

b) The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.

c) Sand and gravel may be extracted across the entire active channel during the dry season.

d) Abandoned stream channels on terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. Stream should not be diverted to form inactive channel.

e) Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

f) Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

g) Segments of braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.

h) Sand and gravel shall not be extracted within 200 to 500 meter from any crucial hydraulic structure such as pumping station, water intakes, and bridges. The exact distance should be ascertained by the local authorities based on local situation. The cross-section survey should cover a minimum distance of 1.0 km upstream and 1.0 km downstream of the potential reach for extraction. The sediment sampling should include the bed material and bed material load before, during and after extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross- section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume. Calculate the extraction volume based on the sediment rating curve and high flow period after determining the allowable mining depth.

i) Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.

j) Flood discharge capacity of the river could be maintained in areas where there are significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross- section history.

k) Alternatively, off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.

l) The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for ground water recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.

m) Mining depth should be restricted to 3 meter and distance from the bank should be 3 meter or 10 percent of the river width whichever less.

n) The borrow area should preferably be located on the river side of the proposed embankment, because they get silted up in course of time. For low embankment less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In case of higher embankment the distance should not be less than 50 m. In order to obviate development of flow parallel to embankment, cross bars of width eight times the depth of borrow pits spaced 50 to 60 meters centre-to-centre should be left in the borrow pits.

o) Demarcation of mining area with pillars and geo-referencing should be done prior to start of mining.

THE WORLD SCENARIO

Sand and gravel are mined world-wide and account for the largest volume of solid material extracted globally. Formed by erosive processes over thousands of years, they are now being extracted at a rate far greater than their renewal. Furthermore, the volume being extracted is having a major impact on rivers, deltas and coastal and marine ecosystems, resulting in loss of land through river or coastal erosion, lowering of the water table and decrease in the amount of sediment supply. Despite the colossal quantities of sand and gravel being used, increasing dependence on them and the significant impact that their extraction has on the environment, this issue needs far better attention and awareness.

Globally, between 47 and 59 billion tonnes of material is mined every year of which sand and gravel, known as aggregates, account for both the largest share (from 68% to 85%) and the fastest growth in extraction increase. Although more sand and gravel are mined than any other material, reliable data on their extraction is not available. The absence of global data on aggregates mining makes environmental assessment very difficult and has contributed to the lack of awareness about this issue. One way to estimate the global use of aggregates indirectly is through the production of cement for concrete (concrete is made with cement, water, sand and gravel). The production of cement is reported by 150 countries and it reached 3.7 billion tonnes in 2012 (USGS, 2013a). For each tonne of cement, the building industry needs about six to seven times more tonnes of sand and gravel (USGS, 2013b). Thus, the world's use of aggregates for concrete can be estimated at 25.9 billion tonnes a year for 2012 alone.

Added to this are all the aggregates used in land reclamation, shoreline developments and road embankments (for which the global statistics are unavailable), added to this is the 180 million tonnes of sand used in industry (USGS, 2012). Aggregates also contribute to 90% of asphalt pavements and 80% of concrete roads (Robinson and Brown, 2002). Taking all these estimates into account, a conservative estimate for the world consumption of aggregates exceeds 40 billion tonnes a year.

This large quantity of material cannot be extracted and used without a significant impact on the environment. Extraction has an impact on biodiversity, water turbidity, water table levels and landscape and on climate through carbon dioxide emissions from transportation. There are also socio-economic, cultural and even political consequences. In some extreme cases, the mining of marine aggregates has changed international boundaries, such as through the disappearance of sand islands in Indonesia (New York Times, 2010; Guerin, 2003).

The impacts of sand mining can be mainly categorized as follows:

IMPACTS ON	DESCRIPTION
Biodiversity	Impacts on related ecosystems (for example; fisheries)
Land losses	Both inland and coastal through erosion
Hydrological functions	Change in water flows, flood regulation and marine currents
Water supply	Through lowering of the water table and pollution
Infrastructures	Damage to bridges, river embankments and coastal infrastructures
Climate	Directly through transport emissions
Landscape	Coastal erosion, changes in deltaic structures, quarries, pollution of rivers
Extreme events	Decline of protection against extreme events (flood, drought, storm surge)

World over sand was until recently extracted in land quarries and riverbeds; however, a shift to marine and coastal aggregates mining has occurred due to the decline of inland resources. River and marine aggregates remain the main sources for building and land reclamation. For concrete, in-stream gravel requires less processing and produces high-quality material while marine aggregate needs to be thoroughly washed to remove salt. If the chloride is not removed from marine aggregate, a structure built with it might collapse after few decades due to corrosion of steel reinforced structures. Most sand from deserts cannot be used for concrete and land reclaiming, as the wind erosion process forms round grains that do not bind well.

INDIAN SCENARIO

The data on consumption of sand and aggregate in country is not available with any source. It can be derived indirectly from the usage of cement, construction of roads and stowing of mines. The trend for aggregates extraction can be estimated using cement production as a proxy.

Cement production has multiplied three-fold in the last 20 years from 1.37 billion tonnes of cement in 1994 to 3.7 billion tonnes in 2012 (USGS, 2013a) mainly as a result of rapid economic growth in Asia (UNEP and CSIRO, 2011). Five countries: China (58%), India (6.75%), the United States (2%), Brazil and Turkey - produce 70% of the world's cement (USGS, 2013c). The consumption of cement is expected to reach 324 million tonnes, which equates to use of 2.2 billion tonnes of aggregates. This is in addition to sand and aggregates used in stowing of mines, industry and other allied usage.

In India the main sources of sand are:

(a) River (riverbed and flood plain).

(b) Lakes and reservoirs.

(c) Agricultural fields (Haryana).

(d) Coastal / marine sand.

(e) Palaeo-channels (Bikaner in Rajasthan).

THE PRICE ELASTICITY FOR DEMAND OF SAND

As the price elasticity of demand for sand is inelastic (-0.88), any increase in price in absence of marketable alternative will not have any significant impact on demand. Use of crushed stones or other substitute material should be promoted. The regional context of aggregate resources, market demand, and the environmental impacts of various alternatives must be understood before any site-specific proposal for aggregate extraction can be reviewed.

Evaluation of aggregate supply and demand should be undertaken on the basis of production-consumption regions, encompassing the market for aggregate and all potential sources of aggregate within an economical transport distance. The finite nature of high-quality alluvial gravel resources must be recognized, and high-quality PCC-grade aggregates should be reserved only for the uses demanding this quality material (such as concrete). Alternative sources should be used in less demanding applications (such as road sub-base). Part replacement with fly ash in roads and embankments be promoted in place of sand and aggregates.

The environmental costs of sand mining should be incorporated into the price of the product so that alternative sources that require more processing but have less environmental impact become more attractive.

PROCESS OF SEDIMENT TRANSPORT

The loose boundary (consisting of movable material) of an alluvial channel deforms under the action of flowing water and the deformed bed with its changing roughness (bed forms) interacts with the flow. The resulting movement of the bed material (sediment) in the direction of flow is called sediment transport and a critical bed shear stress must be exceeded to start the particle movement.

Such a critical shear stress is referred as incipient (threshold) motion condition, below which the particles will be at rest and the flow is similar to that on a rigid boundary. Some sediment particles roll or slide along the bed intermittently and some others saltate (hopping or bouncing along the bed). The material transported in one or both of these modes is called 'bed load'.

Finer particles (with low fall velocities) are entrained in suspension by the fluid turbulence and transported along the channel in suspension. This mode of transport is called 'suspended load'. Sometimes finer particles from upland catchment (sizes which are not present in the bed material), called 'wash load', are also transported in suspension. The combined bed material and wash load is called 'total load'.

Bed load ranges from a few percent of total load in lowland rivers to perhaps 15% in Mountain Rivers to over 60% in some arid catchments. Although a relatively small part of the total sediment load, the arrangement of bed load sediment constitutes the architecture of sand, and gravel-bed channels.

The rate of sediment transport typically increases as a power function of flow; that is, a doubling of flow typically produces more than a doubling in sediment transport and most sediment transport occurs during floods. The environmental impacts from in-stream mining can be avoided, if the annual bed load is calculated and aggregate extraction is restricted to that value or some portion of it. To accurately limit extraction to some portion of bed load, the amount of sediment that passes the in-stream mining site during a given period of time must be calculated.

There is a large amount of uncertainty in the process of calculating annual rates of bed load transport. How much coarse material is moved, how long it remains in motion as also how far it moves depends on the size, shape & packing of the material and the characteristics of the river flow.

Downstream movement commonly occurs as irregular bursts of short-distance movement separated by longer periods, when the particles remain at rest. Because bed load changes from hour-to-hour, day-to-day, and year-to-year, estimating annual bed load rates is a dynamic process involving careful examination.

Constant variations in the flow of the river make the channel floor and riverbanks a dynamic interface, where some materials are being eroded while others are being deposited. The net balance of this activity, on a short- term basis, is referred to as scour or fill.

On a long-term basis, continued scour results in erosion (degradation), while continued fill results in deposition (aggradation).

A general indicator of the stability of a stream relates to the amount of vegetation present. Gravel bars that are vegetated or where the gravel is tightly packed, generally indicate streams, where the gravel supply is in balance. Streams with excessive gravel generally have gravel bars with little or no vegetation, and are surfaced with loosely packed gravel.

SUSTAINABLE SAND AND GRAVEL MINING GUIDELINES

The broad principle on which any sustainable sand mining Guidelines / policy can be based is that river/ natural resources must be utilized for the benefit of the present and future generation, so river resources should be prudently managed and developed. The preparation of District Survery Report is an important initial step.

The Processes under the Guidelines:

(a) Identification of areas of aggradation / deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited. Use of satellite imagery for identifying areas of sand deposit and quantity be done.

(b) Calculation of annual rate of replenishment and allowing time for replenishment after mining in area.

(c) Identifying ways of scientific and systematic mining.

(d) Identifying measures for protection of environment and ecology.

(e) Determining measures for protection of bank erosion.

(f) A bench mark (BM) with respect to mean sea level (MSL) should be made essential to in-mining channel reaches (MCR). Below which no mining shall be allowed.

(g) Identifying steps for conservation of mineral.

(h) Permanent gauging facilities (for discharge and sediment both) should be made compulsory for the sites having excessive mining in consultation with Central Water Commission or any competent State Agency.

(i) Implementing safeguards for checking illegal and indiscrete mining.

Following the above processes, to begin with it is important to prepare a survey document mapping the status of sand sources in a district. This survey should be conducted and report be prepared for each district. Though it is an acceptable fact that rivers cut across districts and States and every river is an ecosystem in itself. But, keeping in view the fact that the district is the most established unit of administration at which this kind of survey, planning and monitoring can be ensured effectively, it is proposed that every district will prepare this document taking the river stretch in that district as an ecological unit and inventorising other sources of sand in the district.

Besides, the production of aggregate in a particular area is a function of availability of natural resources, the size of the population, the economy of the area and various developmental and infrastructural works being undertaken in the area.

The natural resources must be utilized in environment friendly manner in scientific and systematic way and with the objective of sustainable development the policy on the subject should have provisions for protection of environment & ecology. These factors can be accounted for in a most efficient manner at district level.

The sustainable mining plan needs to be dynamic. A survey should be carried out by the District Environment Impact Assessment Authority (DEIAA) with the assistance of Geology Department, Irrigation Department, Forest Department, Public Works Department, Ground Water Boards, Remote Sensing Department and Mining Department etc. in the district at regular intervals.

The survey shall contain:

1. District wise detail of river or stream and other sand source.
2. District wise availability of sand or gravel or aggregate resources.
3. District wise detail of existing mining leases of sand and aggregates.

Based on this survey document, the action plan shall divide the river/ stream/ other sources of the District into the following categories:

1. River / Stream beds sections / other sources suitable for extraction of sand and aggregates.
2. River / Stream beds sections / other sources prohibited for extraction of sand and aggregates.

The river/ streams/ other sources of sand and aggregate are studied on following parameters:

a) Geomorphological studies

i) Place of origin
ii) Catchment area.
iii) General profile of river stream.
iv) Annual deposition factor.
v) Replenishment.
vi) Total potential of minor mineral in the river bed.

b) Geological studies

i) Lithology of catchment area.
ii) Tectonics and structural behavior of rocks.

c) Climatic Factors

i) Intensity of rainfall.
ii) Climate Zone.
iii) Temperature variation

The following points to be considered while selecting the river / stream for mining besides the above parameters:

i) A stable river is able to constantly transport the flow of sediments produced by watershed such that it's dimensions (width and depth) pattern and vertical profile are maintained without aggrading (building up) or degrading (scouring down).

ii) The amount of boulders, cobbles, pebbles, and sand deposited in river bed equals to the amount delivered to the river from catchment area and from bank erosion minus amount transported downstream each year.

iii) It is compulsive nature of river to meander in their beds and therefore they will have to be provided with adequate corridor for meandering without hindrance. Any attempt to diminish the width of the corridor (floodway) and curb the freedom to meander would prove counterproductive.

iv) Erosion and deposition is law of nature. The river stream has to complete its geomorphological cycles from youth, mature to old age.

v) River capturing is unavoidable.

vi) Fundamentally the lowest point of any stream is fixed by sea level.

This survey document should be prepared in the district based on direct and indirect benefits of mining and identification of the potential threats to the river / stream beds in the district.

Besides, calculating the carrying capacity of the river / stream beds / other sources to find out maximum quantity available to be allowed for removal each year from the sources, it should also provide various measures to regulate sand and aggregate mining in a systemic way.

It has to provide for environmentally safe depth of mining and safeguards of banks by prescribing safe distance from banks. It is required that there should be a Sub-Divisional Committee which should visit each site and make recommendation. The Committee should comprise of Sub-Divisional Magistrate, Officers from Irrigation department, State Pollution Control Board or Committee, Forest department, Geology or mining officer shall visit each site for which environmental clearance has been applied for and make recommendation on suitability of site for mining or prohibition thereof.

THE STRUCTURE OF DISTRICT SURVEY REPORT

The report can have following structure:

1. Introduction
2. Overview of Mining Activity in the District
3 The List of Mining Leases in the District with location, area and period of validity
4. Details of Royalty or Revenue received in last three years
5. Detail of Production of Sand or Bajari or minor mineral in last three years
6. Process of Deposition of Sediments in the rivers of the District
7. General Profile of the District
8. Land Utilization Pattern in the district: Forest, Agriculture, Horticulture, Mining etc.
9. Physiography of the District
10. Rainfall: month-wise
11. Geology and Mineral Wealth

12. Drainage System with description of main rivers.

Sl.No.	NAME OF RIVER	AREA DRAINED (Sq. Km)	% AREA DRAINED

13. Salient Features of Important Rivers and Streams:

Sl.No.	Name of the River / Stream	Total Length in the District (in Km)	Place of origin	Altitude at Origin

14. Methodology Adopted for Calculating of Mineral Potential

The mineral potential is calculated based on field investigation and geology of the catchment area of the river/ streams. As per the policy of the State and location, depth of minable mineral is defined. The area for removal of mineral in a river or stream can be decided depending on geo-morphology

and other factors, it can be 50% to 60% of the area of a particular river/stream, e.g. in Himachal Pradesh mineral constituents like boulders, river born bajari, sand up to a depth of one meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river/ stream.

The specific gravity of each mineral constituent is different. While calculating the mineral potential, the average specific gravity is taken as 2.25. The percent of mineral constituent like boulder, river bajari, sand also varies for different river and streams. While calculating the mineral potential the percentage of each mineral constituent is taken as, Boulders 35-40%, Bajari - 30-35%, Sand 25-30% and 5-10% for silt and clay.

The quantum of deposition varies from stream to stream depending upon factors like catchment lithology, discharge, river profile and geomorphology of the river course. There are certain geomorphological features developed in the river beds such as channel bar, point bar etc. where annual deposition is more even two to three meters.

For illustration one example of Yamuna River in Sirmaour district of Himachal Pradesh is given below:

Portion of the River / Stream Recommended for Mineral Concession	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
From Downstream of confluence with Tons River to Behral near Haryana and Uttar Pradesh border	31	478	14818000	16803612

Note: Considering the density of river bed material to be **1.89 g/cm^3**

Present Status of Mining

This gives the detail of mining leases already in operation in this stretch, area and production in last three years from these leases is calculated.

Mineral Potential is calculated in following way:

Mineral Potential

Boulder (MT)	Bajari (MT)	Sand (MT)	Total Mineable Mineral Potential (MT)
5601204	6801462	4400946	16803612

Annual Deposition

336072	408088	264057	1008217

Recommendation:

From the above it is clear that about 16803612 metric tonnes of mineral is available up to depth of one meter in the river bed of Yamuna in Sirmour district.
The annual deposition is 1008217 MT.
The average annual production is 80000 MT.
So, 16723612 MT of mineral can be safely removed.

In similar manner it should be calculated for each river and stream in the district and compiled in following format:

Sl.No.	River/ Stream	Portion of the river / stream recommended for mineral concession	Length of the recommended area for mineral concession (in kilometer)	Average width of the recommended area for mineral concession (in meters)	Area recommended for mineral concession (in sq.mtrs.)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
Total for the District						

About the size of the mining leases for the aggregates it should be borne in mind that a river / stream can be divided into two zones, which in-turn is dynamic i.e. the zone of erosion and

zone of deposition. These zones of deposition and erosion are extended in different patches in the river.

Any mining lease granted in larger tract can cover both the zones, and mining activity in zone of erosion can further aggravate the problem of erosion and as such the mining activity can be allowed only in the zone of the deposition. The mining leases of larger areas in rivers are neither in interest of environment nor in the interest of mineral conservation.

In Himalayan states the rivers and wasteland has been mostly classed as forest land and mining on that requires diversion of forest land and payment of compensatory afforestation and NPV etc. The land in river beds in hilly tracts and many small rivers at any one site seldom exceed 5 hectare, so not allowing sand mining leases less than 5 hectare on river beds further aggravates the situation. So the size of mining lease for river sand mining should be determined by the State as per the local situation.

MANAGEMENT PLAN

1. River Bed Mining Recommendations:

a) Permit Mining Volume Based on Measured Annual Replenishment

In the first year following adoption of the management plan, a volume equal to the estimated annual replenishment could be extracted from the reach of channel. Replenishment (up to the elevation of the selected channel configuration) would need to occur before subsequent extraction could take place. The concept of annual replenishment accounts for the episodic nature of sediment transport. For example, during wet periods with high stream flows, and a high contribution of sediment from hill slopes and tributaries, monitoring data would show that sand and gravel bars are replenished quickly. During drought periods with low stream flow, and little sediment supply or transport, monitoring data would likely show that bars were replenished at a slower rate.

The use of monitoring data is essential in measuring when actual replenishment occurs. The use of the concept of annual replenishment protects long-term channel stability as well as aquatic and riparian habitat by extracting a volume sustainable by watershed processes.

b) Establish an Absolute Elevation below Which No Extraction May Occur (Minimum Enveloped Level or Redline).

The absolute elevation below which no mining could occur or "redline" would be surveyed on a site-specific basis in order to avoid impacts to structures such as bridges and to avoid vegetation impacts associated with down-cutting due to excessive removal of sediment. An extraction site can be determined after setting the deposition level at 1 m above natural channel thalweg elevation, as determined by the survey approved by mine plan approving authority.

c) Limit River Bed Extraction Methods to Bar Skimming

If mining is limited to the downstream end of the bar with a riparian buffer on both the channel and hill slope (or floodplain) side, bar skimming would minimise impacts. Other methods such as excavation of trenches or pools in the low flow channel lower the local base level, and maximise upstream (head cutting and incision) and downstream (widening and braiding) impacts. In addition, direct disturbance of the substrate in the low flow channel should be avoided. Trenching on bars may be beneficial in the future if the river becomes severely aggraded, flat, shallow and braided. Trenching of bars may initially impact a smaller area of riparian habitat than skimming - as a result of excavating deeper rather than shallow skimming of a large area. However, over the

long-term, the upstream and downstream effects of a trench on the bar or in the channel may offset any short-term benefit derived from this method.

d) Extract Sand and Gravel from the Downstream Portion of the Bar:

Retaining the upstream one to two thirds of the bar and riparian vegetation while excavating from the downstream one to two third of the bar is accepted as a method to promote channel stability and protect the narrow width of the low flow channel necessary for aquatic life. Sand and gravel would be re-deposited in the excavated downstream one to two thirds of the bar (or downstream of the widest point of the bar) where an eddy would form during sediment transporting flows. In contrast, if excavation occurs on the entire bar after removing existing riparian vegetation, there is a greater potential for widening and braiding of the low flow channel.

e) Concentrate Activities to Minimise Disturbance:

River bed extraction activities should be concentrated or localised to a few bars rather than spread out over many bars. This localisation of extraction will minimise the area of disturbance of upstream and downstream effects. Skimming decreases habitat and species diversity - these effects should not be expanded over a large portion of the area.

f) Review Cumulative Effects of Sand and Gravel Extraction:

The cumulative impact of all mining proposals should be reviewed on an annual basis to determine if cumulative riverine effects or effects to the estuary are likely.

g) Maintain Flood Capacity:

Flood capacity in the river should be maintained in areas where there are significant flood hazards to existing structures or infrastructure.

h) Establish a Long-term Monitoring Program:

Monitoring of changes in bed elevation and channel morphology, and aquatic and riparian habitat upstream and downstream of the extraction would identify any impacts of sand and gravel extraction to biologic resources. Long-term data collected over a period of decades as sand and gravel extraction occurs will provide data to use in determining trends.

i) Minimise Activities That Release Fine Sediment to the River:

No washing, crushing, screening, stockpiling, or plant operations should occur at or below the streams "average high water elevation," or the dominant discharge. These and similar activities have the potential to release fine sediments into the stream, providing habitat conditions harmful to local fish.

j) Retain Vegetation Buffer at Edge of Water and Against River Bank:

Riparian vegetation performs several functions essential to the proper maintenance of geomorphic and biological processes in rivers. It shields river banks and bars from erosion. Additionally, riparian vegetation, including roots and downed trees, serves as cover for fish, provides food source, works as a filter against sediment inputs, and aids in nutrient cycling. More broadly, the riparian zone is necessary to the integrity of the ecosystem providing habitat for invertebrates, birds and other wildlife.

k) The River Bed mining should only be allowed during the dry season.

No River bed mining should be permitted during rainy season (see Appendix 9).

l) An Annual Status and Trends Report:

This report should review permitted extraction quantities in light of results of the monitoring program, or as improved estimates of replenishment become available. The report should document changes in bed elevation, channel morphology, and aquatic and riparian habitat. The report should also include a record of extraction volumes permitted, and excavation location. Finally, recommendations for reclamation, if needed should be documented.

2. Off-Channel or Floodplain Extraction Recommendations

a) Floodplain Extraction should be set back from the Main Channel

In a dynamic alluvial system, it is not uncommon for meanders to migrate across a floodplain. In areas where sand and gravel occurs on floodplains or terraces, there is a potential for the river channel to migrate toward the pit. If the river erodes through the area left between the excavated pit and the river, there is a potential for "river capture," a situation where the low flow channel is diverted though the pit. In order to avoid river capture, excavation pits should set back from the river to provide a buffer, and should be designed to withstand the 100-year flood (100-year ARI). Adequate buffer widths and reduced pit slope gradients are preferred over engineered structures which require maintenance in perpetuity. Hydraulic, geomorphic, and geotechnical studies should be conducted prior to design and construction of the pit and bund. In addition to river capture, extraction pits create the possibility of stranding fish.

b) The maximum depth of Floodplain Extraction should remain above the Channel Thalweg

Floodplain pits should not be excavated below the elevation of the thalweg in the adjacent channel. This will minimise the impacts of potential river capture by limiting the potential for head cutting and the potential of the pit to trap sediment. A shallow excavation (above the water table) would provide a depression that would fill with

water part of the year, and develop seasonal wetland habitat. An excavation below the water table would provide deep water habitat.

c) Side Slopes of Floodplain Excavation Should Range from 3:1 to 10:1

Side slopes of a floodplain pit should be graded to a slope that ranges from 3:1 to 10:1. This will allow for a range of vegetation from wetland to upland. Steep side slopes excavated in floodplain pits on other systems have not been successfully reclaimed, since it is difficult for vegetation to become stabilised. Terrace pits should be designed with a large percentage of edge habitat with a low gradient which will naturally sustain vegetation at a variety of water levels.

d) Place Stockpiled Topsoil above the 25-year Return Period or ARI Level

Stockpiled topsoil can introduce a large supply of fines to the river during a flood event and degrade fish habitat. Storage above the 25-year flood (25-year ARI) inundation level is sufficient to minimise this risk.

e) Floodplain Pits Should Be Restored to Wetland Habitat or Reclaimed for Agriculture

The key to successful restoration or reclamation is to conserve or import adequate material to re-fill the pit, while ensuring that pit margins are graded to allow for development of significant wetland and emergent vegetation.

f) Establish a Long-term Monitoring Program

A long-term monitoring program should provide data illustrating any impacts to river stability, groundwater, fisheries, and riparian vegetation. The monitoring program should assess the success of any reclamation or restoration attempted.

g) An Annual Status and Trends Report

The status and trends report described previously should include a section on the hydrologic and biologic components of floodplain pit reclamation.

3. Extraction Methods

The important methods of sand and gravel mining operations are as below:

a) **Bar scalping or skimming** is extraction of sand and gravel from the surface of bars. This method generally requires that surface irregularities be smoothed out and that the extracted material be limited to what could be taken above an imaginary line sloping upwards and away from the water from a specified level above the river's water surface at the time of extraction (typically 0.3 - 0.6 m (1-2 ft). Bar scalping is commonly repeated year after year. To maintain the hydraulic control provided to upstream by the Riffle head, the preferred method of bar scalping is now generally to leave the top one-third (approximately) of the bar undisturbed, mining only from the downstream two-

thirds.

b) Dry-Pit Channel Mining

Dry-pit channel mines are pits excavated within the active channel on dry intermittent or ephemeral stream beds. Dry pits are often left with abrupt upstream margins, from which head cuts are likely to propagate upstream.

c) Wet-Pit Channel Mining

Wet-pit mining involves excavation of a pit in the active channel below the surface water in a perennial stream or below the alluvial groundwater table.

d) Bar Excavation

A pit is excavated at the downstream end of the bar as a source of aggregate and as a site to trap sand and gravel. Upon completion, the pit may be connected to the channel at its downstream end to provide side channel habitat.

e) Channel-wide River bed Mining

In rivers with a highly variable flow regime, sand and gravel are commonly extracted across the entire active channel during the dry season. The bed is evened out and uniformly (or nearly so) lowered.

4. Reclamation Plans

Reclamation plans should include:

a) A baseline survey consisting of existing condition cross-section data: Cross-sections must be surveyed between two documented endpoints set back from the top of bank, and elevations should be referenced to bench mark;

b) The proposed mining cross-section data should be plotted over the baseline data to illustrate the vertical extent of the proposed excavation;

c) The cross-section of the replenished bar should be the same as the baseline data. This illustrates that the bar elevation after the bar is replenished will be the same as the bar before extraction;

d) A planimetric map showing the aerial extent of the excavation and extent of the riparian buffers;

e) A planting plan developed by a plant ecologist familiar with the flora of the river for any areas such as roads that need to be restored;

f) A monitoring plan: The appropriate reclamation plans can turn river-bed and floodplain sand and gravel mining operations into something perceived by the public as desirable.

MARINE SAND MINING AND IMPACT ON MARINE BIODIVERSITY

The mining of marine aggregates is increasing significantly. Marine sand mining has had an impact on seabed flora and fauna. Dredging and extraction of aggregates from the benthic (sea bottom) zone destroys organisms, habitats and ecosystems and deeply affects the composition of biodiversity, usually leading to a net decline in faunal biomass and abundance or a shift in species composition. Aggregate particles that are too fine to be used are rejected by dredging boats, releasing vast dust plumes and changing water turbidity, resulting in major changes to aquatic and riparian habitats over large areas.

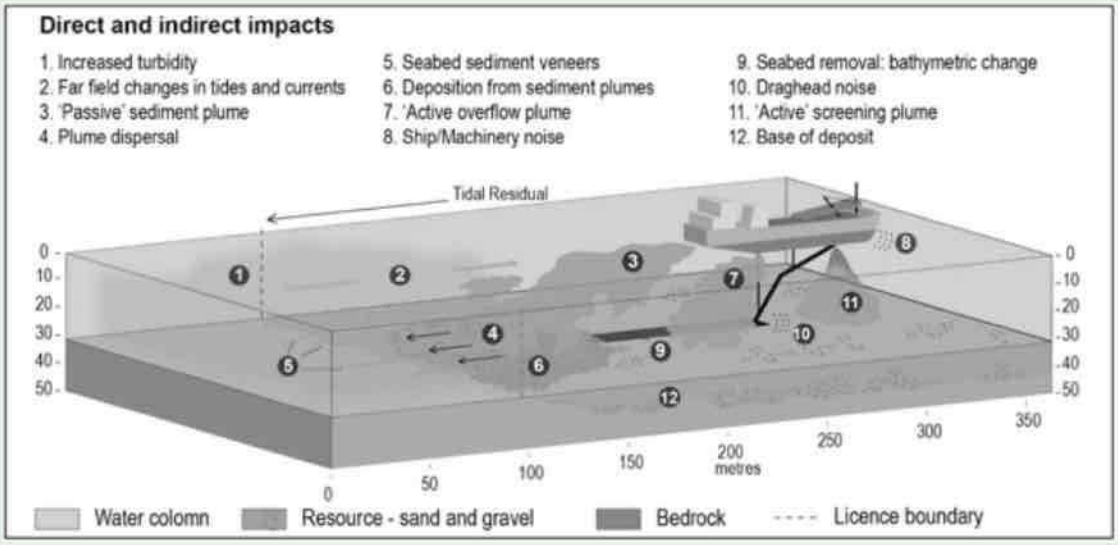

Figure: Direct and indirect consequences of aggregates dredging on the marine environment.

Source: Tillin, H.M., Houghton, A.J., Saunders, J.E., Drabble, R. and Hull, S.C., 2011. Direct and Indirect Impacts of Aggregate Dredging, Marine Aggregate Levy Sustainability Fund (MALSF). Science Monograph Series 1, 1-46.

REDUCING CONSUMPTION OF SAND

Because sand is still very cheap - sand itself is freely accessible; only extraction and transportation costs need to be covered - there is little or no incentive to induce a change in our consumption. Despite the very high value of minerals found in the sand, it is mostly used for concrete or is buried under highways. Recycled building and quarry dust material can be a substitute for sand. Concrete rubble should be recycled to avoid using aggregates, at least for low-quality uses.

Substitutes for sand are available. Quarry dust could be used to replace sand in general concrete structures. The replacement of sand by up to 40% of incinerator ash exhibits higher compressive strength than regular cement mortars. Some desert sand can be used if mixed with other material. There are alternatives for building houses, including wood, straw and recycled material. However, the current building industry is geared toward concrete know-how and equipment.

Training of architects and engineers, new laws and regulations, and positive incentives are needed to initiate a shift for lowering our dependency on sand. Renewable and recycled materials need to be targeted for building houses and roads. Use of Manufactured Sand (M-Sand) also needs to be promoted.

Alternative sources of sand and gravel, which accumulate at the bottom of dams, can also be targeted. Their use would address the problem of these aggregates accumulating which leads to a reduced capacity of dams to store water and could result in the dams' water intakes being blocked. Dams regularly release large amounts of water to flush out aggregates.

The important standard setting bodies in India are taking steps to promote the usage of alternatives to sand and gravel. Bureau of Indian Standards, the National Standards Body of the country, considering the scarcity of sand and coarse aggregates from natural sources, has evolved number of alternatives which are ultimately aimed at conservation of natural resources apart from promoting use of various waste materials without compromising in quality.

These measures include permitting in the Concrete Code (IS 456) as also in the National Building Code of India, the use of slag - a waste from steel industry, fly ash - a waste from thermal power plants, crushed over-burnt bricks and tiles - waste from clay brick and tile industry, in plain cement concrete as an alternative to sand/natural aggregate, subject to fulfilling the requirements of the Code. This Code, further, encourages use of fly ash and ground granulated blast furnace slag as part replacement of ordinary Portland cement in plain as well as reinforced cement concrete.

The Indian Standard on concrete mix design (IS 10262) has been upgraded to include guidance and examples of designing concrete mixes using fly ash and slag. Provisions for compliance for requisite quality of concrete made using fly ash and slag have been duly covered for the manufacturers of ready-mixed concrete in the Indian Standard Code of practice for RMC (IS 4926).

BIS has also formulated an Indian Standard Specification for artificial lightweight aggregates covering manufactured aggregates, such as foamed blast furnace slag, bloated clay aggregate, sintered fly ash aggregate and cinder aggregate (IS 9142).

A series of Indian Standards has also been formulated on various precast concrete products such as solid and hollow concrete blocks, light weight concrete blocks, autoclaved aerated concrete blocks, preformed foam concrete blocks, partial prefabricated concrete flooring and roofing units, concrete pipes, etc, all permitting use of fly ash and slag.

THE REPORT OF THE COMMITTEE HEADED BY SECRETARY, MoEF - 2010

A Committee headed by Secretary, Ministry of Environment and Forest was set up on the subject in 2010. The Committee considered this subject in detail and prepared a report. The important parts of the report are as follows:

Definition of Minor Mineral:

The term 'minor mineral' is defined in clause (e) of Section 3 of MMDR Act, 1957: '3 (e) "minor minerals" means building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes and any other material which the Central Government may, by Notification in the Gazette of India declare to be a minor mineral;'

The term `ordinary sand' used in clause (e) of Section 3 of the MMDR Act, 1957 has been further clarified in rule 70 of the MCR, 1960 as:

(iv) Purposes of stowing in coal mines,
(v) For manufacture of silvicrete cement,
(vi) Manufacture of sodium silicate and for
(vii) Manufacture of pottery and glass.

Additionally, the Central Government has declared the following minerals as minor minerals:

Sl.No.	Minor Minerals
i)	Boulder
ii)	Shingle
iii)	Chalcedony pebbles used for ball mill purposes only
iv)	Lime shell, kankar and limestone used in kilns for manufacture of lime used as building material
v)	Murrum

Sl.No.	Minor Minerals
vi)	Brick-earth
vii)	Fuller's earth
viii)	Bentonite
ix)	Road metal
x)	Reh-matti

Sl.No.	Minor Minerals
xi)	Slate and shale when used for building material
xii)	Marble
xiii)	Stone used for making household utensils
xiv)	Quartzite and sandstone when used for purposes of building or for making road metal and household utensils
xv)	Saltpetre, and

xvi)	Ordinary earth (Used for filling or leveling purposes in construction or embankments, roads, railways building).

It may thus be observed that minerals have been classified into major and minor minerals based on their end use rather than level of production, level of mechanization, export and import etc. There do exist some minor mineral mines of silica sand and limestone where the scale of mechanization and level of production is much higher than those of industrial mineral mines. Further, in terms of the economic cost and revenue, it has been estimated that the total value of minor minerals constitutes about 10% of the total value of mineral production whereas the value of non- metallic minerals comprises only 3%. It is, therefore, evident that the operations of mines of minor minerals need to be subject to some regulatory parameters as that of mines of major minerals. Further, unlike India there does not exist such system in any other country where minerals are classified as major and minor based on end usage. Thus, there is a need to re-look at the definition of 'minor minerals' per se. It is, therefore, recommended that Ministry of Mines along with Indian Bureau of Mines, in consultation with the State Governments may re-examine the classification of minerals into major and minor categories so that the regulatory aspects and environment mitigation measures are appropriately integrated for ensuring sustainable and scientific mining with least impacts on environment.

Size of the Mine Lease:

Area for grant of mine lease varies from State to State. Maximum area which can be held under one or more mine lease is 2590 ha or 25.90 sq. miles in Jammu and Kashmir. Rajasthan prescribed a minimum limit of 1 ha for a lease. Maximum area prescribed for permit is 50x50 m. In most of the States area of permit is not specified in the rules.

It has recently been observed by Punjab and Haryana High Court in its order dated 15.05.2009 that State Government are apparently granting short term permits by dividing the mining area into small zones in effect to avoids environmental norms. There is, thus a need to bring uniformity in the extent of area to be granted for mine lease so as to ensure that eco- friendly scientific mining practices can be adopted. It is recommended that the minimum size of mine lease should be 5 ha. Further, preparation of comprehensive mine plan for contiguous stretches of mineral deposits by the respective State Governments may also be encouraged. This may suitably be incorporated in the Mineral Concession Rules, 1960 by Ministry of Mines.

Period of Mine Lease:

The period of lease varies from State to State depending on type of concessions, minerals and its end use. The minimum lease period is one year and maximum 30 years. Minerals like granite where huge investments are required, a period of 20 years is generally given with the provisions of renewal. Permits are generally granted for short periods which vary from one month to a maximum one year. In States like Haryana, minor mineral leases are auctioned for a particular time period. Mining is considered to be capital intensive industry and considerable time is lost for developing the mine before it attains the status of fully developed mine. If the tenure of the mine lease is short, it would encourage the lessee to concentrate more on rapid exploitation of mineral without really undertaking adequate measures for reclamation and rehabilitation of mined out area, posing thereby a serious threat to the environment and health of the workers and public at large.

There is thus, a need to bring uniformity in the period of lease. It is recommended that a minimum period of mine lease should be 5 years, so that eco- friendly scientific and sustainable mining practices are adopted. However, under exceptional circumstances arising due to judicial interventions, short term mining leases / contracts could be granted to the State Agencies to meet the situation arising there from.

Cluster of Mine Approach for Small Sized Mines:

Considering the nature of occurrence of minor mineral, economic condition of the lessee and the likely difficulties to be faced by Regulatory Authorities in monitoring the environmental impacts and implementation of necessary mitigation measures, it may be desirable to adopt cluster approach in case of smaller mine leases being operated presently. Further, these clusters need be provided with processing/crusher zones for forward integration and minimizing excessive pressure on road infrastructure. The respective State Governments / Mine Owners Associations may facilitate implementation of Environment Management Plans in such cluster of mines.

Requirement of Mine Plan for Minor Minerals:

At present, most of the State Governments have not made it mandatory for preparation of mining plan in respect of minor minerals. In some States like Rajasthan, eco- friendly mining plans are prepared, which are approved by the State Mining Department. The eco- friendly mining plans so prepared, though conceptually welcome, are observed to be deficient and need to be made comprehensive in a manner as is being done for major minerals. Besides, the aspects of reclamation and rehabilitation of mined out areas, progressive mine closure plan, as in vogue for major minerals could be introduced for minor minerals as well.

It is recommended that provision for preparation and approval of mine plan, as in the case of major minerals may appropriately be provided in the Rules governing the mining of minor minerals by the respective State Governments. These should specifically include the provision for reclamation and rehabilitation of mined out area, progressive mine closure plan and post mine land use.

Creation of Separate Corpus for Reclamation / Rehabilitation of Mines of Minor Minerals:

Mining of minor minerals, in our country, is by and large unorganized sector and is practiced in haphazard and unscientific manner. At times, the size of the leasehold is also too small to address the issue of reclamation and rehabilitation of mined outs areas. It may, therefore, be desirable that before the concept of mine closure plan for minor minerals is adopted, the existing abandoned mines may be reclaimed and rehabilitated with the involvement of the State Government. There is thus, a need to create a separate corpus, which may be utilized for reclamation and rehabilitation of mined out areas. The respective State Governments may work out a suitable mechanism for creation of such corpus on the `polluter pays' principle. An organizational structure may also need to be created for undertaking and monitoring these activities.

Depth of Mining:

Mining of minerals, whether major or minor have a direct bearing on the hydrological regime of the

area. Besides, affecting the availability of water as a resource, it also affects the quality of water through direct run of going into the surface water bodies and infiltration / leaching into groundwater. Further, groundwater withdrawal, dewatering of water from mine pit and diversion of surface water may cause surface and sub- surface hydrologic systems to dry up. An ideal situation would require that quarrying should be restricted to unsaturated zone only above the phreatic water table and should not intersect the groundwater table at any point of time. However, from the point of view of mineral conservation, it may not be desirable to impose blanket ban on mining operation below groundwater table. It is, therefore, recommended that detailed hydro-geological report should be prepared in respect of any mining operation for minor minerals to be undertaken below groundwater table. Based on the findings of the study so undertaken and the comments/ recommendations of Central Ground Water Authority/ State Ground Water Board, a decision regarding restriction on depth of mining for any area should be taken on case to case basis.

Uniform Minor Mineral Concession Rules:

The economic value of the minor minerals excavated in the country is estimated to contribute to about 9% of the total value of the minerals whereas the non- metallic minerals contribute to about 2.8%. Keeping in view the large extent of mining of minor minerals and its significant potential to adversely affect the environment, it is recommended that Model Mineral Concession rules may be framed for minor minerals as well and the minor minerals may be subjected to a simpler regulatory regime, which is, however, similar to major minerals regime.

River Bed Mining:

1. Environment damage being caused by unregulated river bed mining of sand, bajri and boulders is attracting considerable attention including in the courts. The following recommendations are therefore made for the river bed mining.

    (a) In the case of mining leases for riverbed sand mining, specific river stretches should be identified and mining permits/lease should be granted stretch wise, so that the requisite safeguard measures are duly implemented and are effectively monitored by the respective Regulatory Authorities.

    (b) The depth of mining may be restricted to 3m / water level, whichever is less.

    (c) For carrying out mining in proximity to any bridge and / or embankment, appropriate safety zone should be worked out on case to case basis, taking into account the structural parameters, locational aspects, flow rate etc. and no mining should be carried out in the safety zone so worked out.

Conclusion:

Mining of minor minerals, though individually, because of smaller size of mine leases is perceived to have lesser impact as compared to mining of major minerals. However, the activity as a whole is seen to have significant adverse impacts on environment. It is, therefore, necessary that the mining of minor minerals is subjected to simpler but strict regulatory regime and carried out only under an

approved framework of mining plan, which should provide for reclamation and rehabilitation of the mined out areas. Further, while granting mining leases by the respective State Governments "location of any eco-fragile zone (s) within the impact zone of the proposed mining area, the linked Rules/ Notifications governing such zones and the judicial pronouncements, if any, need be duly noted.

The Union Ministry of Mines along with Indian Bureau of Mines and respective State Governments should therefore make necessary provisions in this regard under the Mines and Minerals (Development and Regulation) Act, 1957, Mineral Concession Rules, 1960 and adopt model Guideliness to be followed by all States (emphasis supplied)".

REGIME OF LAW AND ADMINISTRATIVE ORDERS RELATING TO MINING OF MINOR MINERALS

The Entry 54 of List 1 in Schedule VII to the Constitution of India is the entry which empowers the Parliament in respect of 'Regulation of Mines and Minerals Development. Entry 23 of List 2 of the same Schedule, read with Article 246 (3) of the Constitution confers legislative powers on the State Legislature in respect of Regulation of Mines and Mineral Development, but, this power is subject to the provisions of List 1 with respect to the regulation and development under the control of the Union. The Parliament, with the object to amend and consolidate the law relating to the regulation of labour and safety in mines enacted the Mines Act, 1952. Section 2 (JJ) of the Mines Act, 1952 defines "minerals" to mean, all substances which can be obtained from the earth by mining, digging, drilling, dredging, hydraulicing, quarrying or by any other operation and includes mineral oils (which, in turn, include natural gas and petroleum). On 1st June, 1958, the Mines and Minerals (Development and Regulation) Act, 1957 was promulgated. This Act provides, inter alia, for general restrictions on undertaking prospecting and mining operations, the procedure for obtaining prospecting licenses or mining leases in respect of the land in which the minerals vests in the Government, the rule making power for regulating the grant of prospecting licenses and mining leases, special powers of Central Government to undertake prospecting or mining operations in certain cases, and for development of minerals.

The protection of natural environment is one of the fundamental duties of every citizen under Article 51-A of the Constitution of India. Article 48-A of the Constitution, obliged the State to endeavor to protect and improve the environment and to safeguard the forests and wild life of the country. The Environment (Protection) Act and Rules, 1986 were enacted and came into force on 19th November, 1986. The object of this Act is to provide for the protection and improvement of environment and for matters connected therewith. Under provisions of the Act and Rules of 1986, MoEFCC has issued various Notifications regulating the mining of minor minerals, specifically stating the procedures that were required to be complied by persons intending to carry on such mining activity and for the authorities to regulate the same.

Prior to 1994, there was no specific regime in place in relation to mining activity being carried out. The Notification issued by MoEF on 27th January, 1994, in exercise of the powers vested in it under Sub-Rule 3 of Rule 5 of the Rules of 1986 and Sub Section (1) and Clause (v) of Sub-Section (2) of Section 3 of the Act of 1986, prescribed the requirement and procedure for seeking Environmental Clearance for the projects listed in Schedule I. Schedule I of this Notification did not list mining projects of minor minerals. On the contrary, the projects covered under S. No. 20 of Schedule I of this Notification were only "mining projects (major mineral) with leases more than 5 hectares".

It provided for the constitution of Expert Committees and preparation of Environmental Impact Assessment Report which was to be evaluated and assessed by the Impact Assessment Agency. In exercise of its statutory powers afore-indicated, the Central Government on 14th September, 2006,

issued a Notification, i.e., 'Environment Impact Assessment Notification, 2006'. In terms of this Notification, the projects as stated in the Schedule to this Notification required prior Environmental Clearance as per the procedure. The projects have been categorised into two kinds, i.e., Category 'A' and Category 'B' under Clause 2 of the Notification. Projects under Category 'A' were required to take prior Environmental Clearance by MoEFCC. For Category 'B' projects, Environmental Clearance was to be given by State Environment Impact Assessment Authority (SEIAA).

The mining of minerals (both major and minor) were brought under the ambit of the EIA Notification, 2006. The mine lease area of more than equal to 50 ha was Category 'A' and mine lease area less than 50 ha and more than equal to 5 ha was category 'B' project. Mine lease area of less than 5 ha (both major and minor) was kept out of EIA Notification purview.

The Notification of 2006 came to be amended by Notification dated 1st December, 2009. It included the category of non-coal mine and coal mine lease and provided that non-coal mine lease of area more than equal to 5 ha and less than 50 ha will be category 'B' and mine lease area more than equal to 50 ha will be category 'A'. Similarly, mine lease area of more than equal to 5 ha and less than 150 ha for coal mine lease will be category 'B' and mine lease area of coal mine more than 150 ha will be category 'A'. Here again mining lease area of less than 5 ha (both coal and non-coal mine) was kept out of EIA Notification purview.

The Hon'ble Supreme Court, vide its order dated 27.2.2012 in I.A. No.12-13 of 2011 in SLP (C) No.19628-19629 of 2009 titled Deepak Kumar etc. v/s State of Haryana & Ors. has inter alia ordered *"We, in the meanwhile, order that leases of minor mineral including their renewal for an area of less than five hectares be granted by the States/Union Territories only after getting environmental clearance from the MoEF."*

Hon'ble Apex Court in Deepak Kumar's case (supra) extensively examined the environmental concerns, in the context of mining of minor minerals, considering its impact on the environment. The Apex Court observed that Extraction of alluvial material from within or near a streambed has a direct impact on the stream's physical habitat characteristics. These characteristics include bed elevation, substrate composition and stability, in-stream roughness elements, depth, velocity, turbidity, sediment transport, stream discharge and temperature. Altering these habitat characteristics can have deleterious impacts on both in-stream biota and the associated riparian habitat. The demand for sand continues to increase day by day as building and construction of new infrastructures and expansion of existing ones is continuous thereby placing immense pressure on the supply of the sand resource and hence mining activities are going on legally and illegally without any restrictions. Lack of proper planning and sand management cause disturbance of marine ecosystem and also upset the ability of natural marine processes to replenish the sand. Quarrying, mining and removal of sand from in-stream and upstream of several rivers, which may have serious environmental impact on ephemeral, seasonal and perennial rivers and river beds and sand extraction may have an adverse effect on bio-diversity as well. Further it may also lead to bed degradation and sedimentation having a negative effect on the aquatic life.

Apex Court observed that without conducting any study on the possible environmental impact on/

in the river beds and else- where the auction notices have been issued. Hon'ble Apex Court observed that "We are of the considered view that when we are faced with a situation where extraction of alluvial material within or near a river bed has an impact on the rivers physical habitat characteristics, like river stability, flood risk, environmental degradation, loss of habitat, decline in biodiversity, it is not an answer to say that the extraction is in blocks of less than 5 hectares, separated by 1 kilo meter, because their collective impact may be significant, hence the necessity of a proper environmental assessment plan".

In order to ensure compliance of the aforesaid order of the Hon'ble Supreme Court, MoEF issued an OM No.L-11011/47/2011-IA.II(M) dated 18.05.2012 stating inter alia that all mining projects of minor minerals including their renewal, irrespective of the size of the lease would henceforth require prior EC and that the projects of minor minerals with lease area less than 5 ha would be treated as Category "B" as defined in EIA Notification, 2006 and will be considered by the respective State Environment Impact Assessment Authorities (SEIAAs) notified by MoEF and following the procedure prescribed under the EIA Notification, 2006.

On 24th June, 2013, MoEF issued another Office Memorandum stating Guideliness for consideration of proposals for grant of Environmental Clearance under the Notification of 2006 for mining of 'brick earth' and 'ordinary earth' having lease area of less than 5 hectares. Referring to the judgment of the Hon'ble Supreme Court in the case of Deepak Kumar (supra) and its Office Memorandum dated 18th May, 2012, it further considered that the 'brick kiln' manufactures had stated that it was a small scale activity requiring that certain depth should be kept outside the purview of Environmental Clearance. Having considered various aspects, examining the recommendations of the Expert Committee, constituted by MoEF, finally it was directed as follows:

"(a) The activities of borrowing / excavation of 'brick earth' and ordinary earth', upto an area of less than 5 ha, may be categorized under 'B2' Category subject to the following Guideliness in terms of the provisions under '7.I Stage(1)-Screening' of EIA Notification, 2006:

(i) The activity associated with borrowing/excavation of 'brick earth' and 'ordinary earth' for purpose of brick manufacturing, construction of roads, embankments etc. shall not involve blasting.

(ii) The borrowing/excavation activity shall be restricted to a maximum depth of 2 m below general ground level at the site.

(iii) The borrowing/excavation activity shall be restricted to 2 m above the ground water table at the site.

(iv) The borrowing/excavation activity shall not alter the natural drainage pattern of the area.

(v) The borrowed/excavated pit shall be restored by the project proponent for useful purpose(s).

(vi) Appropriate fencing all around the borrowed/excavated pit shall be made to prevent any mishap.

(vii) Measures shall be taken to prevent dust emission by covering of borrowed/excavated earth during transportation.

(viii) Safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to borrowing/excavation of earth.

(ix) Workers / labourers shall be provided with facilities for drinking water and sanitation.

(x) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

(xi) A minimum distance of 15 m from any civil structure shall be kept from the periphery of any excavation area.

2. (a) The concerned SEIAA while considering granting environmental clearance for such activity for brick earth / ordinary earth will prescribe the Guideliness as stated at (i) to (xi) above and specify that the clearance so granted shall be liable to be cancelled in case of any violation of above Guideliness.

(b) Notwithstanding what has been stated at (a) above, the following will apply:

(i) No borrowing of earth / excavation of 'brick earth' or 'ordinary earth' shall be permitted in case the area of borrowing/ excavation is within 1 km of boundary of national parks and wild life sanctuaries.

(ii) In case the area of borrowing / excavation is likely to result into a cluster situation i.e. if the periphery of one borrow area is less than 500 m from the periphery of another borrow area and the total borrow area equals or exceeds 5 ha, the activity shall become Category 'B 1' Project under the EIA Notification, 2006. In such a case, mining operations in any of the borrow areas in the cluster will be allowed only if the environmental clearance has been obtained in respect of the cluster. This issues with the approval of the Competent Authority."

These directions which were specific only to 'brick earth' and 'ordinary earth' activities for areas less than 5 hectares, as decided to be categorised as 'B 2' Category projects, subject to the restrictions stated in the memorandum, provided that if the cluster area exceeded 5 hectares, then it would become Category 'B 1' and would not be treated as Category 'B 2' projects. The above Office Memorandum was not dealing with the issues of sand mining or any other minor mineral activity except 'brick earth' and 'ordinary earth'. Further, MoEF has issued an amendment to EIA Notification vide Notification S.O. 2731 (E) dated 9th September 2013 and amended the EIA Notification, 2006 for item 1 (a) as follows:

(1)	(2)	(3)	(4)	(5)
"1(a)	(i) Mining of minerals.	≥ 50 ha of mining lease area in respect of non-coal mine lease	<50 ha of mining lease area in respect of minor minerals mine lease ; and < 50 ha ≥5 ha of mining lease area in respect of other non-coal mine lease.	General Conditions shall apply except for project or activity of less than 5 ha of mining lease area for minor minerals: Provided that the above exception shall not apply for project or activity if the sum total of the mining lease area of the said project or activity and that of existing operating mines and mining projects which were accorded environment clearance and are located within 500 metres from the periphery of such project or activity equals or exceeds 5 ha.
		>150 ha of mining lease area in respect of coal mine lease.	≤ 150 ha ≥ 5 ha of mining lease area in respect of coal mine lease.	(i) Prior environmental clearance is required at the stage of renewal of mine lease for which an application shall be made up to two years prior to the date due for renewal. Further, a period of two years with effect from the 4th April, 2011 is provided for obtaining environmental clearance for all those mine leases, which were operating as

(1)	(2)	(3)	(4)	(5)
				on the 4th April, 2011 with requisite valid environmental clearance and which have fallen due for renewal on or after the 4th November, 2011: Provided that no fresh environmental clearance shall be required for a mining project or activity at the time of renewal of mining lease, which has already obtained environmental clearance under this notification.
	(ii) Slurry pipelines (coal lignite and other ores) passing through national parks or sanctuaries or coral reefs, ecologically sensitive areas.	All projects.		(ii) Mineral prospecting is exempted.

In this Notification a new category of minor mineral was introduced and it was provided that mining lease area of minor mineral less than 50 ha will be category 'B' and will require EC. Accordingly the minor mineral mining projects having less than 5 hectare of lease area are required to be appraised by the SEIAA/SEAC of respective State for granting environment clearance. It was provided that the project or activity of less than 5 ha of mining lease area for minor minerals will be exempt from the General Conditions. Simultaneously the concept of cluster was introduced and it was provided that the exemption of applicability of General Conditions shall not apply for project or activity if the sum total of the mining lease area of the said project or activity and that of existing operating mines and mining projects which were accorded EC and are located within 500 m from the periphery of such project or activity equal or exceeds 5 ha.

The Ministry, on 24th December, 2013, issued another Office Memorandum for consideration of proposals for grant of Environmental Clearance regarding categorisation of Category 'B' projects into Category 'B (1)' and 'B (2)'. Mining of minor minerals had been separately dealt with in this Office Memorandum. This Office Memorandum stated that no river sand mining project with mining lease area of less than 5 hectares may be considered for grant of Environmental Clearance. Such area up to 25 hectares would be categorised as 'B (2)' and such projects were to be considered, subject to the stipulations stated therein. This Office Memorandum stated that no Environmental Clearance would be granted for extraction of minor minerals from any riverbed where the area is less than 5 hectares. Sand mining, in area other than riverbeds, would be permitted, only if the Project Proponent takes Environmental Clearance.

The Ministry vide Notification No. S.O. 1599 (E) dated 25.06.2014 reduced the area of 10 kilo meter to 5 kilo meters for applicability of General Conditions increasing the delegation to States by taking out projects located in 5 to 10 kilo meter of interstate boundary, CEPI, and, PAs from category 'A'.

The anomaly created by the Notification dated 09.09.2013 was corrected vide Notification No. S.O. 2601 (E) dated 7th October 2014, and category of minor mineral was deleted and mining leases were again classed as non-coal mine and coal mine and mining lease area of less than 50 ha was made category 'B' for non-coal mine and mine lease area of less than equal to 150 ha for coal mine was made category 'B'. The mine lease area of less than 5 ha was exempt from the applicability of General Conditions and cluster concept of Notification dated 09.09.2013 was retained.

Notification S.O. 2601 (E) dated 7th October 2014 provides as follows:

(1)	(2)	(3)	(4)	(5)
"1(a)	(i) Mining of minerals.	≥ 50 ha of mining lease area in respect of non-coal mine lease.	<50 ha of mining lease area in respect of non-coal mine lease.	General Conditions shall apply except for project or activity of less than 5 ha of mining lease area:
		>150 ha of mining lease area in respect of coal mine lease.	≤ 150 ha of mining lease area in respect of coal mine lease.	Provided that the above exception shall not apply for project or activity if the sum total of the mining lease area of the said project or activity and that of existing operating mines and mining projects which were accorded environment clearance and are located within 500 metres from the periphery of such project or activity equals or exceeds 5 ha.
		Asbestos mining irrespective of mining area.		Note: (i) Prior environmental clearance is required at the stage of renewal of mine lease for which an application shall be made up to two years prior to the date due for renewal.
	(ii) Slurry pipelines (coal lignite and other ores) passing through national parks or sanctuaries or coral reefs, ecologically sensitive areas	All projects.		Provided that no fresh environmental clearance shall be required for a mining project or activity at the time of renewal of mining lease, which has already obtained environmental clearance under this notification. (ii) Mineral prospecting is exempted. "

The NGT vide order dated 13.01.2015 (O.A. No. 123 of 2014 and M.A. No. 419 of 2014) has declared the Notification dated 09.09.2013 as invalid, inoperative and quashed it. The above order has also quashed the paragraph 4 (b) (i) of O.M. dated 24th June 2013 which provided that "No borrowing of earth / excavation of 'brick earth' or 'ordinary earth' shall be permitted in case the area of borrowing / excavation is within 1 km of boundary of national parks and wild life sanctuary." Though this provision was taken from the observation of Hon'ble Supreme Court in W.P. No. 435 of 2012 (Goa Foundation Vs. Union of India) and order dated 04.08.2006 of Supreme Court in *T.N. Godavarman Thirumulpad v. Union of India & Ors.* Supreme Court has taken a view that 1 km. from the boundaries of National Parks and Sanctuaries would be a safety zone, subject to the orders that may be made in IA No.1000 regarding Jamua Ramgarh Sanctuary and the State will not grant any Temporary Working Permit (TWP) in these safety zones comprising 1 km. from the boundaries of National Parks and Sanctuaries.

Similarly the proviso at paragraph 2 (iii) of O.M. dated 24.12.2013 which says that "No river sand mining project, with mine lease area less than 5 ha, may be considered for granting EC" has been quashed. This condition was taken from the recommendations of the Committee headed by the Secretary, MoEF constituted in 2010. The above proviso were quashed on the ground that as EIA Notification places no such restriction, so same cannot be imposed by an executive order and many hill States find it very difficult to get an area equal to or more than 5 ha. in riverbed. The information made available by the States also makes it clear that majority of the mining leases of sand are of area less than 5 hectares.

THE ISSUES AND MANAGEMENT OF MINING IN CLUSTER

In I.A. No. 12-13 of 2011 in SLP Nos. 729-731 / 2011, 21833 / 2009, 12498-499 / 2010, SLP (C) CC … 16157 / 2011 & CC 18235 / 2011 (Deepak Kumar and Ors. Vs. State of Haryana and Ors. etc.) Hon'ble Supreme Court in its order dated 27.02.2012 on the subject of cluster has quoted the submission of affidavit dated 23.11.2011 of MOEFCC. It says that "The Ministry is of the opinion that where the mining area is homogeneous, physically proximate and on identifiable piece of land of 5 ha. or more, it should not be broken into smaller sizes to circumvent the EIA Notification, 2006 as the EIA Notification, 2006 is not applicable to the mining projects having lease area of less than 5 ha. The Report of Committee on Minor Minerals, under the Chairmanship of Secretary (E&F) with representatives of various state governments as members including the State of Haryana and Rajasthan recommended a minimum lease size of 5 ha for minor minerals for undertaking scientific mining for the purpose of integrating and addressing environmental concerns. Only in cases of isolated discontinued mineral deposits in less than 5 ha, such mining leases may be considered keeping in view the mineral conservation".

The order further quotes that "Cluster of Mine Approach for Small Sized Mines: Considering the nature of occurrence of minor mineral, economic condition of the lessee and the likely difficulties to be faced by Regulatory Authorities in monitoring the environmental impacts and implementation of necessary mitigation measures, it may be desirable to adopt cluster approach in case of smaller mine leases being operated presently. Further these clusters need be provided with processing / crusher zones for forward integration and minimizing excessive pressure on road infrastructure. The respective State Governments / Mine Owners Association may facilitate implementation of Environment Management Plans in such cluster of mines." The order has further quoted the letter dated 1.06.2010 written by the then Minister of Environment, Forest and Climate Change which says on the subject that "A cluster approach to mines should be taken in case of smaller mines leases operating currently". The Hon'ble Court has ordered that "The State of Haryana and various other States have not so far implemented the above recommendations of the MoEF or the Guideliness issued by the Ministry of Mines before issuing auction notices granting short term permits by way of auction of minor mineral boulders gravel, sand etc., in the river beds and elsewhere of less than 5 hectares. We therefore, direct to all the States, Union Territories, MoEF and the Ministry of Mines to give effect to the recommendations made by MoEF in its report of March 2010 and the model Guideliness framed by the Ministry of Mines, within a period of six months from today and submit their compliance reports."

"We in the meanwhile, order that leases of minor mineral including their renewal for an area of less than five hectares be granted by the States/ Union Territories only after getting environmental clearance from the MoEF."

The Ministry vide O.M. No. L-11011/47/2011-IA.II (M) dated 18th May 2012 said that "In order to ensure compliance of the above referred order of the Hon'ble Supreme Court dated 27.02.2012, it has now been decided that all mining projects of minor minerals including their renewal, irrespective of the size of the lease would henceforth require prior environment clearance. Mining projects with lease area up to less than 50 ha including projects of minor mineral with lease area less than 5 ha would be treated as Category 'B' as defined in EIA Notification, 2006 and will be considered by the respective SEIAAs notified by MoEF and following the procedure prescribed under EIA Notification, 2006."

On the issue of cluster, the Notifications No. S.O. 2731 (E) dated 09.09.2013 and Notification No. S.O. No. 2601 (E) of 07.10.2014 were issued.

The above Notifications in Schedule at Item No. 1 (a) in Conditions mentions that "General Conditions shall apply except for projects or activity of less than 5 ha of mining lease area:

Provided that the above exception shall not apply for project or activity if the sum total of the mining lease area of the said project or activity and that of existing operating mines and mining projects which were accorded environment clearance and are located within 500 meters from the periphery of such projects or activity equals or exceeds 5 ha. The Office Memorandum No. J-13012/12/2013-IA-II (1) dated 24.12.2013 is about Guideliness for consideration of proposals for grant of environment clearance under Environment Impact Assessment Notification 2006 and its amendments - regarding categorization of Category 'B' projects/ activities into Category 'B1' & 'B2'.

The above O.M. besides categorizing the Category B into Category B1 & B2 also has directions on mining of brick earth / ordinary earth and river sand mining. These provisions are as follows:

"Mining of minor minerals:

As of now, mining projects of minor minerals with less than 50 hectare of mining lease areas are categorized as Category 'B' as per Notification S.O. 2731 (E) dated 9th September 2013. Also vide O.M. No. L-11011/47/2011-IA-II (M) dated 24.06.2013, Guideliness has been issued regarding categorization of mining projects of brick earth and ordinary earth having lease areas less than 5 hectare as Category 'B2' subject to stipulations stated therein.

In the above backdrop, the projects of mining of minor minerals, categorized as Category 'B' are hereby categorized as 'B2' as per the following:

(i) 'Brick Earth' / 'Ordinary Earth' mining projects having lease area less than 5 ha will be considered for granting EC as per the aforesaid Guideliness issued by MOEF on 24.06.2013.

(ii) 'Brick Earth' / 'Ordinary Earth' mining projects with mining lease area more than equal to 5 ha but less than equal to 25 ha and all other minor , mineral mining projects with mining lease area < 25 ha, except for river sand mining projects will be appraised as Category 'B2' projects.

These projects will be appraised based on the following documents:

(a) Form-1 as per the Appendix-I under the EIA Notification 2006

(b) Pre-feasibility report of the project

(c) Mining plan approved by the authorized agency of the concerned State Government.

Provided in case the mining lease area is likely to result into a cluster situation, i.e. if the periphery of one lease area is less than 500 meter from the periphery of another lease area and the total lease area equals or exceeds 25 ha, the activity shall become Category 'B1' Project under the EIA

Notification, 2006. In such a case, mining operations in any of the mine lease areas in the cluster will be allowed only if the environmental clearance has been obtained in respect of the cluster.

About river sand mining it says that:

(iii) No river sand mining project, with mine lease area less than 5 ha, may be considered for granting EC. The river sand mining projects with lease area more than equal to 5 ha but less than 25 ha will be categorized as 'B2'. In addition to the requirement of documents, as brought out above under sub-para (ii) above for appraisal, such projects will be considered subject to the following stipulations:

(a) The mining activity shall be done manually. The depth of mining shall be restricted to 3 m / water level, whichever is less.

(b) For carrying out mining in proximity to any bridge and / or embankment, appropriate safety zone shall be worked out on case to case basis to the satisfaction of SEAC / SEIAA, taking into account the structural parameters, locational aspects, flow rate etc., and no mining shall be carried out in the safety zone so worked out. No in-stream mining shall be allowed.

(c) The mining plan approved by the authorized agency of the State Government shall inter-alia include study to show that the annual replenishment of sand in the mining lease area is sufficient to sustain mining operations at levels prescribed in the mining plan and that the transport infrastructure is adequate to transport the mines material. In case of transportation by road the transport vehicles will be covered with the tarpaulin to minimize dust/ sand particle emissions.

(d) EC will be valid for mine lease period subject to a ceiling of 5 years.

Provided, in case the mining lease area is likely to result into a cluster situation i.e. if the periphery of one lease area is less than 1 km from the periphery of another lease area and total lease area equals to or exceeds 25 ha., the activity shall become Category 'B1' Projects under EIA Notification, 2006. In such a case, mining operation in any of the mine lease area in the cluster will be allowed only if the environment clearance has been obtained in respect of the cluster.

The NGT order dated 13.01.2015 in O.A. No. 123 of 2014 and M.A. No. 419 of 2014 has following directions on the issue of cluster: "In light of the judgment of the Supreme Court and what has emerged from the various cases that are subject matter of this Judgment, we direct the Ministry of Environment and Forest to formulate a uniform cluster policy in consultation with the States for permitting minor mineral mining activity including its regulatory regime, in accordance with law.

Notification S.O. 1559 (E) dated 25th June 2014 provides that "Any project or activity specified in Category 'B' will be appraised at the Central Level as Category 'A', if located in whole or in part within 5 km. from the boundary of: (i) Protected Areas; (ii) CEPI; (iii) ESA; (iv) Inter-state boundaries or international boundaries ……..".

The NGT vide its order dated 13.01.2015 has quashed the Notification dated 9th September 2013, but similar provision on clusters exists in Notification dated 7th October 2014.

The EIA Notification 2006, as amended makes it clear that projects in respect of non-coal mine leases, where the area is more than equal to 50 hectares would require prior Environmental Clearance from MoEFCC, while the projects of area less than 50 hectares would be appraised for prior Environmental Clearance at the level of SEIAA.

The EIA Notification of 2006 in Clause 7 specifies the stages through which projects for grant of Environmental Clearance are required to be passed and processed. The stages include Screening, Scoping, Public Consultation and Appraisal, upon which, the Expert Appraisal Committee makes recommendation to the MoEF/SEIAA. Under 'Screening', this Clause 7 also provides for a further bifurcation of projects falling under category 'B' into 'B 1' and 'B 2'. The relevant part of Clause 7, dealing with this aspect, reads as under: "Stage (1) - Screening (Only for Category 'B' projects and activities): In case of Category 'B' projects or activities, this stage will entail the scrutiny of an application seeking prior environmental clearance made in Form 1 by the concerned State level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending up on the nature and location specificity of the project . The projects requiring an Environmental Impact Assessment report shall be termed Category 'B1' and remaining projects shall be termed Category 'B2' and will not require an Environment Impact Assessment report. For categorization of projects into B1 or B2 except item 8 (b), the Ministry of Environment and Forests shall issue appropriate Guideliness from time to time."

The Ministry on 24th December, 2013, issued Office Memorandum for consideration of proposals for grant of Environmental Clearance regarding categorisation of Category 'B' projects into Category 'B1' and 'B2'. Mining of minor minerals had been separately dealt with in this Office Memorandum. Such area up to 25 hectares would be categorised as 'B 2' and such projects were to be considered, subject to the stipulations stated therein.

The EIA Notification, 2006 does not provide for issuance of Environment Clearance to Cluster of mines. It provides for EC to individual lease holders / project proponents. This position has also been upheld by the Hon'ble Supreme Court in its judgment of Vivek Bansal Vs. State of Haryana that EC should be applied for and granted to the individual lease holder.

There has been rising concerns about adverse impact of mining on small leases (less than 5 hectare) in case the numbers of such leases are large and they are located in close proximity to each other. This leads to the definition of Cluster. To avoid the rigors of environment impact assessment studies, environment management plan and the environment clearance there has been a tendency to break the leases into size which does not attract the provisions of environment impact assessment studies, environment management plan, public consultation and the environment clearance. In Deepak Kumar's case Hon'ble Supreme Court also encountered this situation and in its order dated 27.02.2012 mandated that no mining lease or renewal be done without environment clearance irrespective of size.

It is seen that the categorization of mines into 'B1' and 'B2' category in which Category 'B2' leases are being exempted from the requirement of Environment Impact Assessment, Environment Management Plan, and Public Consultation for grant of EC, in many cases now the mining leases are being given for 25 hectares or less. This defeats the purpose and intent of Hon'ble Supreme Court Judgment which orders environment clearance for all mining leases irrespective of size. The environment clearance without Environment Impact Assessment, Environment Management Plan, and Public Consultation does not serve the purpose of environment clearance which is to ensure environmentally sustainable and socially responsible mining. So if a cluster or individual lease size exceeds 5 hectare, the EIA/ EMP should be completed in the process of grant of prior environment clearance.

The EIA Notification, 2006 and subsequent amendments to that or any O.M. issued by the Ministry do not provide for procedures and Competent Authority for environment clearance for cluster. In a cluster there will mostly be situation where there are a number of different lease holders and as per the settled law the lease holder has to do the working of mine and the lease holder is the one who can apply for and get the environment clearance. The conditions stipulated in the environment clearance have to be complied by the EC holder and any violation of that empowers the authority to cancel the environment clearance or prosecute the EC holder if necessitated by the circumstances.

For cluster there is no mechanism about who will apply for EC, EC will be issued in whose name, and who will be responsible for compliance of EC conditions.

The intent of cluster assessment is to have a holistic knowledge of the impact on environment by different mines operating in close proximity of each other. There are also requirement of mitigative measures which need implementation in concerted manner by different EC holders of that cluster. To ensure that it is important that there should be an integrated Environment Impact Assessment /

Environment Management Plan for the cluster to be presented before the authority appraising the projects and considering the proposals for grant of EC. This integrated EIA/ EMP can be prepared by either the lease holder, group of lease holders, State or the State Agencies. This EIA/ EMP need to be prepared by the accredited consultants / Registered Qualified Persons of the State Governments. The application for EC and grant of EC should be done in the name of individual lease holders in the background of the integrated EIA/EMP report. The Competent Authority (SEIAA/ SEAC / EAC) will entertain individual lease holder's application for grant of EC to individual mining lease projects in that cluster in the name of lease holders. The conditions related to mitigative measures necessitated by the integrated EIA/EMP may run across more than one lease holder or EC holders, that should figure in each EC accordingly and its compliance be ensured by the individual EC holders.

The Hon'ble Supreme Court, NGT, SEAC/EAC and the Project Proponents have raised issue of cluster in mine lease allotment and environment clearance for the same, so following conditions need to be ensured for cluster of mines:

1. To address the concern of adverse impact of minor mineral mining on environment it is proposed that all mining activity including river sand mining (above 5 hectare individual or cluster) will need to prepare Environment Impact Assessment Report and Environment Management Plan before grant of environment clearance. These reports (EIA /EMP) can be prepared by the State or State nominated Agency / the Project Proponent (s).
2. As can be seen from the data provided by the States most of the mining leases for minor minerals are of lease area less than 5 hectare. It is also reported that in hill states getting a stretch in river with area more than 5 hectare is very uncommon. So the size of lease for minor minerals including river sand mining will be determined by the States as per their circumstances.
3. The EIA Notification, 2006 does not provide for cluster EC, it provides for issuance of EC to individual project proponents and the same has also been upheld in the judgment of Hon'ble Supreme Court in Vijay Bansal vs. State of Haryana case. So EC will have to be applied for and issued to the individual project proponent.
4. A cluster shall be formed when the distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in a homogeneous mineral area.
5. The mining of minor minerals is mostly in clusters. The Environment Impact Assessment or Environment Management Plan are required to be prepared for the entire cluster in order to capture all the possible externalities. These reports shall capture carrying capacity of the cluster, transportation and related issues, replenishment and recharge issues, geo-hydrological study of the cluster area. The Environment Impact Assessment or Environment Management Plan shall be prepared by the State or State nominated Agency or group of project proponents

in the Cluster or the project proponent in the cluster.

6. The individual lease holders in cluster can use the same Environment Impact Assessment or Environment Management Plan for application for environmental clearance. The cluster Environment Impact Assessment or Environment Management Plan shall be updated as per need keeping in view any significant change.

7. There shall be one public consultation for entire cluster after which the final Environment Impact Assessment or Environment Management Plan report for the cluster shall be prepared.

8. The details of cluster Environment Impact Assessment or Environment Management Plan shall be reflected in each environmental clearance in that cluster and District Expert Appraisal Committee (DEAC), SEAC, and EAC shall ensure that the mitigative measures emanating from the Environment Impact Assessment or Environment Management Plan study are fully reflected as environmental clearance conditions in the environmental clearance's of individual project proponents in that cluster.

9. As the sand is mostly mined from rivers and majority of the rivers which are important source of sand also form boundary between States, so because of General Conditions most of the sand mining projects become Category 'A' project. So the General Conditions will not apply in case of river sand and gravel mining projects on account of being in 5 kilometer of inter-state boundary.

10. The Committee headed by the District Magistrate or District Collector will be empowered to appraise and grant EC for mining leases up to 5 ha in case of individual lease and up to 25ha in case of cluster for sand mining.

11. In case the mining leases are in cluster (if periphery of one lease is within 500 meters), fowling are the categorization of projects:-

- Category 'B2'Project: Cluster area of mine leases up to 5 ha and to be dealt at DEIAA/ DEAC level
- Category 'B2'Project: Cluster area of Mine leases > 5 ha and < 25 ha with no individual lease > 5 ha and to be dealt at DEIAA/DEAC level
- Category 'B1'Project: Cluster of mine leases of area > 25 hectares with individual lease size < 50ha and to be dealt at SEIAA/SEAC level
- Category 'A' Project: Cluster of any size with any of the individual lease >50ha and to be dealt at MoEFCC/EAC level

The schematic presentation of requirements on Environmental Clearance of Sand Mining including cluster situation is detailed as below:-

Area of Lease (Hectare)	Category of Project	Require-ment of EIA / EMP	Require-ment of Public Hearing	Require-ment of EC	Who can prepare EIA/ EMP	Who will apply for EC	Authority to appraise/ grant EC	Authority to monitor EC compliance
EC Proposal of Sand Mining in cluster situation								
Cluster area of mine leases up to 5 ha	**'B2'**	Form-1M, PFR and Approved Mine Plan	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	DEIAA SEIAA SPCB CPCB MoEFCC Agency nominated by MoEFCC
Cluster area of Mine leases > 5 ha and < 25 ha with no individual lease > 5 ha	**'B2'**	Form-I, PFR and Approved Mine Plan and one EMP for all leases in the Cluster	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	
Cluster of mine leases of area > 25 hectares with individual lease size < 50ha	**'B1'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	SEAC/ SEIAA	

Cluster of any size with any of the individual lease > 50ha	**'A'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	EAC/ MoEFCC	

MANAGEMENT OF SAND DEPOSITED AFTER FLOOD ON AGRICULTURAL FIELD OF FARMERS

The Standing Committee on Water Resources on issues, concerning flood management, compensation, and status of ownership of submerged and eroded land in the country including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers in its meeting held on 29.04.2015 made observations on this subject.

The Committee observed that pursuant to Hon'ble Supreme Court of India decision in "Deepak Kumar Case" in 2012, regulations were framed by the Ministry of Mines to guide environmental clearance of minor minerals. … The Committee, therefore, desires the Ministry of Water Resources, River Development and Ganga Rejuvenation to work in close coordination with the Ministry of Mines and Environment, Forest and Climate Change to frame regulations / Guideliness in this regard expeditiously.

Mining of Sand

The Committee further observed that due to the floods, the agricultural land of farmer is destroyed and rendered infertile. Further the farmer loses his livelihood as the produce of his land is destroyed by flood and become unsalable. The farmer is also deprived of the right of lifting sand from his land. He is therefore, left helpless and destitute and leave their land in search of job.

The Committee observes that "mining operation" means any operation undertaken for the purpose of winning any mineral. Accordingly, if desilting is undertaken perse with the objective of winning a mineral then only it will be construed as a mining operation. Apparently, if the desilting is undertaken not for winning any mineral, it will not be construed as mining operation and therefore, the farmer can remove the sand from the land without requiring the requisite permits. However, the Committee strongly feels that the farmer be given the right to use and dispose-off the sand accumulated over their land post flood, by incorporating the necessary provisions in the Mines and Mineral (Development and Regulation) Act, 1957".

Removal of sand from the agricultural field by the owner farmer of the land from environment point of view will not be considered as mining operation and its removal and disposal can be allowed without the requirement of environment clearance till it is done only to the extent of reclaiming the agricultural land. The sand deposited after flood only be removed, so no mining / digging below the ground level is allowed. For removing sand in case where private land has gone into the river due to erosion, the requirement of mining lease and environment clearance will continue. This operation

of removal of sand deposited on agricultural field should be done after a mapping of deposition is done by the Land Management Committee of the Gram Panchayat. The sand so deposited post flood can be removed by the farmer owning the land / group of farmers affected by this post flood sand deposition or the Gram Panchayat. Customary rights to remove and dispose off the sand should be given to the farmer affected by deposition of sand on account of sudden flood in his agricultural land.

MINING OF SAND FROM AGRICULTURAL FIELD

This practice is prevalent in Haryana, where the top layer of soil varying between 1 and 2 meters is removed and stacked separately and thereafter the sand deposit which may be 10-15 meter deep is mined. After removing the sand layer up to a maximum depth of 09 meters, the top soil stacked is spread out on the field and the same is brought under the cultivation. Though the level of this land (mined out area) is lowered to the depth of the excavation and in initial years of cultivation the productivity is low, but the productivity of the fields improves with continued cultivation and addition of organic manure in the field. In Haryana some leases are of large area (ranging from 1000 hectare to 2000 hectare) the agricultural fields and river bed both are included in the same lease for mining.

The following recommendations should be kept in mind for mining in such leases:

1. Mining of sand in such mine leases will require environment clearance.
2. The lease should be of sand mining either from the agricultural field or river. In same lease both type of area should not be included.
3. The sand mining from agricultural field is being done in Haryana for a long time and it can be done in a more sustainable manner without adverse impact on agricultural productivity, if proper environmental safeguards are taken.
4. The slope of mining area adjacent to agricultural fields should be proper (preferably 45-60 degree) and adequate gap (minimum 10 feet) be left from adjacent agricultural field to avoid erosion and scouring.

CUSTOMARY RIGHT ON SAND MINING

The native people have their long held customary rights to take silt, sand & soil from their tanks and nearby rivers for their use or community works in the village in almost all the States in some form or the other.

Next to the reserved forests, tanks and rivers are the biggest common properties in India. Most of the village tanks are 'government properties' with some exceptions of privately held tanks. Land revenue department, irrigation department and forest department is given powers to deal with property right' and hence protecting all tanks and rivers preventing damages including encroachments is their responsibility. The local villagers were given 'customary rights' under the Revenue Department Orders, and other laws related to Panchayats and Easements to take sand, soil and earth for agricultural and domestic purposes without seeking any permission from anyone. The States strive to keep these customary rights to use such resources like soil and sand for individuals work and community work in the village intact without requirement of any permit and clearance. These customary rights need to be protected and respected.

DESILTING OF RESERVOIRS / BARRAGES / ANNECUTS / LAKES / CANALS

These structures are generally in possession and maintenance of Irrigation Department / Minor Irrigation Department / PHED of State Governments. The dams and reservoirs can be a significant source of sand. Many such structures are silted and their water holding capacity has gone down considerably. In some instances to compensate for silted capacity raising of height of dam or construction of new structures is proposed which further leads to submergence of new areas of agricultural field and forests. Taking up desilting of such projects can serve dual purpose of increasing the water holding capacity and making available the sand for other usage. In some States the Irrigation Department is permitted to use it for the departmental works free of charge and balance can be disposed of in market after paying the due royalty. A detailed study is required to be carried out to verify economic viability and environmental sustainability before contemplating dredging of storage reservoirs for sand / gravel mining.

The de-silting of reservoir, dredging for upkeep and maintenance of structures, channels and averting natural disasters will not be treated as mining for the purpose of environmental clearance.

The Ministry of Water Resources (MoWR) view on desiltation from flood control point of view is as follows:

A multidisciplinary Committee (Mittal Committee) under the chairmanship of Dr. B.K. Mittal, former Chairman, Central Water Commission was constituted by MoWR, vide letter dated 08.10.2001 to identify cause and extent of siltations in rivers, suggest measures to minimize siltation, examine as to whether desilting is a technically feasible means to minimize magnitude of flood in rivers, suggest appropriate technology/ methods of desilting of rivers, propose a realistic operational programme in a time bound manner and other related aspects. The committee studied in respect of few sites on Ganga, Brahmputra, Godavari, Krishna etc., and inter-alia concluded that:

i) Siltation in river is not pronounced and alarming;

ii) Desilting of rivers for flood control is not an economically viable solution;

iii) Dredging in general has been found to be inadequate and should not be resorted to, particularly in major rivers;

iv) There are, of course, some locations such as tidal rivers, confluence points with narrow constrictions and the like which can be tackled by desilting after thorough examination and techno-economic justification;

v) Selective dredging is suggested depending upon local conditions; and

vi) Desilting of rivers can marginally minimize the magnitude of floods and be effective only for a short period.

Thus, desilting in general is not feasible technically, due to several reasons like non-sustainability, non- availability of vast land required for disposal of dredged material etc. This cannot be viewed in isolation of other approaches to manage floods. Desilting of rivers in vulnerable reaches may be suggested based on model study, if it is found techno-economically viable. For navigation purposes, the river reaches in the water ways path may be dredged to have minimum depth of water.

MINING PLAN

The Environment Clearance shall be given to only those mining leases which have mine plan approved by the Competent Authority designated by the States. Modification of the mining plan during operation will also need approval of the Competent Authority. The Mining Plan shall be prepared by the Recognised Qualified Persons (RQP). The person to be recognized for preparing the mining plan should be a holding a degree of Mining Engineering, Environmental Engineering or a post graduate degree in Geology granted by a University established or incorporated by or under a Central Act or a State Act including any institutions recognized by the UGC or any equivalent qualification granted by any University or institution outside India and have a professional experience of three years of working in a supervisory capacity in the field of mining after obtaining a degree. The States will devise their own mechanism of selection and empanelment of RQPs. A mining plan should be valid for a period of 5 years, which can be renewed further.

EVALUATING THE IMPACT OF SAND MINING

To assess the impact of mining and effect of remedial measures can be assessed through monitoring. This is also required for mid-course corrections. Monitoring will provide data to evaluate the upstream and downstream effects of sand and gravel extraction activities, and long-term changes. A brief report summarizing the annual results of the physical and biological monitoring should document the evolution of the sites over time, and the cumulative effects of sand and gravel extraction. The summary should also recommend any modification of extraction rates needed to minimize impacts of extraction.

Sand Replenishment, Geomorphology and Hydrology:

Physical monitoring requirements of sand and gravel extraction activities should include surveyed channel cross-sections, longitudinal profiles, bed material measurements, geomorphic maps, and discharge and sediment transport measurements. The physical data will illustrate bar replenishment and any changes in channel morphology, bank erosion, or particle size.

In addition to local monitoring for replenishment at specific mining sites, monitoring of the entire reach through the estuary will provide information on the cumulative response of the system to sand and gravel extraction. For example, it is important for downstream bars and the estuary to receive sufficient sand and gravel to maintain estuarine structure and function. Because the elevation of the bed of the channel is variable from year to year, a reach-based approach to monitoring will provide a larger context for site-specific changes. If long-term monitoring data show that there is a reach-scale trend of bed lowering (on bars or in the thalweg), the extraction could be limited.

Cross-sections:

Surveyed channel cross-sections should be located at permanently documented sites upstream, downstream and within the extraction area. Cross-sections intended to show reach- scale changes

should be consistently located over geomorphic features such as at the head of riffles, across the deepest part of pools, or across particular types of channel bars.

Cross-section spacing should be close enough to define the morphology of the river channel. Cross-section data should be surveyed in March or April to evaluate changes that may occur during the flooding season.

Cross-section data should be collected over the reach to the estuary, and locally upstream, downstream, and within each mining site. This long-term monitoring data should be collected and analyzed even if no mining occurs in order to understand and estimate the sand budget of the river reach.

Photo-documentation:

Photographs of the project sites should be taken prior to excavation to document the baseline conditions, and again during each monitoring session. Photos should be taken twice a year. Photos of structures nearby like outfalls / off-takes, intakes, bridges and other structures may also be regularly taken.

Groundwater Level:

Monitoring wells should be established adjacent to each off-channel floodplain excavation to record changes in ground water levels. Measurements should be taken monthly. This should help analyse surface water and ground water interaction along the reach.

Extent and Quality of Riparian Vegetation:

Document the extent and quality of riparian vegetation, including successional status, and any increase in disturbance indicators (non-native plants). The extent of riparian habitat can be determined utilising aerial photos. Habitat quality data, i.e., successional status and species composition, must be determined through field reconnaissance.

Riparian Vegetation Maps:

Develop yearly maps of the sensitive habitat areas and document their aerial extent over time. These maps may be combined with the geomorphic maps. Monitor sites identified as sensitive for disturbance in excess of expected geomorphic trends - i.e., massive bank wasting up or downstream from an active mine site. Monitor sand and gravel mining impacts which may translate up and downstream, causing accelerated erosion of sensitive zones and impacting the ability of new habitat to form due to excessive scour or sedimentation.

This monitoring / documentation should be done by the EC holders and will be regularly checked and assessed by the DEIAA for corrective steps in time. The DEIAA should review the status of monitoring and documentation data of each mining site especially for sand mining once in a year.

MONITORING SYSTEM FOR SUSTAINABLE SAND MINING

The implementation of these Guideliness on Sustainable Sand Mining is not possible till States create a robust mechanism to monitor the mining operation and measure the mined out mineral. The entire exercise of Environment Impact Assessment and Environment Management Plan aims towards making the mining process environmentally sustainable. The Environment Clearance letter indicates the EC capacity that is the quantity of material which can be mined in a year. If this quantity is not measured, and much more mineral than envisaged in the EC is mined out then the entire process of EC is rendered futile. Keeping above objective in mind it is required of the State / State Agencies to create and establish a robust system to monitor and measure the mined out mineral at each lease location and its transportation in State.

The State Governments have tried various methods for monitoring the sand mining in their areas, the main feature of which generally has been through Transport Permits (T.P.). The printing of Transport Permits on security paper, invisible ink mark, fugitive ink background, VOID pantograph and Unique Barcode are some of the tools used by the States. These tools need to be backed by suitable software and dedicated websites with security certifications at different levels.

The system proposed is that States should issue Transport Permit. Bar code on the T.P. when scanned using the system, will generate a unique invoice number. The bidder has to enter destination, distance between plot and destination, vehicle number etc in the system. After scanning, unique bar code number; invoice date & time and validity date & time is sent to the bidder, which need to be written on T.P. Validity of T.P. is calculated based on distance between plot and destination. After validity time is over the T.P. stands invalid. The officers involved in monitoring should be provided with the android application using which the T.P. can be checked anywhere on road. As soon as the bar code on T.P. gets scanned through using android application, all details of T.P. such as plot details, vehicle details, validity time etc. should get fetched from server. This means, if anything is re-written on T.P. and attempt is made to reuse the same, it can be traced immediately. Registering of T.P. on server can be done using website, using android application (smartphone with internet) or even through SMS (smartphone without internet). This implies that TP can be registered on server even if only mobile phone range is available on plot. Various reports can be generated using the system showing daily lifting reports and user performance report. This way the vehicles carrying sand can be tracked from source to destination.

MONITORING SYSTEM FOR SUSTAINABLE SAND MINING

PROCEDURE FOR MONITORING OF SAND MINING OR RIVER BED MINING

1. **The security feature of Transport Permit shall be as under:**

   (a) Printed on Indian Banks' Association (IBA) approved Magnetic Ink Character Recognition (MICR) Code paper.

   (b) Unique Barcode.

   (c) Unique Quick Response (QR) code.

   (d) Fugitive Ink Background.

   (e) Invisible Ink Mark.

   (f) Void Pantograph.

   (g) Watermark.

2. **Requirement at Mine Lease Site:**

   (a) Small Size Plot (Up to 5 hectare): Android Based Smart Phone.

   (b) Large Size Plots (More than 5 hectare): CCTV camera, Personal Computer (PC), Internet Connection, Power Back up.

   (c) Access control of mine lease site.

   (d) Arrangement for weight or approximation of weight of mined out mineral on basis of volume of the trailer of vehicle used.

3. **Scanning of Transport Permit or Receipt and Uploading on Server:**

   (a) Website: Scanning of receipt on mining site can be done through barcode scanner and computer using the software;

   (b) Android Application: Scanning on mining site can be done using Android Application using smart phone. It will require internet availability on SIM card;

   (c) SMS: Transport Permit or Receipt shall be uploaded on server even by sending SMS through mobile. Once Transport Permit or Receipt get uploaded, an unique invoice code gets generated with its validity period.

4. Proposed working of the system:

The State Mining Department should print the Transport Permit or Receipt with security features enumerated at Paragraph 1 above and issue them to the mine lease holder through the District Collector. Once these Transport Permits or Receipts are issued, they would be uploaded on the server against that mine lease area. Each receipt should be preferably with pre-fixed quantity, so the total quantity gets determined for the receipts issued.

When the Transport Permit or Receipt barcode gets scanned and invoice is generated, that particular barcode gets used and its validity time is recorded on the server. So all the details of transporting of mined out material can be captured on the server and the Transport Permit or Receipt cannot be reused.

5. Checking On Route:

The staff deployed for the purpose of checking of vehicles carrying mined mineral should be in a position to check the validity of Transport Permit or Receipt by scanning them using website, Android Application and SMS.

6. Breakdown of Vehicle:

In case the Vehicle breakdown, the validity of Transport Permit or Receipt shall be extended by sending SMS by driver in specific format to report breakdown of vehicle. The server will register this information and register the breakdown. The State can also establish a call centre, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server or call centre.

7. Tracking of Vehicles:

The route of vehicle from source to destination can be tracked through the system using check points, RFID Tags, and GPS tracking.

8. Alerts or Report Generation and Action Review:

The system will enable the authorities to develop periodic report on different parameters like daily lifting report, vehicle log or history, lifting against allocation, and total lifting. The system can be used to generate auto mails or SMS. This will enable the District Collector or District Magistrate to get all the relevant details and shall enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle shall be tracked.

The monitoring of mined out mineral, environmental clearance conditions and enforcement of Environment Management Plan will be ensured by the DEIAA, SEIAA and the State Pollution Control Board or Committee. The monitoring arrangements envisaged above shall be put in place. The monitoring of enforcement of environmental clearance conditions shall be done by the Central Pollution Control Board, Ministry of Environment, Forest and Climate Change and the agency nominated by the Ministry for the purpose.

ADMINISTRATIVE STRUCTURE FOR ENVIRONMENT CLEARANCE AND ENSURING COMPLIANCE OF EC CONDITIONS

An no mining in allowed without Envirnomental Clearance. The process of EC involves preparation of EIA/EMP, PER and mine plan.

The EIA/EMP can be prepared by the State Government or any agency of the State, group of project proponents in the cluster or the individual project proponent. The EIA / EMP can be prepared by the accredited consultants or the Registered Qualified Person(s) / agencies selected by the States.

DISTRICT ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

The Central Government has constituted the District Level Environment Impact Assessment Authority (DEIAA), for grant of environmental clearance for Category 'B2' Projects for mining of minor minerals, for all the districts in the country.

For, minor minerals including sand and gravel mining lease of area up to 5 hectare in case of individual lease and up to 25 ha in case of cluster for sand mining, the grant of EC will be done by the District Environment Impact Assessment Authority (DEIAA) headed by the District Magistrate or District Collector. This Authority will be responsible for proper and sustainable management of sand mining in the district. The Authority will be responsible for designating the area / stretch in river suitable for mining in the district and also identifying the area / stretch in river prohibited for sand mining. The Authority will ensure clear demarcation of mining site, its documentation, and ensuring that no mining takes place without EIA / EMP and EC of the mining site.

The Chairperson and official members of the Authority for the districts should hold office during their tenure in the district on said posts and the expert member shall hold office for a period of three years from the date of nomination by the Competent Authority. The Committee shall meet at least once in a month.

The District Environment Impact Assessment Authority (DEIAA) :

The DEIAA will have following composition :

1.	District Magistrate or District Collector of the district	Chairperson
2.	Senior most Divisional Forest Officer in the district	Member
3.	An expert member to be nominated by the Divisional Commissioner or Chief Conservator of the Forest	Member
4.	Sub-Divisional Magistrate or Sub-Divisional Officer of the district head quarter	Member-Secretary

DISTRICT LEVEL EXPERT APPRAISAL COMMITTEE:

The District Level Expert Appraisal Committee (DEAC) will appraise the cases and make recommendations to the District Environment Impact Assessment Authority for environmental clearance. This Committee will also make recommendations / suggestions on the District Survey Report to the DEIAA. The DEAC will have following composition:

1.	Senior most Executive Engineer, Irrigation Department	Chairperson
2.	Senior most Sub-Divisional Officer (Forest)	Member
3.	A representative of Remote Sensing Department or Geology Department or State Ground Water Department to be nominated by the District Magistrate or District Collector	Member
4.	Occupational health expert or Medical Officer to be nominated by the District Magistrate or District Collector	Member
5.	Engineer from Zila Parishad	Member
6.	A representative of State Pollution Control Board or Committee	Member
7.	An expert to be nominated by the Divisional Commissioner or Chief Conservator of Forest	Member
8.	An expert to be nominated by the Divisional Commissioner or Chief Conservator of Forest	Member
9.	An expert to be nominated by the Divisional Commissioner or Chief Conservator of Forest	Member
10.	Senior most Assistant Engineer, Public Works Department	Member
11.	Assistant Director or Deputy Director or District Mines Officer or Geologist in the district in that order	Member- Secretary

The DEAC will meet at least once a month, depending on the work load the frequency of meetings can be decided by the Chairperson of DEAC and Chairperson, DEIAA.

Each proposal for the mining lease under consideration for environmental clearance in the district will be inspected on-site by the Sub-Divisional Level Committee headed by the SDM.

The Sub-Divisional Committee should comprise of following officers:

Sub-Divisional Magistrate	Chairperson
Sub-Divisional Officer, Forest/ Assistant Conservator of Forest/ Forest Range Officer	Member
Representative of State Pollution Control Board	Member
SDO, Irrigation Department	Member
Geologist or Assistant Geologist or Mining Officer / Mining Inspector	Member

The presence of at least three members will be needed for inspection. This Committee shall submit its report within 15 days from the receipt of the proposal.

The monitoring of EC conditions and enforcement of EMP will be ensured by the District Collector and the, State Pollution Control Board. The monitoring of enforcement of EC conditions can also be done by the Central Pollution Control Board, Ministry of Environment, Forest & Climate Change and the agency nominated by the Ministry for the purpose.

Schematic Presentation of Requirements on Environmental Clearance of Sand Mining including cluster situation

Area of Lease (Hectare)	Category of Project	Require-ment of EIA / EMP	Require-ment of Public Hearing	Require-ment of EC	Who can prepare EIA/ EMP	Who will apply for EC	Authority to appraise/ grant EC	Authority to monitor EC compliance
EC Proposal of Sand Mining on the basis of individual mine lease								
0 - 5ha	**'B2'**	Form - 1M, PFR and Approved Mine Plan	No	Yes	Project Proponent	Project Proponent	DEAC/ DEIAA	DEIAA SEIAA SPCB CPCB MoEFCC Agency nominated by MoEFCC

> 5 ha and < 25 ha	**'B2'**	Form-I, PFR and Approved Mine Plan and EMP	No	Yes	Project Proponent	Project Proponent	SEAC / SEIAA	DEIAA SEIAA SPCB CPCB MoEFCC Agency nominated by MoEFCC
≥ 25ha and < 50ha	**'B1'**	Yes	Yes	Yes	Project Proponent	Project Proponent	SEAC / SEIAA	
≥ 50 ha	**'A'**	Yes	Yes	Yes	Project Proponent	Project Proponent	SEAC / SEIAA	
EC Proposal of Sand Mining in cluster situation								
Cluster area of mine leases up to 5 ha	**'B2'**	Form - 1M, PFR and Approved Mine Plan	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	DEIAA SEIAA SPCB CPCB MoEFCC Agency nominated by MoEFCC
Cluster area of Mine leases > 5 ha and < 25 ha with no individual lease > 5 ha	**'B2'**	Form -I, PFR and Approved Mine Plan and one EMP for all leases in the Cluster	No	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	DEAC/ DEIAA/	

Cluster of mine leases of area ≥ 25 hectares with individual lease size < 50ha	**'B1'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	SEAC/ SEIAA	
Cluster of any size with any of the individual lease ≥ 50ha	**'A'**	Yes	Yes	Yes	State, State Agency, Group of Project Proponents, Project Proponent	Project Proponent	EAC/ MoEFCC	

General Conditions will not apply on account of inter- state boundaries for river sand mining leases.

EXEMPTION OF CERTAIN CASES FROM BEING CONSIDERED AS MINING FOR THE PURPOSE OF REQUIREMNT OF ENVIRONMENTAL CLEARANCE

Keeping in view the purpose, maintenance of infrastructure, abatement of disasters, customary easement and property rights, it is felt that following cases may not be treated as mining for the purpose of requirement of environmental clearance. The following cases shall not require prior environmental clearance, namely:-

1. Extraction of ordinary clay or sand, manually, by the Kumhars (Potter) to prepare earthen pots, lamp, toys, etc. as per their customs.
2. Extraction of ordinary clay or sand, manually, by earthen tile makers who prepare earthen tiles.
3. Removal of sand deposits on agricultural field after flood by farmers.
4. Customary extraction of sand and ordinary earth from sources situated in Gram Panchayat for personal use or community work in village.
5. Community works like de-silting of village ponds or tanks, construction of village roads, ponds, bunds undertaken in Mahatama Gandhi National Rural Employment and Guarantee Schemes, other Government sponsored schemes, and community efforts.
6. Dredging and de-silting of dams, reservoirs, weirs, barrages, river, and canals for the purpose of their maintenance, upkeep and disaster management.
7. Traditional occupational work of sand by Vanjara and Oads in Gujarat vide notification number GU/90(16)/MCR-2189(68)/5-CHH, dated the 14th February, 1990 of the Government of Gujarat.
8. Digging of well for irrigation or drinking water.
9. Digging of foundation for buildings not requiring prior environmental clearance.
10. Excavation of ordinary earth or clay for plugging of any breach caused in canal, nala, drain, water body, etc., to deal with any disaster or flood like situation upon orders of District Collector or District Magistrate.
11. Activities declared by State Government under legislations or rules as non- mining activity with concurrence of the Ministry of Environment, Forest and Climate Change, Government of India.

STANDARD ENVIRONMENTAL CONDITIONS FOR SAND MINING

Impact Category	S.No.	Environmental Conditions
Stakeholder Engagement	1	In the case of private land not owned by the lease holder an affidavit should be obtained regarding consent of the concerned land owner (s) for carrying out the mining operation.
	2	Stakeholder awareness and ability to raise concerns and getting it to be addressed.
	3	Implementation of Action Plan on the issues raised during the Public Hearing. The Proponent shall complete all the tasks as per the Action Plan submitted with the budgetary provisions during the Public Hearing.
	4	Having valid lease and all the permits is very much needed.
	5	To establish a Monitoring Committee including Local Panchayat, to check on traffic due to transportation and submit an annual report on the same.
	6	The directions given by the Hon'ble Supreme Court of India vide order dated 27.02.2012 in Deepak Kumar case [SLP(C) Nos. 19628-19629 of 2009] and order dated 05.08.2013 of the Hon'ble National Green Tribunal in application No. 171/2013 may be strictly followed.
	7	All the provisions made and restrictions imposed as covered in the Minor Mineral Rule, shall be complied with, particularly regarding Environment Management Practices and its fund management and Payment of compensation to the land owners.
Sustainable Mining Practices	8	District level Survey Report should be prepared and area suitable for mining and area prohibited for mining be identified.
	9	The depth of mining in Riverbed shall not exceed one meter or water level whichever is less, provided that where the Joint Inspection Committee certifies about excessive deposit or over accumulation of mineral in certain reaches requiring channelization, it can go up to 3 meters on defined reaches of the River.
	10	No River sand mining be allowed in rainy season.
	11	To submit annual replenishment report certified by an authorized agency. In case the replenishment is lower than the approved rate of production,

		then the mining activity / production levels shall be decreased / stopped accordingly till the replenishment is completed.
	12	Ultimate working depth shall be up to 3.0 m from Riverbed level and not less than one meter from the water level of the River channel whichever is reached earlier. In hilly terrain this depth be preferably restricted to one meter.
	13	In River flood plain mining a buffer of 3 meter to be left from the River bank for mining.
	14	In mining from agricultural field a buffer of 3 meter to be left from the adjacent field.
	15	Mining shall be done in layers of 1 meter depth to avoid ponding effect and after first layer is excavated, the process will be repeated for the next layers.
	16	To maintain safety and stability of Riverbanks i.e. 3 meter or 10% of the width of the River whichever is more will be left intact as no mining zone.
	17	No stream should be diverted for the purpose of sand mining. No natural water course and/ or water resources are obstructed due to mining operations.
	18	No blasting shall be resorted to in River mining and without permission at any other place.
	19	Depending upon the location, thickness of sand, deposition, agricultural land/Riverbed, the method of mining may be manual, semi-mechanized or mechanized; however, manual method of mining shall be preferred over any other method.
Identification and Preparation of Mining Site	20	Mining should be done only in area / stretch identified in the District Level Survey Report suitable for mining and so certified by the Sub-Divisional Level Committee after site visit.
	21	Mining should begin only after pucca pillar marking the boundary of lease area is erected at the cost of the lease holder after certification by the mining official and its geo coordinates are made available to the District Level Committee.
	22	The top soil in case of surface land mining shall be stored temporarily in an earmarked site and concurrently used for land reclamation.

Monitoring the Mining of Mineral and its Transportation	23	The EC holder shall keep a correct account of quantity of mineral mined out, dispatched from the mine, mode of transport, registration number of vehicle, person in-charge of vehicle and mine plan. This should be produced before officers of Central Government and State for inspection.
	24	For each mining lease site the access should be controlled in a way that vehicles carrying mineral from that area are tracked and accounted for.
	25	The State / District Level Environment Committee should use technology like Bar Coding, Information and Communications Technology (ICT), Web based and ICT enabled services, mobile SMS App etc. to account for weight of mineral being taken out of the lease area and the number of trucks moving out with the mineral.
	26	There should be regular monitoring of the mining activities in the State to ensure effective compliance of stipulated EC conditions and of the provisions under the Minor Mineral Concessions Rules framed by the State Government.
Noise Management	27	Noise arising out of mining and processing shall be abated and controlled at source to keep within permissible limit.
	28	Restricted working hours. Sand mining operation has to be carried out between 6 am to 7 pm.
Air Pollution and Dust Management	29	The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly.
	30	Air Pollution due to dust, exhaust emission or fumes during mining and processing phase should be controlled and kept in permissible limits specified under environmental laws.
	31	The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Wheel washing facility should be installed and used.
Management of Visual Impact	32	The mining operations are to be done in a systematic manner so that the operations shall create a major visual impact on the site.
Bio-Diversity Protection	33	Restoration of flora affected by mining should be done immediately. Twice the number of trees destroyed by mining to be planted preferably of indigenous species. Each EC holder should plant and maintain for lease period at least 5 trees per hectare in area near lease.
	34	No mining lease shall be granted in the forest area without forest clearance in accordance with the provisions of the Forest Conservation Act, 1980 and the rules made thereunder.

	35	Protection of turtle and bird habitats shall be ensured.
	36	No felling of tree near quarry is allowed. For mining lease within 10km of the National Park / Sanctuary or in Eco-Sensitive Zone of the Protected Area, recommendation of Standing Committee of National Board of Wild Life (NBWL) have to be obtained as per the Hon'ble Supreme Court order in I.A. No. 460 of 2004.
	37	Spring sources should not be affected due to mining activities. Necessary Protection measures are to be incorporated.
Management of Instability and Erosion	38	Removal, stacking and utilization of top soil in mining are should be ensured. Where top soil cannot be used concurrently, it shall be stored separately for future use keeping in view that the bacterial organism should not die and should be spread nearby area.
	39	The EC should stipulate conditions for adequate steps to check soil erosion and control debris flow etc. by constructing engineering structures
	40	Use of oversize material to control erosion and movement of sediments
	41	No overhangs shall be allowed to be formed due to mining and mining shall not be allowed in area where subsidence of rocks is likely to occur due to steep angle of slope.
	42	No extraction of stone / boulder / sand in landslide prone areas.
	43	Controlled clearance of riparian vegetation to be undertaken
Waste Management	44	Site clearance and tidiness is very much needed to have less visual impact of mining.
	45	Dumping of waste shall be done in earmarked places as approved in Mining Plan.
	46	Rubbish burial shall not be done in the Rivers.
Pollution Prevention	47	The EC holder shall take all possible precautions for the protection of environment and control of pollution.
	48	Effluent discharge should be kept to the minimum and it should meet the standards prescribed.
Protection of Infrastructure	49	Mining shall not be undertaken in a mining lease located in 200-500 meter of bridge, 200 meter upstream and downstream of water supply / irrigation scheme, 100 meters from the edge of National Highway and railway line, 50 meters from a reservoir, canal or building, 25 meter from the edge of State Highway and 10 meters from the edge of other

		roads except on special exemption by the Sub-Divisional level Joint Inspection Committee.
	50	For carrying out mining in proximity to any bridge or embankment, appropriate safety zone (not less than 200 meters) should be worked out on case to case basis, taking into account the structural parameters, location aspects and flow rate, and no mining should be carried out in the safety zone so worked out.
	51	Mining activities shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical, and archeological importance.
Enhancement Road Safety	52	Vehicles used for transportation of sand are to be permitted only with **of** fitness and PUC Certificates.
	53	Junction at takeoff point of approach road with main road be properly developed with proper width and geometry required for safe movement of traffic by concession holder at his own cost.
	54	Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guideliness with respect to complying with traffic congestion and density.
	55	No stacking allowed on road side along National Highways.
Closure and Reclamation of Mined Out Area	56	The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
	57	Restoration, reclamation and rehabilitation in cluster should be done systematically and jointly by each EC holder in that cluster. This should be appropriately reflected as EC condition in each EC in cluster.
	58	Site specific plan with eco-restoration should be in place and implemented.
Health and Safety	59	Health and safety of workers should be taken care of.
	60	Transport of mineral will not be done through villages / habitations.
	61	The Project Proponent shall make arrangement for drinking water, first aid facility (along with species specific anti-venom provisioning) in case of emergency for the workers.

	62	Project Proponent shall implement the Disaster Management Plan if the mine lease area is located in Seismic Zone-IV. Project Proponent shall appoint a Committee to have a check over any disaster to warn workers well before for the safety of the workers. Emergency helpline number will be displayed at all levels.
	63	Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted.
Monitoring the Impact of Mining	64	The Project Proponent shall report monitoring data on replenishment, traffic management, levels of production, River Bank erosion and maintenance of Road etc.
Mineral Conservation	65	Use of alternate material such as M-sand in place of natural River sand shall be encouraged in order to reduce stress on natural eco-system.

APPENDIX: TABLE - 1

REVENUE FROM SAND MINING IN STATES / UTs

(Rs. in crores)

Sl.No.	STATE / U.T	2012 - 2013	2013 - 2014	2014 - 2015
01	Andaman & Nicobar	0.073	0	0
02	Arunachal Pradesh	7	8	5
03	National Capital Territory of Delhi	0	0	
04	Himachal Pradesh	0.70	0.35	0.07
05	Jharkhand	4.25	3.04	0.07
06	Karnataka	23.74	15.33	25.99
07	Madhya Pradesh	184.93	179.41	172.53
08	Meghalaya	14.50	15.88	15.50 (as forest royalty from govt. contractors)
09	Mizoram	0.018	0.0475	0.0861
10	Puducherry	0.80	0.20	0.03
11	Rajasthan	173.36	252.06	134
12	Tamil Nadu	188.50	117.73	109.10
13	Uttar Pradesh	97.27	166.45	168.38

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 2

NUMBER OF MINING LEASES IN STATE

Sl.No.	STATE / U.T	In stream	Flood Plain	Sea Shore	Agricul-tural field	River	Total
01	Andaman & Nicobar						Nil
02	Andhra Pradesh						Nil
03	Haryana	5	12		7		31
04	Jammu & Kashmir					650	650
05	Jharkhand	10				387	397
06	Lakshadweep					1090	1090
07	Manipur						NIL
08	Meghalaya						NIL
09	Odisha						NIL
10	Punjab	2 + 80 Temporary Working Permit				73	155
11	Sikkim		85				85
12	Tripura	21	244		5		270

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 3

AVERAGE SIZE OF SAND MINING LEASES IN STATE / UT: 2014-15

(In Hectare)

Sl.No.	STATE / U.T	AVERAGE SIZE	SMALLEST MINING LEASE AREA	LARGEST MINING LEASE AREA
01	Andaman & Nicobar	NOT APPLICABLE		
02	Arunachal Pradesh	ONLY MINING PERMITS		
03	Himachal Pradesh	1.20	0.25	4.09
04	Jharkhand	0.25	0.13	87.38
05	Karnataka	5	5	19.42
06	Madhya Pradesh	8.52	0.30	306.98
07	Meghalaya	Mostly < 1.5 ha.		
08	Mizoram	NA		
09	Puducherry	NA		
10	Rajasthan	2 5 in Bikaner	24.82 2 in Bikaner	1901.89 5 in Bikaner
11	Tamil Nadu	29 leases < 10 ha.	14 leases of 10 - 15 ha.	42 leases > 15 ha.
12	Uttar Pradesh	25	5	200

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 4

AVERAGE PERIOD OF SAND MINING LEASES IN STATE / UT

(In Hectare)

Sl.No.	STATE / U.T	AVERAGE MINING LEASE PERIOD (YEARS)
01	Andaman & Nicobar	Not Applicable
02	Arunachal Pradesh	Only mining permit is given
03	Himachal Pradesh	5
04	Jharkhand	3
05	Karnataka	2
06	Madhya Pradesh	5 to 10
07	Meghalaya	No lease in operation currently
08	Mizoram	No mining lease in operation currently
09	Puducherry	One year permit
10	Rajasthan	5 20-30 years in Bikaner
11	Tamil Nadu	3
12	Uttar Pradesh	3

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 5

COMMON METHOD AND PRACTICE OF SAND MINING IN STATE / UT

Sl.No.	STATE / U.T	COMMON METHOD AND PRACTICE OF SAND MINING
01	Andaman & Nicobar	1. The Apex Court in its order dated 7.5.2002 in I.A. No. 502 in WP (C) No. 202 of 1995, had directed that extraction of sand be phased out @ minimum 20% per year on reducing balance basis to bring the sand mining to a level of 33% of the present level of mining within a maximum period of five years. 2. Since the level of extraction of sand in the territory in the year 2001-02 i.e. the base year, was 68909 cubic meter, the quantity of extractable sand is fixed at 22581 cubic meter. 3. The quantity of sea sand so allowed by MoEF is extracted from the identified and approved sites having such deposits on the sea beaches (identified accreting area) with adequate environmental safeguards so as to prevent any damage to the sensitive coastal eco-system including corals, turtle/ bird nesting sites and the protected areas. 4. The allotment of sea sand is made to the individuals by the Sand Allotment Committee constituted by the Lieutenant Governor under the Chairmanship of Chief Secretary who also heads the A&N CZMA. The quantum of sea sand allotted is fixed by the Committee on the basis of availability of sea sand and the number of applicants (local) applied for their bonafide use.
02	Arunachal Pradesh	1. Mining of sand restricted to foothills only that too for a very short period. Grant of mining lease is kept in abeyance, short term mining permits are issued to various Central and State agencies for carrying out developmental works under the strict supervision of the departmental officers.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	COMMON METHOD AND PRACTICE OF SAND MINING
03	Himachal Pradesh	Manual. The mining lease areas are sanctioned on the river bed if the area is approved in survey document. The mining activities are allowed strictly in accordance with the approved working cum Environment Management Plan and after the environment clearance.
04	Jharkhand	Manual
05	Karnataka	Manual
06	Madhya Pradesh	Manual
07	Meghalaya	Hill quarrying in private areas
08	Mizoram	Extraction of sand limited mainly for domestic purpose in the state. The produce extracted illegally is seized as per the Mizoram Forest Act, 1955. Mining is only limited to river banks and riverbeds with improvised equipments like spade, shovel, small canoes, etc.
09	Puducherry	Manual
10	Rajasthan	In Rajasthan sand is available in seasonal streams and rivers except Chambal which is perennial but mining is banned because of Chambal Crocodile Sanctuary. Mining is done up to 3 meters and is open cast. It is filled in trucks either manually or semi mechanized method. In Bikaner no river exists and mining for sand is being done from palaeo-channel. In this palaeo-channel the sand deposit occurs at the depth of 5 meter to 20 meter below ground level with an over burden of 5 to 20 meters. The mining here is done open cast benching method, where overlying blown sand, gravel, pebble etc. is removed, the sand is further sieved, graded and washed upto 12 to 18 mesh size.
11	Tamil Nadu	Manual mining is carried out in certain quarries. In most of the sand quarries two poclains are used by the PWD.
12	Uttar Pradesh	Manual and Semi-mechanised

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 6

SUGGESTIONS / RECOMMENDATIONS FROM STATES / UTs FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
01	Andaman & Nicobar	The quantum of extractable sand fixed at 22581 cubic meter should be enhanced. This limit has been fixed by the orders of Hon'ble Supreme Court subject to study by National Institute of Oceanography.
02	Arunachal Pradesh	1. For environmentally sustainable sand mining a strict and comprehensive sand mining policy need to be framed.
		2. River sand is becoming a scarce commodity and hence exploring alternative to it has become imminent. Manufactured sand is a good alternative both for fine as well as coarse sand used in concrete.
		3. Sand mining should be restricted to surface collection only without the use of heavy machinery.
		4. Due to turbulent and inaccessible nature of rivers flowing in the hilly terrains of the state, deposition of the sand in the river bed is very negligible and except for few quarries in the foothills and plains, most of the notified quarries are boulders and mining of sand is very negligible.
		5. In view of environment related issues the grant of mining lease for river bed minor mineral viz. sand, gravel, shingle, aggregate, boulder are kept in abeyance and extraction of these minerals is regulated only by grant of mining permits, that too not exceeding 3000 cubic meter in one permit.
		6. For scientific mining of sand and other minor minerals Guideliness has been prepared and accordingly Geo-Technical Committee has been constituted under the chairmanship of ADC/SDO in the district level to determine the quantity of quarriable mineral that can be safely removed and also to give technical clearance for notification of quarries of smaller size, preferably within one hectare.
03	Chhattisgarh	1. While attempting to prepare a model Guidelines / policy for the country, the differences that exist in different states may be taken into account. It may be tried to take all stakeholders along.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
		2. To ease the process of EC granting, SEIAA may have benches across the State with each bench having a SEAC under it. Time bound clearance with ease of access and grant.
		3. Sand mining with use of machinery should be allowed.
		4. Road construction material like murram should be exempted from EC considering their local / pocket occurrences and impossibility of obtaining EC.
		5. Considering the traffic issue at urban areas and to reduce intermediaries like storage point dealers, night mining with adequate lighting should be allowed.
		6. To make the availability of sand from local rivulet / streams the river bank to in-stream mine area distance should be reduced from 10 meter to 3 meters.
04	NCT of Delhi	1. Location of sand mining should be identified by a committee comprising of revenue deptt., Irrigation Deptt., CGWB, SPCB, Forest Department and mining department. Mining area should distinctly be marked at site, before allowing mining.
		2. Depth of mining should be restricted to 3 mtrs or water level, whichever is less and that to from aggradation areas. The side slope of excavation should be less than 3:1.
		3. Requirement of sand and gravel should be reduced by utilization of construction and demolition waste. It requires not only legislative support but also awareness campaign among the society.
		4. Guidelines should be distinctly clear and easy to understand covring do's and don't during mining operation.
		5. Sufficient safe distance should be left between mining site and adjoining engineering structures like embankment, spurs, bed bars, bridges, reservoir and regulator etc.
		6. Security amount should be sufficient enough to compel the agency to carry out rehabilitation, corrective measures and to ensure strict compliance of conditions of lease. S.D. should be released after inspection of committee and recording of certificate that agency complied with the lease conditions.
		7. Mining may be carried out by state agency instead of private agaencies.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
05	Himachal Pradesh	1. Working cum Environment Management Plan has been made mandatory. The mining activities are allowed after submission of environment clearance.
		2. In compliance of order of Hon'ble Supreme Court dated 27.02.2012 in Deepak Kumar case, the Himachal Pradesh has repealed its rules called the Himachal Pradesh Minor Mineral (Concession) and Mineral (Prevention of illegal mining, transportation and Storage) Rule, 2015 in accordance to the recommendation of the Ministry of Environment & Forest and rules circulated by the Ministry of Mines. Hence the State of Himachal Pradesh has complied with the above directions of the Hon'ble Apex Court,
		3. Therefore the condition of applicability of Environment Clearance on the area less than 5 hectare shall be exempted.
		4. Further keeping in view, the peculiar topography, geography and socio-economic fabric of the State, the condition for the minimum size of the lease should be exempted as the rivers are in youth stage forming different land forms, land holdings are less, population is thin and scattered and the demand of minor mineral is limited, which could be met out locally by exploiting local resources on the small scale.
06	Jammu & Kashmir	1. Uniform Guidelines be framed for sand mining and river bed mining as they cannot be segregated.
		2. Identification of sand belts be made in consultation with CGWB and while framing Guideliness CGWB may be taken on board.
		3. Sand mining leases less than 5 hectare be exempted from EC and comprehensive policy may be made for hilly states for easing the process of grant of lease.
07	Jharkhand	1. Machine should not be used in sand mining. Only manual mining should be done.
		2. The depth of mining shall be restricted to 3 meter / water level whichever is less.
		3. No mining should be carried out in proximity of any bridge / embankment.
		4. In-stream mining should not be allowed.
		5. Mining should be done in accordance with an approved mining plan.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
		6. EC should be valid for settlement period subject to ceiling of five years.
08	Karnataka	1. Undertaking sand mining activity through a Government agency to be governed by District Level Sand Monitoring Committee headed by Deputy Commissioner.
		2. The area should be properly surveyed and mapped with the help of GPS to assign geo coordinates and accordingly erect boundary pillars so as to avoid illegal and unscientific mining.
		3. Depth of sand available may be indicated in a contour map using suitable drilled holes to ensure sand mining do not exceed one meter depth.
		4. Once thickness is established sand mining may be permitted to one meter depth where the thickness of sand is more than three meter deep. If the thickness of sand is less than three meter, sand mining shall not be permitted.
		5. Sufficient spacing shall be ensured from one block to another block and sufficient time gap shall be provided for replenishment before undertaking mining activity in the same block.
		6. Mining activity shall be restricted to only non-monsoon season and in the area that is exposed.
		7. No in-stream mining shall be permitted.
		8. No stream should be diverted for the purpose of sand mining. No natural water course and/ or water resources are obstructed due to mining operations.
		9. Site specific plan with eco-restoration should be in place.
		10. Sand mining shall be undertaken only by manual method without use of earth moving equipment such as JCB etc. Use of mechanized boats for sucking sand from in-stream area shall be strictly prohibited.
		11. Appropriate safety zones shall be maintained in proximity to any bridge / and / or embankment and other permanent structures. No sand mining shall be undertaken in such safety / buffer zones. Guideliness issued by the Ministry of Mines in this regard shall also be adhered to.
		12. The quarrying activity shall not intersect subterranean water level and ground water table.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
		13. The top soil in case of surface land mining shall be stored temporarily in an earmarked site and concurrently used for land reclamation.
		14. Use of alternate material such as M-sand in place of natural river sand shall be encouraged in order to reduce stress on natural eco-system.
09	Madhya Pradesh	1. Geographical location of the state should be taken care of.
		2. Keep provision for extraction of sand from forest areas.
		3. Expedite the EC process.
		4. In inter-state boundary leases sand mining EC be giver by the SEIAA.
		5. Clear Guidelines for B-1, B2 be issued.
		6. Simplify cluster cases.
		7. Exempt mining leases of less than 5 hectare from EC.
10	Meghalaya	1. No sand mining within 3 kilometer from Protected area and Reserved Forest area.
		2. Advance royalty etc for entire quantity of mineral be realized in full.
		3. Only loose boulder and sand are allowed to be removed from the mid river stream leaving 15 meter on either side untouched.
		4. No collection of sand is allowed on 15 meter of either side of structures like bridge, culvert etc.
		5. No blasting allowed.
		6. No extraction of stone / boulder / sand in landslide prone areas.
		7. No stacking allowed on road side along national highways.
		8. No felling of tree near quarry is allowed.
		9. No transportation of forest produce (sand from forest area) is allowed after sunset.
		10. Export fee realized if sand is sent outside the state.
		11. Stone crusher cannot be installed without permission of DFO.
		12. Tree should be planted at quarry after completion of mining.
		13. Violation of above conditions will result in cancellation of permit and forfeiture of advance royalty already paid.
11	Mizoram	1. Extraction of sand from the forest may be permitted strictly as per mining plan approved by the Competent Authority and after getting necessary clearance under various acts related to the forest and environment.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
12	Odisha	1. EC may be exempted for leases less than 5 hectare.
		2. EC should not be required for earth mining.
		3. Minor minerals even close to inter-state borders should be allowed to be cleared by the SEIAA.
		4. In case a river is forming boundary of states and mechanized mining of sand is causing tension in states it should be resolved at the national level.
13	Puducherry	1. Environment Clearance is issued by SEIAA, Puducherry strictly under the provisions of the EIA Notification, 2006 and subsequent amendments.
14	Rajasthan	1. The bajari mined out from river bed is filled back by the river itself during the next rainy season. So, nature itself reclaims the mined out area every year. The formation of bajari is a natural process in the river and it is also essential to remove bajari from the river bed to avoid silting. If the sand deposited in the river bed is not removed, it may cause change of river course and may also results in flood plains will be developed.
		2. Price control system adopted in Rajasthan. Sand is a essential commodity.
		3. The depth of mining should be restricted to 3 meters or above water table.
		4. Machinery having boom height more than 3 meter shall not be allowed in extraction of bajari.
		5. Size of mining leases be allowed below 5 hectare.
		6. In streams with low deposit of sand and if use is mostly local no mechanized mining should be allowed and EC should not be required.
		7. In larger deposits there should be semi-mechanised mining with EC.
		8. The sand (river and stream) in different categories, with their availability, use and size of the deposit. **Category A:** Small deposits in river and stream where thickness of sand bed is very less and sand is used locally in villages and towns only and no mechanical mining is done, in such areas restriction of obtaining Environment Clearance can be relaxed for manual mining.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
		Category B: Large deposits, where in rivers and streams having thickness of sand bed is medium to large, sand mining, shall be allowed with semi mechanized manner after obtaining Environment Clearance. **Bikaner District:** Bikaner district is a desert terrain where ground water table is very deep. Bajari is excavated above water table and it does not affect the water table. In addition to this boulder, gravel and waste generated due to bajari mining is used in reclamation of pits. Hence environment is not adversely affected due to bajari mining.
15	Sikkim	1. Forest department is the nodal department for sand and stone extraction from the riverbed.
		2. Use of machines is prohibited.
		3. Quarrying sites are allotted to village youth cooperatives.
		4. For bigger companies quarry sites in forest area are allotted after FC.
		5. State Government has considerations for allotment of quarries for Border Road Organization and MoD.
		6. GoI can monitor mining in states through GIS.
16	Tamil Nadu	1. Excess sand deposits identified in the flood plains and in-stream areas only to be mined in order to safeguard and maintain ground water table.
		2. Sand mining operation has to be carried out between 6 am to 7 pm.
		3. Mining operation should be carried out in a systematic manner without affecting environment and ecology of the area.
17	Uttar Pradesh	1. Depth of mining cannot be more than 3 meter or water table whichever is less.
		2. Mining can be done in slices forming benches where bench height cannot be more than 1 meter and bench width cannot be less than 10 meter.
		3. A width of not less than 50 meter or 10% width of river can be restricted for mining activities from river bank. A condition can be imposed that mining will be done from river activities from river bank.
		4. SEIAA should be decentralized to expedite EC process. It can be decentralized to district or zonal level.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	SUGGESTIONS / RECOMMENDATIONS FOR ENVIRONMENTALLY SUSTAINABLE SAND MINING
		5. Make EC conditions practical.
		6. Requirement of mining plan in river bed mining be done away with.
		7. There should not be requirement of EC for short term permit.
		8. The quantity of sand should not be fixed in EC as it leads to loss in revenue and illegal mining.
		9. Semi-mechanised form of sand mining be allowed.
		10. Sand mining to be exempted from EC as it takes 6-8 months and environment department do not have requisite work force to enforce EC conditions. A Guidelines for environmentally sustainable sand mining be framed and it can be complied by imposing it in the lease condition.
18	Uttarakhand	1. Area less than 5 hectare be exempted from EC.
		2. Use of machine be allowed for scientific mining and reducing the cost of production.
		3. RBM deposition in the lease should not be fixed for the entire lease period. RBM in lease area be assessed after rains every year.
		4. 70% of leases in state not operating for want of EC and these vacant lots are source of illegal mining.

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 7

BEST PRACTICE OF SAND MINING ADOPTED IN DISTRICT / STATE / UT

Sl.No.	STATE / U.T	DESCRIPTION OF BEST PRACTICES
01	Andaman & Nicobar	Institute of Ocean Management has been entrusted the task of identification of sand accreting sites.
02	Arunachal Pradesh	Mining of sand is restricted to foothills only that too for a very short period.
03	National Capital Territory of Delhi	In Delhi sand mining lease is granted by Revenue department. NOC from I&FC Deptt. Were issued with condition of limitation of depth, area of mining, operation timing limitation and limited period of NOC. Compliance of laid down conditions and monitoring is ensured by collector.
04	Himachal Pradesh	1. The mining activities on river beds are allowed strictly as per the provisions of river / stream bed mining policy as under.
		2. No river / stream bed mining shall be allowed without the recommendation of the Sub Divisional Level Committee constituted under the Chairmanship of Sub Divisional Magistrate having XEN PWD, Irrigation and Public Health, SPCB, DFO and Mining Officer as its member.
		3. Nor river / stream bed mining shall be allowed within 75 meter from the periphery of soil conservation works, nursery plantations, check dams or within the distance as recommended by the Sub-Divisional Committee whichever is more.
		4. No river / stream bed mining shall be allowed within 1/10th of its span or 5 meters from the banks or as specified by the Sub-Divisional Level Committee, whichever is more.
		5. Nor river / stream bed mining shall be allowed within 200 meters upstream and downstream of water supply scheme or as specified by the Committee whichever is more.
		6. Nor river / stream bed mining shall be allowed within 200 meters upstream and 200 to 500 meters downstream of bridges depending upon the site specific conditions.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	DESCRIPTION OF BEST PRACTICES
		7. No approach road from PWD road shall be allowed to lease area unless lessee / contractor obtains written permission from XEN, PWD for making road leading to all intake places from the PWD road. 8. No boulders/ cobbles/ hand broken road ballast shall be allowed to be transported outside the State from river/stream beds. 9. No digging for more than 3 feet shall be allowed in river/ stream beds. 10. No blasting shall be allowed in river/stream beds.
05	Madhya Pradesh	1. In some districts the Cooperative Societies of Labour are doing the sand collection, loading and unloading work.
06	Tamil Nadu	Permission has been granted in favour of PWD for quarrying sand in the river Poramboke lands in 16 districts in the state of Tamil Nadu. Sand mining is being carried out by the PWD in the entire State.
07	Uttar Pradesh	U.P. Minor Mineral Concession Rules, 1963.

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE - 8

STATUS OF PROMULGATION OF RULE ON SAND MINING IN THE STATE / UT

Sl.No.	STATE / U.T	NAME OF RULE WITH YEAR OF PROMULGATION
01	Andaman & Nicobar	Indian Forest Act, 1927 as sand has been included as forest produce.
02	Arunachal Pradesh	APMMCR 2002 and made effective from 1.01.2003
03	Himachal Pradesh	1. River/Stream bed Mining Policy-2004.
		2. Himachal Pradesh Minor Mineral Policy-2013.
		3. Himachal Pradesh Minor Mineral (Concession) and Mineral (Prevention of illegal mining, transportation and storage) Rule, 2015.
04	Jharkhand	Rule 12 of Jharkhand Minor Mineral Concession (Amendment) Rule 2014.
05	Karnataka	Karnataka Sand Policy was brought out in the year 2011 and as such amendment to the Karnataka Minor Mineral Concession Rule 1994 were made in the year 2011 and a separate chapter IV B for sand mining was introduced under Rule 31-R. Further, as per the Hon'ble Supreme Court orders sated 27.02.2012 in SLP No. 19628-19629 between Deepak Kumar and State of Haryana and others and as per the model Guideliness issued by the Government of India for Environmental Management of Mining of Minor Minerals, amendment to the Karnataka Minor Mineral Concessions Rule 1994 were brought out on 16.12.2013 incorporating a new chapter II A applicable to all minor minerals on Systematic, Scientific Mining and Protection of Environment, wherein Quarrying Plan, Environmental Management Plan and Environment Clearance was made mandatory. Amendments to Rule 31- R were also made wherein the Government, PWD Department was entrusted with sand mining, storage and transportation, under the District Sand Monitoring Committee and Taluk Sand Monitoring Committee.
06	Madhya Pradesh	Rules have been framed as per the orders of Hon'ble Supreme Court for sand mining under M.P. Minor Mineral Rules 1996 and Sand Mining Policy 2015 is also formulated in the State.

* States/UTs not mentioned have not provided the data.

Sl.No.	STATE / U.T	NAME OF RULE WITH YEAR OF PROMULGATION
07	Meghalaya	No rules notified by the state on sand mining
08	Mizoram	Mizoram Forest Act, 1955, which came into force on 1.01.1956.
09	Puducherry	Puducherry Minor Minerals (Concession) Rules, 1977.
10	Rajasthan	RMMCR, 1986 Notification dated 2.11.2012: 1. First proviso of Rule 8(2) and first proviso of 17 (1) - Renewal of Bajari Mining Leases is not allowed. 2. Rule 16 (3) - Mining Leases of Bajari to be granted for 5 years. 3. Rule 18 (18) - Part surrender of lease area of Bajari not allowed. Notification dated 3.4.2013 - (First proviso Rule 7 (1)- Mining leases of Bajari to be granted only by way of tender or auction. Notification dated 12.07.2013 - (First proviso Rule 11 (2)) - Maximum area limit of 10 sq. km. not applicable for Bajari Mining Leases. Bikaner District: Chapter II of RMMCR, 1986 (last amended 12.07.2013).
11	Sikkim	Sikkim Forest (Allotment of Areas for Quarrying of Sand and Stone), 2006.
12	Tamil Nadu	1. As per G.O. Ms. No. 95 Industries (MMCI) Department dated 1.10.2003, a new Rule 38 A has been introduced in the Tamil Nadu Minor Mineral Concession Rules, 1959. Accordingly quarrying and sale of sand is being carried out by PWD in the state of Tamil Nadu since October 2003. 2. As per G.O. Ms. No. 158 Industries (MMIC) Department dated 25.08.2008, a new Rule 38 B has been introduced in the Tamil Nadu Minor Mineral Concession Rules, 1959. Accordingly transportation of sand outside the state not to be made. To regulate storage and transportation of sand a new Rule 38 C B has been introduced in the Tamil Nadu Minor Mineral Concession Rules, 1959 vide G.O. No. 32 Industries (MMIC) Department dated 11.02.2011.

* States/UTs not mentioned have not provided the data.

APPENDIX: TABLE -9

NORMAL DATES OF ONSET AND WITHDRAWAL OF SOUTH-WEST MONSOON

The India Meteorological Department, Nagpur, vide letter No. NAGPUR RMC /CS-312, dated 18th January,2016 has provided the period of Rainy Season viz. Normal dates of Onset and Withdrawal of Southwest Monsoon over India as state-wise and union territory- wise which are as below:-

States	Normal date of Onset of SW-Monsoon	Normal date of Withdrawal of SW-Monsoon
Andhra Pradesh	1st June	15th October
Arunachal Pradesh	5th June	15th October
Assam	5th June	15th October
Bihar	10th June	15th October
Chhattisgarh	10th June	15th October
Goa	5th June	15th October
Gujarat	15th June	15th September
Haryana	1st July	15th September
Himachal Pradesh	1st July	15th September
Jammu & Kashmir	1st July	15th September
Jharkhand	10th June	15th October
Karnataka	5th June	15th October
Kerala	1st June	15th October
Madhya Pradesh	15th June	1st October
Maharashtra	10th June	1st October
Manipur	1st June	15th October
Meghalaya	1st June	15th October
Mizoram	1st June	15th October
Nagaland	5th June	15th October
Odisha (Orissa)	5th June	15th October
Punjab	1st July	15th September
Rajasthan	1st July	1st September
Sikkim	5th June	15th October
Tamil Nadu	1st June	15th October
Telangana	5th June	15th October
Tripura	1st June	15th October

States	Normal date of Onset of SW-Monsoon	Normal date of Withdrawal of SW-Monsoon
Uttar Pradesh	15th June	1st October
Uttarakhand	15th June	1st October
West Bengal	10th June	15th October
Union territory	**Normal date of Onset of SW-Monsoon**	**Normal date of Withdrawal of SW-Monsoon**
Andaman and Nicobar Islands	20th May	15th October
Dadra and Nagar Haveli	10th June	1st October
Daman and Diu	10th June	1st October
Lakshadweep	1st June	15th October
Delhi	1st July	15th September
Puducherry	1st June	15th October

Note: The District Environment Impact Assessment Authority (DEIAA) in consultation with District Expert Appraisal Committee (DEAC) can make necessary changes as per local meteorological variations in this period of rainy season with respect to prohibition of River Sand Mining in the District.

ENSURING SUSTAINABLE SAND MINING FOR SUSTAINABLE DEVELOPMENT

A Major Initiative of Ministry of Environment, Forest and Climate Change for ensuring Environmentally Sustainable Sand Mining and Prevention of illegal Sand Mining.

{Notification No: SO No. 141 (E) dated 15.01.2016 and S.O. No. 190 (E) dated 20.01.2016 available at www.envfor.nic.in}

- Use of Satellite imagery to decide the site suitable for mining and quantity of sand which can be mined.
- Transit permit with tamper proof security features and tracking of mined out mineral.
- Monitoring of mined out mineral to prevent mining in excess of environmental clearance capacity.

- Delegation of power to grant environmental clearance for sand mining to an authority headed by District Magistrate.

- Intergration of power with District Authorities to grant environmental clearance and prevent illegal mining.

Note : Any information of mining without environmental clearance or against the norms prescribed in these notifications be reported at e-mail id: sandmining-moef@gov.in

Annexure SA 3A

Enforcement & Monitoring Guidelines for Sand Mining

Ministry of Environment, Forest and Climate change

January, 2020

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1.0 INTRODUCTION

The Ministry of Environment Forest & Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand Mining in the Country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring.

Section 23 C of MMDR, Act 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals. But in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

Use of latest remote surveillance and IT services helps in effective monitoring of the sand mining activity in-country and also assist the government in controlling the illegal mining activity in the country. Thus, there is a need for an effective policy for monitoring of sand mining in the Country which can be enforced on the ground. These guidelines focus on the effective monitoring of the sand mining since from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public. Further, the effective monitoring and enforcement require efforts from not only Government agencies but also by consumers and the general public.

It is the responsibility of every citizen of India to protect the environment and effective monitoring can only be possible when all the stakeholders viz. Central Government, State Government, Leaseholders/Mine Owners, Distributors, Dealers, Transporters and Consumers (bulk & retail) will contribute towards sustainable mining, and comply with all the statutory provisions. It is felt necessary to identify the minimum requirements across all geographical region to have a uniform protocol for monitoring and enforcement of regulatory provision prescribed for sustainable sand and gravel mining.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining.

The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provision of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020 "shall prevail.

2.0 NEED FOR POLICY GUIDELINES

The Ministry of Environment, Forest & Climate Change (MoEF&CC) published Environmental Impact Assessment Notification 1994 which is only applicable for the Major Minerals more than 5 ha. In order to cover the minor minerals also into the preview of EIA, the MoEF&CC issued EIA Notification 2006 for Major & Minor Mineral more than 5 Ha. The Hon'ble Supreme Court in its Judgment dated the 27th February 2012 in I.A. No.12- 13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc. made prior environment clearance mandatory for mining of minor minerals irrespective of the area of mining lease. In order to comply with the judgment of Hon'ble Supreme Court, the Ministry issued S.O.141 (E) dated 15.01.2016. Further, MoEF&CC published Sustainable Sand Mining Management Guidelines 2016 for scientific and sustainable sand mining in the Country. The recommendations for the management of sustainable sand extraction are the key objective of the Guidelines. Special emphasis is given on monitoring of the mined out material, which is key to the success of the environmental management plan. Use of IT and IT-enabled services for effective monitoring of the quantity of mined out material and transportation along with process re-engineering has been made a part of the Guidelines. Guidelines support the fundamental concept, promote environmental protection, limit negative physiological, hydrogeological and social impacts underpinning sustainable economic growth.

The Hon'ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. Inter-alia observed that ***"There can be no two views that an effective institutional monitoring mechanism is required not only at the stage when Environmental Clearance is granted but also at subsequent stages". "The guidelines focus on the preparation of District Survey Report and the Management Plan" ... We are of the view that all the safeguards which are suggested***

in sustainable sand mining guidelines as well as notification dated 15.01.2016 ought to be scrupulously followed."...It is a known fact that in spite of the above-suggested guidelines being in existence, on the ground level, illegal mining is still going on. The existing mechanism has not been successful and effective in remedying the situation." ..." Since there is an utter failure in the current monitoring mechanism followed by the State Boards, SEIAAs and DEIAAs, it is required to be revised for effective monitoring of sand and gravel mining and a dedicated monitoring mechanism be set up."

The Hon'ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. directed that ***MoEF&CC has issued directions from time to time under Section 3 and 5 of the Environment (Protection) Act, 1986. The MoEF&CC needs to revise its directions keeping in mind the following:***

- *Mining Surveillance System discussed in para 23 above be finalized in consultation with ISRO Hyderabad.*
- *Safeguards suggested in Sustainable Sand Mining Guidelines published by the MoEF&CC in the year 2016.*
- *Suggestions in the High Power Committee Report.*
- *The requirement of demarcation of boundaries being published in respect of different leases in the public domain.*
- *Need to issue SOP laying down mechanism to evaluate loss to the ecology and to recover the cost of restoration of such damage from the legal or illegal miners. Such evaluation must include the cost of mining material as well as the cost of ecological restoration and the net present value of future ecosystem services forgone.*
- *Need to set up a dedicated institutional mechanism for effective monitoring of sand and gravel mining which may also take care of mining done without any Environmental Clearance as well as mining done in violation of Environmental Clearance conditions.*

- *The Mining Department may make a provision for keeping apart at least 25% of the value of mined material for the restoration of the area affected by the mining and also for compensating the inhabitants affected by the mining.*

- *One of the conditions of every lease of mine or minerals would be that there will be independent environmental audit at least once in a year by reputed third party entity and report of such audit be placed in the public domain.*

- *In the course of such an environmental audit, a three-member committee of the local inhabitants will also be associated. Composition of three members committee may preferably include ex-servicemen, a former teacher and former civil servant. The Committee will be nominated by the District Magistrate.*

The Hon'ble NGT in its order dated 05.09.2018 in O.A. 44/2016 in the matter of Mushtakeem Vs. MoEF & CC & Ors. Inter-alia observed the following:

"Para 20. In Original Application No. 481/2016, the allegation is that there is the connivance of the District Administration with the miners and mining is going in violation of conditions of Environmental Clearance. According to the applicant, an effective mechanism is required to be evolved so that illegal mining does not place."

"Para 22. We proceed to consider the main question proposed for the consideration stated earlier hereinabove as to ***how to ensure the protection of the environment by checking illegal mining."***

"Para 23. We have dealt with the identical issue relating to the illegal sand mining in the border districts in the State of West Bengal and Odisha in the order dated 04th September 2018 in Sudarsan Das Vs. State of West Bengal & Ors., Original Application No. 173 of 2018. We have directed the MoEF&CC to revise the guidelines on the subject for an effective mechanism for sand mining, relevant portions of which are reproduced below: -..."

The Hon'ble NGT in its order dated 10.09.2018 in O.A. 304/2015 in the matter of Jai Singh & Anr.Vs. Union of India Ors. inter-alia observed the following:

"Para 6. After disposal of the above matters, a disturbing event widely reported in media which took place on 07th September 2018 has been brought to our notice. ***A Deputy Ranger who tried to stop illegal mining was killed by mining mafia at Morena in the State of M.P.***

"Para 7. The above disturbing event may also be kept in mind by the MoEF, while considering the issuance of revised guidelines in light of the judgment dated 05th September 2018 (Supra)."

The Hon'ble NGT in its order dated 05.04.2019 in O.A. 360/2015 in the matter of National Green Tribunal Bar Association & Anr.Vs. Union of India & Ors. inter-alia observed the following:

"The 2016 Guidelines need revision in the light of the report of High Powered Committee in September 2016, failure of Monitoring mechanism followed by State Boards, SEIIAs, DEIAAs and MSS system developed by Ministry of Mines & IBM with the assistance of BISAG and MAITY and other observations quoted in paras 12 to 15 above.

50. As noted earlier in paras 17, 23, 27, 31 and 35, States of West Bengal, Odisha, Gujarat, Karnataka, Maharashtra, Punjab, Haryana and Uttar

Pradesh are required to follow SSMG, 2016 as may be revised by MoEF&CC and even other States where illegal sand mining is taking place.

The States may review the monitoring mechanism in terms of several directions of the Tribunal and guidelines of MoEF&CC.

The international conservation concern regarding natural wealth is a universal demand. Article 51(a) subsection (G) of the constitution requires every citizen of India to protect and improve the natural environment including forest, lakes, rivers, wildlife and to have compassion for the living creature.

The Hon'ble Supreme Court in the case of M.C. Mehta Vs. Kamal Nath (1997) 1 SCC 388 held that under Article of Indian Constitution incorporates the "Public Trust Doctrine" and as such extents to the protection of all-natural resources which includes the protection of flora and fauna.

The Hon'ble Supreme Court in the case of Vellore Citizens Welfare Forum Vs. Union of India & Ors (1996) held that the precautionary principle is part of the Environmental Law in India. It further stated that onus of proof is on the actor of the developer/industrialize to show that its actions are environmentally benign."

3.0 OBJECTIVE OF GUIDLINES

- Identification and Quantification of Mineral Resource and its optimal utilization.
- To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining.

4.0 REQUIREMENTS FOR MONITORING & ENFOCEMENT

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the source of sand in India are through

a) River (riverbed and flood plain),
b) Lakes and reservoirs,
c) Agricultural fields,
d) Coastal / marine sand,
e) Palaeo-channels and
f) Manufactured Sand (M-Sand).

The SSMMG-2016 highlights the identification of the sand mining sources, replenishment of the River Bed Material (Sand, Boulder, Gravel, Cobble etc.), preparation of Districts Survey Report, and Standard Environmental Conditions suitable for sand mining projects.

The necessary requirements to comply with the direction of Hon'ble NGT and to facilitate effective monitoring and enforcement of regulatory provision for sand mining in the country are as follows:

i) Identification of sand mining sources, its quantification and feasibility for mining considering various environmental (proximity of protected area, wetlands, creeks, forest etc.) and other factors such as important structures, places of archaeological importance, habitation, prohibited area etc.

ii) The mining lease auctioned by State government as per their Minor Mineral Concession Rules are granted of Letter of Intent (LoI), but it has been observed that many of the sites are not suitable w.r.t environmental aspects. In most of the cases, the unplanned grant of mining lease leads to formation of cluster and/or contiguous cluster

of small mining leases which sometimes is difficult to regulate and monitor. In order to address such issues, more emphasis is required on the preparation of District Survey Report and its format for reporting,

iii) Mining Plan is an important document to assist the mine owner to operate the mine in a scientific manner. States have their own format for preparation of mining plan and it is observed that recording of the initial level of mining lease at shorter interval say 25m X 25 m grid interval is not present.

iv) There is no practice for regular replenishment study to ascertain the rate of depositing, plan and section needs to be prepared based on the restrictions provided in letter of intent and provisions of Sustainable Sand Mining Management Guidelines 2016.

v) Environmental Clearance is a process wherein the regulatory authorities after considering the potential environment impact of mining clearance is granted with a set of specific & standard conditions to carry out mining operations, but often it is observed that letter of intent is granted for a location which has less potential for mining and not feasible for environment-friendly mining. This leads to an unnecessary financial burden on the mine owners and litigations. Thus, LoI should be preferably granted for those locations which have the least possibility of an impact on the environment and nearby habitation.

vi) It is the responsibility of the mine owner to obtain all the statutory clearance and comply with the conditions stipulated in the clearance letter. Mining should be carried out within the mining lease area as per

approved mining plan or mining plan concurred by other regulatory authorities.

vii) Mining operation also involves transportation of mineral from the mining area to end-user and its necessary that movement of the mineral needs to be monitored.

The State Government already have power under section 23c of MMDR, Act 1957 to make rules for preventing illegal mining, transportation and storage of minerals. However, there are instances of illegal mining which shows that there is a need for strengthening the system of mineral dispatch and its monitoring. This document provides good practices already under implementation by various states for regulating the mineral sale, dispatch, storage, transportation and use.

viii) The river reaches with sand provide the resource and thus it is necessary to ascertain the rate of replenishment of the mineral. Regular replenishment study needs to be carried out to keep a balance between deposition and extraction. This document provides the procedure to be followed for conducting replenishment study.

ix) Even after all the regulatory procedure and policy being in place, there are instances where illegal mining is taking place. There is a need for regular surveillance of the sand mining reaches. The monitoring agencies can monitor the sites remotely by using Unmanned Artificial Vehicles (UAVs)/Drone which is now a viable option. The drone can also be used for reserves estimation, quantity estimation, land use monitoring. This document highlights possible use of IT/Satellite/Drone technology for effective monitoring of sand mining.

4.1 Identification of possible sand mining sources and preparation of District Survey Report (DSR)

4.1.1 Preparation of District Survey Report.

"Sustainable Sand Mining Guidelines, 2016" issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/LoI. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.

The Hon'ble NGT in its Judgment dated 08.12.2017 in the matter of Anjani Kumar vs State of Uttar Pradesh & Ors. inter-alia mentioned the following regarding sand mining in the Uttar Pradesh.

> *"It states that the main object of preparation of District Survey Report is to ensure identification of areas of aggradation/deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining area. Thus, the environmental protection requires a strictly regulated mining in terms of area, quantity as well as most importantly replenishment thereof."*

"The data collection and declared for preparation of DSR shall take precedence over other data and would form the foundation for providing mining lease in terms of Appendix- x to the Notification dated 15th January 2016 must be prepared by the statutory authority stated therein i.e. DEIAA prior to awarding of permits for carrying on mining activity in any part of the State of UP."

The Hon'ble High Court of Jharkhand at Ranchi in its orders dated the 11th April 2018 and 19th June 2018 in W.P. (PIL) No. 1806 of 2015, in the matter of Court on its Own Motion Versus the State of Jharkhand & Others with W.P. (PIL) No. 290 of 2013, in the matter of Hemant Kumar Shilkarwar Versus the State of Jharkhand & Others, has inter-alia directed the preparation of District Survey Report for minor minerals other than Sand and Bajri or delegation of the powers for preparation of format of District Survey Report of minor minerals other than sand and Bajri to the State Government and/or District Environment Impact Assessment Authority and District Expert Appraisal Committee. To comply with the direction of Hon'ble High Court the Ministry has issued S.O. 3611(E) dated 25.07.2018, wherein, the procedure of preparation of DSR is mentioned. But it is felt that still there is other information that needs to be reported in DSR to make it a comprehensive DSR.

Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depends on the quality of District Survey Report.

Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters, formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.

a) District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.

b) The first step is to develop the inventory of the River Bed Material and Other sand sources in the District. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.

The revenue department of Kerala already conducted river mapping and sand auditing of around 20 rivers of Kerala which is a good example wherein the profile of rivers was created at regular intervals and aggradation/deposition was identified along with water level. In the same study, benchmarks were also created at a prominent location at regular interval for future surveying. Such study helps the mining departments to identify the source of sand.

Thus, it is proposed that for preparation of district survey report, the auditing of rivers needs to be carried out. There is already a provision under MMDR Act 2015 for National Mineral Exploration Trust (MET) wherein a 2% of royalty amount to be deposited in the trust. This fund is used for mineral exploration in the country. The Sand Auditing is also a sort of identification of mineral and State Government may request Central Govt. for proving funds for river auditing. The Central Govt. (Ministry of Mines) may also explore the possibilities for providing the funds for river auditing. The other option is that State Govt. may conduct such studies by its own fund and the same may be recovered from the leaseholders to whom the mining lease will be allocated.

c) District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.

d) Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khtedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khtedari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in **Annexure-I.**

e) Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition are identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central ¾th part of the river, width needs to be identified on a map. Out of the ¾th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining ¼th area needs to be kept as no mining zone for the

protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

Note: As physical survey with conventional method is time-consuming, use of unmanned aerial vehicle (UAV) may be explored to carry out the survey and finalizing the original ground level and for developing a 3D model of the area.

f) The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.

g) Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.

h) Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.

i) It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.

j) The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller

mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.

k) Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.

l) The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.

m) The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.

n) The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so

selected should be verified by the State Government for its carrying capacity.

o) Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as **Annexure-II**. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in **Annexure-III**. The details of the transportation need to be provided as in **Annexure IV.**

p) **Public consultation-**The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per **Annexure-V.** The details regarding cluster and contiguous cluster needs to be provided in **Annexure-VI**. The details of the transportation need to be provided in **Annexure-VII.**

4.2 Grant of Letter of Intent to those mining leases which are falling in potential mining zone

The State Government shall issue letter of intent as per procedure laid down in their Minor Mineral Concession Rules with due consideration of final district survey report. The State Government shall ensure that all the letter of intent shall have complete details of the mining lease including geo-coordinate of the corner points, the involvement of forest land, distance from the forest land, distance from the protected area, distance from other sites of archaeological importance, details of the cluster situation etc. The demarcation of the boundaries of LoI/Lease area shall be placed in public domain along with LoI/lease deed details.

The LOI should not be granted for mining area falling on both riverbed and outside riverbed. Therefore, in the same lease, both types of area should not be included.

The authority responsible for grant of lease for sand mining shall ensure that annual audit of the sand mining process, production and compliance of the imposed conditions by regulatory authority (Environmental clearance or mine plan) shall be one of the essential condition of the lease agreement. The annual audit report shall be submitted to the district administration, which shall be put in public domain through the district website. Any deviation observed shall be appropriately and in-accordance with applicable law shall be dealt by the concerned authority and corrective measures shall also be taken to restoration of ecological/environmental damage, if observed.

4.3 Mining Plan

The preparation of Mining Plan is also very important. The mining plan should include the original ground level recorded at an interval not more than 10M x 10M along & across the length of the river. In addition to this-levels, outside the mining lease and bank of the river up to meters needs to be recorded. In the mining plan, there should be 3 plates for each year production & development planning (pre-monsoon, monsoon and post-monsoon). The time period of monsoon should be defined in the DSR. At the time of review of the mining plan, the details of the replenishment study conducted for all the years needs to be included in the mining plan. The Mining Plan should include the certificate from PCCF on forest land, distance from the protected area, past production details for mining leases seeking expansion.

Following considerations shall be kept in mind for sand/gravel mining while approving mining plan

a) Parts of the river reach that experience deposition or aggradation shall be identified. The Leaseholder/ Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.

b) The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.

c) Sand and gravel may be extracted across the entire active channel during the dry season.

d) Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

e) Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

f) Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

g) Segments of the braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.

h) Sand and gravel shall not be extracted up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

i) The sediment sampling should include the bed material and bed material load before, during and after the extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross-section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume. Calculate the extraction volume based on the sediment rating curve and high flow period after determining the allowable mining depth.

j) Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two-thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.

k) The flood discharge capacity of the river could be maintained in areas where there is a significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross-section history. Alternatively, off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.

l) The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for groundwater recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.

m) Mining depth should be restricted to 3 meters and distance from the bank should be ¼th or river width and should not be less than 7.5 meters.

n) The borrow area should preferably be located on the riverside of the proposed embankment because they get silted in the course of time. For low embankment, less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In the case of the higher embankment, the distance should not be less than 50 m. In order to obviate the development of flow parallels to the embankment, crossbars of width eight times the depth of borrow pits spaced 50 to 60 meter center-to-center should be left in the borrow pits.

o) Demarcation of mining area with pillars and geo-referencing should be done prior to the start of mining.

p) A buffer distance /un-mined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.

q) A buffer distance /unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.

r) River bed sand mining shall be restricted within the central 3/4th width of the river/rivulet or 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be and decided by regulatory authority while granting environmental clearance in consultation with irrigation department. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation or relaxation in this regard shall be adequately supported by the scientific report.

s) Mining Plan for the mining leases(non-government) on agricultural fields/Patta land shall only be approved if there is a possibility of replenishment of the mineral or when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market.

The minerals reserve for river bed area is calculated on the basis of maximum depth of 3 meters and margins, width and other dimensions as mentioned in para (s) above. The area multiplied by depth gives the volume and volume multiplied with bulk density gives the quantity in Metric Ton. In case of river bed, mineable material per hectare area available for actual mining shall not exceed the maximum quantity of 60,000 MT per annum.

4.4 Obtaining Environmental & Other Statutory Clearance

The LOI Holder/Lease Holder to obtain Environmental and Other Statutory Clearances from the concerned authorities as per provision of applicable laws.

4.5 Baseline date before Commencement of Mining Operations

Baseline data in respect of the initial level of mining lease in the interval not more than 25 X 25 meters shall be collected for record by leaseholder. The level of river bed upstream and downstream up to 100 meters also needs to be recorded. The area outside the mining lease/river bank (if lease boundary coincides with mining lease) up to 100 meters from both the banks/mining lease needs to surveyed for initial level.

4.6 Additional measures where project proponent is selected by a bidding

In those states where sand plots are auctioned to the highest bidder, the following is suggested:

It has been observed that bidders try to form a cartel and bids are received for certain plots where legal mining is done, and bids for certain other plots don't elicit any response. Sand from these un-

auctioned plots is then excavated using the same machinery deployed for the excavation of adjacent plot which might have been auctioned off. It is not easily possible for the field machinery to prevent such illegal activities. This may be prevented by having plot of larger size. plots are large in size as possible are identified for auction. Care may be taken to ensure that no continuous stretch of plot in the river bed is divided for auction. A continuous stretch of plot shall be preferred for auction, and the attempt may not be made to auction it off in pieces.

5.0 REPLENISHMENT STUDY

The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessing sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverine regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on in-stream biota and riparian habitats. It is assumed that the riparian habitat disturbance is minimum if the replenishment is equal to excavation for a given stretch. Therefore, to minimize the adverse impact arising out of sand mining in a given river stretch, it is imperative to have a study of replenishment of material during the defined period.

5.1 Generic Structure of Replenishment Study

Initially replenishment study requires four surveys. The first survey needs to be carried out in the month of April for recording the level of mining lease before the monsoon. The second survey is at the time of closing of mines for monsoon season. This survey will provide the quantity of the material excavated before the offset of monsoon. The third survey needs to be carried out after the monsoon to know the quantum of material deposited/replenished in the mining lease. The fourth survey at the end of March to know the quantity of material excavated during the financial year. For the subsequent years, there will be a requirement of only three surveys. The results of year-wise surveys help the state government to establish the replenishment rate of the river. Based on the replenishment rate future auction may be planned.

The replenishment period may vary on nature of the channel and season of deposition arising due to variation in the flow. Such period and season may vary on the geographical and precipitation characteristic of the region and requires to be defined by the local agencies preferable with the help of the Central Water Commission and Indian Meteorological Department. The excavation will, therefore, be limited to estimated replenishment estimated with consideration of other regulatory provisions.

5.2 Methodology for Replenishment Study

The replenishment estimation is based on a theoretical empirical formula with the estimation of bedload transport comprising of analytical models to calculate the replenishment estimation. The iso-pluvial maps of IMD can be used for estimation of rainfall. Catchment yield is computed using different standard empirical formulas relevant to the geographical and channel attributes. eg. Strange's Monsoon runoff curves for runoff coefficient). Peak flood discharge for the study area can be calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation or similar can be made. A simulation model is used with basic data generated from the field in the pre-study and post-study period (preferably pre-monsoon and post-monsoon) to estimate the volume of replenished material. The particle size distribution and bulk density of the deposited material are required to be assessed from a NABL recognized laboratory. Considering the bulk density and the volume, the estimation of replenishment in weight will be calculated after considering safeguards and stability of the slopes and riverine regime. Some of the common methods used for field data acquisition for replenishment study

5.2.1. Physical survey of the field by the conventional method

i. The conventional survey technical using DGPS and other survey tools are used to define the topography, contours and offsets of the lease area. The survey should clearly depict the important attributes of the stretch of the river and its nearby important civil and other feature of importance. Such information will provide the eligible spatial area for mining. The contour and the elevation benchmarks will provide the baseline data for assessing the pre and post-study period scenario.

ii. Physical benchmarks are to be fixed at appropriate intervals (preferable 1 in 30 m) and the Reduced Level (RL) shall be validated from a nearby standard RL. These RL should be engraved on a steel plate (Bench Plate) and shall be fixed and placed at locations which are free from any damages and are available in pre and post-study period. The bench plates shall be available for use during the mining period as reference for all mining activity. Reference pillar may also be used in place of Bench Plates with visible and readable demarcation on the ground as common reference points to control the topographic survey and mining activity.

iii Baseline data on elevation status for a grid of 10 m x 10 m is preferred to have accuracy in the assessment. It is expected that two consecutive cross-sections in longitudinal and lateral direction should not be more than 10-meter distance apart, however, the regulatory authority may fix these intervals depending on the geographical and site-specific conditions, only and after providing the scientific reason for such deviation.

iv The changes observed in the elevation in per and post scenario at each node should be depicted in graphical forms with an appropriate scale to estimate the area of deposition and erosion. These graphical

presentations should depict the active channel regime and the flow bed elevation with other important features required to be considered for estimation of the mining area. The area of deposition and erosion shall be calculated for each cross-section after giving due regard to the stability and safety of active channel banks, and other features of importance. The elevation level shall be in reference to the nearest bench-plates established for the purpose.

v The levels (MSL & RL) of the corner point of each grid should be identifiable and safety barriers (Non-Mining) demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.

vi A clear identification is required to be highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) be subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

vii The database should be structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.

viii Net area shall be derived after the summation of the area of deposition minus area of erosion for each cross-section. The volume will be estimated by multiplying the distance between two cross-sections with the average of net area of these two consecutive cross-sections.

ix One sample per 900 square meters (30 m x 30 m) shall be preferred sample density for assessment of bulk density for estimation of deposition rate. Care should be taken that the sample for assessment

of bulk density is taken from the deposition zone and not from erosion. However, depending on the site condition, river morphology and geographical condition, sample density may be adjusted. Reason for such deviation shall be appropriately highlighted in the report with supporting scientific data.

5.2.2. Use of UAV/Drone and other image data processing techniques

With the development in image data processing tools and its accuracy acceptability, Drone/UAV fitted with the advance camera are used for survey purposes. Such technology has promising potential in the survey of sand mining zones due to its fast and reliable output deliveries. The survey is conducted using a set of instruments and compatible software to utilized the properly referenced data for depicting the topography of the study area. Instrument calibration and software compatibility and its validation with the ground data are an essential requirement for using this technique.

The details of the instruments their limitation and software used shall be demonstrated in the form of the accuracy assessment report, through a chapter in the replenishment study report. Other details to be incorporated in the report with regard to the study using such imaginary techniques shall highlight the followings:

a) **Flight Planning:** - The lease co-ordinates and the flight plan devised to capture the front and side overlap percentages for in each flight in reference to global coordinates (Kml or SHP file) system. The software used for the purpose and its details along with limitations with basic analytical assumptions.

b) **Block file generation:** - This operation concerns the selection of the sensor model and the definition of block properties, the addition of

imagery to the block file, marking of GCPs, generation of tie points and refining of the model.

c) **Interior orientation:** - The interior orientation of the stereo pair rational polynomial coefficients (RPC) used, which should be bundled with the scenes. RPCs are coefficient, which is used by photogrammetric software to represent the ground to-image viewing geometry.

d) **Exterior orientation:** For exterior orientation, ground control points shall be used, which are collected from the DGPS survey.

e) **Aero Triangulation:** - A critical phase in photogrammetric mapping is to rectify the satellite imagery at an appropriate tract on the surface of the earth. This is accomplished by collecting horizontal and vertical data [GCP's] to ascertain the spatial location of a number of features that are visible and measurable on the aerial images – this process is often called control bridging, which refers to passing horizontal and vertical information from one aerial image to the next.

f) **Ortho Generation:** - After running the above steps; the software shall automatically generate orthorectified imagery.

g) **DTM extraction:** For extraction of DTM, Generated point cloud data classified manually to extract bare earth.

5.2.3 Accuracy Assessment of Aerial Data:

To check the accuracy of DTM generated by Aerial data, few points are selected and compared with on-site by using DGPS instrument for the ground-truthing purpose. It is preferred to do ground-truthing at minimum 5 locations spread evenly across the lease area. The readings from the DGPS instrument are then compared with the Drone data for accuracy assessment

purpose. A comparative chart will be prepared in comparison of Data related to ground-truthing (by DGPS) and from Drone. Such accuracy assessment report shall a chapter of the replenishment study.

5.2.4 Replenishment study shall have the details of

- List of instruments
- List of software
- Establishment of Benchmark by putting No. of pillar points and various Ground Control Points (GCP) at the site.
- Ground Control Points (GCP) Collection: - Various GCPs were observed by using DGPS for Permanent Benchmarks and for control points.
- The summary of the elevation data from each section's profile based on the post-monsoon the survey should have mentioned in the table form.
- The detail of post-monsoon survey data in the tabular form shall be
- The detailed comparison of both pre-monsoon and post-monsoon elevation data shall be attached
- Cross-sectional depiction of deposition and erosion for each section in pre and post-deposition season shall be given supported by relevant field study data and plan.

6.0 ENFORCEMENT

6.1 Mining Operation:

The mining operations should be strictly carried out in accordance with the approved mining plan and after complying with all the conditions stipulated in Environmental & Other Statutory Clearance. Mine owner shall follow the operational procedure (for sale, dispatch, storage, reserve reconciliation and transportation) as may be defined by the concerned state government in its monitoring guidelines. Mine owner should comply with the recommendation and suggestion made by the High Power Committee as applicable.

6.2 Post Environment Clearnace Monitoring:

It's the responsibility of the EC Holder to comply with the Environmental Clearance conditions and upload the six-monthly EC compliance report on the website of the Ministry. For the category, 'A' mines (>100 Ha individual & cluster) Regional Office of the MoEF&CC are entrusted to carry out EC Monitoring and for the Category 'B' Mines by SEIAA. The monitoring shall be carried out as per the procedure/schedule suggested by MoEF&CC from time to time. MOEF&CC vide its notification S.O. 637(E) dated 28.02.2014 has delegated the power to State/Union Territory Environmental Impact Assessment Authority to issue show cause notice to project proponent in case of violation of Conditions of Environmental Clearance issued by the said authority and to issue direction for keeping the said EC in abeyance or withdrawing it. Thus, for category 'B' (0 to 100 Ha) projects SEIAAs are responsible for EC monitoring.

6.3 Environment Audit:

The Hon'ble NGT in its order dated 04.09.2018 in O.A. 173/2018 in the matter of Sudarsan Das vs. State of West Bengal & Ors. Inter-alia directed

that "*One of the conditions of every lease of mine or minerals would be that there will be independent environmental audit at least once in a year by reputed third party entity and report of such audit be placed in the public domain. In the course of such an environmental audit, a three-member committee of the local inhabitants will also be associated. Composition of three member's committee may preferably include ex-servicemen, a former teacher and former civil servant. The Committee will be nominated by the District Magistrate.*

The gazette notification on environmental audit has been issued by the Ministry of Environment and Forests on March 13, 1992 (amended vide notification GSR 386 (E) dated April 22, 1993). This notification applies to every person carrying on an industry, operation or process requiring consent to operate under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981), or both, or authorization under the Hazardous Waste (Management and Handling) Rules, 1989, issued under the Environment (Protection) Act, 1986 (29 of 1986). The notification requires that an Environmental Statement for the financial year ending the 31st March be submitted to the concerned State Pollution Control Board, on or before the 30th September of the same year.

It is suggested that NABET Accredited consultant may be engaged for Environment Audit and during the course of the audit, a three-member committee nominated by District Magistrate shall be associated.

6.4 Monitoring of Sale & Purchase of Sand:

6.4.1 In order to curb illegal mining it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. The Ministry of Mines issued ***Sand Mining Framework 2018*** wherein it has proposed two mechanisms for the online sale of sand depending on whether there is a free market for sand in the State or the prices are regulated by the Government.

Para 1.2.12.2 Under the market model

In the case of the market model, all the lessees/ certified dealers in the State should register themselves on the online portal/ mobile app. For registering, the lessee/ certified dealer will have to enter the details of its concession/ stockyard, location, the quantity of sand expected on a weekly basis, as per the approved mining plan. Once registered, the online portal/ app will display the name of the reach/ stockyard and sand could be booked by the consumer from those leases/ stockyards and prices up to the delivery level. Further, the lessee/ certified dealer needs to regularly update the sand available in the reach/ stockyard, and they can decide the price at which they want to sell their sand. Anyone who wishes to purchase sand in the State will have the following options for buying:

1. *Mobile app*
2. *Online portal*
3. *Customer care/ telephone call*
4. *Licensed traders*

The consumer needs to register on the portal and log in using his/her credentials (Aadhar card based only). After logging in, the portal will display the entire list of reaches/ stockyards along with the quantity of sand available in those reaches/ stockyards and the quality and price of

sand. The consumer can filter/ sort the reaches/ stockyards based on such parameters as location, quality and price, and book from the lease/ stockyard he/she wishes to. The consumer should also have the option to purchase the sand by ordering at customer care. Also, stockyards should be made around all the major consumption hubs in the State based on their estimated demand.

Para 1.2.12.3 Controlled market prices

In case the prices are regulated by the State Government, the only difference from the previous model is that the price of sand at the river reach/ stockyard shall be uniform across the State/ district based on the quality and transportation lead. A consumer after logging in may choose the reach/ stockyard from which he/she wishes to purchase the sand. The payment for booking the sand in both the cases should be made on the portal/ app so that proper accounting of the sale of sand can be maintained by the Government. Also, stockyards should be made around all the major consumption hubs in the State based on their estimated demand.

It is suggested that the State Government should develop an online portal for sale and purchase of Sand & RBM. In addition to this State Government shall decide on the model viz. *Under market model or Controlled market prices or both* to be adopted for their respective States. The State Government shall accordingly modify their Minor Mineral Concession Rules within 6 months of publication of these guidelines. It is suggested that the controlled price model is more effective in controlling illegal sand mining. Because if the State Government is the only agency to provide the sand in the State, then price and supply of sand can be controlled more effectively. There will be no confusion in the consumers about legality of the purchase as the only source of sand provider is the State Government through its network of registered stockiest, retailers and transporters. The consumers

can fill the online request, pay the amount, select the transporter and give its feedback after the receipt of the sand. The transportation can also be controlled as the tippers used for transportation is registered tippers with GPS facility, the transportation route is well defined for easy monitoring, control over overloading of tippers, control over spillage of mineral etc. The State Govt. shall also make provision for penalizing the persons/agency buying the sand and RBM from the illegal sources.

6.4.2 The Ministry of Mines in its Sand Mining Framework also mentioned the following different level of monitoring:

Para 1.2.13.1 Level 1- Reach/ Stockyard level monitoring

For monitoring of the active reaches:

a. *Quantity of sand to be extracted from the reach should be based on the quantity of sand assessed in the reach by the Joint Inspection Team.*

b. *The lease boundary should be demarcated with geo-coordinates or geo-fenced to ensure that sand extraction is going on only within the permitted area.*

c. *De-casting from river beds should be monitored on a regular basis to keep a track of excavated quantity.*

d. *After every two years, a mandatory audit of the quantity extracted and quantity permitted along with the replenishment rate.*

e. *Mandatory e-pass/ e-permit should be made available at reach level for transportation of any sand by any GPS enabled vehicle with the provision of entering the vehicle number of the sand carrying vehicle and expected delivery address and customer name/ mobile number. Also, provision should be made available for stockyards/ stockiest of sand. In the case of*

nomination based (controlled pricing) business model, the margin of private stockist should be capped over a fixed percentage of notified prices.

f. *At the stockyard, the stock supervisor should verify the authenticity of online payment receipt before issuing the transit pass. The loading of sand should be monitored electronically and all transporting vehicles should pass through an electronically monitored weighbridge. g. Real-time data capture for transportation*

Para 1.2.13.2 Level 2 - Transportation monitoring

To make transportation monitoring effective and useful, all the sand carrying vehicles (tractors/ trucks) should be registered with the department and GPS equipment should be installed in all the sand carrying vehicles. Weighbridges with CCTV should be installed at all the stockyards, active reaches to ascertain the exact quantity of sand being transported in the vehicle. Check posts with CCTV cameras should be established near all major consumption centres to check if all the transporting vehicles are carrying a valid transport permit. The transport permit generated should contain the security features mentioned under section 5.11 so that one permit cannot be re-used by generating photocopies of the permit.

Para 1.2.13.3 Level 3 - End consumer monitoring/ bulk consumer

For end consumer monitoring, a customer grievance redressal center should be established to enquire about the grievances faced by the sand consumers. The telephone number of the call center should be advertised so that it reaches the general public through which anyone in the State can register his/her complain related to the sand, be it in terms of price or any other grievance. Additionally, profiles of customers should be analyzed such as the delivery of sand at the same address, usage pattern and its comparison with the estimated usage, as mentioned in purpose, etc. Further, surprise checking

should be conducted by the district level committee staff as per instructions of the monitoring agency.

Para 1.2.13.4 Level 4 - Indirect monitoring

Indirect monitoring can be done by determining sand consumption through the quantum of cement sales in the State, as the sale of cement is quite organized and data is easily available at the State level and district levels for the same. From district-wise cement consumption, the further trend of sand consumption can be derived. Any anomalies in the sand consumption/demand can be analyzed further.

Note: *The above monitoring mechanism is just a suggestion and the States may visit Andhra Pradesh and Telangana to study the monitoring mechanism in greater detail.*

It is suggested that State Government may consult with concern department of State of Telangana and Tamil Nadu to have better understanding on their experience and knowledge in adopting best sand mining enforcement provisions and monitoring practices and frame their own regulatory regime and monitoring framework. The framework of monitoring should essential include online sale & purchase of River Bed Material/ Auction of leases, Sand from rivers and other sources, online monitoring of excavation, storage and transportation of mineral for control of illegal mining.

The respective State Governments shall develop the online Sale & Purchase System after defining the model viz. Under market model or Controlled market prices model. The level of monitoring needs to be defined and guidelines need to be finalized by the respective State Governments as per their requirement with due consideration of suggestive guideline in this document. These all measure will help in curbing illegal mining.

7.0 Recommendations of High Power Committee:

A high power committee (HPC) was constituted by Hon'ble National Green Tribunal to assess the status of illegal mining the stretch of River Yamuna, under the chairmanship of Secretary, Ministry of Environment Forest & Climate Change. The committee after exhaustive field survey and interaction with stakeholders and having surprise visits submitted a comprehensive report on river sand mining along with certain recommendations on enforcement requirements and monitoring essentials. The same is provided in the following section for consideration of monitoring / regulatory authority to adopt applicable provisions in their monitoring framework and also to ensure that the infrastructural requirements recommended by the HPC are put in use at all locations including the lease area.

7.1 Recommendations of High Power Committee (HPC)

The following recommendation of the High Power Committee shall be considered while framing the monitoring mechanism by the State Government.

i. Project Proponent must ensure that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible.:

(a) Printed on Indian Bank Association (IBA) approved
(b) Magnetic Ink Character Recognition Code (MICR) paper;
(c) Unique Barcode;
(d) Unique Quick Response Code (QR);
(e) Fugitive Ink Background;
(f) Invisible Ink Mark;
(g) Void Pantograph;
(h) Watermark.

ii. Project Proponent must ensure that CCTV camera, Personal Computer (PC) or laptop, Internet Connection, Power Back up, access control of mine lease site; and arrangement for weight or approximation of weight of mined out mineral on basis of volume of the trailer of vehicle used at mine lease site are available.

iii. The PP has to enter the destination, distance between plot and destination, vehicle number etc in the system. After scanning, unique bar code number, invoice date time and validity date-time are generated by the software which gets printed individually on each TP Validity of TP is calculated based on the distance between plot and destination. After validity time is over the TP stands invalid.

iv. The officers involved in monitoring should be provided with mobile application and/or bar code scanners using which the TP can be checked anywhere on road. As soon as the bar or QR code on TP gets scanned through using the mobile application and/or scanner or vehicle number is entered into the application or sent by SMS to a predefined number, all details of TP such as plot details, vehicle details, validity time, etc. should be fetched from the server. This means if anything is re-written on TP and attempt is made to reuse the same, it can be traced immediately. Various reports can be generated using the system showing daily lifting reports and user performance report. This way the vehicles carrying sand can be tracked from source to destination.

v. The facility to fetch details using mobile app, website and SMS may be made available to the general public as well. However, they shall not be allowed to stop the vehicles to check the transportation. The only option that they should have is to check vehicle numbers of the passing vehicle in the mobile app or SMS for the validity of the pass. The only result that should be available to them should be if the vehicle carrying sand has a

valid permit at the relevant point of time or not. If the citizen finds that the vehicle doesn't have such a permit, as ascertained from mobile app or website or SMS, he should alert local authorities, who shall then take further action as per the law.

vi. In case, the vehicle break-down, the validity of Transport Permit or Receipt shall be extended by sending SMS by the driver in specific format to report the breakdown of the vehicle. The server will register this information and register the breakdown. The State can also establish a call center, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server/call center.

vii. The route of the vehicle from source to destination shall be tracked through the system using checkpoints, Radio-frequency identification (RFID) tags, and Global Positioning System (GPS) tracking.

viii. The system shall enable the Authorities to develop a periodic report on different parameters like daily lifting report, vehicle log/ history, lifting against allocation, and total lifting. The system can be used to generate auto mails/SMS. This will enable the District Collector / Magistrate and other authorities to get all the relevant details and will enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle should be tracked.

ix. It is necessary to prevent any truck/vehicle from transporting sand out of the identified plot bypassing the strong IT enabled system. Therefore, at each of the sand plot, the following additional measures should be taken.

(a) There shall be one entry and exit point provided for trucks/vehicles. The said entry point should have facilities as mentioned above. In case, it is necessary to have more than one entry/exit points, all such points shall have checkpoints with facilities as mentioned above. All other possible ways of entry/exit should be closed using barriers like compound, trench, etc. All provisions shall be made to not make it possible for any vehicle to enter or exit without entry into the computerized system.

(b) All such points should have 24X7 CCTV coverage, the footage of which should be made available online to the district administration. In cases, where sufficient internet bandwidth is not available, it may be deposited with the district administration on a weekly basis. If possible, the entry/exit points should have boom barriers which will record the vehicles entering and exiting the plot.

8.0 GENERAL APPROACH TO SUSTAINABLE SAND MINING

8.1 Pre-requisite for starting sand mining operation

i) All district to prepare a comprehensive mining plan for the district as per the provision of District Survey Report. These reports shall be put on the website of District Administration. No mining shall be allowed in the area which has not been identified in the comprehensive mining plan of the District.

ii) Replenishment study should be conducted on regular basis.

iii) All potential rivers mining zone/area shall be identified and put for auction with proper geo-tagged details by the auctioning authority concerned.

iv) The latitude and longitude of each mining lease shall be clearly mentioned in Letter of Intent issued to the potential mine lease. Such information shall be provided on the website of the district administration.

v) The provision of these guidelines shall be considered while identifying the potential stretches /locations and boundaries of the leases for the minable area.

vi) The LoI holder shall seek Environmental Clearance as per the provision of EIA Notification, and the regulatory authority shall ensure that the provision suggested in "Sustainable Sand Mining & Management 2016" and in this documents, as applicable are part of the clearance conditions.

vii) There shall be no river bed mining operation allowed in monsoon

period. The period as defined by IMD Nagpur for each state shall be adhered with.

viii) The monitoring infrastructures including weighbridge and adequate fencing of the lease area, CCTV, Transport permits, etc, as suggested in this document shall be ensured in order to reduce unrecorded dispatch.

ix) Regular monitoring of mined minerals and its transportation and storage shall be ensured and all information shall be captured at centralized database so that easy tracking of illegal material can be done.

x) Annual audit of each mining lease shall be carried out wherein three independent member of repute, nominated by District administration shall also participate.

8.2 Mining of Sand from Agricultural Fields

This practice is prevalent in Haryana; to ensure that mining from outside doesn't affect rivers, no mining is permitted in an area up to a width of 100 meters from the active edge of embankments or distance prescribed by Irrigation department whichever is critical. The top layer of soil varying between 1 and 2 meters is removed and stacked separately and thereafter the sand deposit which maybe 10-15 meter deep is mined. After removing the sand layer up to a maximum depth of 09 meters or the maximum mineable minerals, as permitted by competent authority. The topsoil stacked is spread out on the field and the same is brought under the cultivation. Though the level of this land (mined out area) is lowered to the depth of the excavation and in initial years of cultivation the productivity is low, but the productivity of the fields improves with continued cultivation and addition of organic manure in the field. In Haryana, some leases are of large area

(ranging from 1000 hectare to 2000 hectare) and agricultural fields and river bed both are included in the same lease for mining.

The following recommendations should be kept in mind for mining in such leases:

1. Mining of sand in such mine leases will require environment clearance.
2. The lease should be of sand mining either from the agricultural field or river. In the same lease, both types of area should not be included.
3. The sand mining from the agricultural field is being done in Haryana for a long time and it can be done in a more sustainable manner without adverse impact on agricultural productivity if proper environmental safeguards are taken.
4. The slope of mining area adjacent to agricultural fields should be proper (preferably 45 degree) and adequate gap (minimum 10 feet) be left from adjacent agricultural field to avoid erosion and scouring.

The provision for sand mining in agricultural field may be permitted, whenever replenishment of sand occurs due to natural phenomena.

Permission may also be granted by competent authority (District administration) for excavation of sand/Soil from agricultural fields, after due diligence of this prevailing condition in order to avoid any unacceptable impact on the environment and nearby livelihood from agriculture provided such objective of such excavation mining of Soil/Sand in limited increase the productivity of sand agricultural field.

9.0 MONITORING MECHANISM

9.1 Illegal Mining

The Hon'ble Supreme Court in its Judgment dated 2.08.2017 in W.P 114 of 2014 in the matter of Common Cause Vs Union of India & Ors, inter-alia passed the following:

Para 128. *The simple reason for not accepting this interpretation is that Rule 2(ii-a) of the MCR was inserted by a notification dated 26th July 2012 while we are concerned with an earlier period. That apart, as mentioned above, the holder of a mining lease is required to adhere to the terms of the mining scheme, the mining plan and the mining lease as well as the statutes such as the EPA, the FCA, the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. If any mining operation is conducted in violation of any of these requirements, then that mining operation is illegal or unlawful. Any extraction of a mineral through an illegal or unlawful mining operation would become illegally or unlawfully extracted mineral."*

In view of above Judgement, any mining activities which are not governed under the provision of Environment (Protection) Act, 1985, The Water (Prevention & Control of Pollution Act, 1974, The Air (Prevention & Control of Pollution) Act, 1981, Forest Conservation Act-1980, Wildlife Protection Act - 1972, shall be considered as illegal mining within the provision of section 21(5) of Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act) and the concerned authority shall take necessary action within the provision of MMDR Act.

As per the provision of 23(C) of MMDR Act, the State Government is empowered to make rules for preventing illegal mining, and transportation

& storage of Illegal minerals. All such mining which qualifies under illegal, shall be dealt with in the provision of MMDR Act by the concern authorities.

State Pollution Control Board (SPCB) is the nodal authority in the State for dealing with cases related to pollution or environment management coming under the purview of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment Protection Act 1986. SPCB shall initiate appropriate action under the provision of these acts for non-compliance of violation of the provisions.

9.2 Environmental Damage due to illegal mining

The environmental damages incurred or resulting due to illegal mining shall be assessed by a committee constituted by District Administration having expertise from relevant fields, and also having independent representation of locals and State Pollution Control Board. Guidelines for assessment of ecological damages prescribed by the State Government or Concerned Pollution Control Boards or any other authority shall be applicable and compensation as fixed shall be paid by the project proponent, in light of Hon'ble National Green Tribunal orders.

9.3 Monitoring of Mining near Inter-district or inter-state boundary

There are situations where bifurcated river becomes district boundaries or state boundaries in such situation it is difficult to assess the mining potential, or to have close monitoring and enforcement of the regulatory provision. Such challenges have been identified and dealt with in SSMG-2016. However, in the absence of any standardized procedure, the monitoring has not been effectively practiced. This has been highlighted by the High Power Committee constituted by NGT in the matter pertaining to illegal mining.

The districts/state sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and also should actively participate in the preparation of DSR by providing appropriate inputs. In such cases, the draft DSR so prepared shall be put up for public consultation in both the districts through respective district administration website.

The task force shall meet every quarter to reconcile the data collected during the period and identify any gap/ lapses based on the outcome of such meeting. The respective district shall take action/ corrective measures. Effort shall be made for real-time data sharing between both the district.

The task –force shall include essentially the representative of respective districts from the mining department, transport department, regional office of SPCB concerned and a reputed citizen nominated by district administration. The Taskforce shall be headed by officer not less than ADM rank and quarterly outcome shall be submitted to District administration.

In addition to the above, there is a need for strict surveillance, particularly at night. The State of Gujarat has already initiated a program called '*Trinetra*' for night surveillance by using night-vision drones to control illegal mining incidents. This program is giving satisfactory results. Such type of system may also be developed by each State within a reasonable time.

A typical standard operating procedure for assessing illegal mining by the committee constituted shall, but not limited to, include the steps given in the following table. However, the process of assessing can be modified based on site-specific conditions and any deviation shall be recorded in the report with proper justification.

Suggestive standard Practice for assessing illegal mining

Step 1	The assessment team should collect the information and documents prescribed in the Pre-Requisite section.
Step 2	The assessment team should verify the applicability/validity of statutes under EPA-1986, Air and Water Act, MMDR 1957, State Mines and Mineral Rules, etc.
Step 3	Field visit should be conducted for identification of mining lease area (in hectare) and boundary pillar constructed to indicate the same.
Step 4	With the help of GPS instrument, the team should assess the area where any extraction or mining have been carried out on the day of visit and calculate the mined-out area in a hectare.
Step 5	If available, the team may avail the use of latest satellite images for calculating the total mined out area.
Step 6	The team should verify the Ground / Surface Level (in meter above MSL) of at least 04 highest points in or around the area where mining has been done. The Ground/surface level will then be computed based on averaging of 04 highest points verified by the team.
Step 7	With the help of Depth Measurement kit or any depth measuring instruments, the depth should be measured for at least 04 points in the mined-out area. For computing, the depth, averaging of the value obtained at 04 points should be done.
Step 8	Verification of compliance conditions of Environmental Clearance and Consent to operate, mining methodology under Mining Plan
Step 9	Identification of vulnerable impacts observed on the field and non-compliance of conditions of Environmental Clearance and Consent to Operate.

Step 10	Field Survey for identification, monitoring and verification of ecological species based on the information available and documents mentioned in the Pre-requisite section.
Step 11	Preparation of inventory of machinery used/observed on the field (optional)
Step 12	Preparation of inventory of hydraulic structures observed on the field (optional)
Step 13	Water sampling for assessment of water quality including physical and biological parameters. (optional)
Step 14	Reconciliation collation of data/information and compilation to maintain violation.
Step 15	Identification of restoration plan and computation of cost of the restoration plan.

9.4 Monitoring Mechanism

A uniform monitoring mechanism is required to assess the regulatory provision in quantitative terms, with robust institutional and legal framework. Based on past experience and suggestions available, the following requirements are suggested for defining a mechanism for monitoring of mining activities which will help in identification of mining which is operating either illegally or are violating the regulatory provisions. Some suggestion will facilitate direct or indirect information to help in such an assessment.

1. All precaution shall be taken to ensure that the water stream flows unhindered and process of Natural river meandering doesn't get affected due to mining activity.

2. River mining from outside shall not affect rivers, no mining shall be permitted in an area up to a width of 100 meters from the active edge of embankments or distance prescribed by the Irrigation department.

3. The mining from the area outside river bed shall be permitted subject to the condition that a safety margin of two meters (2 m) shall be maintained above the groundwater table while undertaking mining and no mining operation shall be permissible below this level unless specific permission is obtained from the Competent Authority. Further, the mining should not exceed nine-meter (9 m) at any point in time.

4. Survey shall be carried out for identifying the stretches having habitation of freshwater turtles or turtle nesting zones. Similarly, stretches shall be identified for other species of significant importance to the river eco-system. Such stretch with adequate buffer distance shall be declared as no-mining zone and no mining shall be permitted. The regulatory authority as defined for granting Environmental Clearance, while considering the application of issuance of ToR and/or EC for the adjacent block (to non-mining zone) of mining shall take due precaution and impose requisite conditions to safeguard the interest of such species of importance.

5. District administration shall provide detailed information on its website about the sand mines in its district for public information, with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed. Appropriate feedback and its redressal mechanism shall also be made operational. The details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.

6. A website needs to be maintain to track the movement of centralised sand mining and a Centralised server system should be made to manage the data related to sand mining across India.

7. The mineral concession holders shall maintain electronic weighbridges at the appropriate location identified by the district mining officer, in order to ensure that all mined minerals from that particular mine are accounted for before the material is dispatched from the mine. The weighing bridge shall have the provision of CCTV camera and all dispatch from the mine shall be accounted for.

8. The mineral movement shall be monitored and controlled through the use of transit permit with security features like printing on IBA approved MICR papers, Unique bar/QR, fugitive ink background, invisible ink mark, void pantographs and watermarks papers or through use of RFID tagged transit permits and IT /IT-enabled services. Such monitoring system shall be created and made operationalised by State Mining department and district level mining officer shall be responsible for ensuring that all legal and operational mines are connected and providing the requisite information on the system. Regular check and associated report shall be submitted to DLTF and uploaded on the website.

9. State Government shall constitute a District Level Task Force (DLTF) under the Chairmanship of Deputy Commissioner/District Magistrate/Collector with Superintendents of Police and other related senior functionaries (District Forest Officer, District transport officer, Regional officer- SPCBs, Senior Officer of Irrigation Department, District Mining Officer) with one/two independent member nominated by the Commissioner concerned. The independent member shall be retired government officials/teacher or ex-serviceman or ex-judiciary member.

The DLTF shall keep regular watch over the mining activities and movement of minerals in the district. The DLTF shall have its regular meeting, preferably every month to reconcile the information from the mining activity, and other observations made during the month and take appropriate corrective and remedial action, which may include a recommendation for revoking mining lease or environmental clearance. The DLTF may constitute an independent committee of the expert to assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern. The recommendation may also include action under the provision of E(P) Act, 1986.

10. The area not identified for mining due to restriction or otherwise are also to be monitored on a regular basis by the DLTF. Any observations of mining activity from the restricted area shall be reported and corrective measures shall be initiated on an urgent basis by the DLTF.

11. The dispatch routes shall be defined in the Environmental Clearance and shall be avoided through densely habituated area and the increase in the number of vehicle movement on the road shall be in agreement with the IRC guidelines / carrying capacity of the road. The alternate and dedicated route shall be explored and preferred for movement of mining to avoid inconvenience to the local habitat. The mining production capacity, by volume/weight, shall be governed by total permissible dispatch calculated based on the carrying capacity of dispatch link roads and accordingly, the production should be regulated.

12. The movement of minerals shall be reconciled with the data collected from the mines and various Naka/check posts. Other measures may also include a general survey of the potential mineable area in the district

which has not been leased/auctioned or permitted for mining due to regulatory or other reasons.

13. The location and number of check post requirement shall be reviewed by DLTF on a regular basis so that appropriate changes in location/number could be made as per the requirement. Such review shall be carried out on a regular basis for the district on inter-state boundary or district providing multiple passages between two districts of different states.

14. The district administration shall compile the information from their district of the permitted and legal mined out minerals and other details and share such information and intelligence with the officials of the adjoining district (Inter or/and Intra State) for reconciliation. The information shall include the area of operation, permissible quantity, mined out minerals (production) the permitted route etc., and other observations, especially where the mine lease boundary is congruent with the district boundary. Such coordination meeting shall be held on a quarterly basis, alternatively in two district headquarters or any other site in two districts decided mutually by the District Magistrate.

15. The mining department shall include submission of an annual environmental audit report as one of the conditions in the mining lease agreement. The annual audit for each river bed mining lease shall be carried out and the audit report shall be uploaded on the website of district administration. The audit shall be carried out by an independent team of 3 members nominated by District Collector/Magistrate/Commissioner comprising of Ex-Serviceman, Ex-Government officials of repute, Professor or Person having experience of mining/environment. The guidelines and method of the audit shall reflect adequately the monitor-able parameters and output and reflect

the compliance status with respect to the conditions imposed by the regulatory authorities including conditions of Environmental clearance.

16. The in-situ and ex-situ environmental mitigative measures stipulated as EMP, CER, CSR and other environmental and safety conditions in mines including the welfare of labours shall properly reflect in the audit report.

9.5 Suggestive additional requirements are

i. The requirement at the Mine Lease Site:

a. Small Size Plot (Up to 5 hectares): Android Based Smart Phone.
b. Large Size Plots (More than 5 hectares): CCTV camera, Personal Computer (PC), Internet Connection, Power Back up.
c. Access control of mine lease site.
d. Arrangement for weight or approximation of the weight of mined out mineral on the basis of the volume of the trailer of vehicle used.

ii. Scanning of Transport Permit or Receipt and Uploading on Server:

a. Website: Scanning of receipt on mining site can be done through barcode scanner and computer using the software;

b. Android Application: Scanning on mining site can be done using Android Application using a smartphone. It will require internet availability on SIM card;

c. SMS: Transport Permit or Receipt shall be uploaded on the server even by sending SMS through mobile. Once Transport Permit or Receipt get uploaded, a unique invoice code gets generated with its validity period.

iii. Proposed working of the system:

The State Mining Department should print the Transport Permit or Receipt with security features and issue them to the mining leaseholder through the District Collector. Once these Transport Permits or Receipts are issued, they would be uploaded on the server against that mine lease area. Each receipt should be preferable with pre-fixed quantity, so the total quantity gets determined for the receipts issued. When the

Transport Permit or Receipt barcode gets scanned and invoice is generated, that particular barcode gets used and its validity time is recorded on the server. So all the details of transporting of mined out material can be captured on the server and the Transport Permit or Receipt cannot be reused.

iv. Checking On Route:

The staff deployed for the purpose of checking of vehicles carrying mined mineral should be in a position to check the validity of Transport Permit or Receipt by scanning them using the website, Android Application and SMS.

v. Breakdown of Vehicle:

In case the vehicle break-down, the validity of Transport Permit or Receipt shall be extended by sending SMS by the driver in specific format to report the breakdown of the vehicle. The server will register this information and register the breakdown. The State can also establish a call center, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server or call center.

vi. Tracking of Vehicles:

The route of the vehicle from source to destination can be tracked through the system using checkpoints, RFID Tags, and GPS tracking.

vii. Alerts or Report Generation and Action Review:

The system will enable the authorities to develop a periodic report on different parameters like daily lifting report, vehicle log or history, lifting against allocation, and total lifting. The system can be used to generate auto mails or SMS. This will enable the District Collector or District Magistrate to get all the relevant details and shall enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle shall be tracked.

The monitoring of mined out mineral, environmental clearance conditions and enforcement of Environment Management Plan will be ensured by the regulatory authority and the State Pollution Control Board or Committee. The monitoring arrangements envisaged above shall be put in place. The monitoring of enforcement of environmental clearance conditions shall be done by the Central Pollution Control Board, Ministry of Environment, Forest and Climate Change and the agency nominated by the Ministry for the purpose.

Some of the State has followed the SSMMG-2016 and has also improvised or customized on the provisions given therein, and are successfully in operation. Salient provision adopted at different stages of sand mining in the state of Tamil Nadu is given as **Annexure VIII.**

9.6 Actions against illegal excavation and transport

Solapur district administration in Maharashtra had adopted a multi-pronged strategy to penalize the persons involved in illegal excavation and transport which resulted in a significant increase in revenue earned by the state. Following rules and procedures as mentioned in these guidelines will add to the costs of PP. Those involved in illegal activities are not required to bear these costs and this will make their supply in the market cheaper (though illegal). This will put the players running their business by following rules and procedures laid down by the government to disadvantage as far as the selling price is considered. Therefore, it is necessary to come down heavily on those involved in illegal excavation/transport, so that there is no incentive for players to abide by the rules.

The following action may be taken to achieve this deterrence against illegal business:

1. The action should be taken under all legal options available simultaneously. Thus, after identifying the case of illegal excavation, storage and/or transport of minor minerals (including sand), fine should be levied as per the land revenue laws/code(s) of the state. In addition, FIR should be lodged in the police station under relevant sections of law including sec 379 IPC. In addition, action under the Motor Vehicle Act, 1989 and relevant rules should initiate to cancel/suspend the driving license of the driver and permit of the vehicle. Further, action should be initiated under provisions in the Income Tax Act, 1961 for unaccounted income and under the Central Goods and Services Act, 2017 for non-payment of GST. (Earlier this was done under the state act pertaining to Value Added Tax/Sales Tax). Habitual offenders should also be taken up under local state laws for externment and/or preventive action. It is clarified that as per law, it is possible to take all actions under various laws

simultaneously for one offence. What is prohibited in law is an action under the same law for the same act more than once.

2. The action should be taken against all persons responsible. Often, there is a tendency to penalize only the drivers of the vehicles. The mafia of illegal mining and transport is much bigger and drivers are only one part of the system. It is necessary to identify all those involved in the offence. It is usually not possible to reach the place of excavation without creating a motorable pathway up to the same through land which may be private land. Such role of such landowners needs to be looked into for each offence and proceeded against simultaneously. Further, the role of vehicle owners needs to be probed. Role of the person who allowed his land to be used for illegal excavation and storage should also be examined. Lastly, the person who purchases such sand should also be probed. The legal proceedings stated above needs to be initiated against all of these together. An attempt should be made to fix the financial responsibility in joint and several ways so that recovery is easier.

3. There may be discretion available in law about the extent of the penalty to be levied. If such discretion is very wide, then it is advisable that guidelines may be laid down to reduce such discretion in law for levying penalties. For example, in Maharashtra, Land Revenue Code, fine of any amount of penalty up to thrice the value of the sand can be levied. Solapur district administration had instructed Tahsildars and SDMs not to use discretion and levy the fine of three times the value. Availability of discretion makes junior level functionaries susceptible to pressures and it may also lead to corrupt practices.

4. It is emphasized that actions, as stated above, are most important to ensure that the IT-based system works. If these exemplary actions are not taken against everyone, it shall create a strong disincentive to those

involved in legal excavation and transportation. For IT-based (or any other) legal system to work, it is necessary to ensure that illegal system stops working altogether.

Annexure-I

Details of Sand/M-Sand Sources

a) Rivers:

River Name/M-Sand Plant	Total Stretch of River (in KM)	Type of River (Perennial or Non-Perennial)

b) De-Siltation Location: (Lakes/Ponds/Dams etc.)

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size(Ha)

c) Patta Lands/Khatedari Land:

Owner	Sy. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)

d) M-Sand Plants:

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum

Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.

Annexure-II

List of Potential Mining Leases (existing & proposed)

Rivers

River Details	Lease Details	Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in Tonnes /Annum considering digging depth max as 3 meters	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing / Proposed

Patta Lands/Khatedari Land: (existing & proposed)

Owner	Sy. No	Area	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing /Proposed

De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing & proposed)

Name of Reservoir /Dams	Maintain /Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size (Ha)	Quantity MT / Year	Existing /Proposed

M-Sand Plants :(existing & proposed)

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum	Existing/Proposed

Annexure-III

Cluster & Contiguous Cluster details

Clusters:

River Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation (Ton)

Contiguous Clusters:

River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed / Patta Land)	Distance between clusters	Village	Area of Cluster (Ha)	Total Mineral Excavation (Ton)

Annexure-IV

Transportation Routes for individual leases and leases in Cluster

Lease No	Transportation Route No	Number of tippers /day of lease	Number of tippers /day of all the lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/ Lease Owner	Route Map & Location

Cluster No	Transportation Route No	Number of tippers /day of cluster	Number of tippers /day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road(Black Topped/ unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location

Annexure-V

Final List of Potential Mining Leases (existing & proposed)

Rivers

River Details	Lease Details	Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in (MT/Yr) (Mine depth max as 3 m)	Mineral to be mined (Sand/Bajri/RBM etc.)	Existing /Proposed

Patta Lands/Khatedari Land: (existing & proposed)

Owner	Sy. No	Area	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing /Proposed

De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing & proposed)

Name of Reservoir/ Dams	Maintain/ Controlled by State Govt./PSU etc.	Location	Distt.	Tehsil	Village	Size(Ha)	Quantity MT/Year	Existing/ Proposed

M-Sand Plants :(existing & proposed)

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity MT/Annum	Existing/Proposed

Annexure-VI

Final List of Cluster & Contiguous Cluster

Clusters:

River Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation (Ton)

Contiguous Clusters:

River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed /Patta Land)	Distance between clusters	Village	Area of Cluster (in Ha)	Total Mineral Excavation (Ton)

Annexure-VII

Final Transportation Routes for individual leases and leases in Cluster

Lease No	Transportation Route No	Number of tippers /day of lease	Number of tippers /day of all the lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road(Black Topped/ unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location

Cluster No	Transportation Route No	Number of tippers /day of cluster	Number of tippers /day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road(Black Topped/ unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location

Annexure VIII

Salient provision for sand mining in the state of Tamil Nadu

STEPS TO BE FOLLOWED BEFORE EXECUTION:

- The state as a policy should endeavor to have single authority/agency responsible for all river sand mining in the state with an objective to ease the gap in demand and supply and accordingly, take necessary measures including planning, monitoring of mined material and its transport, and to curb illegal mining and sale of materials.

- The prospective site for sand quarry may be identified based on the availability of adequate sand deposits along the river beds, which hinders the free flow of water and results in flooding during monsoon seasons. Emphasis may be given to such quarry sites which is more viable for replenishment.

- A detailed study may be conducted by engaging expert from reputed Institutions to identify prospective sand reaches, assessment of the impact of sand quarrying on the Ground Water Table and water availability, conduct bore log details and study the social and environmental aspects. The generic requirement for replenishment study is to be followed.

- Once the site is identified for prospective sand quarry site based on the detailed replenishment study, the concerned department shall submit the proposal with the geo-tagged boundary of the proposed mining Precise Area Proposal to the District Collector for approval.

- A joint inspection may be carried out by the RDO/Sub-Collector, Assistant/Deputy Director,

- Executive Engineer, TWAD Board and the PWD officials to consider the various factors before giving consent to the proposal.

- The RDO concerned along with Revenue officials may verify the revenue records of the proposed sand quarrying area and give the NOC.

- The AD/DD Mines may verify the presence of permanent structures such as tower line, bridge, monuments if any, in the vicinity of the proposed mining site as per Tamil Nadu Minor Mineral Concession Rules,1959 (As per Rule 36 " there shall be no quarrying of sand in any river bed or adjoining area or any other area which is located within 500 meter radial distance from the location of any bridge, water supply system, infiltration well or pumping installation of any of the local bodies or Central or State Government Department or the Tamil Nadu Water Supply and Drainage Board head works or any area identified for locating water supply schemes by any of the above mentioned Government Department or other bodies" and " The distance of 50 meter shall be measured in the case of railway, reservoir or canal horizontally from the outer toe of the bank or the outer edge of the cutting, as the case may be …. "). Also, the availability of minerals may be cross verified with the available DSR.

- The TWAD officials may verify the drinking water schemes located nearby the proposed quarry site and the minimum distance required as per statutory norms.

- Based on the feasibility report of the joint inspection by the Revenue, Tamil Nadu Water Supply and Drainage Board and Mining officials/experts, the District Collector may give consent for the Precise Area proposal.

- After getting Precise Area approval, a detailed Mining Plan and sketch shall be prepared by the Executive Engineer, PWD using the services of a NABET accredited consultant who holds the pivotal role in the preparation of mining plan. Due responsibility will be expected on the concerned consultant in the mining plan preparation taking care of adhering to all mining rules, existing as on date. The mining plan shall contain the details of quantity to be excavated, the period of mining, method of excavation, deployment of required machinery, Environment Management Plan (EMP), proposed number of laborers to be deployed and Conceptual Mining Plan, as per Rule 41 of TNMMC Rules 1959. It is also the duty of the consultant to give the safe distance of 50 m or twice the bank height from the toe of the riverbank, whichever is higher and fixing the Geo coordinates for boundaries using DGPS instruments.

- The concerned Executive Engineer, PWD shall submit the Mining Plan prepared by the NABET accredited consultant to the concerned Assistant/Deputy Director, Department of Geology and Mines for approval, as per Rule 42 of TNMMC 1959. After scrutiny, the Assistant/Deputy Director, Department of Geology will present the Mining plan before the State Level Environment Impact Assessment Authority (SEIAA) for granting Environmental Clearance.

- The Executive Engineer, PWD shall prepare Form I and Pre-feasibility report with the help of the consultant and submit to SEIAA for an area less than 50 Ha. or to the Ministry of Environment and Forest and Climate Change (MoEF&CC) for the area more than 50 Ha.

- The State Expert Appraisal Committee (SEAC) under SEIAA, consisting of experts from renowned fields such as Mines, Environment, Sociology etc. shall conduct a site inspection of the proposed sand quarry site and after intense scrutiny, may recommend the proposal to SEIAA for approval.

- SEIAA shall grant Environmental Clearance for the sand quarry proposal after analyzing all the statutory provisions and based on the recommendation of the SEAC.

- The Environmental Clearance shall be informed to the public with basic details through advertisement in at least two widely circulated local newspapers with at least one in the vernacular language of the locality, within 7 days of the receipt of the clearance.

- On receipt of the Environmental Clearance, the Executive Engineer, PWD shall apply for Consent to Establish (CTE), from the Tamil Nadu Pollution Control Board as per the Air and Water Act, to enter upon the sand quarry site and commence the preliminary works such as construction of temporary sheds, bio-toilets, formation of biodegradable road using sugar cane leaves etc., drilling of bore wells etc. as per the statutory requirements. After all the preliminary works are completed, the Executive Engineer, PWD shall apply for the Consent to Operate (CTO) from the Tamil Nadu Pollution Control Board. Earmarking boundary of the identified land site through the concrete posts along with red flags need to be established.

- On receipt of the CTO, the Executive Engineer, PWD shall request the consent of the District Collector to commence the quarries. The District Collector shall request the Taluk Level Task Force comprising of Tahsildar, Inspector of Police, Officials from the Departments of Geology and Mining, Transport and Forest, Assistant Engineer, PWD and the Village Administrative Officer concerned, to verify the compliance of all preconditions mentioned in the Environmental Clearance and grant necessary permission to start the functioning of new sand quarries.

II. STEPS TO BE FOLLOWED DURING EXECUTION:

- Before the commencement of mining operations, the depth of sand quarrying needs to be measured accurately using Advanced technology and new gadgets like Total Stations, Global Positioning System (GPS) instruments etc. The Total Station and GPS instruments also need to be calibrated before measurement. Both the traditional and modern techniques may be infused in the right blend to get an accurate measure of the depth. A clear contour map (0.25m interval) of the levels within 2Km (one Km U/s and one Km D/s) needs to be prepared and submitted to both the Project Director, Sand Quarrying Operations and all the Monitoring Committee members. The depth of sand quarrying shall be restricted to 1 m from the theoretical/design bed level.

- The mining area must be demarcated at a minimum distance of at least 50 m away from the river embankment on either side. The boundaries of the quarries may be fixed with reference to the existing survey marks from the survey fields adjacent to the river. Sand quarrying lease area shall be demarcated on the ground with pucca stone or concrete pillars to show the present natural bed level and the depth of mining allowed.

- Modern techniques such as drone survey may be adopted to assess the depth and quantity of the mined area. Boundary pillars shall be erected at an interval of 50 m each on all four sides of the sand quarry site with red flags on every pillar and also in site pillars. The levels of shoal height, river bed height and depth to be excavated up to one meter downwards shall be marked in the pillars to avoid any deviation from the approved depth of excavation.

- It shall be ensured that no sand quarrying of any type is undertaken with 50m of the distance mentioned in the proposal (whichever is higher)

from both the banks of the river to control and avoid erosion of river banks.

- Temporary access roads or Katcha roads shall be formed between the banks of the river and the mining area with locally available bio-degradable materials such as sugarcane waste (bagasse), hay, etc.

- Proper entry and exit point for the movement of loading vehicles in and out of the sand quarry site shall be carefully located taking into consideration the habitations/settlements in the area.

- To monitor the groundwater level during sand quarrying operations, a network of existing wells may be established around the sand quarrying area and new piezometers must be installed at all sand quarry sites. Monitoring of Ground Water Quality in the vicinity (one Km radius from the sand quarrying site) shall be carried out once in two months.

- Periodic Monitoring (at least four times in a year – pre-monsoon, Monsoon, Post monsoon and winter) once in each season shall be carried out by PWD and the data thus collected may be sent regularly to SEIAA/TNPCB. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out, which includes immediate stopping of mining.

- Similar to the Baseline studies for data on water, soil and air etc., that is being done before the sand quarrying operations, the air and water quality may be checked periodically by Tamil Nadu Pollution Control Board to ensure that no pollution is caused due to Sand Quarrying Operations. 10. Safety gadgets such as earplugs, goggles, respiratory

devices, luminescent vests etc. may be provided to the workers at the sand quarry site.

- First aid kit with all essentials shall be kept ready at all quarry/depot site, in case of any emergency.

- To prevent air pollution due to the dust during sand quarrying operations and safeguard the persons in the sand quarry and depot site, constant water sprinkling on the pathways and dust prone areas may be done. The sand loaded vehicles are to be covered with a tarpaulin before moving out of the quarries/depots.

- Suitable depots shall be located in the vicinity of the sand quarry site to facilitate the sale of sand. While selecting the site for depots, it must be ensured that the site is within 25 km from the sand quarry site and has an area of around 10-15 Acres with parking facilities and proper entry and exit for smooth movement of the vehicles. The depot site shall preferably be a Government poramboke land, foreshore area of tank bund etc., near an NH/SH/MDR/ODR. In the absence of any Government land in the vicinity, private Patta land may be leased out and rent fixed as per the approved Government rates applicable therein.

- Permission must be obtained from the Electricity Board for power supply to operate the CCTV cameras at sand quarry site and depots.

- Minimum of two CCTV cameras, one each at the entry and exit point and one PTZ camera may be installed at all quarries/depots to monitor illegality if any taking place in the sand quarry/depot.

- To ensure uninterrupted seamless live streaming of videos from the surveillance cameras, a high-speed Internet Lease Line connection may

be made available at all quarries/depots. Arrangements may also be made for online monitoring of the sand quarrying, Centre for Assessing Real-Time Sand Mining (CARS) that could be located at the office of the Project Director in Chennai.

- The live streaming of the videos shall be monitored at a Centralised control room and the data shall be stored in the Server for future references. A robust Customer Care may also be functional 24 x 7 at the Control Room, to redress the grievance of the public.

- Drop gates shall be installed at the entry and exit points of all quarries/depots.

- Display boards shall be erected in local vernacular language at sand quarry/depot site, in the nearest village by which sand transportation will be carried and at the entrance of the village road from the main road.

- The concerned authority of PWD shall call for e-tender to select the contractors for loading/raising of sand at the quarry site, transporting contractors to transport sand from the quarry site to depots and loading/maintenance contractors at depots.

- Sand shall be loaded in the quarries in the PWD tendered GPS fitted vehicles and online transmit permit shall be issued by the competent authorities in PWD to the transporting vehicles to transport sand from the quarry to depots.

- On the arrival of the sand shunting vehicles from quarry to the depot, an online authentication shall be done to confirm the arrival of the

appropriate quantity of sand mentioned in the transport permit into the depot.

- The loading of sand from the depots shall be carried out by booking through the online portal "www.tnsand.in" as done presently. Online transit passes will also be issued to the loaded vehicles which could be verified by using an Android app "TNsand Investigator".

- During operation of the quarries, the PWD officers shall ensure that at no point in time, the depth of quarry exceeds 1 m depth from the river bed level and quarrying is done in a uniform manner over the entire mining area to avoid overexploitation and formation of pits at fixed places.

- Proper registers may be maintained at the entry and exit points of the sand quarry/depot sites and a Loading Register may be made available during inspection. An Inspection Register and a Complaint Register may be made available at the sand quarry/depot site.

- The functioning time of quarries/depots shall be from 7.00 AM to 6.00 PM. No sand transporting vehicles to be parked inside the quarry/depot site during night time.

- A copy of the approved mining plan may be kept at the quarry site for ready reference.

- Photographs and sketch showing the pit dimensions, depth etc. may be recorded every week and maintained in the sand quarry. The Executive Engineer, PWD may inspect each sand quarry on a weekly basis and ensure that mining activities are taking place within the approved boundaries/depth.

- The sand quarrying activity shall be stopped if the entire quantity is quarried even before the expiry of the sand quarry lease period and the same shall be mentioned by the PWD authorities.

- The Taluk Level Taskforce shall inspect the quarries every fortnight, as per G.O. (Ms) No. 135 of Industries Department, dated 13.11.2009 and record the status of the compliance in the registers maintained at the sand quarry site.

- The Taluk Level Task Force has to submit its inspection report to the District Level Task Force chaired by the District Collector. The District Level Task Force has to be convened every month to discuss cases of illegal quarrying. An Environmentalist from reputed State / Central Institution and a legal expert on environmental matters may be part of the District Level Task Force. The District Level Task Force shall also dispose of the petitions on illegal sand quarrying after due enquiry and scrutiny, and pass orders within a period of two months from the date of receipt of the complaint. If any person is aggrieved with the orders passed by the District Level Task Force, an appeal may be preferred before the Appellate Forum.

- The District Collector shall take necessary steps to strengthen the existing District and Taluk Level Committees and act on the complaints received, if any, on illegal sand quarrying and take strict remedial measures to rectify the same in a time-bound manner. The District Level Task Force may send its monthly report to the Appellate Forum formed as per G.O. (Ms) No. 27 of Industries Dept. dated 17.02.2015.

- The Appellate Forum shall hear the appeals filed against the orders passed by the District Level Task Force. The Appellate Forum comprises

of the Secretaries to Government from Industries Department, Public Works Department, Revenue Department, Environment and Forests Department, Commissioner of Geology and Mining and an Expert from a reputed Government Institution.

- The Appellate Forum may convene once in 2 months to deliberate on the reports from the District Level Task Force and shall dispose of the appeals made by the petitioners aggrieved with the orders passed by the District Level Task Force.

- Periodical Capacity building and sensitization of PWD officials on the environmental and legal aspects of sand quarrying may be made mandatory. Continuous training and awareness programs shall be scheduled and conducted by IIT/Anna University for the PWD staff to keep themselves aware of the best practices in this field. It may be ensured that the enforcement officials from the Departments of Revenue, Police, Geology and Mining and Transport in the districts where quarries are situated are given adequate training and capacity building on their duties and responsibilities with respect to inspection of sand quarries and sand transporting vehicles at specified time intervals.

- No blasting shall be carried out any point in time.

- It is the obligation of the Public Works Department to run the quarry in an environmentally friendly and ecologically sustainable manner.

- The Hon'ble High Court-appointed Monitoring Committee shall inspect the sand quarries periodically and submit a report to the Hon'ble High Court.

- The PWD should explore/take necessary steps to introduce Mining Surveillance System (MSS) in line with MSS evolved by the Indian Bureau of Mines and Bhaskaracharya Institute for Space Applications and Geo-informatics (BISAG).

III. STEPS TO BE FOLLOWED AFTER EXECUTION:

- A Judicious mine closure plan may be formulated once the quarry is closed after exhaustion of the quantity of sand.

- Reclamation works may be factored into the contract agreement and strict monitoring by the PWD officials may be initiated to scrupulously follow up the mine closure plan.

- It may be ensured that the total quantity of sand permitted in the EC shall not be exceeded in any case.

- After the exhaustion of the quantity of sand, the sheds constructed at the quarry site may be removed. All the roads and pathways may be levelled so that there is no obstruction for the normal flow in the river.

- All the records/registers may be carefully maintained by the PWD for future reference.

Annexure No. SA 4

प्रेषक,

जिलाधिकारी
सहारनपुर।

सेवा में,

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय,
उ0प्र0, खनिज–भवन,
लखनऊ।

संख्याः 631 /ख0अनु0/2021–22 दिनांक 03 दिसम्बर, 2021

विषयः– **जिला सर्वेक्षण रिपोर्ट संशोधन/संयोजन (मोडिफिकेशन) के सम्बन्ध में।**

महोदय,

कृपया अवगत कराना है कि जनपद सहारनपुर के उपखनिज (RBM) के प्रस्तावित 10 खनन क्षेत्रों को जिला सर्वेक्षण रिपोर्ट में संयोजन हेतु प्रस्ताव तैयार कर लिया गया है, जिसमें राजस्व विभाग व खनिज विभाग की संयुक्त आख्या व सिंचाई विभाग की आख्या तथा प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग सहारनपुर व प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर की वन अनापत्ति, राजस्व अभिलेख खतौनी विवरण सहित प्ररूप 1 से 7 तक इस पत्र के साथ संलग्न कर प्रेषित की जा रही है।

अतः अनुरोध है कि जनपद सहारनपुर के उपखनिज (RBM) के प्रस्तावित 10 खनन क्षेत्रों को जिला सर्वेक्षण रिपोर्ट संशोधन/संयोजन करने की कृपा करें।

संलग्नकः यथोपरि।

भवदीय

(अखिलेश सिंह)
जिलाधिकारी
सहारनपुर

प्रतिलिपिः–

1. सचिव, भूतत्व एवं खनिकर्म, उत्तर प्रदेश शासन, लखनऊ को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
2. जिला सूचना विज्ञान अधिकारी (एन0आई0सी0), सहारनपुर को इस निर्देश के साथ प्रेषित कि उक्त सूचना को आम जन मानस से आपत्ति/सुझाव प्राप्त किये जाने हेतु 21 दिनों तक जिले की वेबसाईट पर अपलोड करने का कष्ट करें।

(अखिलेश सिंह)
जिलाधिकारी
सहारनपुर

Annexure-I

Details of Sand/RBM/M-Sand Sources

a) Rivers:

River Name/M-Sand Plant	TotalStretchofRiver(inKM)	Type of River (Perennial or Non-Perennial)
Yamuna	70	Perennial
Kaluwala	-	Non-Perennial
Badshahi Bagh Rao	-	Non-Perennial
Badkala Rao	-	Non-Perennial
Khaironwali Rao	-	Non-Perennial
Gaisra Rao	-	Non-Perennial

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b) De-Siltation Location: (Lakes/Ponds/Dams etc.)

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size(Ha)
-	-	-	-	-	-	-

c) Patta Lands/Khatedari Land:

Owner	Sy. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)
-	-	-	-	-	-	-

d) M-Sand Plants:

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum
-	-	-	-	-	-	-

Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज

Annexure-II

List of Potential Mining Leases(existing and proposed) Rivers

River Details	Lease Details			Area (in Ha)	Distance (in KM) from PA/BR/ WC/	Distance from Forest Area (inKM)	Mining leases within 500 meters(if yes cluster area)	Geological Reserve (in cubic meter)	Mineable Reserve (in cubic meter)	Mineral to be mined (Sand/Bajri/RB Metc)	Existing / Proposed
	Tehsil	Village	GataNo								
Yamuna	Behat	Akbarpurbans Ahatmal	1M	17.90	-	More than 0.10 KM	Yes	537000	322200	(RBM)	Proposed
Yamuna	Behat	Araji jewadi Ahatmal& Mo Soodpurgadh Ahatmal	1M & 1M	13.80	-	More than 0.10 KM	Yes	414000	248400	(RBM)	Proposed
Yamuna	Behat	Shajadpurbans Ahatmal	1M	13.00	-	More than 0.10 KM	Yes	390000	234000	(RBM)	Propsed
Yamuna	Behat	Alauddinpurbans Ahatmal	1M	9.58	-	More than 0.10 KM	Yes	287400	172440	(RBM)	Proposed
Yamuna	Behat	Mahmoodpurnagli Ahatmal	1M	15.70	-	More than 0.10 KM	Yes	471000	282600	(RBM)	Proposed
Yamuna	Behat	Shahpurbans Ahatmal	1M	15.60	-	More than 0.10 KM	Yes	468000	280800	(RBM)	Proposed
Yamuna	Behat	Abutalibpurgarh Ahatmal	1M	37.00	-	More than 0.10 KM	Yes	1110000	666000	(RBM)	Proposed
Yamuna	Behat	Nityanandpur Ahatmal & Saidmohammadpurgarh Ahatmal	1M &1M	17.70	-	More than 0.10 KM	Yes	531000	318600	(RBM)	Proposed
Khairawali Rao	Behat	Sherpur Pelo	403,404,405,406,416,421,422,423,424,429,431	6.475	-	More than 0.10 KM	Yes	194250	77700	(RBM)	Proposed
Kaluwala	Behat	Kaluwala Pahadipur	119M,120M,192M,193M,125M	14.90	-	More than 0.10 KM	No	447000	178800	(RBM)	Proposed

(M-Z)

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

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Annexure-III

Cluster & Contiguous Cluster details Clusters:

River Name	Cluster No.	Lease No	Location (Riverbed/ Patta Land)	Village	Area (in Ha)	Geological Reserve (in cubic meter)	Mineable Reserve (in cubic meter)
Yamuna	1	Gata No-1M Village-Akbarpurbans Ahatmal	Riverbed	Akbarpurbans Ahatmal	17.90	537000	322200
Yamuna	1	Gata No-1M,1M Village-Araji Jevdi Ahatamal &Mahmoodpurgarh Ahatmal	Riverbed	Araji Jevdi Ahatamal &Mahmoodpurgarh Ahatmal	13.80	414000	248400
Yamuna	1	Gata No-1M Village-Shahjadpurbans Ahatmal	Riverbed	Shahjadpurbans Ahatmal	13.00	390000	234000
Yamuna	1	Gata No-1M Village-Alauddinpurbans Ahatmal	Riverbed	Alauddinpurbans Ahatmal	9.58	287400	172440
Yamuna	1	Gata No-1M Village-Mahmoodpur Nagli Ahatmal	Riverbed	Mahmoodpur Nagli Ahatmal	15.70	471000	282600
Yamuna	1	Gata No-1M Village-Shahpurbans Ahatmal	Riverbed	Shahpurbans Ahatmal	15.60	468000	280800
Yamuna	1	Gata No-1M Village-Abutalibpurgarh Ahatmal	Riverbed	Abutalibpurgarh Ahatmal	37.00	1110000	666000
Yamuna	1	Gata No-1M,1M Village-Nityanandpur Ahatmal&Saidmohammadpurgarh Ahatmal	Riverbed	Nityanandpur Ahatmal&Saidmohammadpurgarh Ahatmal	17.70	531000	318600
Khairawali Rao	2	Gata No-403,404,405,406,416,421, 422,423,424,429,431 Village-Sherpur Pelo	Riverbed	Sherpur Pelo	6.475	194250	77700

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जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

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Annexure-IV

Transportation Routes for individual leases

Lease Details			Transportation Route No	Number of tippers /day of lease	Numbe of tippers /day of all the lease on route	Lengthof Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructedby Govt/Lease Owner	Route Map & Location
Tehsil	Village	GataNo								
Behat	Akbarpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Different Stone crusher situated in villages-Nityanandpur,Abutalibpurgarh,Aslampur Bartha,Bartha Korsi..etc
Behat	Araji jewadi Ahatmal & Mahmoodpurgadh Ahatmal	1M & 1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Shajadpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Alauddinpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Mahmoodpurnagli Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Shahpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Abutalibpurgarh Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Nityanandpur Ahatmal & Saidmohammadpurgarh Ahatmal	1M &1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Sherpur Pelo	403,404,405,406,416,421,422,423,424,429,431		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Village Sherpur Pelo Road
Behat	Kaluwala Pahadipur	119M,120M,192M,193M,125M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Village Kaluwala Pahadipur Road

(M-I)

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

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Annexure-V

Final List of Potential Mining Leases Govt.Land(existing & proposed)

River Details	Lease Details			Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (inKM)	Mining leases within 500 meters(if yes cluster area)	Geological Reserve (in cubic meter)	Mineable Reserve (in cubic meter)	Mineral to be mined (Sand/Bajri/RBMetc)	Existing / Proposed
	Tehsil	Village	GataNo								
Yamuna	Behat	Akbarpurbans Ahatmal	1M	17.90	-	More than 0.10 KM	Yes	537000	322200	(RBM)	Proposed
Yamuna	Behat	Araji jewadi Ahatmal& Mahmoodpurgadh Ahatmal	1M & 1M	13.80	-	More than 0.10 KM	Yes	414000	248400	(RBM)	Proposed
Yamuna	Behat	Shajadpurbans Ahatmal	1M	13.00	-	More than 0.10 KM	Yes	390000	234000	(RBM)	Propsed
Yamuna	Behat	Alauddinpurbans Ahatmal	1M	9.58	-	More than 0.10 KM	Yes	287400	172440	(RBM)	Proposed
Yamuna	Behat	Mahmoodpurnagli Ahatmal	1M	15.70	-	More than 0.10 KM	Yes	471000	282600	(RBM)	Proposed
Yamuna	Behat	Shahpurbans Ahatmal	1M	15.60	-	More than 0.10 KM	Yes	468000	280800	(RBM)	Proposed
Yamuna	Behat	Abutalibpurgarh Ahatmal	1M	37.00	-	More than 0.10 KM	Yes	1110000	666000	(RBM)	Proposed
Yamuna	Behat	Nityanandpur Ahatmal & Saidmohammadpurgarh Ahatmal	1M &1M	17.70	-	More than 0.10 KM	Yes	531000	318600	(RBM)	Proposed
Khairawali Rao	Behat	Sherpur Pelo	403,404,405, 406,416,421, 422,423,424, 429,431	6.475	-	More than 0.10 KM	Yes	194250	77700	(RBM)	Proposed
Kaluwala	Behat	Kaluwala Pahadipur	119M,120M, 192M,193M, 125M	14.90	-	More than 0.10 KM	No	447000	178800	(RBM)	Proposed

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

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Annexure-VI

Final List of Cluster:

River Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Geological Reserve (in cubic meter)	Mineable Reserve (in cubic meter)
Yamuna	1	Gata No-1M Village-Akbarpurbans Ahatmal	Riverbed	Akbarpurbans Ahatmal	17.90	537000	322200
Yamuna	1	Gata No-1M,1M Village-Araji Jevdi Ahatamal &Mahmoodpurgarh Ahatmal	Riverbed	Araji Jevdi Ahatamal &Mahmoodpurgarh Ahatmal	13.80	414000	248400
Yamuna	1	Gata No-1M Village-Shahjadpurbans Ahatmal	Riverbed	Shahjadpurbans Ahatmal	13.00	390000	234000
Yamuna	1	Gata No-1M Village-Alauddinpurbans Ahatmal	Riverbed	Alauddinpurbans Ahatmal	9.58	287400	172440
Yamuna	1	Gata No-1M Village-Mahmoodpur Nagli Ahatmal	Riverbed	Mahmoodpur Nagli Ahatmal	15.70	471000	282600
Yamuna	1	Gata No-1M Village-Shahpurbans Ahatmal	Riverbed	Shahpurbans Ahatmal	15.60	468000	280800
Yamuna	1	Gata No-1M Village-Abutalibpurgarh Ahatmal	Riverbed	Abutalibpurgarh Ahatmal	37.00	1110000	666000
Yamuna	1	Gata No-1M,1M Village-Nityanandpur Ahatmal&Saidmohammadpurgarh Ahatmal	Riverbed	Nityanandpur Ahatmal&Saidmohammadpurgarh Ahatmal	17.70	531000	318600
Khairawali Rao	2	Gata No-403,404,405,406,416,421,422,423,424,429,431 Village-Sherpur Pelo	Riverbed	Sherpur Pelo	6.475	194250	77700

(M-I)

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

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Annexure-VII

Final List of Transportation Routes for individual leases

Lease Details			Transportation Route No	Number of tippers /day of lease	Numbe of tippers /day of all the lease on route	Lengthof Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructedby Govt/Lease Owner	Route Map & Location
Tehsil	Village	GataNo								
Behat	Akbarpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Different Stone crusher situated in villages-Nityanandpur,Abutalibpurgarh,Aslampur Bartha,Bartha Korsi..etc
Behat	Araji jewadi Ahatmal & Mahmoodpurgadh Ahatmal	1M & 1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Shajadpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Alauddinpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Mahmoodpurnagli Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Shahpurbans Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Abutalibpurgarh Ahatmal	1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Nityanandpur Ahatmal & Saidmohammadpurgarh Ahatmal	1M &1M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	
Behat	Sherpur Pelo	403,404,405,406,416,421,422,423,424,429,431		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Village Sherpur Pelo Road
Behat	Kaluwala Pahadipur	119M,120M,192M,193M,125M		As per requirement	As per requirement		unpaved	unpaved	Lease Owner	Village Kaluwala Pahadipur Road

(M-I)

जिला खनन अधिकारी
सहारनपुर।

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज

1350

संयुक्त जांच आख्या

जिलाधिकारी महोदय
सहारनपुर

जनपद सहारनपुर में नदी तल में उपलब्ध बालू, बजरी, बोल्डर आदि (मिश्रित अवस्था में) के उपलब्ध क्षेत्रों को उत्तर प्रदेश उपखनिज परिहार नियमावली, के अनुक्रम में भूतत्व एवं खनिकर्म विभाग, उ0प्र0 शासन लखनऊ के शासनादेश संख्या 2168/86–2019–57(सामा0)/2017 दिनांक 09.10.2019 में दिये गये निर्देशानुसार ई–निविदा सह ई–नीलामी प्रणाली के माध्यम से उ0प्र0 उपखनिज परिहार नियमावली, 2021 के अध्याय–4 के अन्तर्गत खनन पटटा पर स्वीकृत किये जाने हेतु पर्यावरण तथा पारिस्थितिकी के दृष्टिगत क्षेत्र की उपयुक्तता एवं खनन योग्य मात्रा का आंकलन राजस्व विभाग की आख्या व खनन विभाग की संयुक्त आख्या व सिंचाई विभाग की आख्या तथा प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर व प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर की वन अनापत्ति की संस्तुति सहित आख्या प्राप्त की गई है, जिनका विवरण निम्नवत् हैः–

क्र0 सं0	खनन क्षेत्र का नाम	आवेदित क्षेत्र का विवरण			भू–निर्देशांक			क्षेत्र में बालू/मौरम की मात्रा (घ0मी0)	खनन योग्य बालू/मौरम की मात्रा (घ0मी0)	क्षेत्र की स्थिति	संस्तुति हाँ/नही
		ग्राम	गाटा सं0	क्षे0 (हे0 में)							
1	2	3	4	5		6		7	8	9	10
1	अकबरपुर बांस	अकबरपुर बांस	1म	17.900	A	N	30° 16' 27.80"	537000	322200	रिक्त क्षेत्र तहसील बेहट के ग्राम अकबरपुर बांस अहतमाल के गाटा संख्या–1म कुल रकबा–17.900हे0 का सर्वेक्षण दिनांक 05.02.2021 को क्षेत्रीय लेखपाल श्री बिजेन्द्र राणा द्वारा बताए गए सन्दर्भ बिन्दु से नक्शीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अभियन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आच्छादनः) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन प्रक्रिया किया जा सकता है।
					B	N	30° 16' 34.01"				
						E	77° 32' 47.53"				
					C	N	30° 16' 42.58"				
						E	77° 32' 53.94"				
					D	N	30° 16' 43.84"				
						E	77° 32' 58.19"				
					E	N	30° 16' 50.96"				
						E	77° 32' 47.76"				
					F	N	30° 16' 46.69"				
						E	77° 32' 43.28"				
					G	N	30° 16' 39.98"				
						E	77° 32' 41.04"				
					H	N	30° 16' 36.08"				
						E	77° 32' 33.91"				

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खनन अधिकारी
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											और यह अवगत कराया है कि कोई तटबन्ध नही है।	
2	आराजी जेवडी अहतमाल व मसूदपुर गढ अहतमाल	आराजी जेवडी अहतमाल व मसूदपुर गढ अहतमाल	1म व 1म	13.800	A	N	30° 15' 51.33"	414000	248400	रिक्त क्षेत्र तहसील बेहट के ग्राम आराजी जेवडी अहतमाल व मसूदपुर गढ अहतमाल के गाटा संख्या–1म व 1म कुल रकबा–13.800हे0 का सर्वेक्षण दिनांक 10.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 32' 21.84"					
					B	N	30° 15' 58.45"					
						E	77° 32' 08.63"					
					C	N	30° 15' 45.65"					
						E	77° 32' 03.15"					
					D	N	30° 15' 41.84"					
						E	77° 32' 13.01"					
3	शहजादपुर बांस अहतमाल	शहजादपुर बांस अहतमाल	1म	13.000	A	N	30° 15' 24.84"	390000	234000	रिक्त क्षेत्र तहसील बेहट के ग्राम शहजादपुर बांस के गाटा संख्या–1म कुल रकबा–13.000हे0 का सर्वेक्षण दिनांक 12.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 31' 57.01"					
					B	N	30° 15' 12.32"					
						E	77° 31' 47.88"					
					C	N	30° 15' 16.91"					
						E	77° 31' 36.94"					
						N	30° 15' 28.43"					

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					D	E	77° 31' 48.83"			के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	
4	अलाउदीन पुर बांस अहतमाल	अलाउदीन पुर बांस अहतमाल	1म	9.580	A	N	30° 16' 14.92"	287400	172440	रिक्त क्षेत्र तहसील बेहट के ग्राम अलाउद्दीननपुर बांस अहतमाल के गाटा संख्या–1म कुल रकबा–9.580हे0 का सर्वेक्षण दिनांक 08.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 32' 39.76"				
					B	N	30° 16' 17.99"				
						E	77° 32' 32.74"				
					C	N	30° 16' 08.09"				
						E	77° 32' 23.84"				
					D	N	30° 16' 02.92"				
						E	77° 32' 31.72"				
5	महमूदपुर नगली अहतमाल	महमूदपुर नगली अहतमाल	1म	15.700	A	N	30° 16' 09.98"	471000	282600	रिक्त क्षेत्र तहसील बेहट के ग्राम महमूदपुर नगली अहतमाल के गाटा संख्या–1म कुल रकबा–15.700हे0 का सर्वेक्षण दिनांक 09.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 32' 30.74"				
					B	N	30° 16' 10.84"				
						E	77° 32' 18.84"				
					C	N	30° 16' 00.40"				
						E	77° 32' 11.56"				
					D	N	30° 15' 51.70"				
						E	77° 32' 23.64"				

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											और यह अवगत कराया है कि कोई तटबन्ध नही है।	
6	शाहपुर बांस अहतमाल	शाहपुर बांस अहतमाल	1म	15.600	A	N	30° 16' 27.75"	468000	280800	रिक्त क्षेत्र तहसील बेहट के ग्राम शाहपुर बांस अहतमाल के गाटा संख्या–1म कुल रकबा–15.600हे0 का सर्वेक्षण दिनांक 06.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 32' 46.14"					
					B	N	30° 16' 16.01"					
						E	77° 32' 38.50"					
					C	N	30° 16' 20.43"					
						E	77° 32' 28.70"					
					D	N	30° 16' 35.53"					
						E	77° 32' 33.20"					
7	अबुतालिब पुर गढ अहतमाल	अबुतालिब पुर गढ अहतमाल	1म	37.000	A	N	30° 14' 41.78"	1110000	666000	रिक्त क्षेत्र तहसील बेहट के ग्राम अबुतालिबपुर गढ अहतमाल के गाटा संख्या–1म कुल रकबा–37.000हे0 का सर्वेक्षण दिनांक 12.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि लगभग 2.00 किमी0 से	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 31' 38.30"					
					B	N	30° 14' 49.46"					
						E	77° 31' 21.34"					
					C	N	30° 15' 16.20"					
						E	77° 31' 36.25"					
					D	N	30° 15' 11.96"					
						E	77° 31' 46.05"					

(M.I)

जिला खनन अधिकारी

उपजिलाधिकारी
बेहट

											अधिक दूरी पर तटबन्ध है।	
8	नित्यानन्द पुर अहतमाल व सैद मौहम्मदपुर गढ अहतमाल	नित्यानन्द पुर अहतमाल व सैद मौहम्मदपुर गढ अहतमाल	1म व 1म	17.700	A	N	30° 15' 25.77"	531000	318600	रिक्त क्षेत्र तहसील बेहट के ग्राम नित्यानन्दपुर अहतमाल व सैद मौहम्मदपुर गढ अहतमाल के गाटा संख्या–1म व 1म कुल रकबा–17.700हे0 का सर्वेक्षण दिनांक 18.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर के पत्र संख्या 1136/14–1 दिनांक 06.08.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 31' 57.79"					
					B	N	30° 15' 41.32"					
						E	77° 32' 12.89"					
					C	N	30° 15' 46.16"					
						E	77° 32' 00.64"					
					D	N	30° 15' 28.87"					
						E	77° 31' 50.13"					
9	शेरपुर पेलों	शेरपुर पेलों	403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431	6.475	A	N	30° 16' 35.16"	194250	77700	रिक्त क्षेत्र तहसील बेहट के ग्राम शेरपुर पेलों के गाटा संख्या–403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431 कुल रकबा–6.475हे0 का सर्वेक्षण दिनांक 18.09.2020 को क्षेत्रीय लेखपाल श्री अनुपम चौहान द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड खसरा नं0 403, 404, 405, 406, 429 व 431 में कार्यालय अभिलेखों के अनुसार दिनांक 18.11.015 के बाद कोई खनन पट्टा संचालित नहीं रहा है तथा शेष नये नम्बर सम्मिलित किये गये हैं। उक्त प्रस्तावित क्षेत्र को नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर के पत्र संख्या 1398/14–1 दिनांक 05.12.2020 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 39' 44.44"					
					B	N	30° 16' 32.34"					
						E	77° 39' 51.41"					
					C	N	30° 16' 21.11"					
						E	77° 39' 36.26"					
					D	N	30° 16' 22.11"					

(M.I)

जिला खनन अधिकारी
सहारनपुर।

उपजिलाधिकारी
बेहट

						E	77° 39' 34.41"			3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	
10	कालूवाला पहाडीपुर	कालूवाला पहाडीपुर	119म, 120म, 192म, 193म व 125म	14.900	A	N	30° 12' 08.76"	447000	178800	रिक्त क्षेत्र तहसील बेहट के ग्राम कालूवाला पहाडीपुर के गाटा संख्या–119म, 120म, 192म, 193म, 125म कुल रकबा–14.900हे0 का सर्वेक्षण दिनांक 15.01.2021 को क्षेत्रीय लेखपाल श्री विजय कुमार सिंह पुण्डीर द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कॉर्नर के जियो कॉर्डिनेटस् लिये गये है। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड को नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। 1. क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। 2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर के पत्र संख्या 3044/14–1 दिनांक 11.06.2021 द्वारा खनन पटटा स्थल के पुनर्गठन हेतु अनापत्ति प्रमाण पत्र निर्गत किया गया है। 3. अधिशासी अयिन्ता, सिंचाई निर्माण खण्ड, सहारनपुर के पत्र दिनांक 03.12.2021 द्वारा अनापत्ति प्रस्तुत की है और यह अवगत कराया है कि कोई तटबन्ध नही है।	आवेदित क्षेत्र में उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में (आर0बी0एम0) प्रचुर मात्रा में उपलब्ध है। क्षेत्र में नियमानुसार खनन संक्रिया किया जा सकता है।
						E	77° 45' 37.77"				
					B	N	30° 12' 06.03"				
						E	77° 45' 42.25"				
					C	N	30° 12' 00.52"				
						E	77° 45' 38.93"				
					D	N	30° 11' 40.91"				
						E	77° 45' 32.39"				
					E	N	30° 11' 41.72"				
						E	77° 45' 25.51"				
					F	N	30° 12' 02.80"				
						E	77° 45' 33.06"				

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सर्वेक्षक
सहारनपुर

खान निरीक्षक
सहारनपुर

खान अधिकारी
सहारनपुर

जिला खनन अधिकारी
सहारनपुर।

अधिशासी अभियन्ता,
सिंचाई विभाग,
सहारनपुर

क्षेत्रीय अधिकारी
उ0प्र0 प्रदूषण नियंत्रण बोर्ड
सहारनपुर

उपजिलाधिकारी
बेहट

अपर जिलाधिकारी (वि0/रा0)
सहारनपुर

प्रभागीय निदेशक,
सामाजिकी वानिकी प्रभाग,
सहारनपुर

BHULEKH
Uttar Pradesh

(1)

खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : अकबरपुर बाँस अ0 परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1423-1428 भाग : 1 खाता संख्या : 00038

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (है.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना नदी / /	1	45.9820	1413फ - भू0 प्र0 समिति ग्राम अकबरपुर बां0 अ0 प्रस्ताव दि0 11.05.05 जिसमे वृक्षारोपण हेतु 11 व्यक्तियो को आवंट किया गया है श्री मान उपजिलाधिकारी बेहट के आदेश दि0 9.06.05 के अन्तगत स्वीकृत किये गये है आवंटियो का विवरण निम्न प्रकार है क्रं0. नाम आवंटी /जाति , ख0/ र0 , ल0, श्रेणी 1.रामधन पु0 अतर सिंह जाति बाल्मिकी 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 2.फकीरिया पु0 रामस्वरूप जाति बाल्मिकी 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 3.महफूज पु0 लुकमान जाति राऊ 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 4.शौकिन पु0 सुलेमान जाति राऊ 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 5.हनीफ पु0 काटी जाति राऊ 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 6.मसरूर पु0 लुकमान जाति राऊ 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 7.मीन्ना पु0 काल् जाति भडभुज्जा 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 8.गुलजार पु0 हबीब जाति धोबी 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 9.अशोक पु0 मोल्हू जाति कश्यप 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 10.पाल्ला पु0 राजाराम जाति कश्यप 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय 11.चरणा पु0 रामचन्द्र जाति कश्यप 1म/0.615, 15.30/- वृक्षारोपण 30 वर्षीय ह0 र0 का0 29.06.05 1422फ - उपजिलाधिकारी महोदय बेहट के आ0 दि0 21.01.15 के अनुसार भूमि प्रबधंक समिति अकबरपुर बांस का प्रस्ताव दि0 11.05.05 स्वीकृति दि0 09.06.05 को वृक्षारोपण हेतु 11 आवंटियो को पक्ष मे किया गया आवंटन वृक्षारोपण न करने के कारण निरस्त किया गया ह0 र0 का0 03.02.15	
	14/2	0.0610		
	37/2	0.6560		
	38/2	0.3380		
	39	0.1020		
	40	0.1950		
	41	0.2560		
	42	0.2560		
	43	0.2770		
	44	0.0820		
	45	0.3380		
	46	0.5120		
	48	1.3010		
योग	13	50.3560		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के चक ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वाद) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त अंकित मात्र अभिलेखकार्य है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवं सी.एस.सी.ई-गवर्नेन्स केन्द्र से नवीनतम की प्रमाणित प्रति प्राप्त की जा सकती है।
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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : आराजी जेवडी अह0 परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1425-1430 भाग : 1 खाता संख्या : 00018

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना / /	1	17.3020		
	2	0.0200		
	3	0.0200		
	4/2	0.0310		
	5म	0.0200		
	8	0.0920		
	9/2	0.0510		
	10	0.0410		
	11	0.0410		
	12	0.0820		
	13	0.0310		
	14/1	0.1540		
	15म	0.1130		
	21म	0.0730		
योग	14	18.0710		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : मस्तूपुर गढ अ. परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1426-1431 भाग : 1 खाता संख्या : 00010

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना / /	1 2/1 5/3 4 3	4.5680 0.5530 0.0510 0.0310 0.0610	1407फ हरियाली पटटे दार 14.11.97/21.11.97 क0 स0 नाम अवंटी पि0 का नाम जाति ख0 न0/ र0 लगान 1. गीता पु0 रामलाल झिवर 1 म / 0.415 7.60 2. प्रेम पु0 रामलाल झिवर 1 म / 0.415 7.60 3.सुलेमान पु0 यामीन लुहार मुस्लीम 1 म / 0.415 7.60 4. इरफान पु0 रक्खा लुहार मुस्लीम 1 म / 0.415 7.60 5. इकराम पु0 रक्खा लुहार मुस्लीम 1 म / 0.415 7.60 6.स्लीया पु0 तराचन्द जोगी 1 म / 0.415 7.60 7. चतरा पु0 रामलाल झिवर 1 म / 0.415 ह0 ले0 31.04.98	
योग	5	5.2640		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ हैं, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : शाहपुर बाँस अह0 परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1424-1429 भाग : 1 खाता संख्या : 00032

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना नदी / /	1/1	29.3170	1414फ-भू0प्र0स0 ग्राम शाहपुर बांस जिसमें ग्राम अलाऊद्दीनपुर बांस भी शामिल है का प्रस्ताव दि0 16.03.06 जो वृक्षारोपण हेतु छ: पात्र व्यक्ति को किया गया उपजिलाधिकारी महोदय बेहट के आ0 दि0 24.03.06 के अन्तगत स्वीकृत किया गया है। खतौनी के खाता कैफियत में इन्द्राज अंकित करें। आवंटियों का विवरण निम्न प्रकार है-- 1-श्रीमति शिक्षा देवी वि0 लखमीरा चमार ख0 न0 1/16/ 0.359, 1/33/0.153 कुल 2/0.512 ल0 12.60 2- मीनाक्षी पत्नी संदीप नि0 ग्राम चमार 1/29/0.512 ल0 12.60 3- दीपा पत्नी राजन चमार ख0 न0 1/30/0.512 ल0 12.60, 4- मनोज कुमार पु0 लखमीरा चमार ख0 न0 1/31/0.512ल0 12.60, 5- राजन पु0 लखमीरा नि0 ग्राम चमार ख0 न0 1/32/0.512 ल0 12.60 ह0 र0 का0 27.03.06 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 325/17-18 धारा विविध वृक्षारोपण आवंटन निरस्तीकरण सरकार बनाम शिक्षा देवी में आ० दि० 8.3.18 को आ० हुआ कि तह० बेहट की आख्या दि० 26.2.18 की पुष्टि करते हुय वृक्षारोपण आवंटन प्रस्ताव दि० 16.3.06 व स्वीकृति दि० 24.3.06 के द्वारा शिक्षा देवी पत्नी लखमीरा नि० शाहपुर बांस का ख०न० 1/16/0.359, 1/33/0.153 वृक्षारोपण हेतु आवंटित पटटा तत्काल प्रभाव से निरस्त करते हुये उक्त भूमि को राजस्व अभिलेखो में मूल नौय्यत में दर्ज होवे ह० र० का० 6.4.18 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 326/17-18 धारा विविध वृक्षारोपण आवंटन निरस्तीकरण सरकार बनाम राजन में आ० दि० 8.3.18 को आ० हुआ कि तह० बेहट की आख्या दि० 26.2.18 की पुष्टि करते हुय वृक्षारोपण आवंटन प्रस्ताव दि० 16.3.06 व स्वीकृति दि० 24.3.06 के द्वारा राजन पुत्र लखतीरा नि० शाहपुर बांस का ख०न० 1/32/0.512	
	2	0.0200		
	3	0.0310		
	4	0.2970		
	5	0.1130		
	6	0.0820		
	7	0.0100		
	8	0.1640		
	9	0.1940		
	10	0.4200		
	11	0.4410		
	12	0.2150		
	13	0.0100		
	14	0.5940		
	40	0.0720		
	41	2.5820		
	42	1.4650		
	43/1	0.1430		
	44/1	0.1020		
	46/2	0.0200		
	47	0.5430		
	48	0.1430		
	49/2	0.4200		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : अलग कौल उर्फ़ परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1424-1429 भाग : 1 खाता संख्या : 00018

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खाता संख्या	क्षेत्रफल (है.)	अहेत	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि।				
उमराव / /	1/1	21.2040	1414क - भू0 प्र0 समिति ग्राम शाहपुर बांस जिसमे ग्राम अलाउद्दीनपुर बला भी सम्मिलित है का प्रस्ताव दि0 16.03.06 जो कृषारोपण हेतु छः पात्र व्यक्तियों को किया गया उपजिलाधिकारी महोदय, बेहट के आदेश दि0 24.03.06 के अन्तर्गत स्वीकृत किया गया है खतौनी के खाता कैरिफार्म में
	2	0.0920	
	3	0.2360	
	4	0.0310	
	5	0.0200	इन्द्राज (टिप्पणी) अंकित करें। अवार्डियों का विवरण निम्न प्रकार है 6- एककट पुत्र इन्द दि0 ग्राम श्रेणी 16/1/0.512 ल0 12.60 ह0 प0 क0 27.03.06
	6	0.1640	
	14/2	0.2770	
	16	0.5940	मालकान एवं0 क0 1 के पेज सं0 137 के क0 4 पर छपा हुआ अन्देह किन है अ0 उपजिलाधिकारी बेहट के आ0 दि0 07.06.05 को भूमि प्रबन्धक समिति शाहपुर बांस के प्रस्ताव दि0 25.02.05 को किन पट्टे कृषारोपण हेतु स्वीकृत किये गये 1. खलील पुत्र अली अहमद वि0 ग्राम नई खा0 क0
	17	0.7790	
	18	0.4300	1/1/0.410 ल0 10.10/- 2.रमजान पुत्र खोजी हसन वि0 ग्राम नई खा0 क0 1/1/ 0.410 ल0 10.-10 3.कासिम पुत्र खेजी हसन वि0 ग्राम नई खा0 क0 1/1/0.410 ल0 10.10/- 4. जमान पुत्र इलाम वि0 ग्राम नई खा0 क0 17म/0.615
			ल0 10.10 5. इकबाल पुत्र इलाम वि0 ग्राम नई खा0 क0 18/0.410, 17म/0.164 कुल 2/0.574 ल0 15.30 6. हसन पुत्र फुद्दू वि0 ग्राम नई 1/1/0.410 ल0 1.10 ह0 प0 क0 07.06.05/04.03.13
			1425क- न्या0उपजिलाधिकारी बेहट वाद सं0 224/17-18 पक्षा विधि। कृषारोपण अवधान निरस्तीकरण प्रकाश, बनाम खुर्शीद वे आ0 दि0 5.4.18 को आ0 हुआ कि तह0 बेहट की आज्ञा दि0 26.2.18 की पूर्ति करते हुए कृषारोपण अवधान प्रस्ताव दि0 16.3.06 व स्वीकृति दि0 24.3.06 के द्वारा खुर्शीद पुत्र इन्द वि0 अलाउद्दीनपुर बांस का ख0न0 16/1/0.512 कृषारोपण हेतु अवंटित पट्टा तत्काल प्रभाव से निरस्त करते हुये उक्त भूमि को राजस्व अभिलेखों में पूर्व श्रेण्यक्त जमात श्रेणी 6-1ये दर्ज होने ह0 प0 क0 26.4.18
योग	10	23.8270		

कृपया उक्त खसरे की फ्रीमिटी (फाड़ (फटा) के बाद प्रति /विक्रय पत्र-नकल /बयनामा की) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: इस अभिलेख को अद्यतनता है उक्त विवरण प्रमाणक है, तथापि वास्तविक केस एवम् तीन दीवेकमाती केस में रहस्य की प्रतिलिपि पूर्ण रूप की जा सकती है।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : महमूदपुरमाफी अ0 परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1428-1433 भाग : 1 खाता संख्या : 00066

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	रकबा (है.)	अदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना / /	1	28.2560	1425फ- न्या.उपजिलाधिकारी बेहट वाद सं॰ 532/17-18 धारा विविध पुनरोपण अवटन मिस्तीकरण सरकार बनाम कृष्णा अदि में अ॰ दि॰ 20.4.18 को अ॰ हुआ कि तह॰ बेहट की भवाला दि॰ 7.3.18 की पुष्टि करते हुए कृषारोपण स्वीकृति दि॰ 1.3.87 के द्वारा कृष्णा पुत्र साटा नि॰ ग्राम का ख॰न॰ 55म/0.205 व कालू पुत्र साटा नि॰ ग्राम का ख॰न॰ 55म/0.205 व रिडीराम पुत्र अन्तू नि॰ ग्राम का ख॰न॰ 55म/0.205 व सन्तू पुत्र कालू नि॰ ग्राम का ख॰न॰ 55म/0.205 व धाक पुत्र रम्मी नि॰ ग्राम का ख॰न॰ 55म/0.205 व गिरधारी पुत्र चिरंजा नि॰ ग्राम का ख॰न॰ 56म/0.1.95 व अन्तू कालू नि॰ ग्राम का ख॰न॰ 60/1/0.337 व विजान पुत्र पीरिया नि॰ ग्राम का ख॰न॰ 51म/0.113 व नानकू पुत्र सोना नि॰ ग्राम का ख॰न॰ 68म/0.297 व मिठू पुत्र साटा नि॰ ग्राम का ख॰न॰ 51म/0.205 व राजमल पुत्र नानकू नि॰ ग्राम का ख॰न॰ 55म/0.205 व जेती पुत्र मनोहर नि॰ ग्राम का ख॰न॰ 47म/0.420 व प्रकाशी पुत्री शीत कृष्ण नि॰ ग्राम का ख॰न॰ 47म/0.430 कृषारोपण हेतु अवटित पट्टा उत्कल प्रभाव से निरस्त करते हुये उक्त भूमि को राजस्व अभिलेखों में मूल श्रेणियन में दर्ज होने ह॰ व॰ क॰ 1.5.18	
	2/3	0.0170		
	4	0.0270		
	6	0.0460		
	11/2	0.1540		
	13	0.0510		
	14	0.0170		
	15	0.0610		
	16/2	0.0100		
	17	0.9940		
	18/2	0.2150		
	31	0.0510		
	33	0.0920		
	35	0.2360		
	36/2	0.0610		
	37	0.2970		
	38	0.5740		
	39	0.1020		
	45/2म	0.1020		
	50/2	0.5740		
	52	0.1430		
	53	1.2900		
	54	0.4300		
	68	0.3970		
	80	0.0820		
	82	0.1840		

कृपया उक्त खसरे की प्रतिलिपि (भूगोंद (गाटा) के बाद गत /विक्रय /भू-नाता /नामान्तरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त अंकित तथ्य अद्यतनीय है, उक्त विवरण प्रमाणक है, तहसील कार्यालय केन्द्र मुख्य सी.एस./टी.एस.कार्यालय केन्द्र से उक्त की प्रमाणित प्रति प्राप्त की जा सकती है ।

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	83	1.2900
	56	0.4000
	2/1	0.0610
	3	0.0510
	5/1	0.0920
	8	0.0610
	9	0.2970
	10	0.1430
	32	0.1430
	20	0.2360
	34	0.1700
	36/1	0.2050
	45/1	0.2420
	6	0.0100
	7	0.0720
	49/1	0.0310
	58/3	0.1020
	66/0.	0.1020
	71/1	0.1000
योग	45	38.2710

मूलप्रत अन्य स्रोतों की तुलनित (प्रमाणित नकल) के साथ ही निवेदन एवं सत्यता जाचना चाहिये) इस पृष्ठ मोहर या सिग्नेचर नहीं

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : शाहपुर बाँस अह0 परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1424-1429 भाग : 1 खाता संख्या : 00032

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (है.)	ब्यौरा	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना नदी / /	1/1	29.3170	1414फ-भू0प्र0स0 ग्राम शाहपुर बांस जिसमें ग्राम अलाउद्दीनपुर बांस भी शामिल है का प्रस्ताव दि0 16.03.06 जो वृक्षारोपण हेतु छः पात्र व्यक्ति को किया गया उपजिलाधिकारी महोदय बेहट के आ0 दि0 24.03.06 के अन्तर्गत स्वीकृत किया गया है। खतौनी के खाता कैफियत में इन्द्राज अंकित करें। अबंटियों का विवरण निम्न प्रकार है– 1-श्रीमति शिक्षा देवी वि0 लक्ष्मीरा चमार ख0 न0 1/16/ 0.359, 1/33/0.153 कुल 2/0.512 त0 12.60 2-मीनाक्षी पत्नी संदीप वि0 ग्राम चमार 1/29/0.512 त0 12.60 3- वीरा पत्नी राजन चमार ख0 न0 1/30/0.512 त0 12.60, 4- मनोज कुमार पु0 लक्ष्मीरा चमार ख0 न0 1/31/0.512त0 12.60, 5- राजन पु0 लक्ष्मीरा वि0 ग्राम चमार ख0 न0 1/32/0.512 त0 12.60 ह0 त0 का0 27.03.06 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 325/17-18 धारा विविध वृक्षारोपण अबंटन निरस्तीकरण सरकार बनाम शिक्षा देवी में अ० दि० 8.3.18 को अ० हुआ कि तह० बेहट की आख्या दि० 26.2.18 की पुष्टि करते हुए वृक्षारोपण अबंटन प्रस्ताव दि० 16.3.06 व स्वीकृति दि० 24.3.06 के द्वारा शिक्षा देवी पत्नी लक्ष्मीरा नि० शाहपुर बांस का ख०नं० 1/16/0.359, 1/33/0.153 वृक्षारोपण हेतु अबंटित पट्टा तत्काल प्रभाव से निरस्त कराते हुये उक्त भूमि को राजस्व अभिलेखों में मूल नौयत में दर्ज होवे ह० र० का० 6.4.18 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 326/17-18 धारा विविध वृक्षारोपण अबंटन निरस्तीकरण सरकार बनाम राजन में अ० दि० 8.3.18 को अ० हुआ कि तह० बेहट की आख्या दि० 26.2.18 की पुष्टि करते हुए वृक्षारोपण अबंटन प्रस्ताव दि० 16.3.06 व स्वीकृति दि० 24.3.06 के द्वारा राजन पुत्र लखमीरा नि० शाहपुर बांस का ख०नं० 1/32/0.512 वृक्षारोपण हेतु अबंटित पट्टा तत्काल प्रभाव से निरस्त करते हुये उक्त भूमि को राजस्व अभिलेखों में मूल नौयत में दर्ज होवे ह० र० का० 6.4.18	
	2	0.0200		
	3	0.0310		
	4	0.2970		
	5	0.1130		
	6	0.0820		
	7	0.0100		
	8	0.1640		
	9	0.1940		
	10	0.4200		
	11	0.4410		
	12	0.2150		
	13	0.0100		
	14	0.5940		
	40	0.0720		
	41	2.5820		
	42	1.4650		
	43/1	0.1430		
	44/1	0.1020		
	46/2	0.0200		
	47	0.5430		
	48	0.1430		
	49/2	0.4200		

कृपया उक्त खाते की प्रस्थिति (भूखण्ड (गाटा) के बाद ग्रन्त /विलग /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: यह ऑनलाईन प्रमाणित है, उक्त विवरण आवश्यक है, तहसील कार्यालय, केन्द्र राज्य की एजेन्सियों/संस्थाओं केन्द्र से सत्यापन की प्रमाणित प्रति प्राप्त की जा सकती है ।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : अब्दुलालचपुर गढ़ परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1427-1432 भाग : 1 खाता संख्या : 00051

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (है.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना / / नि. ग्राम	1	73.0880		
	5/3	0.1020		
	6/3	0.2050		
	7/2	0.6970		
	8	0.1020		
	9	0.7070		
	42/3	0.2770		
	46	0.1640		
	47/3	0.5020		
	48/3.	0.3590		
	49/3	0.9530		
	50	0.2560		
	51	0.5740		
	41/1	0.0100		
	52	0.2050		
	53	0.4200		
	54	1.4240		
	55/1.	0.0710		
	57	1.0750		
	58/2	0.2050		
	60	0.1020		
	66/2.	0.0920		
	58/3	0.9120		
	73	0.0200		
	49/4	0.2050		
योग	25	82.7270		

कृपया उक्त खसरे की स्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : नित्यानन्दपुर अह परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1424-1429 भाग : 1 खाता संख्या : 00022

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जमना / /	1 2 3/1 4/1 3/2	7.8260 0.0310 0.1430 0.0100 0.2100	1406फ-भू.प्र.स.सैद मौ.पुर गढ दि.14.11.97 स्वी कृति दि.21.11.97 परगनाधिकारी महो.द्वारा हरियाली पट्टे के रूप मे दी गई क्र. नाम जा. ख.न./रकबा ला. नौ. 1/20 हुक्म पु.नरपत झीवर 1म/.415 7.60 हरि.प 2/21 संदीप पु.नरपत झीवर 1म/.415 7.60 हरि.प. 3/22 निर्मल पु.नरपत झीवर 1म/0.415 ल0 7.60/- हरि0 प0 4/23प्रिसपाल पु.रामसिंह झीवर 1म/.415 7.60 ह.प 7/26 सकट् पु.बल्लू झीवर 1म/.415 7.60 हरि.प. 8/27 किरण पु.ताराचन्द जोगी 1म/.415 7.60 हरि.प 9/28 पप्पू पु.बाबू गुर्जर 1म/.415 7.60 ह.प. 10/29 सीद् पु.ज्ञानेन्द्र 1म/.415 मा.7.60 हरि.प. ह.ले./31.8.98 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 193/17-18 धारा विविध वृक्षारोपण आवंटन निरस्तीकरण सरकार बनाम प्रिसपाल में आ० दि० 8.3.18 को आ० हुआ कि तह० बेहट की आख्या दि० 23.2.18 की पुष्टि करते हुय वृक्षारोपण आवंटन प्रस्ताव दि० 14.11.97 व स्वीकृति दि० 21.11.97 के द्वारा प्रिसंपाल पुत्र रामसिंह नि० नित्यानन्दपुर का ख०न० 1म/0.415 वृक्षारोपण हेतु आवंटित पटटा तत्काल प्रभाव से निरस्त करते हुये उक्त भूमि को राजस्व अभिलेखो में मूल नौय्यत में दर्ज होवे ह० र० का० 7.4.18 1425फ- न्या०उपजिलाधिकारी बेहट वाद सं० 200/17-18 धारा विविध वृक्षारोपण आवंटन निरस्तीकरण सरकार बनाम पप्पू में आ० दि० 8.3.18 को आ० हुआ कि तह० बेहट की आख्या दि० 23.2.18 की पुष्टि करते हुय	

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण बही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र मे उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : हैदरी पुरगद्दा मठ | परगना : (फैजाबाद) | तहसील : बेहट | जनपद : सहारनपुर | फसली वर्ष : 1423-1428 | भाग : 1 | खाता संख्या : 00053

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (है.)	अदेय	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलाप्लव भूमि।				
जमना / /	1म	24.6490	1406फ- पु0उ0स0 ग्राम हैदरीपुर गद्दा के प्रस्ताव दि0 14.01.90 बिलाकी स्वीकृति उपजिलाधिकारी नकोदर द्वारा दि0 21.11.97 को हरियाली पट्टे के रूप में प्रदान की गई। 1. रिसपाल पु0 चैतू, चमार, 1म /0.415, त0 7.60। 2.जेअपाल पु0 चौहल, चमार, 1म /0.415, त0 7.60। 3. जगपा पु0भिकू, चमार, 1म /0.415, त0 7.60। 4.उपाल पु0 फूल सिंह, चमार, 1म /0.415, त0 7.60। 5. किसन पु0रिखा, चमार, 1म /0.415, त0 7.60। 6. मितवी पु0 जोती, चमार, 1म /0.415, त0 7.60। 7. मिसल पु0 चूहड़, चमार, 1म /0.415, त0 7.60। 8. चन्दराम पु0 चूहड़, चमार, 1म /0.415, त0 7.60। 9. राजवीर पु0मोरेचन्द, चमार, 1म /0.415, त0 7.60। 10. प्रेम पु0 हमेरचन्द, चमार, 1म /0.415, त0 7.60। 11. सहबलीह पु0 बिजोरी, चमार, 1म /0.415, त0 7.60। 12. रमन सिंह पु0 चैतू, चमार, 1म /0.415, त0 7.60। 13. ईक पु0 भिकू, चमार, 1म /0.415, त0 7.60। 14. भरत पु0 गरा, चमार, 1म /0.415, त0 7.60। 15. गुलब पु0 चौहल, चमार, 1म /0.415, त0 7.60। 16.जगन पु0 बिजोरी, चमार, 1म /0.415, त0 7.60। 17. अमर पु0 हरया, चमार, 1म /0.415, त0 7.60। 18. सोभत पु0 चूहड़, चमार, 1म /0.415, त0 7.60। ह0 से0 03.08.98	
	2/2	0.0410		
	4/2	0.0320		
	5/2	0.0100		
	7/2	0.0100		
	9/2	0.0310		
	10	0.0100		
	11	0.2050		
	12	0.0720		
	13	0.1020		
	14/2	0.3070		
	15	0.1020		
	16	0.0310		
	17	1.5360		
	18	0.2770		
	19	0.3590		
	20	0.0310		
	21	1.1160		
	22	0.0920		
	23/2	1.1260		
	27/2	0.0720		
	28/2	0.2560		
	5/1	0.0410		
योग	23	30.5080		

कृपया उक्त खाते की प्रतिलिपि (फर्द/नकल) के लिए ग्राम/विकास खण्ड-तहसील/जनपद चुनें) हेतु खाता संख्या पर क्लिक करें

Disclaimer: उक्त अभिलेख मात्र जानकारी हेतु, एवं विधिक प्रयोजन हेतु, तहसील कम्प्यूटर केन्द्र तथा भू.प्र.सू.नियोजनालयों केन्द्र से प्रमाणित प्रति प्राप्त की जा सकती है।

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BHULEKH
Uttar Pradesh

खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : शेरपुर पेली परगना : (फैजाबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1424-1429 भाग : 1 खाता संख्या : 00330

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
नदी / /	3म	2.2950		
	7/1	0.0820		
	8/1	5.8280		
	13/2	0.2660		
	15	0.2250		
	17	0.0820		
	18	0.2150		
	20/1	0.7680		
	21	0.4000		
	22	5.4590		
	24म	1.5230		
	109	0.0720		
	125/2	0.9530		
	211/1	0.0610		
	223/1	0.4000		
	226	0.9220		
	261म	4.5480		
	262	3.0120		
	272/2म	0.4710		
	361	0.0410		
	374/2	0.1020		
	375/2	1.5360		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण बही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त अंकित मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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	376	2.0290
	377/4	4.5780
	378/2	4.8660
	379/2	6.4590
	381/2	0.1020
	403	0.6860
	404/1	1.7930
	405	1.8030
	406/1	0.6040
	416/2	1.3930
	421/1	1.0960
	422/2	0.8710
	423/2	0.9520
	424/2	0.5120
	428	1.0750
	429	0.9010
	430	0.0510
	431	1.9710
	434	0.1950
	444/2	0.5630
	447/2	0.1840
	460/3	2.3260
	473/2	0.2050
	474	0.0510
	110/1	0.0720
	392/2	0.0720
योग	48	64.6710

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है।

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Uttar Pradesh

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खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : कालूवालाप.पुर परगना : (मुजफ्फराबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1428-1433 भाग : 1 खाता संख्या : 00997

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	अभेद	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
नदी / /	92	0.1540		
	93/1	0.7170		
	94	1.1370		
	95/1	0.0720		
	116/1	1.4850		
	117/1	1.1060		
	118/1	0.8190		
	119/1	3.4620		
	120/1	4.1690		
	192/1	5.1010		
	193/1	3.6570		
	193/3	0.3480		
	194/1	0.2360		
	194/2	0.2760		
	195/1	0.4000		
	195/2	0.1530		
	196	0.7070		
	197/2	0.1940		
	223/2	0.4100		
	225/1	3.8400		
	226/2	0.2460		
	234	1.1670		
	255/1	3.6060		
	264/2	0.3480		
	273/1	0.3070		
	274	0.3380		
		0.2350		
		0.1280		
		1.3110		
		0.2660		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण बही) हेतु खसरा संख्या पर क्लिक करें

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Uttar Pradesh

खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : कालूखालाप.पुर परगना : (मुजफ्फराबाद) तहसील : बेहट जनपद : सहारनपुर फसली वर्ष : 1428-1433 भाग : 1 खाता संख्या : 00993

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
श्रेणी : 5-3-ख / कृषि योग्य बंजर - ऐसे वन जिसमें अन्यप्रकर के वृक्ष,झाड़ियों के झुन्ड,झाड़ियाँ इत्यादि हों।				
झाडियो का जंगल / /	7/5/1	1.4340	1416फ - न्या0 उपजिलाधिकारी बेहट वाद सं0 02/03-04 धारा 161 ज0 वि0 अ0 स्कमणी बनाम ग्राम सभा नि0 दि0 14.07.04 को आ0 हुआ कि ख0 न0 120/3/2.059, 184/ 17/0.143, 273/2/0.113, 275/1/0.246, 184/18/0.103 कुल 2.664 से श्रीमति स्कमणी गुप्ता पत्नी सोमप्रकाश गुप्ता नि0 ग्राम का नाम निरस्त करते हुए उक्त ख0 नं0 को श्रेणी 5 ख (2) ग्राम समाज में निहित किया जाये वख0 न0 530/1/3.380 श्रेणी 5 ख (2) ग्राम समाज की निहित भूमि का नाम निरस्त करते हुए उसके स्थान परश्रीमति स्कमणी गुप्ता पत्नी सोमप्रकाश गुप्ता नि0 ग्राम का नाम दर्ज होवे ह0 र0 का0 21.08.08	
	8/7/1म	0.0990		
	9/9	0.2050		
	10/7	0.3080		
	13/1/1	0.0510		
	26/1/1म	5.3570		
	28/1/1म	4.0350		
	30/1/1	1.7630		
	35/1/1	0.4100		
	38/6/1	0.0510		
	40/9/1	0.2780		
	71/1/1	2.1310		
	71/5	0.2050		
	71/8	0.3070		
	71/9	0.5120		
	73/1/1	0.5630		
	79/1/1	2.8890		
	110/2/4	2.5310		
	110/14	0.2770		
	110/15	0.2050		
	110/16	0.2050		
	111/1	0.7270		
	112/1/2	1.9860		
	113/1/1	0.1740		
	113/2/2	0.0210		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अकलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/लोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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	118/2	3.2680			
	124/1/1	0.3380			
	124/10/3	0.2770			
	125/4	0.6660			
	394/1म	1.1160			
	394/6	0.2250			
	405/1/1	2.0790			
	443/9	0.2050			
	517/1/1	0.3790			
	517/10म	0.5840			
	530/1म	2.4370			
	530/15	0.2460			
	530/18	0.2770			
	967/6	0.3380			
	968/3/1	3.0020			
	394/8	0.4510			
	120/3	2.0590			
	184/17.	0.1430			
	273/2.	0.1130			
	275/1.	0.2460			
	184/8.	0.1030			
	394/1म	0.4100			
योग	48	45.7370			

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करें

Disclaimer: उक्त आँकड़े मात्र अवलोकनार्थ है, उक्त विवरण अद्यतन है, तहसील कम्प्यूटर केन्द्र एवम सी.एस.सी/दोकवाणी केन्द्र से उद्धरण की प्रमाणित प्रति प्राप्त की जा सकती है ।

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संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा आहूत बैठक दिनांक 20.06.2020 में जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रो का सर्वेक्षण कर क्षेत्रो को पुर्नगठित करने के निर्देश दिये गये थे। निर्देशों के अनुपालन मे तहसील बेहट के ग्राम शेरपुर पेलो के गाटा संख्या–403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431 रकबा–6.475है0 का सर्वेक्षण दिनांक 18.09.2020 को क्षेत्रीय लेखपाल श्री अनुपम चौहान द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड के खसरा संख्या–403, 404, 405, 406, 429 व 431 में कार्यालय अभिलेखों के अनुसार दिनांक 18.11.2015 के बाद कोई खनन पट्टा संचालित नही रहा है तथा शेष नये नम्बर सम्मलित किये गये है। उक्त प्रस्तावित क्षेत्र को नियमानुसार सम्बन्धित विभागो से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैः–

Name of Pillars	Latitude	Longitude
A	30^0 16' 35.16"	77^0 39' 44.44"
B	30^0 16'32.34"	77^0 39' 51.41"
C	30^0 16' 21.11"	77^0 39' 36.26"
D	30^0 16'22.11"	77^0 39' 34.41"

आख्या आगेम कार्यवाही हेतु सादर प्रेषित।

(अनुपम चौहान)
लेखपाल ग्राम
शेरपुर पेलो

(शिवकुमार)
सर्वेदक
खनन विभाग
सहारनपुर।

(मो0 एजाज)
खान निरीक्षक
सहारनपुर।

16.10.20

महोदय,
कार्यालय 570/ख0 अ0प0/2021 दिनांक 18-11-2021 के अनुपालन में आख्या अधोहस्ताक्षर सादर प्रेषित।

तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा आहूत बैठक दिनांक 20.06.2020 में जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निद्रेशों के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम कालूवाला पहाडीपुर के गाटा संख्या–119म, 120म, 192म, 193म, 125म रकबा–14.900है0 का सर्वेक्षण दिनांक 15.01.2021 व 16.01.2021 को क्षेत्रीय लेखपाल श्री विजय कुमार सिंह पुण्डीर द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड को नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 12' 08.76"**	**77^0 45' 37.77"**
B	**30^0 12' 06.03"**	**77^0 45' 42.25"**
C	**30^0 12' 00.52"**	**77^0 45' 38.93"**
D	**30^0 11' 40.91"**	**77^0 45' 32.39"**
E	**30^0 11' 41.72"**	**77^0 45' 25.51"**
F	**30^0 12' 02.80"**	**77^0 45' 33.06"**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(विजय कुमार सिंह पुण्डीर)
लेखपाल ग्राम
कालूवाला पहाडीपुर

(शिवकुमार)
सर्वेक्षक
खनन विभाग
सहारनपुर।

(मो0 एजाज)
खान निरीक्षक
सहारनपुर।

(आशीष कुमार)
खान अधिकारी
सहारनपुर

खतौनी लिपि
वन विभाग से अनापत्ति
प्रमाण पत्र हेतु पत्र
प्रस्तुत करें।
15/3/21

पत्रांक 570/खा.अनु./2021
दिनांक 18/11/21
अनुपालन में आख्या उपरोक्तानुसार
सादर प्रेषित।
18/11/21
तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम अकबरपुर बासं अहतमाल के गाटा संख्या–1म कुल रकबा–17.900 है0 का सर्वेक्षण दिनांक 05.02.2021 को क्षेत्रीय लेखपाल श्री बिजेन्द्र राणा द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	30° 16' 27.80"	77° 32' 46.96"
B	30° 16' 34.01"	77° 32' 47.53"
C	30° 16' 42.58"	77° 32' 53.94"
D	30° 16' 43.84"	77° 32' 58.19"
E	30° 16' 50.96"	77° 32' 47.76"
F	30° 16' 46.69"	77° 32' 43.28"
G	30° 16' 39.98"	77° 32' 41.04"
H	30° 16' 36.08"	77° 32' 33.91"

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(विजेन्द्र राणा)
लेखपाल ग्राम
अकबरपुर बासं अहतमाल

(शिवकुमार)
सर्वेक्षक
खनन विभाग
सहारनपुर।

(मो0 एजाज)
खान निरीक्षक
सहारनपुर।

(आशीष कुमार)
खान अधिकारी
सहारनपुर

महोदय,

पत्रांक 570/ख0 आज0/2021 द्वारा दिनांक 18-11-2021 के अनुपालन में आख्या उपरोक्तानुसार सादर प्रेषित।

तहसीलदार 12/11
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम आराजी जेवडी अहतमाल व मसूदपुर गढ़ अहतमाल के गाटा संख्या–1म व गाटा संख्या–1म कुल रकबा –13.800 है0 का सर्वेक्षण दिनांक 10.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज़ (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 15' 51.33"**	**77^0 32' 21.84"**
B	**30^0 15' 58.45"**	**77^0 32' 08.63"**
C	**30^0 15' 45.65"**	**77^0 32' 03.15"**
D	**30^0 15' 41.84"**	**77^0 32' 13.01"**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(रियासत अली)	(शिवकुमार)	(मो0 एजाज)	(आशीष कुमार)
लेखपाल ग्राम	सर्वेक्षक	खान निरीक्षक	खान अधिकारी
आराजी जेवडी अहतमाल	खनन विभाग	सहारनपुर।	सहारनपुर
व महमूदपुर गढ़	सहारनपुर।		
अहतमाल			

महोदय,
कार्यालय पत्रांक 570/ज0अनु0/2021 दिनांक 18-1-2021 के अनुपालन में आख्या अवलोकनार्थ सादर प्रेषित।

तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम शाहपुरबासं अहतमाल के गाटा संख्या–1म कुल रकबा–15.600 है0 का सर्वेक्षण दिनांक 06.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	30^0 16' 27.75"	77^0 32' 46.14"
B	30^0 16' 16.01"	77^0 32' 38.50"
C	30^0 16' 20.43"	77^0 32' 28.70"
D	30^0 16' 35.53"	77^0 32' 33.20"

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(रियासत अली)
लेखपाल ग्राम
साहबपुर बासं अहतमाल

(शिवकुमार)
सर्वेक्षक
खनन विभाग
सहारनपुर।

(मौ0 एजाज)
खान निरीक्षक
सहारनपुर।

(आशीष कुमार)
खान अधिकारी
सहारनपुर

महोदय,
पत्रांक 570/जि0 खनि0/2021 द्वारा
दिनांक 18-11-2021 के अनुपालन में आख्या
उपरोक्तानुसार सादर प्रेषित।

तहसीलदार 22/12/21

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम अलाउद्दीनपुर बासं अहतमाल के गाटा संख्या–1म कुल रकबा – 9.580 है0 का सर्वेक्षण दिनांक 08.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 16' 14.92"**	**77^0 32' 39.76"**
B	**30^0 16' 17.99"**	**77^0 32' 32.74"**
C	**30^0 16' 08.09"**	**77^0 32' 23.84"**
D	**30^0 16' 02.92"**	**77^0 32' 31.72"**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(रियासत अली)	(शिवकुमार)	(मो0 एजाज)	(आशीष कुमार)
लेखपाल ग्राम	सर्वेक्षक	खान निरीक्षक	खान अधिकारी
अलाउदीन पुर बासं	खनन विभाग	सहारनपुर।	सहारनपुर
	सहारनपुर।		

महोदय,

पत्रांक 570/ख0अनु0/2021 दिनांक 18-11-2021 के अनुपालन में आख्या अनुसार सादर प्रेषित।

तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम महमूदपुर नंगली अहतमाल के गाटा संख्या–1म कुल रकबा –15.700 है0 का सर्वेक्षण दिनांक 09.02.2021 को क्षेत्रीय लेखपाल श्री रियासत अली द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	30^0 16' 09.98"	77^0 32' 30.74"
B	30^0 16' 10.84"	77^0 32' 18.84"
C	30^0 16' 00.40"	77^0 32' 11.56"
D	30^0 15' 51.70"	77^0 32' 23.64"

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(रियासत अली)
लेखपाल ग्राम
महमूदपुर नंगली
अहतमाल

(शिवकुमार)
सर्वेक्षक
खनन विभाग
सहारनपुर।

(मो0 एजाज)
खान निरीक्षक
सहारनपुर।

(आशीष कुमार)
खान अधिकारी
सहारनपुर

महोदय,
पत्रांक 570/ख0अनु0/2021 दि0
दिनांक 18-11-2021 के अनुपालन में आख्या
अग्रेषित सादर प्रेषित।

तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम शहजादपुर बासं के गाटा संख्या–1म कुल रकबा–13.000 है0 का सर्वेक्षण दिनांक 12.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 15' 24.84"**	**77^0 31' 57.01"**
B	**30^0 15' 12.32"**	**77^0 31' 47.88"**
C	**30^0 15' 16.91"**	**77^0 31' 36.94"**
D	**30^0 15' 28.43"**	**77^0 31' 48.83"**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(अभिषेक यादव)	(शिवकुमार)	(मो0 एजाज)	(आशीष कुमार)
लेखपाल ग्राम	सर्वेक्षक	खान निरीक्षक	खान अधिकारी
शहजादपुर बासं	खनन विभाग	सहारनपुर।	सहारनपुर
	सहारनपुर।		

महोदय,
पत्रांक 570/उप0 अनु0/2021 द्वारा दिनांक 18-11-2021 के अनुपालन में आख्या उपरोक्तानुसार सादर प्रेषित।

तहसीलदार
बेहट

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशो के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम अबुतालिबपुर गढ अहतमाल के गाटा संख्या–1म कुल रकबा–37.000 है0 का सर्वेक्षण दिनांक 12.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 14' 41.78''**	**77^0 31' 38.30''**
B	**30^0 14' 49.46''**	**77^0 31' 21.34''**
C	**30^0 15' 16.20''**	**77^0 31' 36.25''**
D	**30^0 15' 11.96''**	**77^0 31' 46.05''**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(अभिषेक यादव)	(शिवकुमार)	(मो0 एजाज)	(आशीष कुमार)
लेखपाल ग्राम	सर्वेक्षक	खान निरीक्षक	खान अधिकारी
अबुतालिबपुरगढ	खनन विभाग	सहारनपुर।	सहारनपुर
अहतमाल	सहारनपुर।		

महोदय,
पत्रांक 570/GD-320/2021 दिनांक 10-11-2021 के अनुपालन में आख्या अग्रेषणार्थ सादर प्रेषित।

तहसीलदार

संयुक्त सर्वेक्षण आख्या

महोदय,

कृपया अपर जिलाधिकारी (वि0/रा0) सहारनपुर द्वारा दिनांक 02.02.2021 को जनपद सहारनपुर की जिला सर्वेक्षण रिपोर्ट में दिये गये व अन्य बालू, बजरी, बोल्डर (मिश्रित अवस्था में) क्षेत्रों का सर्वेक्षण कर क्षेत्रों को पुर्नगठित करने के निर्देश दिये गये है निर्देशों के अनुपालन में रिक्त क्षेत्र तहसील बेहट के ग्राम नित्यानन्दपुर अहतमाल व सैद मौहम्दपुर गढ अहतमाल के गाटा संख्या–1म व गाटा संख्या 1 म कुल रकबा–17.700 है0 का सर्वेक्षण दिनांक 18.02.2021 को क्षेत्रीय लेखपाल श्री अभिषेक यादव द्वारा बताए गए सन्दर्भ बिन्दु से मशीन द्वारा सर्वेक्षण कर पुर्नगठित किया गया। सर्वेक्षण क्षेत्र के कोर्नर के जियो कोर्डिनेट्स लिये गये हैं। क्षेत्र में उपखनिज (बालू, बजरी, बोल्डर) मिश्रित अवस्था में पर्याप्त मात्रा में उपलब्ध है। उक्त प्रस्तावित खण्ड नियमानुसार सम्बन्धित विभागों से अनापत्ति प्राप्त होने के उपरान्त परिहार हेतु उपयुक्त होगा। क्षेत्र के कोर्डिनेट्स निम्नवत् हैं:–

Name of Pillars	Latitude	Longitude
A	**30^0 15' 25.77''**	**77^0 31' 57.79''**
B	**30^0 15' 41.32''**	**77^0 32' 12.89''**
C	**30^0 15' 46.16''**	**77^0 32' 00.64''**
D	**30^0 15' 28.87''**	**77^0 31' 50.13''**

आख्या अग्रिम कार्यवाही हेतु सादर प्रेषित।

(अभिषेक यादव)
लेखपाल ग्राम
नित्यानन्दपुर अहतमाल
सैद मौहम्दपुर गढ
अहतमाल

(शिवकुमार)
सर्वेक्षक
खनन विभाग
सहारनपुर।

(मो0 एजाज)
खान निरीक्षक
सहारनपुर।

(आशीष कुमार)
खान अधिकारी
सहारनपुर

महोदय,
पत्रांक 570/80 उप0/2021 तद्
दिनांक 18-11-2021 के अनुपालन में आख्या
उपरोक्तानुसार सादर प्रेषित)

प्रेषक,

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड,
सहारनपुर।

प्रेषित,

जिलाधिकारी,
सहारनपुर।

पत्रांकः 2941 /सिंनिखस/आख्या/ दिनांक 03 –12–2021

विषयः जनपद सहारनपुर के रिक्त 10 क्षेत्रों को परिहार पर स्वीकृत करने से पूर्व, जिला सर्वेक्षण रिपोर्ट संशोधन/संयोजन (नोटिफिकेशन) हेतु अनापत्ति प्रमाण पत्र के सम्बन्ध में।

सन्दर्भः आपका पत्रांकः 569/ख0अनु0/2021–22/दिनांक 18.11.2021

महोदय,

उपरोक्त विषयक सन्दर्भित पत्र के सम्बन्ध में अवगत कराना है कि सन्दर्भित पत्र में दर्शायी गयी आवेदित 10 क्षेत्रों के सम्बन्ध में आख्या की वांछना की गयी है। आख्या संलग्न कर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्नकः– उपरोक्तानुसार।

भवदीय,

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड,
सहारनपुर।

पत्रांकः 2941 /सिंनिखस/आख्या/तदिनांक –12–2021

1– प्रतिलिपि खान अधिकारी, सहारनपुर को संलग्न कर सूचनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु प्रेषित।

2– प्रतिलिपि अधिशासी अभियन्ता, अपर खण्ड पूर्वी यमुना नहर, सहारनपुर को उनके पत्रांकः 732/अखपूयनस/दिनांक 01.12.2021 के क्रम में सूचनार्थ प्रेषित है।

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड,
सहारनपुर।

जनपद सहारनपुर में रिक्त 10 आवेदित क्षेत्रों का विवरण से सम्बन्धित तालिका।

क्र0 सं0	खनन क्षेत्र का नाम	आवेदित क्षेत्र का विवरण			भू–निर्देशांक		तटबन्धों के सम्बन्ध में खण्ड द्वारा जारी आख्या
		ग्राम	गाटा संख्या	क्षेत्र (हैक्टेयर में)			
1	2	3	4	5	6		7
1	अकबरपुर बांस	अकबरपुर बांस	1म	17.900	N	30°16'43.84''	कोई तटबन्ध नही है।
					E	77°32'58.19''	
2	आराजी जेवडी अहतमाल व महमूदपुर गढ अहतमाल	आराजी जेवडी अहतमाल व महमूदपुर गढ अहतमाल	1म व 1म	13.800	N	30°15'51.33''	कोई तटबन्ध नही है।
					E	77°32'21.84''	
3	शहजादपुर अहतमाल	शहजादपुर अहतमाल	1म	13.000	N	30°15'28.43''	कोई तटबन्ध नही है।
					E	77°31'48.83''	
4	अलाउदीनपुर बांस अहतमाल	अलाउदीनपुर बांस अहतमाल	1म	9.580	N	30°16'14.92''	कोई तटबन्ध नही है।
					E	77°32'39.76''	
5	महमूदपुर नगली अहतमाल	महमूदपुर नगली अहतमाल	1म	15.700	N	30°16'09.98''	कोई तटबन्ध नही है।
					E	77°32'30.74''	
6	शाहपुर बांस अहतमाल	शाहपुर बांस अहतमाल	1म	15.600	N	30°16'27.75''	कोई तटबन्ध नही है।
					E	77°32'46.14''	
7	अबुतालिबपुर गढ अहतमाल	अबुतालिबपुर गढ अहतमाल	1म	37.000	N	30°15'11.96''	लगभग 2.00 किमी0 से अधिक।
					E	77°31'46.05''	
8	नित्यानन्दपुर अहतमाल व सैद मौहमतदपुर गढ अहतमाल	नित्यानन्दपुर अहतमाल व सैद मौहमतदपुर गढ अहतमाल	1म व 1म	17.700	N	30°15'41.32''	कोई तटबन्ध नही है।
					E	77°32'12.89''	
9	शेरपुर पेलों	शेरपुर पेलों	403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431	6.475	N	30°16'35.16''	कोई तटबन्ध नही है।
					E	77°39'44.44''	
10	कालूवाला पहाडीपुर	कालूवाला पहाडीपुर	119म, 120म, 192म, 193म, व 125म	15.900	N	30°12'08.76''	कोई तटबन्ध नही है।
					E	77°45'37.77''	

टिप्पणीः– उपरोक्त 10 क्षेत्रों का निरीक्षण करने पर पाया गया कि इनके आस–पास कोई तालाब नही है।

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड,
सहारनपुर।

कार्यालय प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग, सहारनपुर।
पत्रांक 1126/14–1 दिनांक, सहारनपुर 6-9 2021

सेवा में

जिलाधिकारी,
सहारनपुर । (खनन विभाग)

विषय– जनपद सहारनपुर के पुर्नगठित खनन पट्टा क्षेत्र के सम्बन्ध में अनापत्ति प्रमाण–पत्र उपलब्ध कराये जाने के सम्बन्ध में ।

सन्दर्भ– आपका पत्रांक 6070 / खo नि0 / 2020–21, दिनांक–09.03.2021

महोदय,

आपके उक्त संदर्भित पत्र दिनांक 09.03.2021 द्वारा निम्नांकित गाटा संख्या जो इस वन प्रभाग की बेहट रेंज के अन्तर्गत आता है, के सम्बन्ध में विषयांकित कम में अनापत्ति निर्गत करने की अपेक्षा की गयी है:–

क्र0 सं0	तहसील का नाम	स्थल का नाम	गाटा संख्या	क्षेत्रफल हे0 में	खनन पट्टों के स्थल की जियोकोर्डिनेटस	हरियाणा राज्य के निकटतम कलेसर राष्ट्रीय उद्यान से दूरी कि0मी0में	उ0प्र0 के निकटतम आरक्षित वन क्षेत्र (हाथी रिर्जव)मगनपुरा मुनारा सं0 908 से दूरीकिमी0 में
1	2	3	4	5	6	7	8
1	बेहट	अकबरपुर बांस अहतमाल	1म	17.900	30 16 43.84 77 32 58.19	4.37	9.03
2	बेहट	आरजीजेवडी अहतमाल व महमूदपुर गढ अहतमाल	1म व 1म	13.800	30 15 51.33 77 32 21.84	6.31	10.85
3	बेहट	शहजादपुर बांस अहतमाल	1म	13.00	30 15 28.43 77 31 48.83	7.34	11.94
4	बेहट	अलाउदीनपुर बांस अहतमाल	1म	9.580	30 16 14.92 77 32 39.76	5.35	9.94
5	बेहट	महमूदपुर नगली अहतमाल	1म	15.700	30 16 09.98 77 32 30.74	5.67	10.28
6	बेहट	शाहपुर बांस अहतमाल	1म	15.600	30 16 27.75 77 32 46.14	5.00	9.60
7	बेहट	अबुतालिबपुर गढ अहतमाल	1म	37.00	30 15 11.96 77 31 46.05	7.82	12.40
8	बेहट	नित्यानन्दपुर अहतमाल व सैदनोहम्मदपुर गढ अह0	1म व 1म	17.700	30 15 41.32 77 32 12.89	6.70	11.24

उक्त कम में इस कार्यालय की पत्र सं0 3237 / 14–1, दिनांक–16.3.2021 द्वारा क्षेत्रीय वन अधिकारी, बेहट से जांच आख्या मांगी गयी । प्रकरण में क्षेत्रीय वन अधिकारी, बेहट द्वारा अपने पत्र सं0 260 / 14–1, दि0 26.04.20 द्वारा जांच आख्या निम्न प्रकार प्रेषित की गयी है।

अतः खनन हेतु प्रस्तावित क्षेत्र राजाजी टाइगर रिर्जव के ईको सेन्सिटिव जोन के 10 कि0मी0 रेडियस से अधिक दूरी पर तथा आरक्षित वन क्षेत्र से 100 मी0 से अधिक दूरी पर स्थित है, इसलिये शासनादेश सं0 1483(3) / 14–2–08–65 / 2004–टी0सी0–03, दिनांक 04.06.2008 में निहित प्राविधानों के अन्तर्गत अनापत्ति निर्गत करने हेतु क्षेत्रीय वन अधिकारी, बेहट द्वारा संस्तुति की गयी है।

क्षेत्रीय वन अधिकारी, बेहट द्वारा की गयी संस्तुति के आधार पर उक्त प्रकरण में निम्न शर्तो के आधार पर अनापत्ति निर्गत की जाती है।

1–बाढ के कारण इकठ्ठा हुये बालू को हटाने से पूर्व सम्बन्धित क्षेत्र की सीमाबन्दी वन विभाग, राजस्व विभाग तथा खनन विभाग के सक्षम अधिकारी / कर्मचारी की उपस्थिति में करना होगा ।

2–उक्त खसरा नं0 में प्रत्येक कोने पर पक्की चिनाई कर सीमा स्तम्भ लगाये जायें तथा प्रत्येक स्तम्भ पर जी0पी0एस0रीडिंग अंकित किये जायेगें ।

3–खसरा क्षेत्र से अतिरिक्त किसी भी वन क्षेत्र से अवैध खनन नहीं किया जायेगा तथा अन्य किसी भी व्यक्ति द्वारा अवैध खनन किये जाने की सूचना क्षेत्रीय वन अधिकारी को देनी होगी ।

4–माल निकासी सूर्योदय से पूर्व तथा सूर्यास्त के पश्चात नहीं की जायेगी ।

5–खनन स्थल के आसपास स्थित वृक्षों एंव वन्य जीवों को कोई हानि नहीं पहुंचायी जायेगी ।

6–वन संरक्षण अधिनियम 1980 तथा रिट याचिका संख्या 202/1995 टी0एन0गोडावर्मन थिरूमलकपाद बनाम भारत संघ एंव अन्य में मा0 सर्वोच्च न्यायालय के आदेश दिनाकं 12.12.1996 एंव इसके उपरान्त मा0 न्यायालय के अन्य आदेशों का कोई उल्लंघन नहीं किया जायेगा ।

7–खनन हेतु प्रयुक्त क्षेत्र अथवा न्यूनतम 01 एकड क्षेत्रफल में स्थानीय प्रजातियों के 200 फलदार/छायादार पौधों का रोपण,सिंचाई एंव फैसिंग के साथ निजी श्रोत सै किया जायेगा । उक्त शर्तों के अनुपालन कराने की जिम्मेदारी खान अधिकारी की होगी जिसकी सूचना/अनुपालन आख्या उनके क्षरा इस वन प्रभाग को उपलब्ध कराई जायेगी ।

8–उक्त शर्तो का अनुपालन सुनिश्चित न किये जाने की स्थिति में अनापत्ति स्वतः ही निरस्त समझी जायेगी ।

भवदीय

(आई0सी0 सिंह)
प्रभागीय निदेशक
सामाजिक वानिकी प्रभाग
सहारनपुर

संख्याः / दिनाकिंत ।

प्रतिलिपि क्षेत्रीय वन अधिकारी, बेहट को सूचनार्थ एंव आवश्यक कार्यवाही हेतु प्रेषित ।

(आई0सी0 सिंह)
प्रभागीय निदेशक
सामाजिक वानिकी प्रभाग
सहारनपुर

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पत्रांक– 1398 /14–1 दिनांक सहारनपुर, 05/12/ दिसम्बर, 2020

सेवा में,

जिलाधिकारी,
सहारनपुर।

विषयः– जनपद सहारनपुर के पुर्नगठित खनन पट्टा क्षेत्रों के सम्बन्ध में अनापत्ति प्रमाण पत्र उपलब्ध कराये जाने विषयक।

सदर्भः– आपका पत्रांक–5109/खनन क्षेत्र/ई–टेण्डर/2018–19 दिनांक 20.10.2020

महोदय,

उक्त संदर्भित पत्र द्वारा विषयांकित कम में अनापत्ति निर्गत किये जाने हेतु सम्बन्धित क्षेत्रीय वन अधिकारियों, तथा उप प्रभागीय वनाधिकारी, को प्रकरण में जांच कर अनापत्ति निर्गत किये जाने हेतु आख्या/संस्तुति प्रेषित किये जाने हेतु निर्देशित किया गया। जिसके कम में सम्बन्धित क्षेत्रीय वन अधिकारियों द्वारा निम्नानुसार अपनी संस्तुति/आख्या प्रेषित की गयी है :–

तालिका–1

क्र0 स0	तहसील	ग्राम	गाटा संख्या	क्षे0फ0 (हे0)	रेंज	क्षेत्रीय वन अधिकारी की आख्या	उप प्रभागीय वनाधिकारी की आख्या/ संस्तुति
1	2	3	4	5	6	7	8
1	बेहट	शेरपुर पेलो	403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431	6.475	बडकला	क्षेत्रीय वन अधिकारी बड़कला के पत्रांक–116/14 दिनांक 26.11.2020 द्वारा आख्या प्रेषित की गयी है, जिसमें उल्लेख किया गया है कि प्रस्तावित स्थल की निकटतम आरक्षित वन क्षेत्र से हवाई दूरी 0.32 कि0मी0 एवं कलेसर नेशनल पार्क के ईको सेन्सिटिव जोन से दूरी 10.810 कि0मी0 है, प्रकरण में अनापत्ति निर्गत किये जाने हेतु संस्तुति की गयी है।	अनापत्ति निर्गत किये जाने हेतु संस्तुति की गयी है।

अतः उक्तानुसार तालिका–1 में वर्णित ग्राम शेरपुर पेलो के गाटा संख्या–403, 404, 405, 406, 416, 421, 422, 423, 424, 429 व 431 क्षे0फ0–6.475 हे0 में खनन कार्य हेतु सम्बन्धित क्षेत्रीय वन अधिकारी बडकला एवं उप प्रभागीय वनाधिकारी, शिवालिक द्वारा की गयी संस्तुति के आधार पर एवं शासनादेश संख्या–1483 (3)/14–2–2008–65/2004–टी0 सी0–3 वन अनुभाग–2 दिनांक 04.06.2008 द्वारा दिये गये निर्देशो के अनुपालन हेतु निम्न शर्तो के अधीन खनन अनापत्ति व्यक्त की जाती है।

1–प्रश्नगगत भूमि की वन क्षेत्र से 0.32 कि0मी0 दूरी है।

2–वन उत्पाद के अभिवहन के लिये वन भूमि/वन क्षेत्र का उपयोग नही किया जायेगा परन्तु विकल्प नही होने पर वन मार्ग के उपयोग की अनुमति हेतु वन सरंक्षण अधिनियम 1980 के अन्तर्गत भारत सरकार, वन पर्यावरण एवं जलवायु पावितर्न मन्त्रालय से पूवानुमति प्राप्त की जानी आवश्यक होगी।

3–वन सम्पदा या वन्य जीवो को कोई क्षति नही पहुचायी जायेगी।

4–खनन पटटा प्राप्तकर्ता द्वारा जितने क्षेत्रफल मे खनन किया जायेगा, उतने क्षेत्रफल मे अथवा न्यूनतम एक एकड क्षेत्रफल मे स्थानीय प्रजाति के 200 फलदार/छायादार वृक्षो का रोपण सिचांई एवं फेंसिग के साथ अपने निजी स्रोतो से करेंगे। एक एकड या उससे अधिक क्षेत्रफल के खनन पटटो की अनापत्ति के मामलो मे प्रति एकड के हिसाब से अतिरिक्त 200 वृक्ष लगाने होंगे, जो पूर्णांक मे नही हो।

विषयांकित कम मे निम्नांकित तालिका–2 में अंकित क्षेत्रों की जांच क्षेत्रीय वन अधिकारी मोहण्ड द्वारा अपने पत्रांक–170/14–1 दिनांक 21.11.2020 द्वारा प्रेषित की गयी है, जिसका विवरण निम्नवत है:–

तालिका–2

क्र0 स0	तहसील	ग्राम	गाटा संख्या	क्षे0फ0 (हे0)	रेंज	क्षेत्रीय वन अधिकारी की आख्या	उप प्रभागीय वनाधिकारी की आख्या/ संस्तुति
1	2	3	4	5	6	7	8
1	बेहट	खुशहालीपुर	576, 572, 574, 575, 587/2	15.500	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 1.12 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 5.14 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी/ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।
2	बेहट	गणेशपुर	101/1, 101/1/1	3.349	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 471 मी0 एवं राजाजी टाईगर रिजर्व से दूरी 1.12 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी/ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।
3	बेहट	कालूवाला जहानपुर	843/2, 844, 845, 846, 847/2 व 850	5.402	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 1.13 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 9.57 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी/ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।
4	बेहट	फतेहपुर पेलो	407/1	9.520	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 3.22 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 5.80 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी/ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।

5		फतेहपुर पेलो	420 / 1	10.000	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 3.80 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 4.80 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी / ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।
6		फतेहपुर पेलो	354 / 3, 355, 353, 367, 368 / 1, 363 / 1	6.240	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 2.61 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 6.00 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी / ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।
7		फतेहपुर पेलो	363 / 3, 368 / 1, 366 / 2, 398 / 1, 399 / 2	4.990	मोहण्ड	प्रस्तावित क्षेत्र की आरक्षित वन से दूरी 3.22 कि0मी0 एवं राजाजी टाईगर रिजर्व से दूरी 5.80 कि0मी0 है, इस प्रकार यह क्षेत्र राजाजी टाईगर रिजर्व की 10 कि0मी0 दूरी / ईको सेन्सिटिव क्षेत्र मे आता है जिसके लिये राज्य वन्य जीव बोर्ड एवं राष्ट्रीय वन्य जीव बोर्ड की अनुमति आवश्यक है। इसलिये प्रकरण में खनन हेतु असहमति व्यक्त की गयी है।	अनापत्ति निर्गत किये जाने हेतु असहमति दी गयी है।

अतः भारत सरकार, पर्यावरण, वन एवं पर्यावरण मन्त्रालय (वन्य जीव डीविजन) भारत सरकार, नई दिल्ली के पत्र सं0–F.No 22-43/2018-IA.III date 08.08.2019 तथा भारत सरकार, पर्यावरण, वन एवं पर्यावरण मन्त्रालय (वन्य जीव डीविजन) भारत सरकार, नई दिल्ली के पत्र सं0–F.No 6-60/2020-WL Part-(1) date 16.07.2020 के कम में उक्त तालिका संख्या–2 में वर्णित क्षेत्र ईको सेन्सिटिव जोन के निर्धारण होने तक राजाजी टाईगर रिजर्व के 10 कि0मी0 रेडियस / ईको सेन्सिटिव जोन में होने के कारण राष्ट्रीय वन्य जीव सलाहाकार परिषद की स्थायी समिति की पूर्वानुमति लिया जाना आवश्यक है। इसलिये उपरोक्त तालिका संख्या–2 में अंकित कम संख्या 1 से 07 तक के क्षेत्रों में खनन कार्य हेतु अनापत्ति व्यक्त किया जाना सम्भव नहीं है तथा उक्त प्रस्ताव राष्ट्रीय वन्य जीव सलाहाकार परिषद की स्थायी समिति / बोर्ड को प्रेषित किये जाने की संस्तुति की जाती है।

संलग्नक– 5 मानचित्र मूल मे,

भवदीय,

(आर0बालाचन्द्रन)
प्रभागीय वनाधिकारी
शिवालिक वन प्रभाग,
सहारनपुर

पत्रांक– /14–1 दिनांकित।

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं विषयांकित कम में उनके द्वारा की गयी संस्तुति के कम में आवश्यक कार्यवाही हेतु प्रेषित।

1– उप प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग सहारनपुर।
2– क्षेत्रीय वन अधिकारी, बडकला एवं मोहण्ड।

Shi Letter 605

(आर0बालाचन्द्रन)
प्रभागीय वनाधिकारी
शिवालिक वन प्रभाग
सहारनपुर

कार्यालय प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर।

पत्रांक3044/14–1 दिनांकित, सहारनपुर दून/ 11, .2021

सेवा में,

जिलाधिकारी,
सहारनपुर।

विषयः– **जनपद सहारनपुर के पुर्नगठित खनन पट्टा क्षेत्र के सम्बन्ध में अनापत्ति प्रमाण पत्र उपलब्ध कराये जाने के सम्बन्ध में**

संदर्भः– आपका पत्रांक 6071/ख0वि0/2020–21 दिनांक 09.03.2021

महोदय,

आपके उक्त संदर्भित पत्र दिनांक 09.3.2021 द्वारा निम्नांकित गाटा संख्या जो इस वन प्रभाग की मोहण्ड रेंज के अन्तर्गत आता है, के सम्बन्ध में विषयांकित कम में अनापत्ति निर्गत करने की अपेक्षा की गयी है:–

क0स0	तहसील	ग्राम	गाटा संख्या	रेंज का नाम	क्षे0फ0 (हे0 में)
1	बेहट	कालूवाला जहानपुर	119म, 120म, 192म, 193म, व 125म,	मोहण्ड	14.900

उक्त कम में इस कार्यालय के पत्रांक 2427/14–1 दिनांक 12.03.2021 द्वारा क्षेत्रीय वन अधिकारी मोहण्ड से जांच आख्या मांगी गयी। प्रकरण में क्षेत्रीय वन अधिकारी मोहण्ड द्वारा अपने पत्रांक 383/14–1 दिनांक 27.04.2021 द्वारा जांच आख्या निम्नवत प्रेषित की गयी है।

1– प्रस्तावित खनन पट्टा क्षेत्र के गाटा संख्या 119म, 120म, 192म, 193म, व 125म, रकवा 14.900 हे0 क्षेत्र के वाहरी बिन्दुओं की जी0पी0एस0 रीडिंग निम्न प्रकार है:–

A.30°12'08.76''N 77°45' 37.77''E B. 30°12' 06.03''N 77°45' 42.25''E
C. 30°12' 00.52''N 77°45'38.93''E D. 30°11'40.91''N 77°45' 32.39''E
E. 30°11' 41.72''N 77°45'25.51''E F. 30°12'2.80'' N 77°45' 33.06''E

2– (i). आरक्षित वन क्षेत्र कालूवाला के निकटस्थ सीमा स्तम्भ की जी0पी0एस0 रीडिंग 30°12'31.086''N 77°48' 19.828"E व बिन्दु–B से हवाई दूरी 4.28 कि0मी0 है।

(ii).संरक्षित वन भूमि, सहारनपुर–देहरादून, रा0रा0 मार्ग 72ए के कि0मी0–16 की बांयी पटरी की जी0पी0एस0 रीडिंग 30°08' 11.72''N 77°51'47.69''E व बिन्दु–C से हवाई दूरी–12.1 कि0मी0 है।

3– प्रस्तावित खनन स्थल की राजाजी टाइगर रिजर्व क्षेत्र के मिलान पिलर संख्या 636 की जी0पी0एस0 रीडिंग 30°08' 29.58''N 77°52'32.736''E व बिन्दु–B से हवाई दूरी – 12.80 कि0मी0 है।

4– प्रस्तावित खनन स्थल का नजरी नक्शा संलग्न है।

उक्त से स्पष्ट है कि खनन हेतु प्रस्तावित क्षेत्र राजाजी टाइगर रिजर्व के ईको सेन्सिटिव जोन के 10 कि0मी0 रेडियस से अधिक दूरी पर तथा आरक्षित वन क्षेत्र से 100 मी0 से अधिक दूरी पर स्थित है, इसलिये शासनादेश संख्या 1483(3)/14–2–08–65/2004–टी0सी0–3 दिनांक 04.06.2018 में निहित प्राविधानों के अर्न्तगत अनापत्ति निर्गत करने हेतु क्षेत्रीय वन अधिकारी मोहण्ड द्वारा संस्तुति की गयी है।

अतः क्षेत्रीय वन अधिकारी मोहण्ड द्वारा की गयी संस्तुति के आधार पर उक्त प्रकरण में निम्न शर्तो के आधार पर अनापत्ति निर्गत की जाती है।

1– बाढ़ के कारण इकट्ठा हुये बालू को हटाने से पूर्व सम्बन्धित क्षेत्र की सीमाबन्दी वन विभाग, राजस्व विभाग तथा खनन विभाग, के सक्षम अधिकारी/कर्मचारी की उपस्थिति में करना होगा।

2– उक्त खसरा नं0 में प्रत्येक कोने पर पक्की चिनाई कर सीमा स्तम्भ लगाये जायें तथा प्रत्येक स्तम्भ पर जी0पी0एस0 रीडिंग अंकित किये जायेगें।

3– खसरा क्षेत्र से अतिरिक्त किसी भी वन क्षेत्र में अवैध खनन नहीं किया जायेगा तथा अन्य किसी भी व्यक्ति द्वारा अवैध खनन किये जाने की सूचना सम्बन्धित क्षेत्रीय वन अधिकारी को देनी होगी।

4– किसी भी वन मार्ग का उपयोग उक्त खनिज परिवहन हेतु नहीं किया जायेगा।

5– माल निकासी सूर्योदय से पूर्व तथा सूर्यास्त के पश्चात नहीं की जायेगी।

Shi Letter

6– खनन स्थल के आसपास स्थित वृक्षों एवं वन्य जीवों को कोई हानि नहीं पहुंचायी जायेगी।
7– वन संरक्षण अधिनियम 1980 तथा रिट याचिका संख्या– 202/1995 टी0एन0गोडावर्मन थिरूमलकपाद बनाम भारत संघ एवं अन्य में मा0 सर्वोच्च न्यायालय के आदेश दिनांक 12.12.1996 एवं इसके उपरान्त मा0 न्यायालय के अन्य आदेशों का कोई उल्लंघन नहीं किया जायेगा।
8– खनन हेतु प्रयुक्त क्षेत्र अथवा न्यूनतम् 01 एकड़ क्षेत्रफल में स्थानीय प्रजातियों के 200 फलदार/छायादार पौधों का रोपण, सिंचाई एवं फैन्सिंग के साथ निजी श्रोत से किया जायेगा, अर्थात खनन हेतु प्रयुक्त क्षेत्रफल 36.803 एकड़ के सापेक्ष 200 पौधे प्रति एकड़ के अनुसार कुल 7361 पौधों का रोपण किया जायेगा। उक्त शर्तों के अनुपालन कराने की जिम्मेदारी खान अधिकारी की होगी जिसकी सूचना/अनुपालन आख्या उनके द्वारा इस वन प्रभाग को उपलब्ध कराई जायेगी।
9– उक्त शर्तों के का अनुपालन सुनिश्चित न किये जाने की स्थिति में अनापत्ति स्वतः ही निरस्त समझी जायेगी।
संलग्नक–उपरोक्तानुसार।

भवदीया,

(श्वेता सैन)
प्रभागीय वनाधिकारी,
शिवालिक वन प्रभाग,
सहारनपुर।

पत्रांक /14–1 दिनांकित

प्रतिलिपि क्षेत्रीय वन अधिकारी, मोहण्ड को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

(श्वेता सैन)
प्रभागीय वनाधिकारी,
शिवालिक वन प्रभाग,
सहारनपुर।

Annexure No. SA 5

कायालय जिलाधिकारी सहारनपुर
(खनन अनुभाग)

पत्रांकः 1383/ख0अनु0/ई–निविदा–कमेटी/2021 दिनांक 02/05/अप्रैल,2022

कार्यालय आदेश

जनपद सहारनपुर में अधिकांश खनन क्षेत्र युमना नदी में स्थित हैं। सभी उपखनिज के खण्ड एक दूसरे से सटे हैं जिसकी संख्या 16 है, तथा ख़ैरावली रॉ, बादशाही बाग रॉ, बड़कला रॉ, गैसरा रॉ, कालूवाला रॉ में 06 उपखनिज के क्षेत्र उपलब्ध है। सभी नदियां साथ ही आस पास ही स्थित जिसमें कुल उपखनिज के खनन क्षेत्रों की संख्या 22 है। नदी तल में उपलब्ध 22 खनन क्षेत्रों ग्राम अकरबपुर बांस अहतमाल, आराजी जेवडी अहतमाल व मसूदपुर गढ अहतमाल, शहजादपुर बांस अहतमाल, अलाउद्दीनपुर बांस अहतमाल, महमूदपुर नगली अहतमाल, शाहपुर बांस अहतमाल, अबुतालिबपुर गढ अहतमाल, नित्यानन्दपुर अहतमाल व सैदमौहम्मदपुर गढ अहतमाल, शेरपुर पेलों, कालूवाला पहाडीपुर नुनियारी अहतमाल खण्ड–द्वितीय, असलमपुर बरथा, रसूलपुर उर्फ रसूली असलमपुर बरथा, नुनियारी अहतमाल खण्ड–प्रथम, फैजाबाद खण्ड–प्रथम व फैजाबाद खण्ड –द्वितीय की पुनः पूर्ति अध्ययन (Replenishment Study) कराये जाने हेतु उपखनिज बालू, बजरी, बोल्डर (मिश्रित अवस्था में), RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश–2016 और एमओईएफएंडसीसी द्वारा प्रकाशित रेत खनन–2020 के लिए प्रवर्तन और निगरानी दिशा निर्देशों के अन्तर्गत उक्त क्षेत्रों की पुनः पूर्ति अध्ययन (Replenishment Study) किये जाने के निर्देश प्राप्त हुए है।

जनपद–सहारनपुर में नदी तल में उपलब्ध बालू, बजरी, बोल्डर (मिश्रित अवस्था में) RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश –2016 और MoEF&CC द्वारा प्रकाशित Enforcement & Monitoring Guideline For Sand Mining–2020 के निर्देशों के अर्न्तगत क्षेत्रों का पुनः पूर्ति अध्ययन (Replenishment Study) हेतु जिला स्तर पर अपर जिलाधिकारी (वि0/रा0) की अध्यक्षता में प्रभागीय वनाधिकारी अथवा (नामित अधिकारी), लोक निर्माण विभाग व सिंचाई विभाग से संबंधित अधिशासी अभियन्ता एव क्षेत्रीय अधिकारी, उत्तर प्रदेश प्रदुषण नियंत्रण बोर्ड, खान अधिकारी जनपद सहारनपुर को जनपद में उपलब्ध 22 क्षेत्रों की पुनः पूर्ति अध्ययन (Replenishment Study) किये जाने हेतु निम्न समिति का गठन किया जाता है:–

1. अपर जिलाधिकारी (वि0/रा0), सहारनपुर (अध्यक्ष)
2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर (सदस्य)
3. अधिशासी अभियन्ता, सिंचाई निर्माण खण्ड, सहारनपुर (सदस्य)
4. अधिशासी अभियन्ता, लोक निर्माण विभाग, सहारनरपुर (सदस्य)
3. क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, सहारनपुर (सदस्य)
4. खान अधिकारी, सहारनपुर (सदस्य)

उक्त समिति पुनः पूर्ति अध्ययन (Replenishment Study) को अन्तिम रूप प्रदान कर अपनी संस्तुति सहित जिलाधिकारी के समक्ष प्रस्तुत करेगी।

जिलाधिकारी
सहारनपुर

पत्रांक व दिनांकः–उपरोक्तानुसार।
प्रतिलिपिः–निम्नलिखित को सूचनार्थ एवं अग्रिम कार्यवाही हेतु प्रेषित।

1. अपर जिलाधिकारी (वि0/रा0), सहारनपुर ।
2. प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर।
3. अधिशासी अभियन्ता, सिंचाई निर्माण खण्ड, सहारनपुर ।
4. अधिशासी अभियन्ता, लोक निर्माण विभाग, सहारनरपुर।
5. क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, सहारनपुर ।
6. खान अधिकारी, सहारनपुर।

जिलाधिकारी
सहारनपुर

Annexure No. SA 6

Item No. 07 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Hybrid Mode)

Original Application No. 403/2022
(I.A. No. 133/2022, I.A. No. 13/2023 &
I.A. No. 19/2023)

Daljeet Singh Applicant

Versus

State of Uttar Pradesh & Ors. Respondent(s)

Date of hearing: 25.01.2023

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER

Applicant: Mr. Ajit Sharma, Advocate for Applicant

Respondent(s):
Mr. Mukesh Verma, Advocate for the Mining Department, State of UP
Ms. Priyanka Swami, Advocate for SEIAA, UP

ORDER

1. Grievance in this application is against submission of District Survey Report dated 03.12.2021 by the District Magistrate, Saharanpur to the Director, Geology and Mines, U.P. Main ground against the said report is that it has been submitted without replenishment study of the river in terms of Enforcement & Monitoring Guidelines for Sand Mining, 2020 (EMSGM, 2020).

2. Vide order dated 30.05.2022, notice was issued and interim injunction was granted against grant of any mining lease before completing replenishment study.

3. Reply has been filed by the Mining Department, U.P to the effect that replenishment study had been conducted prior to the Draft Survey Report for Saharanpur River Bed Mining 2022. The DSR is at draft stage and is yet to be finalized.

4. In view of above, no further order is necessary.

The application is disposed of. All IAs also stand disposed of.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

January 25, 2023
Original Application No. 403/2022
(I.A. No. 133/2022, I.A. No. 13/2023 &
I.A. No. 19/2023)
AB

Annexure No. SA 7

प्रेषक,

जिलाधिकारी
सहारनपुर।

सेवा में

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय,
उ0प्र0, खनिज–भवन, लखनऊ।

संख्याः 89 / ख0अनु0 / 2023–24 दिनांक 18/04/2024

विषयः– जिला सर्वेक्षण रिपोर्ट संशोधन / संयोजन (मोडिफिकेशन) के सम्बन्ध में प्राप्त आपत्तियों / सुझाव के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक अवगत कराना है कि जनपद सहारनपुर में नदी तल में उपलब्ध उपखनिज आर0बी0एम0 (बालू, बजरी, बोल्डर मिश्रित अवस्था में) के नये खनन क्षेत्रों को जिला सर्वेक्षण रिपोर्ट (DSR) में सम्मिलित कराने के लिए नियमानुसार जनसामान्य से आपत्तियां / सुझाव प्राप्त करने हेतु जिला के वेबसाईट (NIC) पर अपलोड किया गया था। जिसके कम में चार आपत्तियाँ / सुझाव प्राप्त हुई थी जिनका विवरण निम्नवत हैः–

क्र0सं0	आपत्तिकर्ता का नाम व पता	आपत्ति निस्तारण का पत्र संख्या व दिनांक
1	श्री दलजीत सिंह पुत्र श्री जोगिन्दर सिंह निवासी म0नं0'–566 फाउन्टेन चौक हमीद कॉलानी, जगाधरी यमुनानगर हरियाणा।	पत्र संख्या–2016 / ख0अनु0 / शिकायत–डीएसआर–2022–23 दिनांक 27.02.2023
2	श्री गौरव कुमार पुत्र श्री कैलाश कुमार निवासी म0नं0–2018 रेलवे कॉलोनी ए, जगाधरी वर्कशाप, जिला यमुनानगर हरियाणा।	पत्र संख्या–2017 / ख0अनु0 / शिकायत–डीएसआर–2022–23 दिनांक 27.02.2023
3	श्री सुमित सिंह राणा पुत्र श्री कवरपाल सिंह निवासी खजूरी नागल खजूरी यमुनानगर हरियाणा।	पत्र संख्या–2064 / ख0अनु0 / शिकायत–डीएसआर–2022–23 दिनांक 03.03.2023
4	सिविल मिस0 रिट याचिका पी0आई0एल0 संख्या–595 / 2023, श्री सुमित सिंह राणा बनाम उत्तर प्रदेश सरकार व अन्य।	पत्र संख्या–82 / अभिकथन / 2023 दिनांक 27.03.2023 द्वारा अनुदेश दाखिल किया गया। उक्त रिट पी0आई0एल0 मा0 न्यायालय द्वारा दिनांक 28.03.2023 को Dismissed कर दिया गया।

उपरोक्त आपत्तियों का तत्कालीन जिलाधिकारी द्वारा ससमय निस्तारण / निराकरण करते हुये जनपद का जिला सर्वेक्षण रिर्पोट तैयार किया गया।

कृपया सादर सूचनार्थ व आवश्यक कार्यवाही हेतु प्रेषित।

संलग्नकः–निस्तारित आपत्तियों का विवरण।

भवदीय,

18/04/2024
(डॉ0 दिनेश चन्द्र)
जिलाधिकारी
सहारनपुर।

खान अधिकारी
सहारनपुर।

Annexure No. SA 8

प्रेषक,

जिलाधिकारी,
सहारनपुर।

सेवा में,

निदेशक,
भूतत्व एवं खनिकर्म विभाग,
उत्तर प्रदेश शासन,
लखनऊ।

पत्रांक: 1770 ख0अनु0 / Replenishment Study / Updated DSR / 2022–23 दिनांक: 01/02/ ,2023

विषय: जनपद सहारनपुर में बालू, बजरी, बोल्डर (मिश्रित अवस्था में), RBM के उपलब्ध खनन क्षेत्रों हेतु पुनः पूर्ति अध्ययन (Replenishment Study Report) पूर्ण कराये जाने के उपरान्त UPDATED DSR की अग्रिम कार्यवाही करने के संबंध में।

महोदय,

कृपया उपरोक्त विषयक अवगत कराना है कि मा0 राष्ट्रीय न्याय हरितकरण नई दिल्ली में योजित ओ0 ए0 संख्या 403/2022 दलजीत सिंह बनाम उत्तर प्रदेश राज्य व अन्य में दिनांक 30.05.2022 पारित आदेश जिसमें निम्न आदेश पारित किये गये हैं:–

"In the meanwhile no lease shall be granted and also no mining shall be commenced in any of the mining sites in District Saharanpur, Uttar Pradesh before completion of replenishment study, updation of DSR and grant of environmental clearance/CTE/CTO on the basis thereof in accordance with SSMG, 2016 and EMGSM, 2020."

मा0 राष्ट्रीय न्याय हरितकरण नई दिल्ली में योजित ओ0 ए0 संख्या 403/2022 दलजीत सिंह बनाम उत्तर प्रदेश राज्य व अन्य में पारित आदेश के अनुपालन में जनपद सहारनपुर में स्थित नदियों के पुनः पूर्ति अध्ययन (Replenishment Study) के प्री मानसून (Pre-Monsoon) एवं (Post Monsoon) माह दिसम्बर में सब– डिविजनल कमेटी (Sub Divisional Committee) द्वारा मैसर्स ग्रीनसइण्डिया कन्सलटिंग प्रा0 लि0 पता– 608–611, लेवल 5 शोपरिक्स मॉल, सैक्टर–5 वैशाली गाजियाबाद को क्षेत्र में कार्य करने हेतु उपकरण एवं स्टाफ की सहायता से **Enforcement & Monitoring Guidelines for Sand Mining- 2020** के दिशा–निर्देशों के अनुसार विभिन्न कारकों को ध्यान में रखते हुये आँकडों को एकत्र कर पुनः पूर्ति अध्ययन रिपोर्ट पूर्ण कर ली गई है।

उपरोक्त आदेश के अनुकम में श्री प्रदीप मिश्रा, एडवोकेट आन रिकार्ड, मा0 सर्वोच्च न्यायालय, के पत्र दिनांक 12.01.2023 द्वारा निर्देशित किया गया है कि (UPDATED D S R) जिला सर्वेक्षण की सूचना आम जनमानस से आपत्ति/सुझाव प्राप्त किये जाने हेतु नियमानुसार पब्लिक डोमेन हेतु जिले की वेबसाईट पर (NIC) पर 21 दिनों के लिये अपलोड किया जाना आवश्यक है। साथ ही मा0 सर्वोच्च न्यायालय में योजित अपील संख्या 3661–62/2020 स्टेट आफ बिहार बनाम पवन कुमार में दिनांक 10.11.2021 पारित आदेश निम्न प्रकार है:–

"After the draft DSRs are prepared, the District Magistrate of the concerned District shall forward the same for examination and evaluation by the SEAC.

The same shall be examined by the SEAC within a period of 6 weeks and its report shall be forwarded to the SEIAA within the aforesaid period of 6 weeks from the receipt of it. The SEIAA will thereafter consider the grant of approval to such DSRs within a period of 6 weeks from the receipt thereon;

(ii) Needless to state that while preparing DSRs and the appraisal thereof by SEAC and SEIAA, it should be ensured that a strict adherence to the procedure and parameters laid down in the policy of January 2020 should be followed."

अतः अनुरोध है कि जनपद सहारनपुर में बालू, बजरी, बोल्डर (मिश्रित अवस्था में), RBM के उपलब्ध खनन क्षेत्रों हेतु पुनः पूर्ति अध्ययन आख्या (Replenishment Study Report) तथा (UPDATED D S R) का अवलोकन तथा निरीक्षण करने के उपरान्त आवश्यक कार्यवाही करने का कष्ट करें।

संलग्नक: उपरोक्तानुसार।

भवदीय,

(अखिलेश सिंह)
जिलाधिकारी,
सहारनपुर।

प्रतिलिपि:

1. विशेष सचिव, भूतत्व एवं खनिकर्म विभाग, उत्तर प्रदेश शासन, लखनऊ को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

जिलाधिकारी,
सहारनपुर।

Annexure No. SA 8A

प्रेषक,

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0,
"खनिज भवन", लखनऊ।

सेवा मे,

1. श्री अजय कुमार श्रीवास्तव, विशेष कार्याधिकारी, राजस्व परिषद, उ0प्र0, लखनऊ।
2. श्री एम0के0 वर्मा, अधिशासी अभियन्ता, अनुसन्धान एवं नियोजन यूनिट–8, सिंचाई विभाग, उ0प्र0, लखनऊ ।
3. श्री हरिलाल चौरसिया उप प्रभागीय वनाधिकारी, लखनऊ, अवध वन प्रभाग लखनऊ, 21/475 इन्दिरा नगर, लखनऊ।
4. श्रीमती श्रुति शुक्ला, उप निदेशक, पर्यावरण निदेशालय, गोमती नगर, उ0प्र0, लखनऊ।
5. श्री जय प्रकाश, संयुक्त निदेशक, भूतत्व एवं खनिकर्म निदेशालय, सदस्य,
6. श्री सत्यनारायण पटेल, भूवैज्ञानिक, भूतत्व एवं खनिकर्म निदेशालय, सदस्य
7. श्री राम प्रवेश सिंह, भूवैज्ञानिक, भूतत्व एवं खनिकर्म निदेशालय, सदस्य सचिव,

पत्र सं0: ——/एम0–228/2017–खनन नीति (v) दिनांक: 04-02-2023

विषयः–**जिला सर्वेक्षण रिपोर्ट के संशोधन/संयोजन के सम्बन्ध में।**

महोदय,

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा उपखनिज के सुव्यवस्थित खनन सम्बन्धी प्रक्रिया के सम्बन्ध में जनवरी 2020, में "Enforcement & Monitoring guidelines for Sand Mining" निर्गत किया गया है। उक्त गाइडलाइन्स के प्रस्तर 4.1.1 (a) के अनुसार भारत सरकार से पर्यावरण प्रभाव आंकलन (Environment Impact Assesment) अधिसूचना/आदेश जारी होने तक खनन क्षेत्रों के सम्बन्ध में राज्य सरकार स्तर से जिला सर्वेक्षण रिपोर्ट तैयार किया जाना अपेक्षित है। तद्नुसार जनपदों से जिला सर्वेक्षण रिपोर्ट में क्षेत्रों के संशोधन/संयोजन सम्बन्धी प्राप्त प्रस्तावों का परीक्षण करने हेतु शासन के भूतत्व एवं खनिकर्म अनुभाग के कार्यालय ज्ञाप संख्या–1153(1)86–2021 दिनांक 09 सितम्बर, 2021 के द्वारा जिला सर्वेक्षण तकनीकी समिति का गठन किया गया है, जिसमें आप सदस्य के रूप में नामित हैं।

जनपद सहारनपुर (संशोधन/संयोजन हेतु) से उपखनिज साधारण बालू/मोरम व आर0बी0एम0 के प्राप्त प्रस्तावों का परीक्षण कर अपनी संस्तुति प्रदान किये जाने के सम्बन्ध में तकनीकी समिति की बैठक **दिनांक 10 मार्च, 2023** को भूतत्व एवं खनिकर्म निदेशालय, लखनऊ में अपरान्ह **12.00 बजे** आहूत की गयी है।

अतः पत्र इस आशय के साथ प्रेषित है कि नियत दिनांक एवं समय पर बैठक में प्रतिभाग करने का कष्ट करें।

भवदीय

(विपिन कुमार जैन)
अपर निदेशक

पत्र सं0 829/एम0–228/2017–खनन नीति (v) तद्दिनांक

प्रतिलिपि– निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. आयुक्त एवं सचिव, राजस्व परिषद, उ0 प्र0, अनुभाग–5, लखनऊ।
2. सचिव, भूतत्व एवं खनिकर्म, उत्तर प्रदेश शासन, लखनऊ।
3. प्रभागीय वनाधिकारी, अवध वन प्रभाग, प्रभागीय भवन, 21/475 इन्दिरा नगर, लखनऊ।
4. तकनीकी समिति के समस्त सदस्यों को अनुपालनार्थ।
5. खान अधिकारी, सहारनपुर को इस निर्देश के साथ कि नियत तिथि एवं समय पर समस्त मूल अभिलेखों के साथ उपस्थित होना सुनिश्चित करें अन्यथा सम्बन्धित जनपद के क्षेत्र का डी0एस0आर0 बैठक में सम्मिलित नहीं किया जायेगा।

(विपिन कुमार जैन)
अपर निदेशक

Annexure No. SA 8B

प्रेषक,

निदेशक
भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0,
"खनिज भवन", लखनऊ।

सेवा में,

जिलाधिकारी
सहारनपुर।

पत्र सं0 1935/एम0228/2017 (खनन नीति)–डी0एस0आर0 दिनॉक: 27 मार्च, 2023

विषयः–**जिला सर्वेक्षण रिपोर्ट में संशोधन/संयोजन के सम्बन्ध में।**

महोदय,

कृपया अवगत कराना है कि पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा बालू/मौरम के सुव्यवस्थित खनन सम्बन्धी प्रक्रिया के सम्बन्ध में जनवरी, 2020 में "Enforcement & Monitoring guidelines for sand Mining" की गाइडलाइन्स निर्गत की गयी है। उक्त गाइड लाइन के प्रस्तर–4.1.1(a) के अनुसार खनन क्षेत्रों की नीलामी/ ई–नीलामी/खनन पट्टे की स्वीकृति/आशय पत्र निर्गत करने के पूर्व राज्य सरकार द्वारा जिला सर्वेक्षण रिपोर्ट तैयार किया जाना है। उक्त व्यवस्था के अन्तर्गत भारत सरकार द्वारा पर्यावरण प्रभाव आंकलन अधिसूचना/आदेश निर्गत होने तक जनपदों से प्राप्त जिला सर्वेक्षण रिपोर्ट में क्षेत्रों के प्रस्तावित संशोधन/संयोजन के लम्बित प्रस्तावों तथा नये प्रस्तावों का परीक्षण किये जाने हेतु भूतत्व एवं खनिकर्म विभाग, उत्तर प्रदेश शासन, लखनऊ के कार्यालय ज्ञाप सं0 790(1)/86–2020, दिनॉक 01 जून, 2020 यथासंशोधित दिनांक 09 सितम्बर, 2021 के द्वारा अपर निदेशक, भूतत्व एवं खनिकर्म विभाग की अध्यक्षता में तकनीकी विशेषज्ञ समिति का गठन किया गया।

2. मा0 राष्ट्रीय न्याय हरितकरण, नई दिल्ली में योजित ओ0ए0 सं0–403/2022 दलजीत सिंह बनाम उ0प्र0 राज्य व अन्य में पारित आदेश दिनांक 30.05.2022 के क्रम में जिलाधिकारी सहारनपुर के पत्र सं0–1770, दिनांक 01.02.2023 के साथ जनपद स्तर पर Replenishment Study के आधार पर तैयार की गयी आख्या के क्रम में जनपद में उपलब्ध 22 खनन क्षेत्रों को जिला सर्वेक्षण रिपोर्ट में संयोजित/संशोधित किये जाने की अपेक्षा की गयी है।

3. तकनीकी समिति की बैठक दिनांक 10.03.2023 में जनपद **सहारनपुर,** से 22 प्राप्त प्रस्तावों का परीक्षण किया गया। समिति के समक्ष प्रस्तुत प्रस्तावों का विवरण निम्न तालिकानुसार हैः–

क्रम सं0	तहसील	ग्राम का नाम	खण्ड सं0/ गाटा सं0	क्षेत्रफल (हेक्टेयर में)
1.	बेहट	अकबरपुरबांस अहतमाल	1	17.900

2.	बेहट	आराजीजेवड़ी अहतमाल व मसूदपुरगढ़ अहतमाल	1 व 1	13.800
3.	बेहट	शहजादपुरबांस	1	13.000
4.	बेहट	अलाउद्दीनपुर बांस अहतमाल	1/1	9.580
5.	बेहट	महमूदपुरनगली अहतमाल	1	15.700
6.	बेहट	शाहपुरबांस अहतमाल	1/1	15.600
7.	बेहट	अबुतालिबपुर गढ़ अहतमाल	1	37.000
8.	बेहट	नित्यानन्दपुर अहतमाल व सैदमोहम्मदपुर गढ़ अहतमाल	1 व 1 म	17.700
9.	बेहट	शेरपुरपेलो	403, 404/1, 405, 406/1, 416/2, 421/1, 422/2, 423/2, 424/2, 429, 431	6.475
10.	बेहट	कालूवाला पहाड़ीपुर	119/1, 120/1, 192/1, 193/1, 125/4	14.900
11.	बेहट	रसूलपुर उर्फ रसूली	1/1	34.000
12.	बेहट	असलमपुर बरथा खण्ड–1	1/1म	36.600
13.	बेहट	असलमपुर बरथा खण्ड–II	1/1म	28.160
14.	बेहट	नुनियारी अहतमाल	1/1/1	पूर्व में 23.00 हे0 संसोधित 19.000 हे0
15.	बेहट	मायापुर रूपपुर	14/1	3.100
16.	बेहट	बरथा कोसी	1	36.000
17.	बेहट	हैदरपुर हिन्दवाला	खण्ड नं0/ गाटा सं0– 8/1, 19 एवं 22	4.200
18.	बेहट	शेखपुर पिलोन	378/2 एवं 379/2	7.000
19.	बेहट	नुनियारी अहतमाल	1/1/1 लाट–38	24.290
20.	बेहट	रेहना	खण्ड नं0/ गाटा नं0–	8.050

			03, लाट–03	
21.	बेहट	राहेना	179/2	3.750
22.	नुकुर	ढिक्कन कलां	839, 841 से 856, 858, 859, 860, 861, 863, 864, 865, 866, 867, 871, 872, 888, 889, 406, 407	52.63

4. जिलाधिकारी सहारनपुर द्वारा प्रेषित संयुक्त निरीक्षण आख्या (राजस्व आख्या), वन अनापत्ति, सिंचाई विभाग की आख्या एवं Replenishment Study को राज्य स्तर पर गठित विशेष तकनीकी समिति की बैठक दिनांक 10.03.2023 में परीक्षण किया गया और पाया गया कि तालिका के कमांक–1 से 10 पर अंकित खनन **10** क्षेत्रों के सम्बन्ध में जिलाधिकारी सहारनपुर के पत्र सं0–715/खनन अनुभाग/2021–2022, दिनांक 20.12.2021 के द्वारा प्रेषित प्रस्ताव के क्रम में राज्य स्तर पर गठित तकनीकी समिति की बैठक दिनांक 27.12.2021 की संस्तुति के क्रम में शासकीय पत्र सं0–1676/86–2021–01(सा0)/2020 दिनांक 03.01.2022 के द्वारा अनुमोदन प्रदान किया जा चुका है।(छायाप्रति संलग्न)
5. उक्त तालिका के क्रम सं0–11 से 13 पर अंकित खनन **03** क्षेत्रों हेतु जिलाधिकारी सहारनपुर के पत्र सं0–421/खनन अनुभाग/2022–2023 दिनांक 15.07.2022 सपठित पत्र सं0 641/खनन अनुभाग/2022–2023, दिनांक 30.08.2022 के द्वारा प्रेषित प्रस्ताव पर तकनीकी समिति की बैठक दिनांक 01.11.2022 की संस्तुतियों के क्रम में शासकीय पत्र सं0–1347/86–2022–01(सा0)/2020 दिनांक 18.11.2022 के द्वारा अनुमोदन प्रदान किया गया। (छायाप्रति संलग्न)
6. जनपद सहारनपुर से प्राप्त 22 प्रस्तावों के साथ अधिशासी अभियन्ता सिंचाई खण्ड सहारनपुर के पत्र सं0–309, दिनांक 25.02.2023 के साथ खनन क्षेत्रों से सम्बन्धित संलग्न सूची के अनुसार उपरोक्त तालिका के **क्रम सं0–17** पर अंकित क्षेत्र **हैदरपुर हिन्दवाला** की तटबन्ध से दूरी मानक अनुरूप नहीं पाये जाने, तालिका के **क्रम सं0–19** पर अंकित क्षेत्र नुनियारी अहतमाल, तहसील बेहट गाटा सं0–1/1/1 लाट सं0–38 एवं **क्रम सं0–20** पर अंकित क्षेत्र रेहना, तहसील बेहट गाटा नं0–3, लाट नं0–3 पर अंकित क्षेत्रों के अक्षांश–देशान्तर Replenishment Study में उल्लिखित अक्षांश–देशान्तर से भिन्नता होने के कारण इन्हें जिला सर्वेक्षण रिपोर्ट में संयोजित किये जाने हेतु निदेशालय स्तर पर अपर निदेशक, भूतत्व एवं खनिकर्म की अध्यक्षता में गठित तकनीकी विशेष समिति की बैठक दिनांक 10.03.2023 में संस्तुति नहीं की गई।
7. अपर निदेशक, भूतत्व एवं खनिकर्म की अध्यक्षता में गठित तकनीकी विशेष समिति की बैठक दिनांक 10.03.2023 में की गई संस्तुति के कम में भूतत्व एवं खनिकर्म विभाग, उ0प्र0 शासन के शासकीय पत्र सं0–1026/86–2023–01(सा0)/2020 दिनांक 27.03.2023 के द्वारा उपरोक्त तालिका के क्रम सं0–1 व 9 पर अंकित 02 क्षेत्र में आंशिक संशोधन तथा कम सं0–14, 15, 16, 18, 21 व 22 पर अंकित 06 क्षेत्रों को जनपद

सहारनपुर के जिला सर्वेक्षण रिपोर्ट में संयाजित किये जाने की सहमति प्रदान की गई है।

अतः जिलाधिकारी, सहारनपुर द्वारा replenishment study के आधार पर 22 क्षेत्रों को जिला सर्वेक्षण रिपोर्ट में संशोधित/संयोजित किये जाने सम्बन्धी प्रेषित प्रस्ताव में से क्रम सं0–01 से 13 पर अंकित क्षेत्र पूर्व से ही जिला सर्वेक्षण रिपोर्ट में संयोजित हैं, जिसमें क्रम सं0–1 व 9 पर अंकित क्षेत्र में आंशिक संशोधन के साथ ही क्रम सं0–17, 19 व 20 को छोड़कर शेष 06 क्षेत्र क्रमशः 14, 15, 16, 18, 21 व 22 को सम्मिलित करते हुये 19 क्षेत्र एक साथ जिला सर्वेक्षण रिपोर्ट में संयोजित हो जायेंगे।

संलग्नक–**यथोपरि।**

भवदीय,

(डा0 रौशन जैकब)
निदेशक।

पत्र सं0 **/एम0228/2017 (खनन नीति)–डी0एस0आर0** तद्दिनॉक

प्रतिलिपि–निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित–

1. प्रमुख सचिव, राजस्व परिषद, उ0प्र0 शासन लखनऊ।
2. सचिव, भूतत्व एवं खनिकर्म, उ0प्र0 शासन।
3. निदेशक, पर्यावरण निदेशालय, उ0प्र0, गोमती नगर, लखनऊ।
4. प्रधान मुख्य वन संरक्षक, वन विभाग, उ0प्र0, लखनऊ।
5. प्रमुख अभियन्ता एवं विभागाध्यक्ष, सिंचाई एवं जल संशाधन विभाग, उ0प्र0, लखनऊ।
6. तकनीकी समिति के सदस्यगण।

(डा0 रौशन जैकब)
निदेशक।

Annexure No. SA 9

प्रेषक,

निदेशक/सदस्य–सचिव,
राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति, उ0प्र0,
पर्यावरण निदेशालय, उ0प्र0,
विनीत खण्ड–1, गोमती नगर, लखनऊ।

सेवा में,

संयुक्त सचिव,
आई0ए0 डिवीजन,
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,
भारत सरकार, नई दिल्ली।

पत्रांक: 656/सिविल अपील सं0–6463/2021 दिनांक: 16 नवम्बर, 2023

विषयः District Survey Report (DSR) के अनुमोदन के सम्बन्ध में।

महोदय,

कृपया पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार की अधिसूचना स0–2276 दिनांक 11–06–2021 द्वारा राज्य स्तरीय पर्यावरण प्रभाव ऑकलन प्राधिकरण, उ0प्र0 एवं राज्य स्तरीय विशेषज्ञ मूल्यॉकन समिति, उ0प्र0 (1 व 2) का गठन किया गया है। पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार से निर्गत ई0आई0ए0 अधिसूचना 2006 (यथा संशोधित) में एस0ई0ए0सी0/ए0ई0आई0ए0ए0 के कार्य–दायित्वों में जिला सर्वेक्षण रिपोर्ट (DSR) का अप्रैजल/अनुमोदन किये जाने का कोई प्राविधान नहीं है।

2– पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार से निर्गत ई0आई0ए0 अधिसूचना संख्या– S.O. 141(E) दिनांक 15 जनवरी, 2016 में जिला संर्वेक्षण रिपोर्ट के सम्बन्ध में निम्नवत् उल्लेख किया गया है:–

"The District Survey Report shall be prepared for each minor mineral in the district separately and its draft shall be placed in the public domain by keeping its copy in Collectorate and posting it on district's website for twenty one days. The comments received shall be considered and if found fit, shall be incorporated in the final Report to be finalised within six months by the DEIAA." उल्लेखनीय है कि वर्तमान में डी0आई0ए0ए0 अस्तित्व में नहीं है।

Original Application No. 403/2022 (I.A. No.133/2022) Daljeet Singh Applicant Versus State of Uttar Pradesh & Ors. में मा0 एन0जी0टी0 नई दिल्ली द्वारा दिनांक 30–05–2022 (संलग्न) आदेश पारित किया गया जिसके सुसंगत अंश निम्नवत् है :–

"8. In the meanwhile no lease shall be granted and also no mining shall be commenced in any of the mining sites in District Saharanpur, Uttar Pradesh before completion of replenishment study, updation of DSR and grant of environmental clearance/CTE/CTO on the basis thereof in accordance with SSMG, 2016 and EMGSM, 2020."

3– उक्त के कम में अवगत कराना है कि मा0 उच्चतम न्यायालय, नई दिल्ली द्वारा सिविल अपील No 3661--3662 of 2022, The State of Bihar and others Vs. Pawan Kumar and Others & Ors. में District Survey Report (DSR) के सम्बन्ध में दिनांक 10–11–2021 को बिहार स्टेट के संबंध में निम्नवत् आदेश पारित किया गया है:–

The directions issued by the Tribunal vide judgment and order dated 14th October 2020, are substituted as follows:

(i) The exercise of preparation of DSR for the purpose of mining in the State of Bihar in all the districts shall be undertaken afresh. The draft DSRs shall be prepared by the sub-divisional

committees consisting of the Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board or Committee, Forest Department, Geological or mining officer. The same shall be prepared by undertaking site visits and also by using modern technology. The said draft DSRs shall be prepared within a period of 3 6 weeks from the date of this order. After the draft DSRs are prepared, the District Magistrate of the concerned District shall forward the same for examination and evaluation by the SEAC. The same shall be examined by the SEAC within a period of 6 weeks and its report shall be forwarded to the SEIAA within the aforesaid period of 6 weeks from the receipt of it. The SEIAA will thereafter consider the grant of approval to such DSRs within a period of 6 weeks from the receipt thereon;

(ii) Needless to state that while preparing DSRs and the appraisal thereof by SEAC and SEIAA, it should be ensured that a strict adherence to the procedure and parameters laid down in the policy of January 2020 should be followed;

4– पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार नई दिल्ली द्वारा निर्गत दिशा–निर्देश "Enforcement and Monitoring Guidelines for Sand Mining" 2020 के पैरा 4.1.1 (a) में निम्नवत् उल्लेखित हैं:–

"District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states."

5– उपरोक्त से स्पष्ट है कि "Enforcement and Monitoring Guidelines for Sand Mining" 2020 के प्राविधानों के अनुसार जिला सर्वेक्षण रिपोर्ट (DSR) खनन विभाग द्वारा तैयार की जायेगी, परन्तु उसके अनुमोदन हेतु सक्षम स्तर के संबंध में ई0आई0ए0 अधिसूचना में कोई प्राविधान न होने के कारण उक्त मा0 न्यायालय/मा0 एन0जी0टी0 के आदेशों के दृष्टिगत संशय की स्थिति उत्पन्न हो गयी है।

अतः अनुरोध है कि जिला सर्वेक्षण रिपोर्ट (DSR) खनन विभाग द्वारा ही तैयार की जायेगी, की पुष्टि करने का कष्ट करें तथा मा0 उच्चतम न्यायालय, नई दिल्ली द्वारा बिहार स्टेट के संदर्भ में पारित आदेश दिनांक 10–11–2021 एवं पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा निर्गत ई0आई0ए0 अधिसूचना, 2006 के प्राविधानों को दृष्टिगत रखते हुए जिला सर्वेक्षण रिपोर्ट (DSR) के अनुमोदन के सक्षम स्तर के संबंध में मार्गदर्शन प्रदान करने का कष्ट करें।

भवदीय,

संलग्न–यथोक्त।

(आशीष तिवारी)
निदेशक/ सदस्य–सचिव

पत्रांक: /सिविल अपील सं0–6463/2021, तददिनांक

प्रतिलिपि: निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. अपर मुख्य सचिव, पर्यावरण, वन एवं जलवायु परिवर्तन अनुभाग–7, उ0प्र0 शासन, लखनऊ।
2. निदेशक, भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0 लखनऊ

(आशीष तिवारी)
निदेशक/ सदस्य–सचिव

IA-L-11011/13/2021-IA-II(M)

9011/2023

F.No. L-11011/13/2021-IA-II (M)
Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division

2nd Floor, Prithvi Wing,
Indira Paryavaran Bhawan,
Jorbagh Road, Aliganj,
New Delhi-110 003
Dated: 4th December, 2023

To,
The Member Secretary
State Level Environment Impact Assessment Authority
Directorate of Environment
Vineet Khand 1, Gomti Nagar,
Lucknow, Uttar Pradesh 226010
Email: doeuplko@yahoo.com

Sub: Clarification regarding District Survey Report-reg.

Sir,

This is with reference to the letter no. 656/Civil Appeal no. 6463/2021 dated 16.11.2023 regarding seeking clarification on District Survey Report (DSR).

2 . The matter has been examined in the Ministry. In this context, it is informed that, as per Ministry's notification dated 25.07.2018, the DSR is prepared by the District Authorities and it should be in sync with Sustainable Sand Management Guidelines 2016 & Enforcement and monitoring Guidelines for sand mining 2020.

3. Further, the Hon'ble NGT vide its order dated 29/9/2022 in OA No. 34 of 2022 titled Subhash Bhai Ishwar Bhai Parmar vs State of Gujarat & Ors. observed that they would like to follow the principle laid down by the Hon'ble Supreme Court in order dated 10.11.2021 in Civil Appeal Nos. 3661-3662 of 2020 titled State of Bihar v/s Pawan Kumar. The above-referred order of Hon'ble SC mandates submission of DSR to State Expert Appraisal Committee (SEAC) for examination and evaluation and State Environment Impact Assessment Authority (SEIAA) for approval.

4. This is issued with the approval of the Competent Authority.

Yours faithfully,

(Dr. Saurabh Upadhyay)
Scientist C
E-mail: saurabh.upadhyay85@gov.in

Copy to:

- Scientist E(PV)/ Guard File

प्रेषक,

जिलाधिकारी
सहारनपुर।

Annexure No. SA 11

सेवा में,

सदस्य सचिव,
राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति (SEAC),
पर्यावरण निदेशालय, उ0प्र0
लखनऊ।

पत्र संख्या 2613/ख0अनु0/डी0एस0आर/2023–24 दिनांक: 18/12/,2023

विषयः जनपद सहारनपुर में बालू, बजरी, बोल्डर (मिश्रित अवस्था में) उपलब्ध 22 खनन क्षेत्रों की District Survey Report (DSR) के परीक्षण व अनुमोदन प्रदान किये जाने के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक निदेशक, भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0, खनिज भवन, लखनऊ के पत्र संख्या–1665/एम0–228/खनन नीति–2017 डी0एस0आर0 दिनांक 15.12.2023 का सन्दर्भ ग्रहण करने का कष्ट करें, जिसके द्वारा पर्यावरण एवं जलवायु परिवर्तन मंत्रालय, इम्पैक अस्सेमैण्ट डिविजन नई दिल्ली के पत्र दिनांक 04.12.2023 तथा Civil Appeal No. 3661-3662 of 2020 titled State of Bihar V/s Pawan Kumar. में मा0 सर्वोच्च न्यायालय द्वारा पारित आदेश दिनांक 10.11.2021 के क्रम में जिला सर्वेक्षण रिपोर्ट (DSR) की कार्यवाही कराने के निर्देश दिये गय है।

उक्त के सम्बन्ध में सादर अवगत कराना है कि नदी तल में उपलब्ध बालू, बजरी, बोल्डर (मिश्रित अवस्था में) के उपलब्ध 21 खनन क्षेत्रों एवं साधारण बालू के 01 क्षेत्र कुल 22 क्षेत्र को विकसित किया गया है। उ0प्र0 उपखनिज परिहार नियमावली, 2021 के अन्तर्गत खनन पटटा पर स्वीकृत किये जाने हेतु पर्यावरण तथा पारिस्थितिकी के दृष्टिगत क्षेत्र की उपयुक्तता एवं खनन योग्य मात्रा का आंकलन राजस्व विभाग की आख्या व खनन विभाग की संयुक्त आख्या व सिंचाई विभाग की आख्या तथा प्रभागीय निदेशक, सामाजिकी वानिकी प्रभाग, सहारनपुर व प्रभागीय वनाधिकारी, शिवालिक वन प्रभाग, सहारनपुर की वन अनापत्ति की संस्तुति सहित आख्या प्राप्त करने के उपरान्त ही जिला सर्वेक्षण रिपोर्ट की कार्यवाही पूर्ण करा दी गयी है।

अतः उक्त 22 क्षेत्रों के क्रम में जिला सर्वेक्षण रिपोर्ट (DSR) तथा संलग्नक (1–7) की प्रति इस पत्र के साथ संलग्न कर इस आशय से प्रेषित है कि उक्त 22 खनन पटटा क्षेत्रों हेतु तैयार जिला सर्वेक्षण रिपोर्ट (DSR) का परीक्षण व अनुमोदन कराने का कष्ट करें।

संलग्नकः– **1. Updated DSR की छायाप्रति।**
2.वन विभाग से प्राप्त अनापत्ति प्रमाण पत्र की छायाप्रति।
3. सिंचाई विभाग से प्राप्त अनापत्ति प्रमाण पत्र की छायाप्रति।

27/12/23

भवदीय

जिलाधिकारी
सहारनपुर।
18/12/2023

पत्रांक व दिनांक उपरोक्तानुसार।

प्रतिलिपि निम्नलिखित को सादर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. मा0 अध्यक्ष, राज्य स्तरीय पर्यावरण प्रभाव आंकलन प्राधिकरण, लखनऊ।
2. मा0 अध्यक्ष, विशेषज्ञ स्तरीय मूल्यांकन समिति, लखनऊ।
3. प्रमख सचिव, भूतत्व एवं खनिकर्म विभाग, उ0प्र0 शासन लखनऊ।
4. निदेशक, भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0, खनिज भवन लखनऊ ।
5. सदस्य सचिव, राज्य स्तरीय पर्यावरण प्रभाव आंकलन प्राधिकरण, लखनऊ।

जिलाधिकारी
सहारनपुर

0/C

Annexure No. SA 11A

Minutes of the Joint Meeting of SEAC -1 and SEAC-2, U.P. held on 03/05/2024

The Joint Meeting of State Expert Appraisal Committee (SEAC – 1 & 2) was held in Directorate of Environment, U.P. on 03/05/2024, following members were in the meeting:

1.	Shri Rajive Kumar,	Chairman, SEAC-1
2.	Dr. Harikesh Bahadur Singh,	Chairman, SEAC-2
3.	Shri Ashish Tiwari,	Member-Secretary, SEAC - 1 & 2
4.	Dr. Ajai Mishra,	Member, SEAC-1
5.	Shri Om Prakash Srivastava,	Member, SEAC-1
6.	Shri Umesh Chand Sharma,	Member, SEAC-1
7.	Dr. Ratan Kar,	Member, SEAC-1
8.	Dr. Brij Bihari Awasthi,	Member, SEAC-1
9.	Dr. Amrit Lal Haldar,	Member, SEAC-2
10.	Shri Tanzar Ullah Khan,	Member, SEAC-2
11.	Prof. Jaswant Singh,	Member, SEAC-2
12.	Dr. Shiv Om Singh,	Member, SEAC-2
13.	Shri Subhash Singh,	Mining Officer, Saharanpur
14.	Shri Deveshwar Kain	Senior Assistant, Mining Office, Saharanpur
15.	ShriVimlesh Jaiswal,	DGM, Lucknow
16.	Dr, Anju Verma,	DGM, Lucknow

The Nodal Officers welcomed the Chairman's, Members and Officers of Mining Department in the meeting which was conducted via dual-mode (virtually/physically).

In the Joint committee meeting of SEAC-1 and SEAC-2 following agenda were discussed and resolved:-

Agenda: - Evaluation/Appraisal of District Survey Report (DSR) of District Saharanpur.

Background:

In the joint meeting of SEIAA, SEAC-1 & SEAC-2 the detailed Standard Operating Procedure was formulated for the preparation and modification of D.S.R. for Sand Mining or R.B.M., as well as in-situ rocks, which was send to Director, Geology and Mining by SEIAA. This SoP was prepared in accordance with various guidelines such as MoEF&CC, GoI, Notification No. S.O. 141(E) dated 15-Jan-2016, S.O. 3611 (E) dated 25-July-2018, Sustainable Sand Mining Management Guidelines 2016, Enforcement & Monitoring Guidelines for Sand Mining 2020, and the Hon'ble Supreme Court Judgement passed in Civil Appeal – 3661-3662 of 2020 in the matter of State of Bihar and Others Vrs. Pawan Kumar, along with MoEF&CC, GoI letter dated 04/12/2023.

The District Magistrate, Saharanpur submitted the draft DSR vide its letter no. 2613/kha anu/DSR/2023-24, dated 18/12/2023 for evaluation /appraisal/approval before SEIAA/SEAC. The draft DSR was forwarded to the Director – Geology & Mining by Secretariat for comments and suggestions. The Director, Geology & Mining has provided his comments and suggestions vide letter no. 85/DSR, dated 19/04/2024 and mentioned as follows:

> "....उत्तर प्रदेश शासन द्वारा गठित तकनीकी समिति एवं निदेशालय स्तर पर गठित समिति द्वारा जनपद सहारनपुर द्वारा प्रस्तुत ड्राफ्ट डी0एस0आर0 का परीक्षण किया गया। परीक्षण में प्रस्ताव Sustainable Sand Mining Management Guideline-2016, पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय की अधिसूचना दिनांक 15–01–2016 एवं दिनांक 25–4–2018 Enforcement

and Monitoring Guidelines for Sand Mining -2020 एवं SEIAA/SEAC द्वारा जारी SOP के अनुरूप पाया गया...."

The Secretariat put up this DSR in joint meeting of SEAC-1 & SEAC-2 in dated 03/05/2024. During the meeting a presentation was given by Shri Subhash Singh, Mining Officer along with other senior officers of DGM.

Evaluation/Appraisal in Joint Meeting of SEAC-1 & SEAC-2 on 03/05/2024

Joint meeting of SEAC-1 & SEAC-2 was convened on 03/05/2024 for evaluation/appraisal of DSR of District-Saharanpur. Based on the documents submitted, a presentation on DSR Saharanpur for minor mineral River Bed Material - RBM (Sand/Bajri/Boulder) / Sand Mining-2022 was made by Shri Subhash Singh, District Mining Officer- Saharanpur along with Senior Officials of D.G.M. –UP.

Para wise response and compliance as per the "Standard Operating Procedure" formulated by the Joint committee of SEAC/SEIAA was presented before the SEAC-1&2. On the basis of documents and presentation the following facts have emerged:-

1. The initial District Survey Report of District-Saharanpur having 37 areas was prepared in Year– 2017 in line with the MoEF Notification dated 15-Jan-2016.
2. Thereafter the updated DSR of District-Saharanpur was prepared by Sub-Divisional Committee of District-Saharanpur in Year-2022 and total 22 areas have been proposed.
3. It was informed that out of 22 areas in the updated DSR, NOC for 01 area (Village – Rahena, Lot No-3, area 8.050 ha.) has not been provided by Forest Department. Accordingly, the revised DSR Saharanpur now has total 21 Areas. Lease wise area, gata/khand no., proposed minable quantity, geo-coordinates are proposed in Annexure-1 to Annexure-7 of proposed DSR.
4. As per the information provided vide District Magistrate, Saharanpur letter no. 3154/kha anu/DSR/2023-24, dated 28/03/2024 the DSR was uploaded in public domain for more than 30 days and 03 complaints were received in this period and 01 PIL was filed by the complainant. The details of complaint and its disposal is narrated as under:-

SL.NO	Complaint/PIL details	Details of reply/disposal
1	Shri Daljeet Singh of Yamunanagar Haryana vide letter dated 18.01.2022 submitted 20 points complaint letter on issues related to revision of DSR in 5 years, wrong process of e-tender, non compliance of Hon'ble Supreme Court order in Deepak Kumars Vs State of Haryana, separate DSR for each minor mineral required, non-compliance of formats, non-compliance of Hon'ble Supreme Court order in The State of Bihar Vs Pawan Kumar, Cluster Analysis, requirement of replenishment studies and stake holding of DSR with adjoining district in case of inter-state/inter-district boundaries.	The District Magistrate vide letter no. 2016/Kha Anu/Shikayat-DSR2022-2023 dated 27/02/2023 responded point wise reply and compliances to Shri Daljeet Singh of Yamunanagar Haryana as per the comments provided by Sub-Divisional Committee and disposed the complaint.
2	Shri Gaurav Kumar of Yamunanagar Haryana vide letter dated 25.01.2022 submitted 19 points complaint letter and	The District Magistrate vide letter no. 2017/Kha Anu/Shikayat-DSR2022-2023 dated 27/02/2023

	the issues were identical as mentioned in Sl. No.1	responded point wise reply and compliances to Shri Gaurav Kumar of Yamunanagar Haryana as per the comments provided by Sub-Divisional Committee and disposed the complaint.
3	Shri Sumit Singh Rana of Yamunanagar Haryana submitted 14 points complaint letter and the issues were identical as mentioned in Sl. No.1. Apart from this various NGT orders specific to DSR and Sand Mining were cited in the complaint letter.	The District Magistrate vide letter no. 2064/Kha Anu/Shikayat-DSR2022-2023 dated 03/03/2023 responded point wise reply and compliances to Shri Gaurav Kumar of Yamunanagar Haryana and disposed the complaint.
4	Civil Writ PIL no. 595/2023 Sumit Singh Rana Vs State of U.P and Ors.	The Hon'ble High Court vide order date 28/03/2023 dismissed the petition of Shri Sumit Singh Rana. The operative para of the same is as under:- *"At this stage, in this circumstances , interference claimed under Article 226 of the Constitution of India is declined. Present petition is accordingly dismissed, leaving it open to the petitioner to approach National Green Tribunal"*

5. The Updated DSR of District-Saharanpur has been also examined by the Director, Directorate of Geology & Mining, U.P.
6. Lease wise NOC from Forest and Irrigation Department for 21 areas has been obtained for existing and proposed leases.

SEAC Deliberation:

1. **SEAC asked about the current scenario/status of the leases as DSR was updated in year-2022?**
    - District Mining Officer, Saharanpur vide letter dated 03/05/2024 informed the DSR of district Saharanpur was prepared in year-2022 after conducting replenishment studies in which the reserves were calculated on the basis of replenishment in the post-monsoon – 2022 scenario. Lease wise replenishment studies were also conducted in year – 2023 which depicts that the rate of replenishment is good in the area. Geologically the area is part of shivalik region and there is no significant change in the formation of leases. The leases are getting over replenished and requires removal of deposits to maintain channel of river. The maximum leases are fresh for which LoI has been issued to project proponents who are in the process of securing E.C.

2. **SEAC asked about the status of utilization of DMF Funds?**
    - District Mining Officer Saharanpur informed that funds amounting to Rs. 9.32 Crores approx. have been allotted and phase wise utilized since 2017 from DMF funds which were used as per the objectives of DMF Rules.

3. **SEAC while evaluating presentation suggested that lease should be demarcated after each monsoon period.**
    - District Mining Officer Saharanpur informed that as a matter of practice the lease holders are directed to get demarcation of lease after each monsoon period and erect pillars (in case damaged in monsoon) under the supervision of Mining and Revenue officials. A demarcation report in this aspect is prepared and issued to lease holder.
4. **SEAC suggested that composite digital mapping of all the leases should be done and displayed in the district website.**
    - District Mining Officer Saharanpur informed that mapping of lease has been done in SOI toposheet, Drainage pattern sheet, Google satellite images and cadastral revenue maps. It was informed that the concept of uploading composite digital mapping of all the leases shall be implemented and uploaded in district web site along with approval of DSR of SEIAA/SEAC.
5. **SEAC asked on the method adopted for verification of mineral deposits which are recommended in DSR**?
    - District Mining Officer Saharanpur informed that pre and post monsoon replenishment studies were conducted by Sub-Divisional committee prior preparing DSR. The studies included physical survey, DGPS survey and Drone based survey in pre and post monsoon periods. Accordingly lease wise recommendation reports were made as compliances.
6. **SEAC suggested that demarcation report of the lease only includes corner pillar coordinates and should also mention details of non-working/restricted zone in case active water channel is observed in the lease while conducting demarcation?**
    - District Mining Officer Saharanpur informed that as per the Rule of UPMMCR-2021, geo-coordinates of the lease area are published in e-tender and initial demarcation report of corner pillar coordinates is issued to project proponent along with LoI and Lease Map. The RQP/Consultant prepares the surface and geological maps in mine plan in which the features of non-working/restricted zone is presented. The DGM-Lucknow after satisfaction approves such mine plans and such zones are shown in EIA and salient features of E.C. under workable / non-workable area category.
7. **SEAC asked about the further mineral development in district Saharanpur?**
    - Shri Deveshwar Kain, Senior Assistant, Mining Office, Saharanpur informed that three new areas has been identified in the district which has mineral potential. The SEAC informed that Sub-Divisional Committee has to follow the entire procedure every time, in case any new lease is identified, as per SOP issued by SEIAA/SEAC.

The joint committee after detailed deliberation recommended to approve the District Survey Report (DSR) of District-Saharanpur along with following conditions:

1. The period of validity of Revised DSR Saharanpur-2022 shall be for the remaining balance period of 03 years from the date of its approval.
2. The submitted DSR has 22 areas. NOC for 01 area (Village – Rahena, Lot No-3, area 8.050 ha.) has not been provided by Forest Department. Accordingly, approval of only 21 areas (except Village – Rahena, Lot No-3, area 8.050 ha.) is recommended in the revised DSR Saharanpur.
3. If any new lease is identified, its validity will be co-terminous with the validity period of current DSR and Sub-Divisional Committee will follow the entire procedure every time on the basis of existing DSR.

4. After approval of DSR from SEIAA, the District Administration shall upload the DSR in public domain along with Lease Wise Digital Maps showing the status of deposits and pillar wise coordinates of existing and proposed areas.
5. The District Administration shall utilize the District Mineral Foundation Funds as per notification no. 866/86-2017-132/2016 dated 15/05/2017 issued by Department of Geology and Mining, Government of U.P. or any modification in it by competent authority.
6. The District Administration shall periodically conduct audits of operative mine leases using drone based survey and take corrective measures in case of adverse observations and a quarterly report on this shall be send to SEIAA as compliance.

The meeting ended with a vote of thanks of Chairman.

(Ashish Tiwari) **Member Secretary, SEAC-1 & 2**	**(Dr. Ajai Mishra)** **Member, SEAC-1**	**(Dr. Brij Bihari Awasthi)** **Member, SEAC-1**
(Dr. Ratan Kar) **Member, SEAC-1**	**(Umesh Chandra Sharma)** **Member, SEAC-1**	**(Om Prakash Srivastava)** **Member, SEAC-1**
(Dr. Amrit Lal Haldar) **Member, SEAC-2**	**(Tanzar Ullah Khan)** **Member, SEAC-2**	**Prof. Jaswant Singh)** **Member, SEAC-2**
(Dr. Shiv Om Singh) **Member, SEAC-2**	**(Rajive Kumar)** **Chairman, SEAC-1**	**(Dr. Harikesh Bahadur Singh)** **Chairman, SEAC-2**

Nodal, SEAC-1 & Nodal, SEAC-2

MoM prepared by Secretariat in consultation with Chairman & Members on the basis of decisions taken by joint committee during the meeting.

Annexure No. SA 12A

प्रेषक,

सदस्य सचिव,
राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण, उ0प्र0
विनीत खण्ड–1, गोमती नगर,
लखनऊ।

सेवा में,

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0
खनिज भवन, लखनऊ।

पत्रांक: 159/पर्या0/डी0एस0आर0/सहारनपुर/2024 दिनांक: 07 जून 2024

विषयः जिला सर्वेक्षण रिपोर्ट (डी0एस0आर0) के अनुमोदन के संबंध में।

महोदया,

कृपया उपर्युक्त विषयक अपने पत्र सं0–85/डी0एस0आर0, दिनांक 19–04–2024 का सन्दर्भ ग्रहण करना चाहें, जिसके साथ जनपद–सहारनपुर का ड्राफ्ट डी0एस0आर0 मूल रूप में संलग्न कर आवश्यक कार्यवाही हेतु प्रेषित किया गया था।

जनपद–सहारनपुर की ड्राफ्ट डी0एस0आर0 अप्रेजल हेतु राज्य स्तरीय पर्यावरण मूल्यांकन समिति (SEAC-1&2) की संयुक्त बैठक दिनांक 03–05–2024 को सूचीबद्ध था तथा जिसको राज्य स्तरीय मुल्यांकन समिति द्वारा कुछ शर्तों के साथ अनुमोदन हेतु संस्तुत किया गया। तदोपरान्त राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण (SEIAA) की 814वी0 बैठक दिनांक 24–05–2024 में सहारनपुर की डी0एस0आर0 अन्य शर्तों के अतिरिक्त इस शर्त के साथ अनुमोदित की गई कि:–

SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in LoI.

अनुरोध है कि खनन अधिकारी, सहारनपुर के ई0–मेल दिनांकित 03–06–2024 द्वारा प्रेषित इकाईयो को डी0एस0आर0 में प्रतिस्थापित किया जाये।

भवदीय,

(संजीव कुमार सिंह)
सदस्य सचिव, एस0ई0आई0ए0ए0

Annexure No. SA 12A

प्रेषक,

सदस्य सचिव,
राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण, उ0प्र0
विनीत खण्ड–1, गोमती नगर,
लखनऊ।

सेवा में,

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0
खनिज भवन, लखनऊ।

पत्रांक: 159/पर्या0/डी0एस0आर0/सहारनपुर/2024 दिनांक: 07 जून 2024

विषय: जिला सर्वेक्षण रिपोर्ट (डी0एस0आर0) के अनुमोदन के संबंध में।

महोदया,

कृपया उपर्युक्त विषयक अपने पत्र सं0–85/डी0एस0आर0, दिनांक 19–04–2024 का सन्दर्भ ग्रहण करना चाहें, जिसके साथ जनपद–सहारनपुर का ड्राफ्ट डी0एस0आर0 मूल रूप में संलग्न कर आवश्यक कार्यवाही हेतु प्रेषित किया गया था।

जनपद–सहारनपुर की ड्राफ्ट डी0एस0आर0 अप्रेजल हेतु राज्य स्तरीय पर्यावरण मूल्यांकन समिति (SEAC-1&2) की संयुक्त बैठक दिनांक 03–05–2024 को सूचीबद्ध था तथा जिसको राज्य स्तरीय मुल्यांकन समिति द्वारा कुछ शर्तों के साथ अनुमोदन हेतु संस्तुत किया गया। तदोपरान्त राज्य स्तरीय पर्यावरण प्रभाव निर्धारण प्राधिकरण (SEIAA) की 814वी0 बैठक दिनांक 24–05–2024 में सहारनपुर की डी0एस0आर0 अन्य शर्तों के अतिरिक्त इस शर्त के साथ अनुमोदित की गई कि:–

SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in LoI.

अनुरोध है कि खनन अधिकारी, सहारनपुर के ई0–मेल दिनांकित 03–06–2024 द्वारा प्रेषित इकाईयो को डी0एस0आर0 में प्रतिस्थापित किया जाये।

भवदीय,

(संजीव कुमार सिंह)
सदस्य सचिव, एस0ई0आई0ए0ए0

Annexure No. SA 13

जनपद सहारनपुर
DISTRICT SAHARANPUR

Pre-Monsoon Replenishment Study
&
Reserve Estimation Report of
R.B.M. Mining Leases - District Saharanpur

(Study period – Pre-monsoon-2022)

VOLUME-1

Prepared by M/s GreenCIndia Consulting Pvt. Ltd.

A QCI/NABET Accredited Origination under Mining Sector 1(a) as per MoEF & CC Schedule.

Under Supervision of Sub-Divisional Committee – District Saharanpur

Submitted to Hon'ble District Magistrate, Saharanpur

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संयुक्त निदेशक
खनन अनुभाग
सहारनपुर

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

PREFACE

A Drainage system is the pattern formed by streams, rivers and lakes in a drainage basin. In a drainage system, streams or rivers always connect together to form networks. Several factors such as topography, soil type, bedrock type, climate and vegetation cover influence input, output and transport of sediment and water in a drainage basin *(Charlton, 2008)*. Such factors also influence the nature of the pattern of water bodies *(Twidale, 2004)*. As a consequence, drainage pattern can reflect geographical characteristics of a river network to a certain extent. There are several types of drainage pattern. So far, much research has been done on the description of drainage patterns in geography and hydrology *(e.g. Howard, 1967; Lambert, 1998; Twidale, 2004; Pidwirny, 2006)*.

In addition, sediment transport knowledge is important in river restoration, ecosystem protection, navigation, watershed studies and its management. Bed load represents the lower portion of sediment load in natural rivers. Fluvial sediment load materials are transported by rivers. Sediment load can be divided into bed load and suspended load based on the mode of transport. Bed load is transported close to the bed where particles moved by rolling, sliding, or jumping *(Adegbola, 2012)*. *Xlaoqing (2003)* explained that bed load transport in natural rivers is a complicated phenomenon. Its movement is quite uneven in both the transverse and longitudinal directions, which vary considerably.

The state of Uttar Pradesh has great importance in the local, regional, national and international perspectives due to its distinct physiographic conditions. It is endowed with diverse vegetation types, ranging from tropical to subtropical, temperate and alpine including riverine, grasslands and wetlands. The rivers of Uttar Pradesh play's an important role for the nation and provide water required by various sectors such as irrigation, drinking, recreation and industrial requirements etc. Besides, mining activities are also being carried out in the rivers for the developmental process.

Removal of excess sand and stone from river bed helps to maintain the carrying capacity and provides protection from flooding during monsoon season. Further, continuous flow of river is essential for ecological and economic needs such as irrigation and biodiversity etc. Therefore, drainage study of the river helps to understand potential carrying capacity of water during monsoon season which is generated from rainfall in the watershed and quantity of di-siltation of rivers under mining affected areas.

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In line with same, Replenishment study was carried out for operative/new/planned R.B.M. leases of District Saharanpur. Quantification and estimation of river bed material (RBM) was accomplished by followed three scientific approaches as envisaged in Sustainable Sand Management Guidelines – 2016 (SSMG-2016) and its contemporary guidelines Enforcement & Monitoring Guidelines for Sand Mining (EMSM-2020)issued by MoEF&CC in January-2020.

Mining areas were geo-tagged and surveyed for analysis of study of the availability/potential of sand and gravel. Estimation of deposition and safe limit for extraction/ removal of deposited river bed material (RBM) available in the various rivers/streams were done by analysing elevation profiles and pit profiles at regular intervals and Drone based Survey.

The Report has been prepared and published in Three Volumes namely VOLUME-1, VOLUME-2 and VOLUME-3.

The quantity and elevations has been arrived upon considering the various factors as per guidelines and thse data shall be corelated with the post-monsoon results.

Subdivisional Committee – District Saharanpur

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2	Objective of Study
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4	District and River Profile
5	Sediment Composition
6	Enforcement & Monitoring Guidelines for Sand Mining-2020
7	Inventory of R.B.M. Leases in District Saharanpur
8	Study and Results of Leases in pre-monsoon (2022) scenario.
9	Conclusion & Recommendation
10	Annexures

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Introduction to the Project

INTRODUCTION

The sediment of a river is commonly considered to be aesthetically displeasing and environmentally degrading. Conversely, part of the sediment (sand and gravel) may represent a natural resource for use by society. The potential usefulness of the sediment is enhanced when it is composed of particle sizes found in deposits on the river-bed that would be replenished by newly transported sediment after mining. As such, river deposits become renewable resources, periodically replaced by sediment transport in the river.

- **Bed-load Material:** The mixture of sediment that composes a streambed. Bed material is stationary, but particle size is important to sediment transport because as energy level of a stream increases, some bed-material particles are mobilized and become part of the bed-load or suspended load.

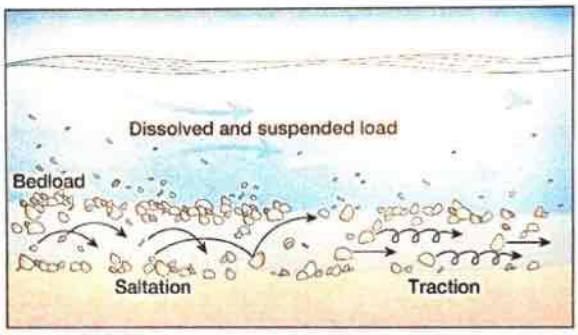

Figure 1-1: Sediment deposition and transportation method

- **Bed-load discharge:** A measure of the quantity (weight) of bed-load per unit time also referred to as bed-load-transport rate.
- **Bed Material:** The mixture of sediment that composes a streambed. Bed material is stationary, but particle size is important to sediment transport because as energy level of a stream increases, some bed-material particles are mobilized and become part of the bed -load or suspended load. In this report, composition of bed material is defined by particle -size distribution.
- **Suspended Sediment Material:** Usually small particles, suspended by turbulence of the flow or existing as colloids, and transported at about the same downstream velocity as the flowing water. Suspended sediment is distributed at all depths in flowing water.
- **Suspended-sediment load:** A general term referring to the quantity (weight) of suspended sediment in transport.
- **Suspended-sediment discharge:** A computed value of the quantity (weight) of suspended sediment per unit time, also referred to as suspended-sediment transport rate.

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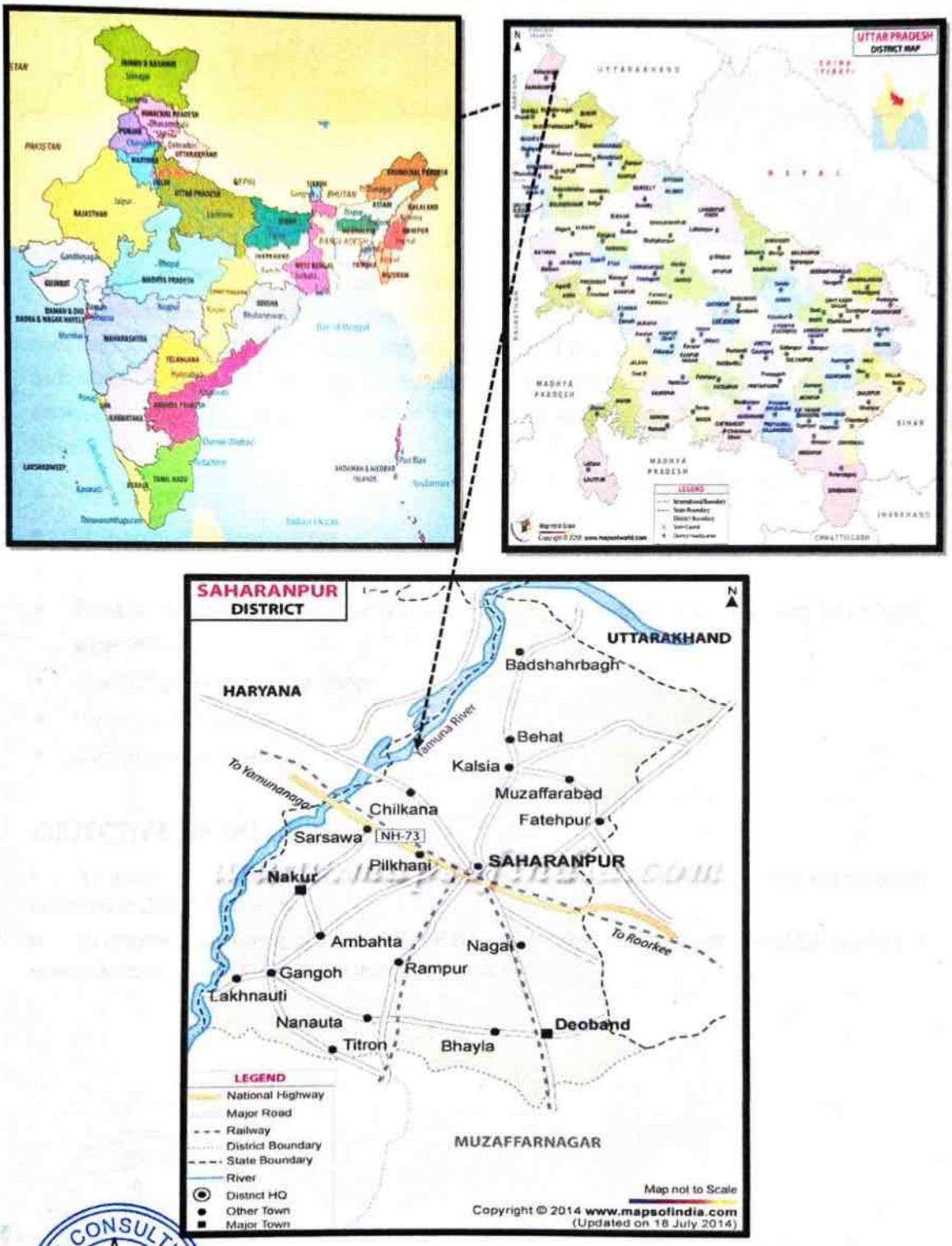
- **Total sediment load:** The sum of bed load and suspended sediment load.
- **Total sediment discharge:** The sum of bed load discharge and suspended-sediment discharge

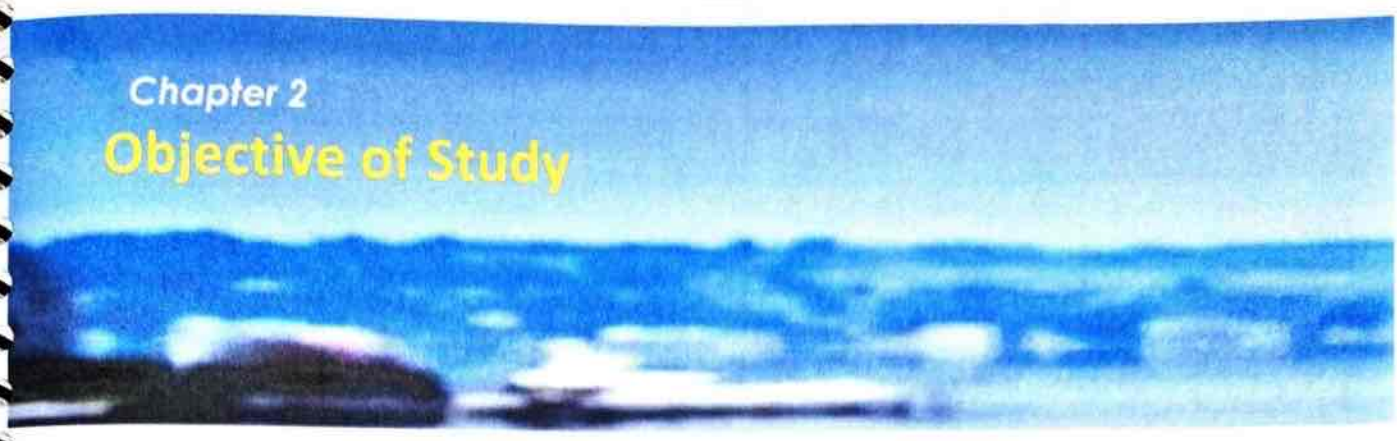
Report Coverage :-

- The report covers the study of River Bed Material (R.B.M.) in the stretch of Yamuna and its allied sub-tributaries in Tehsil Behat of District Saharanpur.
- Removal of excess sand and stone from river bed helps to maintain the carrying capacity and provides protection from flooding during monsoon season. Further, continuous flow of river is essential for ecological and economic needs such as irrigation and biodiversity etc.
- Therefore, drainage study of the river helps to understand potential carrying capacity of water during monsoon season which is generated from rainfall in the watershed and quantity of di-siltation of rivers under mining affected areas.
- Replenishment potential of the existing/inoperative mining areas are studied to assess the availability/potential of sand and gravel.
- Estimation of deposition and safe limit for extraction/ removal of deposited river bed material (RBM) available in the various rivers/streams were done by analysing elevation profiles and pit profiles at regular intervals.
- The conclusion has been arrived upon considering the various factors as per guidelines and the data shall be correlated with the post-monsoon results.

GEOENCINDIA CONSULTING (P) LTD. GHAZIABAD

Study Area - Location Map
Saharanpur, Uttar Pradesh





Chapter 2

Objective of Study

PURPOSE OF THE STUDY

For ecological and environmental sustainable balance there must be a balance between river sand mining and replenishment. The extracted sand is required to be replenished in next monsoon. Therefore, it is necessary to do sand budgeting before and after monsoon to ensure that the extraction will not exceed sedimentation. Due to unscientific and & over extraction, the imbalance may cause following threat to the ecosystem of the area / region, especially in arid and semi -arid regions. Some of the impacts are as follows.

- Transformation of river into buried channel
- Changes in abiotic environment
- Soil / land erosion (especially at banks) at the time of flood
- Possible changes in regional water table (may increase or decrease in pockets) or may form a local water tables
- Quality of ground-water may change
- Ponding in river bed
- Change in river course

OBJECTIVE OF THE STUDY

- To assess the possibility of safe extraction of river bed material from River **Yamuna** and associate tributaries in District Saharanpur
- To determine the reserve of replenishable R.B.M. within mine lease area and to establish quantum of exiting deposits by conducting reserve estimation exercise.

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METHODOLOGY

- The main aim of the survey work and measurements is to carry out the collection of baseline data in pre-monsoon period which will be repeated in post-monsoon period to assess the quantum of replenishment.
- For river R.B.M. reserve estimation the river was surveyed at the ground and the corner coordinates were determined with the help of DGPS so that the lease area boundaries are obtained.
- The survey is based on three layered approach.

  - **Layer one approach includes physical survey of lease** and collection of information related to existing reserves and by conducting pit profiles are regular intervals with the help of JCB Machine and digging equipment's such as Auger, spade, hand shovel, hammer, measuring tape etc. upto a depth of three meters.

  - **Layer two approach includes DGPS survey.** A number of ground control points have been established on each site at permanent structure at prominent locations on the banks of various rivers under study. The DGPS survey observations are taken at a regular grid interval in longitudinal direction and in perpendicular across direction depending on the geological conditions of leases. The number of sections along and across the river depend on the length and width of lease, its dimension as well as ground conditions.

  - **Layer three approach includes DRONE based survey**. Drone technology is becoming a common element in any surveyor or site manager's day-to-day toolkit. This is

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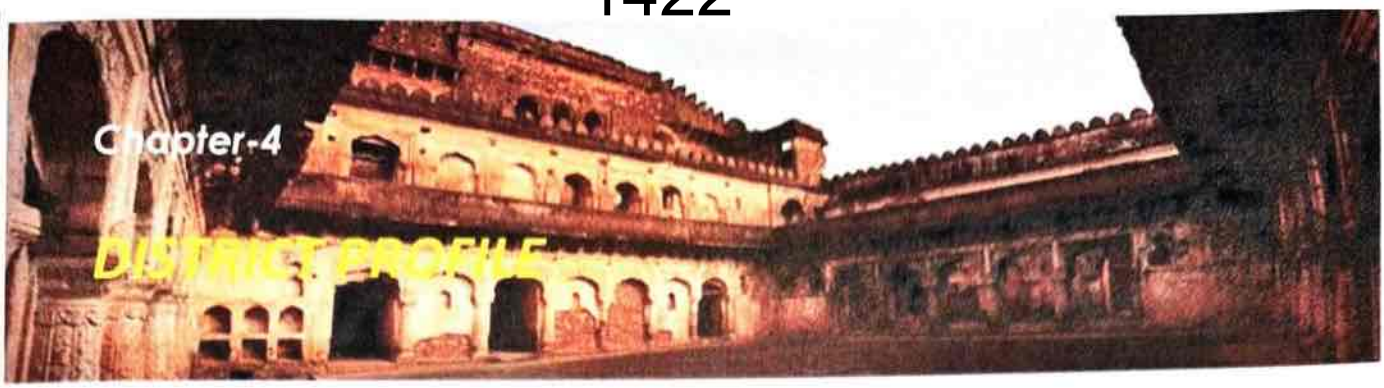
ushering in a new era in topographic surveying thus enabling the capture of detailed site maps, including ground contours and existing features of the earth's surface, at a fraction of the time and cost of traditional methods. Drone helps us to achieve survey-grade accuracy in a photogrammetric map or 3D model. The survey outputs in the form of difference 3D Maps will be correlated with post-monsoon data and a 3D Digital Elevation Model shall be created to analyse the quantum of replenishment occurring due to change in contours / elevations.

- The methodology followed is in conformity to the Enforcement & Monitoring Guidelines for Sand Mining – 2020 issued by MoEF in January-2020 which envisages that Regular Replenishment study needs to be carried out to keep a balance between deposition and extraction.
- Specific emphasis has been given to the norms provided in the Section-5 of Enforcement & Monitoring Guidelines for Sand Mining – 2020 which provides procedure to be followed for conducting replenishment study.
- Since it is for the first time that such baseline data's are being collected, both the approach of conducting replenishment study *(i.e. Physical DGPS survey of the field by the conventional method and Use of UAV/Drone and other image data processing techniques)* has been followed to ensure the accuracy of results.



DISTRICT PROFILE

District Saharanpur is north-western part of Uttar Pradesh, lying between 29°34' and 30°24' N latitude and 77°07' and 77°58' E longitude falling within the survey of India toposheet nos. 53F and 53G. River Yamuna marks the western boundary of the district separating U.P. from adjoining state of Haryana. The extreme north-western part like beak structure touches with Sirmaur district of Himanchal Pradesh. In north lies Dehradun (Uttarakhand) and in the east it faces Haridwar district also being the part of Uttarakhand State. Muzaffar Nagar and Shamli districts marks southern boundary.

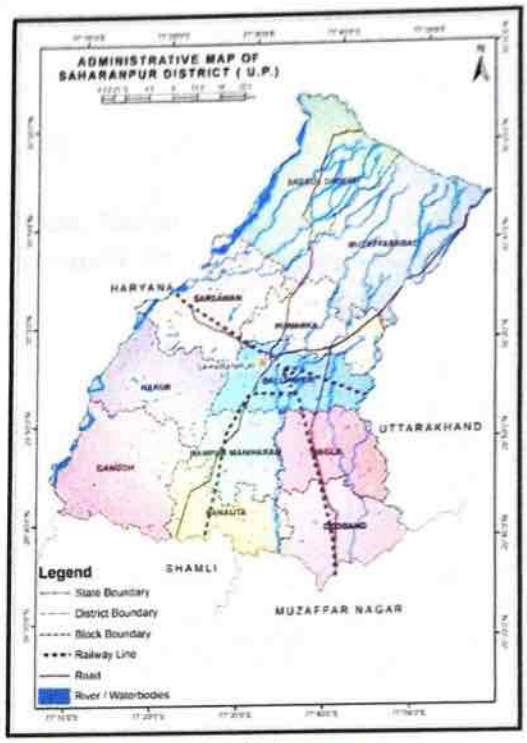


Figure 4-1 – District Map of Saharanpur

Saharanpur forms the most northerly position of the Doab land which stretches between the holy rivers of the Ganges and the Yamuna, The Shivalik hills rise above it on the northern frontier. The portion of Doab in which Saharanpur is situated was probably one of the first region of upper India occupied by the Aryans colonisers as they spread eastward from the Punjab.

Saharanpur district attained the status as Saharanpur division in 1997 of Uttar Pardesh. As regards its physical features the north and the north east of the district is surrounded by Shivalik hills and separates it from the Dehradun district in the recently created state of Uttranchal. The river Yamuna forms its boundary in the west which separates it from Karnal and Yamunanagar districts of Haryana. In the East lies the district of Haridwar which was the part of district Saharanpur before 1989 and in the south lies the district Muzafarnagar. At the time of the British Rule District Muzafarnagar was also a part of district Saharanpur.

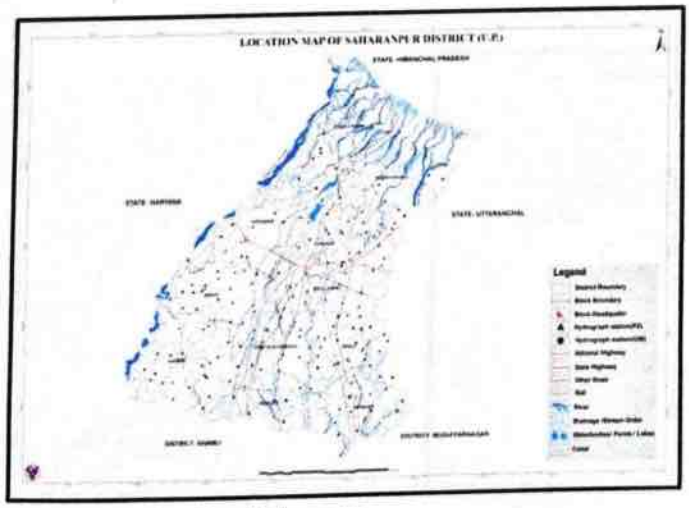


Figure 4.2 - Location Map of Saharanpur

The district presents many varieties of features and differs in general appearance

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than any other portion of the Doab and Gangetic plain as a whole. It is true that most of the area belongs to the upland Bangar which stretches in a continuous line up to Allahabad i.e. Junction of the two great rivers and on the either side is the broad and low lying valley full of swamps and back waters with wide open grass plains and Tamarisk jungle but in the north, There are the steep hills of Shivalik chain which appear in a far more marked form in Saharanpur than any other district of Uttar Pardesh while below the hills are to be seen in a modified form the prevailing characteristics of the Bhabar and Tarai region.

The main characteristics of the district can be divided into four parts.

1. Shivalik Hill Tract
2. The Bhabar Land
3. Bangar Land
4. Khadar Land (Yamuna, Hindon)

Yamuna is the important river of the district. Apart from this Solani, Hindon, Ratmau, Nagdev have also played an important role in the physical reconstruction of the district. All the rivers of the district submerge either in Yamuna or in the Ganges.

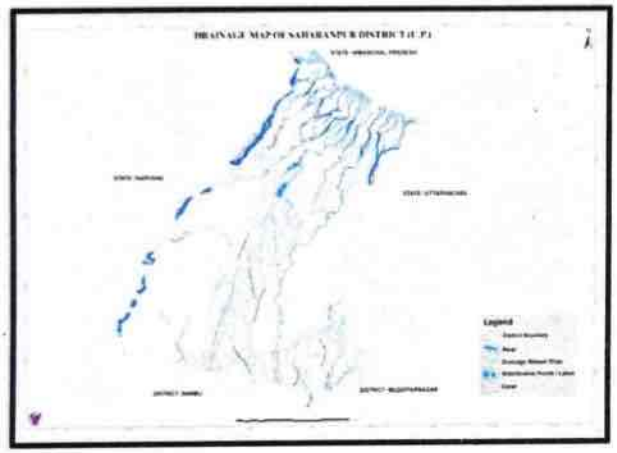

Figure 4.3 - Drainage Map of Saharanpur

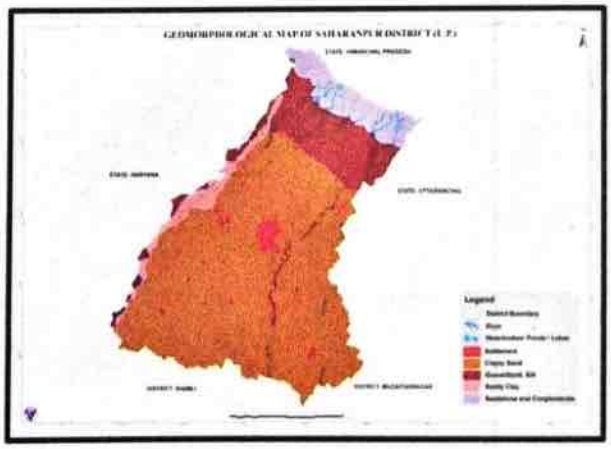

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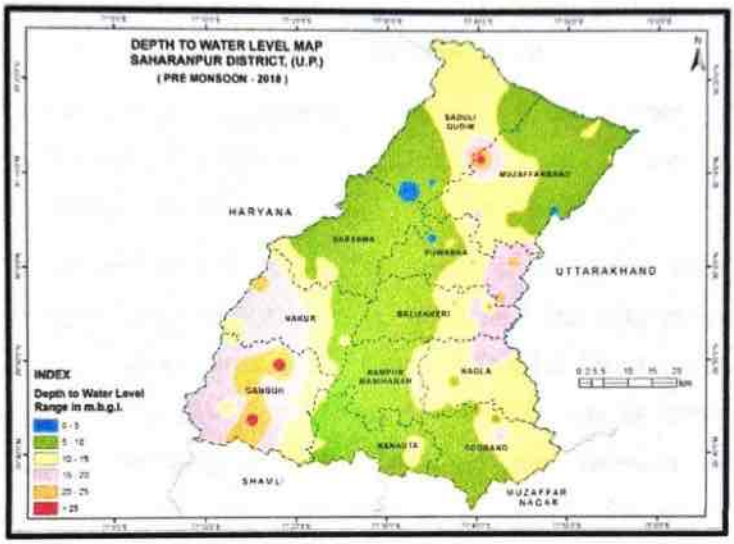
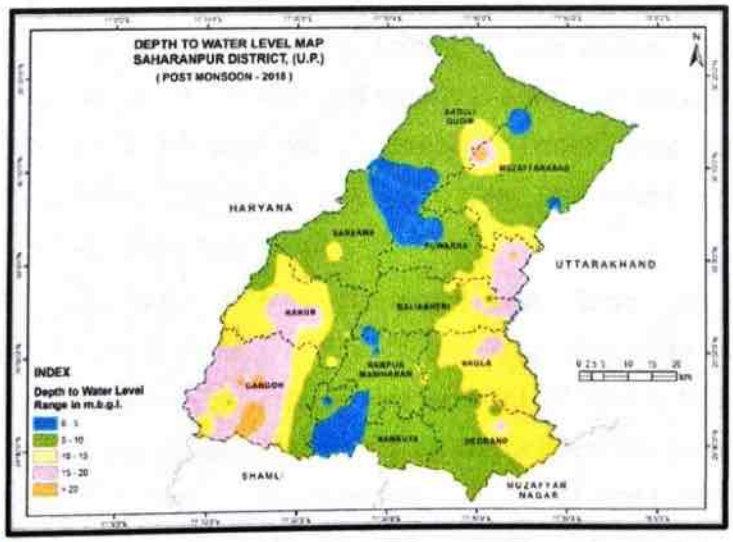
Figure 4.4 - Geomorphological Map of Saharanpur

Ground Water Scenario :-

Ground water occurs under phreatic to semi confined and confined conditions. The near surface aquifer is under unconfined / water table condition. The shallow phreatic aquifer is tapped by dugwells.In 2018 the depth to water level ranges from 2.40 (Shakhambari at Muzaffarabad block) to 22.44mbgl (Gangoh block) duringpre-monsoon whereas it ranges from 2.17 (Ghuna at Puwarka block) to 21.60mbgl (Gangoh block) in post-monsoon. The pre & post- monsoon water level fluctuation varies from 0.02 (Shakhambari at Muzaffarabad block) to 4.81 m (Babail Buzurg at Muzaffarabad). The depth to water level map prepared from the water level data of GWD, Saharanpur of pre-monsoon 2018.





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GEOLOGY

Saharanpur district of Uttar Pradesh in located between latitudes 29°33' and 30°25' N and longitude 77°06' and 78°13 'E. It occupies an area of 3689 sq.km and has a population of about 23,09,000 with a population density of 625 persons per square kilometre *(Census Report 1991);*
The climate in the district is moderate humid and tropical with annual rainfall of 901 mm. This district was bifurcated into two districts, namely, Saharanpur and Haridwar in the year 1989. Haridwar district has recently been included in the newly created Uttaranchal State.

Geologically, the area consists of sandstone, claystone and conglomerate of Siwalik Group of Pliocene to Early Pleistocene in age and unconsolidated sand, silt and clay represented by Older and Newer Alluvium of Middle Pleistocene to Holocene in age.

Siwalik Group in this area is divisible into two formations i.e. Middle Siwalik consisting mainly of sandstone and Upper Siwalik consisting of conglomerate. The rocks of the Siwalik Group are folded and faulted and override the Alluvium along the Foot Hill Thrust (concealed). The Siwalik rocks have been recorded up to a depth 4170m. The Alluvium may be differentiated in to Older Alluvium, consisting of oxidized (brown, yellow and *khaki* color) sediments, and Newer Alluvium comprising unoxidised (grey and *khaki* color) sediments. In Saharanpur district Varanasi Alluvium of Pleistocene age represents Older Alluvium. The Varanasi Alluvium contains polycyclic sequence of micaceous sand, silt, and clay with occasional *kankar* layers. The Newer Alluvium of Holocene age is divisible into Fan Alluvium, Terrace Alluvium and Channel Alluvium. Fan Alluvium overlies the Varanasi Alluvium and comprises gravel beds and coarse sand with minor silt and clay. Sequence of gravel, sand and silt occupying Terrace along Ganga and Yamuna rivers, comprises constitute Channel Alluvium. Loose gravel, sand of point- and-channel-bars and sand-silt offlood plain, of rivers , constitute Channel Alluvium.

Geomorphologically, the terrain of Saharanpur lying between Ganga and Yamuna rivers is differentiated into Low Structural Hills, to the north, and Ganga plain, to the south. Low Structural Hills (sub-Himalaya), constituting a narrow zone with elevations of 500m to 1000m above mean sea level trend NW -SE, has high drainage density and ruggedness index. The Ganga plain lying to the south contains Upland and Lowland. The Upland with elevations of 200m to 500m above mean sea level slopes southward, occupies interfluves and is divisible into Varanasi Plain and Alluvial

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Fan. Alluvial Fan can be distinguished into a northern rugged, gravelly ground with straight incised streams, commonly known as *Bhabhar*, and a southern undulating, silty ground with shallow sluggish streams, generally known as *Tarai*. The *Tarai* merges with Varanasi Plain.

The ground of Varanasi Plain is silty to sandy with relict fluvial features. The Lowland, separated from Upland by 5 to 25 m bluffs, contains one to two levels of Terrace Plain and Channel Plain. Riverbed and its flood plain make Channel Plain.

In Saharanpur resources of land and water are in Ganga and Yamuna drainage basins. Ganga and Yamuna originate from Himalaya and are gravelly to sandy, braided, snow fed and perennial rivers. Spring and groundwater fed streams/rivers originating from foothills are Solani, Hindon, Sahansra Rao, Ratmau Rao, Budhi, Yamuna, Kali and Krishnai. Surface water -streams, *Tals* and canals (Ganga and Yamuna channel systems)- and groundwater found in sand layers (aquifers) sustain domestic and irrigation needs. Groundwater occurs in a four-tier aquifer system under water table and confined conditions.

Aggregate/construction material is excavated from Channel Alluvium, Fan Alluvium deposit and upper Siwaliks. River water of major rivers is tamed and utilized for human sustenance.

Alluvium, Alluvial Fan and sub-Himalaya belt of soft to moderately hard sedimentaries constitute geotechnical provinces of Saharanpur. Bhabhar part of the Fan is not suitable for settlement. Landslides in hills, gully erosion in *Bhabhar*, bank erosion by Ganga and Yamuna in Floods affecting terraces are hazards of Saharanpur district.

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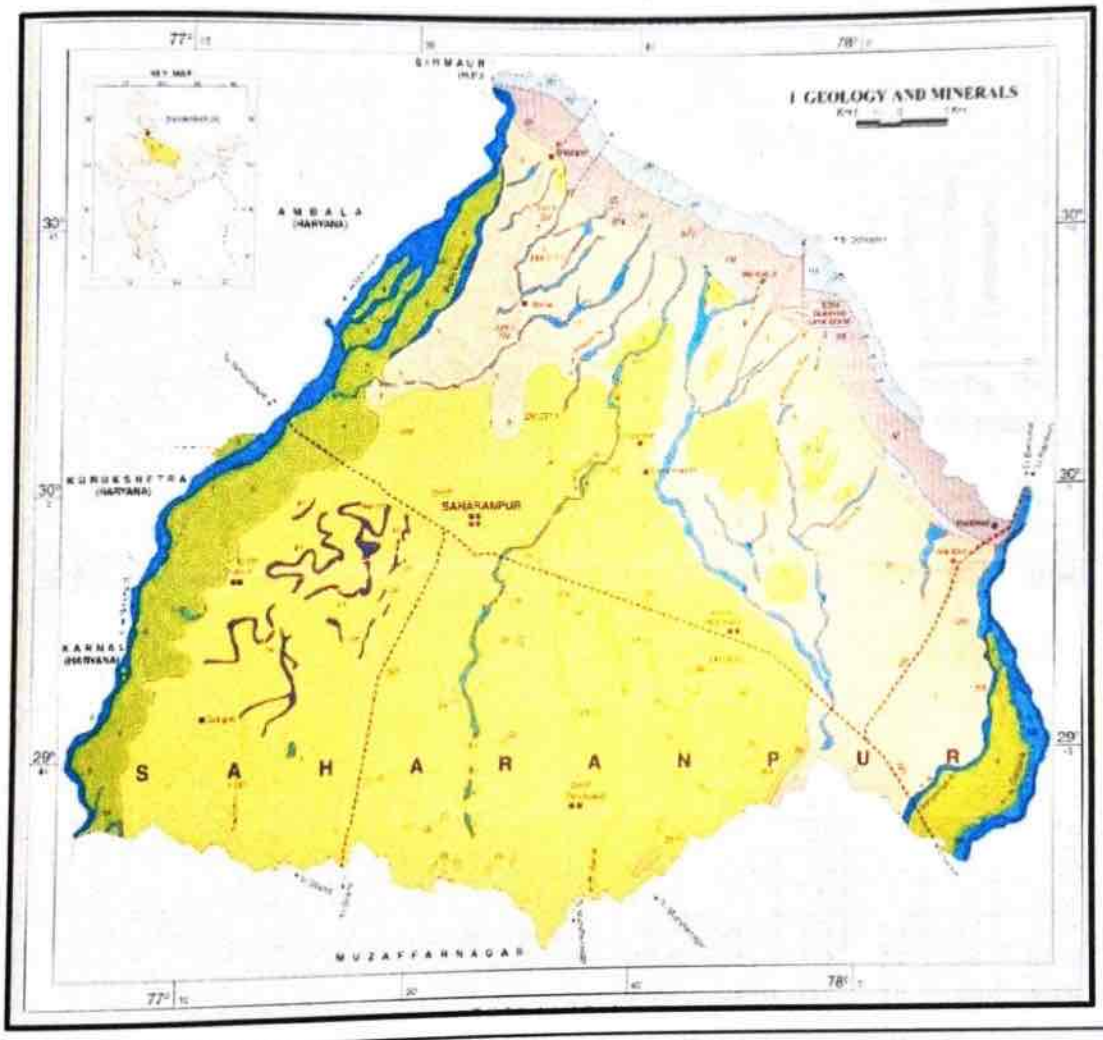
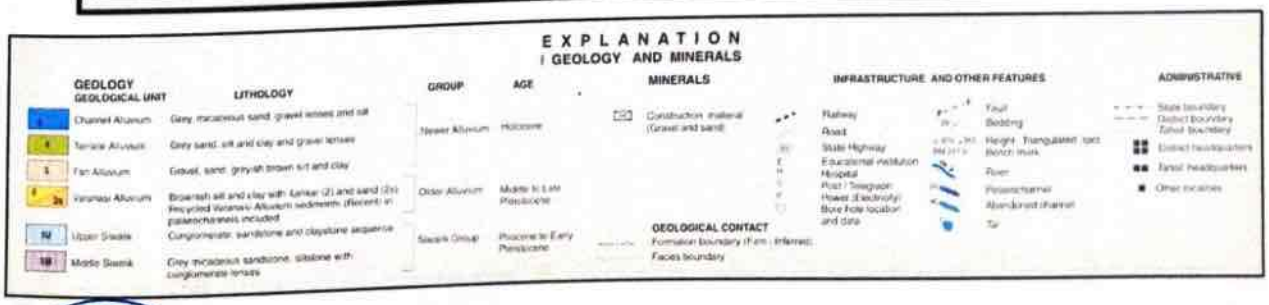
DISTRICT RESOURCE MAP – GEOLOGY AND MINERALS

(SOURCE G.S.I.)





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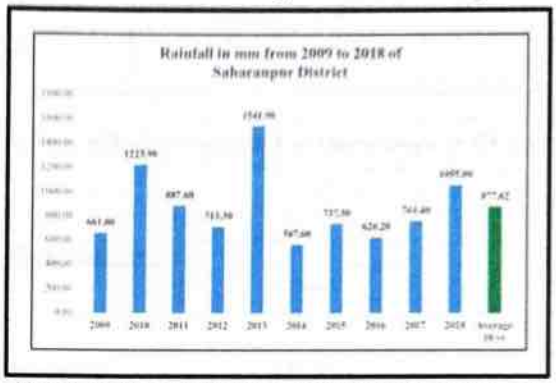
RAINFALL & CLIMATE

The average annual rainfall (Year 1951-2000) in the district is 963.9 mm. About 80% of rainfall takes places from June to September. During monsoon surplus water is available for deep percolation to ground water. The climate is sub humid and it is characterized by general dryness except in the brief period during the monsoon season. Summer is hot and winter is pleasant cold season. There is a meteorological observatory at Meerut, which may be taken as representative of meteorological condition. May is the hottest month. The mean daily maximum temperature is about 40^{0}C, mean daily minimum temperature is about 24^{0}C and maximum temperature some time rises to 44^{0}C. With the onset of southern monsoon by the end of June, there is appreciable drop in temperature. January is the coldest month with mean daily temperature at about 20^{0}C and mean daily minimum at 7^{0}C. The air is dry during the major parts of the year. In south-west monsoon season, the air is very humid and April and May are usually driest months. The mean monthly relative humidity is 67%. The mean wind velocity is 6.70 Km/h. The potential evapo-transpiration is 1545.90 mm.



Rainfall Data (mm) of Saharanpur District, U.P. (2009-2018)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2009	0.0	30.6	0.0	0.0	0.0	0.0	128.0	243.0	254.5	0.0	0.0	4.9	661.0
2010	8.3	20.0	0.0	0.0	19.3	28.3	462.0	285.3	399.7	0.0	0.0	1.0	1223.9
2011	0.0	32.7	13.3	9.0	64.0	295.7	191.7	154.9	126.3	0.0	0.0	0.0	887.6
2012	10.3	1.7	3.3	18.3	2.0	4.0	153.0	349.6	162.3	0.0	0.0	8.8	713.3
2013	93.4	163.1	0.0	0.0	0.0	311.0	376.0	434.7	67.0	72.0	0.0	24.7	1541.9
2014	65.0	52.2	32.3	9.4	12.7	20.0	147.0	67.3	107.0	32.7	0.0	22.0	567.6
2015	17	18	108	18.6	8.7	51.7	233.9	189.7	75.3	7.3	9.3	0	737.5
2016	0	5	18.3	5	58.7	46.9	275.7	204.3	8.3	4	0	0	626.2
2017	48.3	3.3	6.7	9.0	1.0	184.1	132.3	182.0	192.0	0.0	0.0	2.7	761.4
2018	2.0	10.3	3.7	15.3	11.3	113.9	449.7	262.5	151.1	34.3	0.7	1.0	1055.8
AVERAGE	24.4	33.7	18.6	8.5	17.8	105.6	254.9	237.3	154.4	15.0	1.0	6.5	**877.6**

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Summary of Rainfall Data:-

Year / Duration	Average Annual Rainfall (mm)
(Year 1951-2000) – 50 years	963.9
(Year 2009-2018) – 10 years	877.62
(Year 2019)	NA
(Year (2020)	973.10
(Year 2021)	NA

(Source CGWB – Ground Water Year Book, Uttar Pradesh 2020-2021 released on December – 2021 and its past editions)

- **Water discharge data of Hatnikund Barage – River Yamuna**

Sl no	Salient Feature	Height/Volume	Units
1.	High Flood Discharge for (in 100 years frequency)	7,79,900	CUSECS
2.	High Flood Discharge for (in 500 years frequency)	9,95,900	CUSECS
3.	Highest Flood Level	342.35	M
4.	Pond Level	334.32	M
5.	Crest Level		
	I – Spillway Portion	330.0	M
	II – Undersluice Portion	329.0	M

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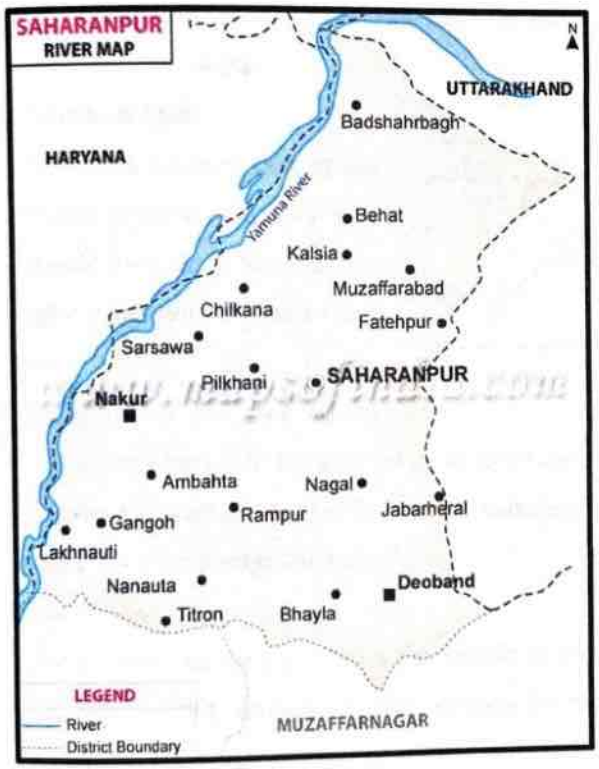
DESCRIPTION OF YAMUNA RIVER

The area occupies a part of Ganga-Yamuna doab zone and underlain by thick alluvial sediments deposited by fluvial action of river Yamuna and it's tributaries. The land slopes gently towards south and SE. Main streams flowing through the area are Katha, Budhi, Saundli nadi which are tributaries of Yamuna river.

Saharanpur District in the northern most of the districts of Uttar Pradesh State, India. Bordering the State of Haryana, Himachal Pradesh and Uttrakhand and close to the foothills of shivalik range, it lies in the state of Uttar Pradesh. Saharanpur District forms part of Saharanpur Commissionary and it is commissionary Head Quarter. District Saharanpur lies in the extreme uppermost comer of Ganga Yammu doab region. The District is bounded in the west of river Yamuna & Haryana, Uttarakhand to the northen east and district Muzaffar Nagar and Shamli to its South.



Out of total 23 leases under study, a total of 16 lease are located on the bank of Yamuna River which is a perennial river and has source of origin from catchment area of Shivaliks. The region has limited potential except river bed materials as Sand / Bajri / Boulders are only main exposed minerals. Limestone has substantial exposure in Shivalik hills and used for building and construction purpose. The mineral observed in the river bed is a result of transportation as the upstream is much exposed to slope which causes natural deposition.

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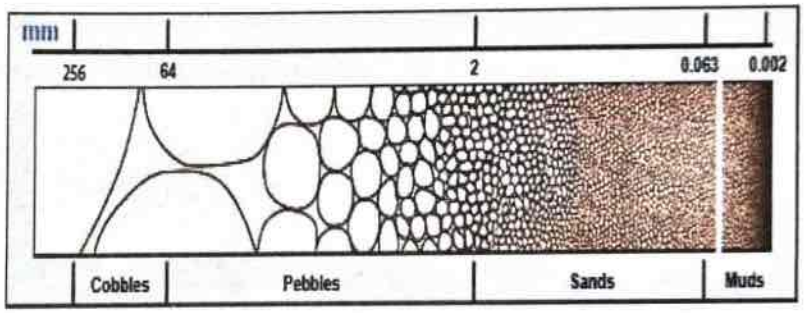
INTRODUCTION

District Saharanpur can be divided into three physiographic divisions, the **structural hills**, the upper physiographic divisions, the structural hills, the upper piedmont plains or **the Bhabar**, and **the Terai** or the lower piedmont plains.

Structural Hills:



The entire northern part of the district is formed structural hills named Siwaliks. In this area the relief is high with steep and sharp hill slopes. The rugged topography of the area affords well for high run off. In the area the upper and middle Siwaliks are encountered but the lower Siwaliks are missing. Lithologically the Siwaliks here are composed of sand stones, conglomerates, sand, clays and silts. There are several major and minor faults.

The Bhabar:

The second units lying just below the foothills of Siwalik locally called as Bhabhar, is characterized by boulders, pebbles, cobbles etc. with relatively dry terrains fringing. The Siwalik foot hills with gradient around 5 m/km. which is much higher than the southern plains.

Geologically the term Bhabhar is used to deposits formed along the foothill zone by coalescence of series of alluvial and talus cones, composed of heterogeneous materials ranging in texture from boulder, gravel to sand and silt. These Bhabhars in Saharanpur district are known as 'Dhar' covering mostly the 'Muzaffarabad' and 'SadauliQuadim' blocks.

Tarai:

Just south of Bhabar zone lies the 'Tarai' or the plains of piedmont plain. The plains sloping gradually by

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southward have around 1.5m/km. gradient. Lithologically, the area is characterized by coarse sand & gravel. These plains are further divided into lower piedmont plains the older alluvial plains and the younger alluvial plains. The lower piedmont plains show flat to undulating plains with gradient towards southwest.
The older alluvial plains also show flat to undulating topography characterized by sediments brought by rivers Yamuna and Ganga.

The younger alluvial plains lie along river Yamuna exhibiting gently sloping and slightly undulating terrains. It comprises younger unconsolidated alluvial material of varying lithology consisting of fluvial land formed as paleo-channels, meanness scar and point bars. The younger alluvial plains also consist of sand bars flood plains and ravines along river Yamuna.
(source – CGWB NR, Lucknow Report on Aquifer Mapping & Management of Ground Water Resources, Saharanpur , Uttar Pradesh; J.P Gautam Scientist 'D')

R.B.M. (Sand/Bajri/Boulder) Deposit in Saharanpur District

Results of Particle Size Distribution and Bulk Density of Deposited Material

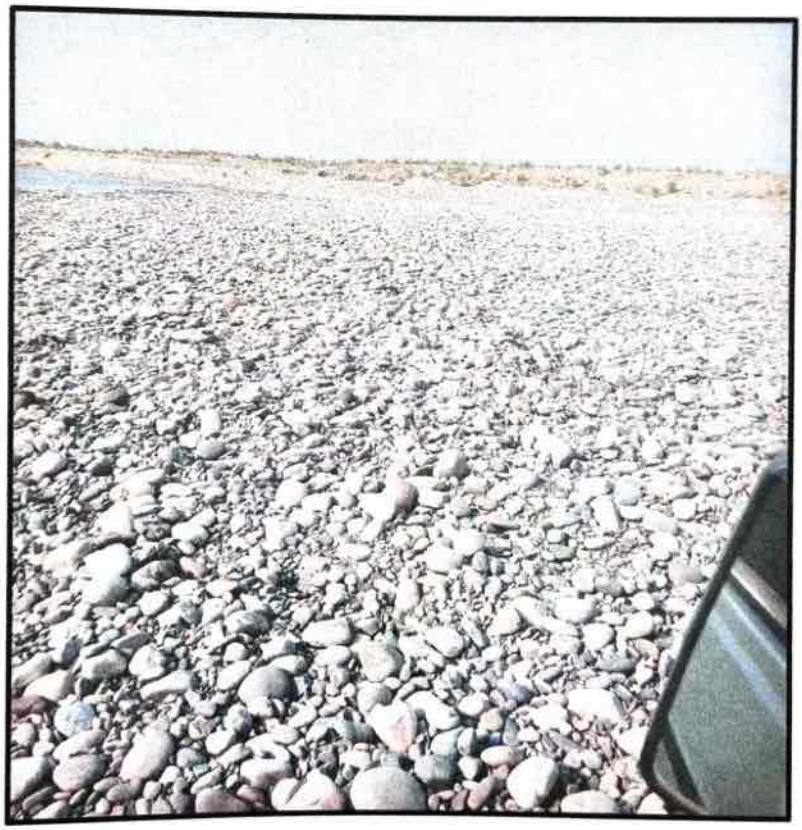
(Reference :- EMGSM – 2020 Guidelines ; Section 5.2 , page – 28)

Samples of 5 Kg each from the dry river bed of Six (06) Rivers namely Yamuna , Badkala Ra, Badshahibagh Rao, Gaisara Rao, Kaluwala and Khairawali Ra were taken in the temper proof polybag and analysed of particle size and Bulk density through NABL Laboratory. The analysis of results are as under: -

RESULTS

1. The formation of mineral observed in the study area is a mix of Silt, Sand (0.125 mm to 0.50 mm in size) , Bajri (2 mm to 4 mm in size *[granule]*) , Pebble/Cobble (4mm to 256mm) and Boulders of large size (more than 256 mm). Results co-related with Wentworth Grain Size Chart.

2. The percentage of Pebble/Cobble and Boulders of large size in percentage are predominant in River Yamuna which is a perennial in nature.



3. Whereas the percentage of Silt, Sand and Bajri is predominant in the rest 5 seasonal tributaries of Yamuna River (namely Badkala Ra, Badshahibagh Rao, Gaisara Rao, Kaluwala and Khairawali Ra)

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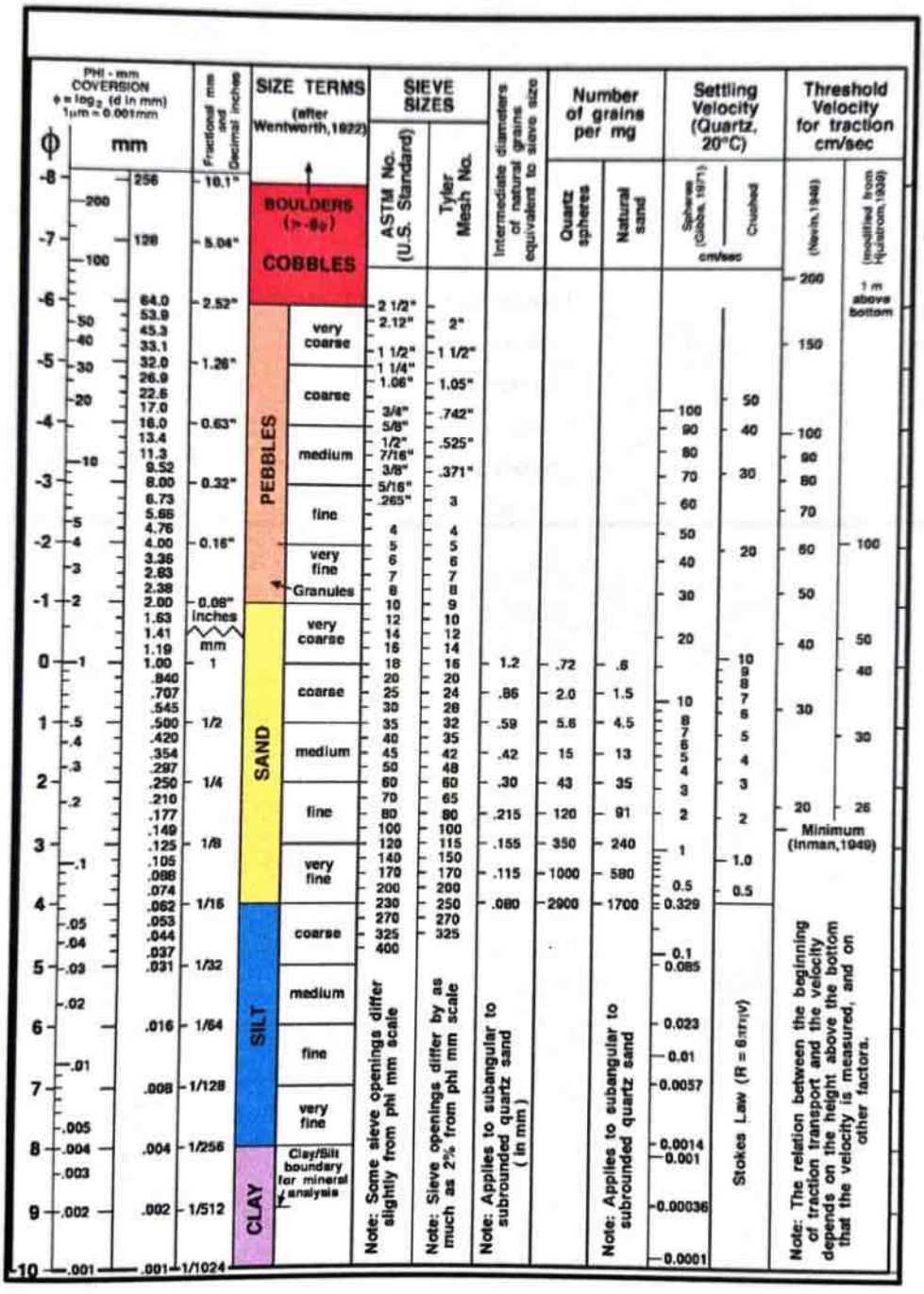
Particle Size Analysis Reference :- Classification of Sediments (Wentworth Grain Size Chart)



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Sediment grain sizes (mm)	Wentworth grade	Phi (Φ) scale
>256	Boulder	−8
>64 to 256	Cobble	−6
>4 to 64	Pebble	−2
>2 to 4	Granule	−1
>1 to 2	Very coarse sand	0
>0.50 to 1	Coarse sand	1
>0.25 to 0.50	Medium sand	2
>0.125 to 0.25	Fine sand	3
>0.0625 to 0.125	Very fine sand	4
>0.0313 to 0.0625	Coarse silt	5
> 0.0156 to 0.0313	Medium silt	6
>0.0078 to 0.0156	Fine silt	7
>0.0039 to 0.0078	Very fine silt	8
<0.0039	Clay	>8

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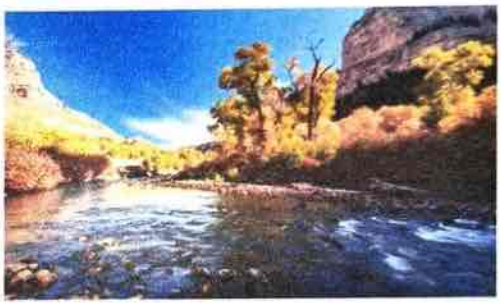
Gradient Analysis of River Yamua:-

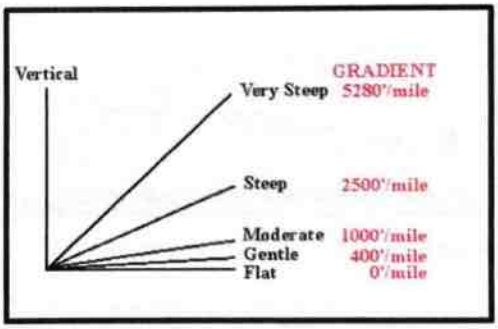
Intruduction & Background :-

1. River / Stream gradient is the grade measured by the ratio of drop in elevation of a stream per unit horizontal distance, which is usually expressed as meters per kilometer or feet per mile.
2. A high gradient indicates a steep slope and rapid flow of water where it has more ability to erode. High gradient streams tend to have steep, narrow V-shaped valleys, and are referred to as young streams.

3. A low gradient indicates a more nearly level stream bed and sluggishly moving water, that may be able to carry only small amounts of very fine sediment. Low gradient streams have wider and less rugged valleys, with a tendency for the stream to meander.



4. The GRADIENT OF A RIVER = ELEVATION DIFFERENCE / DISTANCE ALONG THE STREAM OR HORIZENTAL DISTANCE
5. The interpretation of gradient may be expressed in a score of Very Steep, Steep, Moderate, Gental and Flat.



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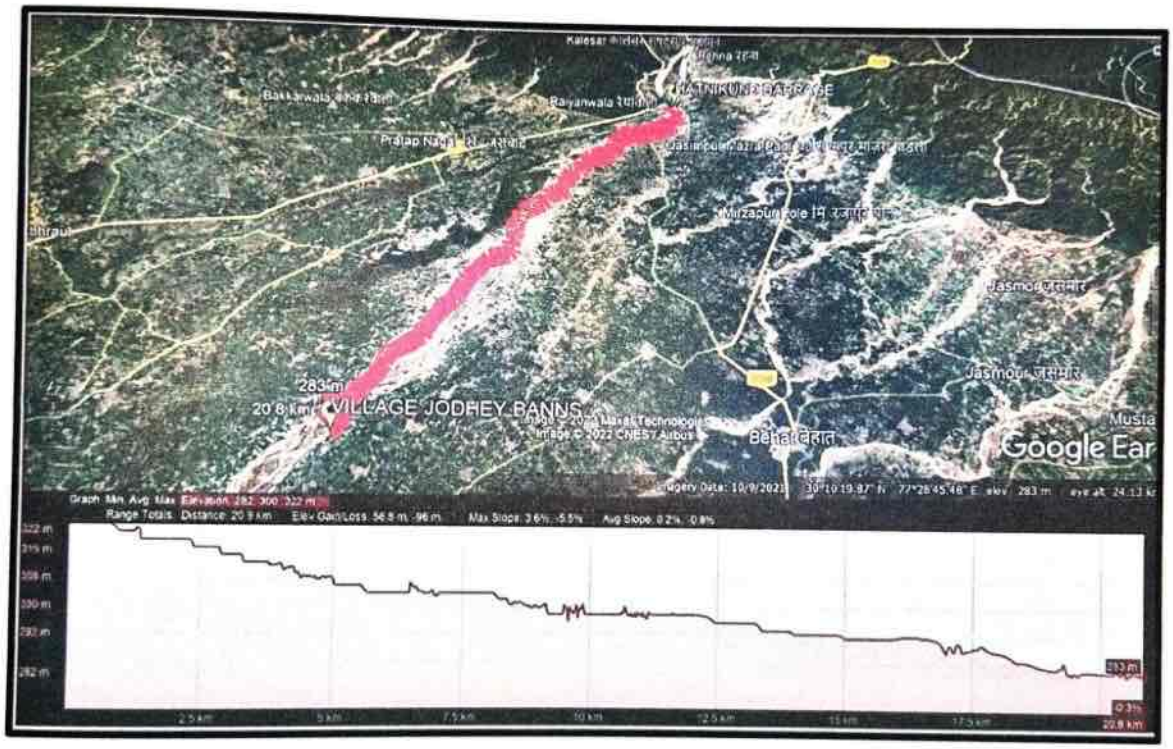
Methodology for Study for Gradient Analysis :-

1. A length patch of 29.90 kms approx in river Yamuna was identified. The length patch of 29.90 kms (distance along the stream) starts from Hatnikund Barrage and ends near Jodhey Banns village.
2. The elevation of Hatnikund Barrage is 329 MrL and the elvation recorded in Jodhey Banns villahe is 283 MrL. Thus the total elevation drop (difference in elevation or slope) is 39 meters.
3. Hence the Gradient of the study area comes to 1.30 meters / kilometer or 6.89 feet / mile.



Gradient Study Area Map – River Yamuna

Graph: Min, Avg, Max Elevation: 282, 300, 322 m
Range Totals: Distance: 20.9 km Elev Gain/Loss: 56.8 m, -96 m Max Slope: 3.6%, -5.5% Avg Slope: 0.2%, -0.8%
322 m
315 m
308 m
300 m
292 m
282 m
283 m
0.3%
20.8 km

Observation:-

1. The gradient level of study area shows that it is Gental. The major attibute for RBM deposit in the area is occurance of higher HFL (High Flood Levels) due to which the RBM in mix state travelles from upstream and deposits in the lease and near by areas.
2. It has been reported by CGWB NR, Lucknow on Aquifer Mapping & Management of Ground Water Resources, Saharanpur , Uttar Pradesh that the Tarai plains slop gradually by southward have around 1.5m/km. gradient (Chapeter-5 of this Report).
3. The Gradient analysis of study areca reveals outcome of 1.30 meters / kilometer or 6.89 feet / mile which is almost equlivant to the CGWB Report and results found co-related and found stable.
4. The area of Yamuna under study shows that the stream consist of multiple small, shallow channels that divide and recombine numerous times forming a pattern resembling a **Braided Stream.** Generally a Braided streams are formed where the sediment load is so heavy that some of the sediments are deposited as shifting islands or bars between the channels as likewise observed in the study area.

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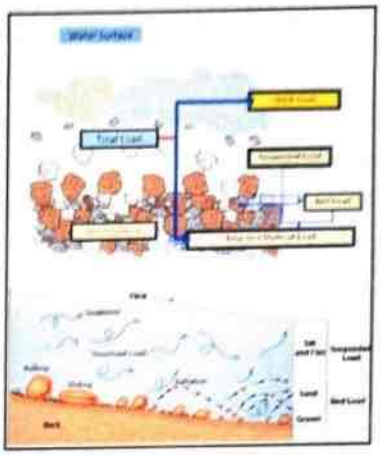
SEDIMENT TRANSPORT



Sediment transport is the movement of solid particles (sediment), typically due to a combination of gravity acting on the sediment, and/or the movement of the fluid in which the sediment is entrained. Sediment transport occurs in natural systems where the particles are clastic rocks (sand, gravel, boulders, etc.), mud or clay; the fluid is air, or water, and the force of gravity acts to move the particles along the sloping surface on which they are resting. Sediment transport due to fluid motion occurs in rivers, oceans, lakes, seas, and other bodies of water due to currents and tides. Sediment transport due only to gravity can occur on sloping surfaces in general, including hill- slopes, scarps, cliffs, and the continental shelf-continental slope boundary.

TYPES OF SEDIMENT LOAD

- **Bed-load:** That portion of the sediment load that is transported along the bed by sliding, rolling or hopping. The bed-load moves at velocities slower than the flow and spends most of its time on or near the stream bed. The mechanisms of grain motion are as follows:
- **Traction (rolling and sliding):** Important factors: frictional drag and lift forces exerted by the flow and slope.
- **Saltation (hopping):** Grains are temporarily suspended by fluid vortices or by ballistic impact and then released Grain movement may be continuous or intermittent depending on the flow regime.

Suspended load: They area particulate sediment that is carried in the body of the flow and moves at the same velocity as the flow. A small particle (e.g. clay and fine silt), with a large relative surface area, is held in suspension more easily because of the electrostatic attraction between the unsatisfied charges on grain's surface and the water molecules. This force, tending to keep the particle in the flow, is large compared to the weight of the particle.

The Hjulstrom curve shows that a much higher velocity is required to entrain clay and fine silt than coarse sand. However, once the fine sediment is in suspension, a much lower velocity is required to maintain it in suspension.The quantity and quality of the load is defined in terms of competence and capacity.

Dissolved load: material that is chemically carried in the water. The factors that govern the percentage of dissolved and suspended load include:

- Climate: temperature, precipitation, vegetation
- Vegetation: type and amount

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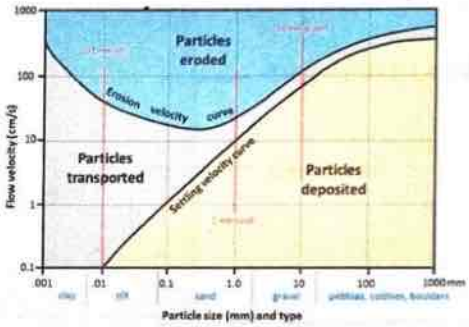
- Activity by man: mining, construction, clear cutting, etc.
- Rock solubility: e.g. hard water in carbonate terranes
- Erodibility of materials in the drainage basin
- Relief and slope (affects PE of flow)

Wash Load: Sometimes finer particles from upland catchment (sizes which are not present in the bed material),called wash load,are also transported in suspension.The combined bed material and wash load is called Total load.

TRANSPORT RATE

When the velocity of water flowing over a bed of non-cohesive sediment flow overcomes the resistance offered by the grain due to its mass, cohesion and other forces. Properties like shape and position of centre of gravity of the grain play important roles in determining the degree of resistance offered. A diagram complied by Hjulstrom (1935) revealed the relationship between critical erosion velocity and grain size. The field above the curve indicates the condition suitable for entrainment of grains.



Formulas to calculate sediment transport rate exist for sediment moving in several different parts of the flow. These formulas are often segregated into bed load, suspended load, and wash load. They may sometimes also be segregated into bed material load and wash load.

DEFINING BED LOAD

Bed load moves by rolling, sliding, and hopping (or saltating) over the bed, and moves at a small fraction of the fluid flow velocity. Bed load is generally thought to constitute 5 -10% of the total sediment load in a stream, making it less important in terms of mass balance. However, the bed material load (the bed load plus the portion of the suspended load which comprises material derived from the bed) is often dominated by bed load, especially in gravel -bed rivers. This bed material load is the only part of the sediment load that actively interacts with the bed. As the bed load is an important component of that, it plays a major role

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in controlling the morphology of the channel. Bed load transport rates are usually expressed as being related to excess dimensionless shear stress raised to some power. Excess dimensionless shear stress is a non –dimensional measure of bed shear stress about the threshold for motion.

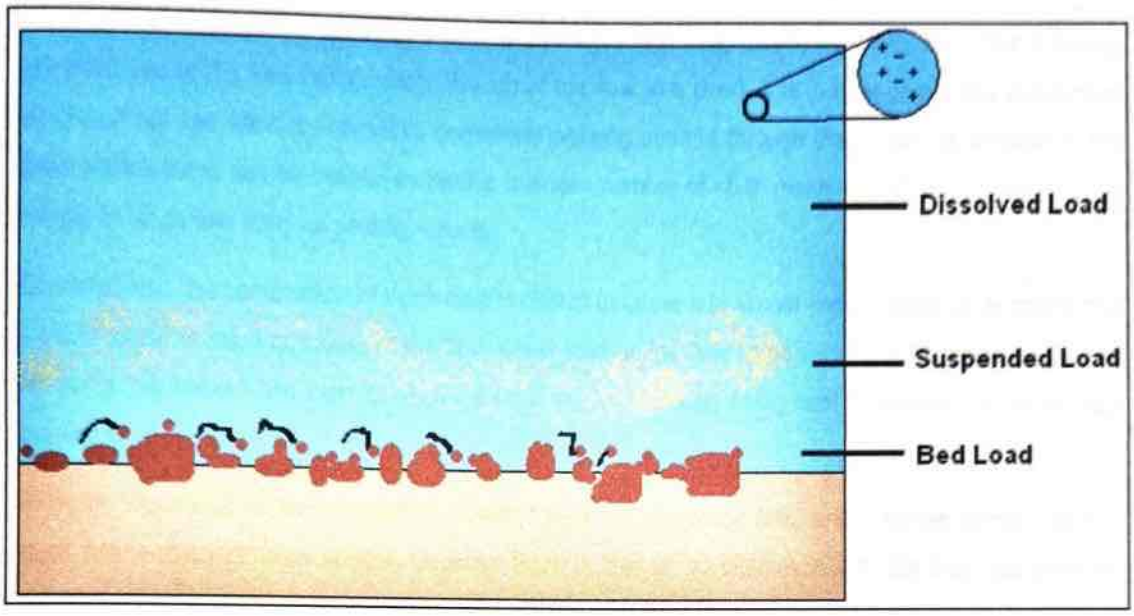

Figure No. 4.2: Sediment load movement

Dissolved load is not sediment. It is composed of disassociated ions moving along with the flow. It may, however, constitute a significant proportion (often several percent, but occasionally greater than half) of the total amount of material being transported by the stream.

DEFINING WASHLOAD

The distinction between bed-material-load and wash-load components of the total load adopted here is that wash load is not found in appreciable quantities in the bed of channel. However,the precise definition of what constitutes an appreciable quantity un clear, meaning that the threshold grain size separating bed-material load and wash load may be defined in several ways. Wash load is the grain size of which 10 percent of the bed mixture is finer. This basically different behaviour of the fine and the coarse parti cles in the same channel has led the author and collaborators to assume that the fine particles in the flows till behave like material called Wash load in the concrete channel whereas the coarse particle act like the sediment in a strictly alluvial channel.

These investigators give the limiting grain size between wash load and alluvial or bed load in terms of the composition of the sediment deposit in the bed. They state that all particle sizes that are not significantly represented in the deposit must be considered as wash load. More specifically, the limiting size may be

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arbitrarily chosen from the mechanical analysis of the deposit as that grain size of which 10 percent of the bed mixture is finer. This rule seems to be rather generally applicable as long as low-water and dead-water deposits are excluded from the bed sediment."

Wash load is the portion of sediment that is carried by a fluid flow, usually in a river, such that it always remains close to the free surface (near the top of the flow in a river). It is in near-permanent suspension and is transported without deposition, essentially passing straight through the stream. It consists of the finest particles and can be defined by having a Rouse number of <0.8, meaning that the turbulent mixing velocity is far greater than the settling velocity.

Composition: The composition of wash load is distinct because it is almost entirely made up of grains that are only found in small quantities in the bed. Wash load grains tend to be very small (mostly clays & silts but some fine sands) and therefore have a small settling velocity, being kept in suspension by the flow turbulence.

Velocity: Wash load is carried within the water column as part of the flow, and therefore moves with the mean flow velocity of main stream. Because there is little or no interaction with the bed, the particles extract only negligible momentum from the flow.

Wash Load Dynamics: There is no universally accepted definition of wash load, yet despite this, the wider concept that sediment in transport that is finer than that making up the bed of the channel behaves differently and plays a different role in the sediment transfer system is widely perceived to have merit and has often proven useful in river engineering studies. In this respect, there are three tenants within the wash load and bed-material load concept that are relevant from a practical regional sediment management perspective. It follows that changes in the quantity of wash load in transport (due to the addition or removal of washload sources) will seldom trigger significant morphological responses and marked changes to the stability of the channel. Conversely, imbalances in the bed-material load will usually drive local morphological response through channel scour (where transport capacity exceeds supply) or fill (where supply exceeds transport capacity). Second, the quantity of wash load carried by a stream is limited not by the streams's sediment transport capacity, but by the available supply. It follows that it is only the bed-material load that most sediment transport equations can calculate on the basis of the transport capacity indicated by the local flow hydraulics. Wash-load transport cannot be predicted this way, but can only be estimated on the basis of comprehensive, quantitative assessment of wash-load sediment sources. Third, the movement of wash load is relatively rapid compared to that of the bed-material load. In a sand-bed channel, where the wash load is composed of fine sands, silts and clays that are fairly evenly distributed throughout the water column, wash load may move through the channel.

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SUSTAINABLE RIVER BED SAND MINING

As per Sustainable Sand Mining Management Guideline, 2016, by Ministry of Environment, Forest and Climate Change, following considerations should be kept in mind for sand / gravel mining:

- Parts of the river reach that experience deposition or aggradation shall be identified first. The Lease holder/Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.
- The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.
- Sand and gravel may be extracted across the entire active channel during the dry season.
- Abandoned stream channels on terrace and inactive floodplains are preferred rather than active channels and their deltas and flood plains. Stream should not be diverted to form inactive channel.
- Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- Segments of braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.
- Sand and gravel shall not be extracted within 200 to 500 meter from any crucial hydraulic structure such as pumping station, water intakes, and bridges. The exact distance should be ascertained by the local authorities based on local situation. The cross-section survey should cover a minimum distance of 1.0 km upstream and 1.0 km downstream of the potential reach for extraction. The sediment sampling should include the bed material and bed material load before, during and after extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross- section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume. Calculate the extraction volume based on the sediment rating curve and high flow period after deter mining the allowable mining depth.
- Sand and gravel could be extracted from the downstream of the sand bar at river bends.

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Retaining the upstream one to two thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.

- Flood discharge capacity of the river could be maintained in areas where there are significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross- section history.
- Alternatively off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.
- The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for ground water recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.
- Mining depth should be restricted to 3 meter and distance from the bank should be 3 meter or 10 percent of the river width whichever less.
- The borrow area should preferably be located on the river side of the proposed embankment, because they get silted up in course of time. For low embankment less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In case of higher embankment the distance should not be less than 50 m. In order to obviate development of flow parallel to embankment, cross bars of width eight times the depth of borrow pits spaced 50 to 60 meters centre-to-centre should be left in the borrow pits.
- Demarcation of mining area with pillars and geo-referencing should be done prior to start of Mining.

The effects of unscientific and excessive sand and gravel mining are as follows:

- Extraction of bed material in excess of replenishment by transport from upstream causes the bed to lower (degrade) upstream and downstream of the site of removal.
- In-stream habitat is impacted by increase in river gradient, suspended load, sediment transport and deposition. Excessive sediment deposition for replenishment increases turbidity which prevents penetration of light required for photosynthesis and reduces food availability of aquatic fauna.
- Riparian habitat including vegetative cover on and adjacent to the river banks it controls erosion, provide nutrient inputs into the stream and prevents intrusion of pollutants in the stream through runoff. Bank erosion and change of morphology of the river can destroy the riparian vegetative cover.
- Bed degradation are responsible for channel shifting, causing loss of properties and degradation of landscape, it can also undermine bridge supports, pipe lines or other structures.
- Degradation may change the morphology of the river bed, which constitutes one aspect of the aquatic habitat.

- Degradation can deplete the entire depth of gravelly bed material, exposing other substrates that may underlie the gravel, which could in turn affect the quality of aquatic habitat. Lowering of ground water table in the flood plain because of lowering of riverbed level as well as river water level takes place because of extraction and draining out of excessive ground water from the adjacent areas. So, if a floodplain aquifer drains to the stream, groundwater levels can be lowered as a result of bed degradation.
- Lowering of the water table can destroy riparian vegetation.
- Excessive pumping of ground water in the process of mining in abandoned channels depletes ground water causing scarcity of irrigation and drinking water. In extreme cases it may create ground fissures and subsidence in adjacent areas.
- Flooding is reduced as bed elevations and flood heights decrease, reducing hazard for human occupancy of floodplains and the possibility of damage to engineering works.
- The supply of overbank sediments to floodplains is reduced as flood heights decrease.
- An un-scientific and unregulated sand and gravel mining tends to increase channel bank scouring and erosion. This causes a large degree of meandering of rivers and sometimes it could be in kms.
- Rapid bed degradation may induce bank collapse and erosion by increasing the heights of banks.
- Polluting ground water by reducing the thickness of the filter material especially if mining is taking place at top of recharge fissures.
- Choking of sand layer which acts as filter for ingress of ground water from river by dumping of finer material, compaction of filter zone due to movement of heavy vehicles. It also reduces the permeability and porosity of the filter material.
- Removal of gravel from bars may cause downstream bars to erode if they subsequently receive less bed material than is carried downstream from them by fluvial transport.
- Ecological effects on bird nesting, fish migration, angling, etc.
- Indiscrete mining activities lead to increased concentration of suspended sediment in the river which in turn causes siltation of water resources projects.
- Un-scientific and unregulated sand and gravel mining leads to the severe health hazards like air quality degradation and dust fog.
- Impacts on coastal processes.

As such, it becomes essential to conduct a replenishment study.

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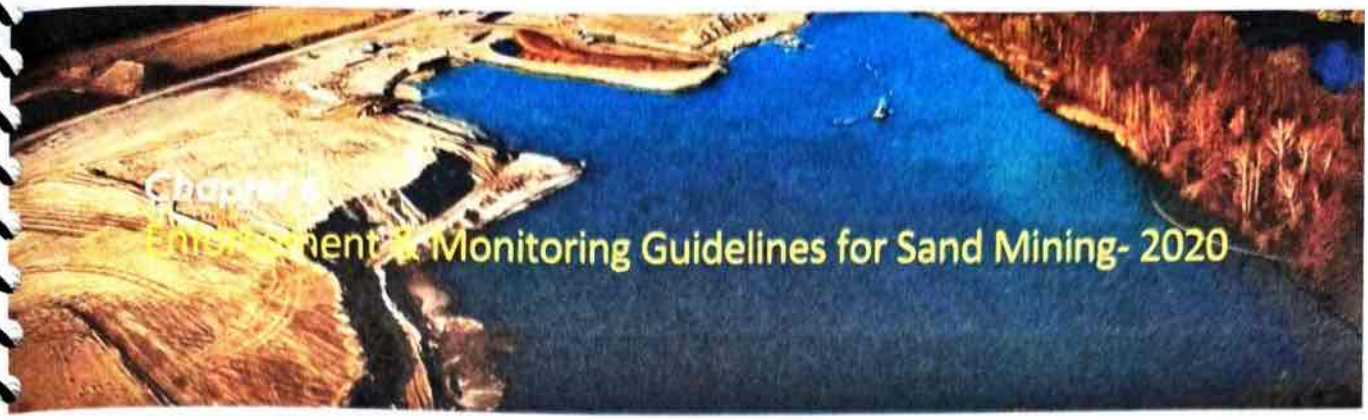

- The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessing sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverine regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on in- stream biota and riparian habitats. It is assumed that the riparian habitat disturbance is minimum if the replenishment is equal to excavation for a given stretch. Therefore, to minimize the adverse impact arising out of sand mining in a given river stretch, it is imperative to have a study of replenishment of material during the defined period.

- As per the provisions of EM Guidelines for Sand Mining – 2020, replenishment study requires filed surveys. For this, original ground level (OGL) are to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level.

- The river reaches with sand provide the resource and thus it is necessary to ascertain the rate of replenishment of the mineral. Regular replenishment study needs to be carried out to keep a balance between deposition and extraction.

- The current study has been done on the basis of Physical Survey of field as per proviso of Section 5.2.1 of EMSM-2020 Guidelines.

- The conventional survey using DGPS and other survey tools are used to define elevation contours of the lease area as the contour and the elevation benchmarks provide the baseline data for assessing the pre and post-study period scenario.

- Baseline data on elevation status by formation of grids has been done on intervals depending on the geographical and site-specific conditions

- The changes observed in the elevation in per and post scenario shall be depicted in graphical forms along with reserve estimation of the mining area.

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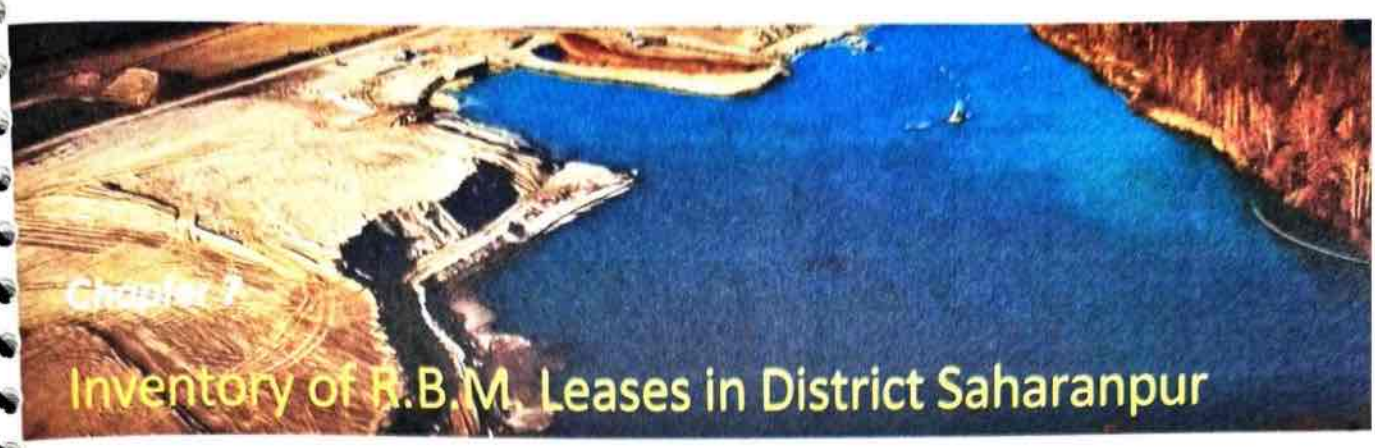
Statutory Requirement :- As per Section 5.2.2 of EMGSM-2020 Guidelines the details of Manpower/Experts , Equipment's and Software's are as under:-

Head	Details	Quantity/Nos.
	Manpower/Experts	
1. Manpower	Geologist	1
2. Manpower	Geologist & R.Q.P.	1
3. Manpower	Senior Environment Expert	2
4. Manpower	Program Coordinator	1
5. Manpower	Field Expert / Foreman	4
6. Manpower	CAD/GIS Expert	2
7. Manpower	Coordinator (Mining)	1
8. Manpower	Environment Planner – Data compilation and Report	1
	Equipment's	
• For Pit Profile	JCB Machine for Drilling	4
• For Reserve Estimation and assessment of Mineral Quality	Augar / JCB / Measurement Devices	12
• For Geo-coordinates	Garmin GPS	8
• For Collecting Elevation Profiles	DGPS Equipment & Drone	4
	Software's	
• For reporting surface/geological sections	ArcGIS	2
• For Lease Detail modelling and Remote data collection	Google Earth	2
• For collection of onsite work profiles	Time Stamp Camera	6
• For Report / For Baseline Data Modelling	MS-Word/ MS-Excel	2
• For Data Modelling	Q-GIS	1



Chapter 4
Inventory of R.B.M. Leases in District Saharanpur

OPERATIVE LEASES

S4.2 .No	Tehsil	River	Village	Gata No. / Khand No. / Zone No.	Area	Pillar	Latitude	Longitude
1	Behat	Badshahibagh Rao	**Mayapur Rooppur**	Gata No. 14/1	3.100	A	30° 19' 21.41" N	77° 38' 26.35" E
						B	30° 19' 17.62" N	77° 38' 30.56" E
						C	30° 19' 13.68" N	77° 38' 25.07" E
						D	30° 19' 17.44" N	77° 38' 20.78" E
2	Behat	Yamuna	**Bartha Korsi**	Gata No. - 1	36.000	A	30° 14' 00.94" N	77° 31' 13.91" E
						B	30° 14' 16.50" N	77° 31' 24.43" E
						C	30° 14' 13.69" N	77° 31' 31.19" E
						D	30° 14' 19.59" N	77° 31' 37.85" E
						E	30° 14' 37.10" N	77° 31' 40.80" E
						F	30° 14' 39.19" N	77° 31' 36.25" E
						G	30° 14' 26.08" N	77° 31' 29.05" E
						H	30° 14' 09.19" N	77° 31' 02.18"E
3	Behat	Badkala Ra	**Haidarpur Hindwala**	Khand No / Gata No. - 8/1 , 19 & 22	4.200	A	30° 15' 20.64" N	77° 40' 42.10" E
						B	30° 15' 20.54" N	77° 41' 00.42" E
						C	30° 15' 17.98" N	77° 41' 01.84" E
						D	30° 15' 17.71" N	77° 40' 42.89" E
4	Behat	Khurwali Ra	**Sherpur**	Gata No. - 378/2 &	7.000	A	30° 15' 52.04" N	77° 39' 22.56" E

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			Pelon	379/2		B	30° 15' 51.84" N	77° 39' 27.43" E
						C	30° 16' 06.24" N	77° 39' 31.26" E
						D	30° 16' 07.18" N	77° 39' 25.07" E
5	Behat	Yamuna	**Nuniyari Aehatmal**	Gata No. - 1/1/1 Laat 38	24.290	A	30°11'00.90" N	77°29"25.83"E
						B	30°11'12.98" N	77°29"12.21" E
						C	30°11'24.95" N	77°29"26.28" E
						D	30°11'21.79" N	77°29"29.68" E
						E	30°11'20.39" N	77°29"33.03" E
						F	30°11'18.64" N	77°29"33.83" E
						G	30°11'17.01" N	77°29"34.70" E
						H	30°11'14.93" N	77°29"32.91" E
						I	30°11'09.54" N	77°29"31.35" E
						J	30°11'03.46" N	77°29"29.55" E
6	Behat	Yamuna	**Rehna**	Khand No. / Gata no. - 03, Lot No - 03	8.050	A	30° 21' 36.45" N	77° 36' 05.61" E
						B	30° 21' 29.62" N	77° 36' 00.26" E
						C	30° 21' 37.95" N	77° 35' 50.38" E
						D	30° 21' 41.71" N	77° 36' 02.50" E
7	Behat	Gaisara Rao	**Rahena**	Gata No. 179/2	3.750	A	30° 19' 56.17" N	77° 36' 33.21" E
						B	30° 19' 52.90" N	77° 36' 33.93" E
						C	30° 19' 50.54" N	77° 36' 20.87" E
						D	30° 19' 53.90" N	77° 36' 20.01" E
8	Nukur	Yamuna	**Dhikkan Kalan**	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.63	A	30° 1'20.61"N	77°17'23.68"E
						B	30° 1'24.58"N	77°17'15.45"E
						C	30° 1'32.77"N	77°17'19.87"E
						D	30° 1'42.25"N	77°17'24.49"E
						E	30° 1'41.34"N	77°17'31.04"E
						F	30° 1'52.02"N	77°17'39.09"E
						G	30° 1'54.80"N	77°17'51.61"E
						H	30° 1'56.88"N	77°17'52.96"E
						I	30° 2'2.71"N	77°18'5.82"E
						J	30° 1'59.86"N	77°18'8.25"E
						K	30° 1'57.85"N	77°18'7.25"E
						L	30° 1'58.76"N	77°18'5.82"E
						M	30° 1'57.46"N	77°18'4.89"E

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						N	30° 1'57.00"N	77°18'1.96"E
						O	30° 1'53.50"N	77°18'0.53"E
						P	30° 1'47.64"N	77°17'52.52"E
						Q	30° 1'42.10"N	77°17'46.53"E
						R	30° 1'32.38"N	77°17'39.44"E
						S	30° 1'27.11"N	77°17'31.55"E

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NON-OPERATIVE LEASES

S.No	Tehsil	River	Village	Gata No. / Khand No. / Zone No.	Area	Pillar	Latitude	Longitude
1	Behat	Khairawali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475	A	30°16'35.16"N	77°39'44.44"E
						B	30°16'32.34"N	77°39'51.41"E
						C	30°16'21.11"N	77°39'36.26"E
						D	30°16'22.11"N	77°39'34.41"E
2	Behat	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900	A	30°12'08.76"N	77°45'37.77"E
						B	30°12'06.03"N	77°45'42.25"E
						C	30°12'00.52"N	77°45'38.93"E
						D	30°11'40.91"N	77°45'32.39"E
						E	30°11'41.72"N	77°45'25.51"E
						F	30°12'02.80"N	77°45'33.06"E
3	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	A	30°16'27.80"N	77°32'46.96"E
						B	30°16'34.01"N	77°32'47.53"E
						C	30°16'42.58"N	77°32'53.94"E
						D	30°16'43.84"N	77°32'58.19"E
						E	30°16'50.96"N	77°32'47.76"E
						F	30°16'46.69"N	77°32'43.28"E
						G	30°16'39.98"N	77°32'41.04"E
						H	30°16'36.08"N	77°32'33.91"E
4	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	A	30°15'51.33"N	77°32'21.84"E
						B	30°15'58.45"N	77°32'08.63"E
						C	30°15'45.65"N	77°32'03.15"E
						D	30°15'41.84"N	77°32'13.01"E
5	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	A	30°15'24.84"N	77°31'57.01"E
						B	30°15'12.32"N	77°31'47.88"E
						C	30°15'16.91"N	77°31'36.94"E

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						D	30°15'28.43"N	77°31'48.83"E
6	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	A	30°16'14.92"N	77°32'39.76"E
						B	30°16'17.99"N	77°32'32.74"E
						C	30°16'08.09"N	77°32'23.84"E
						D	30°16'02.92"N	77°32'31.72"E
7	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	A	30°16'02.98"N	77°32'30.74"E
						B	30°16'10.84"N	77°32'18.84"E
						C	30°16'00.40"N	77°32'11.56"E
						D	30°15'51.70"N	77°32'23.64"E
8	Behat	Yamuna	Shahpur Bans Aehatmal	1/1	15.600	A	30°16'27.75"N	77°32'46.14"E
						B	30°16'16.01"N	77°32'38.50"E
						C	30°16'20.43"N	77°32'28.70"E
						D	30°16'35.53"N	77°32'33.20"E
9	Behat	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700	A	30°15'25.77"N	77°31'57.79"E
						B	30°15'41.32"N	77°32'12.89"E
						C	30°15'46.16"N	77°32'00.64"E
						D	30°15'28.87"N	77°31'50.13"E
10	Behat	Yamuna	Abutalibpur Garh Aehatmal	1	37.000	A	30°14'41.78"N	77°31'38.30"E
						B	30°14'49.46"N	77°31'21.34"E
						C	30°15'16.20"N	77°31'36.25"E
						D	30°15'11.96"N	77°31'46.05"E
11	Behat	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	23.200	A	30°11'00.50"N	77°29'25.19"E
						B	30°10'59.39"N	77°29'23.26"E
						C	30°10'58.86"N	77°29'15.55"E
						D	30°10'55.77"N	77°29'10.53"E

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						E	30°10'46.29"N	77°29'04.02"E
						F	30°10'39.87"N	77°29'00.42"E
						G	30°10'46.96"N	77°29'51.89"E
						H	30°10'51.56"N	77°29'56.86"E
						I	30°10'49.46"N	77°29'58.83"E
						J	30°11'02.30"N	77°29'11.12"E
						K	30°11'07.26"N	77°29'05.46"E
						L	30°11'12.52"N	77°29'11.64"E
12	Behat	Yamuna	Aslampur Bartha – First	1/1M	36.600	A	30°13'45.87"N	77°31'09.07"E
						B	30°13'23.05"N	77°30'53.85"E
						C	30°13'13.45"N	77°30'42.33"E
						D	30°13'16.67"N	77°30'36.60"E
						E	30°13'50.98"N	77°30'57.80"E
13	Behat	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000	A	30°12'17.09"N	77°30'18.81"E
						B	30°12'16.42"N	77°30'17.32"E
						C	30°12'05.34"N	77°30'13.17"E
						D	30°11'59.82"N	77°30'01.24"E
						E	30°11'46.33"N	77°29'58.50"E
						F	30°11'59.32"N	77°29'43.47"E
						G	30°12'21.10"N	77°30'16.04"E
14	Behat	Yamuna	Aslampur Bartha – Second	1/1M	28.160	A	30°13'04.93"N	77°30'44.59"E
						B	30°12'35.50"N	77°30'28.50"E
						C	30°12'38.19"N	77°30'18.84"E
						D	30°13'09.39"N	77°30'35.57"E

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Study and Results of Leases in pre-monsoon (2022) scenario.

1. Pre-monsoon study of total Twenty-Two (22) operative leases where done as per the methodology elaborated in Chapter-3 of the Report.
2. The present survey is the done to report the quantity of mineral before monsoon along with baseline data collection of elevation profiles through DGPS and Drone Survey.
3. It is anticipated that results of year wise surveys will help the state government to establish the replenishment rate of the river based on which future action may be planned.
4. The Physical topographic Survey of the leases using DGPS and Drone Survey to record and report the current elevation profiles of the lease areas. Further Pit profiles up-to the depth of 3 meters were done to estimate the quantity of reserve and analyse sustainable mining to be recommended for grant/operations of leases.
5. Baseline data of elevation status in grids where recorded on cross sections and prepared depending on the condition of site.
6. Field books and database of recordings were structured in a tabulated manner narrating the mRL of OGL (On Ground Level) Points having longitude/latitude.
7. GIS software modelling were done to correlate the data and net results are shown in graphical forms with appropriate scales.
8. Lease wise results are reported in the subsequent sections. The results of pre-monsoon baseline data collection shall be co-related with post-monsoon data to report overall replenishment.

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OPERATIVE LEASES

Particulars	Details / Observation
Serial Number	01
Tehsil	Behat
Village	Mayapur Rooppur
Gata No. / Khand No.	Gata No. 14/1
Area	3.100 ha.
River	Badshahibagh Rao (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 394.662 • The lowest elevation observed is 388.980. • The lease has an overall elevation difference of 5.682 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 92993 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	02
Tehsil	Behat
Village	**Bartha Korsi**
Gata No. / Khand No.	Gata No. – 1
Area	36.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 302.492 • The lowest elevation observed is 292.200. • The lease has an overall elevation difference of 10.292 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 173732 cum. • **Since the lease is operative, the current mineral reserve be treated as pre-monsoon-2022 closing balance and analyzed for sustainable production for long term periods with post monsoon data.** • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	03
Tehsil	Behat
Village	**Haidarpur Hindwala**
Gata No. / Khand No.	Khand No / Gata No. - 8/1 , 19 & 22
Area	4.200 ha.
River	Badkala Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 377.00 • The lowest elevation observed is 368.000. • The lease has an overall elevation difference of 9.000 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 143893 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	04
Tehsil	Behat
Village	**Sherpur Pelon**
Gata No. / Khand No.	Gata No. - 378/2 & 379/2
Area	7.000 ha.
River	Khurwali Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 355.000 • The lowest elevation observed is 349.000. • The lease has an overall elevation difference of 6.000 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 206037 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	05
Tehsil	Behat
Village	**Nuniyari Aehatmal**
Gata No. / Khand No.	Gata No. - 1/1/1 Laat 38
Area	24.290 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 294.000 • The lowest elevation observed is 284.000. • The lease has an overall elevation difference of 10.000 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 607313 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	06
Tehsil	Behat
Village	**Rehna**
Gata No. / Khand No.	Khand No. / Gata no. - 03, Lot No – 03
Area	8.050 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 356.665 • The lowest elevation observed is 345.100 • The lease has an overall elevation difference of 11.565 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 195089 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	07
Tehsil	Behat
Village	**Rehna**
Gata No. / Khand No.	Gata No. 179/2
Area	3.750 ha.
River	Gaisara Rao (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 357.739 • The lowest elevation observed is 351.120. • The lease has an overall elevation difference of 6.619 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 111795 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	08
Tehsil	Nukur
Village	**Dhikkan Kalan**
Gata No. / Khand No.	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863,864,865,866,867, 871, 872, 888, 889, 406 , 407
Area	52.63 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	Ordinary Sand
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 276.669 • The lowest elevation observed is 261.100 • The lease has an overall elevation difference of 15.569 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 26767 cum • **The current mineral reserve to support production for long term periods shall be analyzed along with after post-monsoon replenished data.** • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

NON-OPERATIVE LEASES

Particulars	Details / Observation
Serial Number	01
Tehsil	Behat
Village	**Sherpur Pelon**
Gata No. / Khand No.	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431
Area	6.475 ha.
River	Khairawali Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 375.859 • The lowest elevation observed is 360.100. • The lease has an overall elevation difference of 15.759 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• Current elevation recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 229913 cum • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	02
Tehsil	Behat
Village	**Kaluwala Pahadipur**
Gata No. / Khand No.	119/1 , 120/1 , 192/1 , 193/1 , 125/4
Area	14.900 ha.
River	Kaluwala (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 385.520 • The lowest elevation observed is 358.833 • The lease has an overall elevation difference of 26.687 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 359485 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENINDIA CONSULTING (P) LTD GHAZIABAD

Particulars	Details / Observation
Serial Number	03
Tehsil	Behat
Village	**Akbarpur Bans Aehatmal**
Gata No. / Khand No.	1
Area	17.900 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 319.090 • The lowest elevation observed is 307.100 • The lease has an overall elevation difference of 11.990 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 248739 cum • **The current mineral reserve is capable to support production for mid-term periods.** • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	04
Tehsil	Behat
Village	**Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal**
Gata No. / Khand No.	1 and 1
Area	13.800 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 313.546 • The lowest elevation observed is 302.000 • The lease has an overall elevation difference of 11.546 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 412595 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	05
Tehsil	Behat
Village	**Shehjadpur Bans Aehatmal**
Gata No. / Khand No.	1
Area	13.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 310.605 • The lowest elevation observed is 301.990 • The lease has an overall elevation difference of 8.615 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 383857. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	06
Tehsil	Behat
Village	**Alauddinpur Bans Aehatmal**
Gata No. / Khand No.	1/1
Area	9.580 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 311.562 • The lowest elevation observed is 303.990 • The lease has an overall elevation difference of 7.572 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 145022 cum. • **The current mineral reserve is capable to support production for mid term periods.** • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	07
Tehsil	Behat
Village	**Mehmoodpur Nangli Aehatmal**
Gata No. / Khand No.	1
Area	15.700 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 319.060 • The lowest elevation observed is 303.100 • The lease has an overall elevation difference of 15.960 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 528459 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	08
Tehsil	Behat
Village	**Shahpur Bans Aehatmal**
Gata No. / Khand No.	1/1
Area	15.600 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 320.461 • The lowest elevation observed is 306.980 • The lease has an overall elevation difference of 13.481 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx..351410 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

Particulars	Details / Observation
Serial Number	09
Tehsil	Behat
Village	**Nityanandpur Aehatmal and Said-mohamadpur Aehatmal**
Gata No. / Khand No.	1 and 1ma
Area	17.700 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 311.392 • The lowest elevation observed is 296.859 • The lease has an overall elevation difference of 14.533 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 593005 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Particulars	Details / Observation
Serial Number	10
Tehsil	Behat
Village	**Abutalibpur Garh Aehatmal**
Gata No. / Khand No.	1
Area	37.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 307.806 • The lowest elevation observed is 298.200 • The lease has an overall elevation difference of 9.606 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 1217817 cum,. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Particulars	Details / Observation
Serial Number	11
Tehsil	Behat
Village	**Nuniyari Athmal – Khand Second**
Gata No. / Khand No.	1/1/1
Area	23.200 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 288.593 • The lowest elevation observed is 281.874 • The lease has an overall elevation difference of 6.719 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx.. 519716 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Particulars	Details / Observation
Serial Number	12
Tehsil	Behat
Village	**Aslampur Bartha – First**
Gata No. / Khand No.	1/1 M
Area	36.600 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 306.747 • The lowest elevation observed is 292.100 • The lease has an overall elevation difference of 14.647 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 1250795 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Particulars	Details / Observation
Serial Number	13
Tehsil	Behat
Village	**Rasoolpur Urf Rasooli**
Gata No. / Khand No.	1/1
Area	34.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 295.824 • The lowest elevation observed is 286.839 • The lease has an overall elevation difference of 8.985 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 897564 cum. • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Particulars	Details / Observation
Serial Number	14
Tehsil	Behat
Village	**Aslampur Bartha – Second**
Gata No. / Khand No.	1/1m
Area	28.160 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	June-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME II & II of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 300.106 • The lowest elevation observed is 288.120 • The lease has an overall elevation difference of 11.986 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre-monsoon Ground Control Points were fixed and elevation profiles were recorded which are serially tabulated and schematically presented in surface map in VOLUME-II. The net change in elevation profile shall be recorded in post-monsoon scenario and replenished volume shall be reported in post-monsoon report along with cross sections.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion	• The current elevation profile recorded by DRONE and DGPS methods shows exposure of existing reserves of R.B.M in mixed state to a quantum of approx. 726618 cum, • The current mineral reserve is capable to support production for long term periods. • The results of post-monsoon replenishment reserve shall be added/co-related with present reserve to recommend the overall sustainable production quantity and period as per Guidelines.

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Chapter 9

Conclusion & Recommendation

- The pre-monsoon (2022) replenishment study survey was conducted by Sub-Divisional Committee nominated by **Hon'ble District Magistrate Saharanpur**. The required technical assistance for the pre-monsoon replenishment study was provided by hired support agency.

- In total Twenty-Two (22) leases measuring 422.635 ha. were surveyed and studied in various River Channels in pre-monsoon period.

- The Maximum elevation levels in 22 leases varied between 26.678 to 6.000 from the elevation of River Water channel.

- Existing deposits in various leases were identified, as mining has not been commenced in such leases over several years. The occurrence of existing deposits attribute to the result of periodic replenishment in layers, which has occurred in several years.

- Lase wise results has been reported on Chapter 8 of this report. The interpretation of results are on the basis of supporting Drainage Maps, DGPS baseline data, Drone Survey Data as reported in VOLUME-II of the Report and also on the basis of lease wise study coverage and filed photographs of Physical Survey, DGPS Survey and Drone Survey which is covered in VOLUME-III of this report.

- The overall results of 22 operative leases show that they have adequate geological and minable deposits in the pre-monsoon period of Year-2022. Sustainable reserves were found in all the 22 leases and lease wise recommendation of sustainable production for mid-terms / long-terms has been provided on the basis of existing reserves.

- The exposure of existing reserves along with replenished reserves shall be studied in post-monsoon period to report the overall sustainable production for 5 years.

- The pre-monsoon baseline data of 22 leases has been collected and adequate minable reserves has been found in all the leases. The sub-divisional committee recommends that lease wise present quantum of deposit and results should be co-related in post-monsoon scenario. The Macro Assessment of river stretch shall be done to report overall mineral potential in the entire river stretch area so as to assess and determine the overall sediment flow patter of the rivers.

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Chapter 10
ANNEXURES

Annexure Number	Details
VOLUME-II	**LEASE WISE base maps & plan -** • Study AREA MAP (area and drainage features on S.O.I. TOPSHEET) • Study AREA MAP (area and drainage features on google earth) **LEASE WISE DGPS survey RECORDS /RESULTS-** • GROUND control points (GCP) RECORD SHEET in tabular format. • MAPPING GROUND control points (GCP) RECORD SET ON SURFACE MAP. **LEASE WISE DRONE SURVEY RECORDS /RESULTS** • Contour map • D.S.M. MAP • Ortho map • R.B.M. (Sand/bajri/boulder) EXPOSURE MAP • Water map • Open area map
VOLUME-III	**Lease-wise pictorial view Investigation Details:** • Physical Survey • Drone Survey • DGPS Survey

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Reference's

1.	Directorate of Geology and Mining, Lucknow
2.	Geological Survey of India
3.	CGWB (Ministry of Jal Shakti)
4.	District Survey Report of Saharanpur
5.	Sustainable Sand Mining Management Guidelines 2016,MoEF & CC, Government of India, New Delhi
6.	Enforcement & Monitoring Guidelines for Sand Mining 2020 issued by MoEF&CC
7.	Survey of India Toposheet
8.	Interaction of local people.

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जनपद सहारनपुर
DISTRICT SAHARANPUR

Post-Monsoon Replenishment Study
&
Reserve Estimation Report of
R.B.M. Mining Leases - District Saharanpur

(Study period – Post-monsoon-2022)

VOLUME-IV

Prepared by M/s GreenCIndia Consulting Pvt. Ltd.

A QCI/NABET Accredited Origination under Mining Sector 1(a) as per MoEF & CC Schedule.

Under Supervision of Sub-Divisional Committee – District Saharanpur

Submitted to Hon'ble District Magistrate, Saharanpur

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संयुक्त निदेशक
खनिज कार्यालय
सहारनपुर

अपर जिलाधिकारी (वि/रा)
प्रभारी अधिकारी खनिज
सहारनपुर

PREFACE

A Drainage system is the pattern formed by streams, rivers and lakes in a drainage basin. In a drainage system, streams or rivers always connect together to form networks. Several factors such as topography, soil type, bedrock type, climate and vegetation cover influence input, output and transport of sediment and water in a drainage basin *(Charlton, 2008)*. Such factors also influence the nature of the pattern of water bodies *(Twidale, 2004)*. As a consequence, drainage pattern can reflect geographical characteristics of a river network to a certain extent. There are several types of drainage pattern. So far, much research has been done on the description of drainage patterns in geography and hydrology *(e.g. Howard, 1967; Lambert, 1998; Twidale, 2004; Pidwirny, 2006)*.

In addition, sediment transport knowledge is important in river restoration, ecosystem protection, navigation, watershed studies and its management. Bed load represents the lower portion of sediment load in natural rivers. Fluvial sediment load materials are transported by rivers. Sediment load can be divided into bed load and suspended load based on the mode of transport. Bed load is transported close to the bed where particles moved by rolling, sliding, or jumping *(Adegbola, 2012)*. *Xlaoqing (2003)* explained that bed load transport in natural rivers is a complicated phenomenon. Its movement is quite uneven in both the transverse and longitudinal directions, which vary considerably.

The state of Uttar Pradesh has great importance in the local, regional, national and international perspectives due to its distinct physiographic conditions. It is endowed with diverse vegetation types, ranging from tropical to subtropical, temperate and alpine including riverine, grasslands and wetlands. The rivers of Uttar Pradesh play's an important role for the nation and provide water required by various sectors such as irrigation, drinking, recreation and industrial requirements etc. Besides, mining activities are also being carried out in the rivers for the developmental process.

Removal of excess sand and stone from river bed helps to maintain the carrying capacity and provides protection from flooding during monsoon season. Further, continuous flow of river is essential for ecological and economic needs such as irrigation and biodiversity etc. Therefore, drainage study of the river helps to understand potential carrying capacity of water during monsoon season which is generated from rainfall in the watershed and quantity of di-siltation of rivers under mining affected areas.

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In line with same, Replenishment study was carried out for operative/new/planned R.B.M. leases of District Saharanpur. Quantification and estimation of river bed material (RBM) was accomplished by followING three scientific approaches as envisaged in Sustainable Sand Management Guidelines – 2016 (SSMG-2016) and its contemporary guidelines Enforcement & Monitoring Guidelines for Sand Mining (EMSM-2020)issued by MoEF&CC in January-2020.

Mining areas were geo-tagged and surveyed for analysis of study of the availability/potential of sand and gravel. Estimation of deposition and safe limit for extraction/ removal of deposited river bed material (RBM) available in the various rivers/streams were done by analysing elevation profiles and pit profiles at regular intervals and Drone based Survey.

The Pre-Monsoon Report was prepared and published in Three Volumes namely VOLUME-I, VOLUME-II and VOLUME-III and is completed with results.

The current report has been prepared and published in next Three Volumes namely VOLUME-IV, VOLUME-V and VOLUME-VI

The pre and post monsoon data has been analysed and co-related and final results with river wise recommendation has been recommended in the report.

Sub Divisional Committee – District Saharanpur

TABLE OF CONTENT

Sl. No	Content
1	Background & Introduction of post-monsoon Replenishment Study Report
2	Inventory of R.B.M. Leases in District Saharanpur
3	The concept of Natural Resource Accounting with Monitoring Mechanism
4	Lease wise analysis , post monsoon (2022) replenishment study results with recommendation
5	Final Recommendation of Sub-Divisional Committee
6	Environmental Observations and Enforcement Monitoring recommendation
7	Annexures • VOLUME-V and • VOLUME-VI

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

CHAPTER	**1**
CONTENT	**Background & Introduction of post-monsoon Replenishment Study Report.**

Background

- The replenishment study report of district Saharanpur has been prepared in compliance the provisions of Sustainable Sand Management Guidelines – 2016 and its latest guidelines EM Guidelines for Sand Mining – 2020.
- The important details related to sediment transport and composition, purpose of study, methodology , district profile , ground water scenario, regional geology of district, mineral resources, rainfall & climate , description of study area rivers, analysis of particle size distribution, gradient analysis , list of software / manpower and equipment's, inventory of leases with pre-monsoon results has been covered in the VOLUME-I of the report.
- The details related to Three Layer Survey method i.e physical, DGPS and Drone based survey has been covered in Chapter-3 of the the VOLUME-1 of the report.
- The details and findings related to drainage and features of study area has been mapped on Survey of India Toposheet and google earth images, lease wise DGPS survey records having contour map, DSM , Otho Maps and DGPS record sets in tabular format and

its mapping in surface map has been reported in the VOLUME-II of the report.

- The conclusion of pre-monsoon results along with recommendations has been covered on the Chapter-8 of the VOLUME-I of the pre-monsoon replenishment study report.
- In total Twenty-Two (22) leases measuring 422.635 ha. were surveyed and studied in various River Channels in pre-monsoon period.
- The concluding recommendation of the Sub-Divisional committee in the pre-monsoon report and its operative para is as under:-

> *"The pre-monsoon baseline data of 22 leases has been collected and adequate minable reserves has been found in all the leases. The sub-divisional committee recommends that lease wise present quantum of deposit and results should be co-related in post-monsoon scenario. The Macro Assessment of river stretch shall be done to report overall mineral potential in the entire river stretch area so as to assess and determine the overall sediment flow patter of the rivers"*

Introduction of post-monsoon Replenishment Study Report

- The current post-monsoon report has been prepared and published in 3 volumes namely VOLUME-IV , VOLUME-V0 and VOLUME-VI.
- The final interpretation of leases, replenished quantity, mineral reserves estimation with conclusion and recommendation has been reported in the VOLUME-IV of the post-monsoon replenishment study report.

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- The interpretation of post-monsoon replenishment study results on the basis of supporting Drainage Maps, DGPS baseline data, Drone Survey Data as reported in VOLUME-IV of the Report and lease wise study coverage and filed photographs of Physical Survey, DGPS Survey and Drone Survey has been covered in VOLUME-VI of this report.

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

CHAPTER	2
CONTENT	Inventory of R.B.M. Leases in District Saharanpur

OPERATIVE LEASES

Sl. No	Tehsil	River	Village	Gata No. / Khand No. / Zone No.	Area	Pillar	Latitude	Longitude
1	Behat	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	A	30° 19' 21.41" N	77° 38' 26.35" E
						B	30° 19' 17.62" N	77° 38' 30.56" E
						C	30° 19' 13.68" N	77° 38' 25.07" E
						D	30° 19' 17.44" N	77° 38' 20.78" E
2	Behat	Yamuna	Bartha Korsi	Gata No. - 1	36.000	A	30° 14' 00.94" N	77° 31' 13.91" E
						B	30° 14' 16.50" N	77° 31' 24.43" E
						C	30° 14' 13.69" N	77° 31' 31.19" E
						D	30° 14' 19.59" N	77° 31' 37.85" E
						E	30° 14' 37.10" N	77° 31' 40.80" E
						F	30° 14' 39.19" N	77° 31' 36.25" E
						G	30° 14' 26.08" N	77° 31' 29.05" E
						H	30° 14' 09.19" N	77° 31' 02.18"E
3	Behat	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200	A	30° 15' 20.64" N	77° 40' 42.10" E
						B	30° 15' 20.54" N	77° 41' 00.42" E
						C	30° 15' 17.98" N	77° 41' 01.84" E
						D	30° 15' 17.71" N	77° 40' 42.89" E
4	Behat	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	A	30° 15' 52.04" N	77° 39' 22.56" E
						B	30° 15' 51.84" N	77° 39' 27.43" E
						C	30° 16' 06.24" N	77° 39' 31.26" E
						D	30° 16' 07.18" N	77° 39' 25.07" E
5	Behat	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laat 38	24.290	A	30°11'00.90" N	77°29"25.83"E
						B	30°11'12.98" N	77°29"12.21" E
						C	30°11'24.95" N	77°29"26.28" E
						D	30°11'21.79" N	77°29"29.68" E
						E	30°11'20.39" N	77°29"33.03" E

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						F	30°11'18.64" N	77°29"33.83" E
						G	30°11'17.01" N	77°29"34.70" E
						H	30°11'14.93" N	77°29"32.91" E
						I	30°11'09.54" N	77°29"31.35" E
						J	30°11'03.46" N	77°29"29.55" E
6	Behat	Yamuna	**Rehna**	Khand No. / Gata no. - 03, Lot No - 03	8.050	A	30° 21' 36.45" N	77° 36' 05.61" E
						B	30° 21' 29.62" N	77° 36' 00.26" E
						C	30° 21' 37.95" N	77° 35' 50.38" E
						D	30° 21' 41.71" N	77° 36' 02.50" E
7	Behat	Gaisara Rao	**Rahena**	Gata No. 179/2	3.750	A	30° 19' 56.17" N	77° 36' 33.21" E
						B	30° 19' 52.90" N	77° 36' 33.93" E
						C	30° 19' 50.54" N	77° 36' 20.87" E
						D	30° 19' 53.90" N	77° 36' 20.01" E
8	Nukur	Yamuna	**Dhikkan Kalan**	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.63	A	30° 1'20.61"N	77°17'23.68"E
						B	30° 1'24.58"N	77°17'15.45"E
						C	30° 1'32.77"N	77°17'19.87"E
						D	30° 1'42.25"N	77°17'24.49"E
						E	30° 1'41.34"N	77°17'31.04"E
						F	30° 1'52.02"N	77°17'39.09"E
						G	30° 1'54.80"N	77°17'51.61"E
						H	30° 1'56.88"N	77°17'52.96"E
						I	30° 2'2.71"N	77°18'5.82"E
						J	30° 1'59.86"N	77°18'8.25"E
						K	30° 1'57.85"N	77°18'7.25"E
						L	30° 1'58.76"N	77°18'5.82"E
						M	30° 1'57.46"N	77°18'4.89"E
						N	30° 1'57.00"N	77°18'1.96"E
						O	30° 1'53.50"N	77°18'0.53"E
						P	30° 1'47.64"N	77°17'52.52"E
						Q	30° 1'42.10"N	77°17'46.53"E
						R	30° 1'32.38"N	77°17'39.44"E
						S	30° 1'27.11"N	77°17'31.55"E

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

NON-OPERATIVE LEASES

S.No	Tehsil	River	Village	Gata No. / Khand No. / Zone No.	Area	Pillar	Latitude	Longitude
1	Behat	Khairawali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475	A	30°16'35.16"N	77°39'44.44"E
						B	30°16'32.34"N	77°39'51.41"E
						C	30°16'21.11"N	77°39'36.26"E
						D	30°16'22.11"N	77°39'34.41"E
2	Behat	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900	A	30°12'08.76"N	77°45'37.77"E
						B	30°12'06.03"N	77°45'42.25"E
						C	30°12'00.52"N	77°45'38.93"E
						D	30°11'40.91"N	77°45'32.39"E
						E	30°11'41.72"N	77°45'25.51"E
						F	30°12'02.80"N	77°45'33.06"E
3	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	A	30°16'27.80"N	77°32'46.96"E
						B	30°16'34.01"N	77°32'47.53"E
						C	30°16'42.58"N	77°32'53.94"E
						D	30°16'43.84"N	77°32'58.19"E
						E	30°16'50.96"N	77°32'47.76"E
						F	30°16'46.69"N	77°32'43.28"E
						G	30°16'39.98"N	77°32'41.04"E
						H	30°16'36.08"N	77°32'33.91"E
4	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	A	30°15'51.33"N	77°32'21.84"E
						B	30°15'58.45"N	77°32'08.63"E
						C	30°15'45.65"N	77°32'03.15"E
						D	30°15'41.84"N	77°32'13.01"E
5	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	A	30°15'24.84"N	77°31'57.01"E
						B	30°15'12.32"N	77°31'47.88"E
						C	30°15'16.91"N	77°31'36.94"E
						D	30°15'28.43"N	77°31'48.83"E
6	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	A	30°16'14.92"N	77°32'39.76"E
						B	30°16'17.99"N	77°32'32.74"E
						C	30°16'08.09"N	77°32'23.84"E
						D	30°16'02.92"N	77°32'31.72"E

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7	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	A	30°16'02.98"N	77°32'30.74"E
						B	30°16'10.84"N	77°32'18.84"E
						C	30°16'00.40"N	77°32'11.56"E
						D	30°15'51.70"N	77°32'23.64"E
8	Behat	Yamuna	Shahpur Bans Aehatmal	1/1	15.600	A	30°16'27.75"N	77°32'46.14"E
						B	30°16'16.01"N	77°32'38.50"E
						C	30°16'20.43"N	77°32'28.70"E
						D	30°16'35.53"N	77°32'33.20"E
9	Behat	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700	A	30°15'25.77"N	77°31'57.79"E
						B	30°15'41.32"N	77°32'12.89"E
						C	30°15'46.16"N	77°32'00.64"E
						D	30°15'28.87"N	77°31'50.13"E
10	Behat	Yamuna	Abutalibpur Garh Aehatmal	1	37.000	A	30°14'41.78"N	77°31'38.30"E
						B	30°14'49.46"N	77°31'21.34"E
						C	30°15'16.20"N	77°31'36.25"E
						D	30°15'11.96"N	77°31'46.05"E
11	Behat	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	23.200	A	30°11'00.50"N	77°29'25.19"E
						B	30°10'59.39"N	77°29'23.26"E
						C	30°10'58.86"N	77°29'15.55"E
						D	30°10'55.77"N	77°29'10.53"E
						E	30°10'46.29"N	77°29'04.02"E
						F	30°10'39.87"N	77°29'00.42"E
						G	30°10'46.96"N	77°29'51.89"E
						H	30°10'51.56"N	77°29'56.86"E
						I	30°10'49.46"N	77°29'58.83"E
						J	30°11'02.30"N	77°29'11.12"E
						K	30°11'07.26"N	77°29'05.46"E
						L	30°11'12.52"N	77°29'11.64"E
12	Behat	Yamuna	Aslampur Bartha – First	1/1M	36.600	A	30°13'45.87"N	77°31'09.07"E
						B	30°13'23.05"N	77°30'53.85"E
						C	30°13'13.45"N	77°30'42.33"E
						D	30°13'16.67"N	77°30'36.60"E
						E	30°13'50.98"N	77°30'57.80"E
13	Behat	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000	A	30°12'17.09"N	77°30'18.81"E
						B	30°12'16.42"N	77°30'17.32"E
						C	30°12'05.34"N	77°30'13.17"E

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						D	30°11'59.82"N	77°30'01.24"E
						E	30°11'46.33"N	77°29'58.50"E
						F	30°11'59.32"N	77°29'43.47"E
						G	30°12'21.10"N	77°30'16.04"E
14	Behat	Yamuna	**Aslampur Bartha – Second**	1/1M	28.160	A	30°13'04.93"N	77°30'44.59"E
						B	30°12'35.50"N	77°30'28.50"E
						C	30°12'38.19"N	77°30'18.84"E
						D	30°13'09.39"N	77°30'35.57"E

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CHAPTER	3
CONTENT	The concept of Natural Resource Accounting with Monitoring Mechanism

- The Sub-Divisional committee went through following references while conducting Replenishment Study of the leases prior recommending the promulgation of the concept of Natural Resource Accounting with Monitoring Mechanism: -

Sl. No	Reference	Details
1	Section-3 of the Enforcement & Monitoring Guidelines for Sand Mining-2020	The Section deals with the Objective of Guidelines wherein Identification and Quantification of Mineral Resource and its optimal utilization, To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public, Reduction in demand & supply gaps. To control the instance of illegal mining and other factors has been recommended.
2	Uttar Pradesh Sand Mining Policy – 2017 and subsequent G.O.'s	The said policies and G.O.'s deals with the identification and allotment of long term lease for a period of 5 (five) years on e-auction basis.
3	Section-9 of the Enforcement & Monitoring Guidelines for Sand Mining-2020	The Section deals with the Monitoring Mechanism by referring the provisions of 23(C) of MMDR Act empowering State Government to make rules to prevent illegal mining and transportation (9.1) , standard practice for assessing illegal mining and Monitoring Mechanism (9.4)
4	EAC meeting Minutes Dated 24 & 25 – October – 2016 (non-coal mining)	Wherein the EAC opined the issues related to replenishment study for perennial and non-perennial rivers.

5	Sand Mining Framework 2018 issued by Ministry of Mines	Registration of lease holder, stock holders and transporters in portal, assessment of quantity by joint inspection team, geo-fencing, monitoring the de-casting of river beds, e-permits, transportation monitoring using CCTV/Drone.

The Sub-Divisional Committee opines and suggests following: -

1. Time to time identification of lease with mineral potential is required to canalize river.
2. Time to time identification of lease with mineral potential is required to address the market needs and demand/supply gaps.
3. Time to time identification of lease with mineral potential and its timely auction is required; as there are larger chances of illegal mining in vacant lease areas.
4. Time to time identification of lease with mineral potential is required to generate employment, state royalties to enable development.
5. However, there has to be balance between exploitation and conservation of mineral resources and the same has to be closely monitored.
6. The exploitation / conservation monitoring to promote and regulate sustainable mining can be achieved by a check-n-balance model.
7. The studies has shown that leases in its existing form are mineral rich and surface removal is required for occurrence of new replenishment and river channelization.
8. The Sub-Divisional Committee suggests the concept of Natural Resource Accounting with Monitoring Mechanism.

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Proposed Concept of Natural Resource Accounting with Monitoring Mechanism:-

1. The concept shall work in the simple but effective principals of accounting methods wherein the existing mineral potential shall be treated as opening balance and replenished quantity shall be treated as a income.
2. The addition of existing mineral potential and replenished quantity shall be treated a Total Mineral Balance available on the lease.
3. A life of mine (in years) shall be derived by dividing Total Mineral Balance with the sanctioned annual production.
4. The Total Mineral Balance will then be reduced by subtracting the actual mineral dispatches and revised life of mine (in years) shall be derived on yearly basis.
5. If the life of mine (in years) at any juncture of point shall be observed to be less than 3 (three) months , a red alert shall be raised and the Monitoring Mechanism shall be implemented as per the recommended clause ***"Project Proponent shall decrease / stop the mining in case replenishment is lower than the approved rate of production till the replenishment is completed"***

6. The illustrative Natural Resource Accounting with Monitoring Mechanism model is proposed as under:-

SL.	Lease Detail	Sanctioned Production	Existing Reserve	Replenished Reserve	Net Reserve	Life of Mine	Mineral Production	Balance Reserve	Revised Life of Mine
		(in cum)	(in cum)	(in cum)	(in cum)	(in years)	(in cum)	(in cum)	(in years)
1	A	B	C	D	E = C+D	F = E /B	G	H = E – G	I = H / B
	XYZ	4,00,000	12,50,000	3,00000	15,50,000	3.90	400000	1250000	3.125
	XYZ	4,00,000	12,50,000	2,00,000	14,50,000	3.62	400000	10,50,000	2.625

7. The summary of lease wise pre and post monsoon replenishment study with replenished quantity and net reserves along with expected Life Of Mine has been reported in TABLE No. - PM/001.

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CHAPTER	**4**
CONTENT	**Lease wise analysis , post monsoon (2022) replenishment study results with recommendation**

1. Post-monsoon study of total Twenty-Two (22) operative leases where done as per the methodology elaborated in VOLUME-I of the Report.

2. The present survey is was done to report the quantity of new mineral arriving / depleting after monsoon after interpreting the post-monsoon baseline data collection of elevation profiles through DGPS and Drone Survey.

3. The results of such year wise surveys will help the state government to establish the replenishment rate of the river based on which future action may be planned.

4. The Physical topographic Survey of the leases using DGPS and Drone Survey was done in post-monsoon period in order to record and report the current elevation profiles of the lease areas. Pit profiles up-to the depth of 3 meters were done to estimate the quantity of reserve and analyse sustainable mining to be recommended for grant/operations of leases.

5. Baseline data of elevation status in grids where recorded on cross sections and prepared depending on the condition of site.

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6. Field books and database of recordings were prepared in a tabulated manner narrating the mRL of OGL (On Ground Level) Points having longitude/latitude.

7. GIS software modelling were done to correlate the data and net results are shown in graphical forms with appropriate scales.

8. Lease wise results are reported in this chapter. The results of pre-monsoon baseline data collection have been co-related with post-monsoon data to report overall replenishment occurring in the study areas.

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OPERATIVE LEASES

Particulars	Details / Observation
Serial Number	01
Tehsil	Behat
Village	Mayapur Rooppur
Gata No. / Khand No.	Gata No. 14/1
Area	3.100 ha.
River	Badshahibagh Rao (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 395.331 • The lowest elevation observed is 389.971. • The lease has an overall elevation difference of 5.360 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 92993 cum. • Replenished Quantity – 6895 cum • Post -monsoon reserves – 99888 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	02
Tehsil	Behat
Village	**Bartha Korsi**
Gata No. / Khand No.	Gata No. – 1
Area	36.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 303.601 • The lowest elevation observed is 292.200. • The lease has an overall elevation difference of 11.401meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 173732 cum. • Replenished Quantity – 700626 cum • Post -monsoon reserves – 874358 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	03
Tehsil	Behat
Village	**Haidarpur Hindwala**
Gata No. / Khand No.	Khand No / Gata No. - 8/1 , 19 & 22
Area	4.200 ha.
River	Badkala Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 377.38 • The lowest elevation observed is 367.496 • The lease has an overall elevation difference of 9.884meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 143893 cum. • Replenished Quantity – 14683 cum • Post -monsoon reserves – 158576 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	04
Tehsil	Behat
Village	**Sherpur Pelon**
Gata No. / Khand No.	Gata No. - 378/2 & 379/2
Area	7.000 ha.
River	Khurwali Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 355.444 • The lowest elevation observed is 349.38. • The lease has an overall elevation difference of 6.064meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 206037cum. • Replenished Quantity – 12627 cum • Post -monsoon reserves – 218664 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	05
Tehsil	Behat
Village	**Nuniyari Aehatmal**
Gata No. / Khand No.	Gata No. - 1/1/1 Laat 38
Area	24.290 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 296.203 • The lowest elevation observed is 284.652. • The lease has an overall elevation difference of 11.551meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 607313 cum. • Replenished Quantity – 359639 cum • Post -monsoon reserves – 966952 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	06
Tehsil	Behat
Village	**Rehna**
Gata No. / Khand No.	Khand No. / Gata no. - 03, Lot No – 03
Area	8.050 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 358.565 • The lowest elevation observed is 345.816 • The lease has an overall elevation difference of 12.749meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 195089 cum. • Replenished Quantity – 71575 cum • Post -monsoon reserves – 266664 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	07
Tehsil	Behat
Village	**Rehna**
Gata No. / Khand No.	Gata No. 179/2
Area	3.750 ha.
River	Gaisara Rao (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 357.431 • The lowest elevation observed is 351.681. • The lease has an overall elevation difference of 5.750 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 111795 cum. • Replenished Quantity – 7252 cum • Post -monsoon reserves – 119047 cum • The current mineral reserve is capable to support production for long term periods.

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Particulars	Details / Observation
Serial Number	08
Tehsil	Nukur
Village	**Dhikkan Kalan**
Gata No. / Khand No.	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863,864,865,866,867, 871, 872, 888, 889, 406 , 407
Area	52.63 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	Ordinary Sand
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 278.005 • The lowest elevation observed is 261.100 • The lease has an overall elevation difference of 16.905 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 26767 cum. • Replenished Quantity – 755349 cum • Post -monsoon reserves – 782116 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

NON-OPERATIVE LEASES

Particulars	Details / Observation
Serial Number	01
Tehsil	Behat
Village	**Sherpur Pelon**
Gata No. / Khand No.	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431
Area	6.475 ha.
River	Khairawali Ra (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 377.84 • The lowest elevation observed is 360.109. • The lease has an overall elevation difference of 17.731 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 229913 cum. • Replenished Quantity – 66426 cum • Post -monsoon reserves – 296339 cum • The current mineral reserve is capable to support production for long term periods.

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	02
Tehsil	Behat
Village	**Kaluwala Pahadipur**
Gata No. / Khand No.	119/1 , 120/1 , 192/1 , 193/1 , 125/4
Area	14.900 ha.
River	Kaluwala (Seasonal River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 385.730 • The lowest elevation observed is 359.12 • The lease has an overall elevation difference of 26.610 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 359485 cum. • Replenished Quantity – 130439 cum • Post -monsoon reserves – 489924 cum • The current mineral reserve is capable to support production for long term periods.

GREENINDIA CONSULTING (P) LTD. GHAZIABAD

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	03
Tehsil	Behat
Village	**Akbarpur Bans Aehatmal**
Gata No. / Khand No.	1
Area	17.900 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 319.057 • The lowest elevation observed is 308.100 • The lease has an overall elevation difference of 10.957 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 248739 cum. • Replenished Quantity – 485450 cum • Post -monsoon reserves – 734189 cum • The current mineral reserve is capable to support production for long term periods.

GREEN INDIA CONSULTING (P) LTD. GHAZIABAD

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	04
Tehsil	Behat
Village	**Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal**
Gata No. / Khand No.	1 and 1
Area	13.800 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 319.036 • The lowest elevation observed is 302.818 • The lease has an overall elevation difference of 16.218 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 412595 cum. • Replenished Quantity – 119541 cum • Post -monsoon reserves – 532136 cum • The current mineral reserve is capable to support production for long term periods.

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	05
Tehsil	Behat
Village	**Shehjadpur Bans Aehatmal**
Gata No. / Khand No.	1
Area	13.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 312.585 • The lowest elevation observed is 302.563 • The lease has an overall elevation difference of 10.022 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 383857cum. • Replenished Quantity – 188528 cum • Post -monsoon reserves – 572385 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	06
Tehsil	Behat
Village	**Alauddinpur Bans Aehatmal**
Gata No. / Khand No.	1/1
Area	9.580 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 312.715 • The lowest elevation observed is 303.99 • The lease has an overall elevation difference of 8.725 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 145022 cum. • Replenished Quantity – 335551 cum • Post -monsoon reserves – 480573 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	07
Tehsil	Behat
Village	**Mehmoodpur Nangli Aehatmal**
Gata No. / Khand No.	1
Area	15.700 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 319.259 • The lowest elevation observed is 303.237 • The lease has an overall elevation difference of 16.022 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 528459 cum. • Replenished Quantity – 181049 cum • Post -monsoon reserves – 709508 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	08
Tehsil	Behat
Village	**Shahpur Bans Aehatmal**
Gata No. / Khand No.	1/1
Area	15.600 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 321.442 • The lowest elevation observed is 306.286 • The lease has an overall elevation difference of 15.156 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 351410 cum. • Replenished Quantity – 144427 cum • Post -monsoon reserves – 495837 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	09
Tehsil	Behat
Village	**Nityanandpur Aehatmal and Said-mohamadpur Aehatmal**
Gata No. / Khand No.	1 and 1ma
Area	17.700 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 311.403 • The lowest elevation observed is 297.159 • The lease has an overall elevation difference of 14.244 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 593005 cum. • Replenished Quantity – 328459 cum • Post -monsoon reserves – 921464 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	10
Tehsil	Behat
Village	**Abutalibpur Garh Aehatmal**
Gata No. / Khand No.	1
Area	37.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 308.291 • The lowest elevation observed is 297.116 • The lease has an overall elevation difference of 11.175 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 1217817 cum. • Replenished Quantity – 983797 cum • Post -monsoon reserves – 2201614 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	11
Tehsil	Behat
Village	**Nuniyari Athmal – Khand Second**
Gata No. / Khand No.	1/1/1
Area	23.200 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 290.173 • The lowest elevation observed is 281.874 • The lease has an overall elevation difference of 8.299 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 519716 cum. • Replenished Quantity – 225414 cum • Post -monsoon reserves – 745130 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	12
Tehsil	Behat
Village	**Aslampur Bartha – First**
Gata No. / Khand No.	1/1m
Area	36.600 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 309.568 • The lowest elevation observed is 292.056 • The lease has an overall elevation difference of 17.512 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 1250795 cum. • Replenished Quantity – 414321 cum • Post -monsoon reserves – 1665116 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	13
Tehsil	Behat
Village	**Rasoolpur Urf Rasooli**
Gata No. / Khand No.	1/1
Area	34.000 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 298.059 • The lowest elevation observed is 286.839 • The lease has an overall elevation difference of 11.220 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 897564 cum. • Replenished Quantity – 364931 cum • Post -monsoon reserves – 1262495 cum • The current mineral reserve is capable to support production for long term periods.

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POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

Particulars	Details / Observation
Serial Number	14
Tehsil	Behat
Village	**Aslampur Bartha – Second**
Gata No. / Khand No.	1/1 m
Area	28.160 ha.
River	Yamuna (Perennial River)
Classification of Minor Mineral	R.B.M. (River Bed Material – Sand/Bajri/Boldure) in mixed state.
Period of Survey	Nov-2022
References for interpretation of pre-monsoon baseline data results and conclusion	Site inspection by Sub-Divisional Committee members conducting Physical Survey, DGPS Survey, Drone Survey, collection of on-ground records/elevation profiles is reports in VOLUME V & VI of the report.
Interpretation of DRONE Survey Baseline Data Results	• The highest elevation observed in the lease is 300.668 • The lowest elevation observed is 289.023 • The lease has an overall elevation difference of 11.645 meters and existing deposits were verified during physical survey.
Interpretation of DGPS Survey Baseline Data Results	• Pre & Post monsoon Ground Control Points and elevation profiles are recorded, serially tabulated and schematically presented in VOLUME-V. Section wise net change in elevation profile has been interpreted and replenished volume has been reported.
Results of Physical Pit Profiles for reserve estimation	• Pit Profiles upto depth of 3 meters were conducted at regular intervals. • R.B.M. in mixed state in moist form was found up-to a depth of 3 meters. • Ground water intersection was non observed while conducting pit profiles.
Conclusion:- • The Replenished quantity has been derived upon, on the basis of comparative change in elevation profiles of lease in pre and post monsoon period recorded by DRONE and DGPS survey method's. • The reserves of lease have been calculated by offsetting all elevated contours upto one meter above the water level.	• Pre-monsoon reserves - 726618 cum. • Replenished Quantity – 225401 cum • Post-monsoon reserves – 952019 cum • The current mineral reserve is capable to support production for long term periods.

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CHAPTER	**5**
CONTENT	**Final Recommendation of Sub-Divisional Committee**

Final Recommendation of Sub-Divisional Committee

- The Sub-Divisional Committee of district Saharanpur has identified and evaluated the mineral potential and replenishment of 22 leases admeasuring 422.635 ha. which are spread across 6 Rivers.
- On the basis of pre-monsoon and post-monsoon replenishment study results the recommendation of the Sub-Divisional committee is as under:-

Recommendation on River Yamuna -

- Out of 22 leases, 16 leases admeasuring 383.21 ha. are located in river Yamuna which is a perennial river, has shown existing mineral potential and replenishment.
- The study results show naturally occurring replenishment in these areas and no erosion and land cutting where observed in post-monsoon period. The list of 16 leases are located in river Yamuna is summarised as under :-

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050
2	Behat	R.B.M.	Yamuna	Akbarpur Bans Aehatmal	1	17.900
3	Behat	R.B.M.	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800
4	Behat	R.B.M.	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580

5	Behat	R.B.M.	Yamuna	Mehmoodpur Nangli Achatmal	1	15.700
6	Behat	R.B.M.	Yamuna	Shahpur Bans Achatmal	1/1	15.600
7	Behat	R.B.M.	Yamuna	Nityanandpur Achatmal and Said-mohamadpur Achatmal	1 and 1ma	17.700
8	Behat	R.B.M.	Yamuna	Shehjadpur Bans Achatmal	1	13.000
9	Behat	R.B.M.	Yamuna	Abutalibpur Garh Achatmal	1	37.000
10	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000
11	Behat	R.B.M.	Yamuna	Aslampur Bartha – First	1/1 M	36.600
12	Behat	R.B.M.	Yamuna	Aslampur Bartha – Second	1/1 M	28.160
13	Behat	R.B.M.	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000
14	Behat	R.B.M.	Yamuna	Nuniyari Achatmal	Gata No. - 1/1/1 Laat 38	24.290
15	Behat	R.B.M.	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	23.200
16	Nukur	Sand	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861,863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.630
TOTAL AREA						383.210

- **It was also observed that 12 out of 16 leases in river Yamuna are non-operational since past 5-6 years which are currently over replenished. The elevation levels of such leases above the water level are much high, as a result of which the replenishment has now started in its adjourning areas. It is recommended that removal of existing deposits in such leases should be done in a timely manner so as to maintain the natural river course. In such manner time-to-time surface removal of excessive deposits will enable to maintain the geometry of river and invite proper replenishment in coming times.**
- **The timely operations of such lease is also recommended to control the illegal mining (if any) in the vacant areas which are having existing substantial deposits.**

- **The list of such long vacant 12 leases are as under:-**

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Yamuna	Akbarpur Bans Aehatmal	1	17.900
2	Behat	R.B.M.	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800
3	Behat	R.B.M.	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580
4	Behat	R.B.M.	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700
5	Behat	R.B.M.	Yamuna	Shahpur Bans Aehatmal	1/1	15.600
6	Behat	R.B.M.	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700
7	Behat	R.B.M.	Yamuna	Shehjadpur Bans Aehatmal	1	13.000
8	Behat	R.B.M.	Yamuna	Abutalibpur Garh Aehatmal	1	37.000
9	Behat	R.B.M.	Yamuna	Aslampur Bartha – First	1/1 M	36.600
10	Behat	R.B.M.	Yamuna	Aslampur Bartha – Second	1/1 M	28.160
11	Behat	R.B.M.	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000
12	Behat	R.B.M.	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	23.200

- **The sub-divisional committee further observed that replenishment rate varies depending on the local geological conditions as the local geology is undulated in these areas.**
- **Replenishment of one R.B.M. lease operational in the area was observed and it was found that voids / working pits having depth of 2.5 to 3 meters of the mined out area were properly replenished upto 1.95 meters and there is occurrence of additional deposits in the lease area which is basically attributed to the movement of mineral coming from adjoining over recharged non-operative leases. The detail of once operative lease is as under:-**

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Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000

- It is recommended that keeping in the view the concept of Natural Resource Accounting method and long term operations of leases in a sustainable manner, the mining in lease areas of river Yamuna can be permitted upto a depth of 3 meters from mineral deposit surface and one meter above the water level of river channel whichever reaches out earlier.
- However, on aspect of environment protection, mineral conservation and long term sustainable operations of lease, it is also recommended that out of the total available net reserve ; not more that 60% of the mineral potential volume available upto a depth of 3 meters should be recommended for annual production at one point of time.

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Recommendation on other Five Rivers

- The remaining 6 leases admeasuring 39.425 ha. are located in five rivers namely Badkala Ra , Badshahibagh Rao , Gaisara Rao Kaluwala and Khurwali Ra.
- The list of 6 leases is as under:-

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475
2	Behat	R.B.M.	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900
3	Behat	R.B.M.	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100
4	Behat	R.B.M.	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200
5	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000
6	Behat	R.B.M.	Gaisara Rao	Rahena	Gata No. 179/2	3.750
TOTAL AREA						39.425

- The study results show that all these five rivers are non- perennial in nature. All the five rivers experienced shallow water flow in current monsoon period, which has now withdrawn and the rivers are dry. No erosion and land cutting where observed in post-monsoon period.
- The committee observed that these five rivers do not replenish annually as they are non–perennial in nature.
- Hence the study of annual replenishment in such rivers has to be more specific and nature based due to non-periodic rainfall. With the pit profiles conducted while physical survey, study results, elevation profiles , river geometry and stake holding with local

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villagers it was observed that these rivers in the recent past of 5-10 years got over replenished due to sudden one time occurrence of huge rainfall due to which substantial quantum's of RBM has come from the from the upstream and eventually got deposited in the leases.

- The present levels of deposits show that it can be utilised over a spread of next years, however the operations of these mines is to be critically evaluated while recommending annual production. This is due to the fact that after operations of mines if they are not replenished property the leases may turn into permanent depressions leading to change in natural channel geometry.
- It is recommended that keeping in the view the concept of Natural Resource Accounting method and long term operations of leases in a sustainable manner, the mining in identified lease areas can be permitted upto a depth of 3 meters from mineral deposit surface and one meter above the water level of river channel whichever reaches out earlier, as there are substantial existing reserves, due to sudden one-time occurrence explained above.
- However, on aspect of environment protection, mineral conservation and long term sustainable operations of lease, it is also recommended that out of the total available net reserve; not more that 40% of the mineral potential volume available upto a depth of 3 meters should be recommended for annual production at one point of time.

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CHAPTER	6
CONTENT	Environmental Observations and Enforcement Monitoring recommendation

Environmental Observations and Enforcement Monitoring recommendation :-

- The Sub-Divisional committee shall periodically monitor the results of replenishment study, levels of mineral production, erosion levels and erosion points.
- Management and maintenance plans of erosion levels and erosion points shall be prepared and implemented on the basis of observations made.
- Mining shall only be permitted upto a depth of 3 meters or 1 meter above the water level whichever is reached earlier.
- The results of scientific replenishment study shall be co-related with production levels and a mineral resource accounting systems will be implemented.
- The monitoring and evaluation of such results shall be done once in three months by Sub-Divisional Committee.
- The minable production and permissible depth of mining will be evaluated further on the basis of trend analysis in years to come and recommendations, as so, shall be made.
- The mineral resource accounting system model is proposed to be implemented to keep the checks and balances on minerals deposits.

POST-MONSOON REPLENISHMENT STUDY REPORT YEAR - 2022 - (VOLUME-IV)

CHAPTER	7
CONTENT	Annexures •VOLUME-V and •VOLUME-VI

Volume-V and Volume-VI are Annexures of this report and published separately for the ease of searching references and relevant sections.

अपर जिलाधिकारी
(वि०/रा०), सहारनपुर
(अध्यक्ष)

प्रभागीय निदेशक,
सामाजिक वानिकी प्रभाग,
सहारनपुर
(सदस्य)

अधिशाषी अभियंता,
सिंचाई निर्माण खण्ड,
सहारनपुर
(सदस्य)

अधिशाषी अभियंता,
लोक निर्माण विभाग,
सहारनपुर
(सदस्य)

क्षेत्रीय अधिकारी,
उ० प्र० प्रदूषण नियंत्रण
बोर्ड, सहारनपुर
(सदस्य)

खान अधिकारी,
सहारनपुर
(सदस्य)

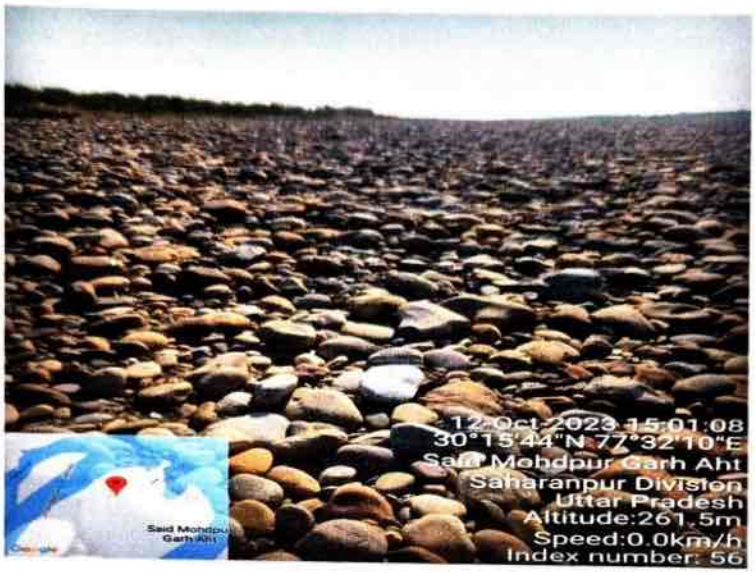
जिलाधिकारी
सहारनपुर।

END OF VOLUME-IV

GREENCINDIA CONSULTING (P) LTD. GHAZIABAD

Annexure No. SA 13A

Pre &Post-Monsoon Replenishment Study
With
Reserve Estimation Report of
R.B.M. / Sand Mining Leases - District Saharanpur
Study Period –2023



Mines Inspector
Saharanpur (Member)

Mines Officer
Saharanpur(Member)

Executive Engineer
Irrigation Construction Division
Saharanpur (Member)

Executive Engineer
Public Works Department
Saharanpur (Member)

Regional Officer
U.P Pollution Control Board
Saharanpur (Member)

Divisional Forest Officer
Shivalik Forest Division
Saharanpur (Member)

SDO Forest
Saharanpur (Member)

SDM Nakur
Saharanpur (Member)

SDM Behat
Saharanpur (Member)

संयुक्त निदेशक
खनिज कार्यालय
सहारनपुर

Additional District Magistrate
(F&R)
Saharanpur (Chairmen)

Prepared - Sub-Divisional Committee – District Saharanpur

Formed vide. D.M. Office Order dated 05/01/2023 , ref. no. 1617/खo अनु०/ जिला०सर्वे० रिप०/2021

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7	The concept of Natural Resource Accounting with Monitoring Mechanism
8	Lease wise analysis , post monsoon (2023) replenishment study results with recommendation
9	Conclusion & Recommendation of Sub-Divisional Committee
10	Environmental Observations and Enforcement Monitoring recommendation
11	Annexures • Study Area Maps in SOI Toposheet

	• Survey Maps in Satellite Images with Geo-coordinates and River Flow • Ground Control Records of Leases • Lease wise Index of profile Sections

1 - Background & Introduction

Background

- A replenishment study, particularly in the context of sand mining, aims to assess the rate at which sand is naturally replenished in a river or stream, ensuring that extraction doesn't exceed the river's capacity to naturally replenish itself, thereby preventing ecological damage.
- The Chapter-5 of the Enforcement & Monitoring Guidelines for Sand Mining (EMGSM-2020) issue by MoEF&CC provides generic structure and mechanism for conducting Replenishment Studies.
- The replenishment study in district Saharanpur was earlier conducted in Year-2022 by Sub-Divisional Committee which was prepared in compliance the provisions of Sustainable Sand Management Guidelines – 2016 and its latest guidelines EM Guidelines for Sand Mining – 2020.
- Important details related to sediment transport and composition, purpose of study, methodology , district profile , ground water scenario, regional geology of district, mineral resources, rainfall & climate , description of study area rivers, analysis of particle size distribution, gradient analysis , list of software / manpower and equipment's, inventory of leases were incorporated in the Report of Year-2022.
- In total Twenty-Two (22) leases measuring 422.635 ha. were surveyed and studied in various River Channels.

- The findings of Replenishment Studies of year 2022 is summarized as under:-

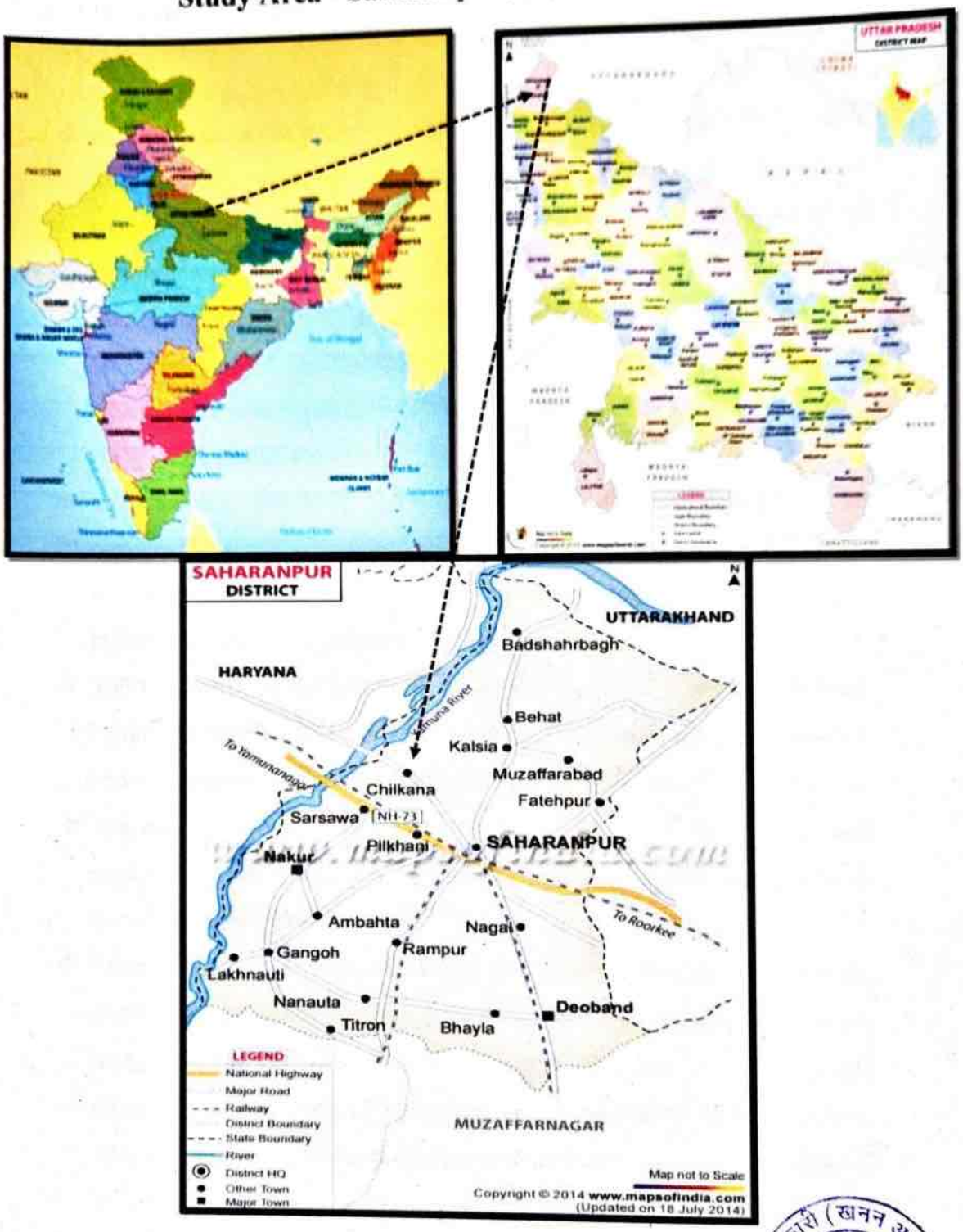
Sl.	Teshil	River	Village	Gata / Khand	Area (in Ha.)	Pre-Monsoon Reserve - 2022 (A) - cum	Post-Monsoon Replenishment - 2022 (B) - cum	Total Quantity in Lease (A+B) - cum	Annual Quantity proposed in DSR out of Total available Quantity- cum
1	Behat	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	92993	6895	99888	69750
2	Behat	Yamuna	Bartha Korsi	Gata No. - 1	36.000	173732	700626	874358	756000
3	Behat	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200	143893	14683	158576	94500
4	Behat	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	206037	12627	218664	197500
5	Behat	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laat 38	24.290	607313	359639	966952	437247
6	Behat	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050	195089	71575	266664	138462
7	Behat	Gaisara Rao	Rahena	Gata No. 179/2	3.750	111795	7252	119047	67500
8	Nukur	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861,863,864, 865,866,867, 871, 872, 888, 889, 406 , 407	52.630	26767	755349	782116	947368
9	Behat	Khurwali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475	229913	66426	296339	77700
10	Behat	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900	359485	130439	489924	178800
11	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	248739	485450	734189	322200
12	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	412595	119541	532136	248400

Sl.	Teshil	River	Village	Gata / Khand	Area (in Ha.)	Pre-Monsoon Reserve - 2022 (A) - cum	Post-Monsoon Replenishment - 2022 (B) - cum	Total Quantity in Lease (A+B) - cum	Annual Quantity proposed in DSR out of Total available Quantity- cum
13	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	383857	188528	572385	234000
14	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	145022	335551	480573	172440
15	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	528459	181049	709508	282600
16	Behat	Yamuna	Shahpur Bans Aehatmal	1/1	15.600	351410	144427	495837	280800
17	Behat	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700	593005	328459	921464	318600
18	Behat	Yamuna	Abutalibpur Garh Aehatmal	1	37.000	1217817	983797	2201614	666000
19	Behat	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	19.00	519716	225414	745130	342000
20	Behat	Yamuna	Aslampur Bartha – First	1/1 M	36.600	1250795	414321	1665116	658800
21	Behat	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000	897564	364931	1262495	612000
22	Behat	Yamuna	Aslampur Bartha – Second	1/1 M	28.160	726618	225401	952019	506880

Introduction of Replenishment Study Report – Year-2023

- The current studies are report has been prepared by taking the methodology, references and baseline date of Report published in Year-2022.
- On the basis of same, fresh field investigation and D.G.P.S based survey were conducted in pre & post monsoon period of year 2023 in 22 leases and results are reported on the basis of collected baseline data.
- Out of total 22 leases, three (03) leases were operational which attained production and mineral dispatch in this period. Rest 19 leases were closed/vacant which replenished in past year as well as this year.
- Final interpretation on leases, replenished quantity, mineral reserves estimation with conclusion and recommendation has been reported in this replenishment study report.

Study Area - Saharanpur, Uttar Pradesh



2 - Objective of Study

- A replenishment study, particularly in the context of sand mining, aims to assess the rate at which sand is naturally replenished in a river or stream, ensuring that extraction doesn't exceed the river's capacity to naturally replenish itself, thereby preventing ecological damage.
- The primary goal of a replenishment study is to determine the "sustainable yield" of a river, meaning the amount of sand that can be extracted without causing long-term harm to the river's ecosystem or its physical characteristics.
- Sand mining can have significant impacts on riverbeds, including changes in channel geometry, bed elevation, and substratum composition. A replenishment study helps to understand these impacts and ensure that mining activities do not lead to unsustainable practices.
- The Chapter-5 of the Enforcement & Monitoring Guidelines for Sand Mining (EMGSM-2020) issue by MoEF&CC provides generic structure and mechanism for conducting Replenishment Studies.
- The main emphasis for the need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excessing sand extraction.
- Removal of excess sand and stone from river bed helps to maintain the carrying capacity and provides protection from flooding during monsoon season. Further, continuous flow of river is essential for ecological and economic needs such as irrigation and biodiversity etc. Therefore, drainage study of the river helps to understand potential carrying capacity of water during monsoon season which is generated from rainfall in the watershed and quantity of di-siltation of rivers under mining affected areas.

- In line with same, Replenishment study was carried out for Sand/R.B.M. leases of District Saharanpur. Quantification and estimation of river bed material (RBM) was accomplished by following three scientific approaches as envisaged in Sustainable Sand Management Guidelines – 2016 (SSMG-2016) and its contemporary guidelines Enforcement & Monitoring Guidelines for Sand Mining (EMSM-2020) issued by MoEF&CC in January-2020.
- Mining areas were geo-tagged and surveyed for analysis of study of the availability/potential of sand and gravel. Estimation of deposition and safe limit for extraction/ removal of deposited river bed material (RBM) available in the various rivers/streams were done by analysing elevation profiles and pit profiles at regular intervals with the help of D.G.P.S. based Survey.
- The pre and post monsoon data were collected and analysed and co-related and final results with river wise recommendation has been recommended in the report.

जिलाधिकारी (खनन अनुभाग) सहारनपुर

3 - Methodology

- **For Resource estimation in pre-monsoon period.**

  - ❖ The main aim of the survey work and measurements is to carry out the collection of baseline data in pre-monsoon period which will be repeated in post-monsoon period to assess the quantum of replenishment.
  - ❖ For river R.B.M. reserve estimation the river was surveyed at the ground and the corner coordinates were determined with the help of D.G.P.S. so that the lease area boundaries are obtained.
  - ❖ Deposits 1 meter above the river water level was considered as existing deposits in pre-monsoon period. For this base flow level of river was determined.
  - ❖ Physical survey of lease and collection of information related to existing reserves and by conducting pit profiles are regular intervals with the help of JCB Machine and digging equipment's such as Auger, spade, hand shovel, hammer, measuring tape etc. were done.

- **Methodology of Replenishment Study in pre and post monsoon periods**

  - ❖ The main aim of the survey work and measurements was to carry out the collection of baseline data in pre-monsoon period which was repeated in post-monsoon period to assess the quantum of replenishment.
  - ❖ The leases were divided in a grid of regular intervals for point specific D.G.P.S. survey. A number of Ground Control Points in each corner of grid were established on each site. The D.G.P.S. survey observations were taken at regular grid intervals in longitudinal direction and in perpendicular across direction depending on the geological conditions of

leases. The number of sections along and across the river depend on the length and width of lease, its dimension as well as ground conditions.

- The studies were done on the basis of individual mines approach. Study plans were prepared for all the leases and each lease was surveyed with DGPS and elevation records in regular intervals were recorded. Inventory of the recorded "Elevation Index" of leases were prepared in pre and post monsoon period.
- Changes in the elevation in pre and post monsoon period in each interval (called Ground Control Point- GCP) was tabulated. Area of deposition for each cross section was calculated and summation deposition at each GCP was done to report the overall thickness observed in the post-monsoon period.
- The methodology followed is in conformity to the Enforcement & Monitoring Guidelines for Sand Mining – 2020 issued by MoEF in January-2020 which envisages that Regular Replenishment study needs to be carried out to keep a balance between deposition and extraction.
- Specific emphasis has been given to the norms provided in the Section-5 of Enforcement & Monitoring Guidelines for Sand Mining – 2020 which provides procedure to be followed for conducting replenishment study.

4 - District and River Profile

- District Saharanpur is north-western part of Uttar Pradesh, lying between $29^0$34' and $30^0$24' N latitude and $77^0$07' and $77^0$58' E longitude falling within the survey of India toposheet nos. 53F and 53G. River Yamuna marks the western boundary of the district separating U.P. from adjoining state of Haryana. The extreme north-western part like beak structure touches with Sirmaur district of Himanchal Pradesh. In north lies Dehradun (Uttarakhand) and in the east it faces Haridwar district also being the part of Uttarakhand State. Muzaffar Nagar and Shamli districts marks southern boundary.
- Saharanpur forms the most northerly position of the Doab land which stretches between the holy rivers of the Ganges and the Yamuna, The Shivalik hills rise above it on the northern frontier. The portion of Doab in which Saharanpur is situated was probably one of the first region of upper India occupied by the Aryans colonisers as they spread eastward from the Punjab.
- Saharanpur district attained the status as Saharanpur division in 1997 of Uttar Pardesh. As regards its physical features the north and the north east of the district is surrounded by Shivalik hills and separates it from the Dehradun district in the recently created state of Uttranchal. The river Yamuna forms its boundary in the west which separates it from Karnal and Yamunanagar districts of Haryana. In the East lies the district of Haridwar which was the part of district Saharanpur before 1989 and in the south lies the district Muzafarnagar. At the time of the British Rule District Muzafarnagar was also a part of district Saharanpur.

- The district presents many varieties of features and differs in general appearance than any other portion of the Doab and Gangetic plain as a whole. It is true that most of the area belongs to the upland Bangar which stretches in a continuous line up to Allahabad i.e. Junction of the two great rivers and on the either side is the broad and low lying valley full of swamps and back waters with wide open grass plains and Tamarisk jungle but in the north, There are the steep hills of Shivalik chain which appear in a far more marked form in Saharanpur than any other district of Uttar Pardesh while below the hills are to be seen in a modified form the prevailing characteristics of the Bhabar and Tarai region.
- The main characteristics of the district can be divided into four parts.
    - Shivalik Hill Tract
    - The Bhabar Land
    - Bangar Land
    - Khadar Land (Yamuna, Hindon)

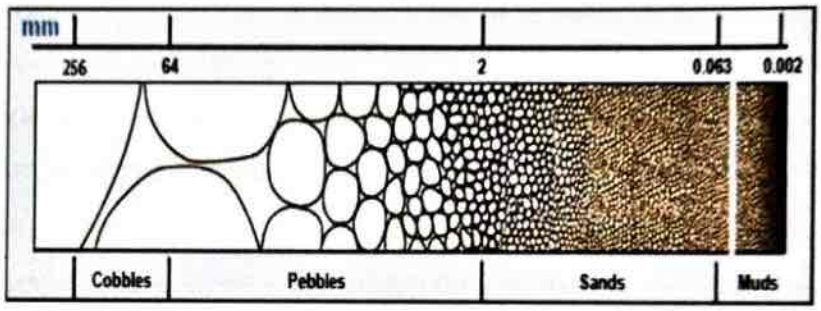
- Yamuna is the important river of the district. Apart from this Solani, Hindon, Ratmau, Nagdev have also played an important role in the physical reconstruction of the district. All the rivers of the district submerge either in Yamuna or in the Ganges.

5 - Sediment Composition

District Saharanpur can be divided into three physiographic divisions, the **structural hills**, the upper physiographic divisions, the structural hills, the upper piedmont plains or **the Bhabar**, and **the Terai** or the lower piedmont plains.

Structural Hills:

The entire northern part of the district is formed structural hills named



Siwaliks. In this area the relief is high with steep and sharp hill slopes. The rugged topography of the area affords well for high run off. In the area the upper and middle Siwaliks are encountered but the lower Siwaliks are missing. Lithologically the Siwaliks here are composed of sand stones, conglomerates, sand, clays and silts. There are several major and minor faults.

The Bhabar:

The second units lying just below the foothills of Siwalik locally called as Bhabhar, is characterized by boulders, pebbles, cobbles etc. with relatively dry terrains fringing. The Siwalik foot hills with gradient around 5 m/km. which is much higher than the southern plains.

Geologically the term Bhabhar is used to deposits formed along the foothill zone by coalescence of series of alluvial and talus cones, composed of heterogeneous materials ranging in texture from boulder, gravel to sand and silt. These Bhabhars in Saharanpur district are known as 'Dhar' covering

mostly the 'Muzaffarabad' and 'SadauliQuadim' blocks.

Tarai:

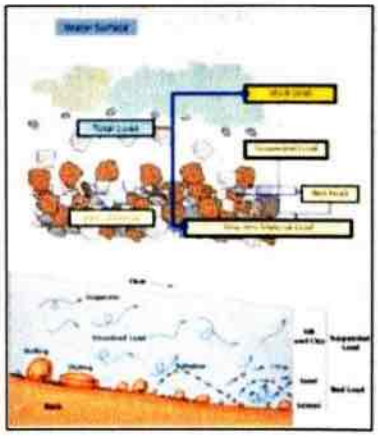
Just south of Bhabar zone lies the 'Tarai' or the plains of piedmont plain. The plains sloping gradually by southward have around 1.5m/km. gradient. Lithologically, the area is characterized by coarse sand & gravel.

These plains are further divided into lower piedmont plains the older alluvial plains and the younger alluvial plains. The lower piedmont plains show flat to undulating plains with gradient towards southwest.

The older alluvial plains also show flat to undulating topography characterized by sediments brought by rivers Yamuna and Ganga.

The younger alluvial plains lie along river Yamuna exhibiting gently sloping and slightly undulating terrains. It comprises younger unconsolidated alluvial material of varying lithology consisting of fluvial land formed as paleo-channels, meanness scar and point bars. The younger alluvial plains also consist of sand bars flood plains and ravines along river Yamuna.

SEDIMENT TRANSPORT



Sediment transport is the movement of solid particles (sediment), typically due to a combination of gravity acting on the sediment, and/or the movement of the fluid in which the sediment is entrained. Sediment transport occurs in natural systems where the particles are clastic rocks (sand, gravel, boulders, etc.), mud or clay; the fluid is air, or water, and the force of gravity acts to move the particles along the sloping surface on which they are resting. Sediment transport due to fluid motion occurs in rivers, oceans, lakes, seas, and other bodies of water due to currents and tides. Sediment transport due only to gravity can occur on sloping surfaces in general, including hill- slopes, scarps, cliffs, and the continental shelf-continental slope boundary.

TYPES OF SEDIMENT LOAD

- **Bed-load:** That portion of the sediment load that is transported along the bed by sliding, rolling or hopping. The bed-load moves at velocities slower than the flow and spends most of its time on or near the stream bed. The mechanisms of grain motion are as follows:
- **Traction (rolling and sliding):** Important factors: frictional drag and lift forces exerted by the flow and slope.
- **Saltation (hopping):** Grains are temporarily suspended by fluid vortices or by ballistic impact and then released Grain movement may be continuous or intermittent depending on the flow regime.

Suspended load: They area particulate sediment that is carried in the body of the flow and moves at the same velocity as the flow. A small particle (e.g. clay and fine silt), with a large relative surface area, is held in suspension more easily because of the electrostatic attraction between the unsatisfied charges on grain's surface and the water molecules. This force, tending to keep the particle in the flow, is large compared to the weight of the particle. The Hjulstrom curve shows that a much higher velocity is required to entrain clay and fine silt than coarse sand. However, once the fine sediment is in suspension, a much lower velocity is required to maintain it in suspension.The quantity and quality of the load is defined in terms of competence and capacity.

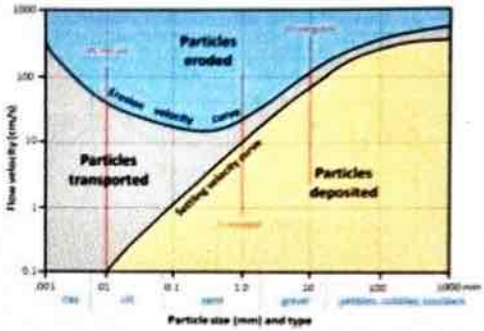
Dissolved load: material that is chemically carried in the water. The factors that govern the percentage of dissolved and suspended load include:

- Climate: temperature, precipitation, vegetation
- Vegetation: type and amount
- Activity by man: mining, construction, clear cutting, etc.

- Rock solubility: e.g. hard water in carbonate terranes
- Erodibility of materials in the drainage basin
- Relief and slope (affects PE of flow)

Wash Load: Sometimes finer particles from upland catchment (sizes which are not present in the bed material),called wash load,are also transported in suspension. The combined bed material and wash load is called Total load.

TRANSPORT RATE



When the velocity of water flowing over a bed of non- cohesive sediment flow overcomes the resistance offered by the grain due to its mass, cohesion and other forces. Properties like shape and position of centre of gravity of the grain play important roles in determining the degree of resistance offered. A diagram complied by Hjulstrom (1935) revealed the relationship between critical erosion velocity and grain size. The field above the curve indicates the condition suitable for entrainment of grains.

Formulas to calculate sediment transport rate exist for sediment moving in several different parts of the flow. These formulas are often segregated into bed load, suspended load, and wash load. They may sometimes also be segregated into bed material load and wash load.

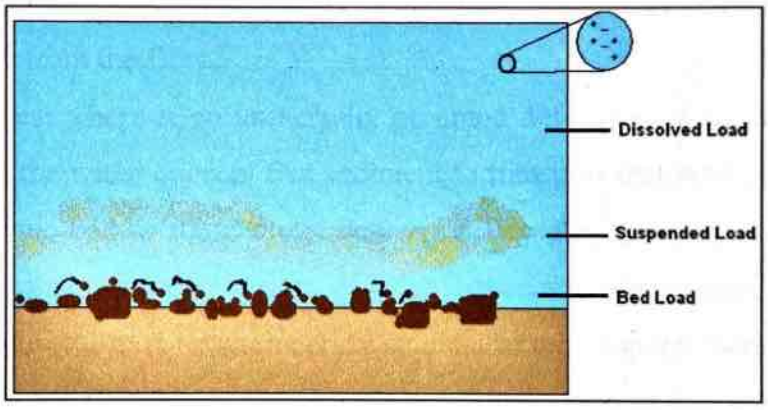
DEFINING BED LOAD

Bed load moves by rolling, sliding, and hopping (or saltating) over the bed, and moves at a small fraction of the fluid flow velocity. Bed load is generally thought to constitute 5 -10% of the total sediment load in a stream, making it less important in terms of mass balance. However, the bed material load (the bed load plus the portion of the suspended load which comprises material

derived from the bed) is often dominated by bed load, especially in gravel - bed rivers. This bed material load is the only part of the sediment load that actively interacts with the bed. As the bed load is an important component of that, it plays a major role

in controlling the morphology of the channel. Bed load transport rates are usually expressed as being related to excess dimensionless shear stress raised to some power. Excess dimensionless shear stress is a non –dimensional measure of bed shear stress about the threshold for motion.

Dissolved load is not sediment. It is composed of disassociated ions moving along with the flow. It may, however, constitute a significant proportion (often several percent, but occasionally greater than half) of the total amount of material being transported by the stream.



DEFINING WASHLOAD

The distinction between bed-material-load and wash-load components of the total load adopted here is that wash load is not found in appreciable quantities in the bed of channel. However, the precise definition of what constitutes an appreciable quantity un clear, meaning that the threshold grain size separating bed- material load and wash load may be defined in several ways. Wash load is the grain size of which 10 percent of the bed mixture is finer. This basically different behaviour of the fine and the coarse particles in the same channel has led the author and collaborators to assume that the fine particles

in the flows till behave like material called Wash load in the concrete channel whereas the coarse particle act like the sediment in a strictly alluvial channel.

Composition: The composition of wash load is distinct because it is almost entirely made up of grains that are only found in small quantities in the bed. Wash load grains tend to be very small (mostly clays & silts but some fine sands) and therefore have a small settling velocity, being kept in suspension by the flow turbulence.

Velocity: Wash load is carried within the water column as part of the flow, and therefore moves with the mean flow velocity of main stream. Because there is little or no interaction with the bed, the particles extract only negligible momentum from the flow.

Wash Load Dynamics: There is no universally accepted definition of wash load, yet despite this, the wider concept that sediment in transport that is finer than that making up the bed of the channel behaves differently and plays a different role in the sediment transfer system is widely perceived to have merit and has often proven useful in river engineering studies. In this respect, there are three tenants within the wash load and bed-material load concept that are relevant from a practical regional sediment management perspective. It follows that changes in the quantity of wash load in transport (due to the addition or removal of washload sources) will seldom trigger significant morphological responses and marked changes to the stability of the channel. Conversely, imbalances in the bed-material load will usually drive local morphological response through channel scour (where transport capacity exceeds supply) or fill (where supply exceeds transport capacity). Second, the quantity of wash load carried by a stream is limited not by the streams's sediment transport capacity, but by the available supply. It follows that it is only the bed-material load that most sediment transport equations can calculate on the basis of the transport capacity indicated by the local flow hydraulics. Wash load

transport cannot be predicted this way, but can only be estimated on the basis of comprehensive, quantitative assessment of wash-load sediment sources. Third, the movement of wash load is relatively rapid compared to that of the bed-material load. In a sand-bed channel, where the wash load is composed of fine sands, silts and clays that are fairly evenly distributed throughout the water column, wash load may move through the channel.

6 - Inventory of R.B.M./Sand Leases in District Saharanpur

Sl. .No	Tehsil	River	Village	Gata No. / Khand No.	Area (ha.)	Pillar	Latitude	Longitude
1	Behat	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	A	30° 19' 21.41" N	77° 38' 26.35" E
						B	30° 19' 17.62" N	77° 38' 30.56" E
						C	30° 19' 13.68" N	77° 38' 25.07" E
						D	30° 19' 17.44" N	77° 38' 20.78" E
2	Behat	Yamuna	Bartha Korsi	Gata No. - 1	36.000	A	30° 14' 00.94" N	77° 31' 13.91" E
						B	30° 14' 16.50" N	77° 31' 24.43" E
						C	30° 14' 13.69" N	77° 31' 31.19" E
						D	30° 14' 19.59" N	77° 31' 37.85" E
						E	30° 14' 37.10" N	77° 31' 40.80" E
						F	30° 14' 39.19" N	77° 31' 36.25" E
						G	30° 14' 26.08" N	77° 31' 29.05" E
						H	30° 14' 09.19" N	77° 31' 02.18"E
3	Behat	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200	A	30° 15' 20.64" N	77° 40' 42.10" E
						B	30° 15' 20.54" N	77° 41' 00.42" E
						C	30° 15' 17.98" N	77° 41' 01.84" E
						D	30° 15' 17.71" N	77° 40' 42.89" E
4	Behat	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	A	30° 15' 52.04" N	77° 39' 22.56" E
						B	30° 15' 51.84" N	77° 39' 27.43" E
						C	30° 16' 06.24" N	77° 39' 31.26" E
						D	30° 16' 07.18" N	77° 39' 25.07" E
5	Behat	Yamuna	Nuniyari Achatmal	Gata No. - 1/1/1 Laat 38	24.290	A	30°11'00.90" N	77°29"25.83"E
						B	30°11'12.98" N	77°29"12.21" E
						C	30°11'24.95" N	77°29"26.28" E
						D	30°11'21.79" N	77°29"29.68" E
						E	30°11'20.39" N	77°29"33.03" E
						F	30°11'18.64" N	77°29"33.83" E
						G	30°11'17.01" N	77°29"34.70" E
						H	30°11'14.93" N	77°29"32.91" E
						I	30°11'09.54" N	77°29"31.35" E
						J	30°11'03.46" N	77°29"28.51" E

Sl. .No	Tehsil	River	Village	Gata No. / Khand No.	Area (ha.)	Pillar	Latitude	Longitude
6	Behat	Yamuna	**Rehna**	Khand No. / Gata no. - 03, Lot No - 03	8.050	A	30° 21' 36.45" N	77° 36' 05.61" E
						B	30° 21' 29.62" N	77° 36' 00.26" E
						C	30° 21' 37.95" N	77° 35' 50.38" E
						D	30° 21' 41.71" N	77° 36' 02.50" E
7	Behat	Gaisara Rao	**Rahena**	Gata No. 179/2	3.750	A	30° 19' 56.17" N	77° 36' 33.21" E
						B	30° 19' 52.90" N	77° 36' 33.93" E
						C	30° 19' 50.54" N	77° 36' 20.87" E
						D	30° 19' 53.90" N	77° 36' 20.01" E
8	Nukur	Yamuna	**Dhikkan Kalan**	Gata No. - 839, 841 to 856, 858, 859, 860, 861, 863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.63	A	30° 1'20.61"N	77°17'23.68"E
						B	30° 1'24.58"N	77°17'15.45"E
						C	30° 1'32.77"N	77°17'19.87"E
						D	30° 1'42.25"N	77°17'24.49"E
						E	30° 1'41.34"N	77°17'31.04"E
						F	30° 1'52.02"N	77°17'39.09"E
						G	30° 1'54.80"N	77°17'51.61"E
						H	30° 1'56.88"N	77°17'52.96"E
						I	30° 2'2.71"N	77°18'5.82"E
						J	30° 1'59.86"N	77°18'8.25"E
						K	30° 1'57.85"N	77°18'7.25"E
						L	30° 1'58.76"N	77°18'5.82"E
						M	30° 1'57.46"N	77°18'4.89"E
						N	30° 1'57.00"N	77°18'1.96"E
						O	30° 1'53.50"N	77°18'0.53"E
						P	30° 1'47.64"N	77°17'52.52"E
						Q	30° 1'42.10"N	77°17'46.53"E
						R	30° 1'32.38"N	77°17'39.44"E
						S	30° 1'27.11"N	77°17'31.55"E
9	Behat	Khairawali Ra	**Sherpur Pelon**	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475	A	30°16'35.16"N	77°39'44.44"E
						B	30°16'32.34"N	77°39'51.41"E
						C	30°16'21.11"N	77°39'36.26"E
						D	30°16'22.11"N	77°39'34.41"E

Sl. .No	Tehsil	River	Village	Gata No. / Khand No.	Area (ha.)	Pillar	Latitude	Longitude
10	Behat	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900	A	30°12'08.76"N	77°45'37.77"E
						B	30°12'06.03"N	77°45'42.25"E
						C	30°12'00.52"N	77°45'38.93"E
						D	30°11'40.91"N	77°45'32.39"E
						E	30°11'41.72"N	77°45'25.51"E
						F	30°12'02.80"N	77°45'33.06"E
11	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	A	30°16'27.80"N	77°32'46.96"E
						B	30°16'34.01"N	77°32'47.53"E
						C	30°16'42.58"N	77°32'53.94"E
						D	30°16'43.84"N	77°32'58.19"E
						E	30°16'50.96"N	77°32'47.76"E
						F	30°16'46.69"N	77°32'43.28"E
						G	30°16'39.98"N	77°32'41.04"E
						H	30°16'36.08"N	77°32'33.91"E
12	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	A	30°15'51.33"N	77°32'21.84"E
						B	30°15'58.45"N	77°32'08.63"E
						C	30°15'45.65"N	77°32'03.15"E
						D	30°15'41.84"N	77°32'13.01"E
13	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	A	30°15'24.84"N	77°31'57.01"E
						B	30°15'12.32"N	77°31'47.88"E
						C	30°15'16.91"N	77°31'36.94"E
						D	30°15'28.43"N	77°31'48.83"E
14	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	A	30°16'14.92"N	77°32'39.76"E
						B	30°16'17.99"N	77°32'32.74"E
						C	30°16'08.09"N	77°32'23.84"E
						D	30°16'02.92"N	77°32'31.72"E
15	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	A	30°16'02.98"N	77°32'30.74"E
						B	30°16'10.84"N	77°32'18.84"E
						C	30°16'00.40"N	77°32'11.56"E
						D	30°15'51.70"N	77°32'23.64"E

Sl. .No	Tehsil	River	Village	Gata No. / Khand No.	Area (ha.)	Pillar	Latitude	Longitude
16	Behat	Yamuna	Shahpur Bans Achatmal	1/1	15.600	A	30°16'27.75"N	77°32'46.14"E
						B	30°16'16.01"N	77°32'38.50"E
						C	30°16'20.43"N	77°32'28.70"E
						D	30°16'35.53"N	77°32'33.20"E
17	Behat	Yamuna	Nityanandpur Achatmal and Said-mohamadpur Achatmal	1 and 1ma	17.700	A	30°15'25.77"N	77°31'57.79"E
						B	30°15'41.32"N	77°32'12.89"E
						C	30°15'46.16"N	77°32'00.64"E
						D	30°15'28.87"N	77°31'50.13"E
18	Behat	Yamuna	Abutalibpur Garh Achatmal	1	37.000	A	30°14'41.78"N	77°31'38.30"E
						B	30°14'49.46"N	77°31'21.34"E
						C	30°15'16.20"N	77°31'36.25"E
						D	30°15'11.96"N	77°31'46.05"E
19	Behat	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	19.000	A	30°11'6.47"N	77°29'18.52"E
						B	30°11'4.27"N	77°29'16.54"E
						C	30°10'59.70"N	77°29'14.05"E
						D	30°10'55.77"N	77°29'10.53"E
						E	30°10'46.29"N	77°29'4.02"E
						F	30°10'39.87"N	77°29'0.42"E
						G	30°10'46.96"N	77°28'51.89"E
						H	30°10'51.56"N	77°28'56.26"E
						I	30°10'49.46"N	77°28'58.83"E
						J	30°11'2.30"N	77°29'11.12"E
						K	30°11'7.26"N	77°29'5.46"E
						L	30°11'12.52"N	77°29'11.64"E
20	Behat	Yamuna	Aslampur Bartha – First	1/1M	36.600	A	30°13'45.87"N	77°31'09.07"E
						B	30°13'23.05"N	77°30'53.85"E
						C	30°13'13.45"N	77°30'42.33"E
						D	30°13'16.67"N	77°30'36.60"E
						E	30°13'50.98"N	77°30'57.80"E
21	Behat	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000	A	30°12'17.09"N	77°30'18.81"E
						B	30°12'16.42"N	77°30'17.32"E
						C	30°12'05.34"N	77°30'13.17"E
						D	30°11'59.82"N	77°30'01.24"E
						E	30°11'46.33"N	77°29'58.50"E
						F	30°11'59.32"N	[illegible]

						G	30°12'21.10"N	77°30'16.04"E
Sl. No	**Tehsil**	**River**	**Village**	**Gata No. / Khand No.**	**Area (ha.)**	**Pillar**	**Latitude**	**Longitude**
	Behat	Yamuna	Aslampur Bartha – Second	1/1M	28.160	A	30°13'04.93"N	77°30'44.59"E
						B	30°12'35.50"N	77°30'28.50"E
						C	30°12'38.19"N	77°30'18.84"E
						D	30°13'09.39"N	77°30'35.57"E

7 - The concept of Natural Resource Accounting with Monitoring Mechanism

The Sub-Divisional committee in past studies of year 2022 went through following references while conducting Replenishment Study of the leases prior recommending the promulgation of the concept of Natural Resource Accounting with Monitoring Mechanism: -

Sl. No	Reference	Details
1	Section-3 of the Enforcement & Monitoring Guidelines for Sand Mining-2020	The Section deals with the Objective of Guidelines wherein Identification and Quantification of Mineral Resource and its optimal utilization, To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public, Reduction in demand & supply gaps. To control the instance of illegal mining and other factors has been recommended.
2	Uttar Pradesh Sand Mining Policy – 2017 and subsequent G.O.'s	The said policies and G.O.'s deals with the identification and allotment of long term lease for a period of 5 (five) years on e-auction basis.
3	Section-9 of the Enforcement & Monitoring	The Section deals with the Monitoring Mechanism by referring the provisions of 23(C) of MMDR Act empowering State

	Guidelines for Sand Mining-2020	Government to make rules to prevent illegal mining and transportation (9.1) , standard practice for assessing illegal mining and Monitoring Mechanism (9.4)
4	EAC meeting Minutes Dated 24 & 25 – October – 2016 (non-coal mining)	Wherein the EAC opined the issues related to replenishment study for perennial and non-perennial rivers.
5	Sand Mining Framework 2018 issued by Ministry of Mines	Registration of lease holder, stock holders and transporters in portal, assessment of quantity by joint inspection team, geo-fencing, monitoring the de-casting of river beds, e-permits, transportation monitoring using CCTV/Drone.

The Sub-Divisional Committee opined and suggests following: -

1. Time to time identification of lease with mineral potential is required to canalize river.
2. Time to time identification of lease with mineral potential is required to address the market needs and demand/supply gaps.
3. Time to time identification of lease with mineral potential and its timely auction is required; as there are larger chances of illegal mining in vacant lease areas.
4. Time to time identification of lease with mineral potential is required to generate employment, state royalties to enable development.

5. However, there has to be balance between exploitation and conservation of mineral resources and the same has to be closely monitored.
6. The exploitation / conservation monitoring to promote and regulate sustainable mining can be achieved by a check-n-balance model.
7. The studies has shown that leases in its existing form are mineral rich and surface removal is required for occurrence of new replenishment and river channelization.
8. The Sub-Divisional Committee suggests the concept of Natural Resource Accounting with Monitoring Mechanism.

Concept of Natural Resource Accounting with Monitoring Mechanism:-

1. The concept shall work in the simple but effective principals of accounting methods wherein the existing mineral potential shall be treated as opening balance and replenished quantity shall be treated as a income.
2. The addition of existing mineral potential and replenished quantity shall be treated a Total Mineral Balance available on the lease.
3. A life of mine (in years) shall be derived by dividing Total Mineral Balance with the sanctioned annual production.
4. The Total Mineral Balance will then be reduced by subtracting the actual mineral dispatches and revised life of mine (in years) shall be derived on yearly basis.
5. If the life of mine (in years) at any juncture of point shall be observed to be less than 3 (three) months , a red alert shall be raised and the Monitoring Mechanism shall be implemented as per the recommended clause ***"Project Proponent shall decrease / stop the mining in case replenishment is lower than the approved rate of production till the replenishment is completed"***

8 - Lease wise analysis of Year 2023 Replenishment Study Results with Recommendation

Sl.	Teshil	River	Village	Gata / Khand	Area (in Ha.)	Pre Monsoon Reserve - 2023 (A) - cum	Post Monsoon Replenishment - 2023 (B) - cum	Total Resource in - 2023 (A+B) - cum	Annual Production proposed in DSR out of Total Resource - cum
1	Behat	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100	99980	29039	129019	69750
2	Behat	Yamuna	Bartha Korsi	Gata No. - 1	36.000	174518	802800	977318	756000
3	Behat	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200	64708	100004	164712	94500
4	Behat	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000	218677	202300	420977	197500
5	Behat	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laat 38	24.290	950600	456773	1407373	437247
6	Behat	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050	266780	139265	406045	138462
7	Behat	Gaisara Rao	Rahena	Gata No. 179/2	3.750	119102	71813	190915	67500
8	Nukur	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861,863,864,865, 866,867, 871, 872, 888, 889, 406 , 407	52.630	158700	1089441	1248141	947368
9	Behat	Khurwali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475	296450	104895	401345	77700
10	Behat	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900	489972	299490	789462	178800
11	Behat	Yamuna	Akbarpur Bans Aehatmal	1	17.900	734092	345470	1079562	322200
12	Behat	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800	532096	251160	783256	248400
13	Behat	Yamuna	Shehjadpur Bans Aehatmal	1	13.000	572455	129740	702195	234000
14	Behat	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580	480653	189684	670337	172440
15	Behat	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700	709400	284170	993570	262600

Sl.	Teshil	River	Village	Gata / Khand	Area (in Ha.)	Pre Monsoon Reserve - 2023 (A) - cum	Post Monsoon Replenishment - 2023 (B) - cum	Total Resource in Lease - 2023 (A+B) - cum	Annual Production proposed in DSR out of Total Resource - cum
16	Behat	Yamuna	Shahpur Bans Achatmal	1/1	15.600	495866	291876	787742	280800
17	Behat	Yamuna	Nityanandpur Achatmal and Said-mohamadpur Achatmal	1 and 1ma	17.700	921500	350460	1271960	318600
18	Behat	Yamuna	Abutalibpur Garh Achatmal	1	37.000	2201550	713360	2914910	666000
19	Behat	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	19.000	745000	375250	1120250	342000
20	Behat	Yamuna	Aslampur Bartha – First	1/1 M	36.600	1665200	688080	2353280	658800
21	Behat	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000	1262100	631380	1893480	612000
22	Behat	Yamuna	Aslampur Bartha – Second	1/1 M	28.160	951900	520960	1472860	506880

IMPORTANT NOTE:-

- **Total Quantity available in each lease in year 2023 is result of pre-monsoon existing reserves and post monsoon replenishment.**
- **Pre-monsoon existing reserves in 14 leases are higher in quantity as they have not been operated in past many years and are getting replenished every years. Deposits from these lease needs to be timely removed to ensure river channelization and river diversion.** ***(mainly Sl. No. 9 to Sl. No.22)***
- **However, after applying the principals of SSMG-2016 and EMGSM-2020 Guidelines, only a sustainable volume of less than 60% of total resource has been proposed for annual production. Hence the balance resource and quantity due to forthcoming replenishments in coming years will be used in phased to ensure sustainable productions and mineral conservation to ensure demand supply gaps.**

9 - Conclusion & Recommendation of Sub-Divisional Committee

Conclusion:-

- In year-2023, Pre & Post-monsoon study of total Twenty-Two (22) leases in district Saharanpur where done as per the methodology elaborated in the Report.
- The Study was done to report the quantity of new mineral arriving / depleting after monsoon after interpreting the pre and post-monsoon baseline data collection of elevation profiles through D.G.P.S. at regular intervals.
- Since the district is located in foothills of Himalaya's and Downstream of Hatnikund Barrage the rate of replenishment in all the leases is substantial due to supportive gradient levels and discharges of mineral from Barrage in monsoon.
- The results of such year wise surveys will help the state government to establish the replenishment rate of the river based on which future action may be planned.
- Pit profiles up-to the depth of 3 meters in each lease were done to estimate the quantity of reserve and analyse sustainable mining to be recommended for grant/operations of leases. No water intersection was observed.

Recommendation on River Yamuna -

- Out of 22 leases, 16 leases admeasuring 383.21 ha. are located in river Yamuna which is a perennial river.
- It was observed that 12 out of 16 leases in river Yamuna are non-operational since past 5-6 years which are currently over replenished. The elevation levels of such leases above the water level are much high, as a result of which the replenishment has now started in its adjourning.

areas. It is recommended that removal of existing deposits in such leases should be done in a timely manner so as to maintain the natural river course. In such manner time-to-time surface removal of excessive deposits will enable to maintain the geometry of river and invite proper replenishment in coming times.

- The timely operations of such lease is also recommended to control the illegal mining (if any) in the vacant areas which are having existing substantial deposits.
- It is recommended that keeping in the view the concept of Natural Resource Accounting method and long term operations of leases in a sustainable manner, the mining in lease areas of river Yamuna can be permitted upto a depth of 3 meters from mineral deposit surface and one meter above the water level of river channel whichever reaches out earlier.
- However, on aspect of environment protection, mineral conservation and long term sustainable operations of lease, it is also recommended that out of the total available net reserve ; not more that 60% of the mineral potential volume available upto a depth of 3 meters should be recommended for annual production at one point of time.

Recommendation on other Five Rivers

- The remaining 6 leases admeasuring 39.425 ha. are located in five rivers namely Badkala Ra , Badshahibagh Rao , Gaisara Rao Kaluwala and Khurwali Ra.
- The study results show that all these five rivers are non- perennial in nature. All the five rivers experienced heavy water flow in current monsoon period.
- The committee observed that these five rivers do not replenish annually as they are non–perennial in nature.

- Hence the study of annual replenishment in such rivers has to be more specific and nature based due to non-periodic rainfall. With the pit profiles conducted while physical survey, study results, elevation profiles , river geometry and stake holding with local villagers it was observed that these rivers in the recent past of 5-10 years got over replenished due to sudden one time occurrence of huge rainfall due to which substantial quantum's of RBM has come from the from the upstream and eventually got deposited in the leases.
- The present levels of deposits show that it can be utilised over a spread of next years, however the operations of these mines is to be critically evaluated while recommending annual production. This is due to the fact that after operations of mines if they are not replenished property the leases may turn into permanent depressions leading to change in natural channel geometry.
- It is recommended that keeping in the view the concept of Natural Resource Accounting method and long term operations of leases in a sustainable manner, the mining in identified lease areas can be permitted upto a depth of 3 meters from mineral deposit surface and one meter above the water level of river channel whichever reaches out earlier, as there are substantial existing reserves, due to sudden one-time occurrence explained above.
- However, on aspect of environment protection, mineral conservation and long term sustainable operations of lease, it is also recommended that out of the total available net reserve; not more that 40% of the mineral potential volume available upto a depth of 3 meters should be recommended for annual production at one point of time.

10 - Environmental Observations and Enforcement Monitoring recommendation

1. The Sub-Divisional committee shall periodically monitor the results of replenishment study, levels of mineral production, erosion levels and erosion points.
2. Management and maintenance plans of erosion levels and erosion points shall be prepared and implemented on the basis of observations made.
3. Mining shall only be permitted upto a depth of 3 meters or 1 meter above the water level whichever is reached earlier.
4. The results of scientific replenishment study shall be co-related with production levels and a mineral resource accounting systems will be implemented.
5. The monitoring and evaluation of such results shall be done once in three months by Sub-Divisional Committee.
6. The minable production and permissible depth of mining will be evaluated further on the basis of trend analysis in years to come and recommendations, as so, shall be made.
7. The mineral resource accounting system model is proposed to be implemented to keep the checks and balances on minerals deposits.

11 - Annexures

- Study Area Maps in SIO Toposheet
- Survey Maps in Satellite Images with Geo-coordinates and River Flow
- Ground Control Records of Leases
- Lease wise Index of profile Sections

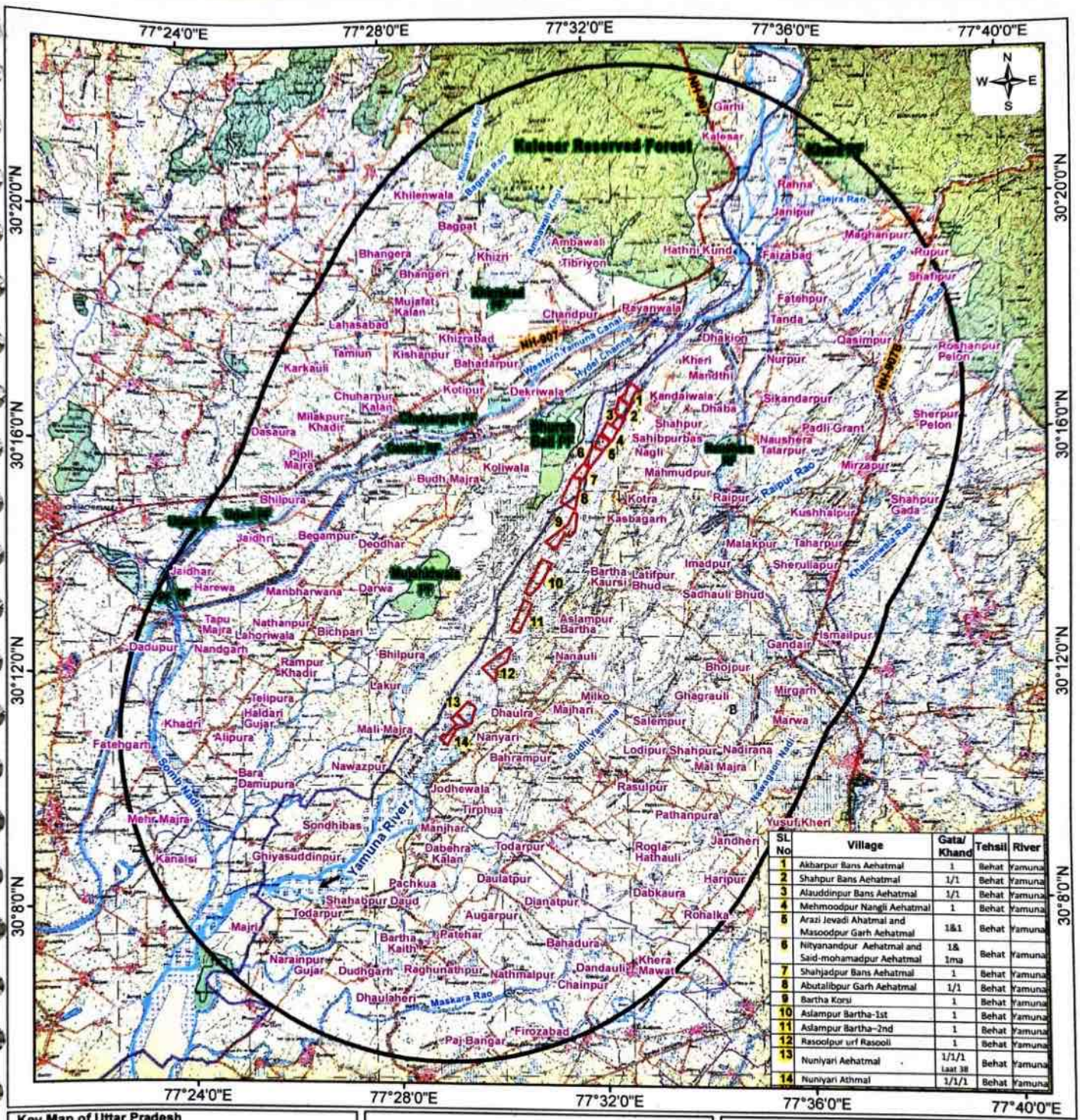
Lease wise

Study Area Maps

Site on S.O.I.

Toposheet Covering

5 Km Catchment Area



SL No	Village	Gata/ Khand	Tehsil	River
1	Akbarpur Bans Aehatmal	1	Behat	Yamuna
2	Shahpur Bans Aehatmal	1/1	Behat	Yamuna
3	Alauddinpur Bans Aehatmal	1/1	Behat	Yamuna
4	Mehmoodpur Nangli Aehatmal	1	Behat	Yamuna
5	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1&1	Behat	Yamuna
6	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1& 1ma	Behat	Yamuna
7	Shahjadpur Bans Aehatmal	1	Behat	Yamuna
8	Abutalibpur Garh Aehatmal	1/1	Behat	Yamuna
9	Bartha Korsi	1	Behat	Yamuna
10	Aslampur Bartha-1st	1	Behat	Yamuna
11	Aslampur Bartha-2nd	1	Behat	Yamuna
12	Rasoolpur urf Rasooli	1	Behat	Yamuna
13	Nuniyari Aehatmal	1/1/1 Laat 38	Behat	Yamuna
14	Nuniyari Athmal	1/1/1	Behat	Yamuna

Key Map of Uttar Pradesh

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/7, 53F/8, 53F/11 & 53F/12
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:115,000

Graphic Scale:

0 1,150 2,300 4600 6900 9,200 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date			
Revision			

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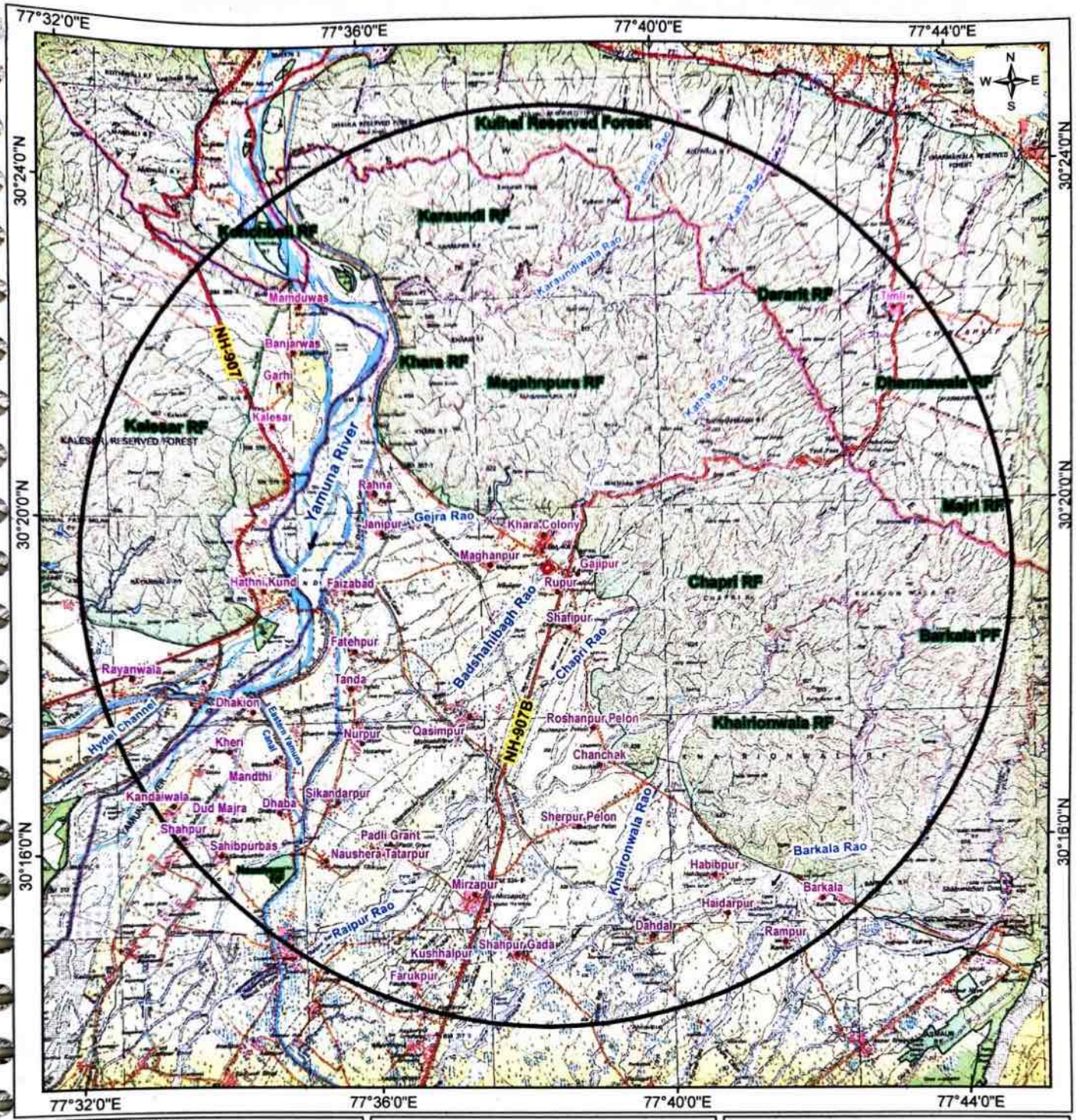

Key Map of Uttar Pradesh

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchildstate_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/11, 53F/12, 53F/15 & 53F/16
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:50,000

Graphic Scale:

0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Mayapur Rooppur, Gata No./Khand No.: 14/1, Area: 3.10ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date			
Revision			

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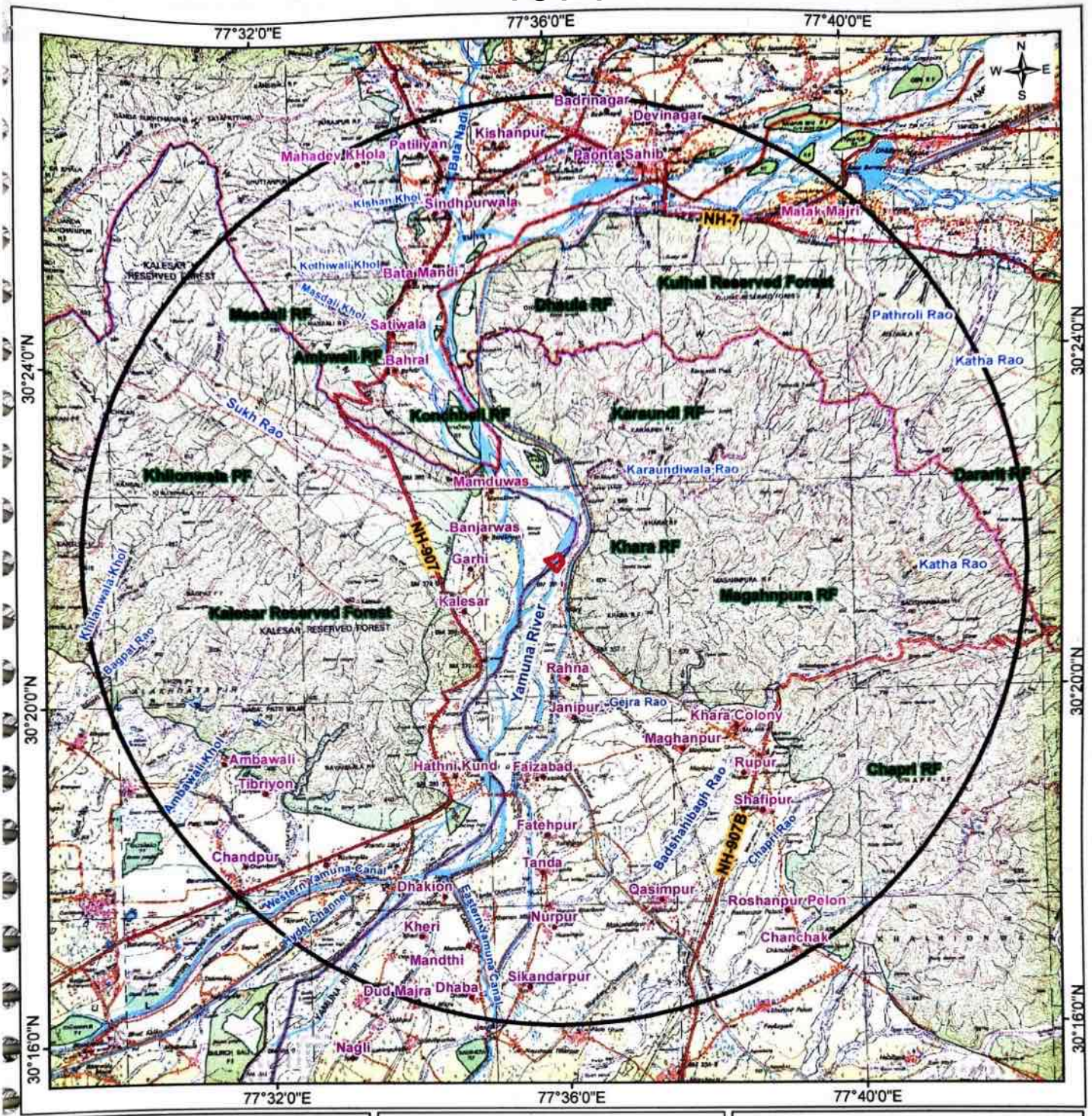
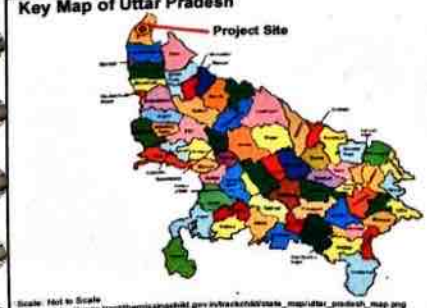


Key Map of Uttar Pradesh



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Source: http://www.trackthemissingchild.gov.in/trackchildstate_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/7 & 53F/11
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:80,000

Graphic Scale:

0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Rehna, Gata No./Khand No.: 03, Lot No-03, Area: 8.05ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date			
Revision			

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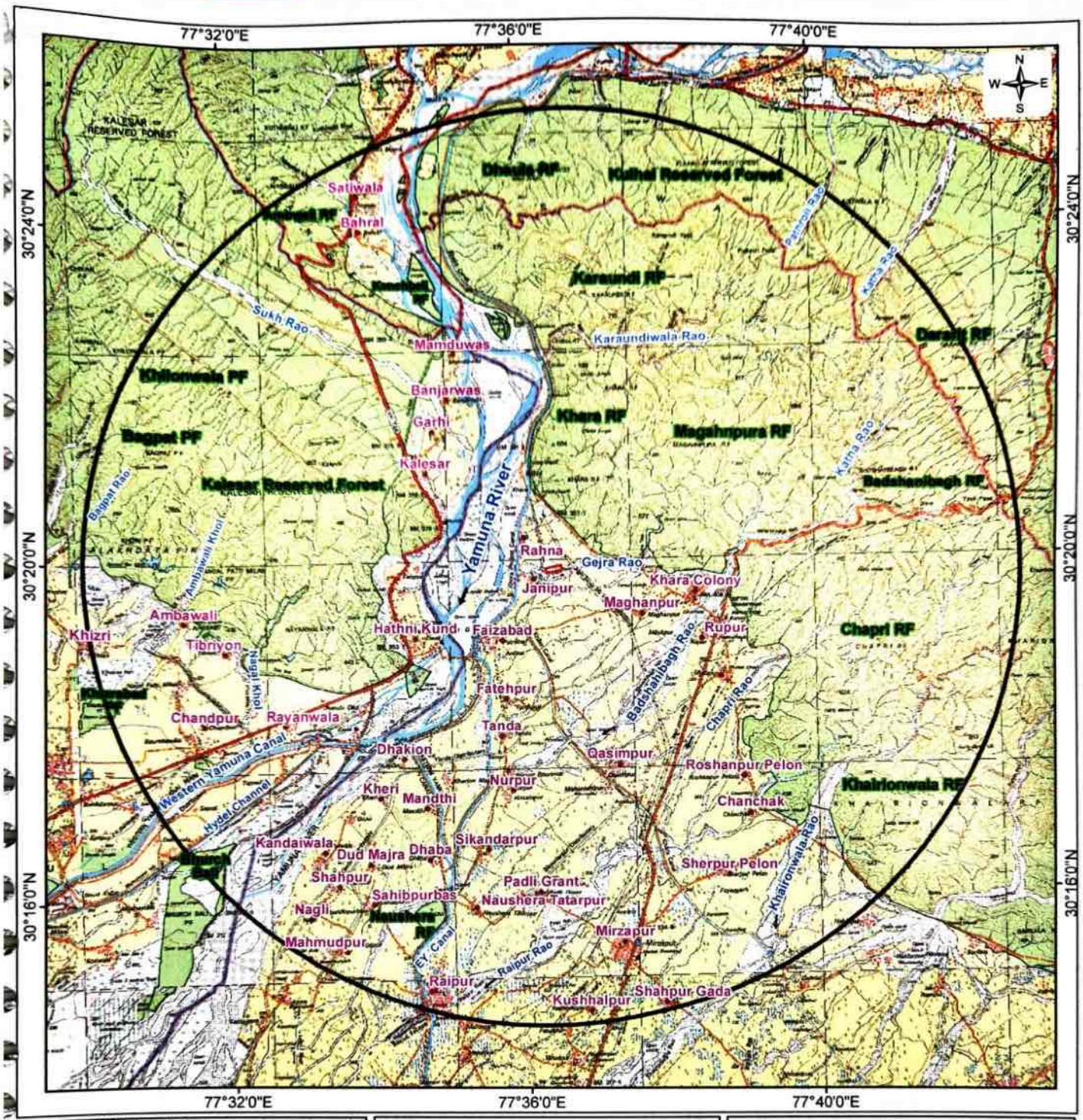

Key Map of Uttar Pradesh

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/7, 53F/8, 53F/11 & 53F/12
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF: 1:80,000

Graphic Scale

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Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Rehna, Gata No./Khand No.: 179/2, Area: 3.750ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date			
Revision			

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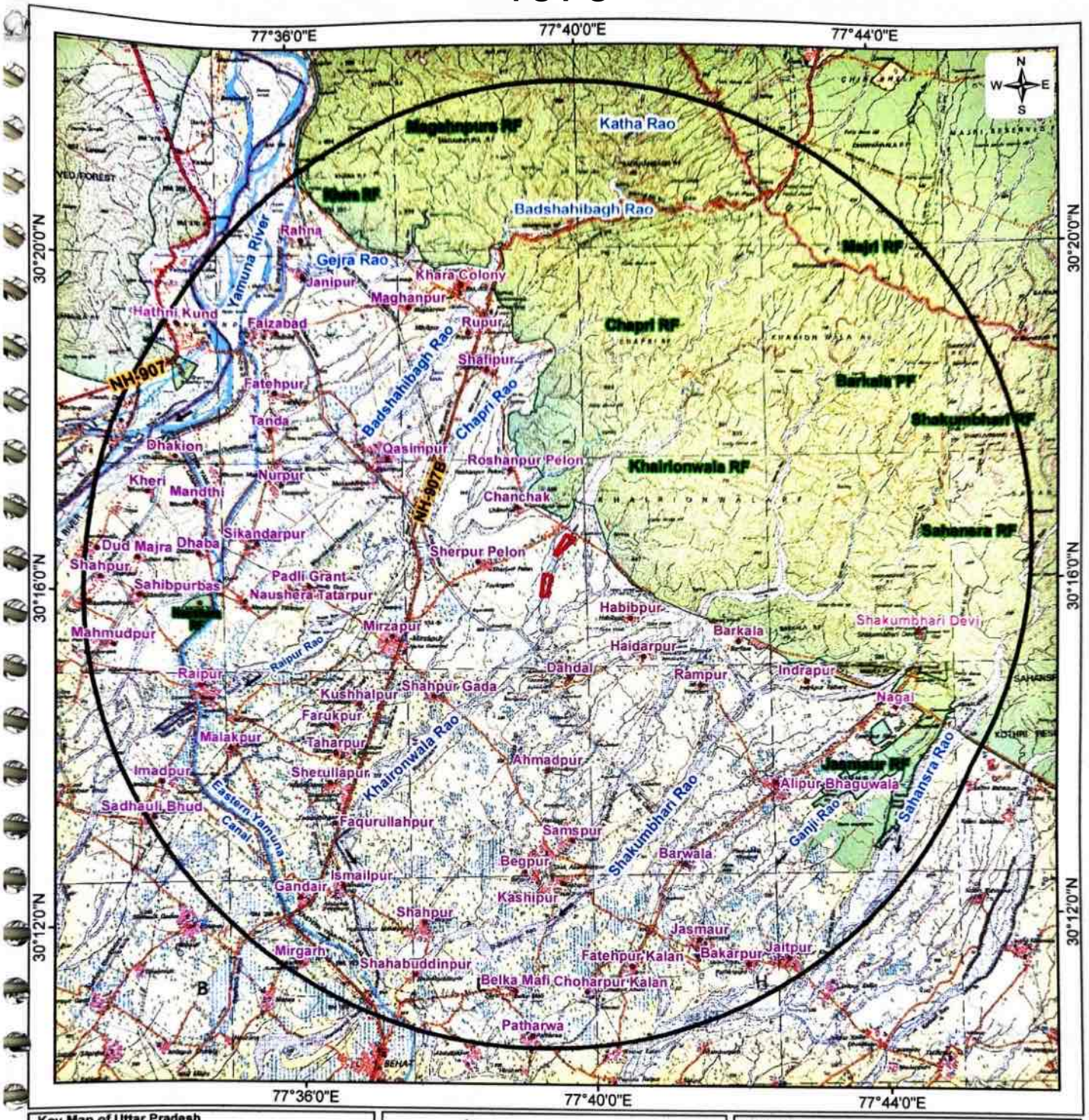

Key Map of Uttar Pradesh

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.jpg

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/11, 53F/12, 53F/15 & 53F/16
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:80,000

Graphic Scale:

0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Sherpur Pelon, Gata No./Khand No.: 403, 404/1, 405, 406/1, 416/2, 421/1, 422/2, 423/2, 424/2, 429 & 431 Area: 6.475ha

Village: Sherpur Pelon, Gata No./Khand No.: 378/2 & 379/2, Area: 7.00ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date				
Revision				

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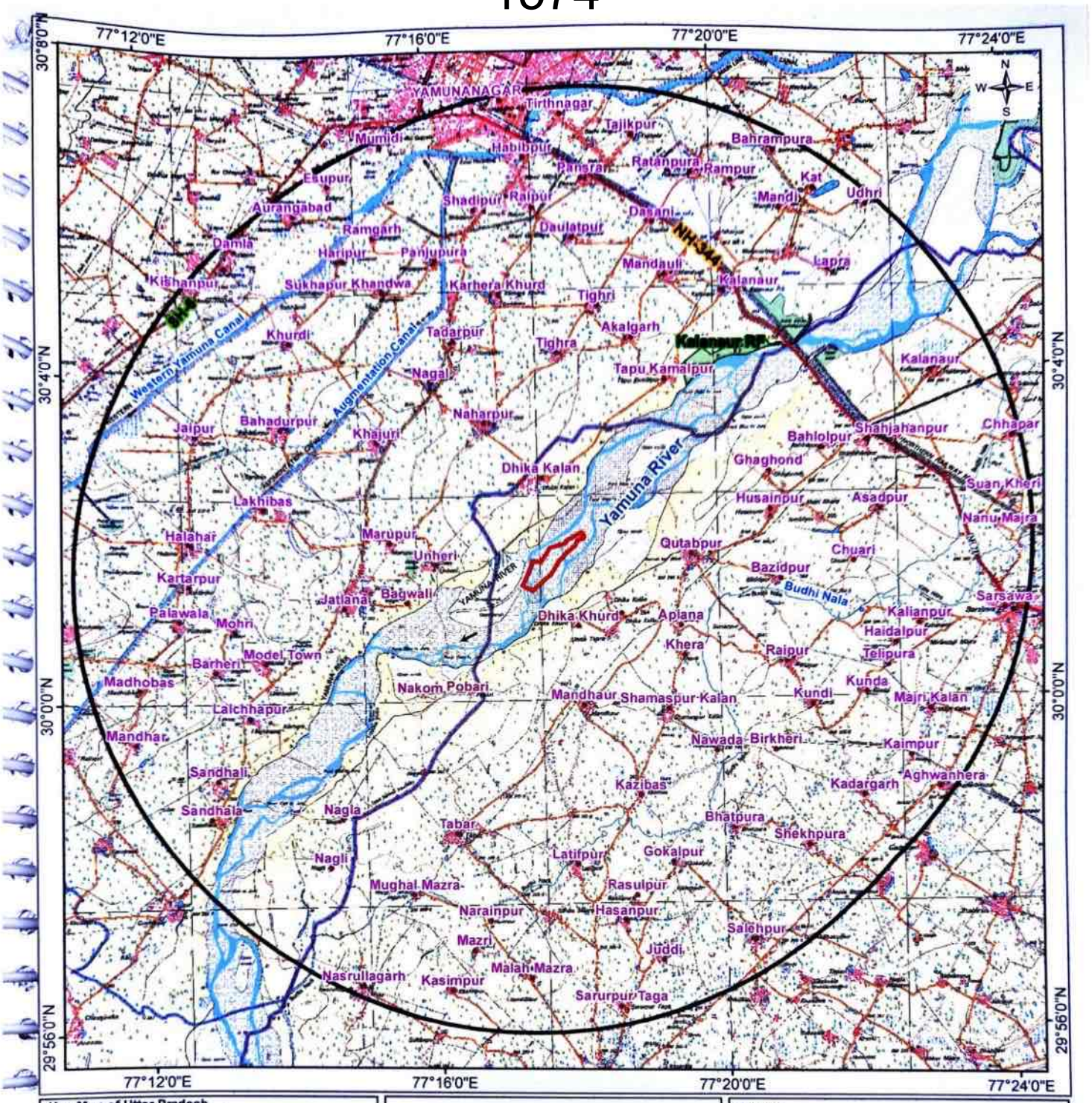

Key Map of Uttar Pradesh

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchildstate_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site
- 10km Buffer

Source:
1. Sol Toposheet No. 53F/4, 53F/8, 53G/1 & 53G/5
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:
1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:80,000

Graphic Scale:

0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Nukur, District: Saharanpur, Uttar Pradesh

Village: Dhikkan Kalan, Gata No./Khand No.: 839, 841 to 856, 858, 859, 860, 861, 863, 864,865, 866, 867, 871, 872, 888, 889, 406, 407, Area: 52.63ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date				
Revision				

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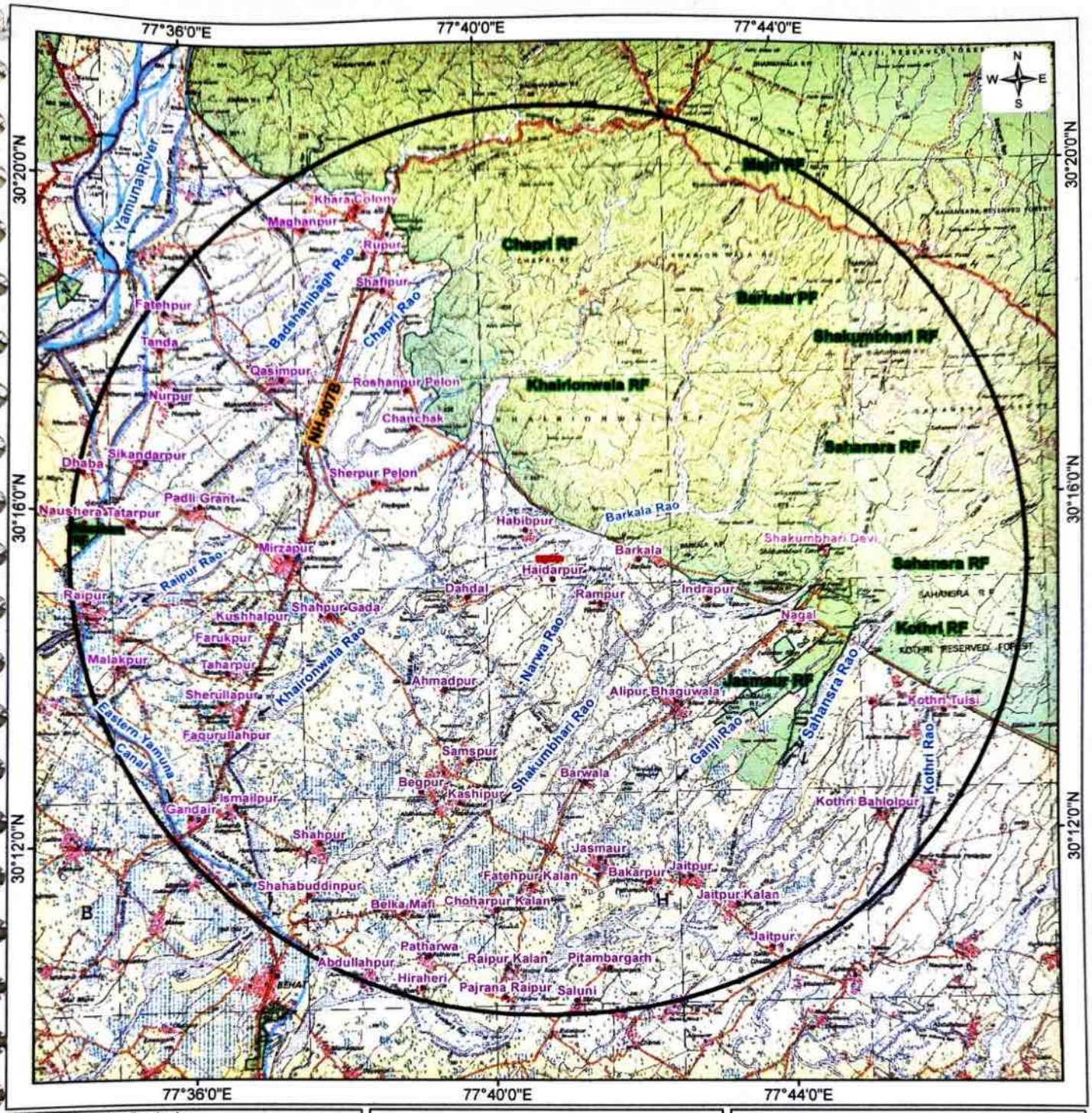

Key Map of Uttar Pradesh

Scale : Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Village/Town
- Project Site Haidarpur
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/11, 53F/12, 53F/15 & 53F/16
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF: 8000

Graphic Scale: 0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Haidarpur Hindwala, Gata No./Khand No.: 8/1, 19 & 22, Area: 4.20ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date			
Revision			

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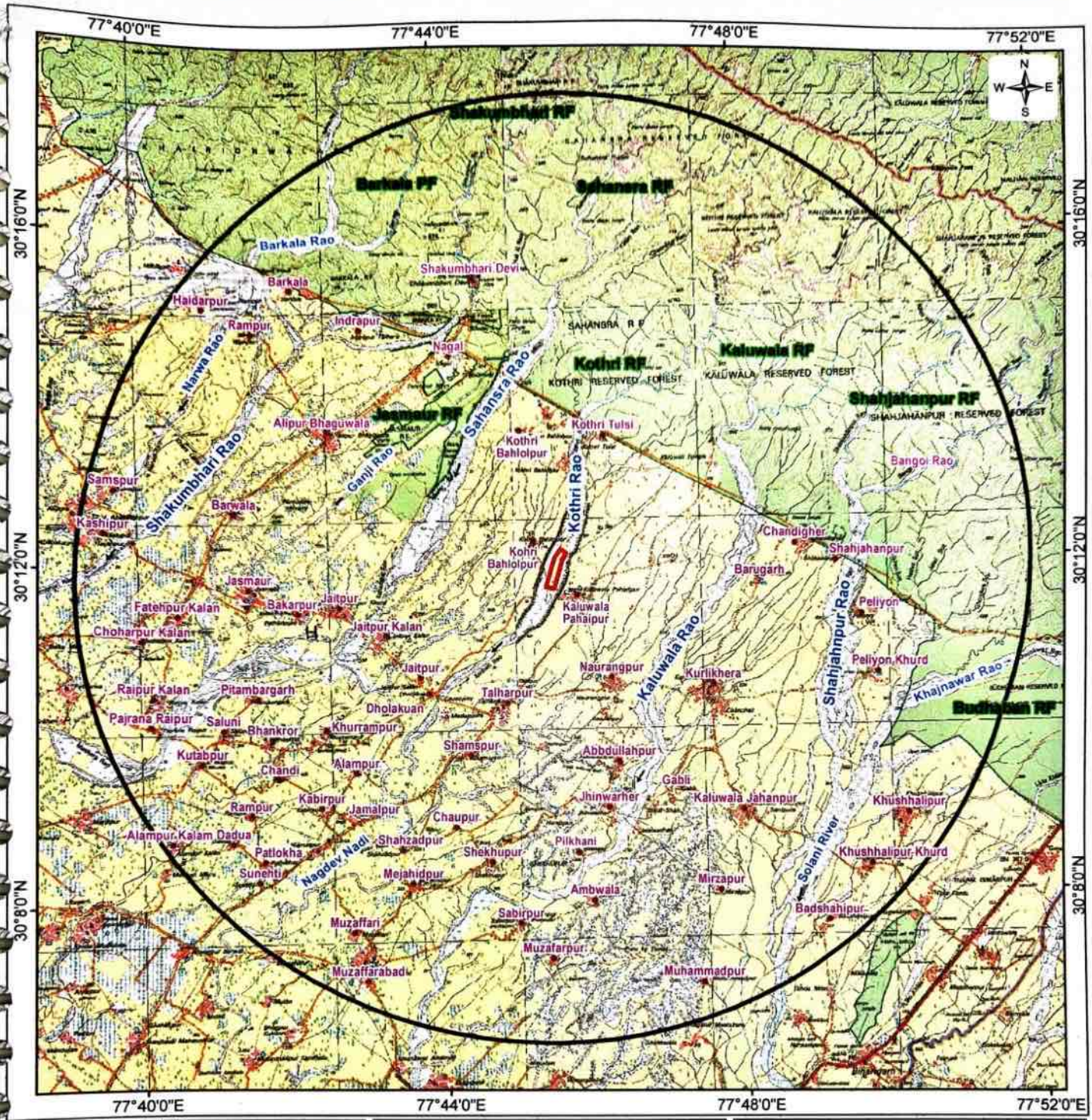
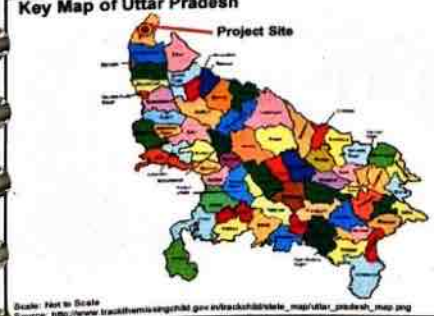


Key Map of Uttar Pradesh



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Legend

- Village/Town
- Project Sie
- 10km Buffer

Source:

1. Sol Toposheet No. 53F/11, 53F/12, 53F/15 & 53F/16
2. Project Layout Plan, RBM
3. Google Satellite Imagery, 2021

Software Used:

1. ArcGIS 10.1
2. AutoCAD 2012
3. Erdas Imagine 10

RF:- 1:80,000

Graphic Scale:

0 800 1,600 3,200 4,800 6,400 m

Figure 0.00: Drainage and Study Area Map

Project:
R.B.M. Mining Project
Tehsil: Behat, District: Saharanpur, Uttar Pradesh

Village: Kaluwala Pahadipur, Gata No./Khand No.:119/1, 120/1, 192/1, 193/1, 125/4,
Area: 14.90ha

Sub Divisional Committee Saharanpur

Drafted By:	Checked By:	Approved By:

Date				
Revision				

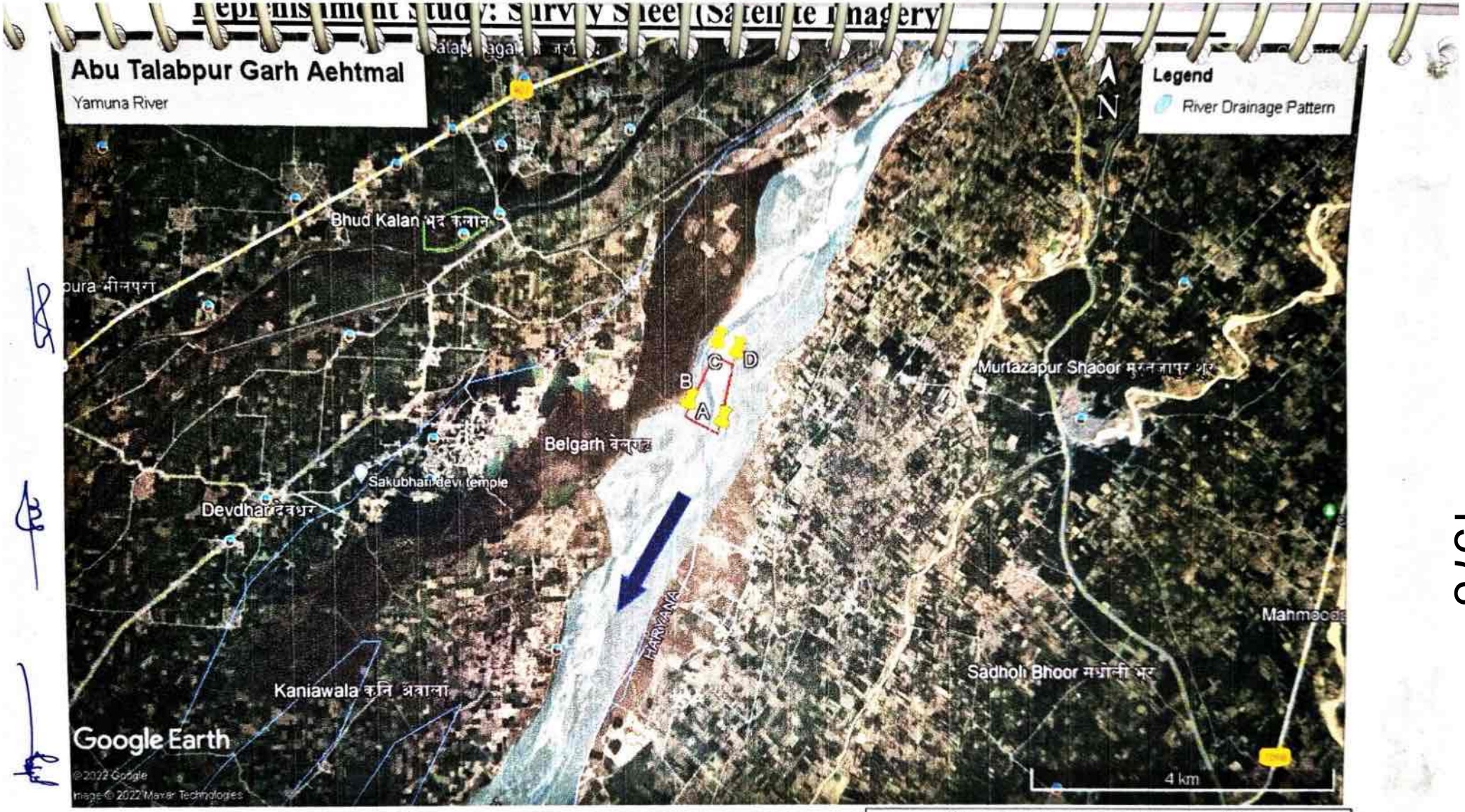
Path: E:\Projects\Mapping\Mining\UP\Sand\Saharanpur\SHP\Drainage _ Study Area Map\Kaluwala Pahadipur-Kothri Rao.mxd

Replenishment Study Survey Sheet superimposed on Satellite Imaginary showing

—

Lease Area, Boundary Pillar Coordinates and Basic Drainage Pattern of River with Flow Direction

Replenishment Study: Survey Sheet (Satellite Imagery)



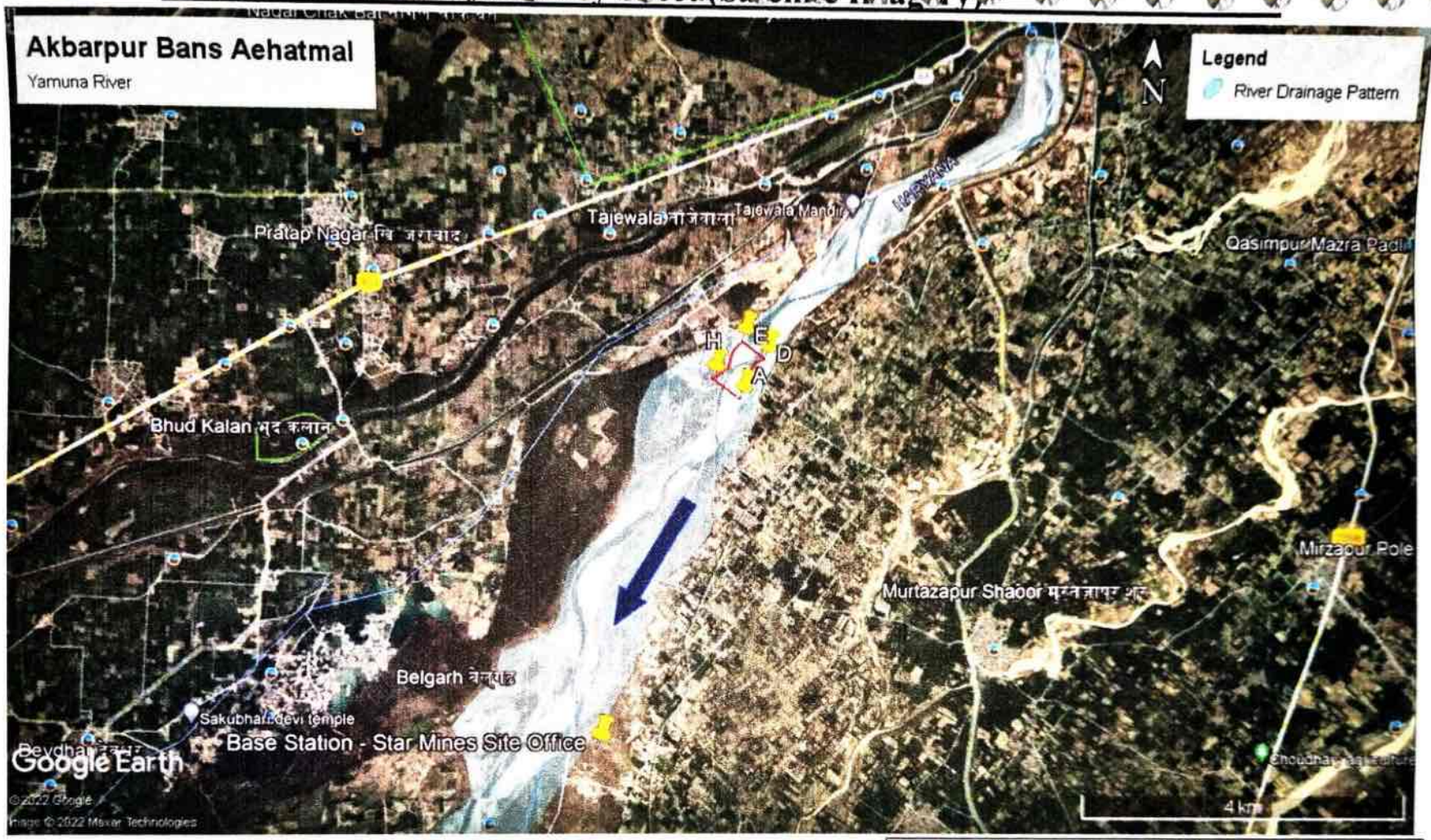
Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (37.00 ha)		
A	30°14'41.78"N	77°31'38.30"E
B	30°14'49.46"N	77°31'21.34"E
C	30°14'46.20"N	77°31'36.25"E
D	30°14'[illegible]"N	77°31'46.05"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	37.00 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Abu Talabpur Garh	Behat	Saharanpur
Survey By:		
Verified By:		

1578

Replacement Bud : Survey Sheet (Satellite Imagery)

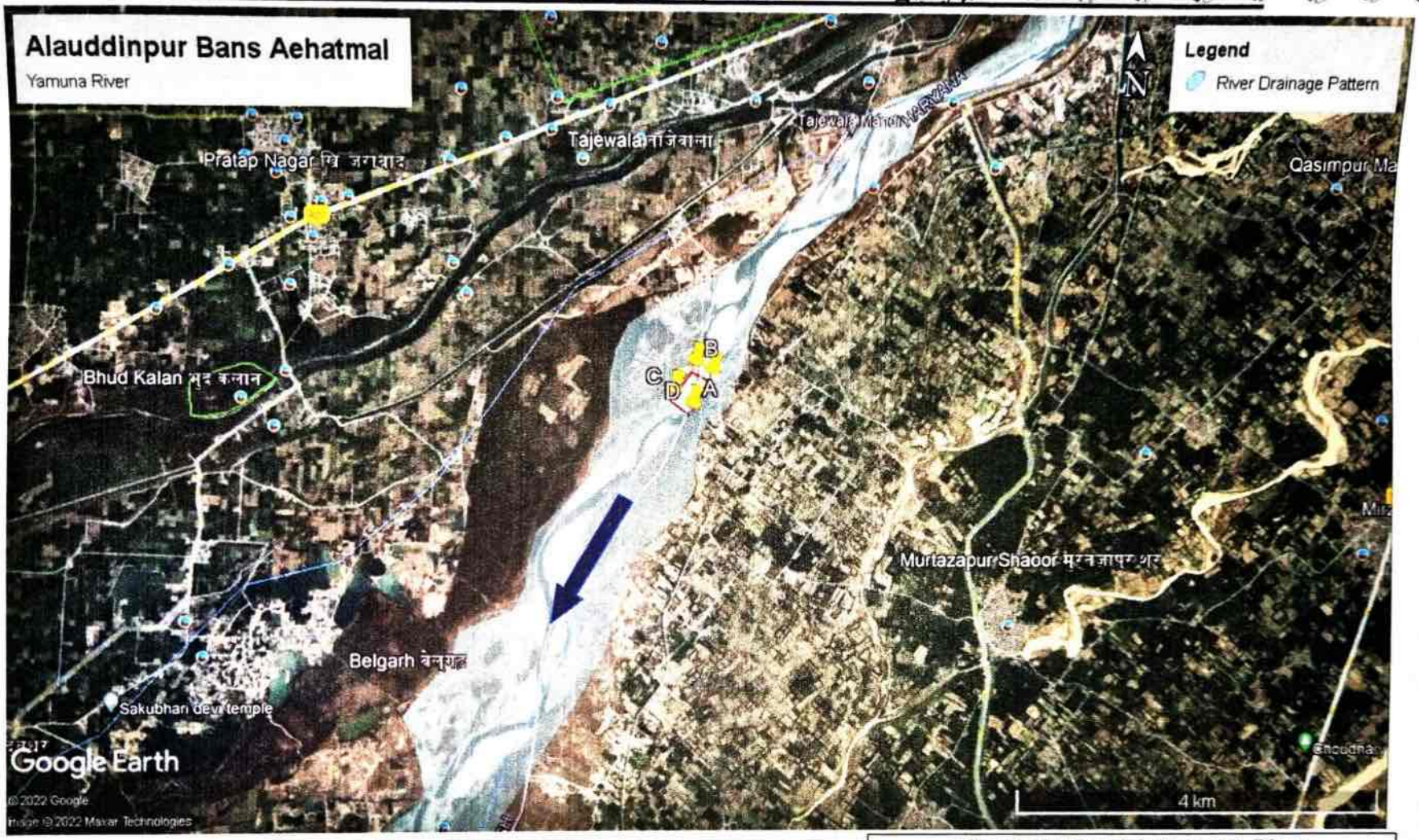


Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (17.90 ha)		
A	30°16'27.80"N	77°32'46.96"E
B	30°16'34.01"N	77°32'47.53"E
C	30°16'42.58"N	77°32'53.94"E
D	30°16'43.84"N	77°32'58.19"E
E	30°16'50.96"N	77°32'47.76"E
F	30°16'46.69"N	77°32'43.28"E
G	30°16'39.98"N	77°32'41.04"E
H	30°16'36.08"N	77°32'33.91"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	17.90 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Akbarpur Bans Aehatmal	Behat	Saharanpur
Survey By:-		
Verified By:-		

1579



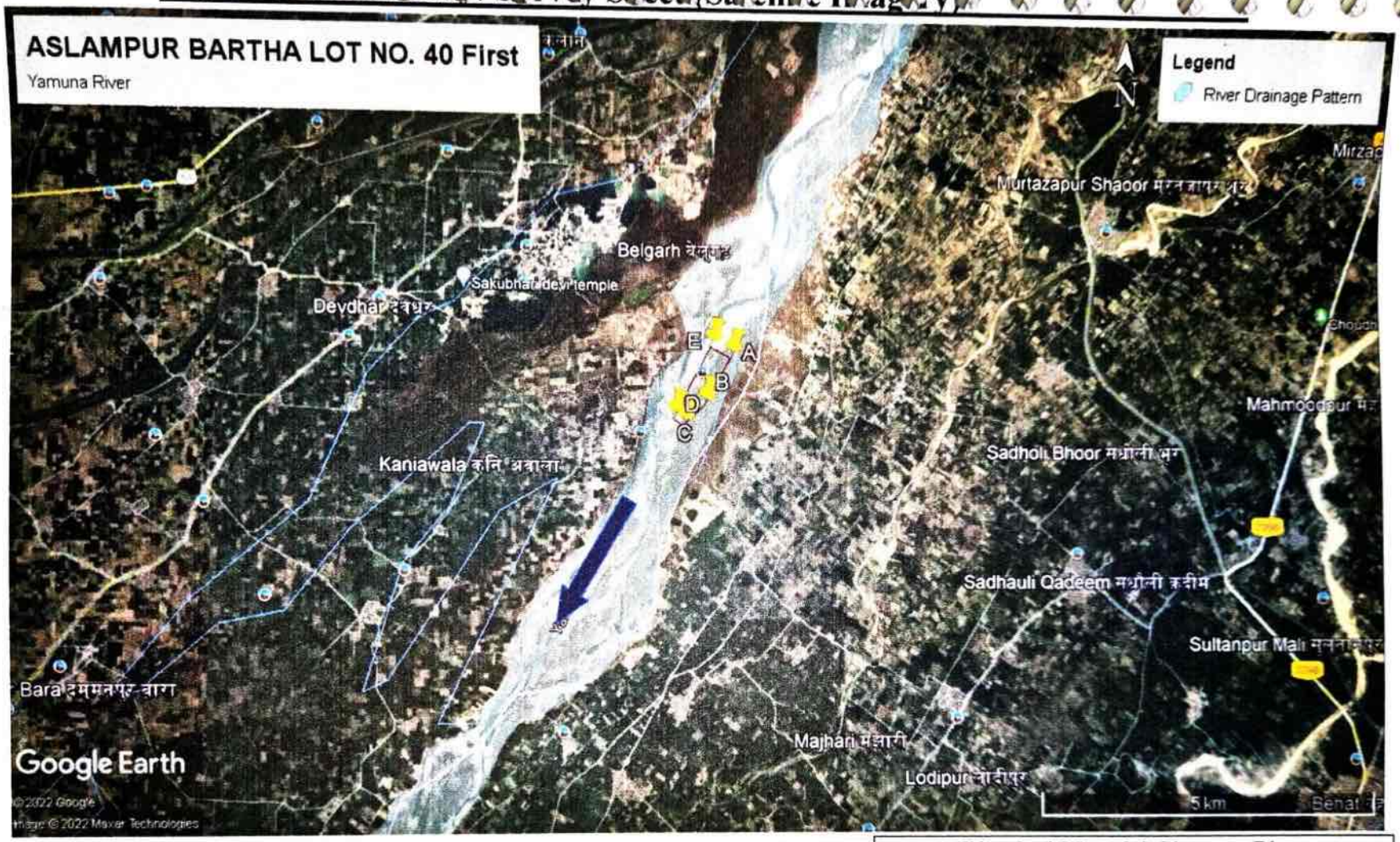
Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (9.58 ha)		
A	30°16'14.92"N	77°32'39.76"E
B	30°16'17.99"N	77°32'32.74"E
C	30°16'08.09"N	77°32'23.84"E
D	30°16'02.92"N	77°32'31.72"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	9.58 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Alauddinpur Bans Aehatmal	Behat	Saharanpur
Survey By:-		
Verified By:-		

1580

Replenishment Study: Survey Sheet (Satellite Imagery)



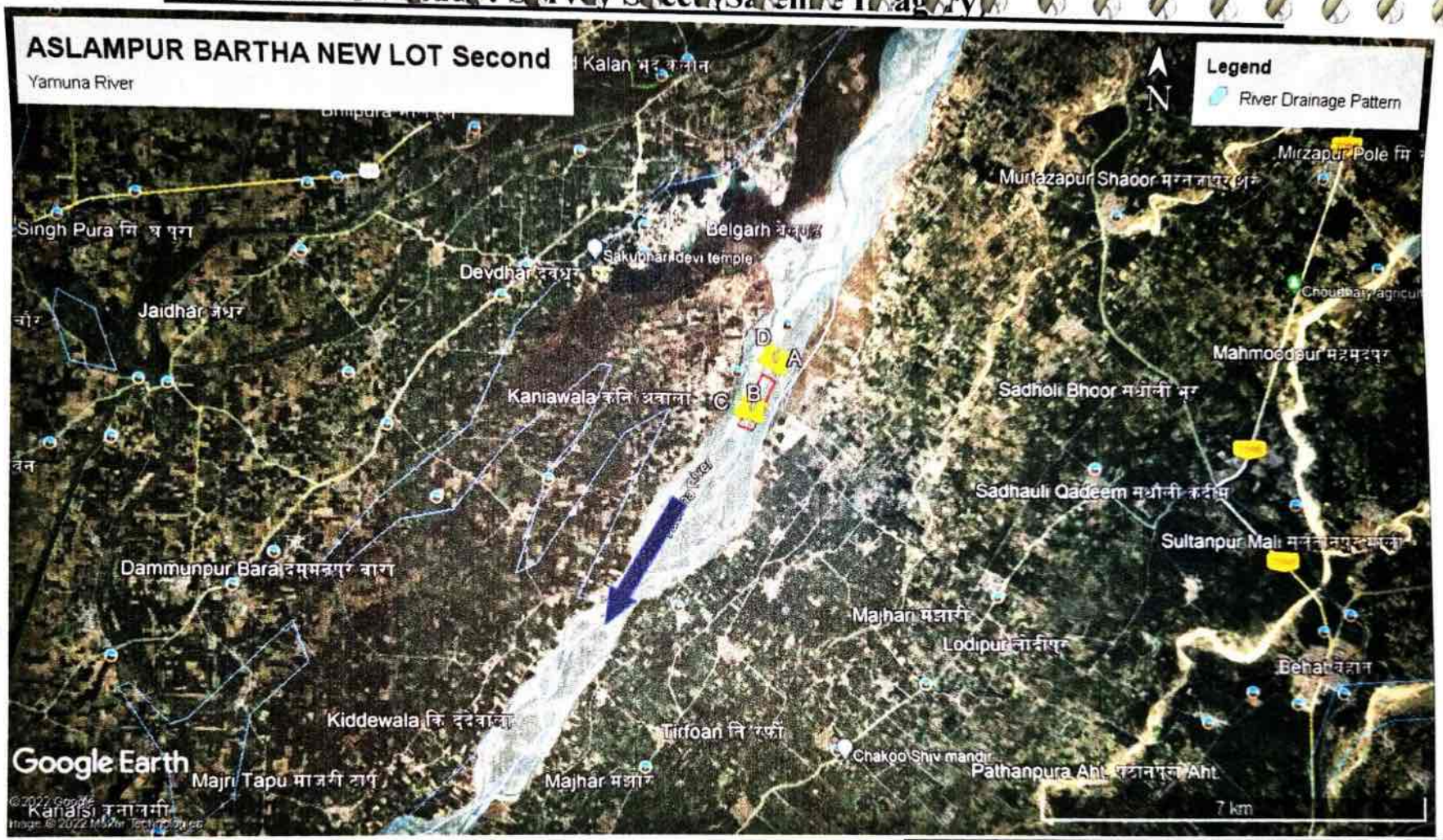
Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (36.60 ha)		
A	30°13'45.87"N	77°31'09.07"E
B	30°13'23.05"N	77°31'53.85"E
C	30°13'13.45"N	77°31'42.33"E
D	30°13'16.67"N	77°31'36.60"E
E	30°13'50.98"N	77°31'57.80"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	36.60 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Aslampur Bartha Lot No. 40 First	Behat	Saharanpur
Survey By:-		
Verified By:-		

1581

Replenishment Study: Survey Sheet (Satellite Imagery)

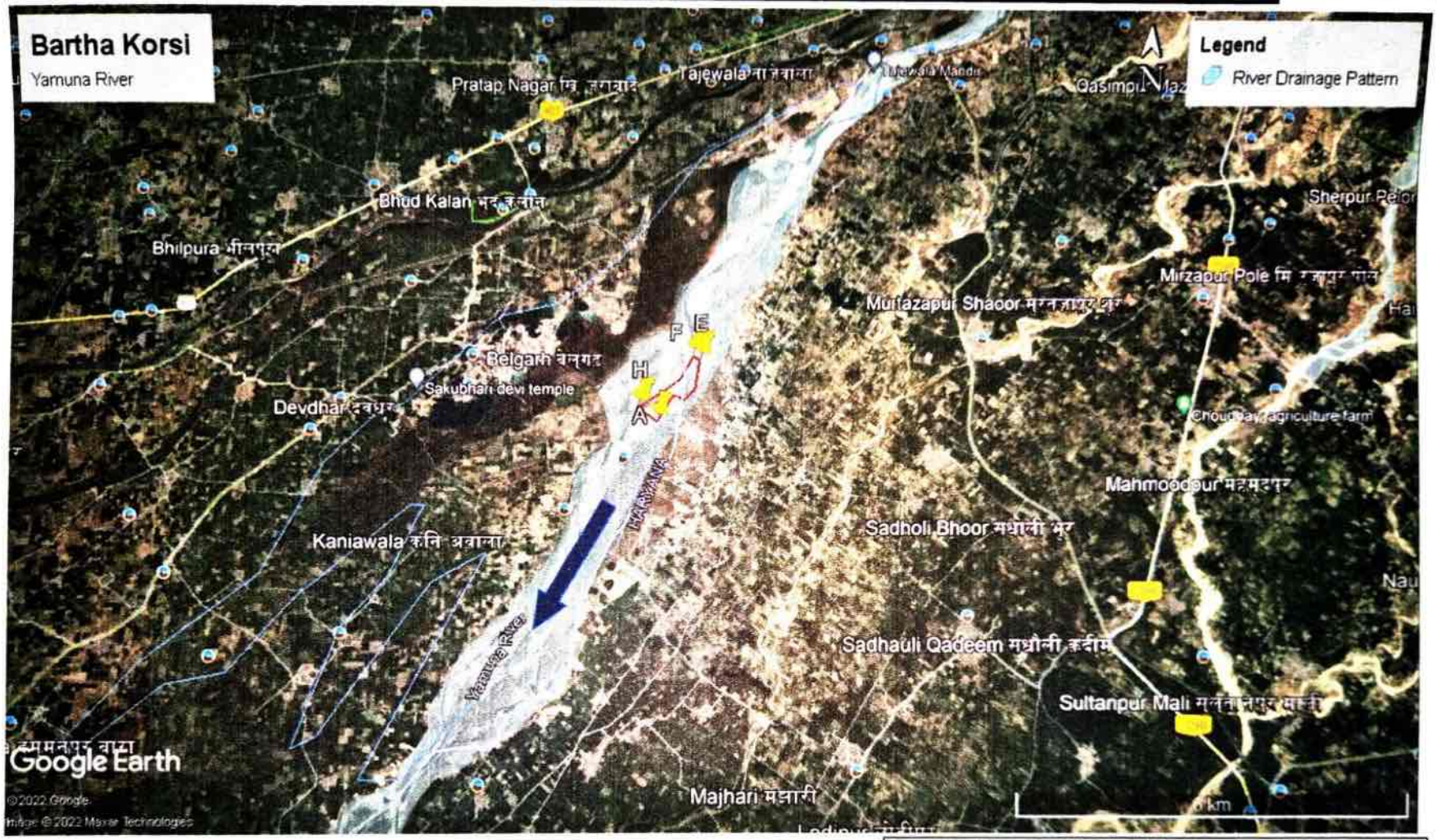


Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (28.16 ha)		
A	30°13'04.93"N	77°30'44.59"E
B	30°12'35.50"N	77°30'28.50"E
C	30°12'38.19"N	77°30'18.84"E
D	30°13'09.39"N	77°30'35.57"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	28.16 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Aslampur Bartha New Lot Second	Behat	Saharanpur
Survey By:-		
Verified By:-		

1582



Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (36.00 ha)		
A	30° 14' 00.94" N	77° 31' 13.91" E
B	30° 14' 16.50" N	77° 31' 24.43" E
C	30° 14' 13.69" N	77° 31' 31.19" E
D	30° 14' 19.59" N	77° 31' 37.85" E
E	30° 14' 37.10" N	77° 31' 40.80" E
F	30° 14' 39.19" N	77° 31' 36.25" E
G	30° 14' 26.08" N	77° 31' 29.05"E
H	30° 14' 09.19" N	77° 31' 02.18" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	36.0 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Bartha Korsi	Behat	Saharanpur
Survey By:-		
Verified By:-		

1583

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	52.63 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Dikkan Kalan	Nukur	Saharanpur
Survey By:-		
Verified By:-		

कार्यालय जिलाधिकारी (सहारनपुर)

Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (52.63 ha)		
A	30° 1'20.61"N	77°17'23.68"E
B	30° 1'24.58"N	77°17'15.45"E
C	30° 1'32.77"N	77°17'19.87"E
D	30° 1'42.25"N	77°17'24.49"E
E	30° 1'41.34"N	77°17'31.04"E
F	30° 1'52.02"N	77°17'39.09"E
G	30° 1'54.80"N	77°17'51.61"E
H	30° 1'56.88"N	77°17'52.96"E
I	30° 2'2.71"N	77°18'5.82"E
J	30° 1'59.86"N	77°18'8.25"E
K	30° 1'57.85"N	77°18'7.25"E
L	30° 1'58.76"N	77°18'5.82"E
M	30° 1'57.46"N	77°18'4.89"E
N	30° 1'57.00"N	77°18'1.96"E
O	30° 1'53.50"N	77°18'0.53"E
P	30° 1'47.64"N	77°17'52.52"E
Q	30° 1'42.10"N	77°17'46.53"E
R	30° 1'32.38"N	77°17'39.44"E
S	30° 1'27.11"N	77°17'31.55"E

1585

Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (4.20 ha)		
A	30° 15' 20.64" N	77° 40' 42.10" E
B	30° 15' 20.54" N	77° 41' 00.42" E
C	30° 15' 17.98" N	77° 41' 01.84" E
D	30° 15' 17.71" N	77° 40' 42.89" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Badkala Ra River		
Survey	Physical, Drone and DGPS	
Survey Area	4.20 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Haiderpur Hinduwala	Behat	Saharanpur
Survey By:		
Verified By:		

1586

Replenishment Study: Survey Sheet (Satellite Imagery)

Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (14.90 ha)		
	30°12'08.76"N	77°45'37.77"E
	30°12'06.03"N	77°45'42.25"E
	30°12'00.52"N	77°45'38.93"E
D	30°11'40.91"N	77°45'32.39"E
E	30°11'41.72"N	77°45'25.51"E
F	30°12'02.80"N	77°45'33.06"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Kaluwala River		
Survey	Physical, Drone and DGPS	
Survey Area	14.90 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Kaluwala Pahadipur	Behat	Saharanpur
Survey By:		
Verified By:		

कार्यालय जिलाधिकारी सहारनपुर (भारत)

1587

Replenishment Study: Survey Sheet (Satellite Imagery)

Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (3.10 ha)		
A	30° 19' 21.41" N	77° 38' 26.35" E
B	30° 19' 17.62" N	77° 38' 30.56" E
C	30° 19' 13.68" N	77° 38' 25.07" E
D	30° 19' 17.44" N	77° 38' 20.78" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Badshahibagh Rao River		
Survey	Physical, Drone and DGPS	
Survey Area	3.10 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Mayapur Rooppur	Behat	Saharanpur
Survey By:		
Verified By:		

1588

Replenishment Study: Survey Sheet/Satellite Imagery

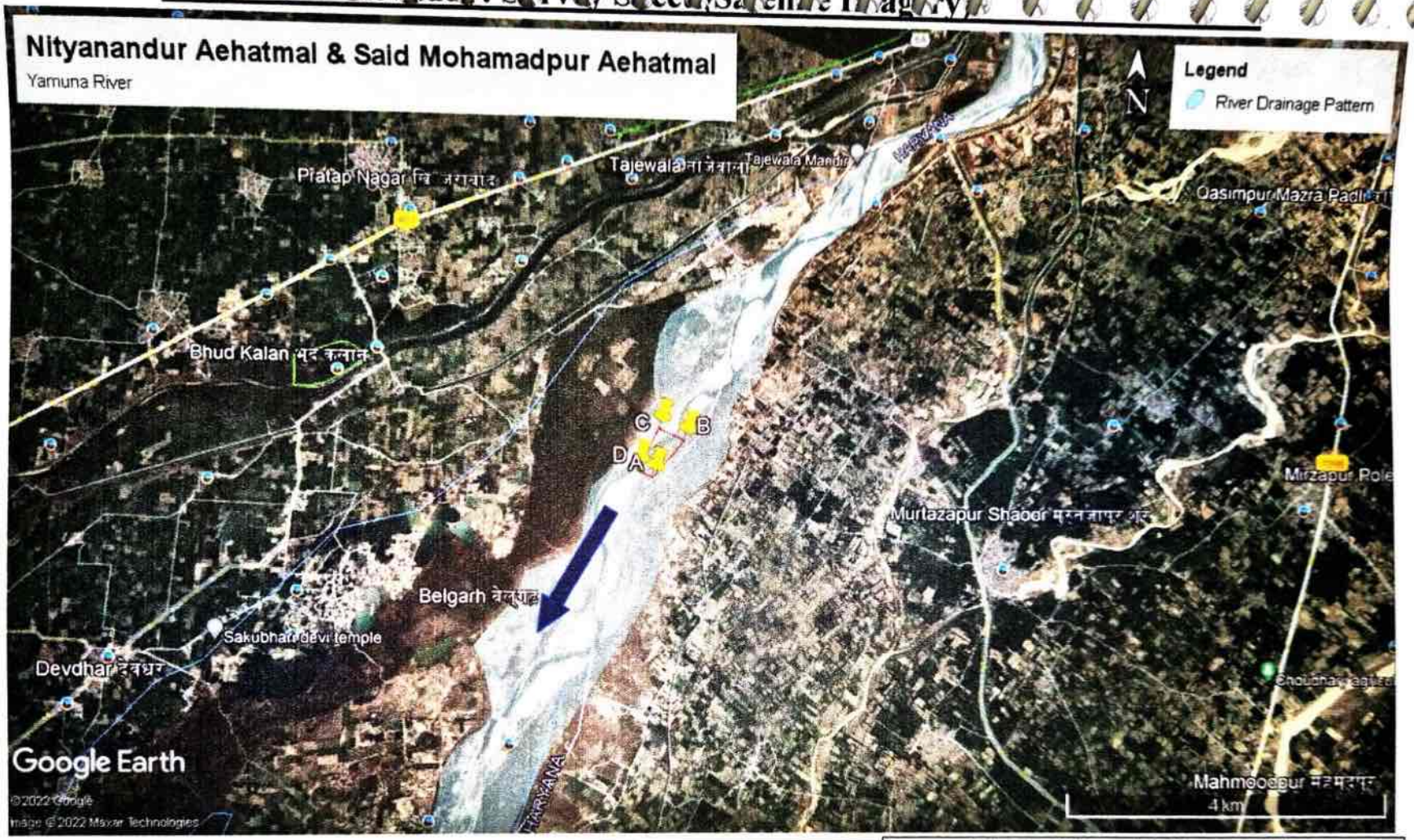
Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (15.70 ha)		
A	30°16'02.98"N	77°32'30.74"E
B	30°16'10.84"N	77°32'18.84"E
C	30°16'00.40"N	77°32'11.56"E
D	30°15'51.70"N	77°32'23.64"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	15.70 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Mehmoodpur Nangli Aehatmal	Behat	Saharanpur
Survey By:		
Verified By:		

कार्यालय जिलाधिकारी सहारनपुर (उत्तर प्रदेश)

1589

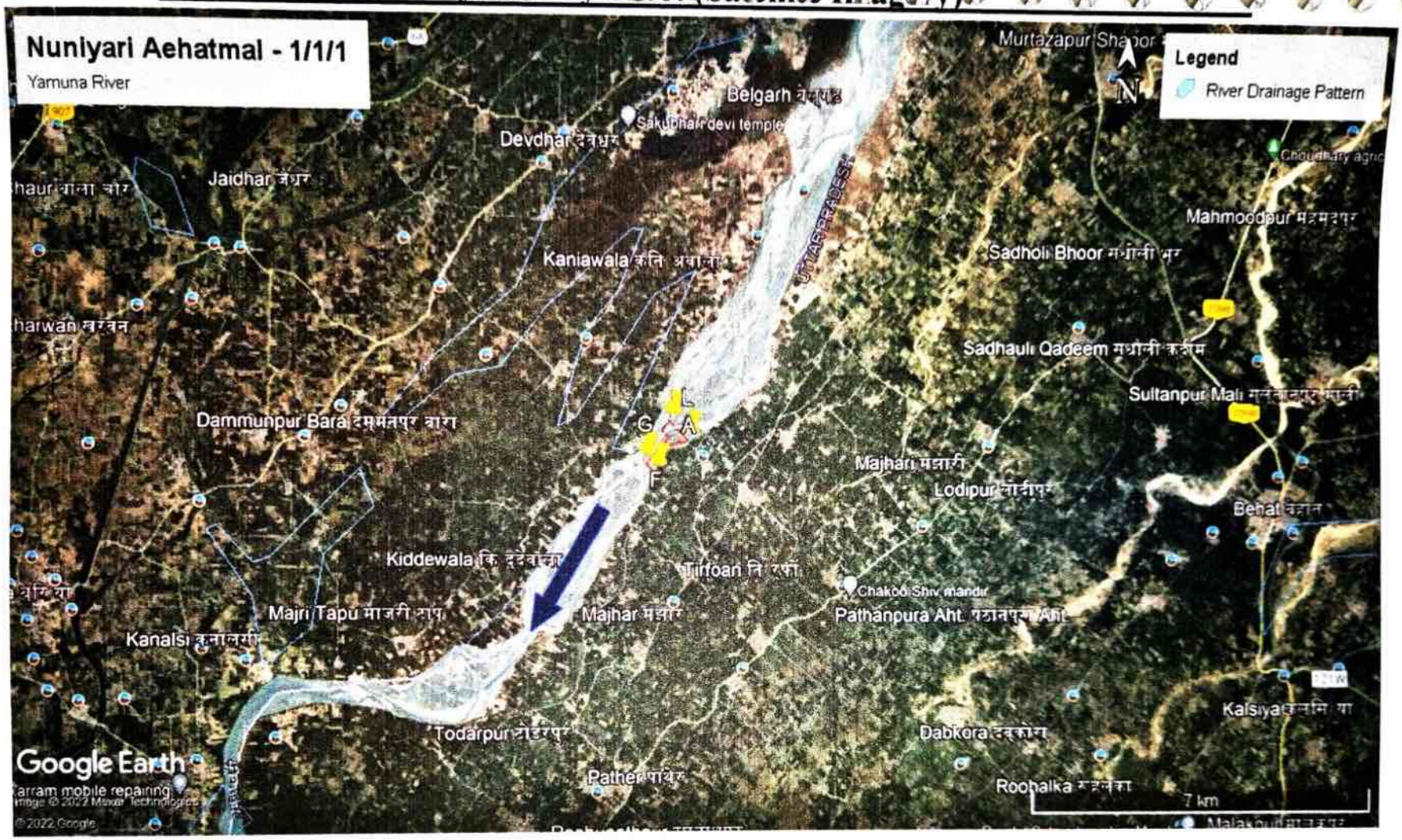


Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (17.70 ha)		
A	30°15'25.77"N	77°31'57.79"E
B	30°15'41.32"N	77°32'12.89"E
C	30°15'46.16"N	77°32'00.64"E
D	30°15'28.87"N	77°31'50.13"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	17.70 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Nityanandur Aehatmal & Said Mohamadpur Aehatmal; Behat; Saharanpur.		
Survey By:-		
Verified By:-		

1590



LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	19.00 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Nuniyari Aehatmal	Behat	Saharanpur
Survey By:-		
Verified By:-		

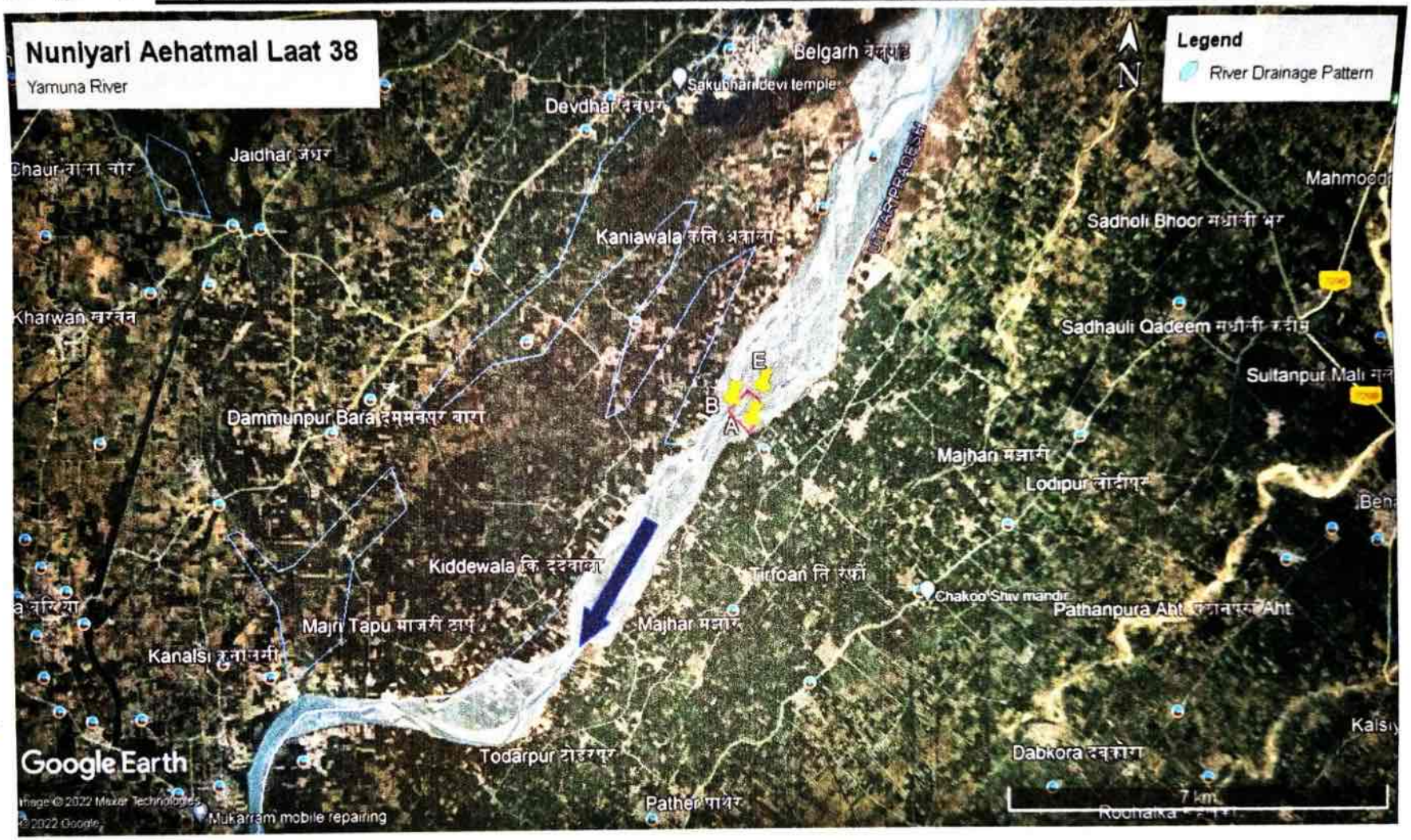
कार्यालय जिलाधिकारी (खनन अनुभाग) देहरादून

1591

Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (23.20 ha)		
A	30°11'00.50"N	77°29'25.19"E
B	30°10'59.39"N	77°29'23.26"E
C	30°10'58.86"N	77°29'15.55"E
D	30°10'55.77"N	77°29'10.53"E
E	30°10'46.29"N	77°29'04.02"E
F	30°10'39.87"N	77°29'00.42"E
G	30°10'46.96"N	77°29'51.89"E
H	30°10'51.56"N	77°29'56.86"E
I	30°10'49.46"N	77°29'58.83"E
J	30°11'02.30"N	77°29'11.12"E
K	30°11'07.26"N	77°29'05.46"E
L	30°11'12.52"N	77°29'11.64"E

1592

Replenishment Study: Survey Sheet (Satellite Imagery)



LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	24.29 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Nuniyari Aehatmal	Behat	Saharanpur
Survey By:-		
Verified By:-		

कार्यालय जिलाधिकारी (खनन) सहारनपुर

1593

Pillars	Latitude (N)	Longitude (E)
Mining Lease Area (24.29 ha)		
A	30°11'00.90" N	77°29"25.83"E
B	30°11'12.98" N	77°29"12.21" E
C	30°11'24.95" N	77°29"26.28" E
D	30°11'21.79" N	77°29"29.68" E
E	30°11'20.39" N	77°29"33.03" E
F	30°11'18.64" N	77°29"33.83" E
G	30°11'17.01" N	77°29"34.70" E
H	30°11'14.93" N	77°29"32.91" E
I	30°11'09.54" N	77°29"31.35" E
J	30°11'03.46" N	77°29"29.55" E

1594

Rephasement Study: Survey Sheet (Satellite Imagery)

Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (34.00 ha)		
A	30°12'17.09"N	77°30'18.81"E
B	30°12'16.42"N	77°30'17.32"E
C	30°12'05.34"N	77°30'13.17"E
D	30°11'59.82"N	77°30'01.24"E
E	30°11'46.33"N	77°29'58.50"E
F	30°11'59.32"N	77°29'43.47"E
G	30°12'21.10"N	77°30'16.04"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	34.00 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Rasoolpur Urf Rasooli	Behat	Saharanpur
Survey By:		
Verified By:		

1595

Replenishment Study: Survey Sheet (Satellite Imagery)

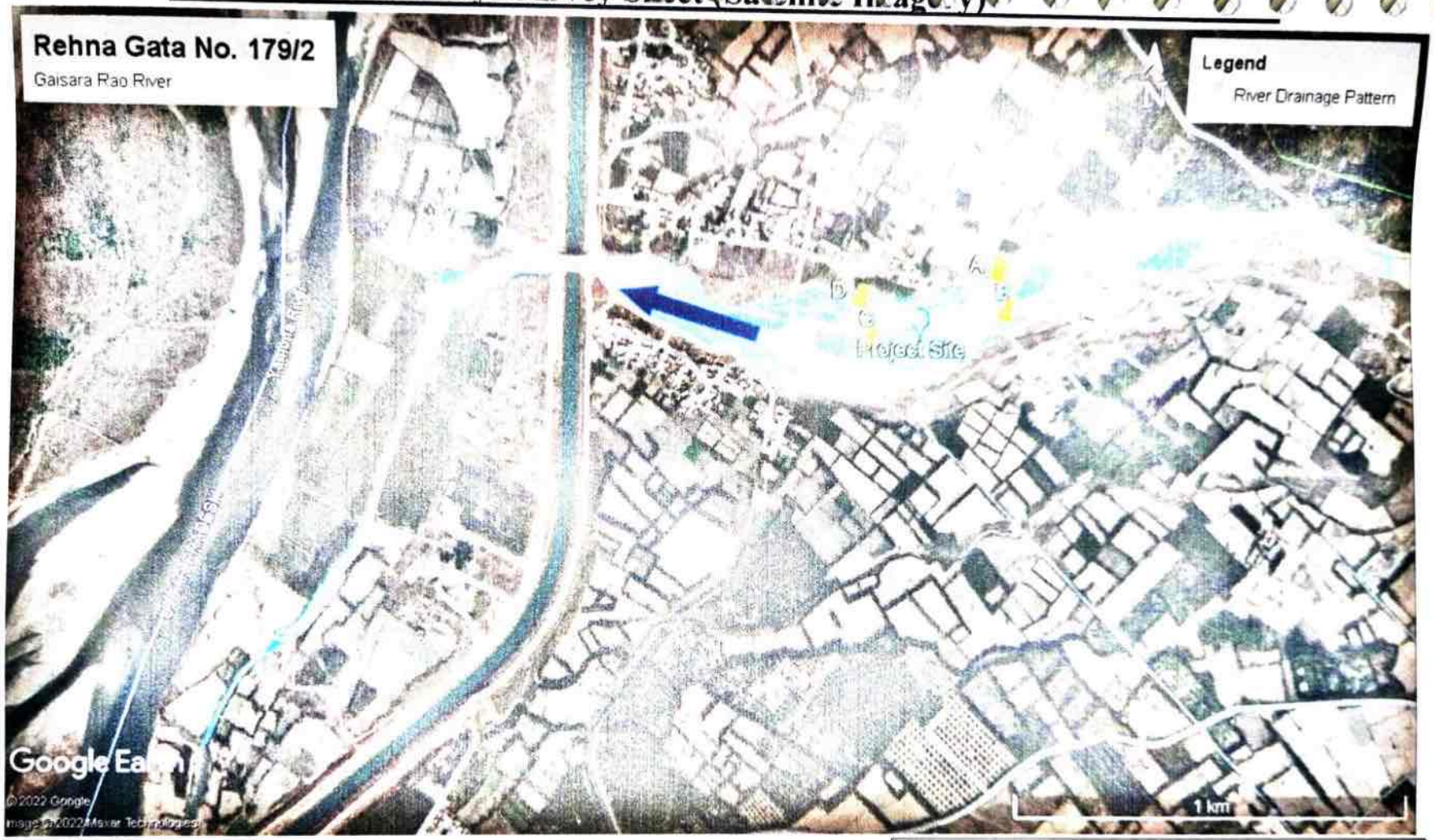
Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (8.05 ha)		
A	30° 21' 36.45" N	77° 36' 05.61" E
B	30° 21' 29.62" N	77° 36' 00.26" E
C	30° 21' 37.95" N	77° 35' 50.38" E
D	30° 21' 41.71" N	77° 36' 02.50" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	8.05 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Rehna	Behat	Saharanpur
Survey By:		
Verified By:		

1596

Replenishment Study: Survey Sheet (Satellite Imagery)



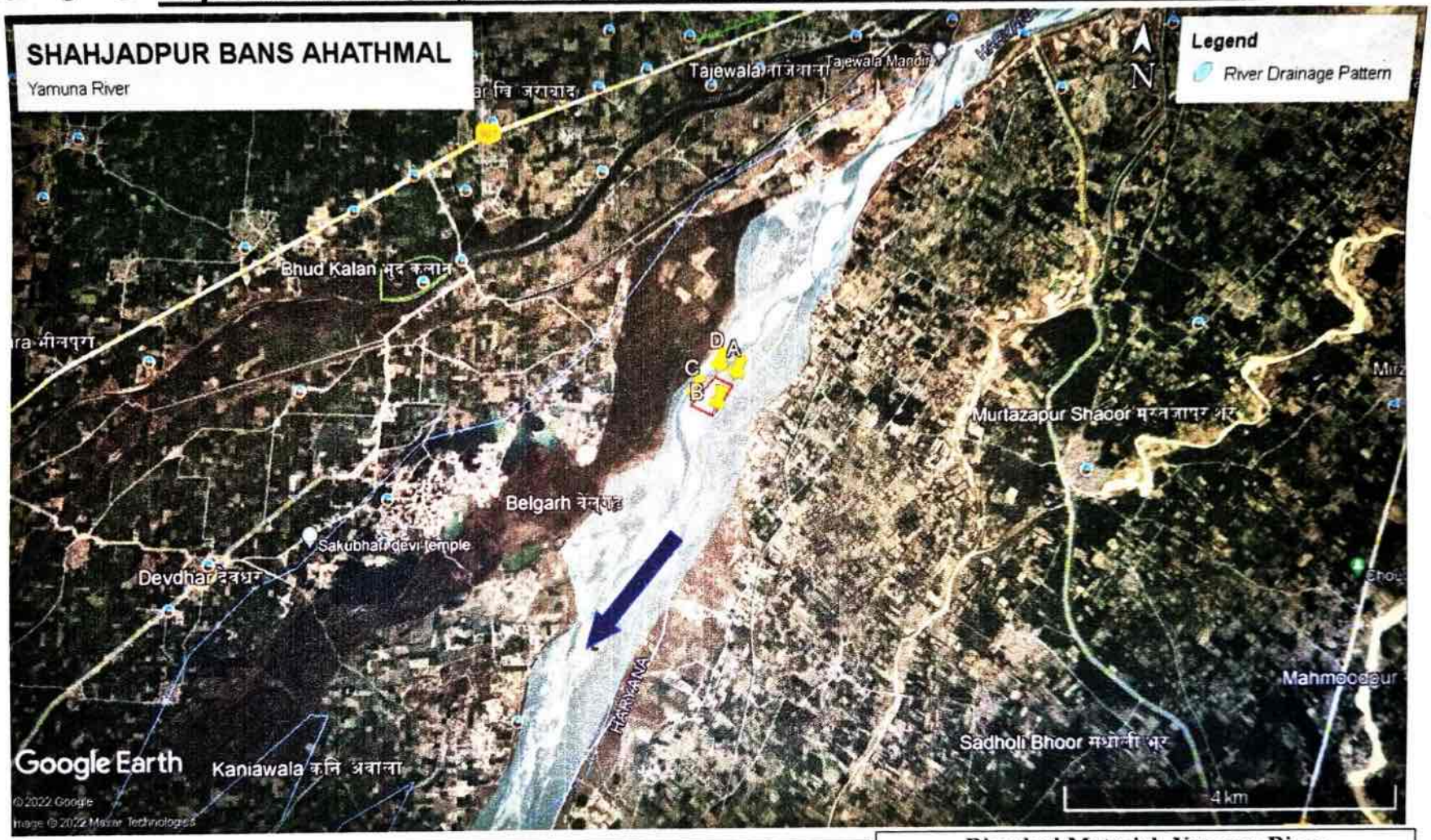
Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (3.75 ha)		
A	30° 19' 56.61" N	77° 36' 32.69" E
B	30° 19' 54.45" N	77° 36' 35.03" E
C	30° 19' 47.72" N	77° 36' 20.40" E
D	30° 19' 49.81" N	77° 36' 18.31" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Gaisara Rao River		
Survey	Physical, Drone and DGPS	
Survey Area	3.75 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Rehna	Behat	Saharanpur
Survey By:		
Verified By:		

1597

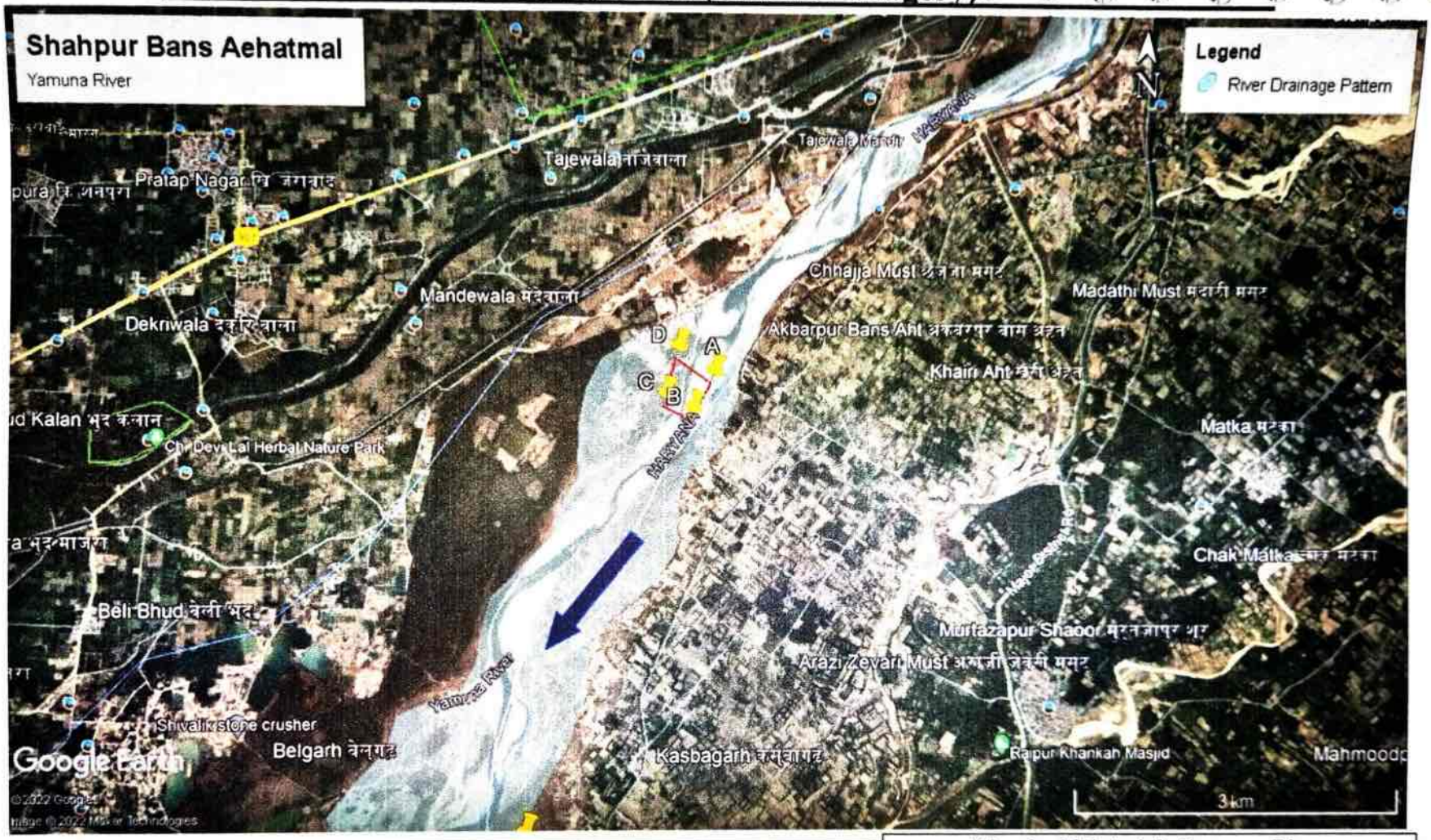
Replacement Study: Survey Sheet (Satellite Imagery)



Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (13.0 ha)		
A	30°15'24.84"N	77°31'57.01"E
B	30°15'12.32"N	77°31'47.88"E
C	30°15'16.91"N	77°31'36.94"E
D	30°15'28.43"N	77°31'48.83"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	13.0 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Shahjadpur Bans Ahathmal	Behat	Saharanpur
Survey By:		
Verified By:		

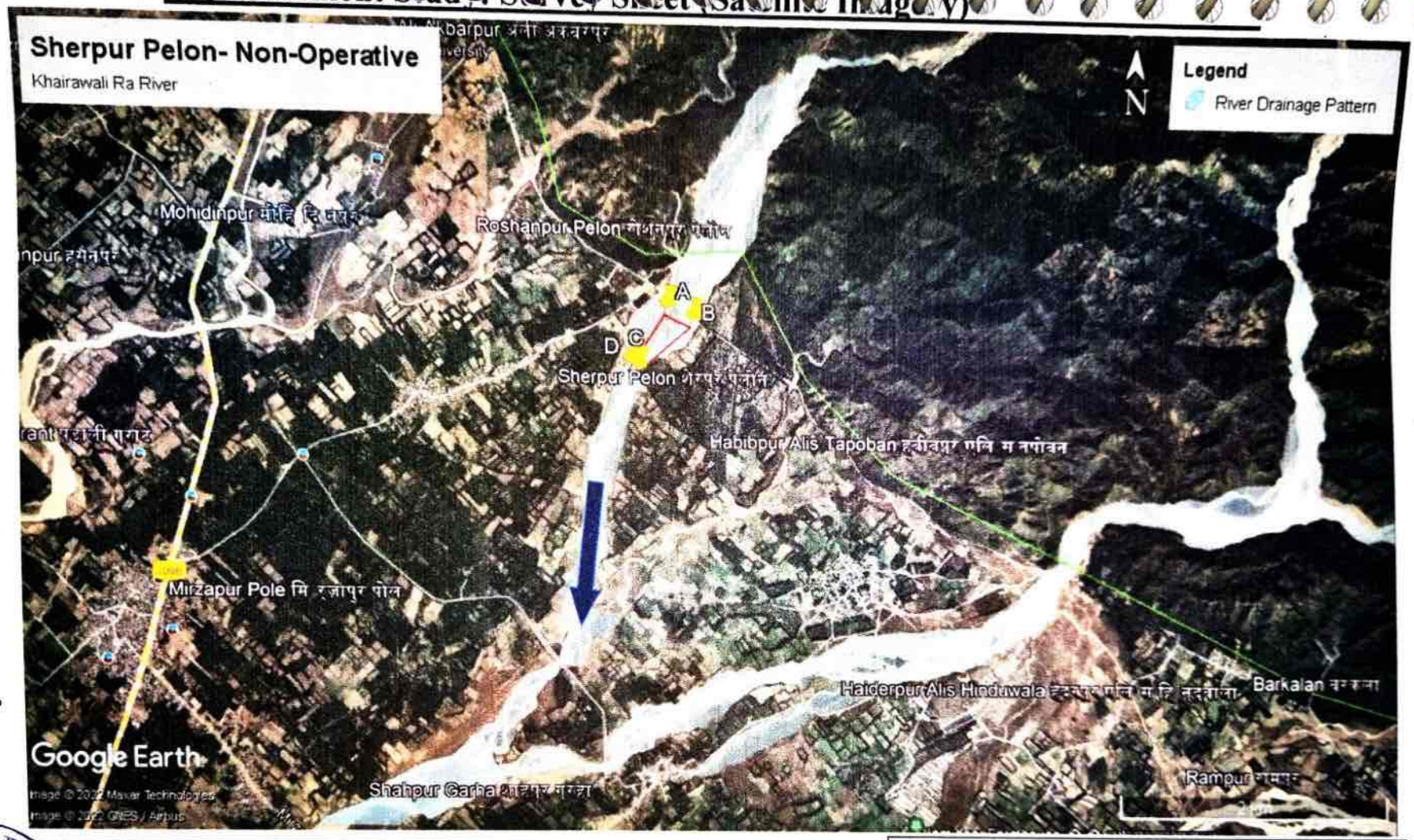


Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (15.60 ha)		
A	30°16'27.75"N	77°32'46.14"E
B	30°16'16.01"N	77°32'38.50"E
C	30°16'20.43"N	77°32'28.70"E
D	30°16'35.53"N	77°32'33.20"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	15.60 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Shahpur Bans Aehatmal	Behat	Saharanpur
Survey By:		
Verified By:		

Replenishment Study Survey Sheet (Satellite Image)



Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (6.475 ha) Gata No. 403, 404/1, 405, 406/1, 416/2, 421/1, 422/2, 423/2, 424/2, 429 & 431		
A	30°16'35.16"N	77°39'44.44"E
B	30°16'32.34"N	77°39'51.41"E
C	30°16'21.11"N	77°39'36.26"E
D	30°16'22.11"N	77°39'34.41"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Khairawali Ra River		
Survey	Physical, Drone and DGPS	
Survey Area	6.475 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Sherpur Pelon	Behat	Saharanpur
Survey By:		
Verified By:		

1600

Replenishment Study Survey Sheet (Satellite Imagery)

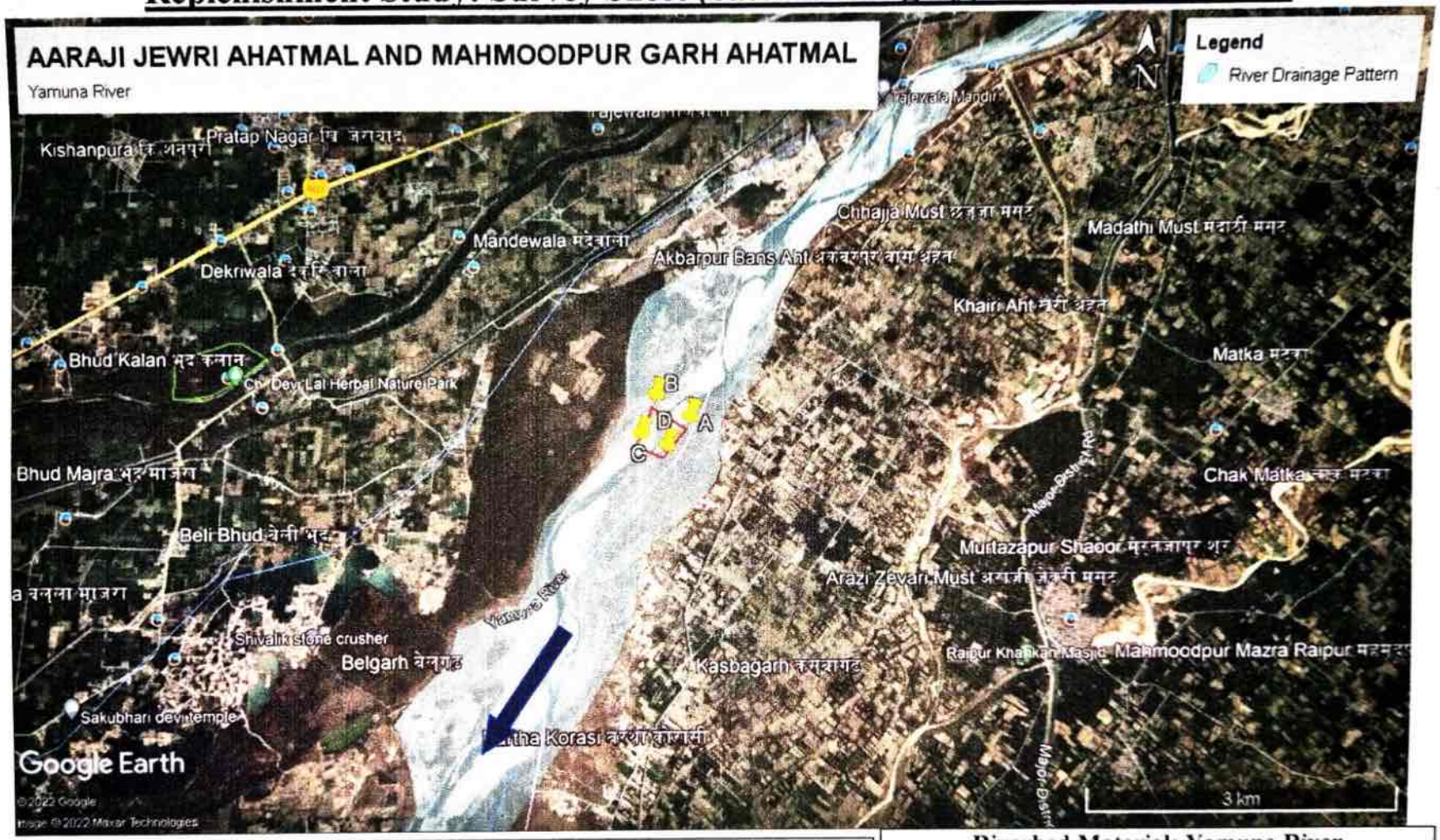
Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (7.00 ha) Gata No. 378/2 & 379/2		
A	30° 15' 52.04" N	77° 39' 22.56" E
B	30° 15' 51.84" N	77° 39' 27.43" E
C	30° 16' 06.24" N	77° 39' 31.26" E
D	30° 16' 07.18" N	77° 39' 25.07" E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Khairawali Ra River		
Survey	Physical, Drone and DGPS	
Survey Area	7.00 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Sherpur Pelon	Behat	Saharanpur
Survey By:		
Verified By:		

1601

Replenishment Study: Survey Sheet (Satellite Imagery)



Pillars	Latitude (N)	Longitude (E)
Sanctioned Mining Lease Area (13.80 ha)		
A	30°15'51.33"N	77°32'21.84"E
B	30°15'58.45"N	77°32'08.63"E
C	30°15'45.65"N	77°32'03.15"N
D	30°15'41.84"N	77°32'13.01"E

LEGEND		
Sl. No.	Symbol	Description
1		Mine Lease Area
2		Drainage Pattern of River
3		Boundary Pillars
4		River Flow Direction
5		Map Scale

Riverbed Material: Yamuna River		
Survey	Physical, Drone and DGPS	
Survey Area	13.80 ha (Upto 3.0 m depth)	
Date of Survey		
Village	Tehsil	District
Aaraji Jewri Ahatmal And Mahmoodpur Garh Ahatmal;	Behat ; Saharanpur	
Survey By:		
Verified By:		

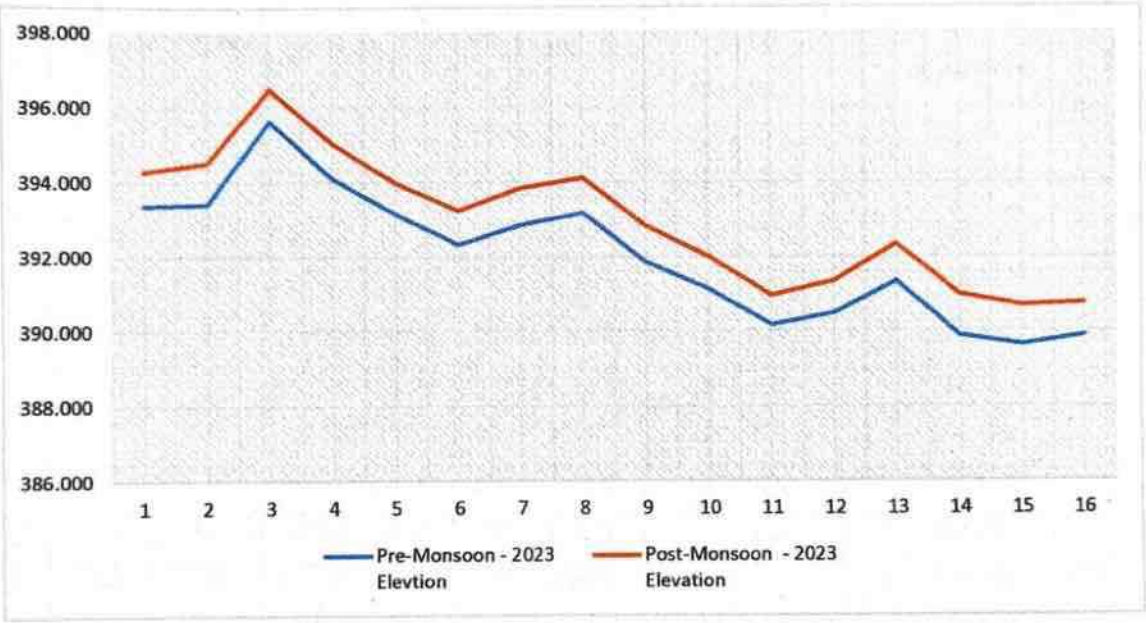
1602

LEASE WISE DGPS SURVEY RECORDS

- **Ground Control Points (GCP) Record Sheet in tabular format**
- **Mapping / Elevation Section of Ground Control Points (GCP)**

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100

Cross Section	Sl.No	Lat.	Long.	Pre-Monsoon - 2023 Elevation	Post-Monsoon - 2023 Elevation
1-1	1	30°19'20.38"N	77°38'26.16"E	393.382	394.294
1-1	2	30°19'19.45"N	77°38'27.07"E	393.414	394.519
1-1	3	30°19'18.40"N	77°38'28.27"E	395.654	396.508
1-1	4	30°19'17.34"N	77°38'29.43"E	394.098	395.050
2-2	5	30°19'16.58"N	77°38'28.32"E	393.173	394.006
2-2	6	30°19'17.48"N	77°38'27.08"E	392.345	393.250
2-2	7	30°19'18.65"N	77°38'25.70"E	392.872	393.856
2-2	8	30°19'19.55"N	77°38'24.90"E	393.190	394.123
3-3	9	30°19'18.83"N	77°38'24.11"E	391.876	392.844
3-3	10	30°19'18.04"N	77°38'25.22"E	391.145	392.010
3-3	11	30°19'16.90"N	77°38'26.20"E	390.168	390.967
3-3	12	30°19'15.59"N	77°38'27.21"E	390.483	391.337
4-4	13	30°19'14.63"N	77°38'25.62"E	391.339	392.337
4-4	14	30°19'15.78"N	77°38'24.18"E	389.887	390.989
4-4	15	30°19'16.69"N	77°38'23.24"E	389.645	390.695
4-4	16	30°19'17.65"N	77°38'22.23"E	389.884	390.758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Pre-Monsoon - 2023 Elevtion
Post-Monsoon - 2023 Elevation

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
2	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000

Section	Sl. No	Lat.	Long.	Pre Monsoon 2023 Elevation	Post Monsoon 2023 Elevation
1-1	1	30°14'1.39"N	77°31'13.73"E	292.522	294.850
1-1	2	30°14'2.47"N	77°31'12.26"E	291.827	294.882
1-1	3	30°14'3.55"N	77°31'10.78"E	292.921	295.446
1-1	4	30°14'4.64"N	77°31'9.30"E	293.126	295.685
1-1	5	30°14'5.74"N	77°31'7.82"E	295.881	296.966
1-1	6	30°14'6.82"N	77°31'6.34"E	294.162	294.788
1-1	7	30°14'7.91"N	77°31'4.86"E	292.722	294.863
1-1	8	30°14'9.01"N	77°31'3.38"E	293.984	295.865
1-1	9	30°14'9.68"N	77°31'2.47"E	293.845	294.952
2-2	10	30°14'10.63"N	77°31'4.09"E	294.725	295.508
2-2	11	30°14'9.97"N	77°31'4.98"E	295.625	295.991
2-2	12	30°14'8.88"N	77°31'6.46"E	292.711	294.498
2-2	13	30°14'7.83"N	77°31'7.91"E	291.522	294.468
2-2	14	30°14'6.74"N	77°31'9.40"E	294.112	295.972
2-2	15	30°14'5.62"N	77°31'10.90"E	296.105	297.896
2-2	16	30°14'4.57"N	77°31'12.38"E	295.718	297.484
2-2	17	30°14'3.44"N	77°31'13.86"E	293.722	298.689
3-3	18	30°14'4.53"N	77°31'15.44"E	294.984	298.658
3-3	19	30°14'5.57"N	77°31'13.95"E	295.945	297.594
3-3	20	30°14'6.63"N	77°31'12.46"E	295.132	295.884
3-3	21	30°14'7.72"N	77°31'10.98"E	295.828	297.488
3-3	22	30°14'8.84"N	77°31'9.46"E	294.135	297.776

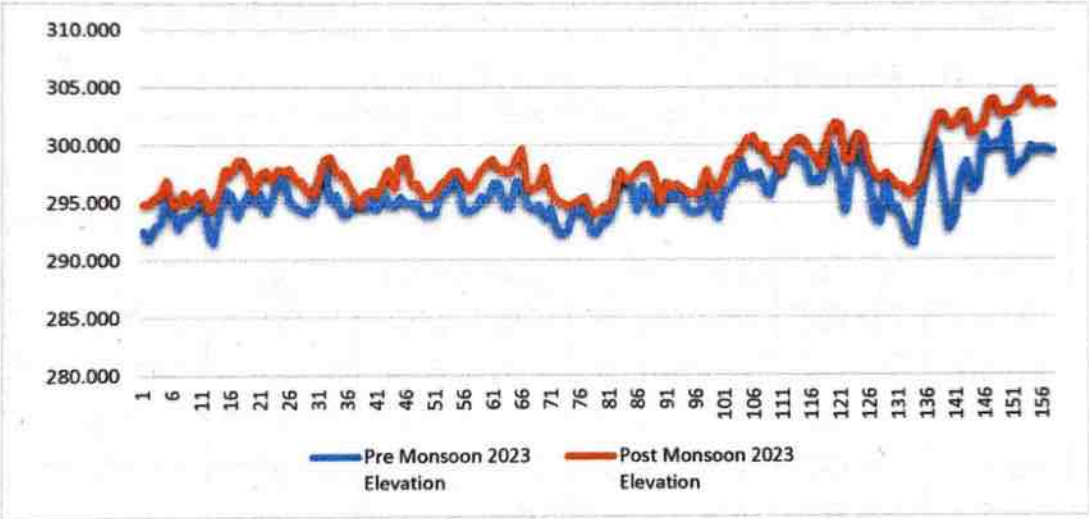
3-3	23	30°14'9.89"N	77°31'7.98"E	295.448	296.967
3-3	24	30°14'10.94"N	77°31'6.57"E	297.166	297.909
3-3	25	77°31'6.57"E	77°31'5.69"E	297.108	297.647
4-4	26	30°14'12.50"N	77°31'7.29"E	295.106	297.982
4-4	27	30°14'11.91"N	77°31'8.13"E	294.708	296.966
4-4	28	30°14'10.88"N	77°31'9.53"E	294.306	296.896
4-4	29	30°14'9.87"N	77°31'10.95"E	294.135	295.998
4-4	30	30°14'8.75"N	77°31'12.46"E	294.666	295.658
4-4	31	30°14'7.70"N	77°31'13.95"E	296.708	296.844
4-4	32	30°14'6.63"N	77°31'15.48"E	298.514	298.772
4-4	33	30°14'5.53"N	77°31'17.01"E	295.147	298.958
5-5	34	30°14'7.64"N	77°31'17.06"E	295.736	297.642
5-5	35	30°14'8.74"N	77°31'15.55"E	293.965	297.568
5-5	36	30°14'9.79"N	77°31'14.04"E	293.955	296.665
5-5	37	30°14'10.87"N	77°31'12.50"E	294.948	295.758
5-5	38	30°14'11.87"N	77°31'11.14"E	294.828	294.658
5-5	39	30°14'12.87"N	77°31'9.72"E	294.548	295.741
5-5	40	30°14'13.46"N	77°31'8.90"E	295.248	295.995
6-6	41	30°14'14.42"N	77°31'10.49"E	294.368	295.633
6-6	42	77°31'10.49"E	77°31'11.30"E	295.958	296.705
6-6	43	30°14'12.85"N	77°31'12.72"E	294.948	297.835
6-6	44	30°14'11.91"N	77°31'14.08"E	294.682	296.214
6-6	45	30°14'10.85"N	77°31'15.62"E	295.538	298.811
6-6	46	30°14'9.79"N	77°31'17.09"E	294.947	298.935
6-6	47	30°14'8.68"N	77°31'18.64"E	294.966	296.568
7-7	48	30°14'10.61"N	77°31'18.88"E	294.974	296.658
7-7	49	30°14'11.65"N	77°31'17.37"E	293.923	295.547
7-7	50	30°14'12.76"N	77°31'15.79"E	293.947	295.568
7-7	51	30°14'13.76"N	77°31'14.35"E	293.966	295.785
7-7	52	30°14'14.83"N	77°31'12.88"E	295.822	296.654
7-7	53	30°14'15.36"N	77°31'12.11"E	295.974	296.958
8-8	54	30°14'16.31"N	77°31'13.72"E	296.966	297.655

8-8	55	30°14'15.79"N	77°31'14.48"E	296.858	297.799
8-8	56	30°14'14.72"N	77°31'16.00"E	294.264	296.855
8-8	57	30°14'13.75"N	77°31'17.38"E	294.367	296.125
8-8	58	30°14'12.69"N	77°31'18.90"E	294.449	296.863
8-8	59	30°14'11.67"N	77°31'20.41"E	295.588	297.866
9-9	60	30°14'12.71"N	77°31'21.92"E	295.225	298.458
9-9	61	30°14'13.70"N	77°31'20.47"E	296.747	298.792
9-9	62	30°14'14.74"N	77°31'18.97"E	296.698	297.856
9-9	63	30°14'15.68"N	77°31'17.60"E	294.848	297.948
9-9	64	30°14'16.72"N	77°31'16.10"E	294.552	297.542
9-9	65	30°14'17.26"N	77°31'15.33"E	296.894	298.814
10-10	66	30°14'18.21"N	77°31'16.94"E	296.647	299.692
10-10	67	30°14'17.69"N	77°31'17.71"E	294.766	296.124
10-10	68	30°14'16.67"N	77°31'19.22"E	294.438	296.245
10-10	69	30°14'15.75"N	77°31'20.61"E	294.858	296.515
10-10	70	30°14'14.81"N	77°31'22.04"E	293.568	298.135
11-11	71	30°14'15.79"N	77°31'23.56"E	294.608	296.108
11-11	72	30°14'16.69"N	77°31'22.18"E	292.774	295.254
11-11	73	30°14'17.66"N	77°31'20.78"E	292.199	295.008
11-11	74	30°14'18.63"N	77°31'19.31"E	292.478	294.766
11-11	75	30°14'19.18"N	77°31'18.56"E	294.899	294.864
12-12	76	30°14'20.11"N	77°31'20.20"E	294.005	295.242
12-12	77	30°14'19.59"N	77°31'20.92"E	294.688	295.555
12-12	78	30°14'18.59"N	77°31'22.46"E	292.647	294.208
12-12	79	30°14'17.53"N	77°31'24.00"E	292.338	294.006
12-12	80	30°14'16.52"N	77°31'25.55"E	293.384	294.652
12-12	81	30°14'15.46"N	77°31'27.08"E	293.377	294.366
13-13	82	30°14'14.37"N	77°31'31.83"E	294.844	295.384
13-13	83	30°14'15.39"N	77°31'30.25"E	297.517	297.771
13-13	84	30°14'16.45"N	77°31'28.69"E	296.847	296.875
13-13	85	30°14'17.47"N	77°31'27.16"E	296.548	297.168
13-13	86	30°14'18.50"N	77°31'25.62"E	294.266	297.633

13-13	87	30°14'19.54"N	77°31'24.07"E	296.458	298.288
13-13	88	30°14'20.55"N	77°31'22.51"E	295.708	298.382
13-13	89	30°14'21.07"N	77°31'21.78"E	294.244	297.406
14-14	90	30°14'22.03"N	77°31'23.41"E	294.208	295.080
14-14	91	30°14'21.55"N	77°31'24.12"E	296.355	296.793
14-14	92	30°14'20.51"N	77°31'25.66"E	295.378	296.356
14-14	93	30°14'19.50"N	77°31'27.19"E	296.225	296.605
14-14	94	30°14'18.47"N	77°31'28.69"E	295.108	296.255
14-14	95	30°14'17.42"N	77°31'30.28"E	294.238	295.798
14-14	96	30°14'16.35"N	77°31'31.84"E	294.284	295.859
14-14	97	30°14'15.49"N	77°31'33.15"E	294.206	295.809
15-15	98	30°14'17.33"N	77°31'33.44"E	297.158	297.892
15-15	99	30°14'18.40"N	77°31'31.86"E	294.744	296.257
15-15	100	30°14'19.40"N	77°31'30.39"E	293.617	296.372
15-15	101	30°14'20.44"N	77°31'28.79"E	296.068	297.299
15-15	102	30°14'21.49"N	77°31'27.25"E	296.192	298.764
15-15	103	30°14'22.48"N	77°31'25.69"E	296.856	298.896
15-15	104	30°14'22.96"N	77°31'25.01"E	298.747	299.531
16-16	105	30°14'23.94"N	77°31'26.62"E	297.265	300.585
16-16	106	30°14'23.47"N	77°31'27.33"E	297.358	300.744
16-16	107	30°14'22.45"N	77°31'28.86"E	297.665	299.682
16-16	108	30°14'21.41"N	77°31'30.41"E	296.475	299.980
16-16	109	30°14'20.39"N	77°31'31.94"E	295.661	298.556
16-16	110	30°14'19.36"N	77°31'33.43"E	297.685	298.732
16-16	111	30°14'18.35"N	77°31'34.98"E	297.472	297.628
17-17	112	30°14'19.32"N	77°31'36.60"E	299.166	299.861
17-17	113	30°14'20.38"N	77°31'35.04"E	299.299	300.366
17-17	114	30°14'21.39"N	77°31'33.52"E	298.908	300.628
17-17	115	30°14'22.38"N	77°31'32.06"E	298.677	300.282
17-17	116	30°14'23.44"N	77°31'30.50"E	296.820	299.344
17-17	117	30°14'24.47"N	77°31'28.95"E	297.068	299.001
17-17	118	30°14'24.89"N	77°31'28.24"E	296.899	298.060

18-18	119	30°14'25.89"N	77°31'29.91"E	300.214	300.688
18-18	120	30°14'24.87"N	77°31'31.47"E	298.908	301.958
18-18	121	30°14'23.82"N	77°31'33.04"E	296.906	301.806
18-18	122	30°14'22.78"N	77°31'34.58"E	294.204	298.746
18-18	123	30°14'21.73"N	77°31'36.14"E	298.116	298.755
18-18	124	30°14'20.71"N	77°31'37.68"E	300.874	300.993
19-19	125	30°14'22.37"N	77°31'37.96"E	298.455	300.668
19-19	126	30°14'23.34"N	77°31'36.64"E	297.462	298.628
19-19	127	30°14'24.40"N	77°31'35.15"E	293.941	297.417
19-19	128	30°14'25.44"N	77°31'33.60"E	293.234	297.006
19-19	129	30°14'26.41"N	77°31'32.16"E	296.948	297.582
19-19	130	30°14'27.44"N	77°31'30.79"E	294.385	296.998
20-20	131	30°14'28.95"N	77°31'31.66"E	294.655	296.437
20-20	132	30°14'27.97"N	77°31'33.08"E	293.299	296.385
20-20	133	30°14'26.95"N	77°31'34.54"E	291.855	295.566
20-20	134	30°14'25.88"N	77°31'36.06"E	291.416	296.448
20-20	135	30°14'24.82"N	77°31'37.56"E	294.777	296.765
21-21	136	30°14'26.32"N	77°31'38.48"E	298.006	298.772
21-21	137	30°14'27.37"N	77°31'36.98"E	300.873	300.769
21-21	138	30°14'28.45"N	77°31'35.44"E	299.927	302.741
21-21	139	30°14'29.47"N	77°31'33.99"E	295.968	302.728
21-21	140	30°14'30.48"N	77°31'32.52"E	292.648	301.733
22-22	141	30°14'32.01"N	77°31'33.40"E	293.733	301.744
22-22	142	30°14'30.98"N	77°31'34.88"E	297.447	302.808
22-22	143	30°14'29.99"N	77°31'36.38"E	298.653	302.885
22-22	144	30°14'28.85"N	77°31'37.93"E	296.066	300.855
23-23	145	30°14'30.34"N	77°31'38.81"E	296.582	301.566
23-23	146	30°14'31.44"N	77°31'37.28"E	300.841	301.709
23-23	147	30°14'32.49"N	77°31'35.78"E	299.628	303.933
23-23	148	30°14'33.51"N	77°31'34.28"E	300.252	303.988
24-24	149	30°14'35.03"N	77°31'35.17"E	299.766	302.708
24-24	150	30°14'33.98"N	77°31'36.69"E	301.808	302.933

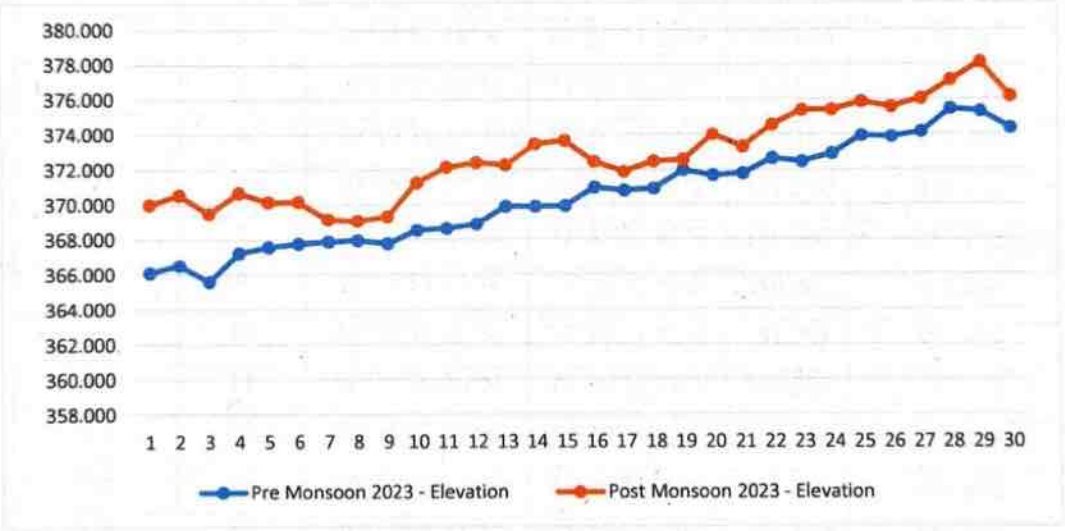
24-24	151	30°14'32.96"N	77°31'38.18"E	297.566	303.114
24-24	152	30°14'31.85"N	77°31'39.75"E	298.444	303.376
25-25	153	30°14'34.43"N	77°31'39.09"E	298.598	304.655
25-25	154	30°14'35.48"N	77°31'37.57"E	299.966	304.892
25-25	155	30°14'36.54"N	77°31'36.03"E	299.568	303.553
26-26	156	30°14'38.05"N	77°31'36.89"E	299.789	303.847
26-26	157	30°14'36.99"N	77°31'38.49"E	299.668	303.953
26-26	158	30°14'35.91"N	77°31'40.02"E	299.468	303.476



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
3	Behat	R.B.M.	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023 - Elevation	Post Monsoon 2023 - Elevation
1-1	1	30°15'20.17"N	77°40'42.82"E	366.122	370.005
1-1	2	30°15'19.28"N	77°40'43.06"E	366.532	370.554
1-1	3	30°15'18.26"N	77°40'43.32"E	365.582	369.487
2-2	4	30°15'18.29"N	77°40'45.06"E	367.234	370.665
2-2	5	30°15'19.30"N	77°40'45.01"E	367.566	370.151
2-2	6	30°15'20.35"N	77°40'44.83"E	367.765	370.167
3-3	7	30°15'20.32"N	77°40'46.72"E	367.872	369.157
3-3	8	30°15'19.35"N	77°40'46.73"E	367.944	369.068
3-3	9	30°15'18.30"N	77°40'46.74"E	367.765	369.312
4-4	10	30°15'18.32"N	77°40'48.28"E	368.522	371.259
4-4	11	30°15'19.30"N	77°40'48.29"E	368.645	372.154
4-4	12	30°15'20.35"N	77°40'48.26"E	368.877	372.425
5-5	13	30°15'20.32"N	77°40'50.23"E	369.902	372.282
5-5	14	30°15'19.32"N	77°40'50.20"E	369.891	373.455
5-5	15	30°15'18.34"N	77°40'50.28"E	369.922	373.656
6-6	16	30°15'18.34"N	77°40'52.50"E	370.956	372.456
6-6	17	30°15'19.37"N	77°40'52.53"E	370.788	371.888
6-6	18	30°15'20.32"N	77°40'52.51"E	370.890	372.467
7-7	19	30°15'20.31"N	77°40'54.36"E	371.952	372.555

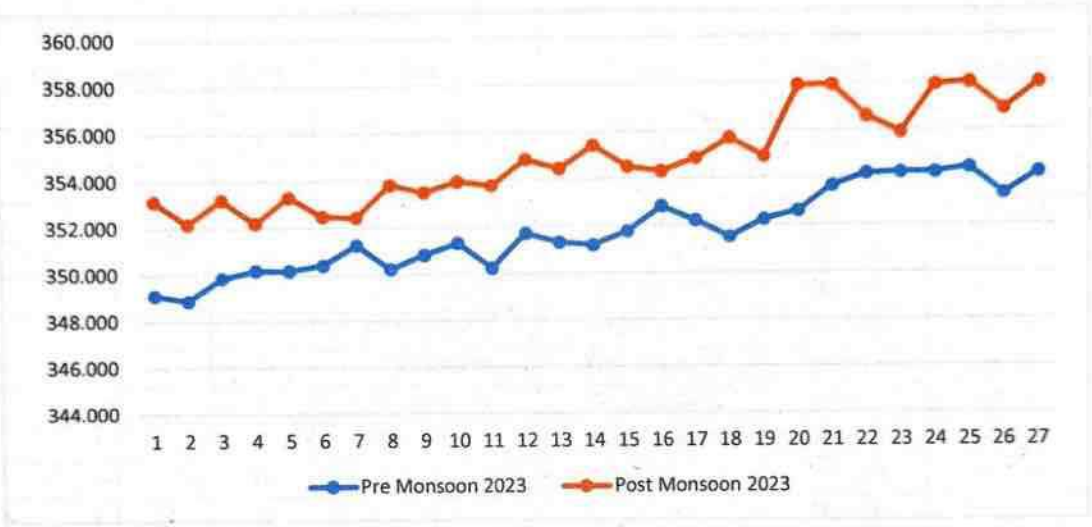
7-7	20	30°15'19.14"N	77°40'54.42"E	371.647	373.989
7-7	21	30°15'18.17"N	77°40'54.38"E	371.772	373.289
8-8	22	30°15'18.36"N	77°40'56.30"E	372.631	374.547
8-8	23	30°15'19.38"N	77°40'56.26"E	372.451	375.386
8-8	24	30°15'20.31"N	77°40'56.24"E	372.892	375.394
9-9	25	30°15'20.22"N	77°40'57.84"E	373.908	375.842
9-9	26	30°15'19.26"N	77°40'57.97"E	373.846	375.557
9-9	27	30°15'18.41"N	77°40'58.03"E	374.133	376.020
10-10	28	30°15'18.42"N	77°41'0.14"E	375.444	377.088
10-10	29	30°15'19.34"N	77°41'0.13"E	375.304	378.110
10-10	30	30°15'20.20"N	77°40'59.96"E	374.356	376.158



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
4	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°15'52.54"N	77°39'23.28"E	349.098	353.121
1-1	2	30°15'52.42"N	77°39'24.88"E	348.862	352.166
1-1	3	30°15'52.35"N	77°39'26.74"E	349.844	353.192
2-2	4	30°15'53.58"N	77°39'27.13"E	350.176	352.192
2-2	5	30°15'53.80"N	77°39'25.40"E	350.166	353.288
2-2	6	30°15'54.18"N	77°39'23.49"E	350.382	352.466
3-3	7	30°15'55.51"N	77°39'23.68"E	351.230	352.410
3-3	8	30°15'55.22"N	77°39'25.61"E	350.208	353.792
3-3	9	30°15'54.83"N	77°39'27.59"E	350.802	353.466
4-4	10	30°15'56.25"N	77°39'27.92"E	351.298	353.922
4-4	11	30°15'56.76"N	77°39'25.93"E	350.228	353.733
4-4	12	30°15'57.17"N	77°39'24.12"E	351.709	354.823
5-5	13	30°15'58.74"N	77°39'24.28"E	351.302	354.432
5-5	14	30°15'58.41"N	77°39'26.30"E	351.177	355.402
5-5	15	30°15'58.05"N	77°39'28.36"E	351.771	354.492
6-6	16	30°15'59.44"N	77°39'28.78"E	352.802	354.305
6-6	17	30°15'59.85"N	77°39'26.66"E	352.203	354.824
6-6	18	30°16'0.17"N	77°39'24.66"E	351.501	355.682
7-7	19	30°16'1.97"N	77°39'24.80"E	352.236	354.890
7-7	20	30°16'1.49"N	77°39'26.86"E	352.588	357.902
7-7	21	30°16'1.43"N	77°39'29.36"E	353.656	357.904
8-8	22	30°16'2.96"N	77°39'28.97"E	354.166	356.582

8-8	23	30°16'3.24"N	77°39'27.39"E	354.204	355.891
8-8	24	30°16'3.71"N	77°39'25.23"E	354.209	357.908
9-9	25	30°16'5.22"N	77°39'25.54"E	354.402	357.992
9-9	26	30°16'4.79"N	77°39'27.71"E	353.294	356.863
9-9	27	30°16'4.34"N	77°39'29.78"E	354.193	357.970

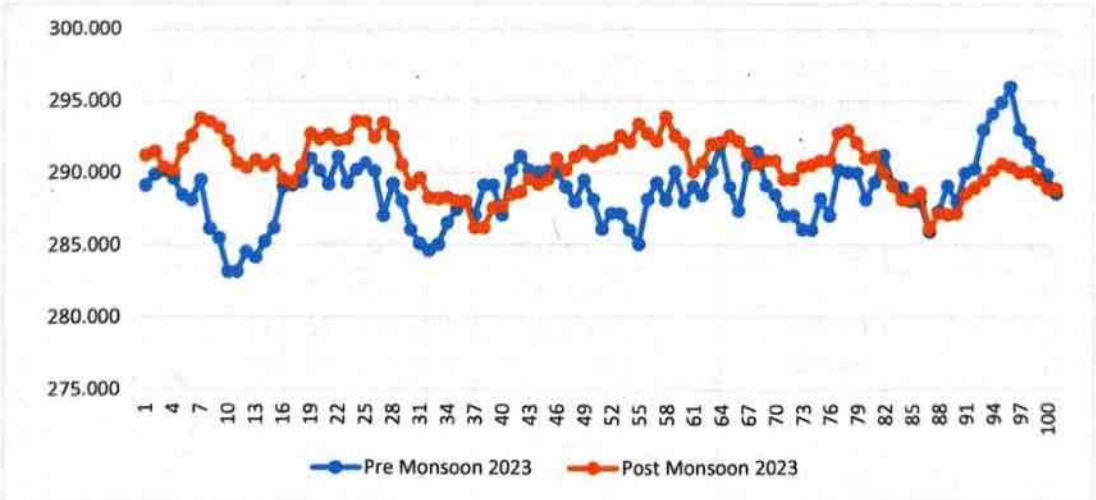


Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
5	Behat	R.B.M.	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laat 38	24.290

Cross Section	Sl.No	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°11'1.66"N	77°29'25.53"E	289.110	291.231
1-1	2	30°11'2.63"N	77°29'24.46"E	289.884	291.478
1-1	3	30°11'3.73"N	77°29'23.32"E	290.112	290.407
1-1	4	30°11'4.95"N	77°29'22.02"E	289.568	290.111
1-1	5	30°11'6.36"N	77°29'20.73"E	288.444	291.658
1-1	6	30°11'7.32"N	77°29'19.44"E	288.102	292.555
1-1	7	30°11'8.60"N	77°29'18.09"E	289.478	293.784
1-1	8	30°11'9.60"N	77°29'16.84"E	286.124	293.545
1-1	9	30°11'10.94"N	77°29'15.32"E	285.452	293.117
1-1	10	30°11'11.83"N	77°29'14.40"E	283.117	292.184
1-1	11	30°11'12.75"N	77°29'13.23"E	283.116	290.695
2-2	12	30°11'13.80"N	77°29'14.38"E	284.487	290.333
2-2	13	30°11'12.89"N	77°29'15.35"E	284.108	290.879
2-2	14	30°11'11.73"N	77°29'16.53"E	285.222	290.487
2-2	15	30°11'10.55"N	77°29'18.05"E	286.164	290.854
2-2	16	30°11'9.54"N	77°29'19.41"E	289.001	289.554
2-2	17	30°11'8.40"N	77°29'20.55"E	289.109	289.332
2-2	18	30°11'7.01"N	77°29'22.04"E	289.356	290.454
2-2	19	30°11'5.81"N	77°29'23.42"E	291.007	292.695
2-2	20	30°11'4.75"N	77°29'24.83"E	290.136	292.302
2-2	21	30°11'3.55"N	77°29'25.96"E	289.196	292.635
2-2	22	30°11'2.35"N	77°29'27.10"E	291.107	292.258
3-3	23	30°11'3.53"N	77°29'28.73"E	289.293	292.353
3-3	24	30°11'4.57"N	77°29'27.51"E	290.197	293.567
3-3	25	30°11'5.58"N	77°29'26.29"E	290.669	293.542
3-3	26	30°11'6.95"N	77°29'24.85"E	290.087	292.458
3-3	27	30°11'7.89"N	77°29'23.43"E	287.004	293.474
3-3	28	30°11'9.22"N	77°29'22.11"E	289.207	292.468
3-3	29	30°11'10.29"N	77°29'20.84"E	288.033	290.555
3-3	30	30°11'11.71"N	77°29'19.42"E	286.012	289.142
3-3	31	30°11'12.86"N	77°29'17.80"E	285.065	289.602
3-3	32	30°11'13.98"N	77°29'16.64"E	284.580	288.252

3-3	33	30°11'14.73"N	77°29'15.73"E	285.011	288.188
4-4	34	30°11'15.98"N	77°29'16.67"E	286.508	288.260
4-4	35	30°11'14.91"N	77°29'17.94"E	287.420	288.032
4-4	36	30°11'14.04"N	77°29'19.00"E	288.012	287.989
4-4	37	30°11'12.80"N	77°29'20.52"E	287.017	286.180
4-4	38	30°11'11.54"N	77°29'21.80"E	289.101	286.176
4-4	39	30°11'10.55"N	77°29'23.12"E	289.109	287.557
4-4	40	30°11'9.16"N	77°29'24.65"E	287.035	287.669
4-4	41	30°11'8.07"N	77°29'26.06"E	290.117	288.458
4-4	42	30°11'6.95"N	77°29'27.39"E	291.133	288.658
4-4	43	30°11'5.80"N	77°29'28.64"E	290.145	289.545
4-4	44	30°11'5.09"N	77°29'29.60"E	290.039	289.172
5-5	45	30°11'7.05"N	77°29'30.19"E	290.111	289.485
5-5	46	30°11'8.04"N	77°29'29.07"E	290.002	290.999
5-5	47	30°11'9.33"N	77°29'27.62"E	289.004	290.168
5-5	48	30°11'10.56"N	77°29'25.82"E	287.994	291.111
5-5	49	30°11'11.63"N	77°29'24.30"E	289.454	291.475
5-5	50	30°11'12.93"N	77°29'23.03"E	288.117	291.165
5-5	51	30°11'14.07"N	77°29'21.70"E	286.080	291.529
5-5	52	30°11'15.39"N	77°29'20.27"E	287.181	291.666
5-5	53	30°11'16.11"N	77°29'19.21"E	287.145	292.531
5-5	54	30°11'16.99"N	77°29'17.96"E	286.010	292.098
6-6	55	30°11'18.47"N	77°29'19.59"E	285.041	293.383
6-6	56	30°11'17.63"N	77°29'20.71"E	288.142	292.690
6-6	57	30°11'16.48"N	77°29'22.02"E	289.289	292.189
6-6	58	30°11'15.37"N	77°29'23.17"E	288.100	293.870
6-6	59	30°11'14.29"N	77°29'24.21"E	290.077	292.548
6-6	60	30°11'13.40"N	77°29'25.79"E	288.011	292.004
6-6	61	30°11'12.46"N	77°29'27.22"E	289.031	290.054
6-6	62	30°11'10.99"N	77°29'28.61"E	288.444	290.687
6-6	63	30°11'10.11"N	77°29'29.90"E	290.118	291.986
7-7	64	30°11'11.06"N	77°29'31.36"E	292.032	292.111
7-7	65	30°11'11.97"N	77°29'30.27"E	289.002	292.549
7-7	66	30°11'13.29"N	77°29'28.78"E	287.337	292.159
7-7	67	30°11'14.22"N	77°29'27.54"E	290.489	291.357
7-7	68	30°11'15.36"N	77°29'26.20"E	291.487	290.645
7-7	69	30°11'16.53"N	77°29'24.54"E	289.112	290.851
7-7	70	30°11'17.89"N	77°29'23.18"E	288.485	290.862
7-7	71	30°11'18.95"N	77°29'21.90"E	287.017	289.557
7-7	72	30°11'19.72"N	77°29'20.95"E	287.031	289.552
8-8	73	30°11'21.02"N	77°29'22.36"E	286.047	290.421
8-8	74	30°11'20.04"N	77°29'23.59"E	286.035	290.563
8-8	75	30°11'19.12"N	77°29'24.53"E	288.201	290.844
8-8	76	30°11'18.16"N	77°29'25.91"E	287.019	290.865
8-8	77	30°11'16.84"N	77°29'27.52"E	290.198	292.755

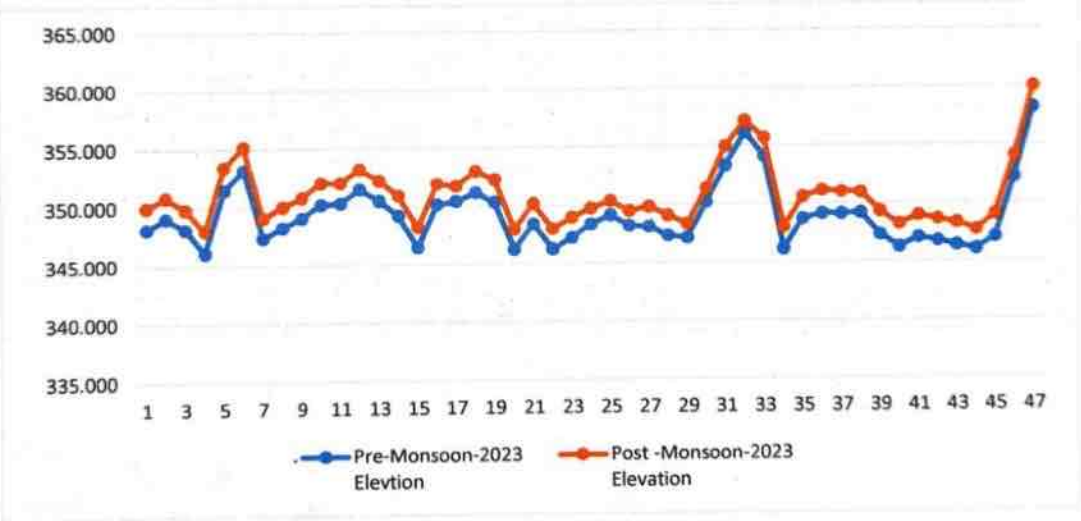
8-8	78	30°11'15.64"N	77°29'28.96"E	290.027	292.950
8-8	79	30°11'14.64"N	77°29'30.17"E	290.001	292.101
8-8	80	30°11'13.44"N	77°29'31.78"E	288.159	291.008
9-9	81	30°11'15.28"N	77°29'32.06"E	289.357	291.141
9-9	82	30°11'16.59"N	77°29'30.84"E	291.258	290.008
9-9	83	30°11'17.88"N	77°29'29.22"E	289.147	289.087
9-9	84	30°11'18.86"N	77°29'27.64"E	289.008	288.164
9-9	85	30°11'19.86"N	77°29'26.37"E	288.026	288.174
9-9	86	30°11'20.97"N	77°29'24.89"E	288.007	288.658
9-9	87	30°11'22.12"N	77°29'23.71"E	285.912	286.113
10-10	88	30°11'23.32"N	77°29'25.06"E	287.369	287.227
10-10	89	30°11'22.24"N	77°29'25.86"E	289.116	287.101
10-10	90	30°11'21.04"N	77°29'27.45"E	288.012	287.182
10-10	91	30°11'19.99"N	77°29'28.70"E	289.998	288.557
10-10	92	30°11'19.20"N	77°29'29.79"E	290.268	288.964
10-10	93	30°11'17.96"N	77°29'31.33"E	293.019	289.481
10-10	94	30°11'16.79"N	77°29'32.60"E	294.157	290.184
11-11	95	30°11'17.45"N	77°29'33.97"E	294.945	290.664
11-11	96	30°11'18.89"N	77°29'33.05"E	296.015	290.438
11-11	97	30°11'20.16"N	77°29'31.97"E	293.058	290.009
11-11	98	30°11'20.80"N	77°29'30.31"E	292.165	290.115
11-11	99	30°11'22.01"N	77°29'28.85"E	290.908	289.612
11-11	100	30°11'23.28"N	77°29'27.17"E	289.887	288.961
11-11	101	30°11'24.28"N	77°29'26.23"E	288.608	288.918



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
6	Behat	R.B.M.	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050

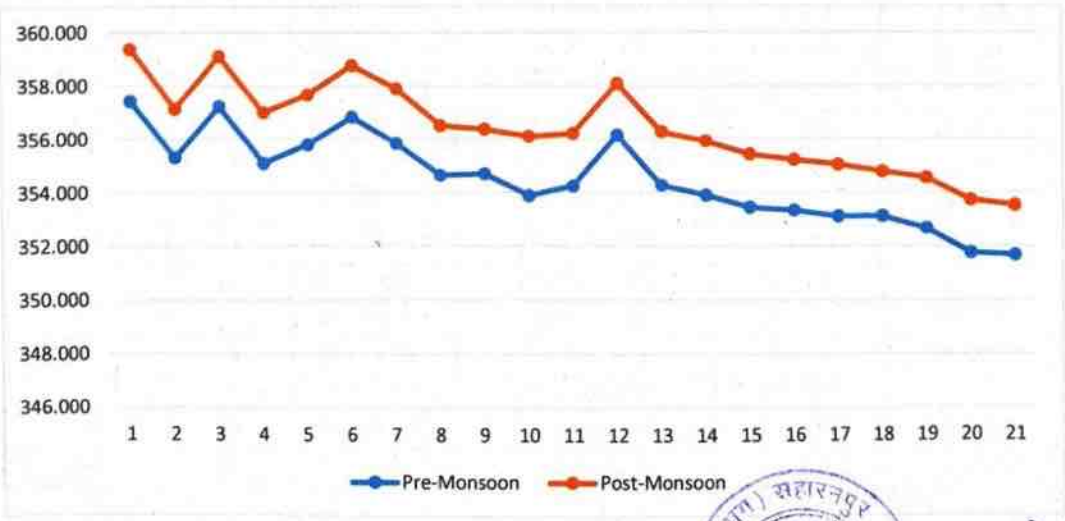
Cross Section	Sl.No	Lat.	Long.	Pre-Monsoon-2023 Elevtion	Post -Monsoon-2023 Elevation
1-1	1	30°21'36.29"N	77°36'5.48"E	348.133	350.013
1-1	2	30°21'37.76"N	77°36'4.62"E	349.100	350.860
1-1	3	30°21'39.20"N	77°36'3.73"E	348.123	349.848
1-1	4	30°21'40.65"N	77°36'2.86"E	346.101	347.991
1-1	5	30°21'41.68"N	77°36'2.29"E	351.476	353.436
2-2	6	30°21'40.97"N	77°36'0.08"E	353.202	355.172
2-2	7	30°21'40.03"N	77°36'1.12"E	347.332	349.082
2-2	8	30°21'38.73"N	77°36'2.31"E	348.241	350.021
2-2	9	30°21'37.65"N	77°36'3.46"E	349.066	350.796
2-2	10	30°21'36.45"N	77°36'4.74"E	350.208	352.058
2-2	11	30°21'35.93"N	77°36'5.21"E	350.311	352.046
3-3	12	30°21'34.57"N	77°36'4.12"E	351.489	353.225
3-3	13	30°21'35.70"N	77°36'3.01"E	350.488	352.216
3-3	14	30°21'36.95"N	77°36'1.72"E	349.210	350.932
3-3	15	30°21'38.08"N	77°36'0.52"E	346.455	348.210
3-3	16	30°21'39.27"N	77°35'59.25"E	350.133	351.899
3-3	17	30°21'40.32"N	77°35'58.12"E	350.399	351.723
4-4	18	30°21'39.75"N	77°35'56.31"E	351.122	352.976
4-4	19	30°21'38.65"N	77°35'57.51"E	350.301	352.259
4-4	20	30°21'37.44"N	77°35'58.74"E	346.222	347.957
4-4	21	30°21'36.27"N	77°35'59.95"E	348.388	350.144
4-4	22	30°21'35.11"N	77°36'1.18"E	346.231	347.962
4-4	23	30°21'33.92"N	77°36'2.49"E	347.192	348.936
4-4	24	30°21'33.58"N	77°36'3.38"E	348.344	349.729
5-5	25	30°21'32.07"N	77°36'2.17"E	349.103	350.328
5-5	26	30°21'33.27"N	77°36'0.87"E	348.192	349.446
5-5	27	30°21'34.51"N	77°35'59.55"E	348.102	349.826
5-5	28	30°21'35.64"N	77°35'58.32"E	347.308	349.074
5-5	29	30°21'36.80"N	77°35'57.03"E	347.122	348.336
5-5	30	30°21'38.00"N	77°35'55.71"E	350.188	351.356

5-5	31	30°21'39.15"N	77°35'54.48"E	353.292	354.950
6-6	32	30°21'38.58"N	77°35'52.65"E	356.124	357.152
6-6	33	30°21'37.34"N	77°35'53.96"E	354.102	355.686
6-6	34	30°21'36.19"N	77°35'55.27"E	346.103	348.002
6-6	35	30°21'34.96"N	77°35'56.62"E	348.708	350.572
6-6	36	30°21'33.79"N	77°35'57.90"E	349.144	351.108
6-6	37	30°21'32.58"N	77°35'59.32"E	349.124	350.979
6-6	38	30°21'31.38"N	77°36'0.53"E	349.192	350.939
6-6	39	30°21'30.80"N	77°36'1.16"E	347.302	349.298
7-7	40	30°21'29.58"N	77°36'0.22"E	346.222	348.210
7-7	41	30°21'30.73"N	77°35'58.92"E	347.022	348.950
7-7	42	30°21'31.93"N	77°35'57.56"E	346.733	348.618
7-7	43	30°21'33.13"N	77°35'56.25"E	346.347	348.311
7-7	44	30°21'34.29"N	77°35'54.87"E	346.022	347.680
7-7	45	30°21'35.54"N	77°35'53.58"E	347.039	349.005
7-7	46	30°21'36.75"N	77°35'52.26"E	352.211	354.055
7-7	47	30°21'37.96"N	77°35'50.83"E	358.166	360.000



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
7	Behat	R.B.M.	Gaisara Rao	Rahena	Gata No. 179/2	3.750

Cross Section	Sl.No	Lat.	Long.	Pre-Monsoon	Post-Monsoon
1-1	1	30°19'55.66"N	77°36'32.17"E	357.433	359.385
1-1	2	30°19'54.29"N	77°36'32.46"E	355.318	357.142
1-1	3	30°19'52.92"N	77°36'32.76"E	357.231	359.097
2-2	4	30°19'52.60"N	77°36'30.90"E	355.100	356.999
2-2	5	30°19'53.97"N	77°36'30.62"E	355.788	357.660
2-2	6	30°19'55.34"N	77°36'30.35"E	356.822	358.750
3-3	7	30°19'55.01"N	77°36'28.53"E	355.834	357.892
3-3	8	30°19'53.65"N	77°36'28.79"E	354.645	356.500
3-3	9	30°19'52.27"N	77°36'29.07"E	354.699	356.363
4-4	10	30°19'51.96"N	77°36'27.24"E	353.871	356.089
4-4	11	30°19'53.34"N	77°36'26.96"E	354.236	356.200
4-4	12	30°19'54.70"N	77°36'26.68"E	356.138	358.071
5-5	13	30°19'54.39"N	77°36'24.82"E	354.274	356.272
5-5	14	30°19'53.02"N	77°36'25.10"E	353.898	355.934
5-5	15	30°19'51.66"N	77°36'25.37"E	353.449	355.423
6-6	16	30°19'51.35"N	77°36'23.55"E	353.344	355.229
6-6	17	30°19'52.69"N	77°36'23.28"E	353.122	355.050
6-6	18	30°19'54.07"N	77°36'22.98"E	353.129	354.797
7-7	19	30°19'53.74"N	77°36'21.13"E	352.674	354.559
7-7	20	30°19'52.38"N	77°36'21.44"E	351.760	353.728
7-7	21	30°19'51.05"N	77°36'21.72"E	351.688	353.538



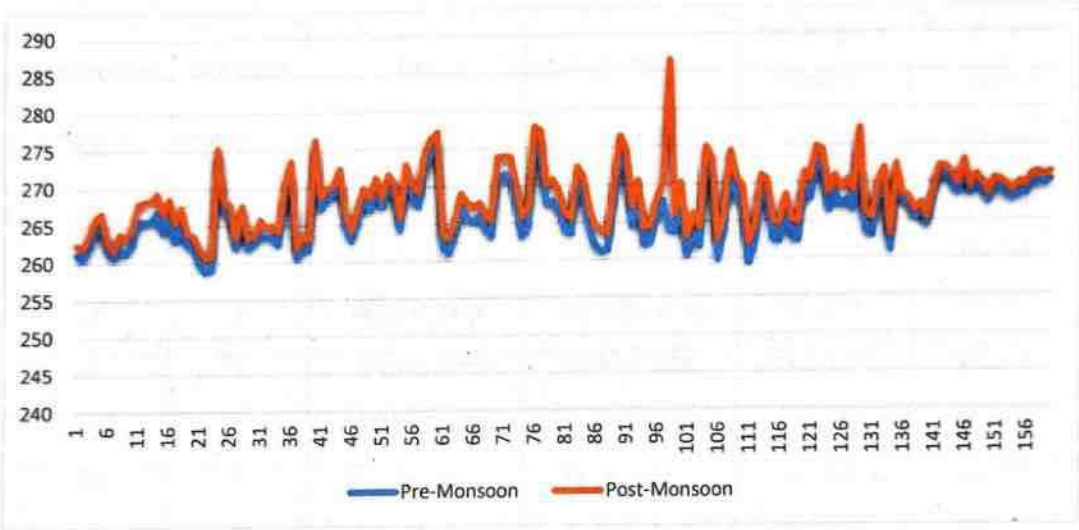
Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
8	Nukur	Sand	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861,863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.630

Cross Section	Ref. Point	Lat.	Long.	Pre-Monsoon	Post-Monsoon
1-1	1	30° 1'22.85"N	77°17'23.37"E	261.133	262.391
1-1	2	30° 1'23.84"N	77°17'21.30"E	260.591	261.949
1-1	3	30° 1'24.91"N	77°17'18.92"E	261.929	263.587
1-1	4	30° 1'25.69"N	77°17'16.86"E	264.629	265.987
2-2	5	30° 1'27.34"N	77°17'17.57"E	264.989	266.647
2-2	6	30° 1'26.79"N	77°17'19.74"E	261.689	262.838
2-2	7	30° 1'26.03"N	77°17'21.90"E	260.701	261.709
2-2	8	30° 1'25.14"N	77°17'24.02"E	261.984	263.942
2-2	9	30° 1'24.38"N	77°17'25.78"E	261.273	263.271
3-3	10	30° 1'24.36"N	77°17'27.99"E	262.497	264.745
3-3	11	30° 1'26.29"N	77°17'27.02"E	265.608	267.846
3-3	12	30° 1'27.23"N	77°17'25.43"E	265.57	268.228
3-3	13	30° 1'28.23"N	77°17'23.17"E	265.636	268.294
3-3	14	30° 1'28.99"N	77°17'21.02"E	266.84	269.298
3-3	15	30° 1'29.64"N	77°17'18.88"E	264.044	266.702
4-4	16	30° 1'31.61"N	77°17'19.93"E	266.211	268.547
4-4	17	30° 1'30.92"N	77°17'21.69"E	262.925	265.473
4-4	18	30° 1'30.30"N	77°17'23.64"E	265.067	267.396
4-4	19	30° 1'29.44"N	77°17'25.55"E	262.421	264.003
4-4	20	30° 1'28.69"N	77°17'27.66"E	262.422	263.705
4-4	21	30° 1'27.78"N	77°17'29.43"E	259.972	261.900
4-4	22	30° 1'27.11"N	77°17'31.29"E	258.816	260.771
5-5	23	30° 1'28.46"N	77°17'32.82"E	259.089	260.974
5-5	24	30° 1'29.66"N	77°17'30.88"E	274.357	275.362
5-5	25	30° 1'30.48"N	77°17'29.16"E	267.224	268.232
5-5	26	30° 1'31.50"N	77°17'27.29"E	266.35	267.685
5-5	27	30° 1'32.58"N	77°17'25.18"E	261.975	263.311
5-5	28	30° 1'33.16"N	77°17'23.15"E	266.429	267.574
5-5	29	30° 1'33.91"N	77°17'21.22"E	261.892	263.287

6-6	30	30° 1'35.90"N	77°17'22.10"E	262.549	263.607
6-6	31	30° 1'35.18"N	77°17'23.89"E	263.784	265.782
6-6	32	30° 1'34.54"N	77°17'25.78"E	263.495	264.832
6-6	33	30° 1'33.77"N	77°17'27.58"E	263.578	264.915
6-6	34	30° 1'32.90"N	77°17'29.29"E	262.375	264.223
6-6	35	30° 1'31.88"N	77°17'31.07"E	268.843	270.501
6-6	36	30° 1'31.18"N	77°17'32.87"E	271.665	273.512
6-6	37	30° 1'30.13"N	77°17'34.69"E	260.578	261.906
7-7	38	30° 1'30.97"N	77°17'36.38"E	262.204	263.462
7-7	39	30° 1'32.22"N	77°17'35.22"E	261.608	262.976
7-7	40	30° 1'33.19"N	77°17'33.51"E	275.12	276.367
7-7	41	30° 1'34.05"N	77°17'31.73"E	267.183	268.841
7-7	42	30° 1'35.06"N	77°17'30.11"E	268.464	269.822
7-7	43	30° 1'36.01"N	77°17'28.40"E	269.11	270.228
7-7	44	30° 1'36.79"N	77°17'26.43"E	270.786	272.484
7-7	45	30° 1'37.49"N	77°17'24.58"E	264.899	266.583
7-7	46	30° 1'38.13"N	77°17'22.84"E	262.856	264.341
8-8	47	30° 1'39.92"N	77°17'23.64"E	265.332	266.979
8-8	48	30° 1'39.38"N	77°17'25.60"E	268.379	269.864
8-8	49	30° 1'38.81"N	77°17'27.46"E	266.91	268.568
8-8	50	30° 1'37.95"N	77°17'29.22"E	269.68	271.228
8-8	51	30° 1'37.09"N	77°17'30.96"E	267.306	268.690
8-8	52	30° 1'36.15"N	77°17'32.70"E	270.024	271.682
8-8	53	30° 1'35.21"N	77°17'34.43"E	268.842	270.499
8-8	54	30° 1'34.26"N	77°17'36.15"E	264.244	265.912
8-8	55	30° 1'33.20"N	77°17'37.72"E	271.468	272.940
8-8	56	30° 1'32.29"N	77°17'39.22"E	268.611	270.082
9-9	57	30° 1'33.99"N	77°17'40.42"E	267.369	269.354
9-9	58	30° 1'35.08"N	77°17'38.90"E	272.401	274.383
9-9	59	30° 1'36.32"N	77°17'37.28"E	274.435	276.430
9-9	60	30° 1'37.33"N	77°17'35.50"E	275.819	277.239
9-9	61	30° 1'38.05"N	77°17'33.74"E	261.909	263.905
9-9	62	30° 1'39.02"N	77°17'32.00"E	261.03	262.977
9-9	63	30° 1'39.91"N	77°17'30.14"E	263.33	265.288
9-9	64	30° 1'40.71"N	77°17'28.18"E	267.114	268.998
9-9	65	30° 1'41.41"N	77°17'26.37"E	265.808	267.776
9-9	66	30° 1'41.88"N	77°17'24.51"E	265.215	267.162
10-10	67	30° 1'41.59"N	77°17'31.65"E	266.1	267.758
10-10	68	30° 1'40.60"N	77°17'33.40"E	264.435	266.083
10-10	69	30° 1'39.81"N	77°17'35.07"E	263.179	265.507
10-10	70	30° 1'38.99"N	77°17'36.98"E	270.833	273.814
10-10	71	30° 1'38.03"N	77°17'38.82"E	271.548	273.873
10-10	72	30° 1'36.89"N	77°17'40.16"E	271.332	273.790
10-10	73	30° 1'35.89"N	77°17'41.75"E	267.812	270.170
11-11	74	30° 1'37.58"N	77°17'42.90"E	263.211	265.869

11-11	75	30° 1'38.76"N	77°17'41.62"E	264.392	267.056
11-11	76	30° 1'39.92"N	77°17'39.89"E	275.391	277.849
11-11	77	30° 1'41.13"N	77°17'38.02"E	274.339	277.297
11-11	78	30° 1'42.16"N	77°17'35.41"E	267.481	270.128
11-11	79	30° 1'43.42"N	77°17'33.32"E	267.965	270.813
12-12	80	30° 1'45.32"N	77°17'34.46"E	266.658	269.280
12-12	81	30° 1'44.26"N	77°17'36.11"E	264.086	266.321
12-12	82	30° 1'43.32"N	77°17'37.81"E	263.559	265.684
12-12	83	30° 1'42.39"N	77°17'39.71"E	270.177	272.432
12-12	84	30° 1'41.31"N	77°17'41.63"E	268.707	271.182
12-12	85	30° 1'40.18"N	77°17'43.25"E	264.323	266.981
12-12	86	30° 1'39.37"N	77°17'44.48"E	261.904	264.562
13-13	87	30° 1'40.97"N	77°17'45.61"E	261.129	264.124
13-13	88	30° 1'42.04"N	77°17'44.13"E	261.276	263.634
13-13	89	30° 1'43.23"N	77°17'42.58"E	267.765	270.223
13-13	90	30° 1'44.22"N	77°17'40.95"E	273.641	276.498
13-13	91	30° 1'45.19"N	77°17'39.20"E	272.154	274.612
13-13	92	30° 1'46.14"N	77°17'37.48"E	264.48	267.064
13-13	93	30° 1'47.22"N	77°17'35.80"E	267.898	270.556
14-14	94	30° 1'48.79"N	77°17'37.05"E	262.005	264.363
14-14	95	30° 1'47.94"N	77°17'38.68"E	262.144	264.509
14-14	96	30° 1'46.92"N	77°17'40.38"E	266.035	268.180
14-14	97	30° 1'45.95"N	77°17'42.23"E	267.816	270.141
14-14	98	30° 1'44.89"N	77°17'44.10"E	263.929	286.475
14-14	99	30° 1'43.75"N	77°17'45.74"E	263.68	266.135
14-14	100	30° 1'43.42"N	77°17'47.98"E	267.536	270.194
15-15	101	30° 1'45.31"N	77°17'47.54"E	260.431	262.959
15-15	102	30° 1'46.46"N	77°17'45.84"E	263.478	266.077
15-15	103	30° 1'47.58"N	77°17'44.14"E	261.61	264.278
15-15	104	30° 1'48.59"N	77°17'42.07"E	272.503	274.936
15-15	105	30° 1'49.55"N	77°17'40.30"E	270.782	273.253
15-15	106	30° 1'50.73"N	77°17'38.65"E	259.873	262.531
16-16	107	30° 1'52.00"N	77°17'40.07"E	263.364	265.853
16-16	108	30° 1'51.33"N	77°17'41.83"E	271.6682	274.326
16-16	109	30° 1'50.39"N	77°17'43.54"E	268.247	270.905
16-16	110	30° 1'49.47"N	77°17'45.55"E	267.188	269.546
16-16	111	30° 1'48.14"N	77°17'47.22"E	259.406	262.064
16-16	112	30° 1'47.16"N	77°17'49.10"E	262.111	264.769
16-16	113	30° 1'46.16"N	77°17'50.81"E	268.707	271.165
17-17	114	30° 1'47.66"N	77°17'52.27"E	268.208	270.573
17-17	115	30° 1'48.49"N	77°17'50.36"E	262.604	265.092
17-17	116	30° 1'49.72"N	77°17'48.89"E	262.338	264.784
17-17	117	30° 1'50.67"N	77°17'47.43"E	265.831	268.489
17-17	118	30° 1'51.63"N	77°17'45.79"E	262.868	265.233
17-17	119	30° 1'52.63"N	77°17'44.21"E	262.431	264.897

18-18	120	30° 1'53.45"N	77°17'46.74"E	268.938	271.506
18-18	121	30° 1'52.56"N	77°17'48.13"E	267.847	270.505
18-18	122	30° 1'51.65"N	77°17'49.56"E	272.42	274.895
18-18	123	30° 1'50.67"N	77°17'51.19"E	272.0243	274.391
18-18	124	30° 1'49.87"N	77°17'52.65"E	266.342	268.799
18-18	125	30° 1'49.01"N	77°17'54.27"E	268.684	271.044
19-19	126	30° 1'50.34"N	77°17'55.95"E	266.935	269.323
19-19	127	30° 1'51.43"N	77°17'54.29"E	267.891	270.363
19-19	128	30° 1'52.29"N	77°17'52.95"E	266.366	269.024
19-19	129	30° 1'52.96"N	77°17'51.66"E	274.608	277.264
19-19	130	30° 1'54.18"N	77°17'50.14"E	263.934	266.205
20-20	131	30° 1'54.89"N	77°17'51.93"E	262.98	265.364
20-20	132	30° 1'54.24"N	77°17'53.41"E	267.665	270.123
20-20	133	30° 1'53.40"N	77°17'54.80"E	269.932	271.986
20-20	134	30° 1'52.52"N	77°17'56.29"E	261.067	263.132
20-20	135	30° 1'51.65"N	77°17'57.83"E	270.423	272.467
21-21	136	30° 1'52.96"N	77°17'59.61"E	267.566	268.601
21-21	137	30° 1'53.80"N	77°17'58.20"E	267.087	268.121
21-21	138	30° 1'54.71"N	77°17'56.73"E	265.269	266.283
21-21	139	30° 1'55.60"N	77°17'55.51"E	266.252	267.287
21-21	140	30° 1'56.44"N	77°17'54.01"E	264.3053	265.339
22-22	141	30° 1'57.42"N	77°17'55.40"E	268.084	269.164
22-22	142	30° 1'56.84"N	77°17'57.04"E	271.153	272.293
22-22	143	30° 1'55.96"N	77°17'58.62"E	270.986	272.136
22-22	144	30° 1'55.04"N	77°18'0.35"E	270.02	271.200
23-23	145	30° 1'56.64"N	77°18'1.23"E	268.534	269.814
23-23	146	30° 1'57.69"N	77°17'59.99"E	271.619	272.999
23-23	147	30° 1'58.60"N	77°17'58.08"E	268.443	269.483
24-24	148	30° 1'59.70"N	77°17'59.99"E	270.012	271.062
24-24	149	30° 1'58.80"N	77°18'1.50"E	268.955	270.055
24-24	150	30° 1'57.79"N	77°18'2.77"E	267.448	268.528
25-25	151	30° 1'58.37"N	77°18'4.85"E	269.214	270.564
25-25	152	30° 1'59.22"N	77°18'3.90"E	269.027	270.267
25-25	153	30° 2'0.37"N	77°18'2.68"E	268.236	269.586
26-26	154	30° 2'1.31"N	77°18'3.98"E	267.773	268.920
26-26	155	30° 2'0.30"N	77°18'5.18"E	268.661	270.018
26-26	156	30° 1'59.40"N	77°18'6.20"E	268.418	269.543
26-26	157	30° 1'58.49"N	77°18'7.40"E	269.75	271.075
27-27	158	30° 2'0.33"N	77°18'7.69"E	269.919	271.254
27-27	159	30° 2'1.44"N	77°18'6.70"E	269.76	270.907
27-27	160	30° 2'2.48"N	77°18'5.67"E	270.215	271.273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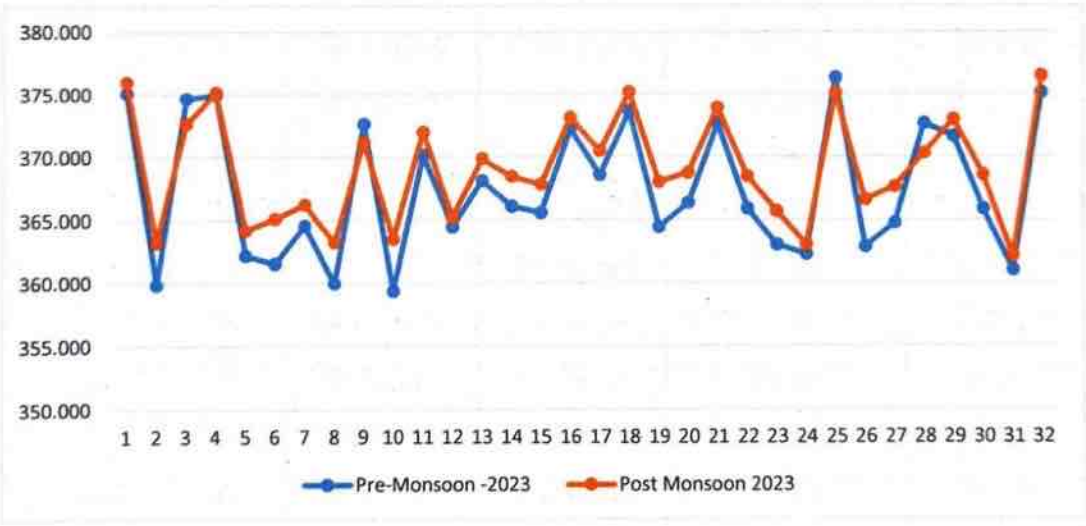
Pre-Monsoon
Post-Monsoon

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
9	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475

Cross Section	Ref. Point	Lat.	Long.	Pre-Monsoon -2023	Post Monsoon 2023
1-1	1	30°16'34.34"N	77°39'44.70"E	375.124	376.009
1-1	2	30°16'33.75"N	77°39'46.29"E	359.852	363.231
1-1	3	30°16'33.05"N	77°39'48.42"E	374.682	372.665
1-1	4	30°16'32.24"N	77°39'50.15"E	374.992	375.185
2-2	5	30°16'31.30"N	77°39'48.97"E	362.177	364.185
2-2	6	30°16'32.06"N	77°39'47.41"E	361.554	365.124
2-2	7	30°16'33.00"N	77°39'45.72"E	364.558	366.239
2-2	8	30°16'33.59"N	77°39'44.15"E	359.958	363.221
3-3	9	30°16'32.38"N	77°39'43.09"E	372.641	371.226
3-3	10	30°16'31.59"N	77°39'44.74"E	359.334	363.445
3-3	11	30°16'30.92"N	77°39'46.34"E	370.128	371.992
3-3	12	30°16'30.11"N	77°39'47.62"E	364.458	365.224
4-4	13	30°16'29.00"N	77°39'46.19"E	368.127	369.856
4-4	14	30°16'29.80"N	77°39'44.95"E	366.052	368.456
4-4	15	30°16'30.60"N	77°39'43.58"E	365.556	367.822
4-4	16	30°16'31.40"N	77°39'41.99"E	372.224	373.129
5-5	17	30°16'29.83"N	77°39'40.81"E	368.564	370.487
5-5	18	30°16'28.82"N	77°39'42.80"E	373.663	375.182
5-5	19	30°16'27.72"N	77°39'44.55"E	364.411	368.002
6-6	20	30°16'26.73"N	77°39'43.12"E	366.328	368.743

6-6	21	30°16'27.79"N	77°39'41.76"E	372.688	373.923
6-6	22	30°16'28.76"N	77°39'39.99"E	365.884	368.451
7-7	23	30°16'27.32"N	77°39'38.87"E	362.995	365.668
7-7	24	30°16'26.47"N	77°39'40.60"E	362.249	362.992
7-7	25	30°16'25.79"N	77°39'41.91"E	376.317	375.116
8-8	26	30°16'24.63"N	77°39'40.19"E	362.855	366.602
8-8	27	30°16'25.36"N	77°39'39.15"E	364.774	367.653
8-8	28	30°16'26.15"N	77°39'37.80"E	372.665	370.287
9-9	29	30°16'24.31"N	77°39'36.68"E	371.658	372.990
9-9	30	30°16'23.44"N	77°39'38.60"E	365.852	368.566
10-10	31	30°16'22.02"N	77°39'36.90"E	361.008	362.112
10-10	32	30°16'22.82"N	77°39'35.47"E	375.118	376.454

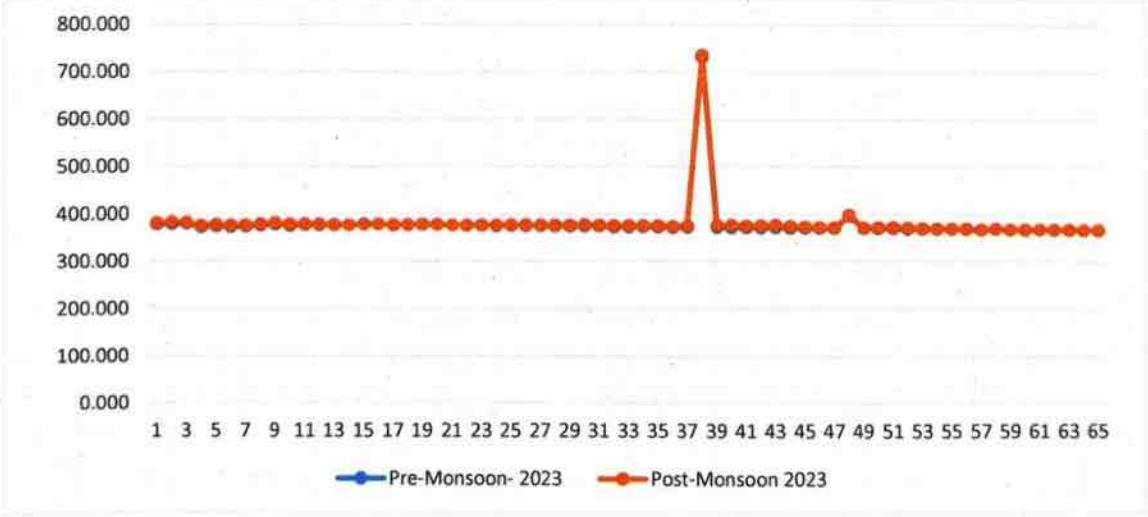


Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
10	Behat	R.B.M.	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900

Cross Section	Sl.No	Lat.	Long.	Pre-Monsoon- 2023	Post-Monsoon 2023
1-1	1	30°12'8.17"N	77°45'37.79"E	378.366	381.046
1-1	2	30°12'7.26"N	77°45'39.14"E	378.995	382.945
1-1	3	30°12'6.38"N	77°45'40.54"E	379.558	382.218
1-1	4	30°12'5.50"N	77°45'41.89"E	372.146	375.086
2-2	5	30°12'4.10"N	77°45'40.90"E	374.228	377.108
2-2	6	30°12'5.03"N	77°45'39.50"E	371.876	375.536
2-2	7	30°12'5.93"N	77°45'38.10"E	373.228	375.638
2-2	8	30°12'6.84"N	77°45'36.78"E	375.088	378.028
3-3	9	30°12'5.41"N	77°45'35.62"E	377.068	380.948
3-3	10	30°12'4.54"N	77°45'36.99"E	374.669	377.319
3-3	11	30°12'3.66"N	77°45'38.38"E	376.558	378.358
3-3	12	30°12'2.76"N	77°45'39.82"E	375.982	378.042
4-4	13	30°12'1.36"N	77°45'38.74"E	376.281	376.043
4-4	14	30°12'2.27"N	77°45'37.25"E	375.882	375.494
4-4	15	30°12'3.13"N	77°45'35.84"E	377.668	377.010
4-4	16	30°12'3.96"N	77°45'34.48"E	377.582	377.710
5-5	17	30°12'2.61"N	77°45'33.43"E	376.008	376.136
5-5	18	30°12'1.79"N	77°45'34.76"E	376.385	376.680
5-5	19	30°12'0.94"N	77°45'36.19"E	376.965	377.349
5-5	20	30°12'0.04"N	77°45'37.69"E	376.668	376.896
6-6	21	30°11'58.60"N	77°45'36.64"E	375.938	375.942

6-6	22	30°11'59.56"N	77°45'35.10"E	375.282	375.940
6-6	23	30°12'0.38"N	77°45'33.63"E	375.482	376.366
7-7	24	30°11'59.07"N	77°45'32.55"E	374.226	375.606
7-7	25	30°11'58.18"N	77°45'34.00"E	374.966	376.646
7-7	26	30°11'57.24"N	77°45'35.56"E	374.658	376.638
7-7	27	30°11'56.37"N	77°45'36.92"E	374.546	376.186
8-8	28	30°11'55.03"N	77°45'35.88"E	373.664	375.724
8-8	29	30°11'55.87"N	77°45'34.50"E	373.881	375.961
8-8	30	30°11'56.85"N	77°45'32.93"E	373.984	376.974
8-8	31	30°11'57.74"N	77°45'31.48"E	373.658	376.018
9-9	32	30°11'55.50"N	77°45'31.84"E	372.148	374.288
9-9	33	30°11'54.54"N	77°45'33.46"E	372.358	374.908
9-9	34	30°11'53.69"N	77°45'34.89"E	372.482	375.362
9-9	35	30°11'52.87"N	77°45'36.28"E	372.006	374.476
10-10	36	30°11'51.53"N	77°45'35.31"E	371.092	373.582
10-10	37	30°11'52.35"N	77°45'33.90"E	371.265	374.035
10-10	38	30°11'53.22"N	77°45'32.43"E	731.369	734.279
10-10	39	30°11'54.19"N	77°45'30.79"E	371.541	376.391
11-11	40	30°11'52.85"N	77°45'29.72"E	370.482	376.342
11-11	41	30°11'51.85"N	77°45'31.37"E	370.658	374.538
11-11	42	30°11'50.97"N	77°45'32.85"E	370.421	375.341
11-11	43	30°11'50.11"N	77°45'34.23"E	370.755	376.745
12-12	44	30°11'47.85"N	77°45'34.63"E	369.774	373.654
12-12	45	30°11'48.73"N	77°45'33.20"E	369.658	372.738
12-12	46	30°11'49.60"N	77°45'31.81"E	369.485	372.375
12-12	47	30°11'50.47"N	77°45'30.31"E	369.666	371.746
13-13	48	30°11'49.12"N	77°45'29.27"E	396.180	397.840
13-13	49	30°11'48.23"N	77°45'30.78"E	369.871	371.751
13-13	50	30°11'47.39"N	77°45'32.19"E	369.741	372.071

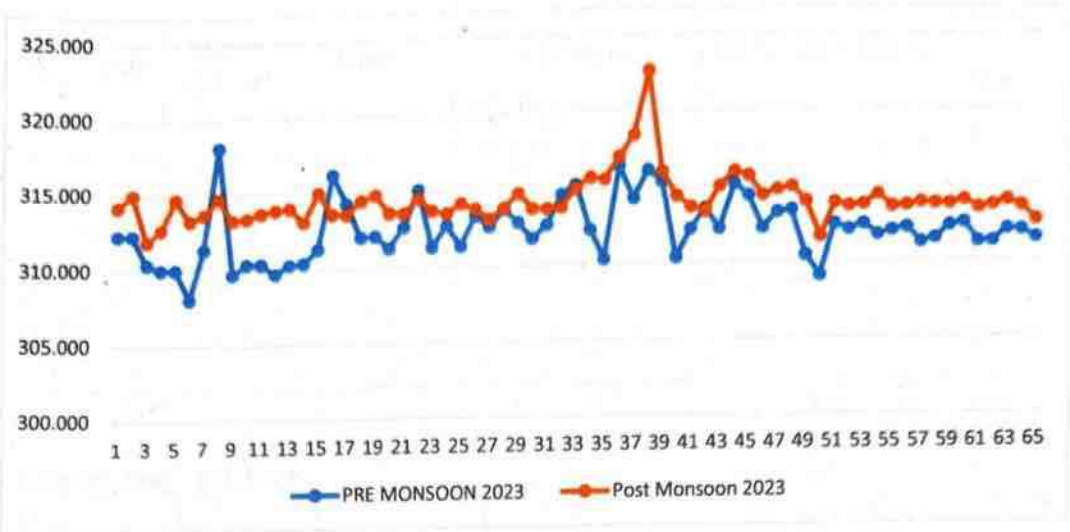
13-13	51	30°11'46.51"N	77°45'33.67"E	369.694	372.774
14-14	52	30°11'45.14"N	77°45'32.65"E	368.469	371.349
14-14	53	30°11'46.02"N	77°45'31.15"E	368.595	370.475
14-14	54	30°11'46.85"N	77°45'29.75"E	368.476	369.526
14-14	55	30°11'47.76"N	77°45'28.20"E	368.664	369.704
15-15	56	30°11'45.47"N	77°45'28.70"E	368.409	369.469
15-15	57	30°11'44.64"N	77°45'30.10"E	367.109	368.189
15-15	58	30°11'43.74"N	77°45'31.62"E	368.993	369.983
15-15	59	30°11'42.90"N	77°45'32.99"E	367.382	368.062
16-16	60	30°11'41.54"N	77°45'32.00"E	367.388	368.046
16-16	61	30°11'42.39"N	77°45'30.58"E	367.665	368.106
16-16	62	30°11'43.31"N	77°45'29.08"E	367.583	367.841
16-16	63	30°11'44.13"N	77°45'27.68"E	367.599	367.967
17-17	64	30°11'42.69"N	77°45'26.59"E	366.881	367.302
17-17	65	30°11'41.88"N	77°45'28.01"E	366.794	367.452



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
11	Behat	R.B.M.	Yamuna	Akbarpur Bans Aehatmal	1	17.900

Cross Section	Ref. Point	Lat.	Long.	PRE MONSOON 2023	Post Monsoon 2023
1-1	1	30°16'29.02"N	77°32'45.75"E	312.263	314.162
1-1	2	30°16'29.95"N	77°32'44.21"E	312.247	314.952
1-1	3	30°16'31.03"N	77°32'42.74"E	310.377	311.856
1-1	4	30°16'31.96"N	77°32'41.18"E	310.009	312.644
1-1	5	30°16'32.92"N	77°32'39.64"E	310.015	314.658
1-1	6	30°16'33.91"N	77°32'38.08"E	308.066	313.252
1-1	7	30°16'34.89"N	77°32'36.58"E	311.355	313.672
1-1	8	30°16'35.84"N	77°32'35.04"E	318.060	314.666
2-2	9	30°16'36.77"N	77°32'36.56"E	309.674	313.265
2-2	10	30°16'35.85"N	77°32'38.12"E	310.342	313.360
2-2	11	30°16'35.00"N	77°32'39.66"E	310.357	313.692
2-2	12	30°16'34.06"N	77°32'41.16"E	309.688	313.871
2-2	13	30°16'33.05"N	77°32'42.75"E	310.282	313.998
2-2	14	30°16'32.07"N	77°32'44.34"E	310.366	313.095
2-2	15	30°16'31.03"N	77°32'45.96"E	311.292	314.966
3-3	16	30°16'32.58"N	77°32'46.73"E	316.164	313.567
3-3	17	30°16'33.56"N	77°32'45.21"E	314.238	313.544
3-3	18	30°16'34.61"N	77°32'43.67"E	312.006	314.394
3-3	19	30°16'35.47"N	77°32'42.03"E	312.072	314.741
3-3	20	30°16'36.53"N	77°32'40.53"E	311.281	313.584
3-3	21	30°16'37.74"N	77°32'38.69"E	312.633	313.544
4-4	22	30°16'38.76"N	77°32'40.23"E	315.066	314.483
4-4	23	30°16'37.83"N	77°32'41.88"E	311.291	313.668
4-4	24	30°16'36.87"N	77°32'43.60"E	312.682	313.481
4-4	25	30°16'35.92"N	77°32'45.36"E	311.332	314.099
4-4	26	30°16'34.92"N	77°32'47.02"E	313.314	313.739
5-5	27	30°16'36.49"N	77°32'48.48"E	312.582	313.068
5-5	28	30°16'37.42"N	77°32'46.61"E	313.682	313.765

5-5	29	30°16'38.26"N	77°32'44.82"E	312.827	314.692
5-5	30	30°16'39.22"N	77°32'43.47"E	311.744	313.695
5-5	31	30°16'40.21"N	77°32'41.72"E	312.658	313.665
6-6	32	30°16'41.95"N	77°32'42.62"E	314.582	313.739
6-6	33	30°16'40.89"N	77°32'44.53"E	315.221	314.941
6-6	34	30°16'39.86"N	77°32'46.23"E	312.276	315.680
6-6	35	30°16'38.99"N	77°32'47.96"E	310.324	315.542
6-6	36	30°16'38.23"N	77°32'49.75"E	316.421	316.988
7-7	37	30°16'40.06"N	77°32'50.59"E	314.265	318.408
7-7	38	30°16'40.93"N	77°32'48.88"E	316.109	322.618
7-7	39	30°16'41.86"N	77°32'47.14"E	315.336	315.999
7-7	40	30°16'42.84"N	77°32'45.24"E	310.360	314.368
7-7	41	30°16'43.88"N	77°32'43.31"E	312.244	313.654
8-8	42	30°16'45.92"N	77°32'43.88"E	313.562	313.373
8-8	43	30°16'44.76"N	77°32'46.02"E	312.238	314.995
8-8	44	30°16'43.61"N	77°32'47.83"E	315.147	315.962
8-8	45	30°16'42.52"N	77°32'49.70"E	314.367	315.665
8-8	46	30°16'41.53"N	77°32'51.66"E	312.264	314.376
9-9	47	30°16'42.73"N	77°32'54.20"E	313.282	314.744
9-9	48	30°16'43.47"N	77°32'52.44"E	313.406	314.935
9-9	49	30°16'44.59"N	77°32'50.82"E	310.445	313.963
9-9	50	30°16'45.59"N	77°32'48.99"E	309.106	311.648
9-9	51	30°16'46.55"N	77°32'47.28"E	312.482	313.855
9-9	52	30°16'47.62"N	77°32'45.10"E	312.106	313.628
10-10	53	30°16'49.03"N	77°32'46.71"E	312.471	313.728
10-10	54	30°16'47.83"N	77°32'48.54"E	311.753	314.364
10-10	55	30°16'46.64"N	77°32'50.26"E	312.036	313.582
10-10	56	30°16'45.47"N	77°32'51.89"E	312.224	313.658
10-10	57	30°16'44.40"N	77°32'53.39"E	311.236	313.833
10-10	58	30°16'43.32"N	77°32'54.87"E	311.472	313.774
11-11	59	30°16'44.03"N	77°32'57.12"E	312.331	313.755
11-11	60	30°16'45.08"N	77°32'55.63"E	312.528	313.993
11-11	61	30°16'46.08"N	77°32'54.16"E	311.256	313.481
11-11	62	30°16'47.16"N	77°32'52.55"E	311.282	313.658
11-11	63	30°16'48.26"N	77°32'50.81"E	312.084	313.982
11-11	64	30°16'48.26"N	77°32'50.81"E	312.008	313.583
11-11	65	30°16'50.55"N	77°32'48.17"E	311.477	312.665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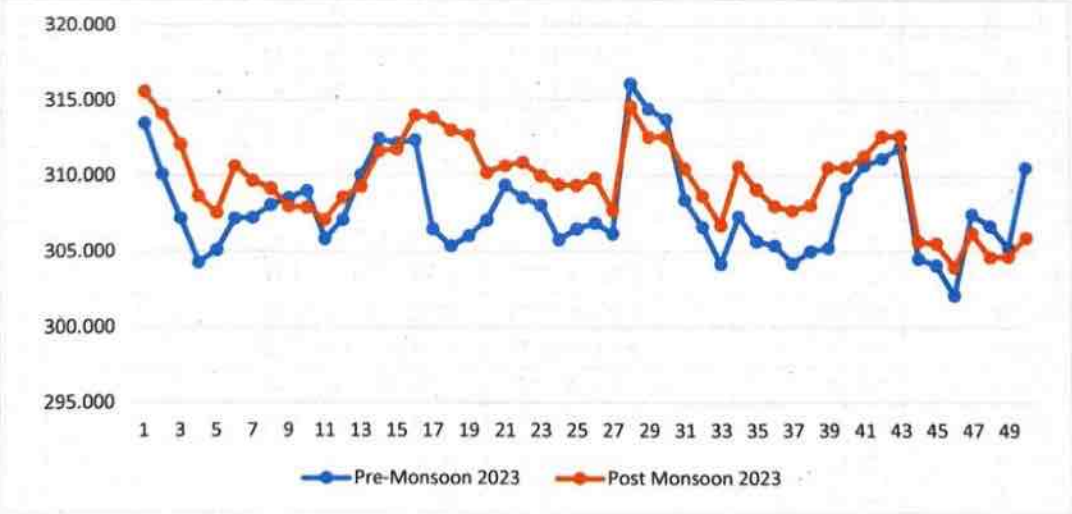
PRE MONSOON 2023
Post Monsoon 2023

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
12	Behat	R.B.M.	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800

Cross Section	Ref. Point	Lat.	Long.	Pre-Monsoon 2023	Post Monsoon 2023
1-1	1	30°15'50.69"N	77°32'20.15"E	313.466	315.588
1-1	2	30°15'51.87"N	77°32'17.96"E	310.088	314.108
1-1	3	30°15'52.91"N	77°32'15.82"E	307.188	312.090
1-1	4	30°15'53.71"N	77°32'14.21"E	304.266	308.665
1-1	5	30°15'54.83"N	77°32'12.39"E	305.083	307.553
1-1	6	30°15'55.83"N	77°32'10.43"E	307.172	310.665
1-1	7	30°15'56.46"N	77°32'8.75"E	307.218	309.672
2-2	8	30°15'54.87"N	77°32'7.72"E	308.065	309.173
2-2	9	30°15'54.20"N	77°32'9.51"E	308.540	307.982
2-2	10	30°15'53.23"N	77°32'11.75"E	309.003	307.894
2-2	11	30°15'52.41"N	77°32'13.51"E	305.833	307.096
2-2	12	30°15'51.54"N	77°32'15.02"E	307.066	308.578
2-2	13	30°15'50.75"N	77°32'17.13"E	310.036	309.282
2-2	14	30°15'49.64"N	77°32'19.25"E	312.456	311.638
3-3	15	30°15'48.44"N	77°32'18.27"E	312.138	311.744
3-3	16	30°15'49.41"N	77°32'16.06"E	312.362	313.992
3-3	17	30°15'50.26"N	77°32'14.45"E	306.456	313.847
3-3	18	30°15'50.90"N	77°32'12.75"E	305.348	312.993
3-3	19	30°15'51.59"N	77°32'10.95"E	306.006	312.658
3-3	20	30°15'52.60"N	77°32'8.66"E	307.036	310.166
3-3	21	30°15'53.00"N	77°32'6.96"E	309.327	310.638
4-4	22	30°15'51.46"N	77°32'6.25"E	308.542	310.866
4-4	23	30°15'50.79"N	77°32'7.87"E	308.033	309.964
4-4	24	30°15'50.08"N	77°32'9.99"E	305.751	309.365
4-4	25	30°15'49.25"N	77°32'11.91"E	306.455	309.329
4-4	26	30°15'48.68"N	77°32'13.64"E	306.836	309.796
4-4	27	30°15'47.94"N	77°32'15.16"E	306.143	307.673
4-4	28	30°15'47.11"N	77°32'17.28"E	316.065	314.582
5-5	29	30°15'45.90"N	77°32'16.09"E	314.417	312.536
5-5	30	30°15'46.64"N	77°32'14.20"E	313.708	312.545

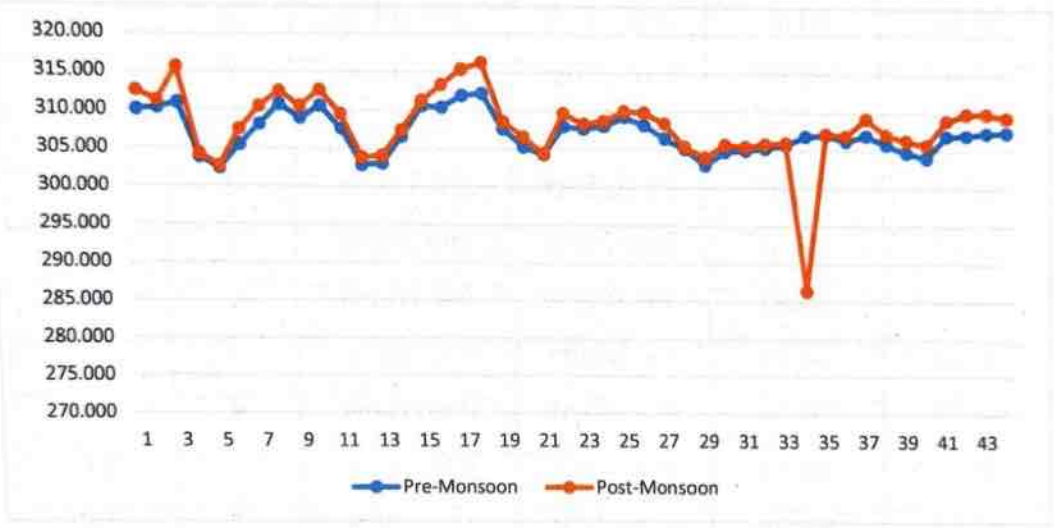
5-5	31	30°15'47.14"N	77°32'12.76"E	308.365	310.458
5-5	32	30°15'47.75"N	77°32'11.07"E	306.582	308.663
5-5	33	30°15'48.43"N	77°32'9.34"E	304.142	306.692
5-5	34	30°15'48.93"N	77°32'7.71"E	307.272	310.592
5-5	35	30°15'49.84"N	77°32'5.79"E	305.658	309.095
6-6	36	30°15'48.31"N	77°32'5.26"E	305.388	307.988
6-6	37	30°15'47.38"N	77°32'7.14"E	304.182	307.684
6-6	38	30°15'46.81"N	77°32'8.76"E	305.004	308.072
6-6	39	30°15'46.34"N	77°32'10.10"E	305.236	310.559
6-6	40	30°15'45.22"N	77°32'13.14"E	309.183	310.561
6-6	41	30°15'44.62"N	77°32'14.77"E	310.688	311.335
7-7	42	30°15'42.97"N	77°32'13.10"E	311.174	312.637
7-7	43	30°15'43.74"N	77°32'11.98"E	311.855	312.639
7-7	44	30°15'45.06"N	77°32'9.20"E	304.522	305.666
7-7	45	30°15'45.50"N	77°32'7.73"E	304.093	305.556
7-7	46	30°15'46.39"N	77°32'6.10"E	302.096	303.982
7-7	47	30°15'47.06"N	77°32'4.49"E	307.459	306.222
8-8	48	30°15'45.55"N	77°32'4.65"E	306.695	304.637
8-8	49	30°15'44.39"N	77°32'7.37"E	305.256	304.674
8-8	50	30°15'43.27"N	77°32'10.50"E	310.581	305.956



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
13	Behat	R.B.M.	Yamuna	Shehjadpur Bans Aehatmal	1	13.000

Cross Section	Ref. Point	Lat.	Long.	Pre-Monsoon	Post-Monsoon
1-1	1	30°15'24.53"N	77°31'55.65"E	310.053	312.494
1-1	2	30°15'25.44"N	77°31'53.87"E	310.271	311.196
1-1	3	30°15'26.27"N	77°31'52.03"E	310.937	315.595
1-1	4	30°15'27.50"N	77°31'49.92"E	303.868	304.320
2-2	5	30°15'26.82"N	77°31'48.99"E	302.421	302.756
2-2	6	30°15'25.58"N	77°31'50.27"E	305.492	307.506
2-2	7	30°15'24.55"N	77°31'52.53"E	308.169	310.494
2-2	8	30°15'23.73"N	77°31'54.76"E	310.752	312.466
3-3	9	30°15'22.23"N	77°31'53.84"E	308.971	310.522
3-3	10	30°15'23.39"N	77°31'51.64"E	310.582	312.614
3-3	11	30°15'24.36"N	77°31'49.46"E	307.605	309.504
3-3	12	30°15'25.50"N	77°31'47.57"E	302.887	303.841
4-4	13	30°15'24.30"N	77°31'46.04"E	303.096	304.091
4-4	14	30°15'23.07"N	77°31'48.25"E	306.561	307.442
4-4	15	30°15'21.93"N	77°31'50.83"E	310.574	311.241
4-4	16	30°15'20.73"N	77°31'53.06"E	310.438	313.363
5-5	17	30°15'19.42"N	77°31'52.14"E	311.965	315.417
5-5	18	30°15'20.56"N	77°31'50.12"E	312.245	316.259
5-5	19	30°15'21.59"N	77°31'47.50"E	307.637	308.655
5-5	20	30°15'22.98"N	77°31'45.08"E	305.302	306.600
6-6	21	30°15'21.90"N	77°31'43.83"E	304.323	304.470
6-6	22	30°15'20.33"N	77°31'46.29"E	307.976	309.690
6-6	23	30°15'19.41"N	77°31'49.03"E	307.708	308.366
6-6	24	30°15'18.14"N	77°31'51.28"E	308.057	308.720
7-7	25	30°15'16.70"N	77°31'50.29"E	309.274	309.998
7-7	26	30°15'17.66"N	77°31'48.10"E	308.202	309.864
7-7	27	30°15'18.95"N	77°31'45.72"E	306.440	308.454
7-7	28	30°15'19.84"N	77°31'43.73"E	305.132	305.416
7-7	29	30°15'20.95"N	77°31'41.67"E	303.026	303.984
8-8	30	30°15'19.84"N	77°31'40.64"E	304.778	305.679
8-8	31	30°15'18.67"N	77°31'42.66"E	304.975	305.427
8-8	32	30°15'17.78"N	77°31'44.94"E	305.246	305.793

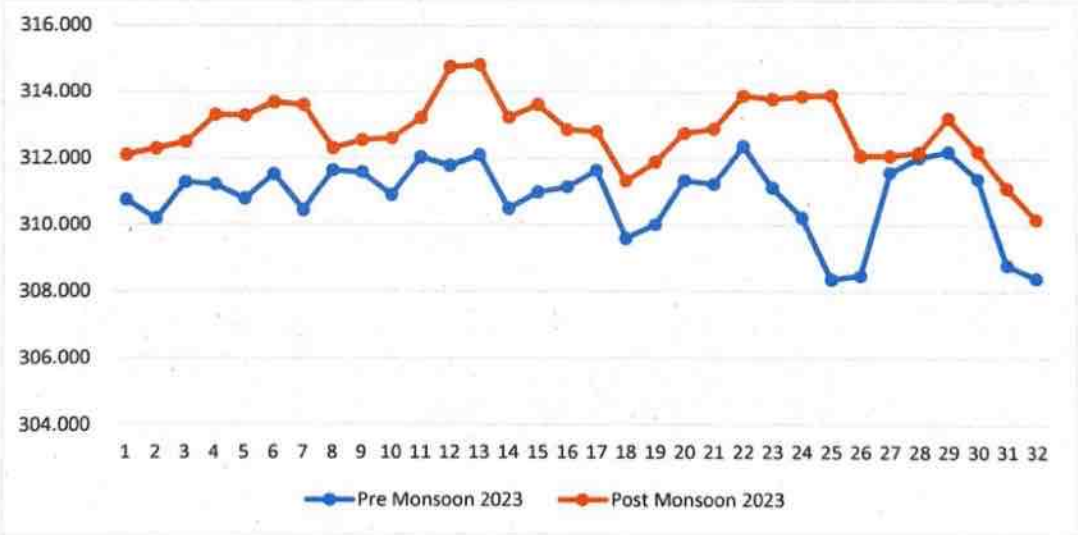
8-8	33	30°15'16.40"N	77°31'47.32"E	305.711	305.945
8-8	34	30°15'15.33"N	77°31'49.66"E	306.815	286.415
9-9	35	30°15'14.23"N	77°31'48.77"E	307.015	307.139
9-9	36	30°15'15.32"N	77°31'46.53"E	306.213	306.897
9-9	37	30°15'16.67"N	77°31'44.22"E	306.945	309.159
9-9	38	30°15'17.81"N	77°31'41.94"E	305.809	307.063
9-9	39	30°15'18.95"N	77°31'39.73"E	304.772	306.296
10-10	40	30°15'17.71"N	77°31'38.49"E	304.067	305.729
10-10	41	30°15'16.70"N	77°31'40.66"E	306.930	308.944
10-10	42	30°15'15.47"N	77°31'43.47"E	307.034	309.881
10-10	43	30°15'14.18"N	77°31'45.61"E	307.361	309.908
10-10	44	30°15'13.32"N	77°31'47.88"E	307.425	309.383



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
14	Behat	R.B.M.	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°16'14.66"N	77°32'38.47"E	310.752	312.102
1-1	2	30°16'15.32"N	77°32'36.96"E	310.188	312.292
1-1	3	30°16'16.37"N	77°32'35.03"E	311.277	312.490
1-1	4	30°16'17.03"N	77°32'33.17"E	311.213	313.311
2-2	5	30°16'15.68"N	77°32'32.07"E	310.781	313.288
2-2	6	30°16'15.09"N	77°32'33.98"E	311.522	313.682
2-2	7	30°16'14.26"N	77°32'35.89"E	310.444	313.601
2-2	8	30°16'13.45"N	77°32'37.56"E	311.644	312.301
3-3	9	30°16'12.08"N	77°32'36.59"E	311.582	312.544
3-3	10	30°16'12.97"N	77°32'34.85"E	310.892	312.601
3-3	11	30°16'13.89"N	77°32'33.07"E	312.032	313.220
3-3	12	30°16'14.70"N	77°32'31.31"E	311.778	314.756
4-4	13	30°16'13.62"N	77°32'30.25"E	312.101	314.821
4-4	14	30°16'12.81"N	77°32'32.20"E	310.492	313.236
4-4	15	30°16'11.85"N	77°32'33.82"E	310.981	313.621
4-4	16	30°16'10.91"N	77°32'35.64"E	311.133	312.866
5-5	17	30°16'9.32"N	77°32'34.45"E	311.644	312.810
5-5	18	30°16'10.31"N	77°32'32.62"E	309.592	311.322
5-5	19	30°16'11.42"N	77°32'31.10"E	310.010	311.899
5-5	20	30°16'12.58"N	77°32'29.38"E	311.339	312.772
6-6	21	30°16'11.16"N	77°32'28.31"E	311.232	312.899

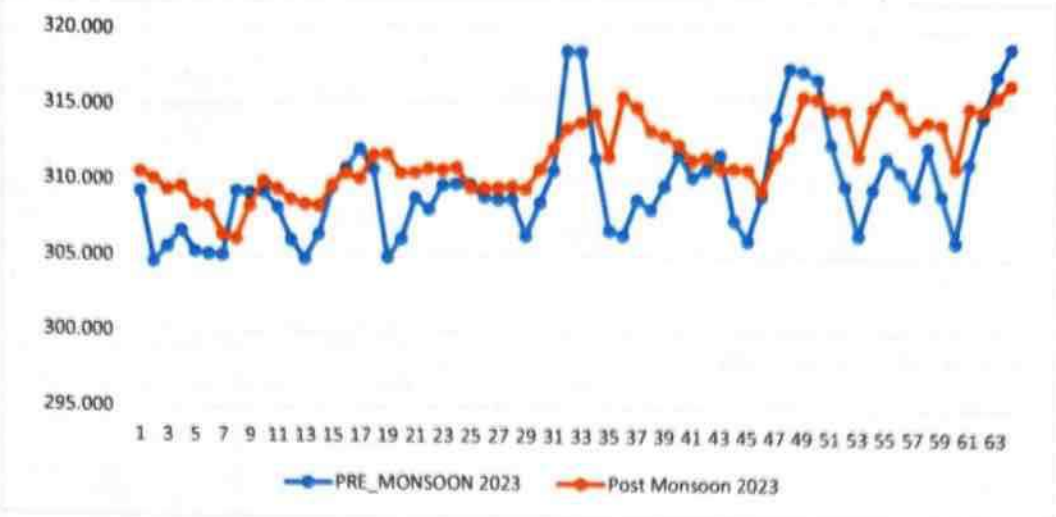
6-6	22	30°16'9.97"N	77°32'30.13"E	312.377	313.901
6-6	23	30°16'9.03"N	77°32'31.86"E	311.127	313.804
6-6	24	30°16'7.96"N	77°32'33.75"E	310.238	313.892
7-7	25	30°16'5.97"N	77°32'32.68"E	308.371	313.922
7-7	26	30°16'7.16"N	77°32'31.08"E	308.481	312.102
7-7	27	30°16'8.26"N	77°32'29.39"E	311.599	312.104
7-7	28	30°16'9.68"N	77°32'27.25"E	312.044	312.201
8-8	29	30°16'8.37"N	77°32'25.93"E	312.223	313.241
8-8	30	30°16'6.98"N	77°32'28.34"E	311.402	312.233
8-8	31	30°16'5.71"N	77°32'30.11"E	308.801	311.122
8-8	32	30°16'4.62"N	77°32'31.59"E	308.399	310.188



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
15	Behat	R.B.M.	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700

Cross Section	Ref. Point	Lat.	Long.	PRE_MONSOON 2023	Post Monsoon 2023
1-1	1	30°16'2.81"N	77°32'30.11"E	309.255	310.558
1-1	2	30°16'3.71"N	77°32'28.50"E	304.596	310.108
1-1	3	30°16'4.75"N	77°32'26.89"E	305.584	309.372
1-1	4	30°16'5.78"N	77°32'25.29"E	306.655	309.558
1-1	5	30°16'6.76"N	77°32'23.74"E	305.272	308.365
1-1	6	30°16'7.83"N	77°32'22.12"E	305.109	308.296
1-1	7	30°16'8.81"N	77°32'20.51"E	305.028	306.372
1-1	8	30°16'9.67"N	77°32'19.00"E	309.255	306.108
2-2	9	30°16'8.28"N	77°32'17.87"E	309.120	308.279
2-2	10	30°16'7.39"N	77°32'19.43"E	309.156	309.872
2-2	11	30°16'6.45"N	77°32'21.12"E	308.155	309.366
2-2	12	30°16'5.43"N	77°32'22.95"E	306.006	308.684
2-2	13	30°16'4.19"N	77°32'24.75"E	304.785	308.366
2-2	14	30°16'3.10"N	77°32'26.36"E	306.364	308.261
2-2	15	30°16'2.13"N	77°32'28.02"E	309.488	309.566
2-2	16	30°16'1.19"N	77°32'29.49"E	310.725	310.364
3-3	17	30°15'59.73"N	77°32'28.53"E	311.955	310.009
3-3	18	30°16'0.75"N	77°32'27.05"E	310.639	311.558
3-3	19	30°16'1.74"N	77°32'25.54"E	304.856	311.599
3-3	20	30°16'2.69"N	77°32'23.95"E	306.065	310.374
3-3	21	30°16'3.60"N	77°32'22.35"E	308.743	310.395
3-3	22	30°16'4.70"N	77°32'20.72"E	308.006	310.665
3-3	23	30°16'5.92"N	77°32'18.86"E	309.552	310.596
3-3	24	30°16'6.95"N	77°32'16.98"E	309.658	310.744
4-4	25	30°16'5.51"N	77°32'15.86"E	309.581	309.408

4-4	26	30°16'4.34"N	77°32'17.71"E	308.801	309.394
4-4	27	30°16'3.28"N	77°32'19.42"E	308.655	309.399
4-4	28	30°16'2.11"N	77°32'21.16"E	308.695	309.472
4-4	29	30°16'1.11"N	77°32'22.70"E	306.293	309.336
4-4	30	30°15'59.93"N	77°32'24.27"E	308.485	310.651
4-4	31	30°15'58.85"N	77°32'25.82"E	310.585	311.988
4-4	32	30°15'57.95"N	77°32'27.44"E	318.366	313.299
5-5	33	30°15'56.55"N	77°32'26.40"E	318.295	313.685
5-5	34	30°15'57.58"N	77°32'24.86"E	311.355	314.299
5-5	35	30°15'58.69"N	77°32'23.38"E	306.675	311.482
5-5	36	30°15'59.78"N	77°32'21.72"E	306.355	315.365
5-5	37	30°16'0.99"N	77°32'20.06"E	308.693	314.698
5-5	38	30°16'1.97"N	77°32'18.40"E	308.066	313.172
5-5	39	30°16'3.16"N	77°32'16.86"E	309.596	312.852
5-5	40	30°16'4.28"N	77°32'15.08"E	311.655	312.272
6-6	41	30°16'2.72"N	77°32'13.94"E	310.142	311.277
6-6	42	30°16'1.75"N	77°32'15.69"E	310.655	311.486
6-6	43	30°16'0.72"N	77°32'17.23"E	311.655	310.746
6-6	44	30°15'59.68"N	77°32'18.95"E	307.361	310.769
6-6	45	30°15'58.69"N	77°32'20.69"E	306.066	310.685
6-6	46	30°15'57.70"N	77°32'22.49"E	309.008	309.284
6-6	47	30°15'56.37"N	77°32'24.15"E	314.129	311.699
6-6	48	30°15'55.16"N	77°32'25.63"E	317.358	312.912
7-7	49	30°15'53.78"N	77°32'24.66"E	317.166	315.488
7-7	50	30°15'55.11"N	77°32'23.26"E	316.658	315.372
7-7	51	30°15'56.10"N	77°32'21.78"E	312.385	314.691
7-7	52	30°15'57.24"N	77°32'20.15"E	309.661	314.658
7-7	53	30°15'58.22"N	77°32'18.49"E	306.458	311.658
7-7	54	30°15'59.38"N	77°32'16.74"E	309.488	314.780
7-7	55	30°16'0.30"N	77°32'15.02"E	311.555	315.788
7-7	56	30°16'1.64"N	77°32'13.13"E	310.633	314.966
8-8	57	30°16'0.06"N	77°32'11.98"E	309.144	313.482
8-8	58	30°15'58.75"N	77°32'14.05"E	312.283	313.983
8-8	59	30°15'57.61"N	77°32'15.77"E	309.138	313.799
8-8	60	30°15'56.47"N	77°32'17.43"E	306.066	310.982
8-8	61	30°15'55.38"N	77°32'19.09"E	311.279	314.958
8-8	62	30°15'54.20"N	77°32'20.78"E	314.351	314.748
8-8	63	30°15'53.07"N	77°32'22.32"E	317.058	315.656
8-8	64	30°15'51.96"N	77°32'23.60"E	318.624	316.444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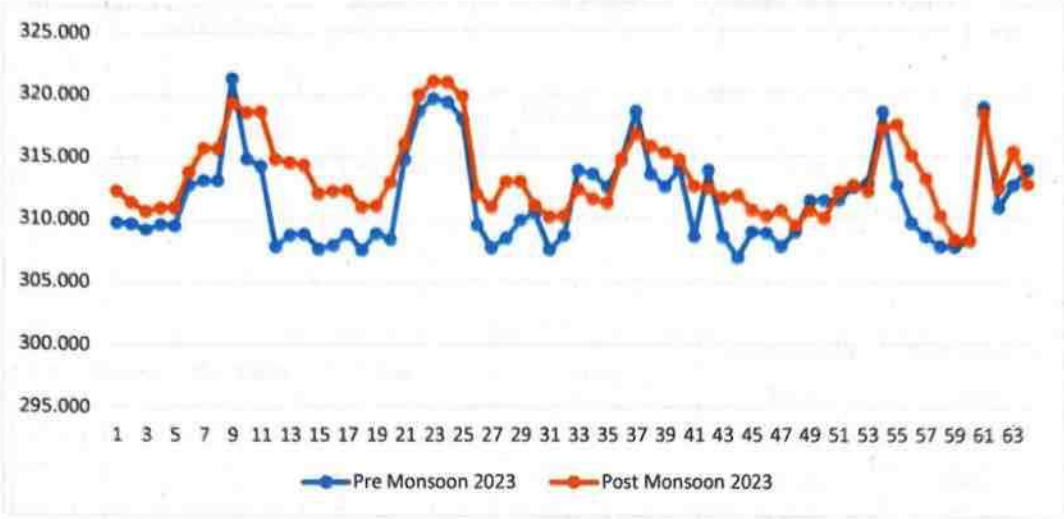
PRE_MONSOON 2023
Post Monsoon 2023

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
16	Behat	R.B.M.	Yamuna	Shahpur Bans Achatmal	1/1	15.600

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°16'27.69"N	77°32'45.53"E	309.788	312.288
1-1	2	30°16'28.59"N	77°32'43.93"E	309.692	311.385
1-1	3	30°16'29.65"N	77°32'42.20"E	309.232	310.695
1-1	4	30°16'30.50"N	77°32'40.57"E	309.644	310.954
1-1	5	30°16'31.46"N	77°32'38.97"E	309.544	310.995
1-1	6	30°16'32.39"N	77°32'37.38"E	312.792	313.854
1-1	7	30°16'33.42"N	77°32'35.69"E	313.168	315.744
1-1	8	30°16'34.42"N	77°32'33.99"E	313.152	315.692
2-2	9	30°16'32.73"N	77°32'33.27"E	321.342	319.376
2-2	10	30°16'31.71"N	77°32'34.83"E	314.896	318.584
2-2	11	30°16'30.88"N	77°32'36.55"E	314.305	318.666
2-2	12	30°16'29.96"N	77°32'38.07"E	307.888	314.845
2-2	13	30°16'28.97"N	77°32'39.74"E	308.792	314.584
2-2	14	30°16'27.84"N	77°32'41.33"E	308.874	314.385
2-2	15	30°16'27.06"N	77°32'43.07"E	307.682	312.085
2-2	16	30°16'26.16"N	77°32'44.63"E	307.941	312.281
3-3	17	30°16'24.58"N	77°32'43.45"E	308.855	312.328
3-3	18	30°16'25.39"N	77°32'41.89"E	307.572	311.009
3-3	19	30°16'26.32"N	77°32'40.16"E	308.882	311.088
3-3	20	30°16'27.43"N	77°32'38.53"E	308.388	312.958
3-3	21	30°16'28.54"N	77°32'36.52"E	314.766	315.985
3-3	22	30°16'29.85"N	77°32'34.38"E	318.595	319.885
3-3	23	30°16'30.94"N	77°32'32.58"E	319.571	320.956
4-4	24	30°16'29.36"N	77°32'32.00"E	319.265	320.854
4-4	25	30°16'28.36"N	77°32'33.70"E	317.968	319.755
4-4	26	30°16'27.27"N	77°32'35.49"E	309.558	311.963
4-4	27	30°16'26.16"N	77°32'37.25"E	307.728	310.971
4-4	28	30°16'25.09"N	77°32'39.08"E	308.463	312.968
4-4	29	30°16'24.02"N	77°32'40.92"E	309.932	312.988

4-4	30	30°16'23.08"N	77°32'42.65"E	310.501	311.085
5-5	31	30°16'21.80"N	77°32'41.65"E	307.555	310.185
5-5	32	30°16'22.87"N	77°32'39.93"E	308.669	310.255
5-5	33	30°16'23.75"N	77°32'38.13"E	313.869	312.366
5-5	34	30°16'24.79"N	77°32'36.39"E	313.582	311.584
5-5	35	30°16'25.64"N	77°32'34.86"E	312.541	311.274
5-5	36	30°16'26.58"N	77°32'33.17"E	314.666	314.754
5-5	37	30°16'27.73"N	77°32'31.69"E	318.514	316.741
6-6	38	30°16'26.08"N	77°32'31.02"E	313.566	315.765
6-6	39	30°16'25.05"N	77°32'32.85"E	312.552	315.239
6-6	40	30°16'23.99"N	77°32'34.40"E	313.968	314.698
6-6	41	30°16'22.99"N	77°32'35.97"E	308.583	312.583
6-6	42	30°16'22.07"N	77°32'37.63"E	313.884	312.452
6-6	43	30°16'20.97"N	77°32'39.15"E	308.565	311.658
6-6	44	30°16'20.00"N	77°32'40.81"E	306.946	311.843
7-7	45	30°16'18.46"N	77°32'39.84"E	308.964	310.704
7-7	46	30°16'19.44"N	77°32'38.23"E	308.885	310.235
7-7	47	30°16'20.50"N	77°32'36.81"E	307.828	310.658
7-7	48	30°16'21.41"N	77°32'35.17"E	308.958	309.458
7-7	49	30°16'22.72"N	77°32'33.30"E	311.448	310.685
7-7	50	30°16'23.76"N	77°32'31.80"E	311.466	310.080
7-7	51	30°16'24.69"N	77°32'30.34"E	311.498	312.172
8-8	52	30°16'23.13"N	77°32'29.88"E	312.508	312.672
8-8	53	30°16'22.33"N	77°32'31.25"E	312.866	312.171
8-8	54	30°16'21.46"N	77°32'32.81"E	318.481	317.182
8-8	55	30°16'20.25"N	77°32'34.43"E	312.655	317.458
8-8	56	30°16'19.19"N	77°32'36.36"E	309.695	315.006
8-8	57	30°16'18.04"N	77°32'37.92"E	308.599	313.172
8-8	58	30°16'16.97"N	77°32'38.86"E	307.808	310.245
9-9	59	30°16'16.84"N	77°32'37.06"E	307.785	308.318
9-9	60	30°16'17.69"N	77°32'35.35"E	308.255	308.284
9-9	61	30°16'18.60"N	77°32'33.43"E	318.861	318.352
9-9	62	30°16'19.81"N	77°32'31.68"E	310.894	312.450
9-9	63	30°16'20.51"N	77°32'30.42"E	312.658	315.325
9-9	64	30°16'21.41"N	77°32'29.30"E	313.908	312.755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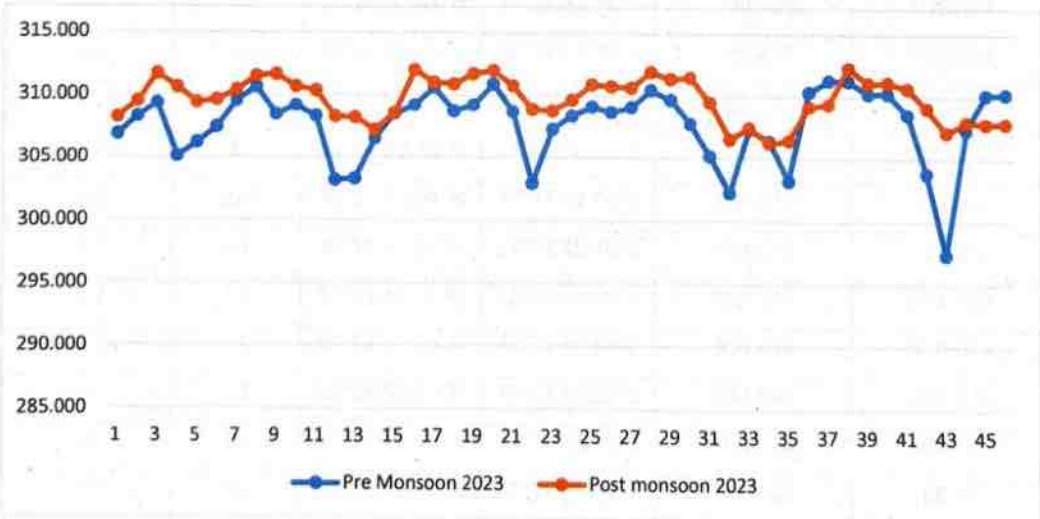
Pre Monsoon 2023
Post Monsoon 2023

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
17	Behat	R.B.M.	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post monsoon 2023
1-1	1	30°15'26.82"N	77°31'57.60"E	306.847	308.192
1-1	2	30°15'27.65"N	77°31'55.69"E	308.262	309.482
1-1	3	30°15'28.45"N	77°31'54.03"E	309.336	311.658
1-1	4	30°15'29.51"N	77°31'51.85"E	305.088	310.584
2-2	5	30°15'31.22"N	77°31'53.04"E	306.188	309.376
2-2	6	30°15'30.36"N	77°31'54.92"E	307.414	309.592
2-2	7	30°15'29.58"N	77°31'56.74"E	309.555	310.372
2-2	8	30°15'28.64"N	77°31'58.52"E	310.599	311.476
3-3	9	30°15'30.03"N	77°32'0.13"E	308.424	311.612
3-3	10	30°15'31.07"N	77°31'58.30"E	309.168	310.666
3-3	11	30°15'31.99"N	77°31'56.55"E	308.299	310.341
3-3	12	30°15'32.94"N	77°31'54.46"E	303.208	308.255
4-4	13	30°15'34.74"N	77°31'55.28"E	303.318	308.185
4-4	14	30°15'33.88"N	77°31'57.14"E	306.508	307.205
4-4	15	30°15'33.08"N	77°31'58.97"E	308.492	308.542
4-4	16	30°15'32.17"N	77°32'0.74"E	309.177	311.984
4-4	17	30°15'31.26"N	77°32'2.60"E	310.606	310.988
5-5	18	30°15'32.67"N	77°32'3.83"E	308.710	310.862
5-5	19	30°15'33.74"N	77°32'2.07"E	309.204	311.682
5-5	20	30°15'34.67"N	77°32'0.40"E	310.852	311.941
5-5	21	30°15'35.66"N	77°31'58.60"E	308.669	310.744
5-5	22	30°15'36.63"N	77°31'56.64"E	302.980	308.855
6-6	23	30°15'38.31"N	77°31'57.31"E	307.282	308.755
6-6	24	30°15'37.39"N	77°31'59.68"E	308.355	309.632
6-6	25	30°15'36.43"N	77°32'1.81"E	309.085	310.864
6-6	26	30°15'35.34"N	77°32'3.87"E	308.654	310.714
6-6	27	30°15'34.29"N	77°32'5.66"E	309.065	310.638

7-7	28	30°15'35.95"N	77°32'7.04"E	310.455	311.882
7-7	29	30°15'37.23"N	77°32'5.26"E	309.682	311.327
7-7	30	30°15'38.40"N	77°32'3.06"E	307.785	311.458
7-7	31	30°15'39.31"N	77°32'1.23"E	305.199	309.466
7-7	32	30°15'40.20"N	77°31'59.02"E	302.285	306.582
8-8	33	30°15'42.07"N	77°31'59.38"E	307.366	307.457
8-8	34	30°15'41.42"N	77°32'1.35"E	306.423	306.272
8-8	35	30°15'40.46"N	77°32'3.62"E	303.258	306.492
8-8	36	30°15'39.39"N	77°32'5.54"E	310.371	309.180
8-8	37	30°15'38.43"N	77°32'7.39"E	311.288	309.366
8-8	38	30°15'37.47"N	77°32'9.04"E	311.244	312.287
9-9	39	30°15'39.20"N	77°32'10.61"E	310.255	311.085
9-9	40	30°15'40.15"N	77°32'8.93"E	310.272	311.140
9-9	41	30°15'41.15"N	77°32'7.10"E	308.566	310.685
9-9	42	30°15'42.31"N	77°32'4.78"E	303.877	309.088
9-9	43	30°15'43.08"N	77°32'2.85"E	297.366	307.166
9-9	44	30°15'44.21"N	77°32'0.92"E	307.348	307.985
10-10	45	30°15'42.23"N	77°32'9.55"E	310.188	307.855
10-10	46	30°15'41.00"N	77°32'11.95"E	310.244	307.876

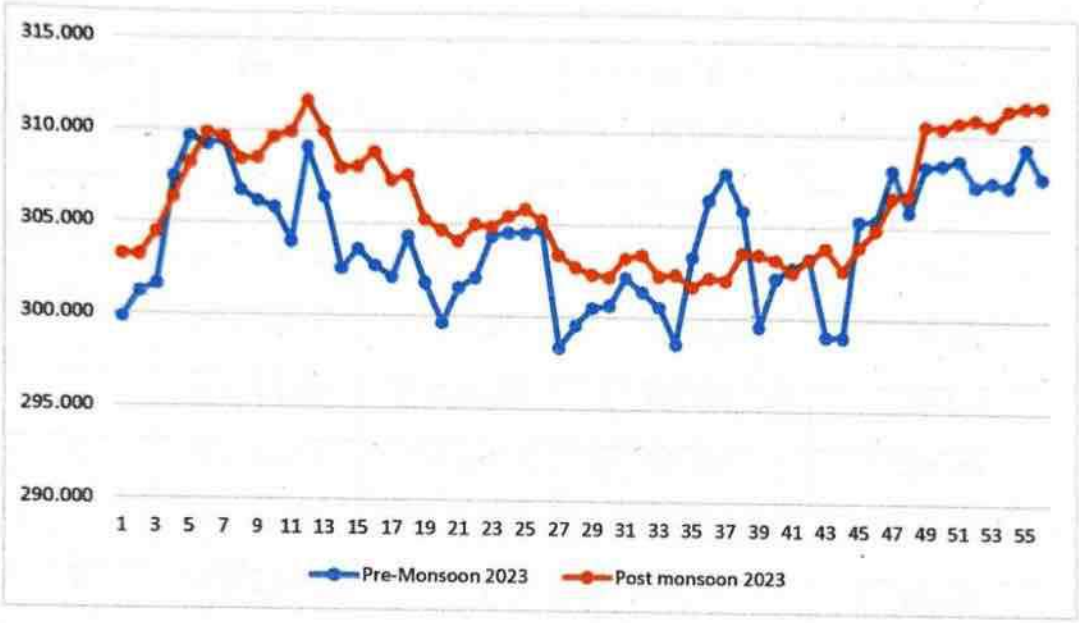


Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
18	Behat	R.B.M.	Yamuna	Abutalibpur Garh Aehatmal	1	37.000

Cross Section	Ref. Point	Lat.	Long.	Pre-Monsoon 2023	Post monsoon 2023
1-1	1	30°14'44.37"N	77°31'37.14"E	299.844	303.255
1-1	2	30°14'45.33"N	77°31'34.98"E	301.229	303.241
1-1	3	30°14'46.45"N	77°31'32.64"E	301.647	304.478
1-1	4	30°14'47.77"N	77°31'29.70"E	307.501	306.385
1-1	5	30°14'49.19"N	77°31'26.83"E	309.658	308.266
1-1	6	30°14'50.81"N	77°31'23.75"E	309.239	309.884
2-2	7	30°14'53.23"N	77°31'25.10"E	309.472	309.658
2-2	8	30°14'51.69"N	77°31'27.64"E	306.766	308.475
2-2	9	30°14'50.48"N	77°31'30.39"E	306.207	308.544
2-2	10	30°14'48.94"N	77°31'32.96"E	305.876	309.667
2-2	11	30°14'47.94"N	77°31'35.40"E	304.025	309.958
2-2	12	30°14'46.80"N	77°31'38.06"E	309.125	311.658
3-3	13	30°14'49.00"N	77°31'38.83"E	306.459	310.014
3-3	14	30°14'50.29"N	77°31'36.17"E	302.561	308.028
3-3	15	30°14'51.37"N	77°31'33.71"E	303.634	308.117
3-3	16	30°14'52.67"N	77°31'31.12"E	302.754	308.887
3-3	17	30°14'54.16"N	77°31'28.44"E	302.108	307.355
3-3	18	30°14'55.64"N	77°31'26.20"E	304.336	307.664
4-4	19	30°14'57.49"N	77°31'27.32"E	301.833	305.241
4-4	20	30°14'56.60"N	77°31'29.44"E	299.667	304.668

4-4	21	30°14'55.57"N	77°31'31.96"E	301.582	304.108
4-4	22	30°14'54.17"N	77°31'34.62"E	302.137	304.998
4-4	23	30°14'52.91"N	77°31'37.14"E	304.368	304.887
4-4	24	30°14'52.10"N	77°31'39.53"E	304.568	305.471
5-5	25	30°14'54.79"N	77°31'40.19"E	304.554	305.847
5-5	26	30°14'56.01"N	77°31'38.01"E	304.772	305.258
5-5	27	30°14'57.16"N	77°31'35.70"E	298.381	303.385
5-5	28	30°14'58.84"N	77°31'33.11"E	299.581	302.741
5-5	29	30°15'0.05"N	77°31'31.11"E	300.541	302.345
5-5	30	30°15'1.59"N	77°31'28.68"E	300.684	302.225
6-6	31	30°15'3.88"N	77°31'30.17"E	302.184	303.266
6-6	32	30°15'2.75"N	77°31'32.53"E	301.453	303.445
6-6	33	30°15'1.33"N	77°31'34.99"E	300.628	302.288
6-6	34	30°14'59.98"N	77°31'37.02"E	298.647	302.365
6-6	35	30°14'58.92"N	77°31'39.37"E	303.335	301.742
6-6	36	30°14'57.66"N	77°31'41.97"E	306.452	302.224
7-7	37	30°15'0.46"N	77°31'42.60"E	307.875	302.085
7-7	38	30°15'1.76"N	77°31'40.20"E	305.897	303.604
7-7	39	30°15'2.87"N	77°31'37.88"E	299.587	303.508
7-7	40	30°15'4.25"N	77°31'35.60"E	302.228	303.237
7-7	41	30°15'5.36"N	77°31'33.73"E	302.766	302.552
7-7	42	30°15'6.84"N	77°31'31.67"E	303.289	303.255
8-8	43	30°15'9.26"N	77°31'32.88"E	299.084	303.891
8-8	44	30°15'7.90"N	77°31'35.33"E	299.079	302.668
8-8	45	30°15'6.61"N	77°31'37.57"E	305.360	303.982
8-8	46	30°15'5.44"N	77°31'40.20"E	305.388	304.885
8-8	47	30°15'4.26"N	77°31'42.69"E	308.138	306.676
9-9	48	30°15'6.91"N	77°31'43.57"E	305.892	306.765
9-9	49	30°15'8.09"N	77°31'41.20"E	308.378	310.582
9-9	50	30°15'9.30"N	77°31'38.84"E	308.483	310.471
9-9	51	30°15'10.66"N	77°31'36.82"E	308.741	310.789
9-9	52	30°15'12.10"N	77°31'34.50"E	307.324	310.958
10-10	53	30°15'14.40"N	77°31'35.82"E	307.559	310.665

10-10	54	30°15'13.23"N	77°31'38.31"E	307.344	311.476
10-10	55	30°15'12.17"N	77°31'40.85"E	309.408	311.652
10-10	56	30°15'10.89"N	77°31'43.79"E	307.785	311.664



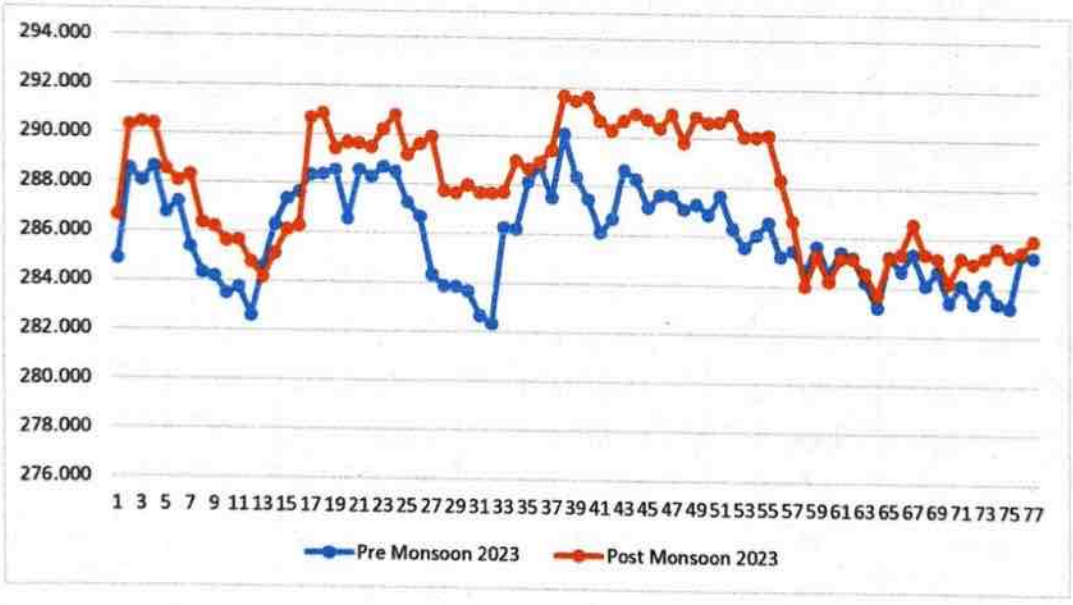
Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
19	Behat	R.B.M.	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	19.000

Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1	30°11'0.53"N	77°29'23.73"E	284.885	286.658
2	30°11'1.62"N	77°29'22.30"E	288.542	290.335
3	30°11'2.75"N	77°29'20.96"E	288.085	290.465
4	30°11'3.95"N	77°29'19.57"E	288.654	290.382
5	30°11'5.11"N	77°29'18.19"E	286.788	288.547
6	30°11'6.27"N	77°29'16.81"E	287.246	288.084
7	30°11'7.46"N	77°29'15.40"E	285.399	288.328
8	30°11'8.75"N	77°29'14.07"E	284.338	286.366
9	30°11'9.92"N	77°29'12.84"E	284.199	286.234
10	30°11'11.19"N	77°29'11.39"E	283.499	285.658
11	30°11'9.94"N	77°29'10.01"E	283.757	285.688
12	30°11'8.73"N	77°29'11.37"E	282.608	284.774
13	30°11'7.49"N	77°29'12.77"E	284.585	284.182
14	30°11'6.41"N	77°29'14.15"E	286.325	285.136
15	30°11'5.23"N	77°29'15.55"E	287.385	286.112
16	30°11'4.02"N	77°29'16.98"E	287.658	286.282
17	30°11'2.85"N	77°29'18.35"E	288.355	290.682
18	30°11'1.66"N	77°29'19.78"E	288.388	290.854
19	30°11'0.59"N	77°29'21.14"E	288.554	289.458

20	30°10'59.51"N	77°29'22.72"E	286.568	289.688
21	30°10'59.48"N	77°29'20.29"E	288.582	289.658
22	30°11'0.60"N	77°29'18.84"E	288.299	289.508
23	30°11'1.80"N	77°29'17.47"E	288.699	290.231
24	30°11'2.96"N	77°29'15.97"E	288.487	290.841
25	30°11'4.24"N	77°29'14.45"E	287.265	289.206
26	30°11'5.43"N	77°29'13.01"E	286.680	289.658
27	30°11'6.51"N	77°29'11.42"E	284.325	289.958
28	30°11'7.67"N	77°29'9.74"E	283.856	287.755
29	30°11'8.87"N	77°29'8.28"E	283.847	287.658
30	30°11'7.66"N	77°29'6.69"E	283.658	287.984
31	30°11'6.51"N	77°29'8.18"E	282.658	287.684
32	30°11'5.18"N	77°29'9.55"E	282.332	287.666
33	30°11'4.04"N	77°29'11.26"E	286.271	287.704
34	30°11'2.97"N	77°29'12.84"E	286.208	288.983
35	30°11'1.69"N	77°29'14.46"E	288.144	288.685
36	30°11'0.74"N	77°29'15.85"E	288.772	288.955
37	30°10'59.72"N	77°29'17.54"E	287.496	289.455
38	30°10'59.36"N	77°29'15.20"E	290.108	291.658
39	30°11'0.52"N	77°29'13.42"E	288.355	291.471
40	30°11'1.75"N	77°29'11.65"E	287.465	291.638
41	30°11'0.41"N	77°29'10.16"E	286.105	290.658
42	30°10'59.11"N	77°29'11.71"E	286.658	290.284
43	30°10'57.93"N	77°29'13.59"E	288.658	290.685
44	30°10'56.94"N	77°29'11.96"E	288.291	290.968

45	30°10'58.15"N	77°29'10.52"E	287.142	290.733
46	30°10'59.27"N	77°29'8.80"E	287.658	290.382
47	30°10'57.87"N	77°29'7.53"E	287.658	290.966
48	30°10'56.90"N	77°29'9.11"E	287.085	289.823
49	30°10'55.91"N	77°29'10.70"E	287.294	290.865
50	30°10'54.37"N	77°29'9.27"E	286.874	290.622
51	30°10'55.39"N	77°29'7.79"E	287.658	290.658
52	30°10'56.58"N	77°29'6.12"E	286.342	290.985
53	30°10'55.17"N	77°29'4.77"E	285.555	290.085
54	30°10'54.10"N	77°29'6.33"E	286.085	290.066
55	30°10'52.93"N	77°29'8.10"E	286.582	290.133
56	30°10'51.35"N	77°29'7.05"E	285.192	288.322
57	30°10'52.44"N	77°29'5.40"E	285.456	286.652
58	30°10'53.75"N	77°29'3.74"E	284.658	284.008
59	30°10'52.40"N	77°29'2.35"E	285.642	285.258
60	30°10'51.15"N	77°29'4.05"E	284.544	284.235
61	30°10'49.83"N	77°29'5.87"E	285.433	285.166
62	30°10'48.27"N	77°29'4.76"E	285.208	285.152
63	30°10'49.35"N	77°29'3.17"E	284.207	284.568
64	30°10'51.06"N	77°29'1.18"E	283.182	283.685
65	30°10'49.51"N	77°28'59.72"E	285.241	285.195
66	30°10'48.22"N	77°29'1.52"E	284.685	285.358
67	30°10'46.74"N	77°29'3.39"E	285.355	286.584
68	30°10'45.14"N	77°29'2.52"E	284.095	285.344
69	30°10'46.59"N	77°29'0.61"E	284.658	285.188

70	30°10'47.88"N	77°28'59.09"E	283.405	284.198
71	30°10'49.29"N	77°28'57.33"E	284.128	285.193
72	30°10'50.52"N	77°28'55.60"E	283.366	284.992
73	30°10'49.06"N	77°28'54.44"E	284.165	285.235
74	30°10'47.87"N	77°28'56.03"E	283.371	285.656
75	30°10'46.62"N	77°28'57.64"E	283.217	285.273
76	30°10'45.36"N	77°28'59.34"E	285.382	285.485
77	30°10'43.92"N	77°29'1.20"E	285.263	285.956



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
20	Behat	R.B.M.	Yamuna	Aslampur Bartha – First	1/1 M	36.600

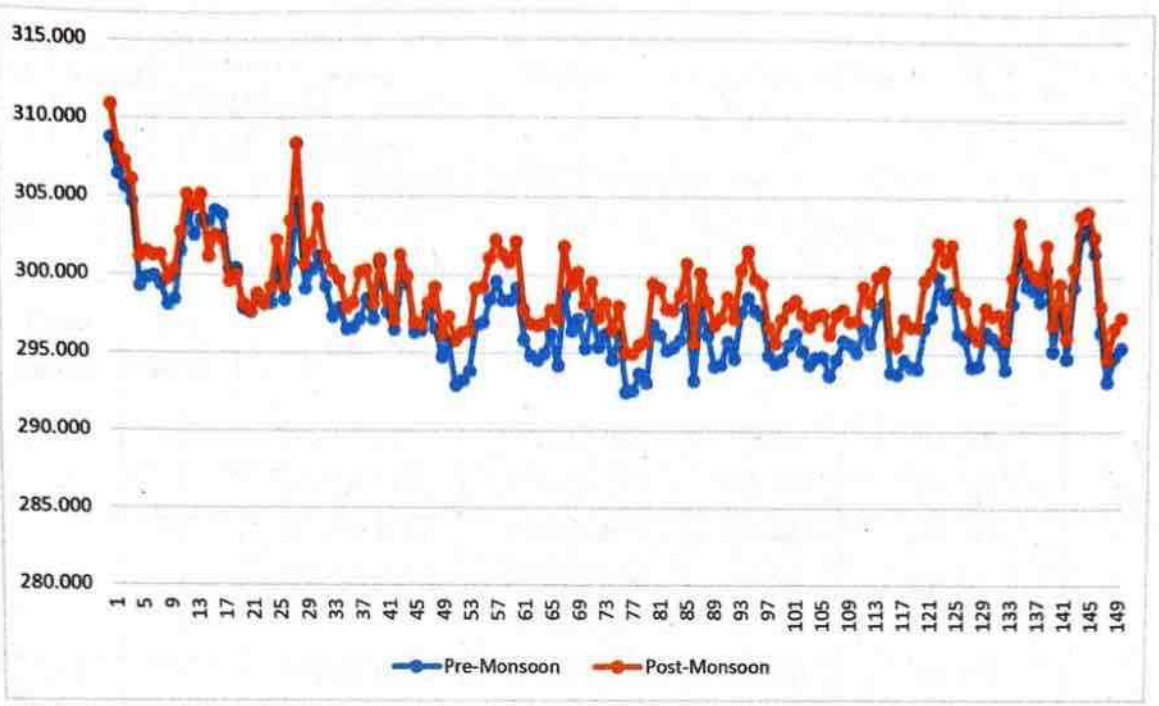
Cross Section	Sl.No	Lat.	Long.	Pre-Monsoon	Post-Monsoon
1-1	1	30°13'45.78"N	77°31'8.43"E	308.811	310.896
1-1	2	30°13'46.53"N	77°31'6.68"E	306.453	308.121
1-1	3	30°13'47.28"N	77°31'4.95"E	305.662	307.228
1-1	4	30°13'48.05"N	77°31'3.21"E	304.656	306.103
1-1	5	30°13'48.81"N	77°31'1.49"E	299.291	301.180
1-1	6	30°13'49.55"N	77°30'59.76"E	299.820	301.504
1-1	7	30°13'50.29"N	77°30'58.01"E	299.972	301.256
2-2	8	30°13'48.85"N	77°30'57.13"E	299.399	301.293
2-2	9	30°13'48.08"N	77°30'58.85"E	298.118	299.776
2-2	10	30°13'47.35"N	77°31'0.57"E	298.456	300.348
2-2	11	30°13'46.56"N	77°31'2.31"E	301.572	302.775
2-2	12	30°13'45.81"N	77°31'4.03"E	303.871	305.155
2-2	13	30°13'45.06"N	77°31'5.79"E	302.562	304.416
2-2	14	30°13'44.31"N	77°31'7.50"E	303.541	305.139
3-3	15	30°13'42.81"N	77°31'6.56"E	303.451	301.169
3-3	16	30°13'43.55"N	77°31'4.84"E	304.120	302.569
3-3	17	30°13'44.33"N	77°31'3.12"E	303.856	302.288
3-3	18	30°13'45.08"N	77°31'1.39"E	300.405	299.597
3-3	19	30°13'45.86"N	77°30'59.64"E	300.442	300.092
3-3	20	30°13'46.60"N	77°30'57.95"E	297.890	298.144
3-3	21	30°13'47.36"N	77°30'56.20"E	297.672	297.757
4-4	22	30°13'45.88"N	77°30'55.27"E	298.431	298.789
4-4	23	30°13'45.10"N	77°30'57.01"E	298.234	298.149
4-4	24	30°13'44.36"N	77°30'58.71"E	298.231	299.229
4-4	25	30°13'43.59"N	77°31'0.46"E	300.374	302.228
4-4	26	30°13'42.84"N	77°31'2.19"E	298.421	299.349

4-4	27	30°13'42.08"N	77°31'3.93"E	300.890	303.458
4-4	28	30°13'41.32"N	77°31'5.64"E	304.688	308.370
5-5	29	30°13'39.82"N	77°31'4.73"E	299.133	300.715
5-5	30	30°13'40.52"N	77°31'2.97"E	300.341	302.010
5-5	31	30°13'41.33"N	77°31'1.27"E	301.201	304.185
5-5	32	30°13'42.08"N	77°30'59.55"E	299.317	301.171
5-5	33	30°13'42.87"N	77°30'57.78"E	297.388	300.273
5-5	34	30°13'43.63"N	77°30'56.11"E	297.891	299.745
5-5	35	30°13'44.39"N	77°30'54.35"E	296.543	297.919
6-6	36	30°13'42.93"N	77°30'53.44"E	296.671	298.253
6-6	37	30°13'42.16"N	77°30'55.17"E	297.208	300.190
6-6	38	30°13'41.40"N	77°30'56.88"E	298.479	300.343
6-6	39	30°13'40.62"N	77°30'58.65"E	297.210	298.208
6-6	40	30°13'39.88"N	77°31'0.35"E	300.782	301.017
6-6	41	30°13'39.11"N	77°31'2.10"E	297.665	298.512
6-6	42	30°13'38.35"N	77°31'3.81"E	296.501	297.159
7-7	43	30°13'36.87"N	77°31'2.88"E	299.409	301.278
7-7	44	30°13'37.62"N	77°31'1.18"E	299.899	299.957
7-7	45	30°13'38.41"N	77°30'59.46"E	296.349	297.007
7-7	46	30°13'39.16"N	77°30'57.74"E	296.459	296.844
7-7	47	30°13'39.92"N	77°30'55.96"E	297.653	298.219
7-7	48	30°13'40.71"N	77°30'54.27"E	296.581	299.225
7-7	49	30°13'41.45"N	77°30'52.52"E	294.784	296.262
8-8	50	30°13'39.96"N	77°30'51.60"E	295.679	297.364
8-8	51	30°13'39.19"N	77°30'53.33"E	292.933	295.818
8-8	52	30°13'38.42"N	77°30'55.02"E	293.244	296.302
8-8	53	30°13'37.64"N	77°30'56.80"E	293.854	296.438
8-8	54	30°13'36.87"N	77°30'58.51"E	296.788	299.116
8-8	55	30°13'36.11"N	77°31'0.24"E	296.988	299.235
8-8	56	30°13'35.38"N	77°31'1.97"E	298.444	301.098
9-9	57	30°13'33.88"N	77°31'1.04"E	299.595	302.260
9-9	58	30°13'34.62"N	77°30'59.32"E	298.388	301.346
9-9	59	30°13'35.42"N	77°30'57.64"E	298.402	300.854

9-9	60	30°13'36.17"N	77°30'55.89"E	299.192	302.150
9-9	61	30°13'36.96"N	77°30'54.13"E	295.871	297.829
9-9	62	30°13'37.71"N	77°30'52.43"E	294.851	296.909
9-9	63	30°13'38.48"N	77°30'50.68"E	294.561	296.799
10-10	64	30°13'36.99"N	77°30'49.75"E	294.981	296.939
10-10	65	30°13'36.22"N	77°30'51.49"E	296.232	297.780
10-10	66	30°13'35.45"N	77°30'53.20"E	294.238	297.223
10-10	67	30°13'34.67"N	77°30'54.94"E	298.779	301.837
10-10	68	30°13'33.90"N	77°30'56.67"E	296.431	299.389
10-10	69	30°13'33.11"N	77°30'58.38"E	297.240	300.217
10-10	70	30°13'32.35"N	77°31'0.09"E	295.321	298.165
11-11	71	30°13'30.86"N	77°30'59.07"E	297.548	299.533
11-11	72	30°13'31.60"N	77°30'57.45"E	295.428	297.310
11-11	73	30°13'32.40"N	77°30'55.73"E	296.266	298.213
11-11	74	30°13'33.17"N	77°30'54.01"E	294.599	296.546
11-11	75	30°13'33.97"N	77°30'52.28"E	296.233	298.021
11-11	76	30°13'34.73"N	77°30'50.58"E	292.512	295.059
11-11	77	30°13'35.54"N	77°30'48.84"E	292.633	294.991
12-12	78	30°13'34.02"N	77°30'47.89"E	293.722	295.546
12-12	79	30°13'33.23"N	77°30'49.65"E	293.122	295.780
12-12	80	30°13'32.45"N	77°30'51.34"E	296.881	299.465
12-12	81	30°13'31.65"N	77°30'53.08"E	296.201	299.185
12-12	82	30°13'30.89"N	77°30'54.80"E	295.208	297.866
12-12	83	30°13'30.11"N	77°30'56.52"E	295.443	297.801
12-12	84	30°13'29.39"N	77°30'58.10"E	295.882	298.729
13-13	85	30°13'27.95"N	77°30'57.13"E	297.921	300.775
13-13	86	30°13'28.63"N	77°30'55.61"E	293.233	295.691
13-13	87	30°13'29.39"N	77°30'53.88"E	298.181	300.189
13-13	88	30°13'30.19"N	77°30'52.17"E	296.175	298.343
13-13	89	30°13'30.97"N	77°30'50.43"E	294.169	296.827
13-13	90	30°13'31.76"N	77°30'48.71"E	294.312	297.310
13-13	91	30°13'32.53"N	77°30'46.98"E	295.796	298.643
14-14	92	30°13'31.05"N	77°30'46.07"E	294.708	297.292

14-14	93	30°13'30.27"N	77°30'47.79"E	297.711	300.369
14-14	94	30°13'29.50"N	77°30'49.51"E	298.601	301.559
14-14	95	30°13'28.70"N	77°30'51.26"E	297.788	299.802
14-14	96	30°13'27.93"N	77°30'52.97"E	297.456	299.451
14-14	97	30°13'27.15"N	77°30'54.69"E	294.894	296.751
14-14	98	30°13'26.50"N	77°30'56.16"E	294.412	295.697
15-15	99	30°13'25.81"N	77°30'53.83"E	294.611	297.269
15-15	100	30°13'26.44"N	77°30'52.04"E	295.599	298.070
15-15	101	77°30'52.04"E	77°30'50.33"E	296.289	298.436
15-15	102	30°13'28.01"N	77°30'48.59"E	295.192	297.556
15-15	103	30°13'28.77"N	77°30'46.85"E	294.329	296.787
15-15	104	30°13'29.56"N	77°30'45.13"E	294.801	297.455
16-16	105	30°13'28.07"N	77°30'44.21"E	294.833	297.573
16-16	106	30°13'27.27"N	77°30'45.94"E	293.601	296.258
16-16	107	30°13'26.52"N	77°30'47.65"E	294.642	297.526
16-16	108	30°13'25.73"N	77°30'49.42"E	295.858	297.848
16-16	109	30°13'24.96"N	77°30'51.13"E	295.635	297.106
16-16	110	30°13'24.17"N	77°30'52.85"E	295.142	297.177
17-17	111	30°13'22.70"N	77°30'51.97"E	296.658	299.315
17-17	112	30°13'23.49"N	77°30'50.24"E	295.691	298.348
17-17	113	30°13'24.23"N	77°30'48.49"E	297.643	299.967
17-17	114	30°13'25.03"N	77°30'46.74"E	298.281	300.311
17-17	115	30°13'25.81"N	77°30'45.01"E	293.823	295.805
17-17	116	30°13'26.56"N	77°30'43.27"E	293.702	295.586
18-18	117	30°13'25.09"N	77°30'42.35"E	294.608	297.266
18-18	118	30°13'24.29"N	77°30'44.10"E	294.192	296.745
18-18	119	30°13'23.50"N	77°30'45.81"E	294.102	296.749
18-18	120	30°13'22.74"N	77°30'47.58"E	296.699	299.694
18-18	121	30°13'21.94"N	77°30'49.28"E	297.434	300.288
18-18	122	30°13'21.17"N	77°30'51.00"E	299.929	302.076
19-19	123	30°13'20.45"N	77°30'48.36"E	298.635	300.960
19-19	124	30°13'21.23"N	77°30'46.64"E	298.981	301.979
19-19	125	30°13'22.03"N	77°30'44.88"E	296.293	298.768

19-19	126	30°13'22.80"N	77°30'43.14"E	295.934	298.405
19-19	127	30°13'23.56"N	77°30'41.43"E	294.231	296.556
20-20	128	30°13'22.10"N	77°30'40.50"E	294.288	295.946
20-20	129	30°13'21.35"N	77°30'42.26"E	296.421	297.968
20-20	130	30°13'20.54"N	77°30'43.97"E	296.056	297.514
20-20	131	30°13'19.77"N	77°30'45.73"E	295.659	297.554
20-20	132	30°13'19.00"N	77°30'47.46"E	294.023	296.018
21-21	133	30°13'17.49"N	77°30'46.53"E	298.272	299.930
21-21	134	30°13'18.26"N	77°30'44.81"E	301.892	303.416
21-21	135	30°13'19.04"N	77°30'43.04"E	299.401	300.848
21-21	136	30°13'19.83"N	77°30'41.30"E	299.121	300.146
21-21	137	30°13'20.61"N	77°30'39.59"E	298.422	299.780
22-22	138	30°13'19.10"N	77°30'38.65"E	300.472	302.041
22-22	139	30°13'18.36"N	77°30'40.38"E	295.230	296.888
22-22	140	30°13'17.57"N	77°30'42.11"E	298.282	299.540
22-22	141	30°13'16.75"N	77°30'43.88"E	294.756	296.081
23-23	142	30°13'15.28"N	77°30'42.96"E	299.334	300.558
23-23	143	30°13'16.06"N	77°30'41.20"E	302.689	303.927
23-23	144	30°13'16.84"N	77°30'39.46"E	303.129	304.181
23-23	145	30°13'17.61"N	77°30'37.71"E	301.534	302.600
24-24	146	30°13'16.93"N	77°30'37.32"E	296.453	298.111
24-24	147	30°13'16.06"N	77°30'38.97"E	293.247	294.732
24-24	148	30°13'15.16"N	77°30'40.63"E	294.857	296.707
24-24	149	30°13'14.28"N	77°30'42.33"E	295.423	297.381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Pre-Monsoon
Post-Monsoon

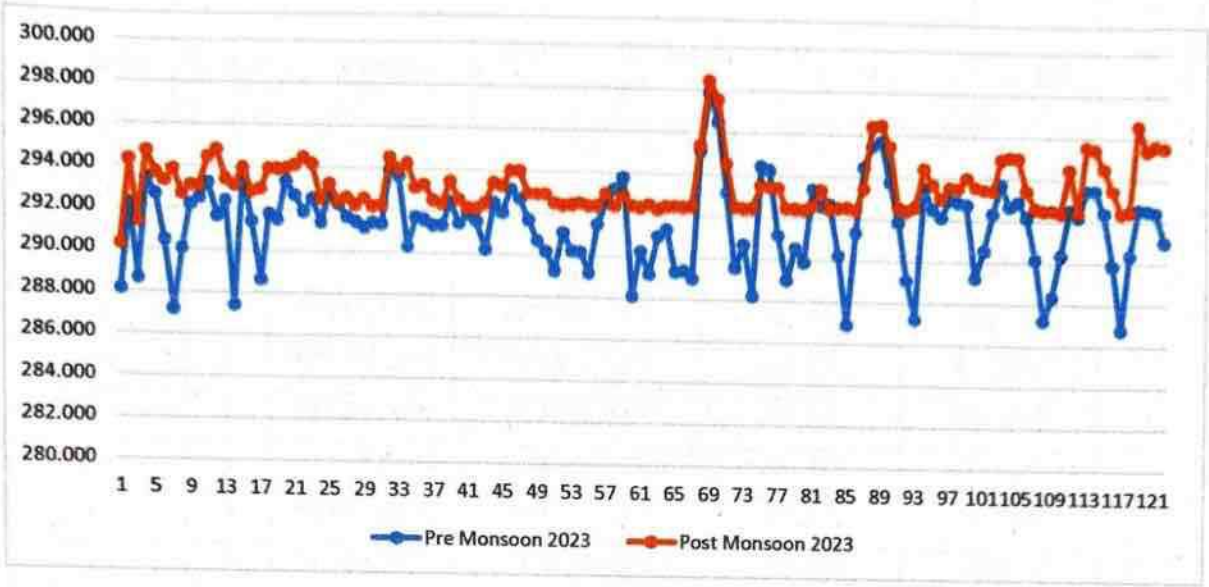
Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
21	Behat	R.B.M.	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000

Cross Section	Ref. Point	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°12'17.38"N	77°30'17.68"E	288.126	290.268
1-1	2	30°12'18.66"N	77°30'16.77"E	292.188	294.286
1-1	3	30°12'20.17"N	77°30'15.80"E	288.642	291.382
2-2	4	30°12'18.66"N	77°30'13.62"E	293.395	294.702
2-2	5	30°12'17.42"N	77°30'14.76"E	292.647	293.697
2-2	6	30°12'16.04"N	77°30'16.30"E	290.482	293.320
3-3	7	30°12'14.20"N	77°30'15.87"E	287.188	293.853
3-3	8	30°12'15.34"N	77°30'14.74"E	290.102	292.692
3-3	9	30°12'16.52"N	77°30'13.39"E	292.188	293.104
3-3	10	30°12'17.76"N	77°30'12.01"E	292.498	293.115
4-4	11	30°12'16.29"N	77°30'10.11"E	293.234	294.456
4-4	12	30°12'15.15"N	77°30'11.42"E	291.646	294.796
4-4	13	30°12'13.80"N	77°30'12.91"E	292.388	293.419
4-4	14	30°12'12.64"N	77°30'14.50"E	287.411	293.136
5-5	15	30°12'10.22"N	77°30'14.03"E	293.599	293.942
5-5	16	30°12'10.83"N	77°30'13.17"E	291.423	292.823
5-5	17	30°12'11.77"N	77°30'12.12"E	288.644	292.974
5-5	18	30°12'12.94"N	77°30'10.98"E	291.776	293.925
5-5	19	30°12'13.87"N	77°30'10.30"E	291.498	293.912
5-5	20	30°12'15.48"N	77°30'8.90"E	293.345	293.951
6-6	21	30°12'14.03"N	77°30'7.27"E	292.677	294.112
6-6	22	30°12'12.92"N	77°30'8.38"E	291.892	294.471
6-6	23	30°12'11.58"N	77°30'9.74"E	292.533	294.172
6-6	24	30°12'9.94"N	77°30'11.32"E	291.401	292.534
6-6	25	30°12'8.76"N	77°30'12.39"E	292.733	293.254

6-6	26	30°12'7.80"N	77°30'13.21"E	292.288	292.411
7-7	27	30°12'5.80"N	77°30'11.96"E	291.664	292.589
7-7	28	30°12'7.16"N	77°30'10.99"E	291.465	292.244
7-7	29	30°12'8.28"N	77°30'10.03"E	291.201	292.571
7-7	30	30°12'9.41"N	77°30'8.84"E	291.425	292.197
7-7	31	30°12'11.02"N	77°30'7.50"E	291.374	292.265
7-7	32	30°12'12.99"N	77°30'5.92"E	293.921	294.521
8-8	33	30°12'12.03"N	77°30'3.51"E	293.673	293.998
8-8	34	30°12'11.08"N	77°30'4.32"E	290.311	294.247
8-8	35	30°12'9.77"N	77°30'5.45"E	291.701	293.121
8-8	36	30°12'8.52"N	77°30'6.56"E	291.586	293.264
8-8	37	30°12'7.19"N	77°30'8.04"E	291.344	292.512
8-8	38	30°12'6.12"N	77°30'9.34"E	291.344	292.362
8-8	39	30°12'4.72"N	77°30'10.75"E	292.457	293.456
9-9	40	30°12'3.93"N	77°30'9.19"E	291.456	292.562
9-9	41	30°12'5.18"N	77°30'7.99"E	291.893	292.174
9-9	42	30°12'6.67"N	77°30'6.54"E	291.566	292.173
9-9	43	30°12'8.25"N	77°30'4.69"E	290.222	292.419
9-9	44	30°12'9.42"N	77°30'3.70"E	292.445	293.418
9-9	45	30°12'11.25"N	77°30'2.05"E	292.001	293.267
10-10	46	30°12'10.01"N	77°30'0.65"E	293.122	293.993
10-10	47	30°12'8.58"N	77°30'1.88"E	292.663	293.995
10-10	48	30°12'7.34"N	77°30'3.02"E	291.659	292.929
10-10	49	30°12'5.71"N	77°30'4.57"E	290.677	292.904
10-10	50	30°12'4.28"N	77°30'5.94"E	290.188	292.918
10-10	51	30°12'2.92"N	77°30'6.80"E	289.261	292.501
11-11	52	30°12'2.17"N	77°30'5.31"E	291.110	292.398
11-11	53	30°12'3.60"N	77°30'4.06"E	290.231	292.436
11-11	54	30°12'5.03"N	77°30'2.96"E	290.192	292.528
11-11	55	30°12'6.56"N	77°30'1.34"E	289.199	292.399
11-11	56	30°12'7.95"N	77°30'0.19"E	291.546	292.412
11-11	57	30°12'9.21"N	77°29'59.24"E	292.557	292.991
12-12	58	30°12'8.16"N	77°29'57.41"E	293.231	292.429
12-12	59	30°12'6.71"N	77°29'58.72"E	293.789	292.923
12-12	60	30°12'5.41"N	77°30'0.06"E	288.124	292.456

12-12	61	30°12'4.08"N	77°30'1.38"E	290.282	292.374
12-12	62	30°12'2.76"N	77°30'2.49"E	289.199	292.496
12-12	63	30°12'1.50"N	77°30'3.81"E	291.006	292.298
13-13	64	30°12'0.85"N	77°30'2.02"E	291.341	292.438
13-13	65	30°12'2.10"N	77°30'0.92"E	289.312	292.451
13-13	66	30°12'3.27"N	77°29'59.90"E	289.388	292.414
13-13	67	30°12'4.68"N	77°29'58.38"E	289.001	292.476
13-13	68	30°12'6.01"N	77°29'57.38"E	295.129	295.381
13-13	69	30°12'7.18"N	77°29'56.21"E	297.888	298.413
14-14	70	30°12'5.58"N	77°29'54.01"E	296.499	297.542
14-14	71	30°12'4.53"N	77°29'55.29"E	293.144	294.522
14-14	72	30°12'3.47"N	77°29'56.62"E	289.566	292.484
14-14	73	30°12'2.10"N	77°29'58.35"E	290.677	292.394
14-14	74	30°12'0.76"N	77°29'59.82"E	288.226	292.421
14-14	75	30°11'59.94"N	77°30'0.77"E	294.411	293.518
15-15	76	30°11'57.93"N	77°29'59.85"E	294.244	293.429
15-15	77	30°11'59.34"N	77°29'58.25"E	291.163	293.431
15-15	78	30°12'0.87"N	77°29'56.71"E	289.008	292.456
15-15	79	30°12'2.38"N	77°29'55.21"E	290.548	292.437
15-15	80	30°12'3.76"N	77°29'54.18"E	289.892	292.384
15-15	81	30°12'4.97"N	77°29'52.99"E	293.372	292.562
16-16	82	30°12'3.78"N	77°29'51.01"E	292.567	293.347
16-16	83	30°12'2.41"N	77°29'52.53"E	292.657	292.474
16-16	84	30°12'1.06"N	77°29'53.88"E	290.236	292.496
16-16	85	30°11'59.73"N	77°29'55.41"E	286.922	292.528
16-16	86	30°11'58.54"N	77°29'56.88"E	291.345	292.394
16-16	87	30°11'57.20"N	77°29'58.61"E	294.451	293.442
16-16	88	30°11'56.29"N	77°29'59.94"E	295.451	296.383
17-17	89	30°11'53.99"N	77°29'59.39"E	295.672	296.459
17-17	90	30°11'55.30"N	77°29'57.62"E	293.773	295.449
17-17	91	30°11'56.84"N	77°29'55.79"E	291.893	292.535
17-17	92	30°11'58.34"N	77°29'53.88"E	289.100	292.419
17-17	93	30°11'59.58"N	77°29'52.43"E	287.233	292.583
17-17	94	30°12'0.76"N	77°29'51.11"E	293.487	294.409
17-17	95	30°12'2.68"N	77°29'49.50"E	292.503	293.667

18-18	96	30°12'1.30"N	77°29'47.74"E	292.122	292.993
18-18	97	30°12'0.16"N	77°29'49.17"E	292.962	293.549
18-18	98	30°11'58.49"N	77°29'50.70"E	292.834	293.502
18-18	99	30°11'57.14"N	77°29'52.14"E	292.732	293.993
18-18	100	30°11'55.84"N	77°29'53.42"E	289.234	293.573
18-18	101	30°11'54.26"N	77°29'55.69"E	290.556	293.449
18-18	102	30°11'53.14"N	77°29'57.21"E	292.334	293.396
18-18	103	30°11'52.05"N	77°29'58.90"E	293.711	294.904
19-19	104	30°11'50.47"N	77°29'58.89"E	292.661	294.991
19-19	105	30°11'51.11"N	77°29'57.78"E	292.882	294.971
19-19	106	30°11'52.42"N	77°29'56.07"E	292.144	293.423
19-19	107	30°11'53.70"N	77°29'54.44"E	290.172	292.578
19-19	108	30°11'55.37"N	77°29'52.57"E	287.231	292.489
19-19	109	30°11'56.36"N	77°29'51.27"E	288.364	292.491
19-19	110	30°11'57.55"N	77°29'49.88"E	290.372	292.389
19-19	111	30°11'58.85"N	77°29'48.39"E	292.508	294.453
19-19	112	30°12'0.20"N	77°29'46.56"E	292.188	292.397
20-20	113	30°11'59.36"N	77°29'44.87"E	293.490	295.531
20-20	114	30°11'57.88"N	77°29'46.76"E	293.466	295.406
20-20	115	30°11'56.21"N	77°29'48.25"E	292.398	294.519
20-20	116	30°11'54.97"N	77°29'49.70"E	289.892	293.482
20-20	117	30°11'53.79"N	77°29'50.84"E	286.788	292.389
20-20	118	30°11'52.15"N	77°29'52.77"E	290.367	292.468
20-20	119	30°11'50.94"N	77°29'54.25"E	292.561	296.578
20-20	120	30°11'49.53"N	77°29'56.25"E	292.520	295.382
20-20	121	30°11'48.32"N	77°29'57.36"E	292.433	295.578
20-20	122	30°11'47.25"N	77°29'58.14"E	291.012	295.512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Pre Monsoon 2023
Post Monsoon 2023

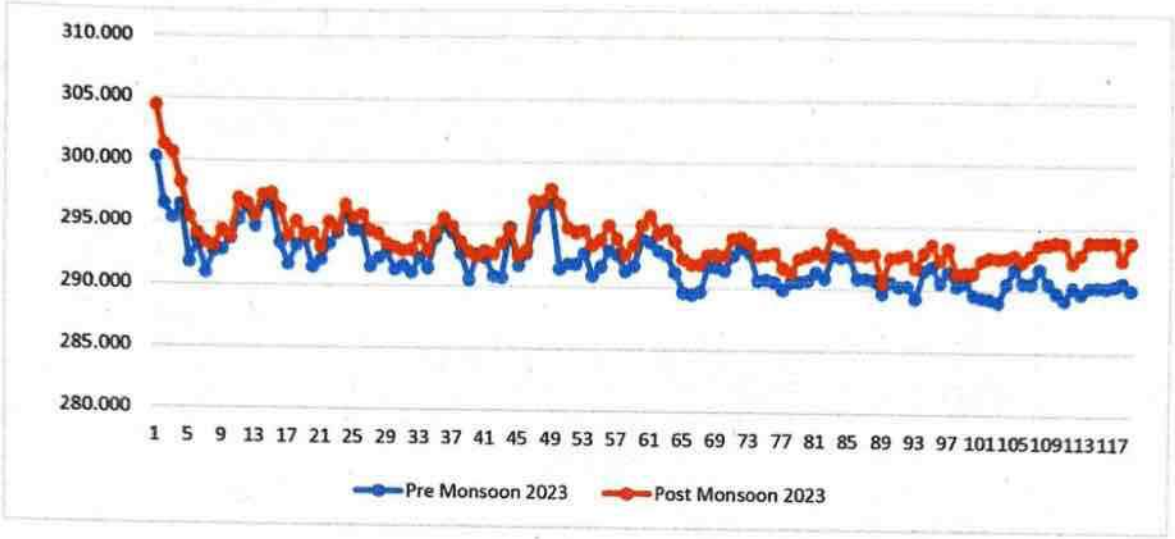
Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
22	Behat	R.B.M.	Yamuna	Aslampur Bartha – Second	1/1 M	28.160

Cross Section	Sl.No	Lat.	Long.	Pre Monsoon 2023	Post Monsoon 2023
1-1	1	30°13'4.33"N	77°30'43.84"E	300.256	304.422
1-1	2	30°13'5.18"N	77°30'42.16"E	296.525	301.258
1-1	3	30°13'6.00"N	77°30'40.47"E	295.368	300.658
1-1	4	30°13'6.82"N	77°30'38.81"E	296.472	298.199
1-1	5	30°13'7.66"N	77°30'37.13"E	291.825	295.508
1-1	6	30°13'8.50"N	77°30'35.43"E	293.658	294.174
2-2	7	30°13'6.98"N	77°30'34.61"E	290.992	293.462
2-2	8	30°13'6.15"N	77°30'36.30"E	292.708	293.182
2-2	9	30°13'5.31"N	77°30'37.98"E	292.885	294.405
2-2	10	30°13'4.47"N	77°30'39.64"E	293.775	293.960
2-2	11	30°13'3.63"N	77°30'41.33"E	295.308	296.962
2-2	12	30°13'2.80"N	77°30'43.02"E	296.342	296.618
3-3	13	30°13'1.21"N	77°30'42.15"E	294.717	295.642
3-3	14	30°13'2.05"N	77°30'40.46"E	296.658	297.291
3-3	15	30°13'2.90"N	77°30'38.80"E	296.609	297.442
3-3	16	30°13'3.75"N	77°30'37.13"E	293.458	296.162
3-3	17	30°13'4.59"N	77°30'35.45"E	291.708	294.006
3-3	18	30°13'5.43"N	77°30'33.76"E	293.247	295.178
4-4	19	30°13'3.94"N	77°30'32.96"E	293.805	294.133
4-4	20	30°13'3.11"N	77°30'34.64"E	291.495	294.272
4-4	21	30°13'2.26"N	77°30'36.33"E	292.108	293.132
4-4	22	30°13'1.39"N	77°30'37.96"E	293.408	295.141
4-4	23	30°13'0.51"N	77°30'39.64"E	294.255	294.591
4-4	24	30°12'59.69"N	77°30'41.31"E	295.655	296.515
5-5	25	30°12'58.20"N	77°30'40.48"E	294.471	295.494

5-5	26	30°12'59.05"N	77°30'38.83"E	294.458	295.754
5-5	27	30°12'59.89"N	77°30'37.13"E	291.588	294.451
5-5	28	30°13'0.75"N	77°30'35.49"E	292.266	294.190
5-5	29	30°13'1.60"N	77°30'33.81"E	292.744	293.462
5-5	30	30°13'2.44"N	77°30'32.15"E	291.333	293.152
6-6	31	30°13'0.94"N	77°30'31.32"E	291.652	292.885
6-6	32	30°13'0.07"N	77°30'32.99"E	291.109	292.981
6-6	33	30°12'59.25"N	77°30'34.68"E	292.335	293.991
6-6	34	30°12'58.39"N	77°30'36.32"E	291.452	292.922
6-6	35	30°12'57.54"N	77°30'37.99"E	293.884	294.365
6-6	36	30°12'56.67"N	77°30'39.68"E	294.852	295.511
7-7	37	30°12'55.15"N	77°30'38.82"E	294.351	294.810
7-7	38	30°12'56.00"N	77°30'37.15"E	292.658	293.622
7-7	39	30°12'56.85"N	77°30'35.46"E	290.552	292.811
7-7	40	30°12'57.68"N	77°30'33.82"E	292.638	292.410
7-7	41	30°12'58.52"N	77°30'32.15"E	292.331	292.911
7-7	42	30°12'59.38"N	77°30'30.48"E	290.858	292.651
8-8	43	30°12'57.87"N	77°30'29.64"E	290.741	293.511
8-8	44	30°12'56.98"N	77°30'31.30"E	294.755	294.652
8-8	45	30°12'56.16"N	77°30'32.96"E	291.705	292.511
8-8	46	30°12'55.31"N	77°30'34.63"E	292.708	292.951
8-8	47	30°12'54.45"N	77°30'36.33"E	294.788	296.894
8-8	48	30°12'53.61"N	77°30'37.95"E	296.652	296.911
9-9	49	30°12'52.08"N	77°30'37.16"E	296.662	297.841
9-9	50	30°12'52.90"N	77°30'35.46"E	291.458	296.655
9-9	51	30°12'53.74"N	77°30'33.79"E	291.885	294.741
9-9	52	30°12'54.63"N	77°30'32.15"E	291.866	294.411
9-9	53	30°12'55.48"N	77°30'30.48"E	292.741	294.541
9-9	54	30°12'56.31"N	77°30'28.79"E	290.925	293.411
10-10	55	30°12'54.82"N	77°30'27.97"E	291.652	293.811
10-10	56	30°12'53.96"N	77°30'29.64"E	292.998	294.989
10-10	57	30°12'53.10"N	77°30'31.32"E	292.658	293.922
10-10	58	30°12'52.26"N	77°30'32.96"E	291.335	292.622

10-10	59	30°12'51.41"N	77°30'34.64"E	291.746	293.411
10-10	60	30°12'50.54"N	77°30'36.32"E	293.885	294.998
11-11	61	30°12'49.03"N	30°12'49.03"N	293.665	295.741
11-11	62	30°12'49.90"N	77°30'33.81"E	292.985	294.335
11-11	63	30°12'50.72"N	77°30'32.13"E	292.638	294.652
11-11	64	30°12'51.58"N	77°30'30.48"E	291.255	293.784
11-11	65	30°12'52.42"N	77°30'28.81"E	289.661	292.323
11-11	66	30°12'53.25"N	77°30'27.12"E	289.506	291.881
12-12	67	30°12'51.74"N	77°30'26.31"E	289.719	291.922
12-12	68	30°12'50.90"N	77°30'27.97"E	291.699	292.668
12-12	69	30°12'50.06"N	77°30'29.62"E	291.758	292.741
12-12	70	30°12'49.19"N	77°30'31.27"E	291.455	292.623
12-12	71	30°12'48.36"N	77°30'32.97"E	292.638	293.991
12-12	72	30°12'47.47"N	77°30'34.66"E	293.266	294.081
13-13	73	30°12'45.97"N	77°30'33.81"E	292.857	293.658
13-13	74	30°12'46.83"N	77°30'32.15"E	290.662	292.632
13-13	75	30°12'47.67"N	77°30'30.46"E	290.734	292.741
13-13	76	30°12'48.51"N	77°30'28.82"E	290.568	292.851
13-13	77	30°12'49.36"N	77°30'27.16"E	289.958	291.662
13-13	78	30°12'50.24"N	77°30'25.48"E	290.554	291.336
14-14	79	30°12'48.58"N	77°30'24.59"E	290.581	292.451
14-14	80	30°12'47.76"N	77°30'26.28"E	290.688	292.659
14-14	81	30°12'46.94"N	77°30'27.96"E	291.366	292.921
14-14	82	30°12'46.12"N	77°30'29.62"E	290.882	292.662
14-14	83	30°12'45.30"N	77°30'31.30"E	292.708	294.411
14-14	84	30°12'44.45"N	77°30'32.99"E	292.554	294.058
15-15	85	30°12'42.96"N	77°30'32.14"E	292.665	293.622
15-15	86	30°12'43.74"N	77°30'30.48"E	290.885	292.854
15-15	87	30°12'44.59"N	77°30'28.79"E	290.900	292.741
15-15	88	30°12'45.39"N	77°30'27.13"E	290.771	292.852
15-15	89	30°12'46.25"N	77°30'25.45"E	289.708	290.584
15-15	90	30°12'47.06"N	77°30'23.76"E	290.667	292.525
16-16	91	30°12'45.59"N	77°30'22.93"E	290.284	292.625

16-16	92	30°12'44.76"N	77°30'24.63"E	290.357	292.844
16-16	93	30°12'43.94"N	77°30'26.33"E	289.337	291.744
16-16	94	30°12'43.08"N	77°30'27.98"E	291.558	292.962
16-16	95	30°12'42.19"N	77°30'29.67"E	291.885	293.665
16-16	96	30°12'41.36"N	77°30'31.33"E	290.657	292.352
17-17	97	30°12'39.92"N	77°30'30.50"E	291.471	293.366
17-17	98	30°12'40.74"N	77°30'28.82"E	290.338	291.332
17-17	99	30°12'41.58"N	77°30'27.15"E	290.628	291.398
17-17	100	30°12'42.39"N	77°30'25.50"E	289.665	291.384
17-17	101	30°12'43.23"N	77°30'23.80"E	289.451	292.366
17-17	102	30°12'44.06"N	77°30'22.12"E	289.329	292.659
18-18	103	30°12'42.49"N	77°30'21.25"E	289.106	292.584
18-18	104	30°12'41.67"N	77°30'22.94"E	290.558	292.628
18-18	105	30°12'40.84"N	77°30'24.63"E	291.776	292.854
18-18	106	30°12'40.03"N	77°30'26.30"E	290.658	292.365
18-18	107	30°12'39.21"N	77°30'27.98"E	290.628	292.847
18-18	108	30°12'38.37"N	77°30'29.66"E	291.766	293.655
19-19	109	30°12'36.81"N	77°30'28.82"E	290.590	293.751
19-19	110	30°12'37.65"N	77°30'27.13"E	289.881	293.929
19-19	111	30°12'38.49"N	77°30'25.44"E	289.284	293.847
19-19	112	30°12'39.31"N	77°30'23.78"E	290.334	292.285
19-19	113	30°12'40.14"N	77°30'22.11"E	289.839	292.953
20-20	114	30°12'40.98"N	77°30'20.42"E	290.358	293.928
20-20	115	30°12'39.46"N	77°30'19.59"E	290.384	293.937
20-20	116	30°12'38.61"N	77°30'21.28"E	290.318	293.947
20-20	117	30°12'37.78"N	77°30'22.96"E	290.451	293.995
20-20	118	30°12'36.98"N	77°30'24.62"E	290.742	292.510
20-20	119	30°12'36.15"N	77°30'26.31"E	290.152	293.958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Pre Monsoon 2023
Post Monsoon 2023

Lease Profile's

Pre-Monsoon

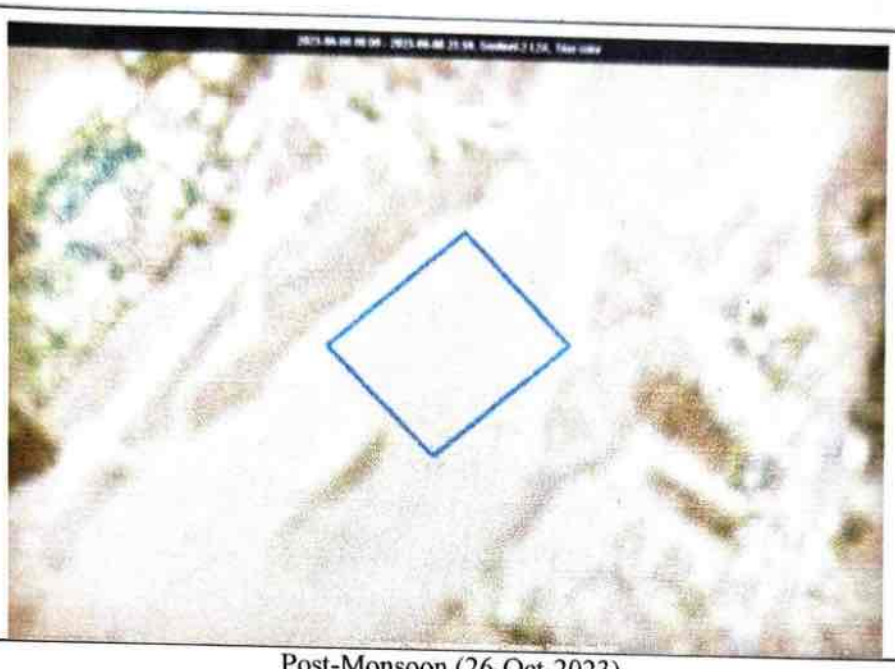
and

Post-Monsoon 2023

Source:- Sentential-2 L2A Satellite

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
1	Behat	R.B.M.	Badshahibagh Rao	Mayapur Rooppur	Gata No. 14/1	3.100

Pre-Monsoon (8-June-2023)



Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
2	Behat	R.B.M.	Yamuna	Bartha Korsi	Gata No. - 1	36.000

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
3	Behat	R.B.M.	Badkala Ra	Haidarpur Hindwala	Khand No / Gata No. - 8/1 , 19 & 22	4.200

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
4	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	Gata No. - 378/2 & 379/2	7.000

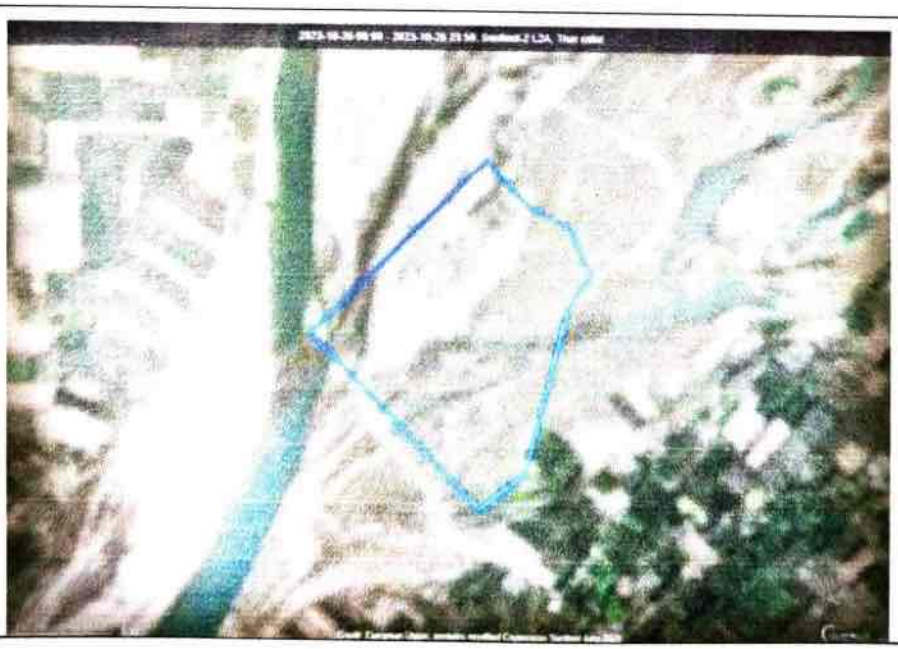
Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
5	Behat	R.B.M.	Yamuna	Nuniyari Aehatmal	Gata No. - 1/1/1 Laat 38	24.290

Pre-Monsoon (8-June-2023)

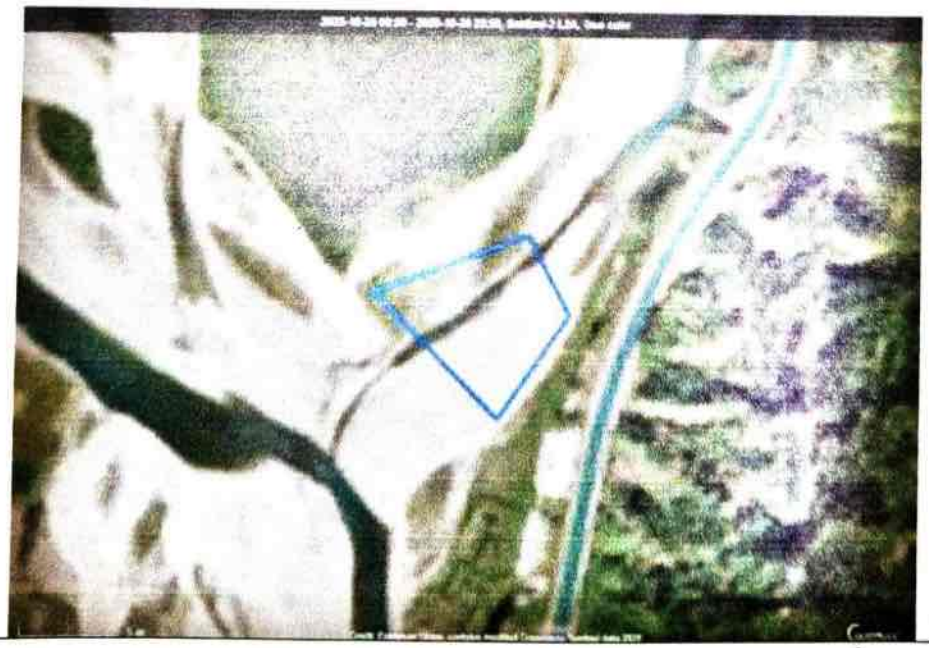
Post-Monsoon (26-Oct-2023)



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
6	Behat	R.B.M.	Yamuna	Rehna	Khand No. / Gata no. - 03, Lot No - 03	8.050

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
7	Behat	R.B.M.	Gaisara Rao	Rahena	Gata No. 179/2	3.750

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
8	Nukur	Sand	Yamuna	Dhikkan Kalan	Gata No. - 839, 841 to 856, 858, 859, 860, 861,863,864,865,866,867, 871, 872, 888, 889, 406 , 407	52.630

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
9	Behat	R.B.M.	Khurwali Ra	Sherpur Pelon	403 , 404/1 , 405 , 406/1 , 416/2 , 421/1 , 422/2 , 423/2 , 424/2 , 429 and 431	6.475

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
10	Behat	R.B.M.	Kaluwala	Kaluwala Pahadipur	119/1 , 120/1 , 192/1 , 193/1 , 125/4	14.900

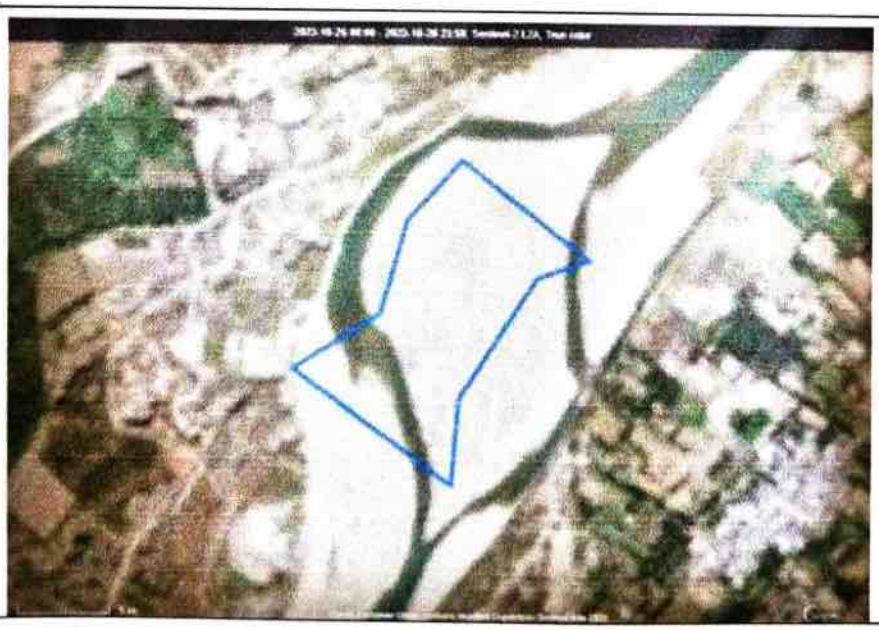
Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
11	Behat	R.B.M.	Yamuna	Akbarpur Bans Achatmal	1	17.900

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)



Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
12	Behat	R.B.M.	Yamuna	Arazi Jevadi Ahatmal and Masoodpur Garh Aehatmal	1 and 1	13.800

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
13	Behat	R.B.M.	Yamuna	Shehjadpur Bans Aehatmal	1	13.000

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
14	Behat	R.B.M.	Yamuna	Alauddinpur Bans Aehatmal	1/1	9.580

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
15	Behat	R.B.M.	Yamuna	Mehmoodpur Nangli Aehatmal	1	15.700

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

जिलाधिकारी (खनन अनु.) सहारनपुर

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
16	Behat	R.B.M.	Yamuna	Shahpur Bans Aehatmal	1/1	15.600

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
17	Behat	R.B.M.	Yamuna	Nityanandpur Aehatmal and Said-mohamadpur Aehatmal	1 and 1ma	17.700

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
18	Behat	R.B.M.	Yamuna	Abutalibpur Garh Aehatmal	1	37.000

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
19	Behat	R.B.M.	Yamuna	Nuniyari Athmal – Khand Second	1/1/1	19.000

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
20	Behat	R.B.M.	Yamuna	Aslampur Bartha – First	1/1 M	36.600

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

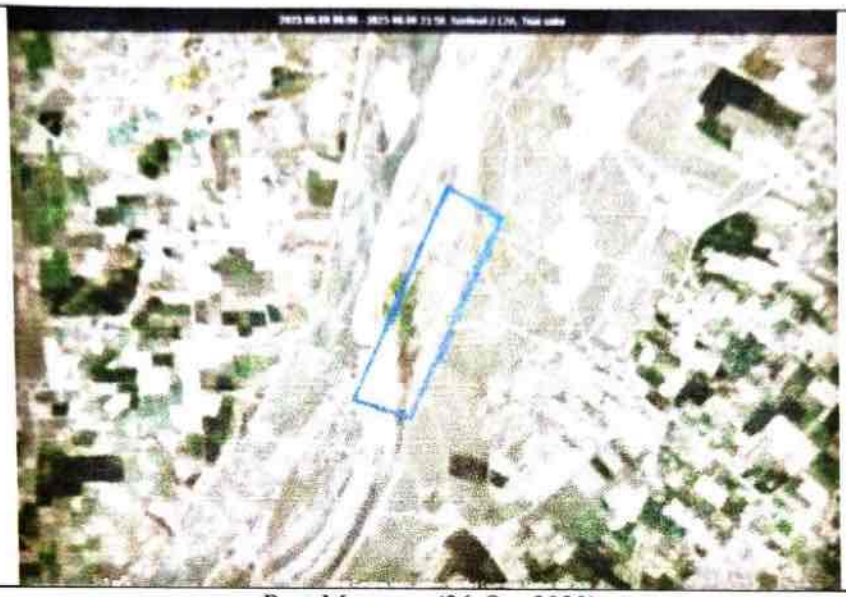
Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
21	Behat	R.B.M.	Yamuna	Rasoolpur Urf Rasooli	1/1	34.000

Pre-Monsoon (8-June-2023)

Post-Monsoon (26-Oct-2023)

Sl.	Teshil	Minor Mineral	River	Village	Gata/Khand/Zone	Area (in Ha.)
22	Behat	R.B.M.	Yamuna	Aslampur Bartha Second	1/1 M	28.160

Pre-Monsoon (8-June-2023)



Post-Monsoon (26-Oct-2023)

Annexure No. SA 14

State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.
Vineet Khand-1, Gomti Nagar, Lucknow - 226 010
Phone : 91-522-2300 541, Fax : 91-522-2300 543
E-mail : doeuplko@yahoo.com
Website : www.seiaaup.com

Minutes of the 814th Meeting of the State Level Environment Impact Assessment Authority, UP (SEIAA) held on 24-05-2024

The meeting of 814th State Level Environment Impact Assessment Authority, UP (SEIAA) was held on-line on 24.05.2024 the Directorate of Environment. The following were present in the meeting:-

1. Smt. Mamta Sanjeev Dubey	**Chairman, SEIAA, U.P**
2. Shri Paras Nath	**Member, SEIAA, U.P**
3. Shri Sanjeev Kumar Singh	**Member Secretary, SEIAA, U.P**

Agenda-A

1. **District Survey Report of Saharanpur.**

SEIAA agreed with the recommendation of SEAC to approve the District Survey Report (DSR) of District- Saharanpur along with following conditions:-

1. Mining Department, UP is advised to develop a mechanism for issuing online LoI.
2. As per MoEFCC notification S. O. 141(E) dated 15.01.2016- The District Survey Report shall be prepared for each minor mineral in the district separately. Hence, DSR for each minor mineral should be submitted separately.
3. The study for mineral availability and its finding should be uploaded on District website.
4. SEIAA noted that in draft DSR unit of quantity is not similar, like under list of potential mining lease (existing and proposed) rivers and cluster and contiguous detail, total excavation is given in MT/Year whereas in final list of cluster geological reserve is given in cubic meter, hence a clarification must be submitted and it should be same as given in LoI.

Nodal Officer
SEIAA, UP
MoM prepared by Secretariat in consultation with Chairman & Members on the basis of decisions taken by SEIAA during the meeting.

(Smt. Mamta Sanjeev Dubey)	**(Sanjeev Kumar Singh)**	**(Paras Nath)**
Chairman	**Member-Secretary**	**Member**
SEIAA	**SEIAA**	**SEIAA**

Annexure No. SA 15

प्रेषक,

अपर जिलाधिकारी (वि0/रा0)/
प्रभारी अधिकारी(खनन)
सहारनपुर।

सेवा में,

सदस्य सचिव,
राज्य पर्यावरण प्रभाव आंकलन प्राधिकरण, (SEIAA)
लखनऊ।

पत्र सख्याः 80 /ख0अनु0/पुनः पूर्ति अध्ययन /2023–24 दिनांक 01 अप्रैल, 2025

विषयः जनपद सहारनपुर में बालू, बजरी, बोल्डर (मिश्रित अवस्था में) उपलब्ध खनन क्षेत्रो की वर्ष 2023–24 में की पुनः पूर्ति अध्ययन (Replenishment Study) के संबंध में।

महोदय,

कृपया अवगत कराना है कि जनपद–सहारनपुर में नदी तल में उपलब्ध बालू, बजरी, बोल्डर (मिश्रित अवस्था में) RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश–2016 और MoEF&CC द्वारा प्रकाशित Enforcement & Monitoring Guideline For Sand Mining–2020 के निर्देशों के अर्न्तगत 22 खनन क्षेत्रों का पुनः पूर्ति अध्ययन (Replenishment Study) गठित तकनीकी समिति वर्ष 2023 हेतु पुनः पूर्ति अध्ययन (Replenishment Study) की रिपोर्ट प्रस्तुत किया गया है। जिसकी प्रति इस पत्र के साथ संलग्न कर सादर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित की जा रही है।

सलग्नकः उपरोक्तानुसार।

भवदीय,

अपर जिलाधिकारी(वि0/रा0)
प्रभारी अधिकारी(खनन)
सहारनपुर।

प्रतिलिपिः–

1. सदस्य सचिव, राज्य स्तरीय विशेषज्ञ मूल्याकन समिति (SEAC), लखनऊ।
2. निदेशक, भूतत्व एवं खनिकर्म निदेशालय, खनिज भवन, उ0 प्र0 लखनऊ।

अपर जिलाधिकारी(वि0/रा0)
प्रभारी अधिकारी(खनन)
सहारनपुर।

प्रेषक,

अपर जिलाधिकारी (वि0/रा0)/
प्रभारी अधिकारी(खनन)
सहारनपुर।

सेवा में,

सदस्य सचिव,
राज्य पर्यावरण प्रभाव आंकलन प्राधिकरण, (SEIAA)
लखनऊ।

पत्र सख्याः 126 /ख0अनु0/पुनः पूर्ति अध्ययन /2023–24 दिनांकः 09 अप्रैल, 2025

विषयः जनपद सहारनपुर में बालू, बजरी, बोल्डर (मिश्रित अवस्था में) उपलब्ध खनन क्षेत्रो की वर्ष 2024 में की पुनः पूर्ति अध्ययन (Replenishment Study) के संबंध में।

महोदय,

कृपया अवगत कराना है कि जनपद–सहारनपुर में नदी तल में उपलब्ध बालू, बजरी, बोल्डर (मिश्रित अवस्था में) RBM की निकासी हेतु रेत खनन प्रबंधन दिशा निर्देश–2016 और MoEF&CC द्वारा प्रकाशित Enforcement & Monitoring Guideline For Sand Mining–2020 के निर्देशों के अर्न्तगत 22 खनन क्षेत्रों का पुनः पूर्ति अध्ययन (Replenishment Study) गठित तकनीकी समिति वर्ष 2024 हेतु पुनः पूर्ति अध्ययन (Replenishment Study) की रिपोर्ट प्रस्तुत किया गया है। जिसकी प्रति इस पत्र के साथ संलग्न कर सादर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित की जा रही है।

सलग्नकः उपरोक्तानुसार।

भवदीय,

अपर जिलाधिकारी(वि0/रा0)
प्रभारी अधिकारी(खनन)
सहारनपुर।

प्रतिलिपिः–

1. निदेशक, भूतत्व एवं खनिकर्म निदेशालय, खनिज भवन, उ0 प्र0 लखनऊ।
2. सदस्य सचिव, राज्य स्तरीय विशेषज्ञ मूल्याकन समिति (SEAC), लखनऊ।

अपर जिलाधिकारी(वि0/रा0)
प्रभारी अधिकारी(खनन)
सहारनपुर।

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REPORTABLE

IN THE SUPREME COURT OF INDIA

CIVIL APPELLATE JURISDICTION

CIVIL APPEAL NOS. 3661-3662 OF 2020

THE STATE OF BIHAR AND OTHERS ...APPELLANT(S)

VERSUS

PAWAN KUMAR AND OTHERS ETC. ...RESPONDENT(S)

O R D E R

Per Court

1. The present appeals challenge the judgment and order dated 14th October 2020, passed by the National Green Tribunal, Principal Bench, New Delhi (hereinafter referred to as "the Tribunal") in O.A. No. 40/2020/EZ with O.A. No. 57/2020/EZ, thereby issuing the following directions:-

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(i) "Having regard to the findings at (a), (b) and (c) above, we direct the State to undertake further exercise for preparation of a fresh DSR for the Banka district.

(ii) As the DEIAA is not functioning as a consequence of the decision of the Tribunal in *Satendra Pandey* (supra), the DSR shall be prepared through a consultant(s) accredited by the National Accreditation Board of Education and Training/Quality Control Council of India in terms of O.M. of MoEF & CC dated 16.03.2010.

(iii) The DSR so prepared shall be submitted to the District Magistrate who shall verify the DSR only in respect of the relevant facts pertaining to the physical and geographical features of the district which shall be distinct from the scientific findings based on the parameters

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prescribed in the SSMMG- 2016. After such verification, the District Magistrate shall forward the DSR for examination and evaluation by the State Expert Appraisal Committee (SEAC) having regarding to the fact that the SEIAA comprises of technical/scientific experts. The SEAC after appraisal of the report shall forward it to the SEIAA for consideration and approval if it meets all scientific/technical requirements.

(iv) While preparing the DSR, the MoEF & CC Accredited Agency/Consultant shall scrupulously follow the procedure and the parameters laid down under the SSMMG-2016 and EMGSM-2020 read in sync with each other."

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2. The appellant-State of Bihar has assailed the said judgment and order dated 14th October 2020, on various grounds.

3. Shri Atmaram Nadkarni, learned Senior Counsel appearing on behalf of the State of Bihar submitted that the Tribunal has grossly erred in holding that unless the State Expert Appraisal Committee (hereinafter referred to as "SEAC") and the State Environment Impact Assessment Authority (hereinafter referred to as "SEIAA") grants approval to the District Survey Report (hereinafter referred to as "DSR") for the purpose of mining of sand, the same cannot be carried out. He submitted that the Tribunal has further held that the very invitation of the tenders without preparing the DSR in accordance with the judgment of the Tribunal in the case of ***Satendra Pandey v. Ministry of Environment, Forest and Climate Change and Another***[1] could not have been done. He submitted that after the tenders are invited in accordance with the DSR prepared by the District Level Committee, the

1 **O.A. No. 186 of 2016 (M.A. No. 350/2016)**

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successful bidder will be required to prepare a mining plan and unless such a mining plan is approved by SEAC and SEIAA, the Environmental Clearance would not be granted and in turn, mining activities cannot be carried out. He submitted that the finding of the Tribunal is like putting the cart before the horse. He further submitted that the Tribunal has also grossly erred in holding that the DSRs prepared by the State were without following the requisite procedure and without considering the relevant factors. He submitted that not only the procedure as prescribed under the relevant rules and regulations was complied with, but the voluminous material in support of the same was also placed on record before the Tribunal. He submitted that the Tribunal has not taken into consideration the said material. He therefore submitted that the judgment and order passed by the Tribunal dated 14th October 2020, needs to be set aside and the State needs to be permitted to finalize the tenders received by it.

4. Shri Nadkarni further submitted that on account of the orders passed by the Tribunal, the old lessees are continuing

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with the mining activities by paying a meagre amount to the State Government. He therefore submitted that on account of this, a huge loss would be caused to the public exchequer. In the alternative, he submitted that the State, at least, needs to be permitted to undertake mining activities through Bihar State Mining Corporation until the DSRs are finalized in accordance with the judgment of the Tribunal.

5. Shri P.S. Patwalia, learned Senior Counsel appearing on behalf of the original applicant vehemently opposed the appeals. He submitted that the Tribunal has rightly held that the DSRs are not prepared in accordance with the relevant rules as well as policy guidelines. He submitted that it is apparently clear that the State has taken into consideration only financial enrichment without considering the environmental aspects.

6. Though, we have heard the learned counsel for both the parties at length on merits, we find that it will be appropriate

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that the appeals are kept pending for further consideration and till then, certain interim orders are passed.

7. It cannot be in dispute that though the developmental activities are not stalled, the environmental issues are also required to be addressed. A balanced approach of sustainable development ensuring environmental safeguards, needs to be resorted to. At the same time, it also cannot be ignored that when legal mining is banned, it gives rise to mushroom growth of illegal mining, resulting into clashes between sand mafias, criminalization and at times, loss of human lives. It also cannot be disputed that sand is required for construction of public infrastructural projects as well as public and private construction activities. A total ban on legal mining, apart from giving rise to illegal mining, also causes huge loss to the public exchequer.

8. Taking into consideration these aspects of the matter, we propose to issue certain interim directions.

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9. The Tribunal, in the case of ***Satendra Pandey*** (supra), has found that the notification dated 15th January 2016, which provided Environmental Clearance to be given by the District Environment Impact Assessment Authority (hereinafter referred to as the "DEIAA") was not in consonance with the judgment of this Court in the case of ***Deepak Kumar v. State of Haryana and Others***[2]. The Tribunal therefore in ***Satendra Pandey*** (supra), had directed Ministry of Environment, Forest and Climate Change (hereinafter referred to as "MoEF and CC) to take steps to revise the procedure laid down in the notification dated 15th January 2016. It is to be noted that MoEF and CC, in accordance with the directions of the Tribunal, had issued Enforcement and Monitoring Guidelines for Sand Mining (hereinafter to referred to as "the 2020 guidelines") in the month of January 2020. Chapter 4 of the 2020 guidelines deals with identification of possible sand mining sources and preparation of DSR. It will be relevant to refer to Clause 4.1.1 (a), (o) and (p) of the 2020 guidelines:-

2 **(2012) 4 SCC 629**

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"4.1 Identification of possible sand mining sources and preparation of District Survey Report (DSR)

4.1.1 Preparation of District Survey Report.

a) District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (Loi) by Mining department or department dealing the mining activity in respective states.

o) Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as **Annexure-II**. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in **Annexure-III**. The details of the transportation need to ~e provided as in **Annexure IV**.

p) **Public consultation**-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general

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> public on the list of mining' lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per **Annexure-V**. The details regarding cluster and contiguous cluster needs to be provided in **Annexure-VI**. The details of the transportation need to be provided in **Annexure-VII.**"

10. It could thus be seen that in accordance with the 2020 guidelines, the DSR is required to be prepared before the auction/e-auction/grant of mining lease by Mining Department or Department dealing with mining activity in the respective States. It is further provided that the potential site for mining having its impact on the forest, protected area, habitation and bridges should be avoided. For this, a sub-divisional committee is required to be formed which, after the site visit, is required to decide regarding the suitability of the sites for mining. The

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sub-divisional committee is further required to record its reasons for selecting the mining lease in the patta land. Various details are required to be given in the annexures appended to the said policy.

11. It is further to be noted that Appendix-X of the notification dated 15th January 2016, issued by MoEF and CC also provides for composition of the sub-divisional committee:-

> "A Sub-Divisional Committee comprising of Sub-Divisional Magistrate, Officers from Irrigation department, State Pollution Control Board or Committee, Forest department, Geology or mining officer shall visit each site for which environmental clearance has been applied for and make recommendation on suitability of site for mining or prohibition thereof."

12. It is to be noted that with the advent of modern technology, various technological gadgets like Drones and satellite imaging etc. can be used for identification of the potential sites and preparation of the DSR and also to check misuse and unauthorized mining.

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13. We further find that when the 2020 guidelines as well as the notification issued by MoEF and CC of 2016 itself provide for constitution of sub-divisional committees comprising of the officers of the State Government from various Departments for identification of the potential sites for mining, there would be no necessity of the DSRs being prepared through private consultants as directed by the Tribunal in the impugned order. The sub-divisional committee consists of various officers from Revenue Department, Irrigation Department, State Pollution Control Board, Forest Department and Geology Mining Department of the State Government. They are better equipped to visit the sites and prepare the draft DSR for the concerned district. Apart from that, preparation of DSR through private consultants would also unnecessarily burden the public exchequer. We are therefore of the view that the direction in that regard issued by the Tribunal requires to be modified. We are further of the considered view that until the DSRs are finalized and granted approval by SEAC and SEIAA, it is appropriate that certain necessary arrangements are permitted

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so that the State can continue with legal mining activities. This apart from preventing illegal mining activities, would also ensure that the public exchequer is not deprived of its share in legalized mining.

14. We therefore find it appropriate to substitute the directions issued by the Tribunal vide judgment and order dated 14th October 2020, with the following directions:-

(i) The exercise of preparation of DSR for the purpose of mining in the State of Bihar in all the districts shall be undertaken afresh. The draft DSRs shall be prepared by the sub-divisional committees consisting of the Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board or Committee, Forest Department, Geological or mining officer. The same shall be prepared by undertaking site visits and also by using modern technology. The said draft DSRs shall be prepared within a

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period of 6 weeks from the date of this order. After the draft DSRs are prepared, the District Magistrate of the concerned District shall forward the same for examination and evaluation by the SEAC. The same shall be examined by the SEAC within a period of 6 weeks and its report shall be forwarded to the SEIAA within the aforesaid period of 6 weeks from the receipt of it. The SEIAA will thereafter consider the grant of approval to such DSRs within a period of 6 weeks from the receipt thereon;

(ii) Needless to state that while preparing DSRs and the appraisal thereof by SEAC and SEIAA, it should be ensured that a strict adherence to the procedure and parameters laid down in the policy of January 2020 should be followed;

(iii) Until further orders, we permit the State Government to carry on mining activities

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through Bihar State Mining Corporation for which it may employ the services of the contractors. However, while doing so, the State Government shall ensure that all environmental concerns are taken care of and no damage is caused to the environment.

15. List the matter after 20 weeks.

.....J.
[L. NAGESWARA RAO]

.....J.
[SANJIV KHANNA]

.....J.
[B.R. GAVAI]

NEW DELHI;
NOVEMBER 10, 2021.

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