

**IN THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

OA No. 752 of 2023

IN THE MATTER OF :

Narender Kumar

...Applicant

Versus

Union of India & Ors

...Respondents

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Supplementary and Final Report of the Joint Committee in the matter of O.A. No. 752/2023 (IA No. 631 of 2025); Narender Kumar V/s Union of India & Ors. in compliance to the Orders of Hon'ble National Green Tribunal dated 19/11/2025.

A. Background:

In the matter of OA No. 752 of 2023; Narender Kumar V/s Union of India and Ors, Hon'ble National Green Tribunal vide Order dated 04.01.2024, had constituted a joint Committee with a direction to the Committee to *i) carry out spot inspection, ii) examine the relevant record and iii) submit the report relating to extent of illegal mining by respondent no. 10, extent of environmental damage caused in the process and remedial action.* In compliance to this order, A report regarding extent of illegal mining and damage assessment was submitted by the Joint Committee constituted in the matter before the Hon'ble NGT on 11/11/2024. The copy of the Report of the Joint Committee is attached as **Annexure-1**.

It was submitted by the Joint Committee in its report filed on 11/11/2024 that the report of HARSAC to validate the extent of illegal mining is awaited.

Hon'ble NGT in its Order dated 19/11/2025 (**Annexure-2**) observed and directed that:

Para 01: *When the matter was listed on 18.09.2025, learned Counsel appearing for the Respondents No. 3 and 4 had made a submission that the final report from the Haryana Space Applications Centre (HARSAC) was received and same would be placed on record within one week.*

Para 03: *One week period for filing the report and six weeks period for completing the pleadings is over and three months have passed thereafter. Yet the Respondents No. 3 and 4 have not placed on record the final report from HARSAC. A prayer for grant of further two weeks' time has been made by submitting that the final report of HARSC is to be routed through the Joint Committee, no such statement was made earlier.*

Para 04: *Hence, in the circumstances of the case noted above, we grant further two weeks' time to Respondents No. 3 and 4 to place on record the final report of HARSAC, subject to deposit of cost of Rs. 50,000/- with the NGT Bar Association within one week.*

B. Supplementary Report of the Joint Committee:

1. Joint Committee constituted in the matter of OA 752 of 2023, in compliance to the orders of Hon'ble NGT dated 04/01/2024, had submitted filed a report on 11/11/2024 relating to extent of illegal mining by Respondent No. 10. This report was prepared based on the examination of the following documents made available to the Joint Committee:
 - i) Mining Plan prepared by Respondent No. 10 and approved by Mining Department.
 - ii) Environmental Clearance granted to Respondent No 10 by MoEF&CC.
 - iii) Consent to Operate (CTO) granted by Haryana State Pollution Control Board.
 - iv) Report prepared by HARSAC for the period from 20/03/2020-11/05/2022.
 - v) Reports of Mining Department.
 - vi) Site Inspection Reports of the Joint Committee submitted earlier before Hon'ble National Green Tribunal.

2. The following points were also taken into consideration by the Joint Committee while preparing the extent of illegal mining prepared and filed in its report dated 11/11/2024:
 - *The maximum mineable area was limited to 24.25 hectares by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 38.25 Hectares proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*
 - *The Quantum of Mining was restricted to 8.39 lacs MT/annum by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 19 Lacs MT/annum proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*
 - *The maximum mineable depth was restricted to 1.33 meter from the original ground level by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 3 mtr proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*

3. The following objections were filed by the project proponent on the interim report of the joint committee:
 - i) *Quantum of legal mining done by the project proponent during 20/03/2020-11/05/2022 was not considered in the interim report,*
 - ii) *Quantity of Overburden not considered by the Joint Committee and*
 - iii) *The quantum of illegal mining done prior to contract of the present proponent not taken into account.*

4. *The Joint Committee in its report filed on 11/11/2024, addressed the objections of the project proponent, which are reproduced below:*

- i. *The quantum of legal mining during the period under reference has been taken into account and the necessary corrections have been incorporated in the preset report.*
- ii. *As per Mining Plan prepared by the project proponent himself and approved by Mining Department, "there will be no overburden and hence so separate dump yard is required" and the status of mining area was indicated as "New Mining Area", therefore, two other issues raised by the project proponent were not found factually correct.*

5. *The following conclusion was drawn by the Joint Committee in its report filed on 11/11/2024, regarding extent of illegal mining done by Respondent:*

- i. *M/s Tirupati Roadways has done illegal mining to the tune of 4860502.68 MT during the period from 20/03/2020 to 15/06/2023. This illegal mining has resulted in GST Loss of Rs. 48, 60, 5027/= (Rs. Four crores eighty-six lacs five thousand and twenty-seven only) and Royalty loss to the State of Haryana amounting to Rs.972,100,536.00 (Rs. Ninety-Seven Crores Twenty-One Lacs Five Hundred and Thirty-Six only). However, the penalty applicable to this 4860502.68 MT illegal Mining during the above period, as per Mining Act comes to only Rs. 45,000/= (Rs. Forty-Five thousand only).*
- ii. *In addition to the above 4860502.68 MT illegal mining estimated by the Joint Committee, an illegal mining of 18828 MT was also reported by Mining Department on the basis of survey conducted during inspection on 15/05/2024, which was disputed by the Respondent No 10 citing the survey conducted by his surveyor in the presence of Joint Committee. The report of HARSAC with regard to illegal mining is awaited.*
- iii. *The project proponent has also done illegal mining in 6.59 hectare area. Total area under mining by the project proponent is 30.84 hectares, which is in excess of 6.59 hectare in comparison to maximum mineable area of 24.25 hectare as permitted in Environmental Clearance granted by MoEF&CC. Thus, the Project Proponent has*

also done illegal mining beyond the permitted mineable lease area, thereby, resulting in damage to the environment.

6. *At the time of concluding the above extent of illegal mining, the report of HARSAC for validating the data examined by the Joint Committee based on the available documents, was awaited.*
7. *Now, HARSAC has submitted the report to the Director General, Department of Mines and Geology vide Letter No. HARSAC/GGM/2025/311-314 dated 18/08/2025. The Copy of the HARSAC Report is attached as **Annexure-3***
8. *The report of HARSAC was circulated to the members of the Joint Committee constituted in the matter on 18/11/2025. The meeting of the Joint Committee was conducted in the office of Deputy Commissioner on 01/12/2024 for reviewing the report of HARSAC and update the extent of illegal mining and environmental damage caused by the Respondent No. 10 i.e., M/s Tirupati Roadways, Village Rattewali, Panchkula, in its report earlier filed before the Hon'ble NGT on 11.11.2024.*
9. HARSAC in its report has mentioned that:
 - i. *The analysis provides **conclusive evidence of excessive, illegal, and unscientific mining** in the Rattewali block, both in terms of **depth and extent (inside buffer & outside lease)**.*
 - ii. *Exact volumes may undergo minor revision once DMG supplies missing benchmark/reference datasets, but **overall findings are robust and consistent**.*
 - iii. *Immediate attention is required from ACS, Mines & Geology Department to:*
 - Finalize reference elevations, permissible limits, and density values.
 - Take enforcement action against excess and out-of-bound mining.
 - Submit factual compliance to Hon'ble NGT (OA No. 752/2023) using this report.

This point was discussed in the meeting of Joint Committee and it was informed by the Mining Department that, "through letters dated 31.01.2025 and 19.02.2025, it has already responded to the queries raised by HARSAC, which have in fact been enclosed with their report as **Annexure-4 (Copy attached)**.

10. The Committee further observed that, *HARSAC in its report has mentioned that it must be ascertained/ensured by the Mining Officer that whether illegal mining was done by the project Proponent, M/s Tirupati Roadways or someone else.*

In this context, the *Assistant Mining Engineer, Panchkula, vide Letter No. 2726 dated 06.12.2025, informed that several surveys, inspections and field verifications of the said mining site have been conducted from time to time by the State Vigilance Bureau and subsequently by teams deputed from the Headquarters. These inspections revealed multiple irregularities by the project proponent, including excavation beyond the permissible depth, mining outside the approved contract area, and other violations of the mining plan and lease conditions. The letter is enclosed as Annexure-5.*

11. The summary of findings of the HARSAC Report with regard to the extent of illegal mining is given below in **Table 1**.

Table 1: Extent of Illegal Mining as per HARSAC Report.

S.No.	Particulars	Values (Area, Quantity, Depth)	Remarks
1.	Extent of Illegal Mining (Area)	~ 166878 m ²	Within lease but beyond 40 mtr buffer (No mining zone).
		~206812 m ²	Outside lease boundary
	Total Illegally Mined Area	~373690 m²	Within and outside lease boundary.
2.	Extent of Illegally Mining (Quantity of Mineral)	~9384188.23 MT	Upto May 2022
		~947885 MT	During May 2022-May 2024
	Total Illegally extracted mineral	~ 10332073.23 MT	Upto May 2024

12. The updated extent of illegal mining in financial terms with regard to GST Loss and Royalty loss to the State of Haryana based on the HARSAC Report, calculated by the Joint Committee with the assistance of Mines and Geology Department, Panchkula is given in **Table 2**. The total extent of illegal mining in financial comes to

Rs.2,169,735,378.00 (Rupees Two hundred sixteen crores, ninety seven lacs, thirty five thousand, three hundred and seventy eight only)

Table 2: Extent of Illegal Mining in financial terms.

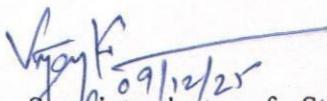
S.No.	Particulars	Values	Remarks
1	Total Illegally mined Material, MT	10332073.23 MT	
2.	Actual Value of illegally mined material, Rs. (@ 200 per MT); Rs.	2,06,64,14,646.00	This amount includes Rs. 50/ per MT as Royalty and Rs 150/-as price of mineral .
3.	Loss of GST on account of Illegal Mining, Rs. @ 5 %; Rs.	103320732.30	
4.	Loss of Royalty to State Govt., on account of Illegal Mining, Rs	516603650.00	This is included in the actual value of illegally mined material.
	Extent of Illegal mining in financial terms (2+3), Rs	2,169,735,378.00 (Two hundred sixteen crores ninety seven lacs thirty five thousand three hundred and seventy eight only)	

13. As submitted earlier in the Report of Joint Committee filed on 11/11/2024, *the Haryana State Pollution Control Board has also initiated the process for imposing Environmental compensation of Rs. 3236586533/= (Rs. Three hundred twenty three crores sixty five lacs eighty six thousand five hundred and thirty three only) through Deputy Commissioner, Panchkula cum Chairman District Level Task Force (DLTF), as per directions of Hon'ble*

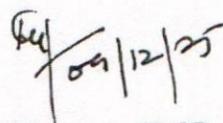
NGT issued vide order dated 26/02/2021 in OA NO. 360 of 2015, for restoration of the environment by preparing an appropriate action plan.

C. Submission:

It is humbly submitted that this supplementary report of the Joint Committee along with report of HARSAC attached herewith as Annexure-3 may kindly be considered by Hon'ble NGT and be taken on record.


Deputy Superintendent of Police, Vigilance, Panchkula


State Mining Engineer
Mines & Geology Department,
Panchkula


Regional Director, CPCB,
Regional Directorate,
Chandigarh


Member Secretary, HSPCB,
Panchkula


Deputy Commissioner,
Panchkula

Dated: December 09, 2025

Report of the Joint Committee with regard to the extent of Illegal Mining done by the Respondent No. 10 (M/s Tirupati Roadways), in the matter of OA No. 752 of 2023; Narender Kumar V/s Union of India and Ors. in compliance to orders of Hon'ble NGT dated 04.01.2024.

1. Background and the Orders of Hon'ble National Green Tribunal:

In the matter of OA No. 752 of 2023; Narender Kumar V/s Union of India and Ors, Hon'ble National Green Tribunal vide Order dated 04.01.2024, had constituted a joint Committee with a direction to the Committee to *i) carry out spot inspection, ii) examine the relevant record and iii) submit the report relating to extent of illegal mining by respondent no. 10, extent of environmental damage caused in the process and remedial action.* IN compliance to this order, an interim report was filed on 28/02/2024 after the site visit conducted on 08/02/2024, by the Joint Committee. The interim report of the Joint Committee was considered by the Hon'ble National Green Tribunal on 10/05/2024 and the following directions were issued vide order dated 10/05/2024 (**Annexure-1**):

Para 8: *"In the above circumstances, we direct respondent no. 4 to duly consider the recommendation made in the Mining Committee by following the principles of "Natural Justice" and take appropriate decision within a period of two weeks from today and submit action taken report before the Tribunal immediately thereafter"*

Para 9: *A request letter has been received from the Joint Committee dated 08.05.2024 seeking extension of time to file the final report so that extent of environmental damage caused through illegal excavation of minerals may be analysed and remedial action may be taken in this regard. For the reasons which are disclosed in the request letter, **the prayer is allowed and further four week's time is granted to file the report...**"*

The 04 members of the Joint Committee namely DC, Panchkula, MS, HSPCB, SME, Mines and Geology Department, Haryana and DSP, Vigilance Department, Panchkula, again submitted request for extension of time line for two weeks, to Hon'ble National Green Tribunal vide letter 31/07/2024 (**Annexure-2**)

It was observed and directed by Hon'ble NGT vide order dated 01/08/2024 (**Annexure-3**) that:

Para 03: *"A communication has been received from the Joint Committee seeking extension of time for filing the final report on the ground that the verification for determining the extent of illegal mining accurately, assessment of environmental damage, identification of necessary remedial action based on finding and compilation of the report is in progress.*

Para 04: *For the reasons reflected in the request letter, further two weeks' time as prayed is granted to the Joint Committee to submit its report."*

2. Compliance of the Directions of Hon'ble National Green Tribunal:

2.1. Action taken by Respondent No. 4 i.e. Department of Mines and Geology, Government of Haryana.

The Department of Mines and Geology submitted the report (**Annexure-4**) before the Joint Committee regarding the action taken so far, against the respondent No. 10 (M/s Tirupati Roadways), as summarized below:

- i. On receipt of the complaint by the Anti Corruption Bureau, the contract area was got assessed through HARSAC along with mining officials, in terms of the quantity of mineral excavated by the contractor company. Observing that the contractor company has

extracted a quantity of 47,66, 079 MT illegally, a total amount of Rs. 35 crore of revenue was reported.

- ii. Subsequently, a committee of departmental officers also inspected the contract area on 11.10.2022 wherein it was found by the committee that a quantity of 2, 93, 923 MT has been illegally excavated other than above.
- iii. Thereafter again a team of departmental officers also inspected the contract area on 15.06.2023 and again found that the contractor company has illegally extracted a further quantity of 16, 44, 500 MT by illegal mining.
- iv. In the light of above, following total penalty amount was imposed on the contractor company by the Mining Officer, Panchkula:

Sr. No.	Date of inspection	Quantity (in MT)	Penalty @ 200 per MT
1.	13.05.2022	47,66, 079	95,32,16, 000.00
2.	11.10.2022	2,93, 923	5,87,84, 600.00
3.	15.06.2023	16,44, 500	32,89,00, 000.00
Total		67,04, 502	134,09,00, 000.00

Further, the Mines and Geology departmental team conducted the inspection of the site after the Joint Committee's visit to the mining area on 08.02.2024 and the following observations were made by the mining departmental team :

- a. As per elevation readings within river bed taken by the surveyor, the depth under mined area varies from 0.3 to 2 m at different points/location at which readings were noted down and by averaging the same it comes out to be 1.0735m. The area where depth of mining operations has exceeded 1.33 m comes approximately 1.5 hectare from which approx 18,228 MT has been excavated.
- b. Fresh mining was observed on the southern-eastern side of the allocated area i.e. adjoining to the GPS Coordinates reading 76°59'24,808 & 30°38'41,856". The same was not within the river but rather was towards the bank side/edge though is part of allocated area which accounts to violation of grant of permission.
- c. Apart from this, the members of earlier committee, who inspected the site earlier on 15.06.2023, observed that mining under point b above is new to them qua being undertaken in virgin area which was not observed in the past by them. Hence apart from the quantity of 67,04, 502 MT extracted illegally previously, a quantity of 18,228 MT has been extracted in violation of the permissible depth.

2.2. Meetings of the Joint Committee after filing the Interim Report on and key decisions taken:

- i) A meeting of the Joint Committee was held on 06.05.2024 with the committee members and during the meeting, the members examined the report submitted by the Mining Department and scheduled a site visit on 15/05/2024, to verify the facts submitted in the report. During the site visit the committee observed discrepancies/errors in the report as

the reading of the DGPS machine and the digital reading taken through mobile phone found varying i.e. from 350 meter in DGPS to 360 meter in mobile phone, therefore the Joint Committee asked the Mining Department to submit their justification/proofs that PP has done the illegal mining in 1.5 hectare (**Annexure-5**).

- ii) Subsequent meeting of the Joint Committee was held on 25.06.2024, wherein it was observed that while the survey conducted by mining on 08/02/2024 indicated additional illegal mining of 18828 MT quantity was extracted illegally amounting to Rs. 3600000.00, the survey conducted by the Surveyor of Respondent No 10 i.e. Tirupati Roadways showed no violation. Therefore, in view of this, a decision was taken by the Joint Committee to get a survey conducted from 3rd agency namely 3rd agency i.e. **DRIISHYA & HARSAC**, to validate the extent of illegal mining reported by Mining department. (Minutes of meeting attached as **Annexure-6**).
- iii) A further meeting of the Joint Committee was conducted on 24/07/2024 to determine the extent of illegal mining by Respondent No. 10 i.e. M/s Tirupati Roadways. Shri Gurnam Singh, Regional Director, CPCB, RD Chandigarh, who was representing CPCB in the Joint Committee superannuated on 30/06/2024. Therefore, Dr. Narender Sharma, Scientist 'F' CPCB, RD, Chandigarh, was nominated to represent CPCB in further proceedings. During meeting on 24/07/2024, new CPCB member pointed out some discrepancies/errors made by the members while interpreting HARSAC report, Conditions of Environmental Clearance and Approved mining plan and requested for a review of quantum of illegal mining estimated in the previous report to ensure filing of a factually correct report before the Hon'ble National Green Tribunal. Minutes of Meeting of the meeting held on 24/07/2024 are attached as **Annexure-7**.
- iv) A meeting notice was issued by HSPCB Regional Officer under the instructions Deputy Commissioner, Panchkula (Nodal Agency) dated 30/10/2024, for the meeting on 06/11/2024, to finalize the report. However, DC, Panchkula got transferred and relieved on 6/11/2024 at 10 AM. Therefore, the meeting of the Joint Committee was held with new Deputy Commissioner, Panchkula, who suggested to finalize the report and get it signed by the previous Deputy Commission. Accordingly, a meeting was held in the office of Regional Officer, HSPCB, on 06/11/2024 at 4.30 PM and the report was finalized.

2.3. Extent of Illegal Mining done by Respondent No. 10 i.e M.s Tirupati Roadways:

Subsequent to the decision taken in the meeting of the Joint Committee conducted in the Office of Deputy Commissioner, Panchkula on 24/07/2024, a meeting of members representing Central Pollution Control Borad (CPCB), Anti-Corruption Bureau (ACB), Mines and Geology Department and Haryana State Pollution Control Board (HSPCB), was held on 29/07/2024, to determine the extent of illegal mining based on inspections conducted so far, reports made available to the Joint Committee and various permissions granted to

Respondent No. 10 i.e. M/s Tirupati Roadways. The following documents were considered by the Joint Committee to estimate the extent of Illegal Mining:

- i) Mining Plan prepared by Respondent No. 10 and approved by Mining Department (**Annexure-8**)
- ii) Environmental Clearance granted to Respondent No 10 by MoEF&CC (**Annexure-9**)
- iii) Consent to Operate (CTO) granted by Haryana State Pollution Control Board (**Annexure-10**)
- iv) Report prepared by HARSAC for the period from 20/03/2020-11/05/2022 (**Annexure-11**)
- v) Reports of Mining Department (**Annexure-12**)
- vi) Site Inspection Reports of the Joint Committee submitted earlier before Hon'ble National Green Tribunal.

The report prepared on 24.07.2024 was reviewed on 06.11.2024 by the Joint Committee, to finalize the report.

2.3.1. Examination of the above documents by the Joint Committee:

The following facts were observed on examination of the above documents, by the Joint Committee:

- a) M/s Tirupati Roadways (Respondent no. 10) submitted online Application No. IA/HR/MIN/66257/2017 dated 27/04/2018 for Environmental Clearance (EC) for mining of 19,00,000 TPA of River Bed Material (Boulder, Gravel & Sand Minor Minerals) from Rattewali Block/PKL B 10 lease area of 45.00 Ha, Located in Rattewali, Tehsil Barwala, District Panchkula, Haryana. The examination of the mining plan indicated that:
 - *The mining plan prepared by Respondent No. 10 was for 1900000 MT/annum of river bed material in lease area of 45 hectares.*
 - *Further, the mining depth as per approved Mining Plan was 3 mtr and the mining contact was for 07 years.*
 - *Out of 45 Hectare lease area, 6.75 hectare area was under restricted zone and hence mining was proposed in 38.25 Hectares.*
 - *As per Mining plan, "there will be no overburden and hence so separate dump yard is required"*
 - *As per mining plan, the status of mining area was indicated as "New Mining Area"*
- b) The Ministry of Environment, Forest and Climate Change IA Division examined the proposal and granted Environment Clearance dated 21.02.2020 to the project proponent (Respondent no. 10) for 07 years and permissible mining of River Bed Material (Boulder, Gravel & Sand) shall be limited to 8.39 LTPA instead of requested 19 LTPA, from an effective mineable area of 24.25 Ha. [B-1 (11.33 Ha.), B-2 (4.5 Ha.) & B3 (8.3 Ha.)], with a maximum mineable depth of 1.33 meter from the original ground level as reported in the replenishment study. Therefore, it may be noted that:

- *The maximum mineable area was limited to 24.25 hectares by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 38.25 Hectares proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*
 - *The Quantum of Mining was restricted to 8.39 lacs MT/annum by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 19 Lacs MT/annum proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*
 - *The maximum mineable depth was restricted to 1.33 meter from the original ground level by the Ministry of Environment, Forest and Climate Change (MoEF&CC) against 3 mtr proposed in the Mining plan by Respondent No 10 and approved by Mining Department.*
- c) The Consent to Operate granted to the respondent No. 10 was valid for **the period 20/03/2020 to 30/09/2024.**
- d) As per site survey conducted by HARSAC on 13/05/20222 and the report of Principal Scientist, HARSAC, Gurugram vide report dated 06.06.2022 total volume of river bed material extracted is **4766079.68 MT (47.66 LTPA) from an area of 30.84 hectares. This total material has been extracted during 20/03/2020-11/05/2022, as per discussion held with Mining Department and ACB during the meeting held on 24/07/2024.**
- e) In addition to the above, the **Mining Department has also assessed the illegal mining of 2,93, 923 MT and 16,44, 500 MT based on the inspection conducted on 11.10.2022 and 15.06.2023 respectively.**
- f) Thereafter, additionally, **an illegal mining of 18828 MT was also reported by Mining Department on the basis of survey conducted during inspection on 15/05/2024, further report of HARSAC to validate the extent of illegal mining is awaited. However, the penalty of Rs. 36 lacs imposed by Mines and Geology Department has already been deposited by the project proponent under protest.**
- g) Total average Number of Trucks dispatched per day, as per documents taken into possession by ACB during surprise check/Investigation comes to 266.65 (267), totalling to 1868 trucks in 7 days (05/05/2022-11/05/2022) Out of these 1868 trucks, only 518 trucks were properly billed mentioning GST and Royalty and remaining are apprehended to be dispatched illegally without paying GST and Royalty.
- 2.3.2. The extent of Illegal Mining by the Respondent No 10 was determined by the Joint Committee based on the above facts derived from the examination of various documents and data made available to the committee, as summarized in **Table 1.**

Table 1: Extent of Illegal Mining by Respondent No. 10 i.e. M/s Tirupati Roadways

S. No	Particulars	Quantity	Actual Value of illegally mined material, Rs. (@ 200 per MT)	Loss of GST on account of Illegal Mining, Rs. @ 5 %	Loss of Royalty to State Govt, on account of Illegal Mining	Applicability of Penalty, as per provisions of Mining Act, Rs.
A	Total material extracted during 20/03/2020-11/05/2022 (2 Years 53 days), as per survey report of HARSAC	4766079.68 MT	953,215,936	47,660,796.8	953,215,936	
B	Total legally extracted material by Respondent No. 10 during 20/03/2020-11/05/2022 (2 Years 53 days) as per EC issued by MoEF&CC and CTO granted by HSPCB (8.39 x2 + (8.39/268x53)	1844000.00 MT	368,800,000	18,440,000	368,800,000	
C	Total material illegally extracted by Respondent No. 10 during 20/03/2020-11/05/2022 (A-B)	2922079.00 MT	584,415,800	29,220,790	584,415,800	
D	Illegally extracted quantity, as per survey conducted by Mining Department on 11/10/2022	293923.00 MT	5,87,84,600	29,39,230	5,87,84,600	
E	Illegally extracted quantity, as per survey conducted by Mining Department on 15/06/2023	1644500.00	329,900,000	16,495,000	329,900,000	
F	Total Illegally extracted Material during the period from 20/03/2020 to 15/06/2023 (C+D+E)	4860502.68	972,100,400	48,605,020	972,100,400	45,000

3. Conclusion:

1. *M/s Tirupati Roadways has done illegal mining to the tune of 4860502.68 MT during the period from 20/03/2020 to 15/06/2023. This illegal mining has resulted in GST Loss of Rs. 48, 60, 5020/= (Rs. Four crores eighty lacs five thousand and twenty only) and Royalty loss to the State of Haryana amounting to Rs.972,100,400.00 (Rs. Ninety Seven Crores Twenty One Lacs and Four Hundred only). However, the penalty applicable to this 4860502.68 MT illegal Mining during the above period, as per Mining Act comes to only Rs. 45,000/= (Rs. Forty Five thousand only).*
2. In addition to the above 4860502.68 MT illegal mining estimated by the Joint Committee, an illegal mining of 18828 MT was also reported by Mining Department on the basis of survey conducted during inspection on 15/05/2024, which was disputed by the Respondent No 10 citing the survey conducted by his surveyor in the presence of Joint Committee. *The report of HARSAC with regard to illegal mining is awaited.*
3. *The project proponent has also done illegal mining in 6.59 hectare area. Total area under mining by the project proponent is 30.84 hectares, which is in excess of 6.59 hectare in comparison to maximum mineable area of 24.25 hectare as permitted in Environmental Clearance granted by MoEF&CC. Thus, the Project Proponent has also done illegal mining beyond the permitted mineable lease area, thereby, resulting in damage to the environment.*
4. It has been reported by Anti-corruption Bureau that, during investigation of case FIR no. 09 dated 25.08.2022 under section 379, 406, 409, 414, 420, 120 B of IPC, section 4, 21 of Mines and Minerals (Development and regulation) Act, 1957 and section 13 (1) (a), 13 (2) of Prevention of Corruption Act, 1988 Police Station Anti-Corruption Bureau, Panchkula, three accused persons including project proponent and two Govt. Officers have been arrested and charge sheet will be filed shortly in the case.
5. *The project proponent has filed the objections on the interim report of the joint committee mainly on three issues:*
 - i) *Quantum of legal mining done by the project proponent during 20/03/2020-11/05/2022 was not considered in the interim report,*
 - ii) *Quantity of Overburden not considered by the Joint Committee and*
 - iii) *The quantum of illegal mining done prior to contract of the present proponent not taken into account.*

In this regard, it is submitted that the quantum of legal mining during the period under reference has been taken into account and the necessary corrections have been incorporated in the preset report.

Further, in view of the fact that as per Mining Plan prepared by the project proponent himself and approved by Mining Department, *“there will be no overburden and hence so separate dump yad is required”* and the status of mining area was indicated as *“New*

Mining Area”, therefor, two other issues raised by the project proponent were not found factually correct.

The Haryana State Pollution Control Board has also initiated the process for imposing Environmental compensation of Rs. 3236586533/= (Rs. Three hundred twenty three crores sixty five lacs eighty six thousand five hundred and thirty three only) through Deputy Commissioner, Panchkula cum Chairman District Level Task Force (DLTF), as per directions of Hon’ble NGT issued vide order dated 26/02/2021 in OA NO. 360 of 2015, for restoration of the environment by preparing an appropriate action plan.

The above report of the Joint Committee is being submitted for the consideration of Hon’ble National Green Tribunal, which may kindly be taken on record. The Joint Committee will abide by any further directions issued by Hon’ble NGT in this matter.

Deputy Commissioner,
Panchkula

Member Secretary,
HSPCB

Regional Director,
CPCB, Chandigarh

SME, Mines &
Geology Department,
Haryana

DSP,
Department,
Panchkula

Item No. 13

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 752/2023

Narender Kumar

Applicant

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 10.05.2024

**CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL JUDICIAL MEMBER
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

Respondent: Mr. Rahul Khurana, Adv. for Respondent No. 3 to 7
Mr. Saurabh Rajpal, Mr. Vinay Kumar Singh & Mr. Siddhant Singh,
Adv. for R - 10

ORDER

1. In this Original Application, the applicant has raised the grievance that respondent no. 10 has done illegal mining much in excess of the permissible limit in violation of the EC condition and that the surprise check was done by the State Vigilance Department and it was found in that surprise check that respondent no. 10 had extracted minerals six times more than the permissible limit in the year and had caused huge loss of revenue of about Rs. 35 crores to the Government of Haryana. The recommendations of the Vigilance Department in the report dated 13.07.2022 have been quoted by the NGT in the order dated 04.01.2024, we took note of the fact that in view of such a large scale illegal extraction, notice of termination of contract dated 22.08.2023 was issued to respondent no. 10 still the mining operation was continuing.

2. In the aforesaid background, the Tribunal on 04.01.2024 had constituted a joint Committee with a direction to the Committee to carry out spot inspection, examine the relevant record and submit the report relating to extent of illegal mining by respondent no. 10, extent of environmental damage caused in the process and remedial action.

3. The interim report dated 28.02.2024 has been submitted by the joint Committee wherein the joint Committee after the site visit on 08.02.2024 and after ascertaining the facts from other sources has found as under:-

“6.0 ASCERTAIN THE FACTS REGARDING SURPRISE CHECK CONDUCTED BY STATE VIGILANCE BUREAU ON 11.05.2022”

That state Vigilance Bureau on source information, such as "GST, Royalty is being evaded by way of not issuing bills of the Trucks/Dumpers taking material from the mine at Rattewali, Panchkula and mining beyond permissible limit by M/s Tirupati Roadways Mine at Village- Rattewali", conducted a surprise check on 11.05.2022 with a team of officers (herein referred as team) of the above said site. During the surprise check, the team examined the relevant documents/records and it was revealed that during the period of 05 days from 05.05.2022 to 11.05.2022, a total number of 1868 Trucks/Dumpers were found to be taking out the material. Whereas, bills mentioning GST and Royalty etc. of only 518 Trucks/Dumpers were found to be issued.

That thereafter on 13.05.2022 in the presence of Mining Officer, Senior Surveyor from Mining Department, Panchkula, Survey of the site (M/s Tirupati Roadways, Rattewali, Panchkula) was conducted by Officers/Officials of HARSAC, Gurugram to verify as to how much volume of material has been extracted from the said river/mine. Further, Principal Scientist, HARSAC, Gurugram vide report dated 06.06.2022 reported to the Vigilance Department, Panchkula that total volume extracted is reported to be 4766079.68 MT (47.66 LTPA).

That as per clause 21 (A) specific conditions of Environment Clearance letter no. J11015/75/2017-IA. II(M) dated 21.02.2020 issued to M/s Tirupati Roadways (Respondent no. 10), Rattewali, Panchkula, the permissible limits of river bed material (Boulder, Gravel and Sand) shall be limited to only 8.39 LTPA (8390000 MT) instead of requested 19 LTPA from an effective mineable area of 24.25 Ha with a maximum mineable depth of 1.33 meter from the original ground, and during the surprise check the extracted mining volume found beyond permissible limits, accordingly, the Inspector, State Vigilance Bureau, Panchkula sent a report dated 23.06.2022 to the Deputy Inspector General, State Vigilance Bureau, Panchkula with the following recommendations:-

1. A case May be registered under Section 420, 379, 414 of IPC and Section 4/21 of MMDR Act and 13 (2) r/w 13 (I) (d) of PC Act. against M/s Tirupati Roadways, owners of the firm and the unknown Government servants of Mining Department of Panchkula.
2. In addition to the punitive action, as per the term and condition of the lease, recovery of loss of revenue may be made from M/s Tirupati Roadways.
3. As per source report, it is reported that M/s Tirupati Roadways is still continuing with the illegal extraction of minerals/materials,

therefore, Mining Department should take effective steps for prevention of further loss of revenue.

4. Mining Department should also get conducted geo-spatial surveys of all the mines through HARSAC to check loss of revenue.

The copy of surprise check report dated 23.06.2022 is annexed as **Annexure-R-5**.

- **COMPLAINT LODGED-**

That Respondent No. 10 (Tirupati Roadways) extracted beyond permissible limits minerals/materials for which Environment Clearance granted and during the surprise check dated 11.05.2022, several others offences found committed by the Respondent no. 10, Sh. Shreef Singh, DSP, State Vigilance Bureau lodged a FIR (09/2022) on 25/08/2022 against the M/s Tirupati Roadways and Officers/Officials of the Mining Geology Department under the Section 379, 414, 420 of IPC, 1860 & Section 4, 21 of Mines and Minerals (Development and Regulation) Act, 1957 and 13 (2), 13 (I) (a) of Prevention of Corruption Act, 1988 (**Annexure- R-6**).

- **HARSAC REPORT DATED 06.06.2022-**

That State Vigilance Bureau, Panchkula, Haryana vide letter no. Spl 01/PS/SVB/PKL dated 12.05.2022 has requested to HARSAC to measure the volume of material extracted from mines at Village Rattewali, by M/s Tirupati Roadways Mining site. Therefore, HARSAC has conducted the DGPS survey at Rattewali mining site on 13.05.2022 along with officials of State Vigilance Bureau, Sr. Surveyor of head office Mines and Geology, and Mining officer Panchkula, Haryana as per their directions and requirements.

- **METHODOLOGY FOR CALCULATION VOLUME EXTRACTED MATERIAL-**

To perform the following analysis of surface volume and extracted material from the river bed at very first we have to fix a ground level contour from SOI toposheet. The vertical accuracy of the Differential Global Positioning system (DGPS) instrument is evaluated by comparing with Survey of India (SOI) 360m contour of the M/S Tirupati Roadways and its Surroundings area through DGPS readings. It seems that the DGPS, Z value approximately [t 1.14) is high from the SOI contour. So, the observed value from DGPS surveyed points are subtracted by the value of 1.14 m to achieved the nearest correct Z value. With the help of corrected DGPS points we have created digital elevation model (DEM) raster surface to put forwarding the process we have generate surface contour using GIS Environment. After that we have proceed to the calculating process.

- **HARSAC SURFACE VOLUME ANALYSIS OF MATERIAL EXTRACTED-**

As per the Mining plan the existing River Bed Level value is 356.8 M and permissible River Bed Level value is 353.8 M subject to verify from Mining Department. The current deepest River Bed Level measured on one site is 342.30 M through DGPS survey. Elevation

difference is 11.497 meters beyond the permissive level. Total Mining Area is 45 hectares as per Mining Plan and mining activity occurred in 30.84 hectares.

- **HARSAC CONCLUSION-**

Based on interpretation / analysis of mining plan it is seems that the existing River Bed Level value is fixed but the river bed level is dependent on gradient variations due to slope, and aspect, geological structure, elevation pattern, nature of rocks, hydrological settings and Land-Use Land-Cover. Thus, it is submitted that the volume calculation is not fixed for the entire area of interest (AOI) due to the above relevant factors. The entire report is prepared as per the information (existing level of river bed and permissive level of river bed) available in the mining plan provided by email dated 17/05/2022.

*The copy of HARSAC report dated 06.06.2022 is annexed as **Annexure- R-7.***

- **STATUS REPORT OF FIR-**

That as mentioned above a FIR has been registered against the M/s Tirupati Roadways and the unknown officers/Officials of the Mining Department at PS, ACB, Panchkula. Investigation report dated 27.02.2024 received from the DSP, ACB, Panchkula and submitted that searches were conducted at the office of Mining Site and Office of accused firm. Relevant persons/Officials have been examined from accused firm M/s Triupati Roadways Mine and Tirupati Roadways Mine and documents received during investigation from the Mining Department and Officers/Officials of Mining Department are being examined.

*Investigation conducted so far has revealed that here is conspiracy of mining officers/officials with the owners of the said firm in getting extracted huge volume of material more than the permissible limit. Still the case is under investigation and the same will be concluded shortly (**Annexure- R-8.**)”*

4. The report of the joint Committee on page 343 also states about conspiracy of Mining Officers/Officials with the Project Proponent by observing as under:-

*“Investigation conducted so far has revealed that here is conspiracy of mining officers/officials with the owners of the said firm in getting extracted huge volume of material more than the permissible limit. Still the case is under investigation and the same will be concluded shortly (**Annexure- R-8.**)”*

5. The interim report of the joint Committee mentions as many as 15 points relating to compliance of EC conditions in the tabulated form and

records as many as seven non-compliance by the respondent no. 10. The observation of the joint Committee in the interim report is as under:-

“Observations of the Joint Committee:

1. *During inspection of the Joint Committee on 08.02.2024, it was found that mining has been done within the pillars installed by the Revenue Department and Mining Department and same has been verified by the Tehsildar, Panchkula that no mining was done beyond the pillars. However, the committee observed that the PP has made Mining beyond 1.33 mtr. which is permitted in the Environment Clearance. Besides the mining is not being done in scientific way and formation of ponding was seen in the river bed. No water flow was observed on the day of inspection as this river is tributary of Tangri and a seasonal river.*
 2. *The Mining Department has been asked to provide the detail of exact mineable mineral excavated from the river bed. Further, the Mining Department has asked for three weeks time from the Joint Committee to provide the above mentioned details/information and to complete the survey. In case if Mining Department submit report that mineable mineral excavated in excess to the EC conditions, then HSPCB will impose Environmental Compensation.*
 3. *As submitted by the DSP, Vigilance a FIR under Mines and Minerals Act, IPC and Prevention of corruption has been lodged against the PP and the investigation is under process.”*
6. Considering the seriousness of the matter, the joint Committee in the interim report has made following recommendations:-

“Recommendation/Remedial action:

Joint Committee observed that the PP has not complied with the EC conditions hence LOI may be suspended by the Mines and Geology Department, Haryana till verification is completed by Joint Committee and final report is submitted by the Mining Department as stated in observation no. 2.”

7. In terms of the said recommendations, the Mining and Geology Department was required to consider suspending the LOI issued to the PP till verification is completed by the joint Committee and the final report is submitted. Though this recommendation was made on 28.02.2024, and more than two months have passed thereafter, but no

action taken by the Mining and Geology Department, Respondent No. 4 has been pointed out.

8. In the above circumstances, we direct respondent no. 4 to duly consider the recommendation made in the Mining Committee by following the principles of 'Natural Justice' and take appropriate decision within a period of two weeks from today and submit action taken report before the Tribunal immediately thereafter.

9. A request letter has been received from the Joint Committee dated 08.05.2024 seeking extension of time to file the final report so that extent of environmental damage caused through illegal excavation of minerals may be analysed and remedial action may be taken in this regard. For the reasons which are disclosed in the request letter, the prayer is allowed and further four week's time is granted to file the report.

10. The respondent no. 10 has filed objection to the joint Committee report but on perusal thereto, we find that all the findings which are recorded in the interim report have not been questioned nor any reasonable material has been enclosed to doubt the same.

11. List on 01.08.2024.

Prakash Shrivastava, CP

Sudhir Agarwal, JM

Dr. A. Senthil Vel, EM

May 10, 2024
Original Application No. 752/2023
SN

To

The Hon'ble Chairperson
and his Companion Members of the
Hon'ble National Green Tribunal,
New Delhi.

Subject: OA No. 752/2023 (Narender Kumar V/s Union of India and Ors.)

We, the Joint Committee constituted as per the Hon'ble NGT order dated 04/01/2024 in Original Application No. 752 of 2023 (Narender Kumar V/s Union of India and Ors.), hereby submit this request for kind consideration of Hon'ble NGT.

Background:

- Pursuant to the NGT order, the meeting of Joint Committee was held on 25/06/2024 wherein it was observed that while the survey conducted by mining on 08/02/2024 indicated additional illegal mining of 18828 MT quantity was extracted illegally amounting to Rs. 3600000.00, the survey conducted by the Surveyor of Respondent No 10 i.e. Tirupati Roadways showed no violation. Therefore, in view of this, a decision was taken by the Joint Committee to get a survey conducted from 3rd agency namely DRIISHYA & HARSAC, to validate the extent of illegal mining reported by Mining department.
- The Joint Committee engaged the services of DRIISHYA agency to conduct a survey. The report from DRIISHYA agency is still awaited.
- Further, M/s Tirupati mines was suspended by the Mining Department (copy attached).

Request for Extension of Time:

- Given the ongoing verification process and pending survey report, the Joint Committee request an extension of time to:
 - Determine the extent of illegal mining accurately.
 - Assessing the environmental damage.
 - Identify necessary remedial actions based on findings.
 - Compile a comprehensive final report.
- That the DRIISHYA agency assured that within 3-4 days they will submit the report to the Joint Committee, therefore joint committee needs some additional times for examination of report and all other relevant documents.
- In light of the abovementioned facts, the Joint Committee pray before this Hon'ble NGT for additional 02 weeks times for the above tasks and this extension will allow Joint Committee to provide an accurate and well-informed report to the Hon'ble NGT Mining Operation has already been suspended. After receiving of report, further action will be taken against Project Proponent by concerned Departments.

~~Deputy Commissioner,
Panchkula~~

Sudhi
Member Secretary,
HSPCB

Mohini
SME, Mines & Geology
Department, Haryana

Vijay
DSP, Vigilance Department,
Panchkula

282
18/06/24
PanchkulaBefore the Appellate Authority-cum-Director General,
Mines & Geology Department

Appeal under sub-rule (1) of Rule 109 of Haryana Minor Mineral Concession, Stocking and Transportation of Mineral and Prevention of Illegal Mining Rules, 2012 (hereinafter referred as State Rules, 2012) for setting aside the impugned demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 issued by Mining Officer, Mines and Geology, Panchkula.

M/s Tirupati Roadways.

---Appellant

Vs.

Mining Officer, Mines and Geology, Panchkula.

---Respondent

Present:-

1. Vaneet Soni, Advocate

...on behalf of the appellant.

2. Deepak Kumar, State Geologist.

.....on behalf of the Department.

ORDER

The present appeal has been filed by the appellant Shri Gurpreet Singh Sabharwal through his Counsels Vaneet Soni (P/1239/2011) & Naveen Kumar (P/2459/2014), Advocates, challenging the demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 issued by Mining Officer, Mines and Geology, Panchkula. In the interest of natural justice, appellant was afforded opportunity of hearing on 08.05.2024 and on request of the counsel for the appellant, next date was fixed 22.05.2024. Advocate Vaneet Soni, appeared on behalf of the appellant firm and Deepak Kumar, State Geologist was present on behalf of the department.

2. On asking about the facts of the case, Deepak Kumar, State Geologist submitted that in the e-auction held on 24.05.2017 and 25.05.2017 at the State Government web portal, appellant-M/S Tirupati Roadways gave highest bid of Rs. 11,72,50,000/- per annum for the grant of mining contract of Rattewali Block/PKL B-10, district Panchkula having an area of 45 hectares for extraction of boulder, gravel and sand for a period of seven years. The highest bid of the appellant was accepted by the State Government and a "Letter of Intent" was granted to him on 16.06.2017 so as



to enable him to get environment clearance (EC) from the Ministry of Environment, Forest and Climate Change, Government of India (in short MoEF&CC) under its notification dated 14.09.2006.

3. That, a contract agreement on Form MC-1 of the State Rule 2012 was also executed on 4.12.2018 by the appellant and his solvent sureties with the DGMG on behalf of the State Government. In compliance with condition No 3(xvii) and 3(xviii) of the LOI referred to above appellant obtained environment clearance from the State Environment Impact Assessment Authority (SEIAA) on the recommendations of State Environment Appraisal Committee (SEAC) on 21.02.2020. Its perusal shows that the appellant was permitted to extract 8,39,000/- MT of boulder, gravel and sand per annum. After seeking Consent to Establish and Consent to Operate from Haryana State Pollution Control Board, the appellant commenced mining w.e.f.21.03.2020.

4. That it is pertinent to point out that a surprise checking was conducted by the State Vigilance Bureau, Haryana (ACB) at the site of M/s Tirupati Roadways and during inspection, it was found that the contractor i.e. M/s Tirupati Roadways had misappropriated the Government property and extracted 47,66,079.68 MT of mineral illegally. Further to verify the fact, the then DMG Haryana constituted a committee. The said committee, inspected the mine of the appellant on 23.11.2022 and further detected illegal mining to the tune 18,467 MT (allegedly mining done up to the depth of 1.75 meter instead of permissible 1.33 meter) inside the contracted area and 2,75,456 MT from the area adjoining the contracted area. Further, the said team again inspected the above said area on 15.06.2023 and also found fresh illegal excavation of mineral to the tune of 16,44,500 MT. Mining Officer, Panchkula issued a show cause notice to the appellant firm on 22.8.2023 based on direction of the then Director, Mines and Geology Haryana in light of report given by the inspection team and directed the appellant firm to deposit a sum of Rs 134,09,45,600/- as royalty, price and fine for 67,04,503 MT of boulder, gravel and sand illegally mined by appellant firm. On the said notice, the contractor firm submitted their response on 04.09.2023. The contents in the reply were found not on merits/satisfactory by the Mining Officer, Panchkula therefore the same was rejected by him and the contractor firm was directed to pay the price, royalty and fine against the total quantity which comes out of Rs.1,34,09,45,600/- into Government Treasury within a period 07 days failing which no further opportunity shall be afforded and mining operation of Rattewali Block/PKL B10, District Panchkula would be suspended and the case for termination

of your contract will also be forwarded to the Director, Mines and Geology, Haryana and Government dues shall be recovered under Arrear of Land Revenue Act.

5. Thereafter, the appellant firm filed Civil Writ Petition No. 1254 of 2024 titled as Tirupati Roadways V/s State of Haryana and others before the Hon'ble Punjab and Haryana High Court, Chandigarh and the said case was disposed of by Hon'ble Mr. Justice Sureshwar Thakur and Hon'ble Mrs. Justice Sukhvinder Kaur, the contents of order dated 20.01.2024 exactly reads as under:-

**"CORAM: HON'BLE MR. JUSTICE SURESHWAR THAKUR
HON'BLE MRS. JUSTICE SUKHVINDER KAUR**

**Present: Mr. R.S. Rai, Sr. Advocate with
Mr. Vaneet Soni, Advocate for the petitioner.**

**Mr. Ankur Mittal, Addl. AG Haryana with
Mr. Saurabh Mago, DAG, Haryana.**

SURESHWAR THAKUR, J. (ORAL)

1. Learned State counsel, does not oppose the prayer made today before this Court, by the learned counsel for the petitioner, that the Authority which issued impugned notices, but without at this stage making any insistence, upon the petitioner to make the deposit of the amounts mentioned in the table, as, occurring in Annexures P-16 and P-18, may proceed to afford an opportunity of personal hearing to the petitioner.

2. Consequently, the writ petition is disposed of with a direction to the author of the above annexures, to within a period of 10 days from today, afford an opportunity of personal hearing to the petitioner.

3. Furthermore, after the said opportunity becoming granted to the present petitioner, he shall expeditiously proceed to, in accordance with law, if otherwise deemed fit, re-draw fresh notices.

**(SURESHWAR THAKUR)
JUDGE**

20.01.2024

**(SUKHVINDER KAUR)
JUDGE"**

6. In compliance of above order, the Mining Officer, Panchkula afforded an opportunity of personal hearing to the petitioner/appellant firm on 15.02.2024 wherein

Gurpreet Singh Sabharwal appeared on behalf of the contract firm. He stated that in response to notice dated 22.08.2023 issued by the department, a reply/response was submitted by the firm vide their letter dated 04.09.2023. The Mining Officer, Panchkula after examining the contents/facts of reply dated 04.09.2023 concluded that same was without any merit, therefore the same was rejected by him in the light of report submitted by the Vigilance Department and inspection reports of the Departmental Committee constituted by the Director, Mines and Geology, Haryana.

7. Aggrieved by the above order of Mining Officer, Panchkula, the contractor firm now through counsels namely Vaneet Soni (P/1239/2011) & Naveen Kumar (P/2459/2014), Advocates has filed the present appeal for setting aside the impugned demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 passed by the Mining Officer, Panchkula

8. During course of hearing, counsel of the appellant firm stated that they were awarded the contract to mine an area of 45 hectares situated in Rattewali Block/PKL B-10 in District Panchkula. Since 21.03.2020, Tirupati has been carrying out mining in the contract area in accordance with the law.

9. That notice dated 19.02.2024 was given by Mining Officer is not a speaking order and against the principle of natural justice. He (counsel of the appellant) further stated that while deciding the matter, Mining officer, Panchkula did not consider their reply dated 04.09.2023 annexed as Annexure A-4. Para No. 4 to 16 of reply by the appellant are relevant so as to prove their contentions. With this counsel of the appellant said that main contention against the notice dated 19.02.2024 are two fold. One is regarding quantity shown as extracted illegally within contract area beyond depth and second is regarding quantity shown as extracted illegally outside the contract area.

10. With regard to quantity shown as extracted illegally from outside the contract area, he stated that prior to the grant of mining contract, there was rampant illegal mining in the area and qua the same various FIR's had been registered by the office of Mining Officer, Panchkula and the appellant was not even in the picture at that stage. The appellant firm is only responsible for mining within the allocated area and has no relation whatsoever with any mining outside the mining area. Any such mining is illegal and deserves to be investigated to determine the actual culprits involved in the case. Copy of the FIRs registered by the department between the years 2017 to 2020 have also been provided by them at various occasions to the Mining Officer,

Panchkula and they cannot be burdened with the cost of material so excavated by those persons.

11. Further with regards to Vigilance inspection, they claimed that vigilance inspection was done without following scientific measures, it was duly objected and on 5th December 2022 a proper survey report submitted to the Vigilance Department. The counsel for the appellant also stated that they have filed a CWP before Hon'ble High Court qua quashing of the FIR filed by the Vigilance department and same is listed for final arguments on 11.07.2024.

12. They further also stated that appellants were neither issued any notice nor associated with any inspection done by the department. Appellant submitted that with regards to first allegation qua illegal mining outside the contract area, they are in no position to make submissions in respect of this finding as they were/are not concerned with mining outside the mining area and it was the duty of the department to ensure that illegal mining is not carried out.

13. With regards to the second allegation pertain to exceeding the depth prescribed for mining in 7.68 acres of land. No details of the land area were provided along with this notice, neither the copy of the report prepared behind their back was supplied and the extent of illegal mining being alleged is not possible considering that the mined mineral has to be transported on open roads, where nakkas are setup and regular checking are made.

14. That appellant were surprised to receive a letter dated 22nd August 2023 demanding a sum of Rs.134,09,45,600/- which is not only without basis but also exaggerated. Response to this notice requires the segregation of the demand into area which falls within the mining contract and that which falls outside and this has no concern with the mining contract.

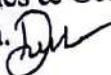
15. Appellant has also submitted a report of Tehsildar/ Patwari wherein it was stated that they are doing mining within pillar erected by them and no illegal mining observed outside.

16. Whereas on asking, Mining Engineer, Head Quarter stated that whenever visit was conducted, the contractor firm was informed by the Mining Officer Panchkula well within time and representatives and their staff were always present during every inspection done and nothing had been done on their back. This is strengthened by the fact that this is an active mine with staff of the appellant always present at the site. The demand notices given are valid in lines with inspection so conducted by

Vigilance department and the department. Further he also submitted that in compliance of direction of Hon'ble National Green Tribunal in OA No.752 of 2023, another inspection was made by a committee constituted by Hon'ble NGT. He further stated that Copy of the FIRs between years 2017 to 2020 submitted by the appellant firm have also been examined and they have no proper details of areas which can relates that the same were being done for the alleged adjoining area for which demands are raised by the Mining Officer. With regards to the report of Tehsildar he stated that the report prepared without ascertaining boundary pillars with any technical instruments.

I have gone through the records and facts placed before me and after giving thoughtful consideration to the facts and record it is being observed the Vigilance department (Now ACB) conducted survey involving surveyors of the department and HARSAC which is an established technical organisation of the State with expertise in Geo surveys. To assist ACB, they prepared a detailed report with depth level maps. However, the same has been challenged by the appellant before Hon'ble High Court but there is no stay qua applicability. With regard to illegal excavation detected near the contract area by department teams, it has not been established that the earlier FIRs submitted by the appellant relates to these specific areas. Therefore, it is clear that all the demand notices given by the Mining Officer were/are valid as they are based on inspection reports of Vigilance (ACB) as well as the department and the appellant firm were well aware of the said inspections. Further since they have not deposited any amount demanded under the impugned notices so as to prove their bonafide therefore their mining operation are suspended with immediate effect with direction to deposit penalty as demanded by the Mining Officer, Panchkula. If the penalty demanded by the mining Officer is not deposited within one month, the contract will be terminated with other consequences as per law.

Panchkula, Dated the
22nd May, 2024

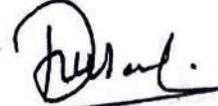

(Mandip Singh Brar, IAS)
Director General, Mines & Geology,
Haryana. 

Endst. No.: DMG/HY/Cont./Rattewali-Block/PKL-10/2017/2489

Dated: 22/05/2024

A copy is forwarded to the following for information and necessary action:-

1. The Deputy Commissioner, Panchkula.
2. Assistant Mining Engineer, Mines and Geology Department, Panchkula with the direction to ensure that no mining activity takes place at the site till further orders.
3. M/s Tirupati Roadways, #3, Sadashiv Properties, Katras Road Bank More, Dhanbad, Jharkhand, Haryana.



State Geologist,
for Director General, Mines & Geology,
Haryana.

Item No. 12

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 752/2023

Narender Kumar

Applicant

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 01.08.2024

**CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: Ms. Shalabh Singhal, Mr. Gaurav Bansal, Ms. Nandita Bansal & Ms. Chandrika Upadhyaya, Advs.

Respondent: Mr. Rahul Khurana, Adv. for Respondent No. 3 to 7
Mr. Saurabh Rajpal, Mr. Vinay Kumar Singh & Mr. Siddhant Singh,
Advs. for R - 10
Mr. Ashutosh Agarwal & Mr. Attin Shankar Rastogi, Advs. for MoEF & CC
(Through VC)

ORDER

1. In this original application, the grievance of Applicant is in respect of illegal mining by Respondent No. 10 in excess of permissible limit.

2. The Tribunal had constituted a Joint Committee which had submitted the interim report on 28.02.2024 which was considered by the Tribunal on 10.05.2024. The final report of the Joint Committee is awaited.

3. A communication has been received from the Joint Committee seeking extension of time for filing the final report on the ground that the verification for determining the extent of illegal mining accurately, assessment of environmental damage, identification of necessary remedial action based on finding and compilation of the report is in progress.

4. For the reasons reflected in the request letter, further two weeks' time as prayed is granted to the Joint Committee to submit its report.

5. The prayer made by Counsel for Respondent No. 10 for grant of four weeks' time after the submission of report for filing objection to the report is accepted.

6. List on 12.11.2024.

Prakash Shrivastava, CP

Arun Kumar Tyagi, JM

Dr. A. Senthil Vel, EM

August 01, 2024
Original Application No. 752/2023
DV

From

The Director General,
Mines and Geology, Haryana, DHL Square, Plot No. 9,
2nd Floor, Sector-22, IT Park,
Panchkula, Haryana.

To

District Magistrate,
Panchkula.

Memo No. DMG/HY/OA No. 752/2023/ 2050
Dated- 25.04.2024

Subject: Inspection Report of Rattewali Mining Block/ PKL B-10".

On the subject noted above.

2. In this regard, as you aware that in compliance with the orders dated 04.01.2024 passed in OA No.752 of 2023 Narender Kumar Vs. Union of India, the Joint committee so constituted was required to carry out the site inspection, examine the relevant record and submit the report relating to extent of illegal mining by the Contractor Company and extent of environmental process as well as its remedial action. The Committee after visiting the site, sought the report from this office about mining operations being undertaken at present.

3. In this behalf before discussing the findings of the inspection, it is worth to inform you that earlier also the department has imposed fine on M/s Tirupati Roadways, the contractor company of Rattewali block after observing that they had under taken illegal mining. The details of earlier action/penalty imposed are as under:-

- a. On receipt of the complaint by the Anti Corruption Bureau, the contract area was got assessed through HARSAC along with mining officials, in terms of the Quantity of mineral excavated by the contractor company. Observing that the contractor company has extracted a quantity of 47,66,079 MT illegally, a total amount of Rs. 35 crore of revenue loss was reported.
- b. Subsequently, a committee of departmental officers also inspected the contract area on 11.10.2022 wherein it was found by the committee that a quantity of 2,93,923 MT has been illegally excavated other than above.

- c. Thereafter again a team of departmental officer inspected the contract are on 15.06.2023 and again found that the contractor company has illegally extracted a further quantity of 16,44,500 MT by illegal mining.
- d. That in the light of above, following total penalty amount was imposed on the contractor company by the Mining Officer, Panchkula:

Sr. No.	Date of inspection	Quantity (in MT)	Penalty @ 200 per MT
1.	13.05.2022	47,66,079	95,32,16,000
2.	11.10.2022	2,93,923	5,87,84,600
3.	15.06.2023	16,44,500	32,89,00,000
Total		67,04,502	134,09,00,600

4. Now coming to the present OA filed by the applicant, the Hon'ble NGT vide orders dated 04.01.2024 constituted a joint committee comprising of Member Secretary, CPCB, Director Mines and Geology, Member Secretary, Haryana State Pollution Control Board, Representative of IG, Vigilance Department and District Magistrate, Panchkula. The DM Panchkula has been appointed as Nodal Agency for this purpose.

5. In compliance with the above orders, the joint committee visited the mining contract area on 08.02.2024 and thereafter sought the report from the respective/ Mining Department. Acting on the same, the inspection was made by the departmental team, wherein following has been found/observed during the inspection:-

- a. As per elevation readings within river bed taken by the surveyor, the depth under mined area varies from 0.3 to 2m at different points/ location at which readings were noted down and by averaging the same it comes out to be 1.0735m. The area where depth of mining operations has exceeded 1.33 m comes approximately 1.5 hectare from which approx 18,228 MT has been excavated.
- b. Fresh mining was observed on the southern-eastern side of the allocated area. i.e adjoining to the GPS Coordinates reading 76°59'24.808" & 30°38'41.856". The same was not within the river but rather was towards the bank side/ edge though is part of allocated area which accounts to violation of grant.

- c. Apart from this, the members of earlier committee, who inspecting the site earlier on 15.06.2023, observed that mining under point b above is new to them qua being undertaken in virgin area which was not observed in the past by them. Hence apart from the quantity of 67,04,502 MT extracted illegally previously, a quantity of 18,228 MT has been extracted in violation of the permissible depth.

It may be noted that the above findings of the committee is for the current ongoing pre monsoon season. The map as well as section prepared by the surveyor in this behalf is also attached as Annexure-1.

This is for your information and necessary action.



State Mining Engineer,
For Director General, Mines and Geology,
Haryana, Panchkula

Minutes of the 3rd meeting held under the Chairmanship of Worthy Deputy Commissioner, Panchkula on 06.05.2024 at Mini Secretariat, Sector-1, Panchkula in O.A. No. 752 of 2023 titled Narender Kumar V/s Union of India & Ors.

The 3rd meeting of Joint Committee constituted by Hon'ble NGT vide its order dated 01.03.2024 in O.A. No. 752 of 2023 titled Narender Kumar V/s Union of India & Ors was held on 06.05.2024 at 04.00 Hrs at Mini Secretariat, Sector-1, Panchkula, in compliance of the directions issued by Hon'ble NGT. The list of participants is attached at **Annex**.

Member Secretary, Haryana State Pollution Control Board welcomed all the participants and briefly explained the objective of the meeting. Further, MS, HSPCB informed the Joint Committee that Mining Department has submitted the report dated 25.04.2024 and as decided in the previous meeting, a request letter on behalf DC, Panchkula has been issued to the DRIISHYA for conducting drone survey of the site in question.

The Joint Committee members discussed and examined the report submitted by the Mining Department and all the members agreed to the point that before reaching any conclusion there is need/requirement to conduct the site visit at earliest and verification or analysis of facts submitted by the Mining Department in the report. The discussion held in the meeting and the decisions taken are as below:

1. The Joint Committee will conduct site visit on 07.05.2024 and all the concerned members are requested to be present at the site before 10.30 AM.
2. The concerned Officials/Officers of the Mining Department, Panchkula will remain present at the site alongwith all the relevant/necessary documents and reports. Further, the Competent Surveyor of the Mining Department will also remain present at the site.

The meeting ended with thanks to all participants.

Sudha
06/05/24
Regional Officer,
HSPCB, Panchkula

Minutes of the 3rd meeting was held on 25.06.2024 at 11.30 AM under the Chairmanship of Sh. Pardeep Kumar, I.A.S, Member Secretary, HSPCB in the HSPCB Conference Room, C-11, Sector-6, Panchkula in the matter of OA No. 752/2023 titled as Narender Kumar V/s Union of India & Ors.

The meeting of Joint Committee of statutory regulators, Central Pollution Control Board, Department of Mines and Geology, State of Haryana, Haryana State Pollution Control Board, Vigilance Department, State of Haryana and District Magistrate, Panchkula Constituted by Hon'ble NGT, vide its order dated 04.01.2024 in the matter of OA No. 752/2023 titled as Narender Kumar Vs Union of India and others was held on 25.06.2024 at 11.30 AM in the HSPCB Conference Room, C-11, Sector-6, Panchkula in compliance the directions of Hon'ble NGT.

At the outset, Regional Officer, HSPCB, Panchkula Region welcomed all the participants present in the meeting on behalf of Member Secretary, HSPCB and apprised that Hon'ble NGT directed the Joint Committee to file final report before the next date of hearing in this matter. Following officers attended the meeting and site visit:-

1. Sh. Gurnam Singh, Regional Director, CPCB.
2. Sh. Vijay Kumar Nehra, DSP, ACB, Panchkula.
3. Dr. Madhvi Gupta, SME, Mines & Geology Department.
4. Sh. Sudhir Mohan, Regional Officer, Panchkula Region.
5. Sh. Ramesh Kumar, Mining Officer, Mines & Geology Department.
6. Sh. Gurpreet Sabharwal, Representative of Respondent no. 10 (M/s Tirupati Roadways).

Regional officer briefed survey was completed by the surveyor of the M/s Tirupati Roadways in the presence of the mining officials and the Committee on 15.05.2024 and submitted his report to the committee.

During the meeting, Survey report of M/s Tirupati Roadways, Rattewali has been examined, and discrepancy observed between the report of mining Department and Respondent no. 10 report.

Surveyor of the M/s Tirupati Roadways informed that they have conducted a survey from unmined block upper stream (U/S) of the river and the unmined block downstream (D/S) of the river. Further he added that there is availability of excess replenishment & material available in the river bed.

It was observed that report submitted by the M/s Tirupati Roadways showing no violation and no illegal mining has been done by them but according to the report of Mining Department, Panchkula unit has made the violation and 18828 quantity was extracted illegally amounting to Rs. 3600000. In the past as per report of mining department unit had made the violation i.e.

Sr. No	Date of inspection	Quantity (in MT)	Penalty @ 200 per MT
1	13.05.2022	47,66,079	95,32,16,000
2	11.10.2022	2,93,923	5,87,84,600
3	15.06.2023	16,44,500	32,89,00,000
Total		67,04,502	1,34,09,00,600

Mining Department officials briefed that they also have conducted a survey and submitted the report of unmined block of the site.

In the end it was decided by the Committee as there is discrepancy in both the report so let the 3rd agency i.e DRIISHYA , HARSAAC submit their report in the matter.

During the discussion, MS, HSPCB asked the Mining Officials, whether any illegal mining was done by the PP in the past, if done, then provide the details of FIR/action taken report in this regard

Further, MS, HSPCB asked the Mining Officials that if any technology is available to determine the illegal mining done by the PP in the past, then it may be done earliest.

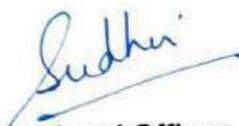
Representative of the M/s Tirupati Roadways informed the Joint Committee that they have deposited the earlier imposed penalty by the Mining Department on the PP for the excess mining i.e. @ 35,00,000 Lacs.

The matter was discussed at length and after deliberations, the Joint Committee decided to invite the concerned officials of DRIISHYA/HARSAAC in the next meeting so that matter could be concluded at the earliest.

Further, following directions were issued by the Committee:-

1. Mining Department should submit their report along with the details of any FIR/ violations /Penalty imposed on the M/s Tirupati Roadways.
2. Representative of the HARSAAC should be present in the next meeting along with report of site inspection reg. Illegal mining.
3. Mining officials coordinate with the DRIISHYA and asked them to conduct the survey at the earliest and submit their report within 7 days.

The meeting ended with thanks to all participants.


Regional Officer,
Panchkula Region

Minutes of the 4th meeting held under the Chairmanship of Deputy Commissioner on 24.07.2024 in Conference Hall, Mini Secretariat, Sector-1, Panchkula in the matter of Narender Kumar V/s Union of India &Ors in O.A. No. 752/2023.

The meeting of Joint Committee of statutory regulators, Central Pollution Control Board, Department of Mines and Geology, State of Haryana, Haryana State Pollution Control Board, Vigilance Department, State of Haryana and District Magistrate, Panchkula Constituted by Hon'ble NGT, vide its order dated 04.01.2024 in OA No. 752/2023 in the matter of Narender Kumar Vs Union of India and others was held on 24.07.2024 in Conference Hall, Mini Secretariat, Sector-1, Panchkula, in compliance of the directions of Hon'ble NGT.

At the outset, Regional Officer, HSPCB, Panchkula Region welcomed all the participants present in the meeting on behalf DC, Panchkula and apprised that agenda of this meeting is to determine the extent of illegal mining/environmental damage caused by the respondent no. 10 and to identify the remedial action in this regard. Further it was informed that CPCB member, Sh. Gurnam Singh, Regional Director, Chandigarh has superannuated on 30.06.2024 and therefore Dr. Narender Sharma, Sc-F and Regional Director has been nominated by CPCB, as a member of Joint Committee. Following officers attended the meeting:-

1. Sh. Yash Garg, IAS, Deputy Commissioner, Panchkula.
2. Sh. Pardeep Kumar, IAS, Member Secretary, HSPCB, Panchkula.
3. Sh. Narender Sharma, Regional Director, CPCB
4. Sh. Vijay Kumar Nehra, DSP, ACB, Panchkula.
5. Dr. Madhvi Gupta, SME, Mines & Geology Department.
6. Sh. Sudhir Mohan, Regional Officer, Panchkula Region.
7. Sh. Phool Kumar, COO, DRIISHYA.
8. Dr. Anup Kumar, Principal Scientist, HARSAAC, Hisar.
9. Sh. Rohan Kumar, Assistant, HARSAAC.

The following point were discussed during the meeting:

1. DRIISHYA Agency Survey Report:

- o Phool Kumar, COO, DRIISHYA informed the committee that they have prepared a survey report.
- o However, submission of the report is contingent upon receiving payment.
- o Madhvi Gupta, SME, Mining Department assured the committee that payment would be made to the DRIISHYA within 03 days as file is already approved from competent authority.

2. Deputy Commissioner, Panchkula directions:

- Deputy Commissioner, Panchkula directed the Mining Department to expedite the payment to the DRIISHYA agency. As payment is assured by the SME, Mining Department, the Deputy Commissioner, Panchkula further directed the DRIISHYA to submit the survey report so that it could be analyzed and the final report be submit before the Hon'ble NGT.

3. Vigilance Department update:

- Representatives from the Vigilance Department shared that FIR already lodged against the respondent no. 10 and ongoing investigation is underway.

4. CPCB request for review:

- Sh. Narender Sharma, CPCB pointed out that in the previous report submitted by Joint Committee, there are some discrepancies/errors in interpretation of HARSAC Report, Conditions of Environmental Clearance and Approved Mining Plan. Therefore, quantum of illegal mining estimated in the previous report needs a review by the Joint Committee to ensure filing of a factually correct report before the Hon'ble NGT.

5. Committee Decision:

- The Joint Committee decided to submit the report before the Hon'ble NGT on the basis of relevant records/data available and allocate 03 weeks times for assessing environmental damage caused by respondent no. 10 and necessary remedial action in this matter.

The meeting ended with thanks to all participants


**Regional Officer,
Panchkula Region.**

Category-A

Modified Mining Plan

with progressive closure plan

(Submitted under Rule Haryana Minor Mineral Concession Rules, 2012)

Department of Mines and Geology
Chandigarh

APPROVED

Vide Letter No. *DMS/AY/MP/Rattewali block PKLB-10/*

दिनांक / Dated. *07-08-2018*

FOR

राज्य खनन इंजीनियर
State Mining Engineer

/3989-92

KHASRA NO.- 141mean,

MINERAL- BOULDER, GRAVEL & SAND,

MINING AREA- 45.00HECT.,

NEAR VILLAGE - RATTEWALI BLOCK - PKL-B-10,

DISTRICT- PANCHKULA (HARYANA)

IN FAVOUR OF

M/s Tirupati Roadways,

through it's Proprietor Shri Lakhmir Singh Sabharwal,

R/o- 3, Sadashiv Properties, Katras Road,

Bank More, Dhanbad, Distt.- Dhanbad (Jharkhand)

PREPARED BY

Nimish Singhwi, Mining Engineer,

15, New Glass Factory Colony, Sunderwas, Udaipur (Raj.)

Mobile No.: 94141-10360,

Phone no.-0294-2492060, Fax No.- 0294-2492060

Email: - nimesh.singhvi@gmail.com

Registered Post

From

The Director,
Mines and Geology, Haryana,
30 Bays Building, 1st Floor, Sector-17,
Chandigarh.

✓ To

M/s. Tirupati Roadways,
R/o 3-Sadashiv Properties, Khatras Road,
Bank More, Dhanbad, district Dhanbad.

Memo No. DMG/HY/MP/Rattewali Block/PKL B-10/2017/3989-92
Dated Chandigarh, the 07-08-2018

Subject: Submission of Modified Mining Plan including Progressive Mine Closure Plan for Boulder, Gravel and Sand Mine for Rattewali Block/PKL B-10 District Panchkula, comprising an area of 45.00 hectares - M/s Tirupati Roadways.

Reference your letter dated 07.08.2018 on the above noted subject.

2. The Mining Plan along with Progressive Mine Closure Plan in respect of minor mineral mining contract for extraction of Boulder, Gravel and Sand over an area of 45.00 hectares in village Rattewali, district Panchkula, Haryana earlier submitted by you through your RQP was approved in exercise of the powers conferred by Sub Rule 4A of Rule 22 of the Mineral Concession Rules 1960 read with the State Government order No. 1/7/103-2IBII-96 dated 25.2.2003 and communicated vide this office memo No. DMG/HY/MP/Rattewali Block/PKL B-10/2017/405 dated 24.01.2018.
3. Now, your RQP vide letter dated 01.08.2018 submitted a fresh request and informed that additional details given in relating to replenishment study and proposal for regular monitoring of area/replenishment in the revised submitted modified mining plan. Accordingly, you through your RQP submitted a request in Mining Plan and Progressive Mining Plan for approval.
4. In exercise of the powers conferred by Sub Rule 4A of Rule 22 of the Mineral Concession Rules 1960 read with the State Government order No.1/7/103-2IBII-96 dated 25.2.2003, I hereby approve the above said Modified Mining Plan along with Progressive Mine Closure Plan in respect of Boulder, Gravel and Sand Minor Minerals over an area of 45.00 hectares of land situated near village Rattewali of district Panchkula. This approval is subject to the following conditions:-
 - (i) That this Modified Mining Plan and Progressive Mine Closure Plan is approved without prejudice to any other laws applicable to the mine/area from time to time whether made by the Central Government or State Government or any other authority;
 - (ii) That this approval of the "Modified Mining Plan alongwith Progressive Mine Closure Plan" of Mining does not in any way imply the approval of the State Government in terms of any other provisions of the Mines and Minerals (Development & Regulation) Act, 1957 or Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012 or any other law including Forest (Conservation) Act, 1980 and Environment Protection Act, 1986 and rules framed there under;

- (iii) That this "Modified Mining Plan along with Progressive Mine Closure Plan" is being approved on the basis of data provided by you. In case, at any point of time any ambiguity in the same is found, the approval will be revoked with suspension of the mining operations and will be allowed to resume operation only after modification/rectification of the same, if so required.
- (iv) That this "Modified Mining Plan along with Progressive Mine Closure Plan" is approved without prejudice to any other order or direction from any court of any competent jurisdiction and is for a period of five years only and shall not be make you entitled for any extension of the contract period;
- (v) That all the norms and provisions as envisaged in the Modified Mining Plan would be adhered to during the working of mine; and
- (vi) That the Financial Assurance of Rs. 5,53,000/- (Rs. Five lacks fifty three thousand only) as required under the provisions of Rule 71(6) of "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules, 2012, shall be furnished within a period of 60 days or before start of mining operations, whichever is earlier.

4. Further, as per condition no. (xviii) of the Lol dated 16-06.2017, the actual mining will be allowed to be commenced only after Prior Environmental Clearance from the Competent Authority as required under EIA notification dated 14/9/2006, as amended from time to time by the MoE&F, Gov and guidelines/ circulars issued in this behalf.

Encl: Modified Mining Plan & Progressive
Mine Closure Plan (2 copies)

State Mining Engineer,
for Director, Mines and Geology,
Haryana. *sd*

Registered Post

Endst. No. DMG/HY/MP/Rattewali Block/PKL B-10/2017/

Dated:

A copy along with a copy of the dully approved Mining Plan and Progressive Mine Closure Plan is forwarded to the Director Mines Safety, Room No. 201-203, 2nd Floor, B-Block, CGO Complex-II, Hapur Road, Ghaziabad for information and necessary action.

- *sd* -

Encl: Modified Mining Plan & Progressive
Mine Closure Plan

State Mining Engineer,
for Director, Mines and Geology,
Haryana.

Registered Post

Endst. DMG/HY/MP/Rattewali Block/PKL B-10/2017/

Dated:

A copy along with a copy of the dully approved Mining Plan and Progressive Mine Closure Plan is forwarded to the Mining Officer, Mines and Geology Department, Panchkula for information and necessary action.

- *sd* -

Encl: Modified Mining Plan & Progressive
Mine Closure Plan

State Mining Engineer,
for Director, Mines and Geology,
Haryana.

Endst. No. DMG/HY/MP/Rattewali Block/PKL B-10/2017/ Dated:

A copy is forwarded to Shri Nimish Singhwi (RQP), 15, New Glass Factory Colony, Sunderwas, Udaipur (Raj) w.r.t. his letter dated 07.08.2018 for information and necessary action.

sd
State Mining Engineer,
for Director, Mines and Geology,
Haryana.

INTRODUCTION

The lease was applied by **M/s Tirupati Roadways**, through it's Proprietor **Shri Lakhmir Singh Sabharwal**, R/o- 3, Sadashiv Properties, Katras Road, Bank More, Dhanbad, Distt.- Dhanbad (Jharkhand) and Mining Plan has been prepared in compliance of Director General, Mines & Geology, Haryana vide letter no. DMG/HY/Cont./Rattewali Block/PKL/B-10/2017/2658 dated 16/06/2017 for Mineral of Boulder, Gravel & Sand (Minor Mineral) in revenue village of Rattewali over an area of 45.00ha in District- Panchkula, Haryana for a period of 7 years.

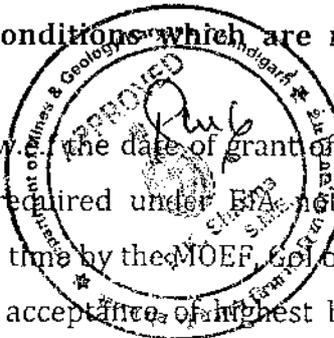
The Mining Plan with progressive closure plan was approved vide order no. DMG/HY/MP/Rattewali Block/PKL/B-10/2017/405-408 dated 24/01/2018.

Reason of Modification:- The case has been appraised at Ministry of Environment, Forest and Climate Change for Environment Clearance. Expert Appraisal Committee (Non-Coal Mining) in minutes of meeting at point no. 13 (c) asked Project Proponent to submit modified mining plan. Hence, applicant is submitting Modification in Mining Plan with progressive mine closure plan is Submit under Rule "Haryana Minor Mineral Concession, Stocking & transportation of minerals and prevention of illegal Mining Rules (71) 2012".

The applicant is involved in the Mining business for last many years. The applicant can invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The objective of preparation of this Modification in Mining Plan and Progressive Mine Closure Plan is to fulfill the conditions stipulated by the Department of Mines & Geology, Haryana required under Haryana Minor Mineral Concession Rules, 2012. The conditions which are related to the mining plan are reproduced here below.

- ❖ The period of contract shall commence w. the date of grant of environmental clearance by competent authority as required under EPA notification dated 14.09.2006 and as amended from time to time by the MOEF, Govt or on expiry of a period of 12 months from the date of acceptance of highest bid/issuance of "Letter of Intent", (LoI) whichever is earlier.
- ❖ The contractor shall also deposit/pay an additional amount equal to 10% of the

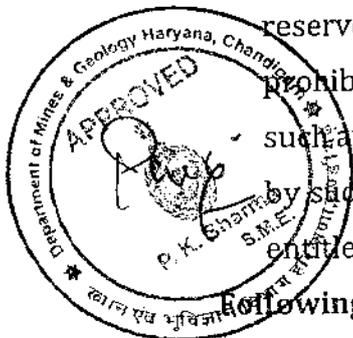


due contract money along with installments towards the 'Mines and Minerals Development, Restoration and Rehabilitation Fund.

- ❖ The mining contractor shall get prepare a "Modification in Mining Plan" along with the Mine Closure Plan (Progressive & Final) from the Recognized Qualified Person as per chapter 10 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012" for mining area granted on contract. The contractor shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director, Mines & Geology, in this behalf. Further, the actual mining will be allowed to be commenced only after prior Environmental Clearance is obtained by the LoI holder/mining contractor for the Mining blocks area from Competent Authority as required under notification dated 14/9/2006 issued by the MoEF & CC, GoI or as amended from time to time.
- ❖ The total mineral excavated and stacked by the concession holder within the area granted on mining contract shall not exceed two times of the average monthly production as per approved Modification in Mining Plan at any point of time.
- ❖ The Mining contractor shall not stock any mineral outside the concession area granted on mining contract, without obtaining a valid mineral dealer license as per provisions contained in Chapter 14 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".
- ❖ The contractor shall not carry out any mining operations in any reserved/protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorized in this behalf, contractor (s) shall not be entitled to claim any relief in payment of contract money on this account.

Following special conditions shall be applicable for excavation of minor mineral(s) from river beds in order to ensure safety of river-beds, structures and the adjoining areas:

1. No mining would be permissible in a river-bed up to a distance of five times of the



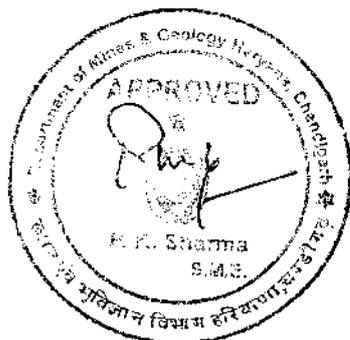
span of a bridge on up-stream side and ten times the span of such bridge on down-stream side, subject to a minimum of 250meters on the up-stream side and 500 meters on the down-stream side.

2. There shall be maintained an un-mined block of 50 meters width after every block of 1000meters over which mining is undertaken or at such distance as may be directed by the Director or any officer authorized by him.
3. The maximum depth of mining in the river-bed shall not exceed three meter from the un-mined bed level at any point in time with proper bench formation.
4. Mining shall be restricted within the central 3/4th width of the river/ rivulet.
5. In case of areas permitted for excavation outside river/rivulets i.e. areas adjoining to rivers/rivulets, no mining shall be permissible in an area upto a width of 500 meters from the active edges of embankments in case of river Yamuna, 250metres in case of Dangri, Markanda and Ghaggar and 100 meters on either side of all other rivers/ rivulets.
6. Any other condition(s), as may be required by the Irrigation Department of the state from time to time for river-bed mining in consultation with the Mines & Geology Department, may be made applicable to the mining operations in river- beds.
 - ❖ In respect of "Sand Units", the contractor shall restrict the quarrying operations to maximum four villages of the Unit at any point of time during the subsistence of the contract. The contractor shall have a right to change the site at any time, during the subsistence of the contract, on settlement of compensation with the land owners of new site of the block from where he intend to extract sand but ceiling of maximum four villages shall be adhered to strictly and such change of site shall be intimated to the Director or any officer authorized by him in this behalf.
 - ❖ That no mining operation shall be allowed in the urban sizable zone of area notified by Town and Country Planning Department. Further, in case of the agriculture zone notified by Town and Country Planning Department mining shall be permissible only after obtaining prior permission from the competent authority.
 - ❖ A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent



authority in this behalf. Further the depth of excavation of mineral shall not exceed nine meters (9m) at any point of time.

- ❖ The contractor shall not undertake any mining operations in the area granted on mining contract without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws.
- ❖ The contractor shall be under obligation to carryout mining in accordance with all other provisions applicable as per Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made there under Wild Life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981.



Chapter 1: GENERAL**a.) Applicant Name and Address:-**

M/s Tirupati Roadways,

Through it's Proprietor Shri Lakhmir Singh Sabharwal,

R/o- 3, Sadashiv Properties, Katras Road, Bank More,

Dhanbad, Distt.- Dhanbad (Jharkhand)

Email- Not Available

Phone No.- Not Available

b.) Status of Applicant /Lessee: - The applicant is a Proprietorship firm

c.) Mineral(s) which is/are included in the prospecting license (for fresh grant) - Nil.

d.) Mineral(s) which is/are included in the letter of Intent/lease deed-
Boulder, Gravel & Sand

e.) Mineral(s) which Lessee Intends to Mine:-
Boulder, Gravel & Sand

f.) Name and Address of the Recognized Person
Nimish Singhwi, Mining Engineer,

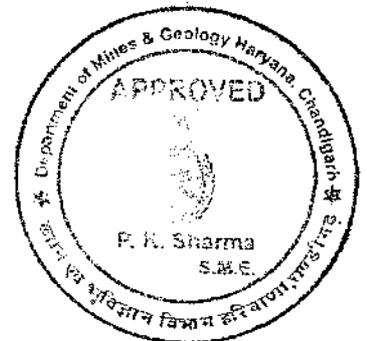
15, New Glass Factory Colony,

Sunderwas, Udaipur (Raj.)

Mobile No.: 94141-10360,

Phone no.-0294-2492060, Fax No.- 0294-2492060

Email: - nimesh.singhvi@gmail.com



2.0 LOCATION AND ACCESSIBILITY

a) Details of the existing area:- Applied area

Name of mines: - Boulder, gravel & sand (Minor Mineral) Area

Lease Period:- 7 years

b) Details of lease area with location map:

Table No.1: Details of the area

Forest		Non- forest	
Forest (specify)	Area (ha)		Area (Hect.)
Nil	Nil	(i) Govt.	45.00 (River Bed)
		(ii) Pvt. Land	Nil
		(iii) Agriculture land	Nil
		(iv) Others (specify)	Nil

Khasra No. : 141 mean

Lease area : 45.00Hect.

District & State : Panchkula (Haryana)

Village : Rattewali Block - PKL-B-10

Type of QL area : Non forest land

Whether the area falls under Coastal Regulation Zone (CRZ):

Area doesn't falls under Coastal Regulation Zone.



Table No.2: Latitude-Longitude of all corner boundary point/ pillars

Pillars	Latitude	Longitude
BP1	N30° 39' 24.6"	E 76° 59' 48.8"
BP2	N30° 39' 22.8"	E 76° 59' 50"
BP3	N30° 39' 16.8"	E 76° 59' 47.3"
BP4	N30° 39' 14.9"	E 76° 59' 47.8"
BP5	N30° 39' 7.439"	E 76° 59' 40.179"
BP6	N30° 39' 1.8"	E 76° 59' 33"
BP7	N30° 39' 01"	E 76° 59' 34.2"
BP8	N30° 38' 54.04"	E 76° 59' 30.88"
BP9	N30° 38' 49.026"	E 76° 59' 28.353"
BP10	N30° 38' 38.70"	E 76° 59' 28.924"
BP11	N30° 38' 33"	E 76° 59' 31.99"
BP12	N30° 38' 33"	E 76° 59' 19.2"
BP13	N30° 38' 49"	E 76° 59' 19.5"
BP14	N30° 38' 53"	E 76° 59' 17.5"
BP15	N30° 38' 55"	E 76° 59' 20.00"
BP16	N30° 38' 58.5"	E 76° 59' 21.2"
BP17	N30° 39' 15"	E 76° 59' 32"

* The Latitude-Longitude is given as per the pillars shown & area occupied by the QL holder/department.

Existence of public road/railway line etc.:-

The lease area is approachable from NH-2 to Ramgarh- Narayangarh road and Barwala - Raipur Rani Roads. All these quarries are connected by metalled road. Panchkula is about 40 kms and Chandigarh is about 50kms from the extreme NE end of the lease area.

=> **Road/Rail link:-** Ambala Railway station about 30 km.

=> **Availability of water:-** water for drinking purpose may be taken up from dug well from the nearby lease. Statutory permissions will be taken up for use of water according to the act and rules applicable.

=> **Power supply:-** Electric power supply is not at QL area.

=> **Climate:- Temperature-** The climate of Panchkula district can be classified as subtropical monsoon, mild & dry winter, hot summer and sub-humid which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. The hot weather season starts from mid-March to last week of the June followed by the south west monsoon which lasts up to September. The transition period from September to November forms the post monsoon season. The winter season starts late in November and remains up to first week of March. The mean maximum temperature is 39.1°C (May & June) and mean minimum is 6.1° C (January) of the district.

Rainfall: Normal Annual Rainfall 1057mm; Normal monsoon Rainfall: 911 mm.

=> **Post Office:-** All the nearby villages.

=> **Medical Facilities:-** Raipur rani, Barwala, Panchkula, Ambala and Chandigarh.

=> **Police station:-** The Police station is at Rattewali.

=> **Education Facility:-** Most of the nearby villages have secondary schools and for higher education institutes are available at Ambala, Panchkula, and Chandigarh & other nearby towns.

(c) General location map showing area and access routes have been attached: -

(Attached plate No. 2)



Chapter 3: DETAILS OF APPROVED MINING PLAN / SCHEME OF MINING (if any)

The Mining Plan with progressive closure plan was approved vide order no. DMG/HY/MP/Rattewali Block/PKL/B-10/2017/405-408 dated 24/01/2018.



Part -A

Chapter 1: GEOLOGY AND EXPLORATION

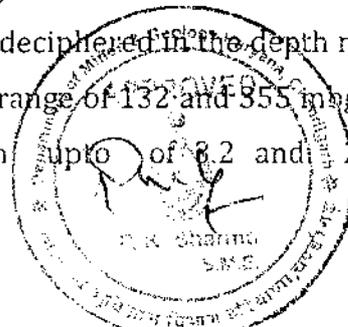
The field work comprising of topographical survey and geological mapping and data collection was done in phases. The contouring for the QL area was undertaken. The mineral & the other prominent features of the area were also marked.

a) Detail description of the topography, drainage pattern, vegetation, climate, and rainfall data:-

Topography:- Siwalik hill ranges occupy the northern and north eastern fringe of Panchkula District and attain the height up to 600m AMSL. The hills are about 150-200m high with respect to the adjacent alluvial plains. These are characterized by the broad tableland topography that has been carved into quite sharp slopes by numerous ephemeral streams come down to the outer slopes of the Siwaliks and spread much of gravels boulders, pebbles in the beds of these streams. The general slope of the land surface is from NE to SW. The river Dangri & Begna provides the major drainage in the lease area. The general physiography of the Lease area is gently sloping from NE to SW side indicating the flow direction of river

Occurrence of ground water:-

Ground water occurs in pore-spaces of alluvial formation including Kandi belt stretching range Siwalik foothills. In alluvium, sands, silts, kankar and gravels form potential aquifer zones in the district. The Kandi belt yet to be explored constitute of boulders, pebbles and cobbles forming major aquifer horizon. **Nature and depth of ground water aquifers:** In Kandi areas, the shallow aquifers are isolated lenses embedded in clay beds whereas aquifers in alluvial areas occur in regional scale and have pinching and swelling disposition and are quite extensive in nature. These aquifers generally consists sands (fine to coarse grained) and gravels and are often intercepted by clay and kankar horizons. These aquifers are under unconfined to semi-confined conditions and support a large no of shallow tube-wells within the depth of 50m only. The discharge of these tube-wells varies between 100lpm and 500lpm for moderate drawdown values. Under ground water exploration programme fourteen exploratory wells were drilled in the district. On average 4-6 No Of granular zones have been deciphered in the depth range down to 355m bgl. Existing wells indicates the depth range of 132 and 355 m bgl, yield range between 205 to 3000lpm for Drawdown upto of 8.2 and 21.9m and



Transmissivity of aquifers range between 2493 and 4928 m²/day. Storativity of formation is 1.3*10⁻²

Depth to water level

The depth to water level during pre-monsoon period in the district ranges between 8.43m bgl at Barwala and 29.26m bgl at Khera, in major part of district water level ranges between 8.0m bgl and 15.0m bgl. The Depth to water level during post-monsoon period in the district ranges between 9.93m bgl at Kakkar Majra and 28.89m bgl at Khera. However, in major part of district water level ranges between 10.0m bgl and 15.0m bgl. During last ten years, majority of observation points in the district have shown declining trends ranging from 0.00013 m/yr to 0.389m/yr, however, area as not recorded any significant rise during last ten years.

Temperature:The climate of Panchkula district can be classified as subtropical monsoon, mild & dry winter, hot summer and sub-humid which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. The hot weather season starts from mid-March to last week of the June followed by the south west monsoon which lasts up to September. The transition period from September to November forms the post monsoon season. The winter season starts late in November and remains up to first week of March. The mean maximum temperature is 39.1°C (May & June) and mean minimum is 6.1° C (January) of the district.

Rainfall: Normal Annual Rainfall 1057mm; Normal monsoon Rainfall: 911 mm.

b) Regional Geology:

The north-eastern part of Haryana is predominantly characterized by sedimentary lithology in the Sub-Himalayan zone comprising Subathus, Dagshais, Kasaulis and Siwaliks. A general Regional stratigraphic sequence in the area is given in Table.

Table No.3: The regional stratigraphic succession is as follows

Age	Super group	group	Formation	Lithology
Holocene	Siwalik		Newer alluvium and Newer Aeolian Deposits	Gravel, Sand, silt, clay, limestone, gypsum
Lower to upper Pleistocene			older alluvium and Older Aeolian Deposits	Gravel, grey sand, silt, clay, brown sand, calcrete
Lower to Middle Pleistocene		Upper Siwalik	Shoulder Conglomerates formation	Conglomerate, sandstone, silt, clay
Upper		Middle	Pinjore	Coarse grit, red sand stone

Pliocene		Siwalik	Formation	and clay, conglomerate
Middle Miocene			Tatrot Formation	Friable Sandstone and variegated clay
			Dhokpathan Formation	Brown sandstone and orange clay
		Nagri Formation	Hard grey sand stone, mudstone and minor shale	
Lower Miocene		Lower Siwalik	Nahan Formation	Coarse gritty, clay and red sandstone often calcareous, brownish shale with lignite lenticels, greenish white Quartzite
			Kausauli Formation	Grey and stone, green shale and grey clay
Upper Eocene		Sirmur	Dagsai Formation	Purple and green sand stone, deep red gritty, clay, white and stone with ferruginous concretions
			Subathu formation	Sandstone with gritty clay, Impure fossiliferous, limestone calcareous slate, greenish shale and dark brown quartzite
Pre-proterozoic			Tundapathar	Thickly bedded, stromatolite limestone with carboniferous shale and quartzite

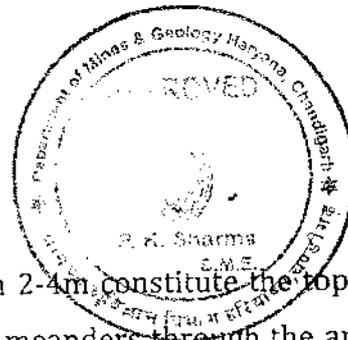
c) Local Geology:-

The litho units encountered in the riverbed and surrounding areas belongs to the Siwalik super groups. The sediments are river borne and has deposited in the riverbed and the flood plains.

The different formations of the area belong to Siwalik Super group and are a mixture of boulders, pebbles, sand, silt and clay. The following sequences have been observed in the area.

- Soil/Alluvium
- Sand
- Gravel
- Boulder

Soil:- Soil/ alluvium varying in thickness from 2-4m constitute the top horizons in the area suitable for agriculture. Dangri River meanders through the area exposing the alluvium and soil at the banks. Boulder, gravel & sand is found in the river bed. Thickness of Boulder, gravel & sand is more than 10meters. This bed is presently dry and water flows only during the rainy season The Sand exposed in the River bed of Dangri & Begna surrounding areas is the product of the deposition of the sediments



brought and deposited in the flood plains of Rivers. These sediments are of recent geological formation. The litho-units exposed within the rivers and surrounding areas have formed as water borne sediments brought by flood water during rainy season every year and deposited in riverbed

Boulder, gravel & sand:-

Sediments of various sizes and in mixed form are predominantly deposited in the river bed and outside the river bed as well in the central part. There is no perfect classification between boulders, cobbles, pebbles and sand. They are deposited in a mixed state. The classification is done by grab mining and the sediments are passed through different sieves in the screening plants.

Sediments of various sizes and in mixed form are predominantly deposited in the river bed and there is no perfect classification between sediments. These may be called as coarse sand, medium sand and fine sand.

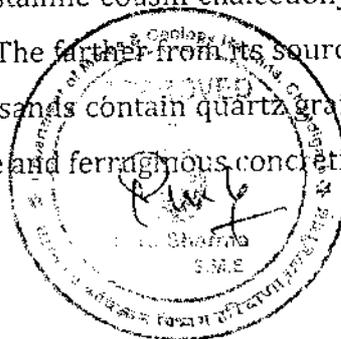
The term sand is used to denote an aggregate of mineral or rock grains greater than 1/16mm and less than 2 mm in diameter.

d) PHYSICAL & CHEMICAL CHARACTERISTICS OF MINERAL

Technically, sand is merely a size category. Sand is particulate matter that's larger than silt and smaller than gravel. Different specialists set different limits for sand: Engineers call sand anything between 0.074 and 2 millimeter, or between a U.S. standard #200 sieve and a #10 sieve. Soil scientists classify grains between 0.05 and 2 mm as sand, or between sieves #270 and #10. Sedimentologists put sand between 0.062 mm (1/16 mm) and 2 mm on the Wentworth scale, or 4 to -1 unit on the phi scale, or between sieves #230 and #10. In some other nations a metric definition is used instead, between 0.1 and 1mm. From a geological viewpoint, sand is anything small enough to be carried by the wind but big enough that it doesn't stay in the air, roughly 0.06 to 1.5 millimeters. It indicates a vigorous environment.

Sand Composition and Shape

Most sand is made of quartz or its microcrystalline cousin chalcedony, because that common mineral is resistant to weathering. The farther from its source rock sand is, the closer it is to impure quartz. But Dangri sands contain quartz grains, tiny bits of rock (lithics), or dark minerals like limestone and ferruginous concretions.



The size of the sediments is variable. The grains whether small or large are rounded in shape, Sand is grey, brown in color, coarse to fine grained. The present deposits are of good quality and can be used for building industries. There is no other use of this material.

e) Origin and control of mineralization (annual replenishment of mineral in river bed area vis-à-vis sedimentation):-

Sedimentation, in the geological sciences, is a process of deposition of a solid material from a state of suspension or solution in a fluid (usually air or water). Broadly defined it also includes deposits from glacial ice and those materials collected under the impetus of gravity alone, as in talus deposits, or accumulations of rock debris at the base of cliffs. The term is commonly used as a synonym for sedimentary petrology and sedimentology.

Sedimentation is generally considered by geologists in terms of the textures, structures, and fossil content of the deposits lay down in different geographic and geomorphic environments.

The factors which affects the "Computation of Sediment".

Geomorphology & Drainage Pattern: The following geomorphic units plays important role:-

- Structural Plain
- Structural Hill
- Structural Ridge
- Denudation Ridge & Valley
- Plain & Plateau of Gangetic plain
- Highly Dissected pediment
- Un dissected pediment



ii) Distribution of Basin Area River wise (Area in Sq. Km or Sq. Miles)

iii) Drainage System/Pattern of the area (Drainage Density =...Km/Sq. Km of Yamuna River

iv) Rainfall & Climate: Year wise Rainfall data for previous 10 years of Yamuna Basin/River

v) As per Dandy & Bolton study "Sediment Yield" can be related to

- 1) Catchment Area and
- 2) Mean Annual Run-off

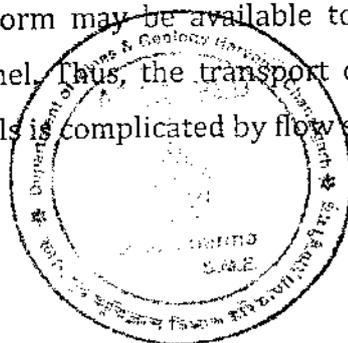
Sand is an essential minor mineral used extensively across the country as a useful construction constituent and variety of other uses in sports, agriculture, glass making (a form of sand with high silica content) etc. It is common knowledge that minerals are non-renewable but this form of mineral naturally gets replenished from time to time in a given river system and is very much interrelated to the hydrological cycle in a river basin.

Panchkula district has a sub tropical continental monsoon climate having, hot summers, cool winters, good monsoon rainfall. It has great variation in temperature (-1 °C to 43 °C). Sometimes winter frost occurs during December and January. The district also receives winter rains from the western disturbance. The rainfall is mostly received in the monsoon. Morni hills constitute the highest point of the district as well as of Haryana. The Ghaggar is the only perennial river, which is very shallow outside of the monsoons. The mountains and hills of Kasauli are clearly visible from Panchkula.

Generally the slope of the district is from north east to south west and in this direction, most of the rivers/streams rain-fed torrents flow down and spread much gravel and pebbles in their beds. Only the Sirsa River, in Kalka Tehsil, flows towards north-west. The soils in the district are mainly light loam.

The underground water in the district is generally fresh and suitable for domestic and purposes. The underground water level is generally high in the southern parts and low in north and north-east which is hilly tract. The district lies in the Himalayas boundary fault zones and earthquakes of moderate to high intensity have occurred in the past.

River Dudhgar Kee Nadi is an ephemeral stream in nature. In ephemeral channels of the northern Haryana, sediment often moves in a step-wise manner because of transmission losses. Water from storms originating in the upper reaches of a watershed is often completely absorbed in the channel before reaching the outlet. Therefore, the ability of the channel to transport sediment is dependent on varying flow as a function of distance along the channel. Sediment that is eroded, entrained, transported, and deposited by one storm may be available to subsequent storm events for transport within the channel. Thus, the transport of sediment in sub-tropical to temperate perennial channels is complicated by flow sequencing.



Therefore, the methodology adopted for the study is an integrated approach involving:

- Field data collection comprising of 46 cross sections in block (Appendix-II), along the lease reach of the river showing river bed material (RBM) with present elevations which when balanced with the next deposition can be quantified as the actual deposition/replenishment for 2018. Fifteen sand samples for sieve analysis (Appendix-I) i.e. d_{10} , d_{30} , d_{50} and d_{60} , uniformity coefficient (C_u) and coefficient of curvature (C_c) was also determined as an input for estimation of bajri/sand replenishment of river reach under study.
- Remote sensing was used for identification of watershed area relevant to the mine lease. The data was used is from the latest satellite imagery of CARTOSAT – 1 of ISRO having a grid of 30 metres and SRTM, NASA at grid of 80 metres and computer aided drainage analysis system.
- Estimation of catchment yield and bed load transport: The catchment yield has been computed using the Strange's runoff method (Strange's Monsoon runoff curves) for the runoff coefficient. The iso-pluvial maps of IMD have been used for estimation of catchment yield and peak flood discharge for the study area by various methods like Dickens, Jarvis, and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport comprises of use of analytical models namely the Einstein, Meyer Peter and Ackers & White's equation for calculation of bed load transport.

In the study area Dudhgar Kee Nadi watershed covers an area of 35.31 km² with average gradient of 5.2 m/km (within lease area) towards south west. The catchment yield of Dudhgar Kee Nadi (within study area) is estimated as 2.80 mcm, 3.26 mcm and 3.73 mcm taking 240 mm, 280 mm and 320 mm, respectively as the **peak rainfall**; value based on 25 years, 50 years and 100 years return period and 24 hrs peak rainfall, respectively; and value of good surface run off coefficient of 33% for this catchment mostly rocky area.

Using formula

Catchment yield (m³) = Catchment area (m²) * runoff coefficient (%) * rainfall (m)



Table No.4: Catchment yield at different return period of rainfall

Catchment yield at different return periods	Catchment area (m ²)	Runoff coefficient (%)	Rainfall (m)	Catchment yield (m ³)
	(A)	(B)	(C)	= A x B x C
Catchment yield (m ³) at 25 years return period	35310000	0.33	0.24	2796552
Catchment yield (m ³) at 50 years return period	35310000	0.33	0.28	3262644
Catchment yield (m ³) at 100 years return period	35310000	0.33	0.32	3728736

Determination of peak flood discharge for Dudhgar Kee Nadi watershed by means of empirical formulae

a. Dicken's formula

Dicken's formula states that: $Q_p = CA^{3/4}$

Where Q_p = High flood or peak discharge in cumec

A = Catchment area in sq. km

C = A constant, taken $c = 3$ for the study area

b. Jarvis formula

Jarvis formula states that:

$$Q_p = C\sqrt{A}$$

Where Q_p = High flood or peak discharge in cumec

C = a constant, having a value of 7 as low

A = Catchment area in sq. km

c. Rational formula

Rational formula states that:

$$Q_p = \frac{1}{36} (K P_c \cdot A)$$

Where Q_p = High flood or peak discharge in cumec

K = Runoff coefficient

P_c = Critical rainfall intensity in cm/hr

A = Catchment area in hectares



Findings of the peak flood discharge based on above methods are given in below.

Table No.5: Peak flood discharges (Q_p) in cumec as calculated

Watershed	Dicken's	Laryis	Rational formula		
			At 25 years return period	At 50 years return period	At 100 years return period
Dudhgar Kee Nadi	43.46	41.60	32.39	37.90	43.08

Sieve Analysis results

The sediment samples were collected from the bed of the river over the entire length of the study reach. Sampling sites were located in the flood plains of the channel and were taken approximately 100 metre apart. Sediment samples were obtained from soil pits excavated in the channel, with the sediment sample material integrated over the one to two metre depth of the pit.

Sieve analyses of the sediment samples were performed to obtain the sediment gradation curves shown in Appendix-I. Inspection of the data revealed a consistent trend in sediment size by reach or with distance along the study reach. Table-11 shows that the variation from the mean is not significant and D_{50} which is used extensively in the analysis is **2.53mm**. Therefore, the sediment gradation curves for all samples were averaged together to obtain a composite reach-averaged curve for the Dudhgar Kee Nadi lease reach.

Sediment sample gradation data and plots showing the sediment distribution curves for each reach are provided in Appendix-II. The uniformity coefficient C_u is defined as the ratio of D_{60} by D_{10} . So when C_u is greater than 4 to 6, it is understood as a well graded soil and when the C_u is less than 4, they are considered to be poorly graded or uniformly graded. Uniformly graded in the sense, the soils have got identical size of the particles. Another coefficient to measure gradation is: C_c is equal to $(D_{30} \text{ square}) / (D_{60} \text{ into } D_{10})$ where coefficient of gradation or coefficient of curvature. For the soil to be uniformly graded the value of coefficient of uniformity C_u has to be less than 4 and C_c should be in the range of 1 to 3. So higher the value of C_u the larger the range of the particle sizes in the RBM. So if the C_u value is high it indicates that the RBM mass consists of different ranges of particle sizes.



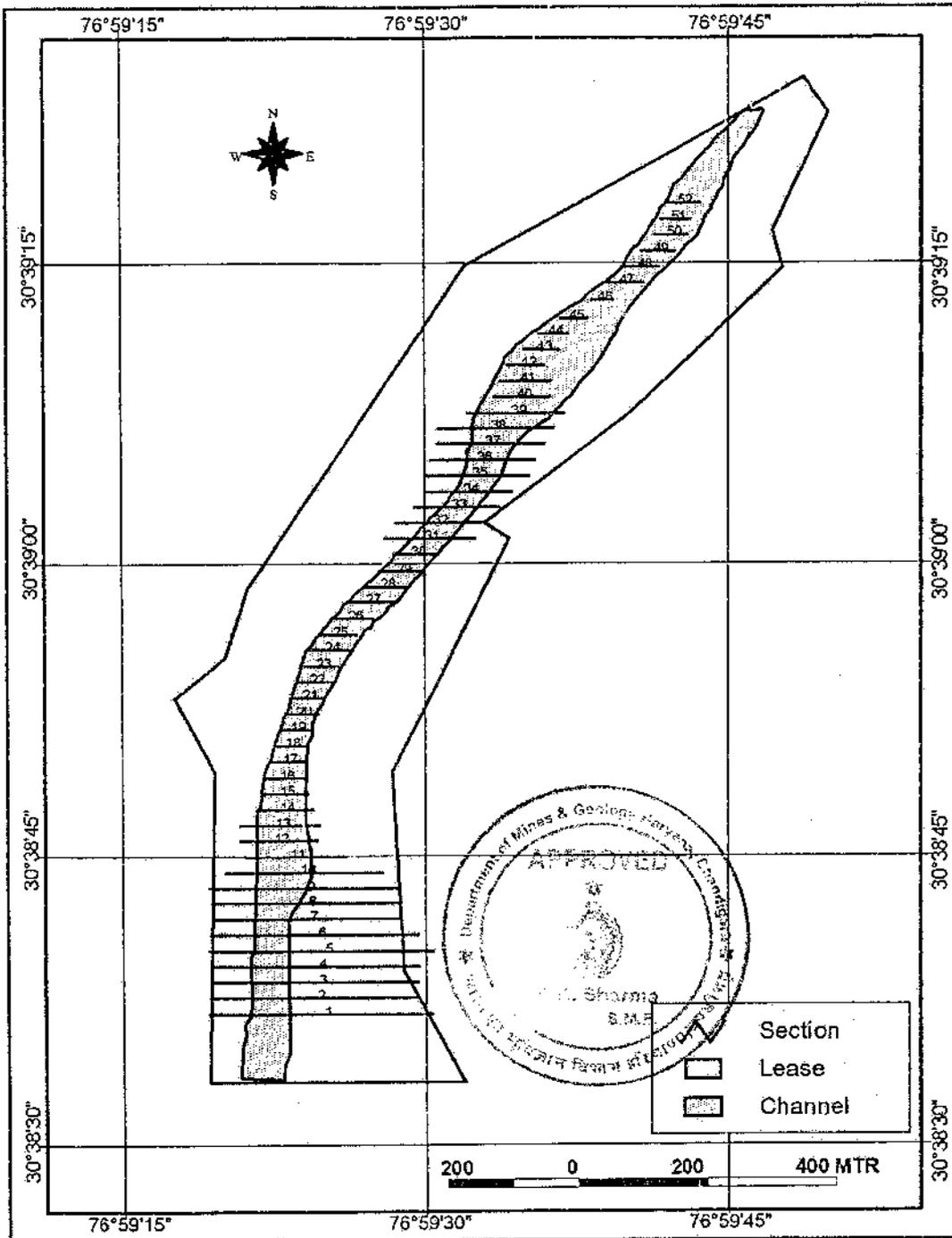
Table No.6: Sieve analysis results

Sample	D ₁₀	D ₃₀	D ₅₀	D ₆₀	C _u	C _c
1	0.343	0.599	2.282	3.146	09.17	00.33
2	0.416	1.881	2.394	3.012	07.24	02.82
3	0.427	2.805	2.805	3.304	07.74	03.08
4	0.408	2.014	2.548	3.127	07.67	03.18
5	0.675	2.002	2.285	2.638	03.91	02.25
6	0.404	2.063	2.642	3.148	07.78	03.34
7	0.360	2.060	2.324	3.661	10.16	03.22
8	0.396	2.080	2.384	3.634	09.18	03.01
9	0.341	1.922	2.741	3.231	09.47	03.35
10	0.324	1.320	2.512	2.894	08.93	01.86
11	0.392	2.042	2.645	2.936	07.56	03.59
12	1.105	2.193	2.952	3.362	03.29	01.20
13	0.547	2.097	2.815	3.308	07.23	02.91
14	0.547	1.829	2.348	2.994	05.47	02.04
15	0.453	2.031	2.345	2.804	06.19	03.25

Forty six cross-sections on a spacing of 25 metres were surveyed using a Total Station and river bed profiles plotted and four benchmarks were established in the lease area.

The objective of the survey is to observe the difference in elevation post-monsoon, 2018 and quantify the actual sand deposition taking place.





Bedload Sediment Rate

Three common bed load equations are Ackers and White, Meyer-Peter-Muller and Einstein. Many more equations exist, some of which are more appropriate for different conditions. The most appropriate for ephemeral streams applicable to this study is the Ackers and White equation, although calculations have been done for all three. Out of the 3 methods considered, the Ackers and White equation give the

reliable value for bed load sediment rate calculation for ephemeral stream of Haryana.

Results

The sediment transport analysis was performed using "Sediment Equations, version 4.0" software developed by Department of Natural Resources, Ohio University, USA.

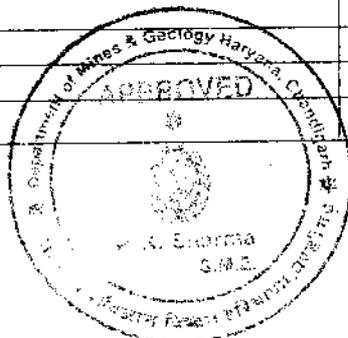
The parameters used with units and analysis results are presented below:

Table No.7: Analysis result using Threshold of Motion

		metric units	
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d_s	0.00253	m
Gravitational acceleration	g	9.81	m/sec ²
Density fluid	ρ_f	1000	kg/m ³
Density sediment	ρ_s	2650	kg/m ³
Specific weight of water	γ	9810	N/m ³
		1000	kgf/m ³
Shear stress	τ	23.0	N/m ²
		2.3	kgf/m ²
Shields parameter	τ_{*c}	0.561	dimensionless
Particle at threshold of motion	D_{cr}	0.02	m

Table No.8: Analysis result for Bedload per unit channel width

		metric units	
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d_s	0.00253	m
Gravitational acceleration	g	9.81	m/sec ²
Density fluid	ρ_f	1000	kg/m ³
Density sediment	ρ_s	2650	kg/m ³
Relative density	s	2.65	dimensionless
Shear stress	τ	23.0	N/m ²
Dimensionless parameter	Ψ	1.78	
Bed-load transport (Meyer-Peter)	Φ	2.944	
	q_s	0.0015	m ² /s
Bed-load transport (Einstein ₄₂)	Φ	1.070	
	q_s	0.00055	m ² /s
Bed-load transport (Einstein ₅₀)	Φ	3.647	
	q_s	0.00187	m ² /s
Ackers and White	n	0.019	
	U	2.23	m/s
	q_b	0.00057	m ² /s



Therefore, based on the Ackers and White analysis, the bed load transport for the studied river Dudhgar Kee Nadi reach taking average width as 310 metres is 15,267 m³/day or 13,74,030 m³/year taking 90 days as active river flow.

Table No. 9: Analysis result using Resistance Manning's & D'Arcy-Weisbach equations

Resistance Manning's and D'Arcy-Weisbach		metric units	
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d _s	0.00253	m
Max depth	d _{max}	3	m
Gravitational acceleration	g	9.81	m/sec ²
Resistance factor = sqrt(8/f)			
Colebrook-White Eq (Hey 1979) for D ₈₄	u/u*	17.3	
Leopold, Wolman & Miller (1964) for D ₈₄	u/u*	16.2	
Griffiths (1981) for D ₅₀	u/u*	14.7	
Manning's roughness coefficient (n):			
Colebrook-White Eq (Hey 1979) for D ₈₄	n	0.0161	
Leopold, Wolman & Miller (1964) for D ₈₄	n	0.0172	
Griffiths (1981) for D ₅₀	n	0.0189	
D'Arcy-Weisbach friction factor:			
Colebrook-White Eq (Hey 1979) for D ₈₄	f	0.0267	
Leopold, Wolman & Miller (1964) for D ₈₄	f	0.0304	
Griffiths (1981) for D ₅₀	f	0.0368	

Note: The detailed study report prepared by Hydro Geo Solutions, Jodhpur is attached as Annexure-III.

h) Detailed Calculation of Reserves:-

Method of Estimation of Reserve:-cross sectional area.

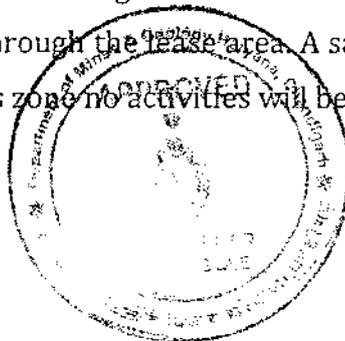
PROVED RESERVES

1) Survey was conducted in the proposed area of Dangri tributary bed as per the area allocated in different village, vide list given by DMG, Haryana. This is the basic document provided by the authorities, Khasra plan was provided by the applicant.

2) Following special conditions which are applicable for excavation of minor mineral(s) from river beds in order to ensure safety of river-beds, structures and the adjoining areas are considered while calculating the reserves of this area:



- i) No mining would be permissible in a river-bed up to a distance of five times of the span of a bridge on up-stream side and ten times the span of such bridge on down-stream side, subject to a minimum of 250meters on the up-stream side and 500 meters on the down-stream side.
 - ii) There shall be maintained an un-mined block of 50 meters width after every block of 1000 meters over which mining is undertaken or at such distance as may be directed by the Director or any officer authorized by him.
 - iii) The maximum depth of mining in the river-bed shall not exceed three meter from the un-mined bed level at any point in time with proper bench formation.
 - iv) Mining shall be restricted within the central 3/4th width of the river/ rivulet.
 - v) In case of areas permitted for excavation outside river/rivulets i.e. areas adjoining to rivers/rivulets, no mining shall be permissible in an area up to a width of 500meters from the active edges of embankments in case of river Yamuna, 250metre in case of Tangri, Dangri Tributary and Ghaggar and 100 meters on either side of all other rivers/ rivulets.
 - vi) Any other condition(s), as may be required by the Irrigation Department of the state from time to time for river-bed mining in consultation with the Mines & Geology A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf. Further the depth of excavation of mineral shall not exceed nine meters (9m) at any point of time.
- 3) The contractor shall not undertake any mining operations in the area granted on mining contract without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws.
 - 4) There are bridges and anicuts exist in the lease area. They provide a way for transportation of mineral also. Safety zone on upstream side and downstream side has been provided depending upon the length of the bridges/ anicuts as a measure of safeguard. No workings will be extended in this zone
 - 5) Metalled roads pass through the lease area. A safety zone of 50 m on each side of road is earmarked. In this zone no activities will be conducted.



6) A barrier of 7.5 m width will be left from the lease boundary, if falling in the river bed.

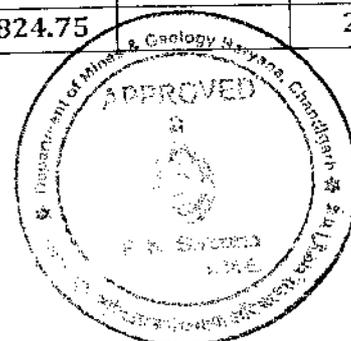
7) River is not having any water flow during post monsoon period and sand bed remains dry.

Mineral reserves are calculated up to 3m depth from river bed surface RL. All reserves are proved reserves. Details are given as below. Methods of estimation of reserves:- For estimating the reserve of boulder, gravel & Sand the Parameters considered are as follows: Sediments of various sizes and in mixed form are predominantly deposited in the river bed and outside the river bed. There is no perfect classification between boulders, cobbles, pebbles and sand. They are deposited in a mixed state. The classification is done by grab mining and the sediments are passed through different sieves in the screening plants.

Reserve:- Section	cross sectional M ²	En. Length	Volume in m ³	Sp. Grav. m ³ /MT	Total Mineable Mineral In tonnes
1-1'	822	36.5	30003	2.6	78008
2-2'	777.5	25	19437.5	2.6	50538
3-3'	752	25	18800	2.6	48880
4-4'	716	25	17900	2.6	46540
5-5'	673	25	16825	2.6	43745
6-6'	621	25	15525	2.6	40365
7-7'	559.5	25	13987.5	2.6	36368
8-8'	555.5	25	13887.5	2.6	36108
9-9'	546	25	13650	2.6	35490
10-10'	543.5	25	13587.5	2.6	35328
11-11'	525	25	13125	2.6	34125
12-12'	506	25	12650	2.6	32890
13-13'	504	25	12600	2.6	32760
14-14'	486	25	12150	2.6	31590
15-15'	469	25	11725	2.6	30485
16-16'	475.5	25	11887.5	2.6	30908
17-17'	483.5	25	12087.5	2.6	31428
18-18'	496.5	25	12412.5	2.6	32273
19-19'	508.5	25	12712.5	2.6	33053
20-20'	542	25	13550	2.6	35230
21-21'	597	25	14925	2.6	38805
22-22'	649	25	16225	2.6	42185
23-23'	727	25	18175	2.6	47255
24-24'	756	25	18900	2.6	49140



25-25'	744.5	25	18612.5	2.6	48393
26-26'	703	25	17575	2.6	45695
27-27'	672.5	25	16812.5	2.6	43713
28-28'	697	25	17425	2.6	45305
29-29'	670	25	16750	2.6	43550
30-30'	514.5	25	12862.5	2.6	33443
31-31'	554.5	25	13862.5	2.6	36043
32-32'	587.5	25	14687.5	2.6	38188
33-33'	592.5	25	14812.5	2.6	38513
34-34'	544	25	13600	2.6	35360
35-35'	528.5	25	13212.5	2.6	34353
36-36'	596.5	25	14912.5	2.6	38773
37-37'	629.5	25	15737.5	2.6	40918
38-38'	635	25	15875	2.6	41275
39-39'	617	25	15425	2.6	40105
40-40'	598.5	25	14962.5	2.6	38903
41-41'	618	25	15450	2.6	40170
42-42'	560.5	25	14012.5	2.6	36433
43-43'	546	25	13650	2.6	35490
44-44'	550	25	13750	2.6	35750
45-45'	544	25	13600	2.6	35360
46-46'	537.5	25	13437.5	2.6	34938
47-47'	602	25	15050	2.6	39130
48-48'	773	25	19325	2.6	50245
49-49'	773	25	19325	2.6	50245
50-50'	845	25	21125	2.6	54925
51-51'	835	25	20875	2.6	54275
52-52'	778	25	19450	2.6	50570
53-53'	734	25	18350	2.6	47710
54-54'	568.5	25	14212.5	2.6	36953
55-55'	568.5	25	14212.5	2.6	36953
56-56'	459	25	11475	2.6	29835
57-57'	413.5	25	10337.5	2.6	26878
58-58'	367	25	9175	2.6	23855
59-59'	272	25	6800	2.6	17680
60-60'	234	25	5850	2.6	15210
61-61'	204.5	46.5	9509.25	2.6	24724
Total			912824.75		2373356



Chapter 2: MINING

A. Open Cast Mining

a) Briefly describe the existing as well as proposed method for excavation with all design parameters indicating on plans /sections:-

(I) Existing Method of Excavation:- Applied area.

(II) Proposed Method of Excavation:- River bed mining is for extracting sand from River bed. As per Haryana Minor Mineral Concession Rules, 2012 extraction is limited to 3.0 m depth only. River bed is dry. Lease area allotted is 45.00 ha in district -Panchkula. Total length of the area as per the description report stretches in the length of 1.78 km. Mining activity will be carried out in allocated areas only.

Effective length of lease area for wining of mineral is 1.78 km. Total production envisaged is 7090 TPD. Activities will be carried out as per the production schedule given earlier. The mining quarry will be working as self -sustained units with all facilities like site office, rest shelter, first aid and drinking water etc... All these mines will be connected suitably with communication system. Light weight excavators/JCB will be deployed for extraction. Mineral will be removed in 3.0 m layer only forming one bench. This is as per the digging depth of the equipment. Mineral will be loaded in trucks of 25 tons capacity. Trucks and equipment will be on hire basis. There will be no OB or waste generation as the sand is exposed in the river bed. Bench will advance parallel to the banks of the river. Height of bench will be 3.0m. Width of the bench will be around 20.0m workings will be restricted within the lease area/khasra as per the description report given by Mining Department. Mining activities will be carried out in a manner so that there is no obstruction to the movement of water flow, if any, during rainy season. The bench will be in the form of slices/ strips parallel to the banks of the river. Roads in the lease area for the movement of loaded trippers/ trucks will not have slopes more than 1 in 20. However, movement of trucks after mineral loading will be towards both sides through approach roads connecting to tar roads. Every block will have its own approach roads, well connected to main highways. No processing of mineral will be done.

III) Salient Points of Proposed Scientific Mining are:-



- a) First requirement is to ascertain the maximum depth to which mineral is available and safe depth of working which has been fixed as 3.0 m in river bed in virgin areas.
- b) All proposed quarries have been proposed for further deepening and widening up to the above proposed depths.
- c) The depth of pit below the surface shall not exceed 3.0m in virgin area sand mining operations are carried out by formation of benches in accordance with the provisions of MMR 1961.
- f) No mining shall be allowed in the adjoining fields in a width of 100m from the active edge of embankment on either side of River Dangri.
- g) The lease holder shall comply with all other conditions and stipulations as given in the LOI and Auction document dated 16.06.2017.

IV) DRILLING & BLASTING

Not Applicable.

(b) Proposed year wise development Mining plan for next five year period:-

Lease has been allotted for a period of 07 Years. Lease area consists of 45.00ha area in Rattewali village (Khasra No. 141 mean) out of which about 6.75hectares area is under restricted zone and 6.5833ha area is under river channel. About 31.6667hectares area is free from restriction and the mining is proposed in this area only.

Proposed Production= 19, 00,000 MT per Annum i.e. 19Lac T/Annum

Working days have been taken as 268 days per Annum.

Daily Production = 7089.55 MT/Day Say 7090 MT/ Day

Trips per Day = 7090 MT/25 T per Truck/Dumper – 283Nos

Five Years Proposed Production Details (MT/A)

Production From River bed		
Year	Trips/ day	MTPA
I	283	19,00,000
II	283	19,00,000
III	283	19,00,000
IV	283	19,00,000
V	283	19,00,000



c) Salient features of working:-

The mining method shall be open cast semi-Mechanized mining.

The slice /strip shall be taken 0.5-1.0m height. Haul road & slice /strip ramp shall be made of 1 in 16 gradient & the width of the road shall be more than height. The loading shall be done by JCB in the Trucks/Dumper/Tractor. The mineral is soft in nature & directly dig gable so no drilling & blasting is required.

d) Utilization of mineral:- Sand will be used in construction, Buildings, Bridges and other infrastructure.

e) Plantation Proposals

Native plants like Neem, Pipal, Mango and other local species will be planted near the River. A suitable combination of trees that can grow fast and also have good leaf cover shall be adopted to develop the greenbelt. It is proposed to 1500 plants per year of native species along with some fruit bearing and medicinal trees during the plan period outside the QL area.

Programme for Plantation

Sr. No.	Year of Plantation	Target of Plantation	Assumed survival	Replenishment of Casualties	Total
1	First year	1500	1350	--	1350
2	Second year	1500	1350	150	1500
3	Third year	1500	1350	150	1500
4	Fourth year	1500	1350	150	1500
5	Fifth year	1500	1350	150	1500

e)Extent of Mechanization:- Initially Dumper/Trucks/Tractors will also arrange on hire basis. Later the applicant will go for own mechanization.

The mining method shall be open cast semi-mechanized mining.

(i) Loading Equipment

Type	Nos	Bucket Capacity in Cu. m.	Make	Motive Power	H.P.
JCB /Excavator	5	0.9M ³	Escort	Diesel	76HP

(ii) Haulage and Transport Equipment

a. Haulage within the STP hold

Type	Nos	Make	Motive Power
Dumper/Trucks/ Tractors	25	Ashok Leyland	Diesel

Where the Dumpers are fitted with exhaust conditioner should be indicated

b. Transport from mine head to the destination

The mineral produced from the pit shall be first brought at a spot outside the pit by JCB /Excavator, The excavated mineral directly loaded into the trucks & dumper by excavator for it onwards transportation.

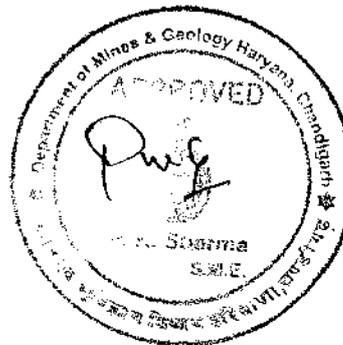
(iv) Miscellaneous Operations

a. Operations:- A Miscellaneous operations like maintenance of haul and access roads, dust suppression by water spraying field etc. shall be done.

b. Machineries Deployed

Type	NOS	Size Capacity	Make	Motive Power	H.P.
Water tanker with sprinkler arrangement with tractor	5	5000liter	Local	Diesel engine	

B. Underground Mines: Not Applicable.



Chapter 3: MINE DRAINAGE

a) Minimum and maximum depth of water table based on observations from nearby wells and water bodies:-

The Ground water table is 5m (in rainy season) to 7m (in Dry Season).

b) Indicate maximum and minimum depth of Workings.

The working depth in next year is likely to reach 0.5-1.0m, so it is not likely to touch the Ground water table in dry season.

c) Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged:-

However, the water may be pumped out using diesel engine driven pump of say 5-10H.P. This water can be spilled in the water drain made for the proper drainage of the mine water outside the QL area.

d) Described regional and local drainage pattern also indicate annual rain fall, catchments area, and likely quantity of rain water to flow through the QL area:-

The general slope of the land surface is from NE to SW. Elevation of the lease area varies from 360.40 to 356.00msl. The Dangri Tributary provides the major drainage in the lease area. The general phygiography of the Lease area is gently sloping from NE to SW side indicating the flow of direction of river.

There is no flow of water in the river bed in post monsoon period. Area is having 1057 mm rainfall in a year. During rainy season, catchment water flows in the river. During dry period the Boulder, gravel & sand is excavated which gets replenished during rainy period. No mining activities will be carried out during rainy season when there is water flowing in the working area.

There will be no intersection of water table as working will be carried out upto 3.0m depth only from surface of river bed while the water level is 8-10 m below the surface of river bed.



CHAPTER 4: STACKING OF MINERAL REJECTS/SUB GRADE MATERIAL AND DISPOSAL OF WASTE

During the mining of Some Cobbles shall also in STP area with sand. The Cobble shall again put in the River bed. So No dump external Dump is proposed.

The project proponent shall strive to adopt zero waste mining concepts by reducing the quantum of reject through technological innovation or finding its use through perspective buyer.



CHAPTER 5: USE OF MINERAL AND MINERAL REJECT

Sand is used in construction of Buildings, Bridges and other infrastructure.



Chapter 6: PROCESSING OF ROM AND MINERAL REJECT

- a) If processing of the ROM or Mineral Reject is planned to be conducted, briefly describe nature of processing. This may indicate size and grade of feed material and concentrate (finished marketable product), recovery etc.

Not Required.

- b) Give a material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery, and its grade at each stage of processing:- Not applicable

- c) Explain the disposal method for tailings or reject from the processing plant:- Not Applicable

- d) Quantity and quality of tailings /reject proposed to be disposed, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailings dam:- Not Applicable

- e) Specify quantity and type of chemicals if any to be used in the processing plant:- No

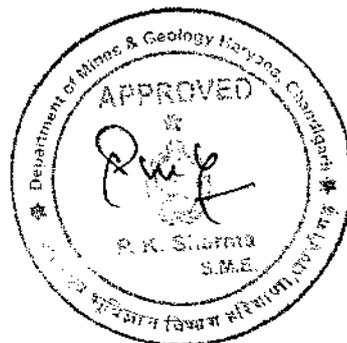
- f) Specify quantity and type of chemicals to be stored on site / plant.

No processing / beneficiation is proposed.

- g) Indicate quantity (cum per day) of water required for mining and processing and sources of supply of water, disposal of water and extent of recycling. Water balance chart may be given.

No water shall be required for processing. Water shall be required in mining, drinking purposes, dust suppressing at faces and on haul roads, and plantation.

Total water requirement in the mine will be about 80 KLD for drinking, spraying and plantation.



Chapter 7: OTHER

Describe briefly the following

a) Site Services

The Electric Power supply line not exists at QL area.

- **Water Supply**

Water is being supplied from a well near the mine. A small water tank is also proposed in the proposed mine office premises. This can be used for supply of water to mining work, spraying, watering the plants and drinking purposes.

- **First Aid**

Primary First aid facility is proposed at the proposed mine office outside QL area.

- **Mine office**

Permanent mine office is proposed outside QL area.

- **Rest Shelter**

Temporary rest shelter is proposed outside QL area.

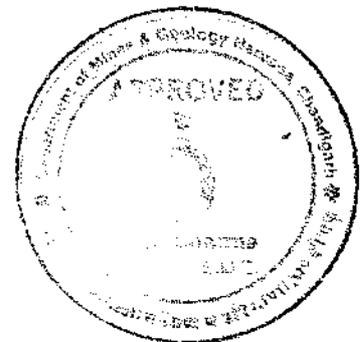
- **Latrines and Urinals**

At the mine site urinal and latrine are proposed outside QL area.

b) EMPLOYMENT POTENTIAL

The mine owner shall employ Mine official (Mines Manager, Forman) in accordance with the provision of the MPMMR. The workers to be employed shall be semi-skilled and unskilled. Most of them will come from the nearby villages. With the increase in the production additional man power shall be required. The Semi-mechanized mining the organizational set up proposed is given below:-

Mining Engineer/Geologist	:	1 Part time
Mines Mate/Mines Foreman	:	1 full time
Watchmen	:	1 full time
Skilled Labours/Operators	:	60 full time
Unskilled Labours	:	10 full time



CHAPTER 8.0 PROGRESSIVE MINE CLOSURE PLAN

8.1 Environment Base line information: Attach a note on the status of baseline information with regard to the following:-

The QL area is characterized by the topographically having moderately. The Existing land use pattern is given in the following table:-

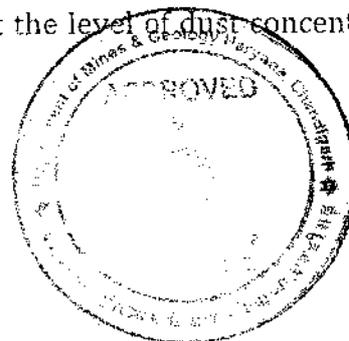
Table No.18: Existing Land use pattern

Sr. No.	*All the areas are given in Hectares	Total (Hect.)
1	Area under excavation	-----
2	Storage of Top Soil	-----
3	O/B Dump	-----
4	Mineral Storage	-----
5	Sub Grade Mineral Storage	-----
6	Safety zone- Bridge & anicuts roads, 7.5m lease boundary, 25% restricted area of river banks, 50m barrier at each km etc	-----
7	Road/ Cart track	-----
8	Railway	-----
9	Green Belt/plantation	-----
10	Tailing Pond	-----
11	Effluent Treatment Plant	-----
12	Mineral Separation Plant	-----
13	Town Ship	-----
14	Electric line	-----
15	Others	-----
16	Virgin area	45.00
Total		45.00

8.1.1 Water regime and presence of water reservoir:- The average annual Rainfall 1057mm; Normal monsoon Rainfall: 911 mm. The Ground water table is 5m (in rainy season) to 7m (in Dry Season). The nearest sources of drinking water are wells from where the potable water is fetched and stored.

8.1.2 Quality of Air, ambient noise level and water:-

The source to pollute air shall be the generation of dust and machinery undertaking the semi-Mechanized mining operation. But the level of dust concentration shall be practically of very low order.



8.1.3 Flora: -

Natural plantation growth has been largely degraded by human intervention. The vegetation in the study area is mainly of Babool, Kanji, Sejha, Palas, Mango, Mahua & Neem.

8.1.4 Climatic condition

Temperature- The climate of Panchkula district can be classified as subtropical monsoon, mild & dry winter, hot summer and sub-humid which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. The hot weather season starts from mid-March to last week of the June followed by the south west monsoon which lasts up to September. The transition period from September to November forms the post monsoon season. The winter season starts late in November and remains up to first week of March. The mean maximum temperature is 39.1°C (May & June) and mean minimum is 6.1° C (January) of the district.

Rainfall: Normal Annual Rainfall 1057mm; Normal monsoon Rainfall: 911 mm.

8.1.5 Human settlement

The population in and around this lease area is very low. The nearest human settlement area is the village Rattewali having population is 2563.

8.1.6 Public Building, Places of Worship and Monument:-

No Public Building, National Monument, place of Worship, Sanctuary, National Park, exist in and around the QL area.

8.1.7 Indicate any sanctuary is located in the vicinity of leasehold.

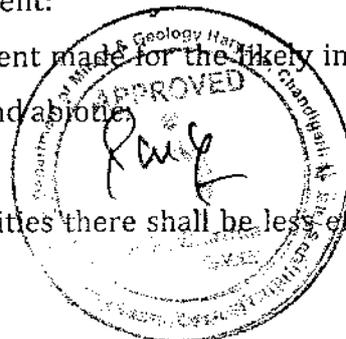
No National Park/sanctuary falls within 10Km. of the QL area.

8.2 Impact Assessment: Attach an Environmental Impact Assessment Statement describing the impact of mining and beneficiation on environment on the following:-

Impact of mining activities on the environment:

Given below are the details of the assessment made for the likely impact of mining activities on the environment, both biotic and abiotic.

8.2.1 Land area:-As a result of mining activities there shall be less effect on present landscape.



8.2.2 Air Quality:- The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like facemask, ear plug/ muffs. For air pollution management at the progressive mine closure of mine, greenbelt will be developed to prevent and control air pollution.

Approach road shall be sprinkled with water at regular intervals for controlling fugitive emission during vehicular movement.

Speed of vehicles shall be restricted below 20Km/hour on Kaccha Roads in order to control fugitive emissions.

Vehicles shall not be overloaded and sand transportation shall be done only through covered trucks so that no spillage of sand takes place.

Vehicles used in mining and transportation shall be maintained well so as keep Vehicular emissions in control.

Ambient air quality shall be monitored at site and the nearest human habitation and it shall conform to the norms prescribed by MoEF, Govt. of India.

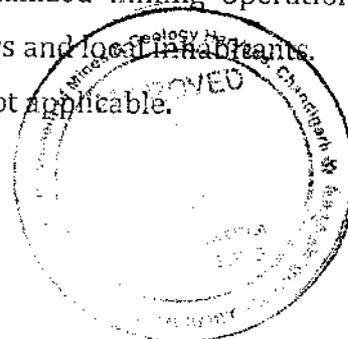
8.2.3 Water Quality: - The River Dangri flows in the north-eastern part of the district which originates in Nahan hills. Chautang, Khand and Omlanals of local existence also drain the district. The general slope of the land surface is From SE to NW. The general phygiography of the Lease area is gently sloping from NE to SW side indicating the flow direction of river.

There is no flow of water in the river bed in post monsoon period. Area is having 1076 mm rainfall in a year. During rainy season, catchment water flows in the river. During dry period the Boulder, gravel & sand is excavated which gets replenished to some extent during this period. No mining activities will be carried out during rainy season when there is water flowing in the working area.

There will be no intersection of water table as working will be carried out upto 3.0 m depth only from surface of river bed while the water level is 10 m below the surface of river bed

8.2.4 Noise Level: - Generation of ground vibration and noise is practically under limit and low enough with the Semi-mechanized mining operation to have any adverse impact on this account to the workers and local inhabitants.

8.2.5 Vibrations Levels (due to blasting):- not applicable.



8.2.6 Water Regime:- in absence of water regime in 500m periphery no impact will anticipate on water regime. The Ground water table is 5m (in rainy season) to 7m (in Dry Season).

8.2.7 Acid mine drainage:- NA

8.2.8 Surface subsidence:- Mining method is proposed is open cast Semi-mechanized mining, so there is no Surface subsidence.

8.2.9 Socio-Economics:- by having an economic activity near the villages, the socio and demographical profile of the local habitants will get positive impact, by direct and indirect jobs.

8.2.10 Historical Monuments:- No historical monument or building is present in the QL area.

8.3 Progressive reclamation Plan:-

The Proposals of the Final Closure are based on the Geology and Topography of the region. At the end of the mining operation, lease area shall be used as water reservoir, the water reservoir would be fenced. The local people would use the Buildings and Roads for their infrastructure facilities.

8.3.1 Mined Out Land

Table-21: Mined Out Land (Hectare)

Particular	Present	At the end of five year
Broken Up Area	Nil	31.6667
Back Filled Area	Nil	Nil
water reservoir	Nil	Nil
Reclaimed Area	Nil	Nil

***All the area are in Hectare**

Mined Out Land Planning The mined out land planning is required to be done to ensure that:

- As soon as the land matures, it shall be made ready for future use.
- At all the times mining pits and the roads shall be maintained in safe condition to prevent landslides etc. and stability shall not be disturbed.
- Water drainage shall be maintained and cleaned in a manner that surface water shall not cause quarry flooding.
- The plantation proposed above would not only help in the restoration of the land use but also improve the eco-system of the area.

Land Use Pattern:- The QL area is having **Govt. Land**. In general the area is flat land. There is no village or human settlement in the QL area. Permanent vegetation in the area is also very less prominent.



The present land use pattern is as indicated in the following Table:-

Table-22: Present land use pattern

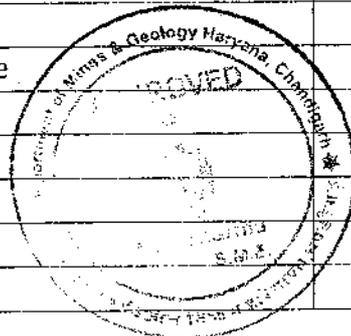
Sr. No.	*All the areas are given in Hectares	Total (Hect.)
1	Area under excavation	-----
2	Storage of Top Soil	-----
3	O/B Dump	-----
4	Mineral Storage	-----
5	Sub Grade Mineral Storage	-----
6	Safety zone- Bridge & anicuts roads, 7.5m lease boundary, 25% restricted area of river banks, 50m barrier at each km etc	-----
7	Road/ Cart track	-----
8	Railway	-----
9	Green Belt/plantation	-----
10	Tailing Pond	-----
11	Effluent Treatment Plant	-----
12	Mineral Separation Plant	-----
13	Town Ship	-----
14	Electric line	-----
15	Others	-----
16	Virgin area	45.00
Total		45.00

Land reclamation & Tree plantations:- The land reclamation and afforestation proposals are presented in Plan. The lessee is committed to take care of and reclaim the mining area as proposed in the plan. At the end of the mining operation, the excavated region shall be converted into water reservoir after exhausting the complete available mineral. The lessee shall make water drains for the purpose. The surroundings of the proposed water reservoir would be fenced.

Proposed Land pattern during plan period:-

Table: Land use pattern during plan period

Sr. No.	Particular	At the end of plan period (5 year) (in Hect.)
1	Area under excavation/ Naturally Reclamation	31.6667
2	Storage of Top Soil	0
3	O/B Dump	0
4	Mineral Storage	0
5	Sub Grade Mineral Storage	0
6	Infrastructure	0.20
7	Road/ Cart track	0
8	Green Belt/plantation	5.00
9	Non utilized	8.1333
Total		45.00



8.4 Disaster Management and Risk Assessment

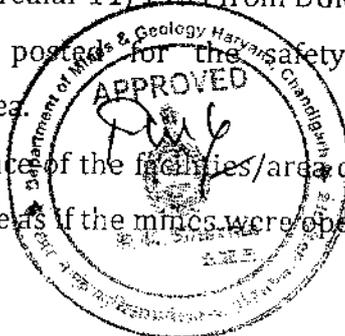
This should deal with action plan for high risk accidents like landslides, subsidence, flood, inundation in underground mines, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authorities should be described.

- The shallow depth of activities in river bed mining will not involve any high risk accident due to side falls/collapse.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, Haryana Mineral Rules, 2012 and other laws applicable to mine will strictly be complied with.
- During heavy rainfall the mining activities will be closed.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.

8.5 Care and Maintenance during Temporary Discontinuance

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off.
- Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:



Mine roads and approach roads,

Fencing on approach roads

Checking and maintenance of machines and equipment,

Drinking water arrangements,

Mine office, first aid stations etc.

- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

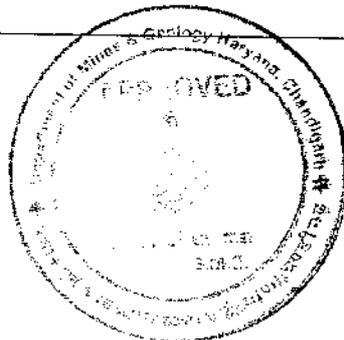
In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc...

8.6: ABANDONMENT COST

As at present mining is not going to be closed so abandonment cost could not be assessed. However based on the progressive mine closure activities during the plan period, cost is assessed as given below:-

Abandonment Cost

Rate	YEAR					Rate	Amount (in Rs.)
	First	Second	Third	Fourth	Fifth		
Plantation (in no.)	1500	1500	1500	1500	1500	@ 20 Rs per sapling	1,80,000/-
Plantation cost (In Rs)	30,000/-	30,000/-	30,000/-	30,000/-	30,000/-		
Wire fencing (meter)	500	500	500	750	1000	@ of 120Rs per meter	3,90,000/-
Total							5,70,000/-



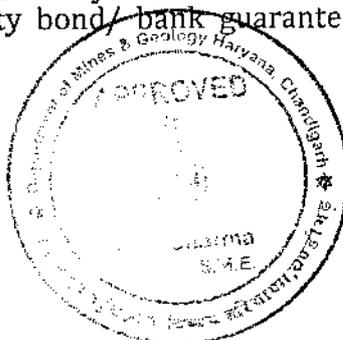
8.7: FINANCIAL ASSURANCE

The lessee is required to submit the financial assurance for the area to be put to use for mining and allied activity. Following table shows the calculation:-

Sr. No.	Head	Area put on use at start of Plan (in Ha.)	Additional requirement during Plan period (in. Ha.)	Total (in. Ha.)	Area considered as fully reclaimed & rehabilitated (in. Ha.)	Net area considered for calculation (in. Ha.)
1.	Area under mining	--	31.6667	31.6667	--	31.6667
2.	Storage for top soil	--	--	--	--	--
3.	Overburden/dump	--	--	--	--	--
4.	Mineral storage	--	--	--	--	--
3	Infrastructure (Workshop, administrative building etc.)	--	0.20	0.20	--	0.20
6.	Road	--	--	--	--	--
7.	Railway	--	--	--	--	--
8.	Green Belt	--	5.00	5.00	--	5.00
9.	Tailing pond	--	--	--	--	--
10.	Effluent Treatment	--	--	--	--	--
11.	Mineral Separation Plant	--	--	--	--	--
12.	Township area	--	--	--	--	--
13.	Sub Grade Stack Yard	--	--	--	--	--
GRAND TOTAL						36.8667

Total 36.8667ha area will be put in use. Against this mined out area the total financial assurance (@15000/- per ha. Comes out to Rs 5,53,000.5/- which will be deposited in the form of Surety bond/ bank guarantee to the director mines & Geology Haryana.

Date :- 30.07.2018
Place:- Udaipur



Nimish
Nimish Singhwi
(Mining Engineer)

Part -B**9.0 CERTIFICATE / UNDERTAKINGS /CONSENT LETTER****M/s Tirupati Roadways,**

Proprietor Shri Lakhmir Singh Sabharwal

**3, Sadashiv Properties, Katras Road, Bank More, Dhanbad, Distt.- Dhanbad
(Jharkhand)**

A. CONSENT LETTER/UNDERTAKINGS/CERTIFICATE FROM THE LESSEE

1. Mining Plan with progressive closure plan in respect of Rattewali Boulder, Gravel & Sand) area (Khasra No.- 141 mean) over an area of 45.0Hect in Village- Rattewali, District- Panchkula, Haryana under Rule Haryana Minor Mineral Concession Rules, 2012 has been prepared by Mining Engineer Shri Nimish Singhwi,

This is to request the Department of Mines & Geology, Haryana to make further correspondence regarding any regarding of Mining plan/scheme of Mining with the said recognized person at his following address:

Nimish Singhwi, Mining Engineer,
15, New Glass Factory Colony,
Sunderwas Udaipur (Raj).
Mobile No.: 94141-10360
Email- nimesh.singhvi@gmail.com



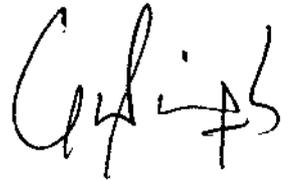
We hereby undertake that all modification/~~updating~~ as made in the said Mining plan by the said recognized person be deemed to have been made with our knowledge and consent and shall be acceptable on us and binding in all respects.

2. It is certified that the Progressive Mine Closure Plan of Rattewali Boulder, Gravel & Sand) area of M/s Tirupati Roadways, through proprietor Shri Lakhmir Singh Sabharwal R/o- 3, Sadashiv Properties, Katras Road, Bank More, Dhanbad-826001 (Jharkhand) over an area of 45.00hect complies, with all statutory Rules, Regulations, Orders made by the Central Government or State Government, Statutory organizations, Court etc. which

have been taken into consideration and Wherever any specific permission is required, the lessee will approach the concerned authorities.

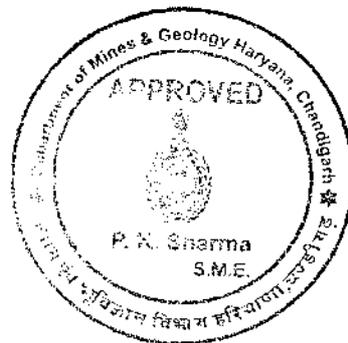
The information furnished in the **Progressive Mine Closure plan** is true and correct to the best of our knowledge and records.

3. The provisions of **mines Act, Rules and Regulations** made there under have been observed in the Mining Plan over an area of 45.00Hect in Village - Rattewali, District- Panchkula, Haryana belonging to Rattewali Boulder, Gravel & Sand) area and where specific permissions are required the lessee will approach the **D.G.M.S.** Further standards prescribed by **D.G.M.S.** in respect of **miners' health** will be strictly implemented"



Date :-
Place:-

M/s Tirupati Roadways,
proprietor Shri Lakhmir Singh Sabharwal
R/o- 3, Sadashiv Properties, Katras Road,
Bank More, Dhanbad-826001 (Jharkhand)



NIMISH SINGHWI
Mining Engineer

Mobile: 094141-10360 (M)
099298-43552 (M)
nimesh.singhvi@gmail.com

Mining & Environmental Consultant

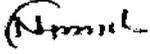
**Address: 15, New Glass factory colony, near AIM computer,
Udaipur (Raj.) 313001**

CERTIFICATE FROM MINING ENGINEER

The provisions of Rule Haryana Minor Mineral Concession Rules, 2012 have been observed in the preparation of the Mining Plan with progressive closure plan for Rattewali Boulder, Gravel & Sand) area (Khasra No.- 141 mean) over an area of 45.00Hect of **M/s Tirupati Roadways**, through proprietor Shri Lakhmir Singh Sabharwal R/o- 3, Sadashiv Properties, Katras Road, Bank More, Dhanbad- 826001 (Jharkhand) State and whenever specific permissions are required, the lessee will approach the concerned authorities of Department of Mines & Geology, Haryana.

The information furnished in the Mining Plan with progressive closure plan is true and correct to the best of our knowledge.

Date: 30.07.2018
Place:- Udaipur


Nimish Singhwi,
(Mining Engineer)



PLATES			
Sr. No.	Particular	Scale	Plate
1.	Key Plan	1:50000	1
2.	Route Plan	Not to be scale	2
3.	Surface Plan	1:4000	3
4.	Geological Plan & Sections	1:4000	4 & 4A
5.	Mine layout plan & section	1:4000	5
6.	Individual year wise development plans & section	1:4000	6A to 6T
7.	Environment plan	1:5000	7
8.	Progressive mine closure Plan	1:4000	8
9.	Conceptual Plan	1:4000	9

List of Annexure

Sr. No.	Description	Annexure No.
1.	Letter of Intent	1
2.	Degree of Mining Engineer	2



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Sr. No.	Particular	Page
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1.	General	5
2.	Location and Accessibility	6
3.	Detail of Approved Mining Plan	8
PART - A		
1.	Geology and Exploration	9
2.	Mining	25
3.	Mine Drainage	29
4.	Stacking of Mineral Reject/ sub grade Material and Disposal of waste	30
5.	Use of Mineral	31
6.	Processing of ROM and Mineral Reject	32
7.	Other	33
8.	Progressive Mine Closure Plan	34



ANNEXURE



Department of Mines and Geology Haryana
30-Bays Building, Sector-17, Chandigarh.

Registered

From

The Director,
Mines & Geology, Haryana
30 Bays building, Sector-17, Chandigarh.



To

M/s Tirupati Roadways,
Through its Proprietor Sh. Lakhmir Singh Sabharwal,
3, Sadashiv Properties, Katras Road,
Bank More, Dhanbad, Jharkhand-826001.

Memo No. DMG/HY/Cont./Rattewali Block/PKL B 10/2017/
Dated Chandigarh, the

Subject:

Acceptance of the highest bid in respect of the Boulder, Gravel and Sand minor mineral mine of "Rattewali Block/PKL B-10" having Tentative Area of 45.00 hectares in the district Panchkula, offered in e-auction held on 24-25.05.2017/ issuance of Letter of Intent (LoI)- regarding.

You participated in the e-auction held on 24-25.05.2017 on the State Government web portal <https://haryanaeprocurement.gov.in> after accepting the terms and conditions of the auction notice issued vide notification no. DMG/HY/e-Auction/PKL/2015/1391 dated 17.04.2017, Corrigendum no. DMG/HY/e-Auction/PKL/2015/1509 dated 21.04.2017 and another Corrigendum no. DMG/HY/e-Auction/PKL/2015/1991 dated 12.05.2017 in order to obtain mining contract of minor mineral mine of the district Panchkula. You offered the highest bid of Rs. 11,72,50,000/- [Rs. Eleven crore seventy two lacs fifty thousand only] per annum, against the Reserve Price of Rs. 08,18,00,000/-, for obtaining the Mining Contract of Minor Mineral Mine namely, 'Rattewali Block/PKL B 10' for extraction of Boulder, Gravel and Sand having tentative area of 45.00 hectares. The details of the khasra numbers of the tentative area under above said Mining Block is attached as Annexure 'A'

2. You are hereby informed that the State Government has accepted the highest bid of Rs. 11,72,50,000/- [Rs. Eleven crore seventy two lacs fifty thousand only] per annum offered by you in respect of the above said minor mineral mine of 'Rattewali Block/PKL B 10' under the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012 (State Rules). Accordingly, you have become the successful bidder in respect of 'Rattewali Block/PKL B 10' of the district Panchkula.

3. The State Government having accepted the aforementioned highest bid offered by you, the Department is pleased to issue this Letter of Intent (LoI) in your favour in respect of

Department of Mines and Geology Haryana
30-Bays Building, Sector-17, Chandigarh.

the Mining Block/area namely '**Rattewali Block/PKL B 16**' subject to the following terms and conditions:

- (i) The period of contract shall be **07 years** and the same shall commence with effect from the date of grant of environmental clearance by competent authority or on expiry of a period of 12 months from the date of this communication of acceptance of highest bid/ issuance of "**Letter of Intent**", whichever is earlier;
- (ii) You may note that the detail of the area of the mining block is tentative and was notified on "as is where is basis" (**refer condition no. 4 of the auction notice**). In case of any inadvertent mistake, if any, the same would be rectified/ corrected before execution of the agreement (**refer condition no. 3 of the auction notice**);
- (iii) No request regarding reduction in bid amount on account of reduction in land/area of the Mining block, including due to change in description of khasra numbers/location etc. at any stage will be entertained on any ground including loss/reduction of area for mining on account of compliance of applicable laws/restrictions. Needless to state that this also includes the changes, if any, as per condition no. 3 of auction notice.
- (iv) The amount of the highest bid i.e. **Rs. 11,72,50,000/-** [Rs. Eleven crore seventy two lacs fifty thousand only] per annum shall be the "Annual Contract Money" payable by you as the contractor money in the manner prescribed in the contract agreement to be executed on form MC-1 appended to State Rules;
- (v) The above said annual contract money shall be increased at the rate of 25% on completion of each block of three years. Accordingly, the year-wise amount of the annual contract money shall be as per details given below:

Sr. No.	Year of the Contract Period	Annual contract Money
1	First Year	Rs. 11,72,50,000/-
2	Second Year	Rs. 11,72,50,000/-
3	Third Year	Rs. 11,72,50,000/-
4	Fourth Year	Rs. 14,65,62,500/-
5	Fifth Year	Rs. 14,65,62,500/-
6	Sixth Year	Rs. 14,65,62,500/-
7	Seventh Year	Rs. 18,32,03,125/-

- (vi) As per the terms and conditions of the grant, you are liable to deposit **Rs. 02,93,12,500/-** i.e. equal to 25% of the annual bid amount as "security deposit" out of which you have already deposited an amount of **Rs. 01,17,25,000/-** (Rs. One crore seventeen lacs twenty five thousand only) i.e. equal to 10% of the annual bid amount as 'initial bid security' after the conclusion of e-auction. The balance amount

- of **Rs. 01,75,87,500/-** of the bid security i.e. 15% of the annual bid amount alongwith one month's advance contract money shall be deposited before commencement of the mining operations or on expiry of period of 12 months, whichever is earlier;
- (vii) You shall execute an Contract Agreement Deed in Form MC-I appended to the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012 (the State Rules 2012) within a period of 90 days from the date of issuance of this communication/ grant of LoI;
- (viii) It may be pointed out that as per existing applicable rates the contract agreement has to be executed on **Non Judicial Stamp papers worth Rs. 41,77,100/- (Rs. Forty one lacs seventy seven thousand one hundred only)**.
- (ix) The Contract Agreement executed shall be got duly registered under relevant law with concerned Registering Authority and you shall be liable to pay applicable stamp duty and registration fee etc. as per the applicable rates as demanded by the Registering Authority/ Revenue Department;
- (x) In case you fail to execute the Agreement Deed within the prescribed period of 90 days, this LoI shall be deemed to have been revoked and the amount of initial bid security deposited at the time of auction shall be forfeited. Further, the balance amount of 15% towards the bid security, amounting to **Rs. 01,75,87,500/-** being the 15% of the annual bid amount, shall be recovered as arrears of land revenue and, you, as the LoI holder/ defaulter, shall be debarred from participation in any future auctions for a period of 5 years;
- (xi) You shall also furnish a solvent surety for a sum equal to the amount of the annual bid for execution of the Agreement. In case the surety offered by the contractor(s) during the subsistence of the contract is not found solvent, the contractor(s) shall offer another solvent surety and a supplementary deed shall be executed to this effect;
- (xii) After execution of Agreement, either before commencement of the mining operation or before expiry of the period of 12 months from the date of issuance of this LoI, whichever is earlier, in case of failure to deposit the balance 15% amount towards security [as required under clause (v) above] the acceptance of bid/issuance of LoI/execution of agreement shall be deemed to have been revoked and 10% amount deposited towards as initial bid security at the time of auction shall stand forfeited. Further, un-paid 15% amount towards security shall be recovered as arrears of land

Department of Mines and Geology Haryana
30-Bays Building, Sector-17, Chandigarh.

- revenue and you shall be debarred from participation in any subsequent bids for a period of 5 years;
- (xiii) You shall be liable to deposit the contract money in advance at monthly intervals as per provisions of Contract Agreement i.e. from the date of commencement of the contract Agreement;
- (xiv) You shall also deposit/ pay an additional amount equal to 10% of the due contract money along with the monthly installments towards the '**Mines and Mineral Development, Restoration and Rehabilitation Fund**'.
- (xv) You shall also be liable to pay advance income tax as per provisions of Section 206(c) of income tax act in addition to contract money, payable as per terms and conditions of contract agreement.
- (xvi) On enhancement of the contract money with the expiry of every three years period, you shall deposit the balance amount of security so as to upscale the security amount equal to 25% of the revised annual contract money as applicable for one year with respect to the next block of three years. No interest, whatsoever, shall be payable on the security amount deposited under the prescribed security head of the government;
- (xvii) You shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) as per chapter 10 of the State Rules for the "Mining Block" and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorised by the Director, mines & Geology, in this behalf.
- (xviii) Further, the actual mining will be allowed to be commenced only after prior Environmental Clearance is obtained by you as the LoI holder/mining contractor for the Mining Block from the Competent Authority as permitted by the competent Authority required under EIA notification dated 14/9/2006, as amended from time to time by the MoE&F, GoI and guidelines/ circulars issued in this behalf;
- (xix) The Mining contractor to whom mining rights have been granted through this contract would also be liable to pay the following to the landowners to undertake mining operations:
- (a) Annual rent in respect of the land area blocked under the concession but not being operated, and
 - (b) Rent plus compensation in respect of the area used for actual mining operations.

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- (xx) The amount of annual rent and the compensation shall be settled mutually between the landowner and the mining contractor. In case of non-settlement of the rent and compensation, the same shall be decided by the District Collector concerned in accordance with the provisions contained in Chapter 9 of the "Haryana Minor Mineral Concession, Stocking, and Transportation of Minerals and Prevention of Illegal Mining Rules, 2012";
- (xxi) The total mineral excavated and stacked by the concession holder within the area granted on mining contract shall not exceed two times of the average monthly production as per approved Mining Plan at any point of time;
- (xxii) The Mining Contractor shall not stock any mineral outside the concession area granted on mining contract, without obtaining a valid license as per provisions contained in Chapter 14 of the State Rules;
- (xxiii) The contractor shall not carry out any mining operations in any reserved/ protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorized in this behalf, contractor(s) shall not be entitled to claim any relief in payment of contract money on this account;
- (xxiv) Following are the general/ special conditions applicable for excavation of minor mineral(s) from river beds in order to ensure safety of river-beds, structures and the adjoining areas:
- (a) No mining would be permissible in a river-bed up to a distance of five times of the span of a bridge structure on up-stream side and ten times the span of such bridge structure on down-stream side, subject to a minimum of 250 meters on the up-stream side and 500 meters on the down-stream side;
 - (b) There shall be maintained an un-mined block of 50 meters width after every block of 1000 meters over which mining is undertaken or at such distance as may be directed by the Director or any officer authorised by him;
 - (c) The maximum depth of mining in the river-bed shall not exceed three meters from the un-mined bed level at any point in time with proper bench formation;
 - (d) Mining shall be restricted within the central 3/4th width of the river/ rivulet;

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30-Bays Building, Sector-17, Chandigarh.

- (e) No mining shall be permissible in an area up to a width of 500 meters from the active edges of embankments in case of river Yamuna, 250 meters in case of Tangri, Markanda and Ghaggar and 100 meters on either side of all other rivers/ rivulets. (This clause is applicable for mining outside river bed area);
- (f) Any other condition(s), as may be required by the Irrigation Department of the state from time to time for river-bed mining in consultation with the Mines & Geology Department, may be made applicable to the mining operations in river-beds.
- (xxv) A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf. Further, the depth of excavation of mineral shall not exceed nine meters (9m) at any point of time. (This clause is applicable for mining outside river bed area);
- (xxvi) The contractor shall not undertake any mining operations in the area granted on mining contract without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws;
- (xxvii) The contractor shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosives Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made thereunder, Wild Life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;
4. Accordingly, you are advised to submit the Draft Contract Agreement on Form MC-I (in Five copies) appended to the State Rules-2012, first copy of which shall be on the stamp paper of **Rs. 41,77,100/- (Rs. Forty one lacs seventy seven thousand one hundred only)** along with other requisite documents including a solvent surety(s) for a sum equal to the amount of the annual bid for execution of the agreement, within a period of 90 days from the date of issue of this bid acceptance letter and the Lol.

Sd/-
Mining Engineer,
for Director Mines & Geology,
Haryana.

Department of Mines and Geology Haryana
30-Bays Building, Sector-17, Chandigarh.

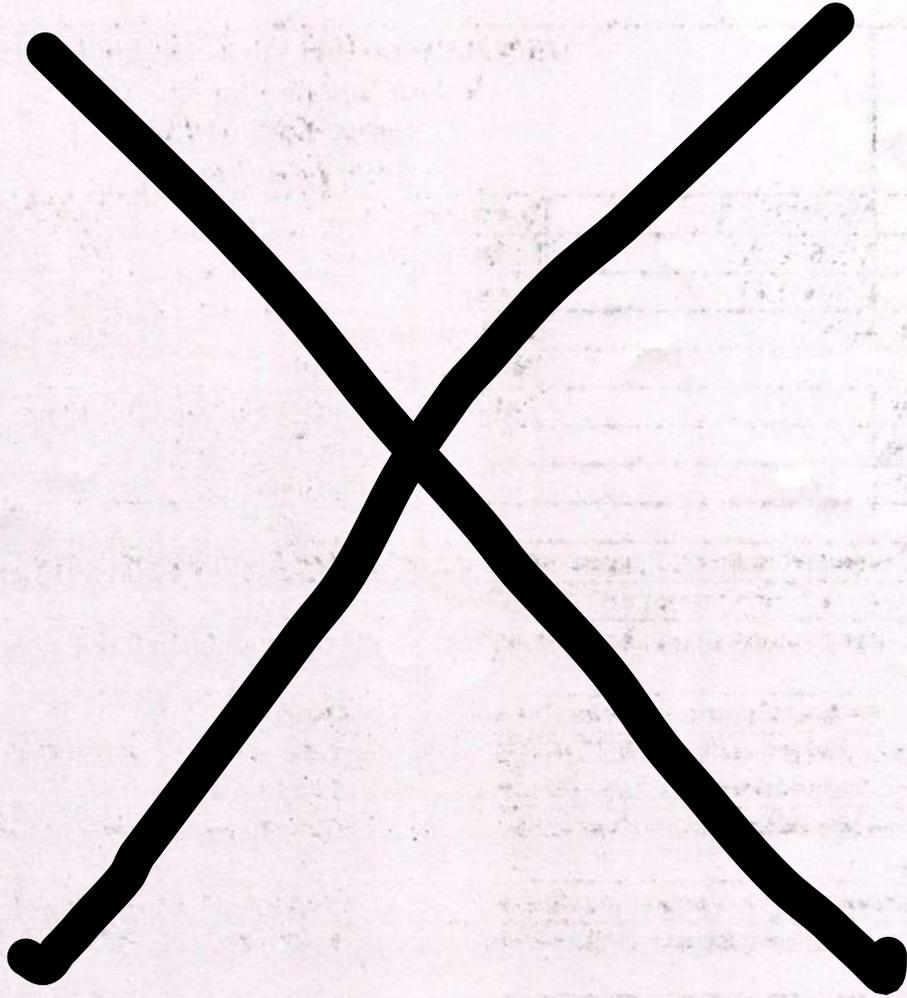
Regd.

Endst.No. DMG/HY/Cont./Rattewali Block/PKL B 10/2017/2659 Dated: 16.06.2017

A copy is forwarded to the following for information and necessary action please:-

1. The Chairman, Haryana State Pollution Control Board, Panchkula.
2. The Deputy Commissioner, Panchkula.
3. The Mining Officer, Mines & Geology Department, Panchkula.


Mining Engineer,
for Director Mines & Geology,
Haryana.



अनुक्रमांक 284
Roll No.

जय नारायण व्यास विश्वविद्यालय जोधपुर

(पूर्व जोधपुर विश्वविद्यालय)

प्रमाणित किया जाता है कि

निमीष सिंघवी

ने इस विश्वविद्यालय से 1997 की परीक्षा में

बैचलर ऑफ इंजीनियरिंग

खनन इंजीनियरी

की उपाधि प्रथम श्रेणी में प्राप्त की

JAI NARAIN VYAS UNIVERSITY JODHPUR

(ERSTWHILE UNIVERSITY OF JODHPUR)

This is to certify that

NIMISH SINGHWI
obtained the degree of

BACHELOR OF ENGINEERING

MINING ENGINEERING

of this University in the

Examination of 1997 and that

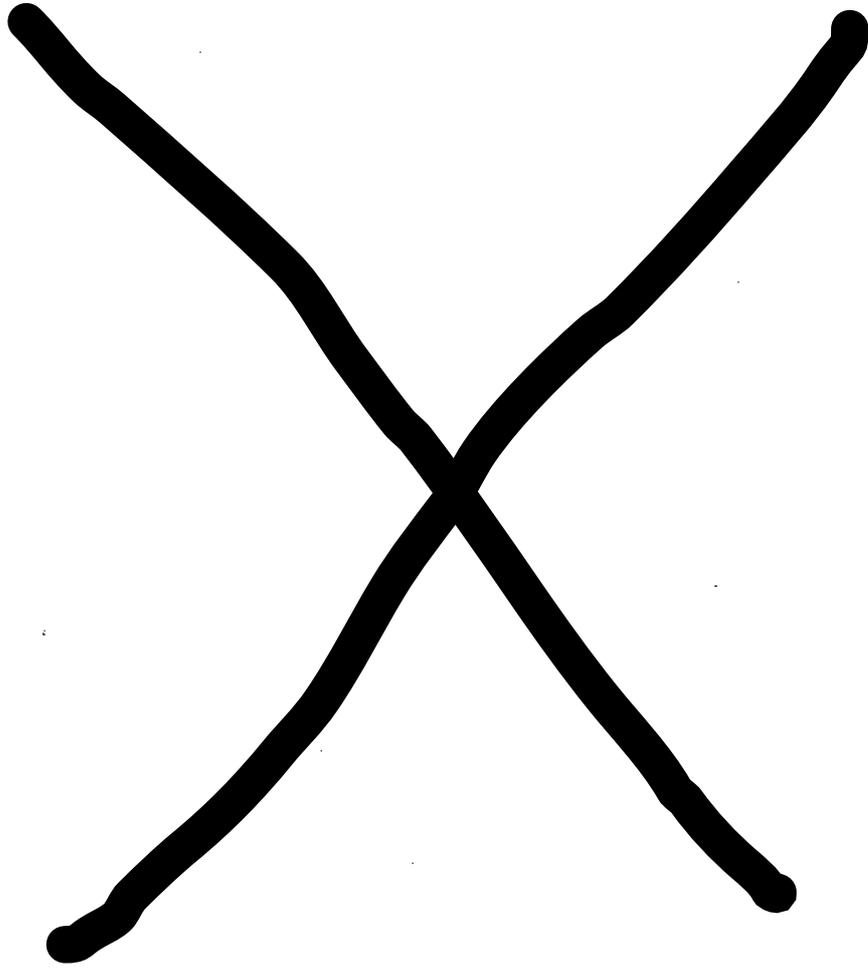
he/she was placed in the First Division



Vice-Chancellor

वाइस-चान्सेलर

September 28, 1998.



Drainage and replenishment
study for sand mining

M/s Tirupati Roadways

A Letter of Intent had been issued by the Director General, Mine & Geology Department, Government of Haryana vide letter no. Memo no DMG/Hy/Cont/Rattewali Block/PLK B-10/2017/2658 dated 16.06.2017 to M/s Tirupati Roadways for Removal of Bajri (Minor Mineral) in revenue village of Rattewali over an area of 45.0 ha in district Panchkula, Haryana for a period of 7 years. As per the conditions of Letter of Intent, it was mandatory to obtain environmental clearance (EC) from MoEFCC, Government of India. Presentations were given in the Expert Appraisal Committee (EAC) of MoEFCC in its 31st EAC Meeting during 14-15th May, 2018 had asked for a Modified Mine Plan and had recommended the lease area be divided in to 25 m grid with the help of sections across the width of the river and along the direction of flow of river for levels so that an accurate assessment can be made on the replenishment taking place.

MoEFCC decided to advise all applicants to carry out scientific replenishment study and submit the report before EAC for the consideration of quantity of production for mining of Bajri/River Sand on yearly basis.

In view of the above condition, M/s Tirupati Roadways approached Hydro Geo Solutions (HGS) for undertaking the scientific replenishment study of his mine in the district of Panchkula, Haryana.

The mine lease area along the course of Dudhgar Kee Nadi which joins to Dangri in the revenue village of Rattewali forms part of the Ghaggar river in district Panchkula and falls under G.T. Sheet No's – 53B/14 shown in Figure-1. The area is located between the following Latitude and Longitudes: 30°38'33"N to 30°39'24.6"N and 76°59'17.5"E to 76°59'50"E.

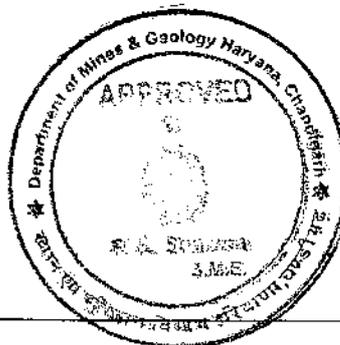
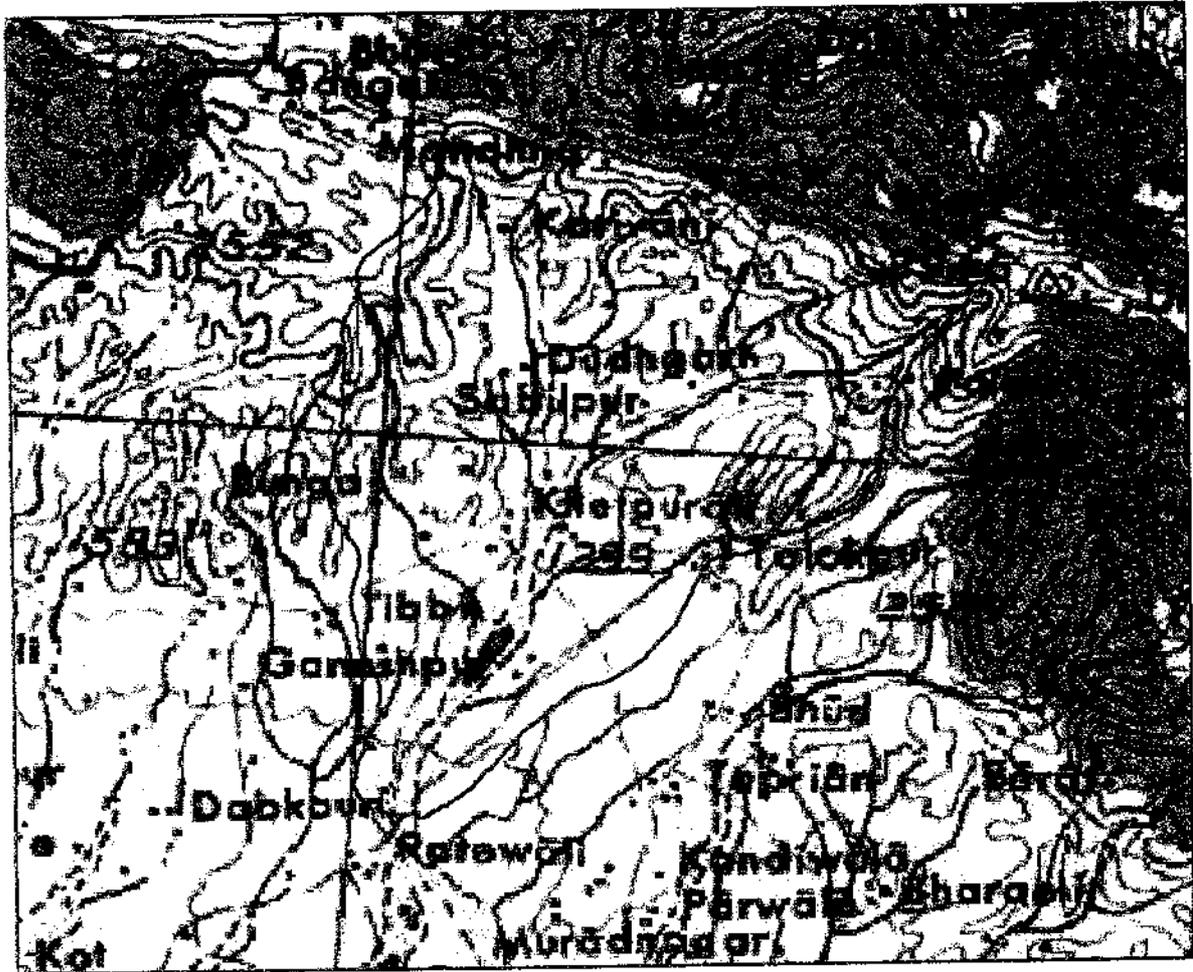


Figure-1. Part of Survey of India Toposheet Nos. 53G/1,5 and 53F/4,8



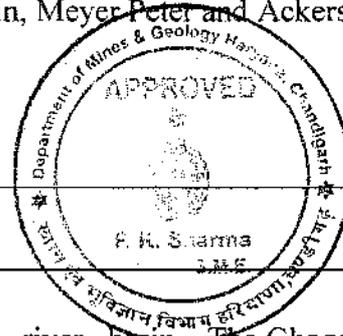
2

River Dudhgar Kee Nadi is an ephemeral stream in nature. In ephemeral channels of the northern Haryana, sediment often moves in a step-wise manner because of transmission losses. Water from storms originating in the upper reaches of a watershed is often completely absorbed in the channel before reaching the outlet. Therefore, the ability of the channel to transport sediment is dependent on varying flow as a function of distance along the channel. Sediment that is eroded, entrained, transported, and deposited by one storm may be available to subsequent storm events for transport within the channel. Thus, the transport of sediment in sub-tropical to temperate perennial channels is complicated by flow sequencing.



Therefore, the methodology adopted for the study is an integrated approach involving:

- ~~It~~ comprising of 46 cross sections in block (Appendix-II), along the lease reach of the river showing river bed material (RBM) with present elevations which when balanced with the next deposition can be quantified as the actual deposition/replenishment for 2018. Fifteen sand samples for sieve analysis (Appendix-I) i.e. d_{10} , d_{30} , d_{50} and d_{60} , uniformity coefficient (C_u) and coefficient of curvature (C_c) was also determined as an input for estimation of bajri/sand replenishment of river reach under study.
- ~~It~~ was used for identification of watershed area relevant to the mine lease. The data was used is from the latest satellite imagery of CARTOSAT – 1 of ISRO having a grid of 30 metres and SRTM, NASA at grid of 80 metres and computer aided drainage analysis system.
- ~~It~~ The catchment yield has been computed using the Strange's runoff method (Strange's Monsoon runoff curves) for the runoff coefficient. The iso-pluvial maps of IMD have been used for estimation of catchment yield and peak flood discharge for the study area by various methods like Dickens, Jarvis, and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport comprises of use of analytical models namely the Einstein, Meyer Peter and Ackers & White's equation for calculation of bed load transport.



Study area falls in upper reaches of Ghaggar river basin. The Ghaggar river is an intermittent river in India and Pakistan that flows only during the monsoon season. The river is known as *Ghaggar* before the Ottu barrage and as the *Hakra* downstream of the barrage. The basin is classified in two parts, *Khadir* and *Bangar*, the higher area that is not flooded in rainy season is called *Bangar* and the lower flood-prone area is called *Khadar*.

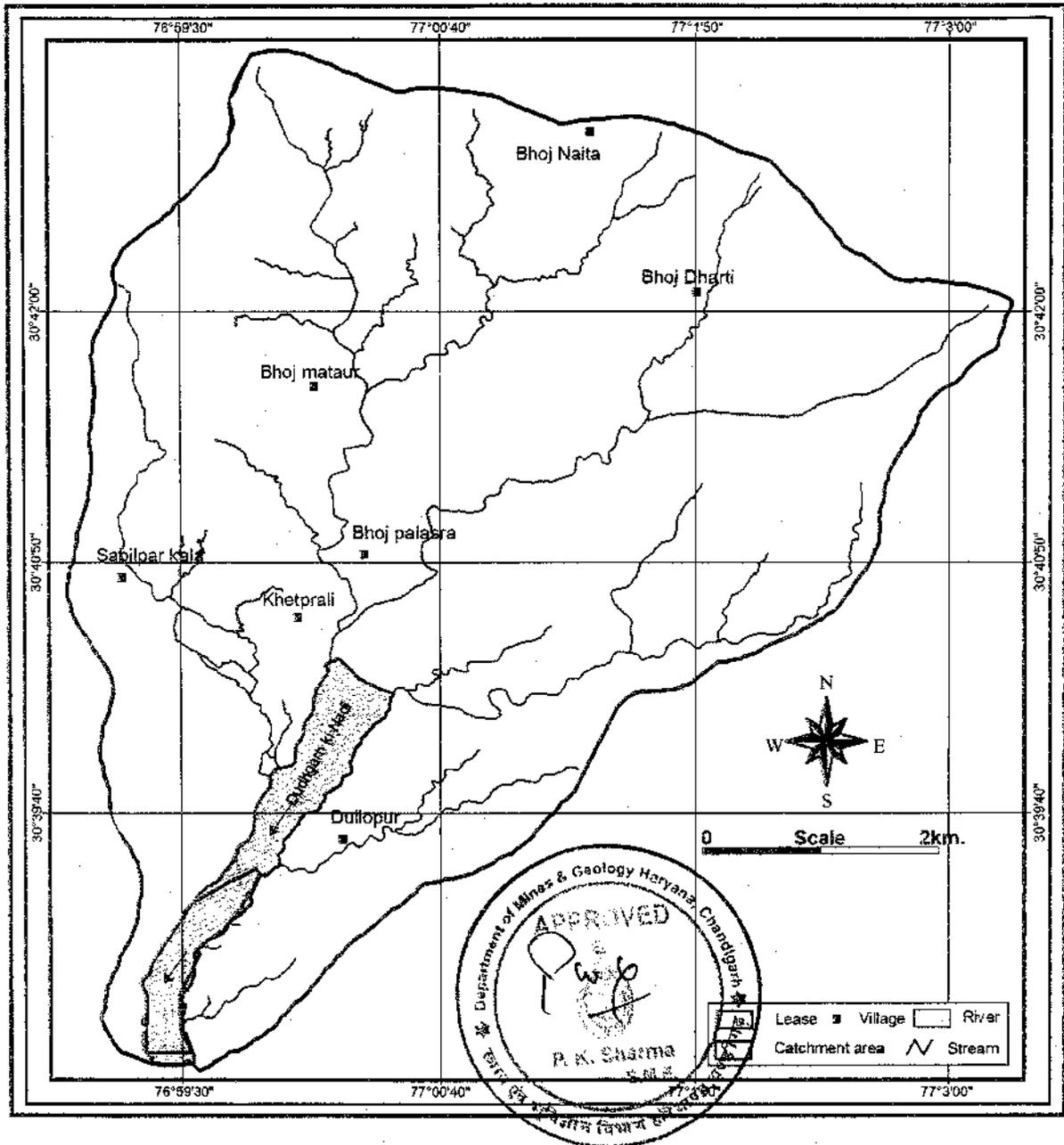
Most sites of the Mature Harappan Civilisation (aka Indus Valley Civilisation) (2600-1900 BCE) are actually found along the (dried-out) bed of the Ghaggar-Hakkar, while the Late Harappan Civilisation was centered on the upper Ghaggar-Hakkar and the lower Indus.

Recent geophysical research shows that during the time of the Harappan Civilisation the Ghaggar-Hakra system was a system of monsoon-fed rivers, not Himalayan-fed, and that the Indus Valley Civilisation declined when the monsoons that fed the rivers diminished at around some 4,000 years ago. Subatlantic Aridification subsequently reduced the Ghaggar-Hakra to the seasonal river it is today.

Nineteenth and early 20th century scholars, but also some more recent authors, have suggested that the Ghaggar-Hakra might be the defunct remains of the mythological Sarasvati of the Rig Veda, fed by Himalayan-fed rivers which changed their course due to tectonics.

The Ghaggar is an intermittent river in India, flowing during the monsoon rains. It originates in the village of Dagshai in the Shivalik Hills of Himachal Pradesh at an elevation of 1,927 metres (6,322 ft) above mean sea level and flows through Punjab and Haryana states into Rajasthan; just southwest of Sirsa, Haryana and by the side of Talwara Lake in Rajasthan. Dammed at Ottu barrage near Sirsa, Ghaggar feeds two irrigation canals that extend into Rajasthan. The main tributaries of the Ghaggar are the Kaushalya river, Markanda, Sarsuti, Tangri and Chautang.





2. 

There is no IMD meteorological station near the study area, the nearest stations being at Chandigarh, which are about 14 km from center of the study area. However, the climatic conditions are not much different than recorded at Chandigarh.

Based on Koppen classification of climatic pattern, the study area may be classified as sub-tropical to temperate. The year is divided into four seasons. The winter season is from mid-December to February and is followed by the hot summer season from March to mid-July, including the pre-monsoon season from April to June. The period from mid-July to mid-September constitutes the southwest monsoon season and the period from the later half of September to mid-December as post monsoon season.

M	h		%		D	
	■	■	%	%	D	D
Jan.	20.5	5.5	68	47	2.3	2.7
Feb.	23.0	8.1	61	42	2.3	2.8
Mar.	28.4	13.0	49	34	2.0	2.8
Apr.	34.6	18.8	37	23	1.6	2.8
May	38.3	23.0	36	23	1.4	2.2
Jun.	38.3	24.9	53	39	2.8	3.0
Jul.	34.1	23.7	75	62	4.4	4.3
Aug.	32.8	23.2	80	70	4.5	4.7
Sep.	33.3	21.7	74	59	2.4	2.8
Oct.	32.3	17.2	57	40	0.8	1.0
Nov.	27.4	10.6	55	40	0.8	1.2
Dec.	21.9	6.4	65	46	1.8	2.2
■	■	■	■	4	■	■

1. ■

The period from March to June is marked by continuous increase in the temperatures. June is the hottest months of the year with a mean daily minimum and maximum temperature of 24.9°C and 38.3°C respectively. With the onset of southwest monsoon by about mid-June, the temperatures go down considerably. From November onwards, both the day and night temperatures decrease and January, the coldest month, with daily minimum and maximum temperatures of 5.5°C and 20.5°C.

2.



Average annual rainfall based on rainfall data recorded at Chandigarh, for last 18 years has been observed as 921.80 mm. Rains are received almost in half of the year but rains are minimum to nil during summer months.

Y	R	Y	R
2000	941.80	2009	873.90
2001	819.60	2010	1214.00
2002	809.80	2011	860.80
2003	896.40	2012	879.00
2004	1243.20	2013	1006.10
2005	1016.20	2014	707.00
2006	752.00	2015	817.30
2007	972.00	2016	614.40
2008	1224.50	2017	944.40

3.3.3. Peak Storm Water

For estimation of surface run off coefficient, HGS has considered a particular value of peak rainfall. In absence of non-availability to HGS, peak storm water has been estimated as under:

3.3.4. Dependability

The dependability has been calculated on the basis of last 18 years rainfall, as indicated in Table-3 where water availability has been considered for arriving at 50% dependability (Table-3 and 4), respectively.



1.	1243.20	10.	879.00
2.	1224.50	11.	873.90
3.	1214.00	12.	860.80
4.	1016.20	13.	819.60
5.	1006.10	14.	817.30
6.	972.00	15.	809.80
7.	944.40	16.	752.00
8.	941.80	17.	707.00
9		18.	614.40



	$N \times p/100$
	$N= 18, p = 50$
	9

Here m = Order number

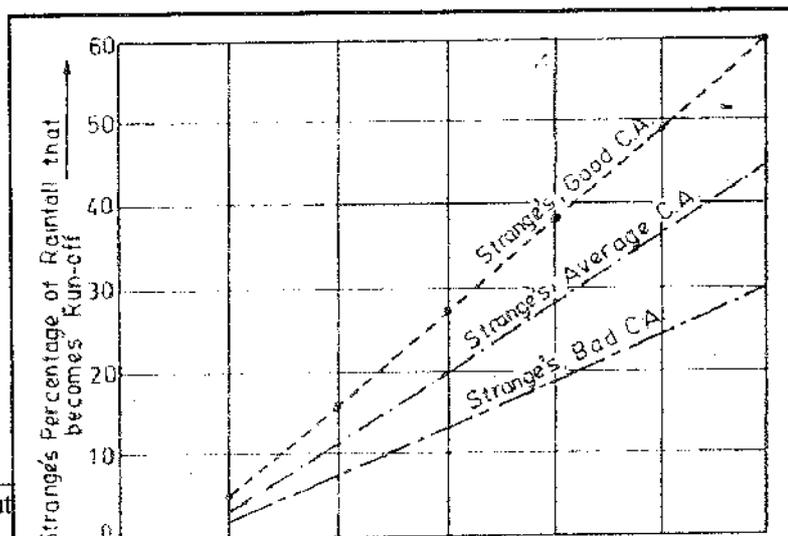
N = The available rainfall data of the past N years is first of all arranged in the descending order of magnitude

p = Dependability percentage

The rainfall value tabulated above in Table-4, the R_m as the values of R_m

So, $R_p = R_m$

R_p is calculated from Strange's monsoon rainfall-runoff curves considering the catchment area as good and the Runoff % for the area is:

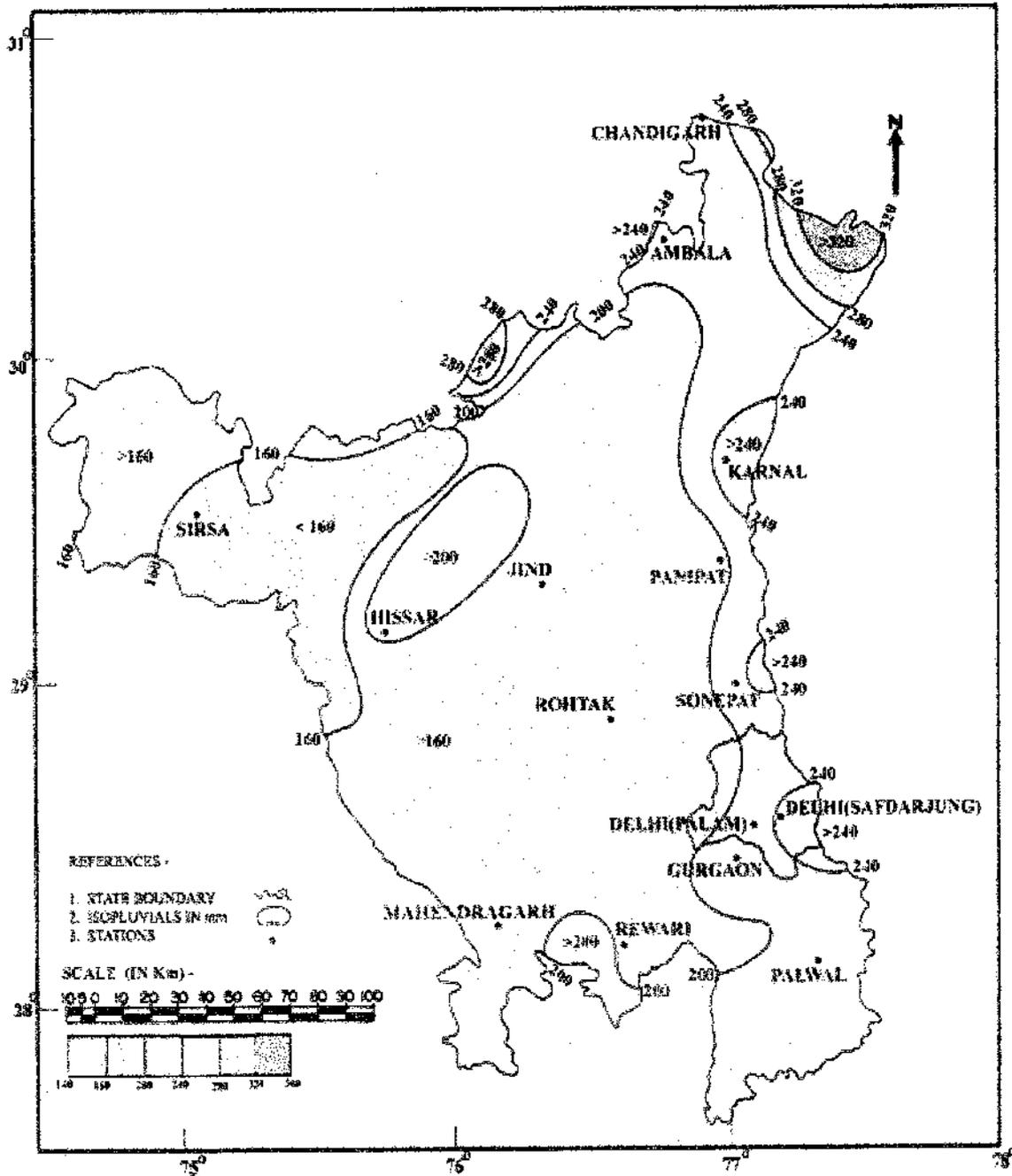


3

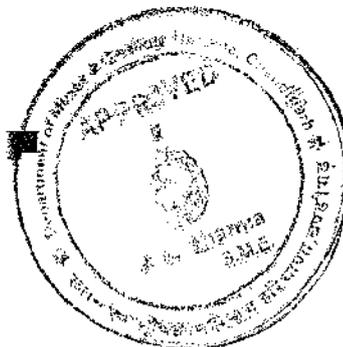
Extreme point rainfall values of different durations and for different return periods have been evaluated by IMD and the iso-pluvial (lines connecting equal depths of rainfall) maps covering the entire country have been prepared. These are available for rainfall in mm in duration of 24 hr for return periods of 2, 5, 10, 25, 50 and 100 years

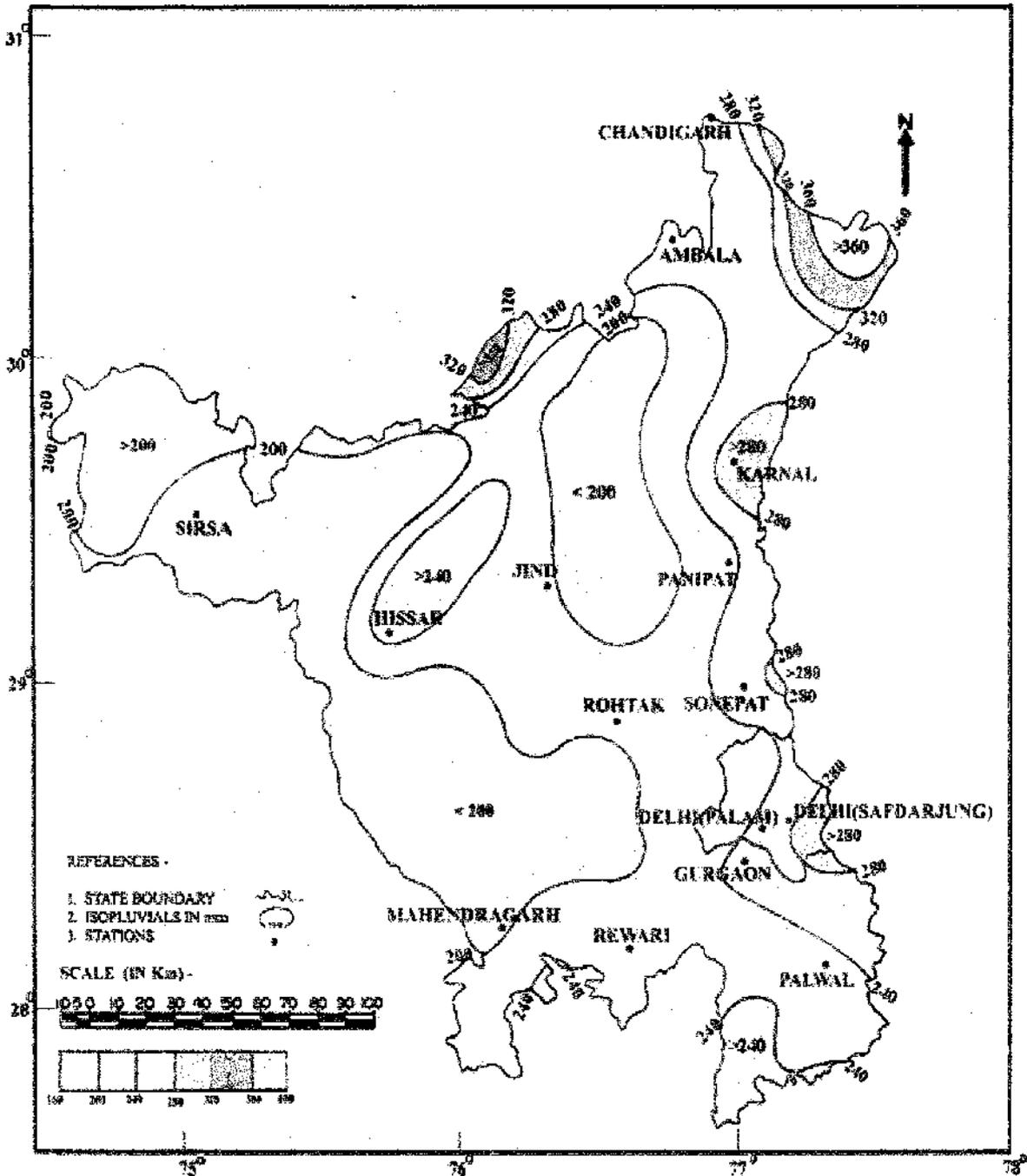
Isopluvial (Return Period) maps provide fairly reliable estimates of rainfall at a particular point / area. The return period is the average time in which a given magnitude of the event is equaled or exceeded.





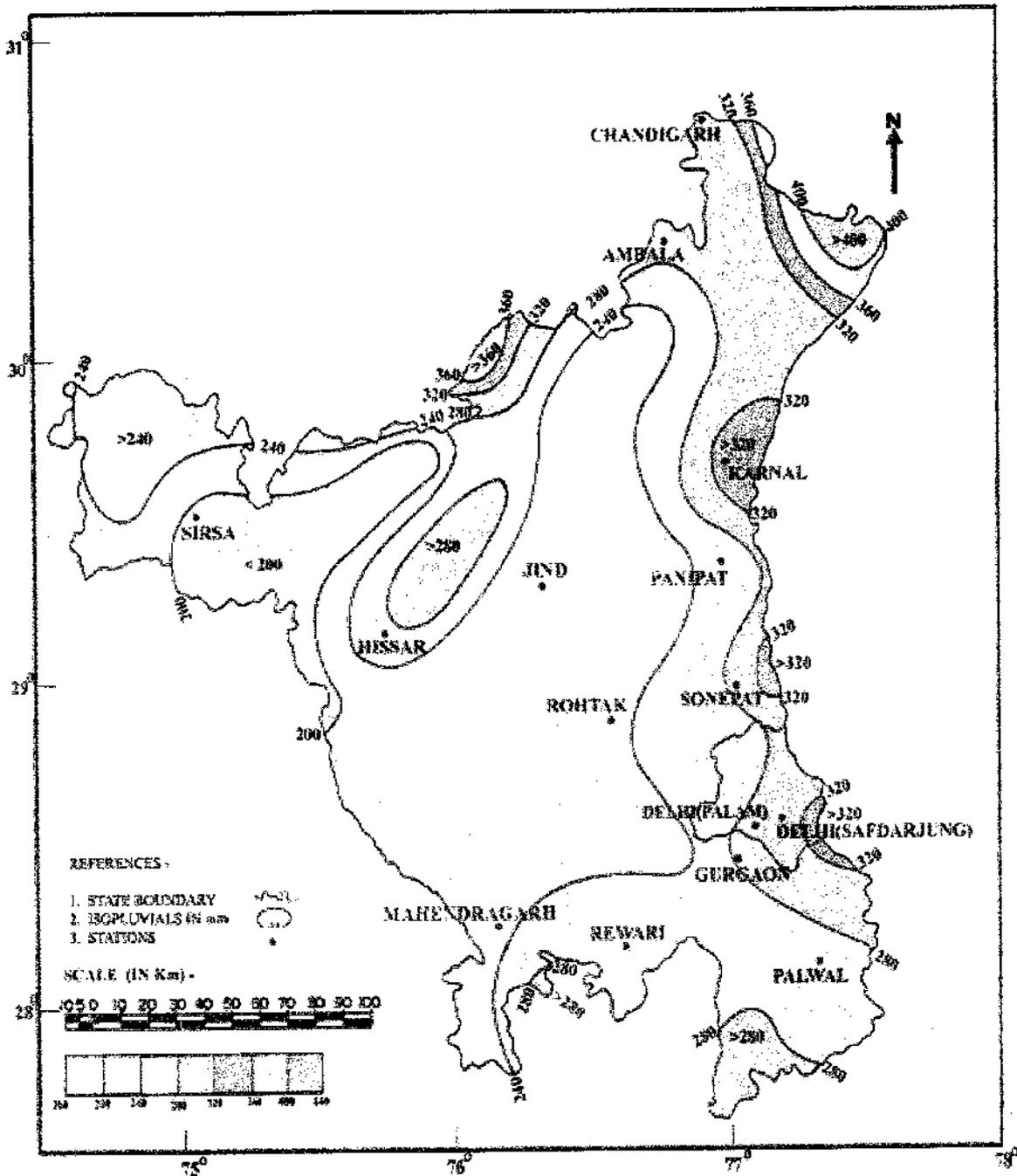
Source: – Atlas of state wise generalized isopluvial (return period) maps of India, Indian Meteorological Department.



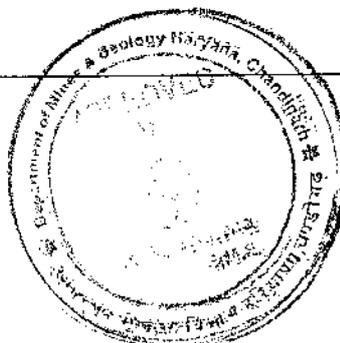


Source: - Atlas of state wise generalized isopluvial (return period) maps of India, Indian Meteorological Department.





Source: - Atlas of state wise generalized isopluvial (return period) maps of India, Indian Meteorological Department.



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Relative humidity during the southwest monsoon is generally over 75%. During the rest of the year, air is normally dry. Relative humidity was observed in the range between 44% and 59%.

2.2.2

Skies are generally moderately to heavily clouded during southwest monsoon season, being overcast on some days. During the rest of the year, the skies are normally clear to lightly clouded. During the months of July-August, the mean cloudiness (in Oktas) is usually more than 4.0, being generally higher in the mornings than the evenings.

2.2.3

The quality of surface water is good as the rocks of upper reaches are mostly consolidated sedimentaries with moderate rainfall and good drainage. The surface water therefore remains free from salinity. Water samples collected from rivers and streams during rainy season have indicated very low salt content, less than 700-900 mg/l and all constituents within permissible limits of drinking, industrial and irrigation purposes.

2.2.4

2.2.5

The North-Eastern and Central part of Haryana is Predominantly characterized by sedimentary lithology in the Sub-Himalayan zone comprising Subathus, Dagshais, Kasaulis and Siwalikas. A general Regional stratigraphic sequence in the area is given in the **5**



Age	Super Group	Group	Formation	Lithology
Holocene			Newer alluvium and newer Aeolian deposits	Gravel, sand, silt, clay, limestone, gypsum
Lower to upper Pleistocene			Older alluvium and older Aeolian Deposits	Gravel, grey sand silt, clay brown sand, calcrete
Lower to middle Pleistocene	S I W A L I K	Upper Siwalik	Boulder conglomerates formation	Conglomerate, sandstone, silt, clay
Upper Pliocene			Pinjore formation	Coarse grit, red sand stone and clay conglomerate
			Tatrot formation	Friable sandstone and variegated clay
		Middle Siwalik	Dhokpathan formation	Brown sandstone and orange clay
Middle Miocene			Nagri formation	Hard grey sand stone and mudstone and minor shale
		Lower Siwalik	Nahan formation	Coarse gritty, clay and red sandstone often calcareous, brownish shale with lignite lenticles, greenish white quartzite
Lower Miocene		Sirmur		Kausauli Formation
			Dagsaj formation	Purple and green sand stone, deep red gitty, clay, white sandstone With ferruginous concretions
Upper Eocene			Subathu formation	Sand stone with gritty clay. Impure fossiliferous limestone calcareous slate greenish shale and dark brown quartzite
Pre-proterozoic			Tundapathar	Thickly bedded, stromatolite limestone with carboniferous shale and quartzite

The litho units encountered in the riverbed and surrounding areas belongs to the Siwalik Super group. The sediments are river borne and has deposited in the riverbed and the flood plains. The different formations of the area belong to Siwalik Super group and are a mixture of boulders, pebbles, sand, silt and clay. The following sequences have been observed in the area.



G
B

There is no clear demarcation between the litho units. They have been deposit in a mixed form. The Litho-Units exposed around the riverbed belong to Siwalik Super group the mineral boulders, Gravel and Sand have formed by weathering of rocks and then deposition on the flood plains of the rivers originated from the Siwaliks, these have been washed by rainwater during rainy season and deposited in river bed in the form of boulder, gravels and sand of different sizes and shapes. These minerals are sorted by screening. The max depth of the minerals is not known.

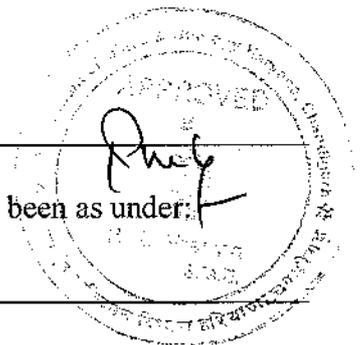
Soil /alluvium varying in thickness from 2-4 constitute the top horizons in the area suitable for agriculture. Yamuna river meanders through the area exposing the alluvium and soil at the banks. Boulders, gravel and sand is found in the river bed. Boulder, gravel and sand is deposited up to great depths. this bed is presently dry and water flows only during the rainy season the sand exposed in the river bed of Yamuna and surrounding area is the product of the deposition of the sediments brought and deposited in flood plains river of the river Yamuna these sediments area of recent geological formation. The litho units exposed within the river and surrounding areas have formed as water borne sediments brought by flood water during rainy season every year and deposited in river bed Geological map section are enclosed.

A

The description of sand found in the lease area as minor mineral has been as under:

A

Sediments of various sizes and in mixed from are predominantly deposited in the river bed and outside the river bed as well in the central part there is no perfect classification between boulders, cobbles pebbles and sand. They are deposited in a mixed state. The classification is done by grab mining and the sediments are passed through different sieves in the screening plants.



Sediments of various sizes and in mixed form are predominantly deposited in the river bed and there is no perfect classification between sediments these may be called as coarse sand, medium sand and fine sand.

2

Most Boulder, Gravel & sand is made of quartz of quartzite / its microcrystalline cousin chalcedony, because that common mineral is resistant to weathering. River boulder, gravel & sands contain quartz feldspar grains, tiny bits of the rocks (lithics) or dark mineral like illuminant and magnetite.

The size of the sediments is variable. The grains whether small or large are rounded in shape gravel & sand are yellow brown in color, coarse to fine grained, and the present deposits are the good quality and can be used for the building industries. There is no other use of the material

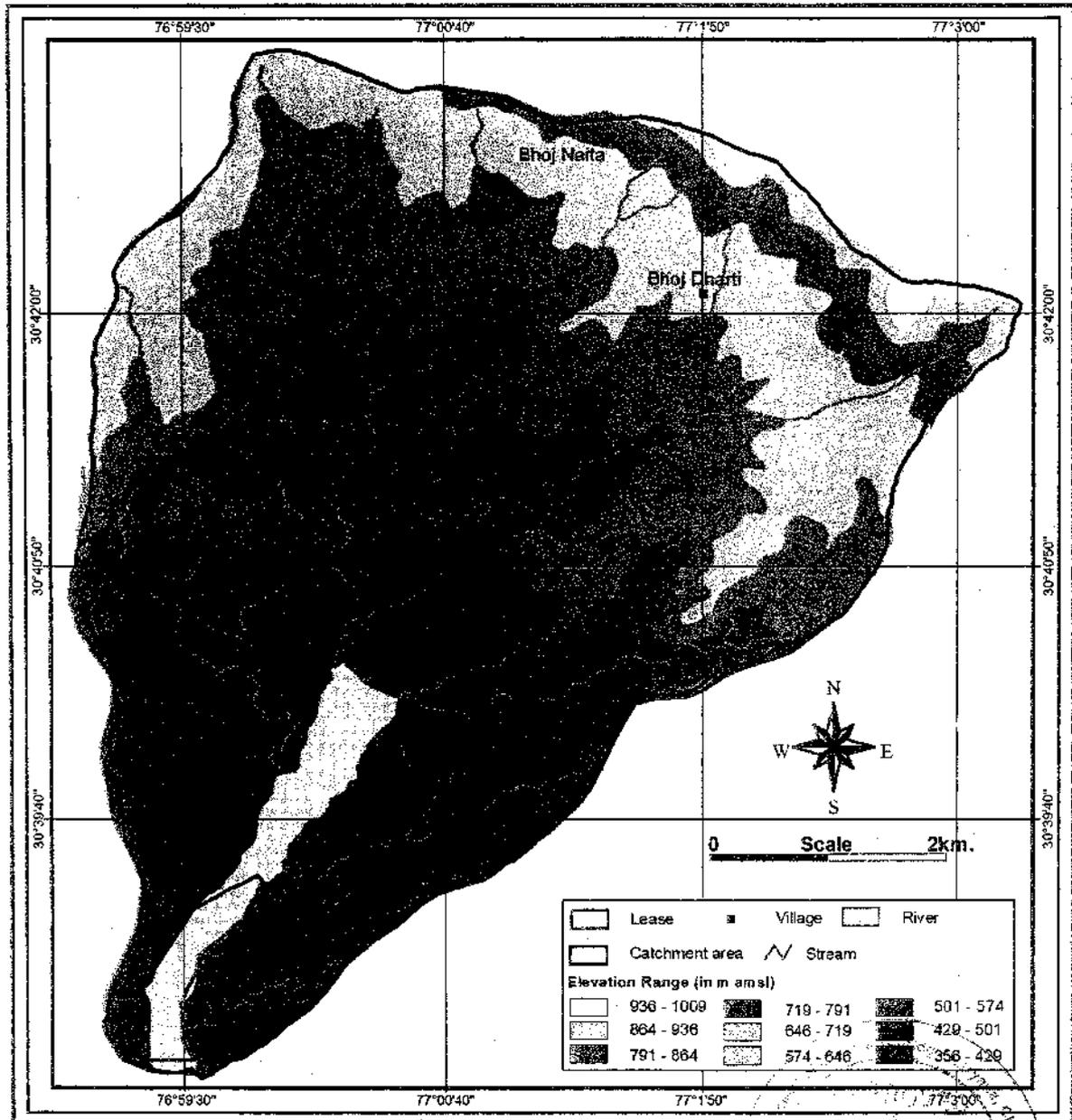
3

Quality of ground water in general is fresh and potable in all the formations with total dissolved salts ranges from 500-700 mg/l in the study area. The ground water therefore is suitable for drinking and irrigation purposes. All the constituents like chloride, sulphate, fluoride, nitrate etc. are within permissible limits of drinking water standards as per IS. 10500-1991 and ICMR 1975.

4

Watershed area of Dudhgar Kee Nadi is mapped in the study area on the basis of Survey of India toposheet Nos. 53B/14 and also used latest satellite imagery of CARTOSAT - 1 of ISRO having a grid of 30 metres and SRTM, NASA at grid of 80 metres and computer aided drainage analysis system





In the study area Dudhgar Kee Nadi watershed covers an area of 35.31 km² with average gradient of 5.2 m/km (within lease area) towards south west. The catchment yield of Dudhgar Kee Nadi (within study area) is estimated as 2.80 mcm, 3.26 mcm and 3.73 mcm (Table-6) taking 240 mm, 280 mm and 320 mm, respectively as the P_{24} value based on 25 years, 50 years and 100 years return period and 24 hrs peak rainfall, respectively; and value

of good surface run off coefficient of 33% for this catchment mostly rocky area.

ii

iii

iv

	A	B	C	D
	A	B	C	D
	35310000	0.33	0.24	2796552
	35310000	0.33	0.28	3262644
	35310000	0.33	0.32	3728736

1. i

a. ii

Dicken's formula states that: $Q_p = CA^{3/4}$

Where Q_p = High flood or peak discharge in cumec
 A = Catchment area in sq. km
 C = A constant, taken $c = 3$ for the study area

b. iii

Jarvis formula states that:

$$Q_p = C\sqrt{A}$$

Where Q_p = High flood or peak discharge in cumec
 C = a constant, having a value of 7 as low
 A = Catchment area in sq. km

c. iv

Rational formula states that:

$$Q_p = \frac{1}{36} (K \cdot P_c \cdot A)$$

Where Q_p = High flood or peak discharge in cumec
 K = Runoff coefficient
 P_c = Critical rainfall intensity in cm/hr
 A = Catchment area in hectares



Findings of the peak flood discharge based on above methods are given in v

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	43.46	41.60	32.39	37.90	43.08

The total sand mining lease area covering parts of Dudhgar Kee Nadi and her flood plains embrace an area of 45 ha (Figure-2). Mining lease area is located in revenue village of Rattewali of district - Panchkula. Mining area consists of 45 ha area in Rattewali Block/PLK B-10, out of which about 6.75 ha area falls under safety zone. About 38.25 ha area is free from restriction and the mining is proposed in this area only.

Rattewali Block/PLK B-10	Rattewali	45.00	141 mean
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As per the Mining Scheme prepared by Mr. S.N. Sharma (RQP/DDN/0135/2001-A valid up to 29-03-2021) of House No. 282, Sector 11D, Faridabad the relevant details are given below.



The lease area is approachable from NH-2 to Ramgarh-Narayangarh road and Barwala-Raipur Rani roads. All these quarries area connected by metalled road, Panchkula is about 40 kms and Chandigarh is about 50 kms from extreme NE end of the lease area.

Proposed Lease area forms a part of G. T. Sheet No's -53B/14. Toposheet is enclosed as Figure 1. Area is located between following Latitude and Longitudes:

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D

H	H
30°38'33" N to 30°39'24.6" N	76°59'17.5" E to 76°59'50" E

1 R

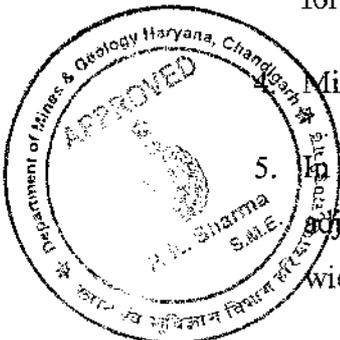
2 R

- Survey was conducted in the proposed area of Dudhgar Kee Nadi (Tributary of Dangri) bed as per the area allocated by DMG, Haryana a document provided by the authorities to the contractor. The khasra plan was provided by the applicant.
- Following special conditions those are applicable for excavations of minor mineral(s) from river beds in the order to ensure safety of river – beds, structures and adjoining areas are considered while reserves of the area:

1. No mining would be permissible in a river-bed up to a distance of five times of the span of a bridge on up-stream side and ten times the span of such bridge on down-stream side, subject to a minimum of 250 meters on the up-stream side and 500 meters on the down-stream side;
2. There shall be maintained an un-mined block of 50 meters width after every block of 1000 meters over which mining is undertaken or at such distance as may be directed by the director or any officer authorized by him;
3. The maximum depth of mining in the river-bed shall not exceed three meter from the un-mined bed level at any point in time with proper bench formation;

4. Mining shall be restricted within the central $\frac{3}{4}$ th width of the river / rivulet;

5. In case of areas permitted for excavation outside river/rivulet i.e. areas adjoining to river/rivulets, no mining shall be permissible in an area up to a width of 500 meters from the active edges of embankments in case of river



Yamuna, 250 meters in case of Tangri, and Ghaggar river and 100 meters on either side of all other rivers/rivulets;

6. Any other condition(s), as may be required by the irrigation department of the state from time to time for river-bed mining in consultation with the mines & Geology, a safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission obtained from the competent authority in this behalf.
7. The contractor shall not undertake any mining operations in the area granted on mining contract without obtaining requisite permission from the compact authority as required undertaking mining operations under relevant laws.
8. There are bridges and anicuts exits in the lease area. They provide a way for transportation of mineral also. Safety zone on upstream side and downstream side has been provided depending on the length of bridges/anicuts as a measure of safeguard. No working will be extended in this zone. (In this case no bridge and anicut exist).
9. Metalled roads passé through the lease area. A safety zone of 50m on each sides of the roads is earmarked. In this zone no activities will be conducted.
10. A barrier of 7.5 m width will be left from the mining area boundary, if falling in the river bed.
11. River is not having any water flow during post monsoon period and sand bed remains dry.



Survey was conducted of the entire patch and sections were drawn at 25 m intervals. This has been considered as influence length for the sections. Detailed calculations, location of sections, sectional area with 3.0 m depth of excavation from surface river bed for the allotted lease area has been carried out. Total reserves/ quantity thus calculated are given below:

A 7,00,000 MT

B

C

D

1

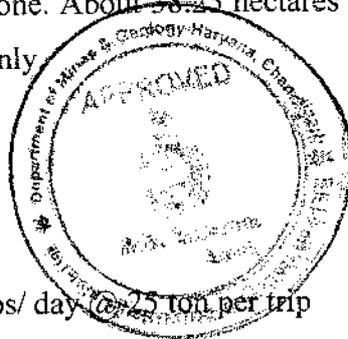
This is a new mining area allotted to the applicant. Future production programmer has been planned as per the details given below:

1

Mining contract has been allotted for a period of 07 year only. Mining area consist of 45 ha area in Rattewali village (Khasra No 141 mean), out of which about 6.75 hectares area is falls under restricted zone. About 38.25 hectares area is free from restriction and mining is proposed in this area only

1 = 7090 MT/day

1 programme is 284 trips/ day @ 25 ton per trip



1 have been taken as 268 days per annum for the purpose of projection of production. However, this can be increased depending on the conditions prevailing at the time of execution.

1 268 x 7,090 = 19,00,120 Tons

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= 1.9 MMTA

■ 2.0 ton/ m³

■ 0.95, Million meter m³

Total (All Blocks)

<i>Year</i>	<i>Total Trips /Day</i>	<i>MTPA</i>	<i>MCM</i>
<i>I</i>	284	1.9	0.95
<i>II</i>	284	1.9	0.95
<i>III</i>	284	1.9	0.95
<i>IV</i>	284	1.9	0.95
<i>V</i>	284	1.9	0.95
Total	1420	9.50	4.75

3

Deposit is moderate to good quality sand. It is widely used in construction, buildings, bridges and other infrastructure. It is free from clay and is non sticky in nature.

5

Mining is proposed up to 3.0m depth in river bed.



River bed mining is proposed for extracting sand from river bed. As per Haryana minor mineral concession rules, 2012 extraction is limited to 3.0 m depth only in dry river bed, mining area allotted is 45 ha in district – Panchkula . Mining activity will be carried out in allocated areas only.

- A. The production plan for each year is suggested to be 19,00,000 MT but for second year onward the same shall be dependent upon the rate of replenishment of the mineral during proceeding year. In case due to any reason the replenishment of mineral (sand is not taken place up to depth the of mined out area (which would not be more then 3 meter of existing level of bed) in that case the working replenishment. for example – in case during any year only 2.5 m or 1.5 m, of the mined out area is refilled after rainy season – the production for said year shall be accordingly adjusted and mining depth will be reduced accordingly.
- B. The same will also act as annual replenishment study of the mine as compared to the prevailing status of river bed.
- C. Sequence of working has been shown in the plate No 4. The proposed rate of production has been shown at chapter 7.2 for the 5 year plan period. If the depth of mineral replacement is less than 3.0 m then proposed production shall be reduced proportionately.

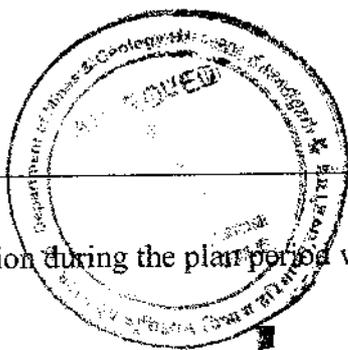
3

Sand mining lease is proposed to be granted for a period of five years only. Calendar plan has already been made and details have been given. Sequence of operation has been depicted in Working Plan and Sections.

Ultimate extraction limit will be 3.0 m below existing bed level as indicated in the working section.

3

Year wise production during the plan period will be as follows:



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Y	M	M	M
1	1.9	0.95	-
2	1.9	0.95	-
3	1.9	0.95	-
4	1.9	0.95	-
5	1.9	0.95	-
T	9.50	4.75	-

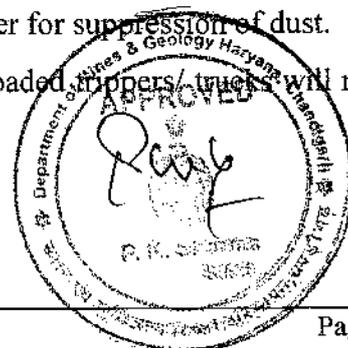
Conversion factor is 2.0 ton/ m³

9.1

It is presumed that the mineral will be replenished every year in river year in river bed during the rainy season. New mineral will be added every year in the river bed. However the present reserves are sufficient for 1 year in "river bed" and thereafter will be replenishment every year.

9.2

- Mining activity will be carried out by open cast semi-mechanized method.
- No overburden / waste material will be produced in river bed. No drilling / blasting are required as the material is loose in nature.
- Light weight excavators/JCB will be used for loading of mineral in tippers.
- Proper benching of 3.0 m height will be maintained and width of the bench will be around 20 m. The benches shall be maintained in the form of slices / strips parallel to the banks of river.
- Mining activities will be carried out in a manner so that there is no obstruction to the movement of water flow, if any, during rainy season.
- Roads will be properly made and sprayed by water for suppression of dust.
- Roads in the mining area for the movement of loaded tippers/trucks will not have slopes more than 1 in 20.



- Extraction activities will start in the blocks from the upstream side to downstream side. This will not obstruct the movement of water, if any, during monsoon period in the river course.

3.1

Mine area will be worked in block for ease of operation. However, as the digging depth will be restricted to 3.0 m only in river bed and material will still be available below. This will be further replenished during rainy season. Blocks will be worked systematically as the width is limited while length is much more.

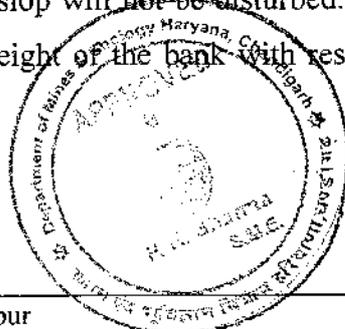
The mining area will be worked in blocks for ease of operation. The depth would be restricted to 3.0 m only from the existing level of the river bed. Regular monitoring of the bed level would be ensured by taking the bed level after fixed intervals, including after the rainy season. The mined out area would be refilled by the mineral (sand) after every rainy. Hence even after completion of the five year period of contract or even on expiry of the period of contract the status of the contracted area / are to be used for mining in the river bed would remain unchanged.

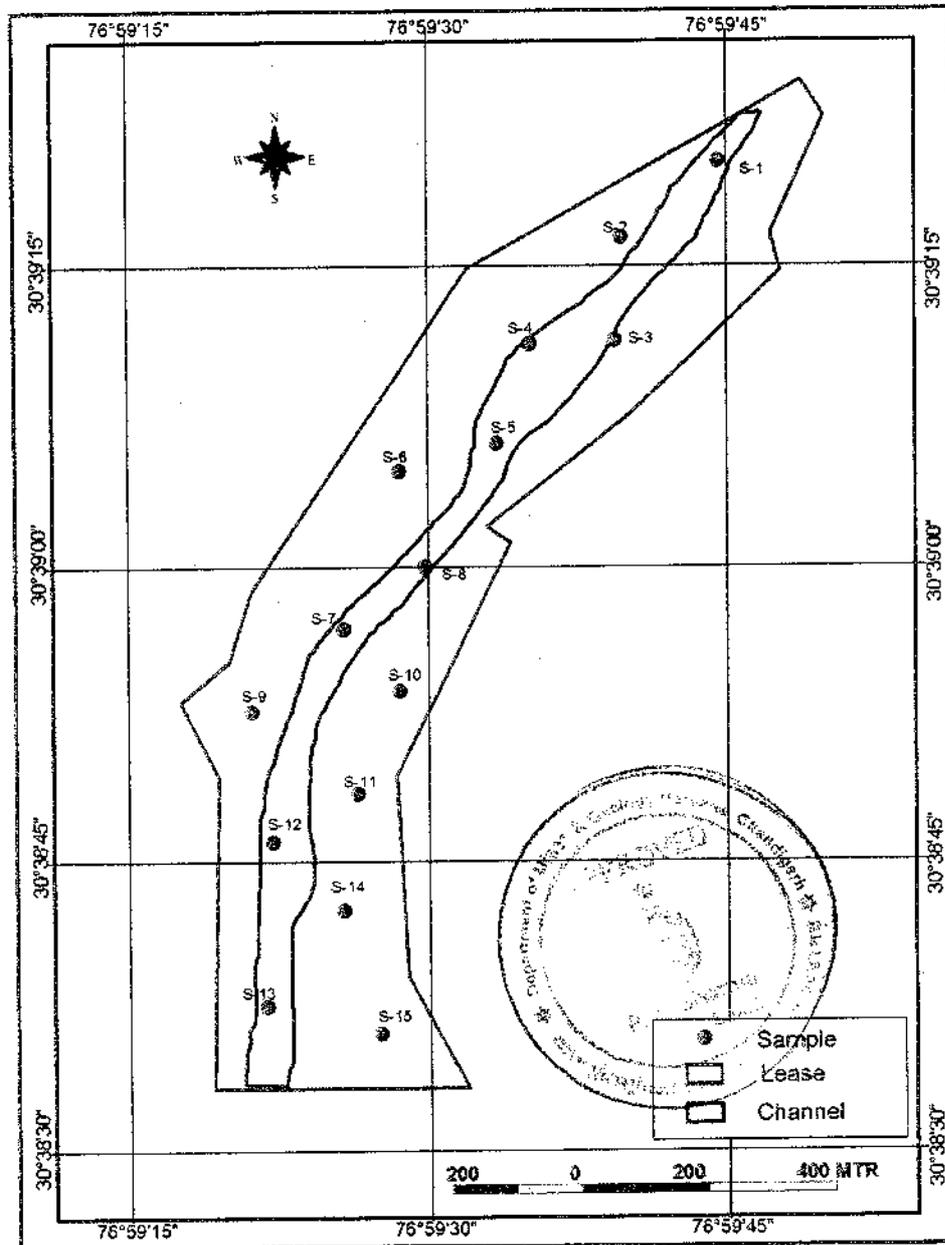
Hence the conceptual plan of the mine after the period of contracts shall be as is on the present day.

As the mining contract period is only 9 years, some of the area will be left un-worked at the end of contract period.

3.2

Thickness of the bench is limited to 3.0 m only in river bed and width will be more than the height of the bench, river bank side will be protected by working in $\frac{3}{4}$ part of middle of the river. Bank side natural slope will not be disturbed. This will prevent collapse of bank and erosion. However, the height of the bank with respect to river bed is varying from 2-3m only.





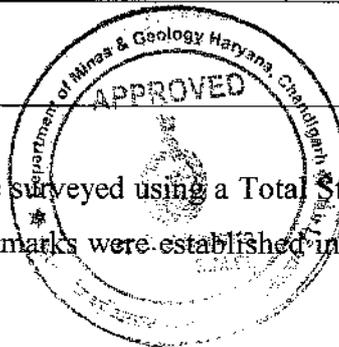
Sieve analyses of the sediment samples were performed to obtain the sediment gradation curves shown in Appendix-I. Inspection of the data revealed a consistent trend in sediment size by reach or with distance along the study reach. Table-11 shows that the variation from the mean is not significant and D_{50} which is used extensively in the analysis is 2. Therefore, the sediment gradation curves for all samples were averaged together to obtain a composite reach-averaged curve for the Dudhgar Kee Nadi lease reach.

Sediment sample gradation data and plots showing the sediment distribution curves for each reach are provided in Appendix-II. The uniformity coefficient C_u is defined as the ratio of D_{60} by D_{10} . So when C_u is greater than 4 to 6, it is understood as a well graded soil and when the C_u is less than 4, they are considered to be poorly graded or uniformly graded. Uniformly graded in the sense, the soils have got identical size of the particles. Another coefficient to measure gradation is: C_c is equal to $(D_{30})^2 / (D_{60} \times D_{10})$ where coefficient of gradation or coefficient of curvature. For the soil to be uniformly graded the value of coefficient of uniformity C_u has to be less than 4 and C_c should be in the range of 1 to 3. So higher the value of C_u the larger the range of the particle sizes in the RBM. So if the C_u value is high it indicates that the RBM mass consists of different ranges of particle sizes.

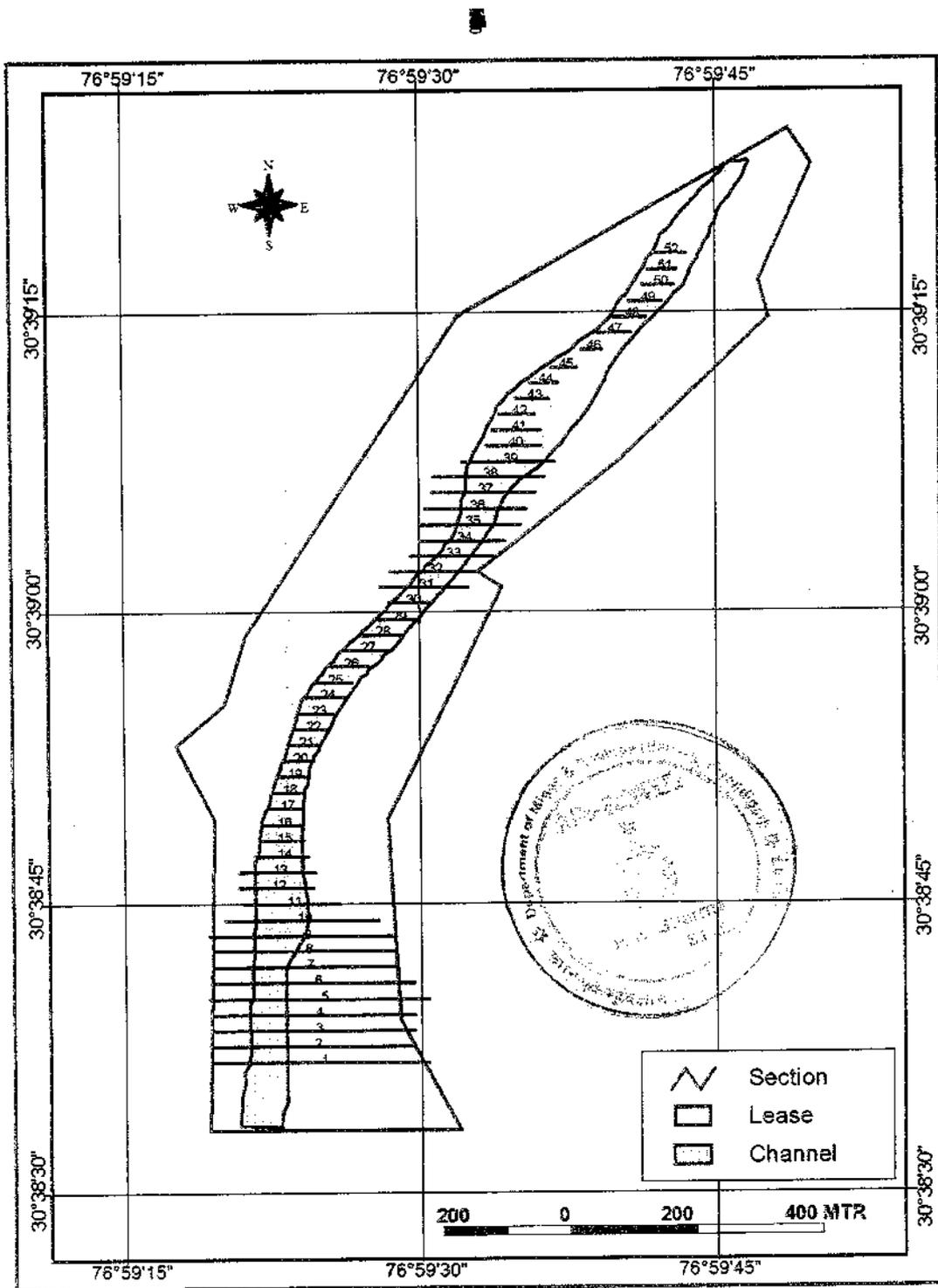
Sl. No.	D_{10}	D_{30}	D_{50}	D_{60}	C_u	C_c
1	0.343	0.599	2.282	3.146	09.17	00.33
2	0.416	1.881	2.394	3.012	07.24	02.82
3	0.427	2.805	2.805	3.304	07.74	03.08
4	0.408	2.014	2.548	3.127	07.67	03.18
5	0.675	2.002	2.285	2.638	03.91	02.25
6	0.404	2.063	2.642	3.148	07.78	03.34
7	0.360	2.060	2.324	3.661	10.16	03.22
8	0.396	2.080	2.384	3.634	09.18	03.01
9	0.341	1.922	2.741	3.231	09.47	03.35
10	0.324	1.320	2.512	2.894	08.93	01.86
11	0.392	2.042	2.645	2.936	07.56	03.59
12	1.105	2.193	2.952	3.362	03.29	01.20
13	0.547	2.097	2.815	3.308	07.23	02.91
14	0.547	1.829	2.348	2.994	05.47	02.04
15	0.453	2.031	2.345	2.804	06.19	03.25

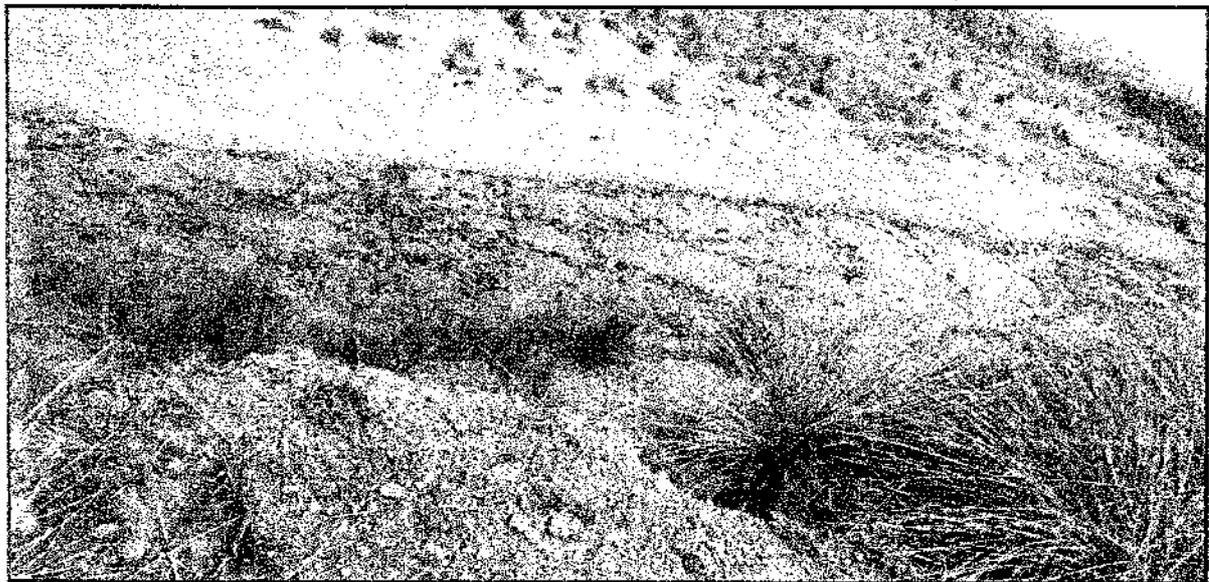


Forty six cross-sections on a spacing of 25 metres were surveyed using a Total Station and river bed profiles plotted (Annexure-II) and four benchmarks were established in the lease area (Photoplate-1).



The objective of the survey is to observe the difference in elevation post-monsoon, 2018 and quantify the actual sand deposition taking place.





The sediment transport analysis is based on three different steps with various equations pertaining to stream process, one dealing with critical dimensionless shear, another on relative roughness and boundary resistance and the last on bed load equations.



Colebrook-White equation, of which a number of variations exist, has the general form

$$U/U^* = A \log(B \cdot \text{relative roughness})$$

Resistance Factor = velocity / shear velocity = U/U^*

Where:

U = velocity

U^* = shear velocity

Value varies from about 2 for rough streambeds to 16 for smooth.

U/U^* is related to common resistance equations as follows:

Manning's roughness coefficient (n):

$$U/U^* = R^{(1/6)/(ng^{0.5})}$$

D'Arcy-Weisbach friction factor (f):

$$U/U^* = (8/f)^{0.5}$$

Because the Colebrook-White equation is a function of measurable values; depth and particle size, other roughness coefficients can be made functions of depth and particle size in generally straight uniform gravel-bed streams where resistance is dominated by boundary roughness

3.1

$$D_s = \tau / ((\rho_s - \rho) g 0.06)(304.8)$$

D_s = diameter sediment particle (mm)

τ = shear stress = $(\rho g)(\text{depth})(\text{slope})$ (lb/ft²) (N/m²)

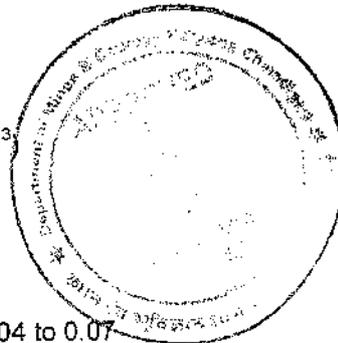
ρ_s = density of sediment (5.15 slugs/ft³) or (2560 kg/m³)

ρ = density of water (1.94 slugs/ft³) (1000 kg/m³)

g = gravitational acceleration (32.2 ft/s²) (9.81 m/s²)

0.06 = Shield's parameter typically in the range of 0.04 to 0.07

Conversion Constant 304.8 mm/ft or 1000 mm/m



In gravel-bed streams at bankfull flow the particle at the threshold of motion is often near in size to the D_{50} of mobile bed surface material.

Three common bed load equations are Ackers and White, Meyer-Peter-Muller and Einstein. Many more equations exist, some of which are more appropriate for different conditions. The most appropriate for ephemeral streams applicable to this study is the Ackers and White equation, although calculations have been done for all three. Out of the 3 methods considered, the Ackers and White equation give the reliable value for bed load sediment rate calculation for ephemeral stream of Haryana.

The sediment transport analysis was performed using "Sediment Equations, version 4.0" software developed by Department of Natural Resources, Ohio University, USA.

Table-12. Analysis result using Threshold of Motion

			metric units
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d_s	0.00253	m
Gravitational acceleration	g	9.81	m/sec ²
Density fluid	ρ_f	1000	kg/m ³
Density sediment	ρ_s	2650	kg/m ³
Specific weight of water	γ	9810	N/m ³
		1000	kg/m ³
Shear stress	τ	23.0	N/m ²
		2.3	kg/m ²
Shields parameter	τ_c	0.561	dimensionless
Particle at threshold of motion	D_{cr}	0.02	m



Table-13. Analysis result for Bedload per unit channel width

		metric units	
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d _s	0.00253	m
Gravitational acceleration	g	9.81	m/sec ²
Density fluid	ρ _f	1000	kg/m ³
Density sediment	ρ _s	2650	kg/m ³
Relative density	s	2.65	dimensionless
Shear stress	τ	23.0	N/m ²
Dimensionless parameter	Ψ	1.78	
Bed-load transport (Meyer-Peter)	Φ	2.944	
	q _s	0.0015	m ² /s
Bed-load transport (Einstein ₄₂)	Φ	1.070	
	q _s	0.00055	m ² /s
Bed-load transport (Einstein ₅₀)	Φ	3.647	
	q _s	0.00187	m ² /s
Ackers and White	n	0.019	
	U	2.23	m/s
	q _b	0.00057	m ² /s

Therefore, based on the Ackers and White analysis, the bed load transport for the studied river Dudhgar Kee Nadi reach taking average width as 310 metres is 15,267 m³/day or ~~15.267~~ taking 90 days as active river flow.

Table-14. Analysis result using Resistance Manning's and D'Arcy-Weisbach equations

Resistance Manning's and D'Arcy-Weisbach		metric units	
Depth	d	0.45	m
Slope	S	0.0052	m/m
Diameter sediment	d _s	0.00253	m
Max depth	d _{max}	3	m
Gravitational acceleration	g	9.81	m/sec ²
Resistance factor = sqrt(8/f)			
Colebrook-White Eq (Hey 1979) for D ₃₄	u/u*	17.3	
Leopold, Wolman & Miller (1964) for D ₃₄	u/u*	16.2	
Griffiths (1981) for D ₅₀	u/u*	14.7	

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Manning's roughness coefficient (n):			
Colebrook-White Eq (Hey 1979) for D_{84}	n	0.0161	
Leopold, Wolman & Miller (1964) for D_{84}	n	0.0172	
Griffiths (1981) for D_{50}	n	0.0189	
D'Arcy-Weisbach friction factor:			
Colebrook-White Eq (Hey 1979) for D_{84}	f	0.0267	
Leopold, Wolman & Miller (1964) for D_{84}	f	0.0304	
Griffiths (1981) for D_{50}	f	0.0368	

5

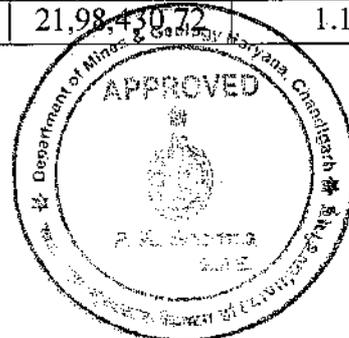
3

The annual Bajri/ sand replenishment in mine lease area has been calculated using the Ackers and White equation. It is found that the annual replenishment rate 1.10 million m^3 for the studied reach of river Dudhgar Kee Nadi. It may be mentioned that occurrence of rain/flood in this region is erratic.

Thus the sand replenishment is 116% of the targeted production as given in the mining plan by the lease holder.

Lease Area (in Ha)	Estimated Bed Load (Tonnes/day)	Sediment Load Deposition per day (in Tonnes)	Sediment Load Deposition per month (in Tonnes)	Annual Replenishment (in Tonnes)	Estimated Annual Replenishment (in million m^3)*
45.00	30,533.76	24,427.01	7,32,810.24	21,98,430.72	1.10

*Specific gravity of sand = 2 tonne per m^3



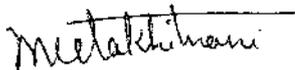
S	S	S	S
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* As per Mining Plan approved by Department of Mines and Geology, Government of Haryana

S

The hydrology and sediment transport of sub-tropical to temperate region ephemeral channels cannot be reliably predicted by extrapolation of humid region hydrology. The estimation of sand replenishment is based on empirical and analytical approaches to the problem as discussed in Chapter 4 which can be approved for targeted production of 0.95 MCM/year as the estimated annual replenishment of 1.10 MCM is relatively higher. The authentic replenishment can only be established in the post-monsoon period of 2018 after actual verification of the 'replenishment pits' and river 'cross sections' (difference in elevation) already established in the field.

Dr. MeetaKhilnani



(Dr. MeetaKhilnani)



F.No. J-11015/75/2017-IA. II (M)

Government of India

Ministry of Environment, Forest and Climate Change
IA Division



सत्यमेव जयते

3rd Floor, Vayu Block,
Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj,
New Delhi-110003Dated: 21st February, 2020

To,

M/s Tirupati Roadways3, Sadashiv Properties, Katra Road,
Bank More, Dhanbad,
Jharkhand-826001

Email: gurpreetsabharwal@hotmail.com

Subject: Mining of River Bed Material (Boulder, Gravel & Sand Minor Minerals) at Rattewali Block/PKL B 10 over an area of 45.00 ha, with production capacity of 19,00,000 TPA located at Village Rattewali, Tehsil- Barwala District- Panchkula, Haryana- Environmental Clearance.

Ref: Online application No: IA/HR/MIN/66257/2017

Sir,

This has reference to your online application for Environmental Clearance (EC) for mining of 19,00,000 TPA of River Bed Material (Boulder, Gravel & Sand Minor Minerals) from Rattewali Block/PKL B 10 mining lease area of 45.00 Ha, located in Rattewali, Tehsil- Barwala District- Panchkula, Haryana by M/s Tirupati Roadways. The mine area is a part of the Survey of India Topo sheet No H43K14 & H43L2 bounded by Latitude: - N 30° 38' 33" to N 30° 39' 24.6 " and Longitude: - E 76° 59' 17.50" to E 76° 50'00".

2. As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category —B1 project as the mining lease area is less than 100 Ha. Further, as per EIA notification, 2006, "Any project or activity specified in Category 'B' is treated as Category 'A', if located in whole or in part within 5 km from the boundary of (i) Protected Areas notified under the Wild Life (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". In the instant case the Khol Hai Raitan Wildlife Sanctuary is within 1.98 km from the mine lease boundary and thus the project was considered as Category 'A' project in the Ministry. The Project Proponent (PP) vide proposal No IA/HR/MIN/66257/2017 applied

online for grant of ToR on July 18, 2017 and submitted Form-1 and Pre-Feasibility Report. The proposal was considered in EAC meeting held on August 29-30th 2017 wherein the Committee recommended for grant of ToR. The ToR was issued by the Ministry, vide Lr. No. J-11015/75/2017-IA-II (M) dated 14.09.2017 for preparation of EIA/EMP Report for 19,00,000 TPA.

3. The Project Proponent (PP) applied vide proposal No. IA/HR/MIN/66257/2017 for grant of EC online on 27.04.2018 and submitted EIA Report after conducting the Public Hearing. The proposal was placed in EAC Meeting held on 14-15 May, 2018, wherein, the Committee returned the proposal in present form due to shortcomings. The PP applied online in Form-II vide proposal no. IA/HR/MIN/66257/2017 dated 30.11.2018 for grant of EC as SEIAA Haryana was not operational and the proposal was placed in the EAC meeting held during 22-23, January 2019 wherein the EAC deferred the proposal for want of requisite information. The PP submitted the requisite information on 3.08.2019 and the proposal was placed in EAC meeting held on 27-28 August, 2019 wherein the Committee recommended the proposal for 19,00,000 TPA of River Bed Material (Boulder, Gravel & Sand) from Rattewali Block/PKL B 10 (ML Area 45.00 ha) located at Village Rattewali, Tehsil- Barwala District- Panchkula, Haryana for grant of Environmental Clearance for the period of 7 years from date of issuance of EC with specific and standard EC Conditions.

4. The PP submitted that the **Letter of Intent (LOI)** over an area of 45.0 ha of Mining lease has been granted by the Director General, Department of Mines & Geology, Haryana vide memo no.- DMG/ HY/ Cont/ Rattewali Block/ PKL B 10/ 2017/ 2658 dated 16.06.2017 for a period of 7 years. The lease area lies on riverbed of Dudgarh in District Panchkula (Haryana). The Project Proponent has submitted the District Survey Report. The PP reported that there is no court case/ litigation pending against the project. The PP submitted that there is no (R & R) involved in this project.

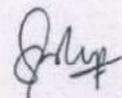
5. The PP submitted **Mining Plan and Progressive Mine Closure Plan** of this proposed mining lease area as approved by Director General of Mines and Geology Department vide memo no. DMG/HY/MP/Rattewali Block/PKL/B-10/2017/405 dated 24/01/2018 with production capacity of 19, 00,000 Tonne. Thereafter, as per direction of EAC, PP prepared Modified Mining Plan including Progressive Mine Closure Plan for 19,00,000 TPA and got it approved by the Office of State Mining Engineer, Director Mines & Geology, Haryana vide Memo no. DMG/ HY/ MP/ Rattewali Block/ PKL B – 10/ 3989 – 92 dated 07.08.2018. The proponent mentioned that the mining activity will be carried out by open cast semi-mechanized method without drilling and blasting. Mining is proposed up to a depth of 3.0 m in river bed. River bed mining is for extracting Boulder, Gravel and Sand from River bed. Light weight excavators will be used for digging and loading of mineral in tippers. No OB/ waste material will be produced. PP submitted that sand shall be excavated by deploying 5 numbers JCB/excavator of capacity 0.9 m³ and transported through 25 Nos. Trucks/Tippers/tractor of maximum 25 tones capacity. The PP previously submitted that total geological reserve is 27,00,000 Tonnes and Mineable Reserve is 22,95,000 Tonnes. The PP re-calculated the geological reserves using datamine software and submitted that the total geological reserve is 35,10,000 Tonnes out of which mineable

reserve is 23,73,356 Tonnes. PP submitted that 2 numbers of water tanker with mist cannon generator system will be deployed for dust suppression.

6. The PP submitted **Replenishment Study Report** wherein the pre-monsoon study was conducted by Hydro Geo Solutions, Jodhpur. Later, on PP conducted the post monsoon survey through UAV and based on both these surveys the erosion and deposition of material was calculated. It is submitted in the replenishment study report that "The calculation of volume of deposits was based on the conservative estimate arising out of different scenario and standard calculation methods of Cross-sectional area method and difference between Digital Elevation Model (DEM). The total material deposited based on pre-monsoon and post monsoon survey in the entire mining lease area is 4,49,355 m³. Further, based on the deposition observed in the study, three mineable blocks namely B-1 (11.33 ha), B-2 (4.5 ha) & B-3 (8.3 ha) has been identified. Considering the applicable mining regulatory provisions such as statutory barrier zone from the lease boundary, lean flow channel, etc. the average deposition has been calculated in each block with varying deposit scenario. An average deposition depth has been observed to be 1.33 meters for the safe extractable material from each block. The tonnage to be mined from Block B-1 (391984.8 metric tons), Block B-2 (156449.6 metric tons), Block B-3 (290244.5 metric tons), Total 838678.9 tons (8.38 Lakh Metric Tonne). It was also observed that the buffer zone/no-mining zone of 40 m inside from the boundary of lease area (bank of the river) as well as 7.5-meter buffer with adequate distance for stability and safety of the edges of wet perimeter during lean flow season has been appropriately considered. The Committee also recommends that for the first year PP should use only scraper & loader as the depth of mining is less and in order to create a uniform pit for next replenishment study. The sieve analysis of the mineable material suggests that 60% (D60) of the samples has average diameter less than 3.14 mm. As per Indian Soil Classification, bulk quantity of material comes under category of sand. However, 40% is more than size of sand. EAC therefore considered the grant of EC for River Bed Material (Boulder, Gravel and Sand).

7. The PP submitted that the recommendations of the Committee with respect to joint inspection with Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board or Committee, Forest Department, Geology of Mining Officer, Revenue Department has been obtained from the Office of Dy. Commissioner, Panchkula vide letter no. 11926/ MA/MC 4 dated 28.06.2019. Wherein inter-alia it has mentioned that i) there is no building, bridge, habitation and religious places within 200 meters of the said mining lease, ii) there are two routes to exits from the mining lease, iii) the safety zone, restricted zone and mining zone is already mentioned in the approved mining plan, iv) specific gravity of the mineral is 2.6, v) the weigh bridges can be installed on the exit routes from mines, vi) the maximum and minimum MSL of the mining lease as verified by the irrigation department in 378 and 355 respectively, vi) the air quality of the area as reported by Haryana Pollution Control Board is fine.

8. The PP submitted that the maximum working depth of mining will be 3 m bgl in river bed whereas the **groundwater** table exists at an average depth of 8-10 m bgl, so mining depth will not intersect the ground water table. PP submitted that the water will be taken from existing water sources from nearby villages by tanker supplier. PP has submitted that an application regarding ground water extraction has been submitted to



CGWA on dated 24.04.2018. The PP submitted that total water requirement was previously 120 KLD which is now revised to 30 KLD (20 KLD for dust suppression, 2.5 KLD for Domestic use, 7.0 KLD for plantation). The Committee observed that in pursuant to Ministry 's O.M No 21-103/2015-IA.III dated 2.11.2018, PP has already applied on 24.4.2018 for obtaining permission from CGWA for extraction of ground water. Further, as per the above said O.M. a specific condition viz. *"Approval/permission of CGWA/SGWA shall be obtained before drawing ground water for the project activities. State Pollution Control Board (SPCB) concerned shall not issue Consent to Operate (CTO) till the project proponent obtains such permission"* needs to be mentioned in EC letter. The PP revised the EMP to include two water tanker having mist generator cannon facility with a provision of Rs 50 Lakh.

9. The PP in its **plantation plan** submitted that total 35112 saplings (31455 saplings outside lease area and 3657 saplings within mining lease) will be planted. Outside mining lease area total 31455 saplings will be planted on 20.97 Ha area covering 7 villages, [Rattewali (7290 saplings), Ganeshpur (2475 saplings), Bharoli (1875 saplings), Amrala (2805 saplings), Alipur (2325 saplings), Parwala (4680 saplings), Kambala (3180 saplings), Taparian (4545 saplings), and Kanauli (2280 saplings)]. Inside the villages plantation will be carried out on Village Road (Panchayat Bhawan, Community Center, School and Public Health Centre. Within the mining lease plantation on 7.5-meter width of lease boundary will be carried out covering 2.437 ha area (1st year 1593 saplings will be planted on 1.062 ha area & 2nd Year 2064 saplings will be planted on 1.3757 ha area). PP submitted the photograph of school, Panchayat Bhawan, Community Center, Public Health Centre approach road with their geo-locations where plantation will be carried out (refer MoM dated 27-28 August,2019). The Committee observed that PP has committed to plant at least 5000 trees /year and in seven years around 35000 trees to be planted. The PP has already proposed to plant 35112 saplings (31455 saplings outside lease area and 3657 saplings within mining lease).

10. The Project Proponent reported that there is no National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves/ Critically Polluted areas/Aravali located within the radius of 10 km of the mine lease area. However, Khol Hai Raitan Wildlife Sanctuary lies at the distance of 1.98 Km in N direction. The PP submitted that no forest land is involved in mining lease area. In this regard the proponent submitted LR No. 5113 dated 19.09.2017 received under RTI Act, 2005 from Forest Department, Haryana.

11. The PP submitted LR No. 5113 dated 19.09.2017 received under RTI Act, 2005 from Forest Department, Haryana. In the same letter the list of flora and fauna is also provided. The PP submitted that there are three Schedule-1 species in the study area viz. Leopard, Indian Peafowl and Indian Python and their conservation plan (Rs. 15 Lakhs) which includes i) Rs 5.0 Lakh for Planting of trees groves in surrounding area and Promotion of agro forest in villages planting fruits trees, ii) Rs 5.0 Lakh for artificial nests, feeding and watering arrangement for animals, iii) Rs 2.0 Lakh for Workshops, Training and awareness programs, iv) Rs 2.0 Lakh for Water supply and v) Rs 1.0 Lakh for Contingency has been prepared and submitted to APCCF Panchkula Haryana for their approval on 22.12.2017. The PCCF (Wildlife), Panchkula, Haryana approved the conservation plan (total amount 15 Lakh) vide LR No 1912 dated 30.08.2018. There is

one more Schedule-1 species Pangolin (*Manis crassicauda*) for which conservation plan has been submitted for approval of Chief Wildlife Warden on 19.11.2018. The PP has revised the budget of Conservation plan for all the Schedule-1 species to 23.60 Lakh. The PP submitted that the conservation plan for Indian Peafowl, Python, Leopard has been approved and the conservation plan for Pangolin is still under approval process. PP also submitted that the request for deposition of amount towards approved Conservation Plan has already been sent to the concerned department to raise demand and the same is awaited.

12. The Primary **baseline data** for specific micro-meteorology data, ambient air quality, waste quality, noise level, soil and flora & fauna has been collected during Post Monsoon season i.e. October to December, 2017. The monitoring results of ambient air, surface water, soil, ambient noise and ground water for the month of October 2017-December 2017 have been reported and no major divergence was observed with respect to concentration values of various parameters of collected samples.

13. The cluster certificate with regards to other mining leases within a distance of 500m has been obtained from the Office of Assistant Mining Engineer, Mines and Geology Department, Panchkula vide letter no. 336 dated 20.05.2019 as per which there is only one mining lease [Shamtoo – 1 Block/ PKL B-11 (46.50 Ha)] within 500 meters of the Rattewali Block/PKL B 10. But for calculation of impact other mining lease viz. Shamtoo – 2 Block/ PKL B-12 (45.0 HA) and Sukhdarshanpur Block/ PKL B-13 (37.38 Ha) were also considered. The PP submitted the air quality modeling in control case scenario and worst case scenario considering the production of all mines in cluster. The Committee observed that predictive values of PM₁₀ & PM_{2.5} are high at Rattewali village and Raipur Rani Village. These villages are away from the mine site and the background values itself are high. The reason as reported are local activity but transportation of mined minerals from habituated locality will further increase the values. Therefore, the transportation of mined minerals as proposed to be made through alternate route (other than the habitation) is acceptable. The background observation of PM₁₀ and PM_{2.5} within mine site is well within the air quality standard applicable in mine area.

14. The Project Proponent reported that **Public Hearing** for the proposed project of —Rattewali Block PKL / B-10 of M/s Tirupati Roadways was held under Chairmanship of Mr. Mukulkumar HCS, Additional Deputy Magistrate, Panchkula at the mine site, on 17.04.2018 at 3:00 PM as per the EIA Notification dated 14th September 2006, as amended by the Ministry of environment and Forest, New Delhi. The advertisement for public hearing was published in "The Tribune" & "Amar Ujala" on 14.03.2018. The issues raised during public hearing were also deliberated during the meeting which includes provision of alternate road for transportation of mineral, provision for dust suppression, employment, social welfare, compensation to affected land owners, installation of crusher, and maintenance of roads. The financial commitments made by PP to address the issues raised during PH by the PP is Rs 21 Lakh/annum under CSR, Rs 30.50 Lakh under EMP which include Rs 18 Lakh (Capital Cost) for construction of roads and Rs 4 Lakh/annum for maintenance of roads. Further, PP committed that preference will be given to local in employment and around 400-500 person will get direct and indirect employment from the projects, motarable road shall be constructed. Tree guards will be erected around the sampling / plants for their protection and survival. Watering of

sampling/plant will be done regularly by the gardeners, and compensation to affected land owner on mutually agreeable rates. The PP submitted that to address the issues raised during public hearing the budget for EMP is now revised to Rs 151.05 Lakh (Capital) & Rs 69.47 Lakh (recurring) and budget of CER is revised to Rs 67.29 lakh (Capital) & Rs 21.0 Lakh (recurring).

15. The Project Proponent submitted the revised budget earmarked for **Environmental Management Plan (EMP)** shall be Rs 151.05 Lakh (Capital) & Rs 69.47 Lakh (recurring). The budget earmarked throughout the life of mine towards EMP is Rs 637.34 Lakh. The Committee noted that in public hearing PP has proposed i) to construct and maintain the roads and proposed a budget of Rs 18 Lakh but now PP has revised the same to Rs 40 Lakh (Capital), Rs 8.0 Lakh (recurring); ii) during PH a budget of Rs. 30.50 Lakhs/yr was proposed for environment protection measures in the surrounding area out of which Rs. 6.00 Lakhs/yr was earmarked for dust suppression and Rs. 25.00 Lakhs for 7 years was proposed for Plantation but now the same has been revised to Rs 151.05 Lakh (Capital) & Rs 69.47 Lakh (recurring).

16. PP submitted revised budget under Environment Social Commitment (now CER) as Rs 67.29 lakh (Capital) & Rs 21.0 Lakh (recurring). The Committee observed that PP has proposed Rs 67.29 Lakh (Capital) and Rs 21 Lakh (recurring) [147 Lakh recurring over the life of mine 7 years]. The Committee is of the view although PP has addressed most of the relevant issue but some of the activities are capital intensive in nature wherein the PP has proposed recurring expenditure also.

17. The Project Proponent submitted that the budget for **Occupational Health and Safety** shall be ₹ 10.0 Lakhs/annum.

18. The Project Proponent submitted an **undertaking** for compliance of Common Cause Order and other statutory requirements by the way of an affidavit on Rs 50 (Non-Judicial Stamp Paper) bearing certificate number C 895272 dated 27.08.2018. In addition to this PP submitted an undertaking dated 27.08.2019 & affidavit on Rs 100 (Non-Judicial Stamp Paper) bearing certificate number IN-JH14020832697621R dated 24.01.2019 (notarized on 11.09.2019) that all the data and information given in the application, enclosures, and other documents are true. The Consultant Enkay Enviro Services Pvt Ltd submitted an undertaking vide affidavit on Rs 100 (Non-Judicial Stamp Paper) bearing certificate number IN-DL33240302804993R dated 23.01.2019 that details and data presented in the proposal submitted to MoEF&CC is factually correct. The Consultant thereafter submitted an undertaking vide letter dated 27.08.2019 & affidavit on Rs 50 (Non-Judicial Stamp Paper) bearing certificate number AF 383385 dated 09.09.2019 that the EIA/EMP report of the said project has been re-drafted and all the data and other documents are factually correct to the extent of knowledge based on technical submission of consultant. The PP also submitted an undertaking on Rs. 50/- Non-Judicial stamp duly notarized bearing certificate no C-895212 dated 27.08.2018 to the effect that each year after the replenishment study, the plan & section will be submitted to the Office of State Mining Engineer, DMG, Haryana for verification and official record. The consultant '*Hydro Geo Solutions*' which has conducted theoretical replenishment study and pre-monsoon survey submitted an undertaking dated 28.08.2019 & affidavit on Rs 100 (Non-Judicial Stamp Paper) bearing certificate number 732 dated 09.09.2019 wherein it has mentioned that

the pre-monsoon survey and data is generated in June 2018 for replenishment study for the proposed project and all the survey and data along with other statistical parameters in the report is her responsibility. The consultant 'Himalayan Surveying Services Pvt Ltd' which has collected the post monsoon data submitted an undertaking dated 27.08.2019 & affidavit on Rs 50 (Non-Judicial Stamp Paper) bearing certificate number C 112288 dated 09.09.2018 that the post-monsoon survey and data is generated in January 2019 for replenishment study for the proposed project and all the survey and data along with other statistical parameters in the report is his responsibility. The consultant 'Mining 360 services' submitted an undertaking dated 26.08.2019 & affidavit on Rs 100 (Non-Judicial Stamp Paper) bearing certificate number AF 793747 dated 10.09.2019 that, based on the pre-monsoon and post monsoon data submitted by 'Hydro Geo Solutions' and Himalayan Surveying Services Pvt Ltd' respectively, the erosion, deposition and safe extractable volume is ascertained in the Replenishment Study Report. The data/information along with other statistical & volumetric calculation provided in the report is his responsibility. The Consultant submitted the NABET Accreditation Certificate of previous ACO 'Vardan Environet' which was valid from 12.07.2017 to 9.11.2019. In addition to this PP submitted the NABET Accreditation Certificate of current consultant Enkay Enviro Services Pvt. Ltd which is valid from 6.09.2017 to 15.11.2019. The PP also submitted the accreditation certificate of the laboratory (Vardan Environet) from which samples were analyzed.

19. The Project Proponent submitted that the total project cost shall be ₹ 9.2 Crore and shall give direct employment to 73 persons.

20. Based on the discussion held and documents submitted by the PP, the Committee in its meeting held on 27-28 August, 2019 **recommended** the proposal of M/s Tirupati Roadways for grant of EC for mining of 19, 00,000 TPA of Riverbed Material (Boulder, Gravel & Sand) from Rattewali Block/PKL B 10 (ML Area 45.00 ha) located at Village Rattewali, Tehsil- Barwala District- Panchkula, Haryana for period of 7 years from date of issuance of EC, with Standard EC Conditions as per Ministry's O.M. No. 22-34/2018-IA.III, dated 08.01.2019, applicable provisions of Sustainable Sand Mining Management Guidelines 2016 (para 21 B) and specific conditions as stipulated at para 21 (A) below.

21. The Ministry of Environment, Forest & Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the Environmental Clearance under the provisions thereof to the above mentioned proposal of M/s Tirupati Roadways for Production of **19,00,000 TPA Riverbed Material** (Boulder, Gravel & Sand) from Rattewali Block/PKL B 10, Mining lease area 45.00 ha (**mineable area 24.25 Ha & non-mineable area 20.75 Ha**) located at Village Rattewali, Tehsil- Barwala District- Panchkula, Haryana for 7 years from dated of issuance of this letter subject to compliance of the terms & conditions and the environmental safeguards mentioned below: -

A. Specific Conditions:

- 1) Permissible Mining of River Bed Material (Boulder, Gravel and Sand) shall be limited to 8.39 LTPA instead of requested 19 LTPA, from an effective mineable area of 24.25 ha [B-1 (11.33 ha), B-2 (4.5 ha) & B-3 (8.3 ha)], with a maximum minable depth of 1.33 meter from the original ground level as reported in the

replenishment study. The permissible minable material of 8.39 Lakh Ton will be valid till one year from the day of issuance of consent to Operate by HSPCB.

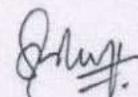
- 2) For subsequent period, PP shall submit fresh annual replenishment study to MoEF&CC for amendment in EC for mineable quantity and maximum permission depth for mining based on the scientific findings of replenishment study. Such study shall be placed before EAC for appraisal for next three years to assess rate of deposition and accordingly, minable production capacity and depth can be prescribed based on trends analysis, provided it is found scientifically satisfactory by the EAC. The placing of the study report before EAC is mandatory for initial three years.
- 3) Occupational Health and Safety Plan (OH&SP) shall be implemented with budgetary expenditure of ₹ 10.0 Lakhs/annum out of which ₹1 Lakh shall be used for Measures to Prevent Accidents during mineral loading, ₹ 1 Lakh for measures to Prevent Accidents during minerals Transportation, ₹ 1 Lakh for measures to Prevent Accidents due to Trucks/ Dumpers etc., ₹ 2 Lakh for measures to Prevent Dangerous Incidents during Inundation/Flooding, ₹ 2 Lakh for education awareness and first aid kit, ₹ 3 Lakh for medical Examination Schedule. The amount proposed in the Occupational Health and Safety Plan shall be kept in separate bank account and same needs to be audited annually. The Proponent should annually (before 1st June of every year for proceeding year) submit the detailed report to Regional Office, MoEF&CC on implementation of OH&SP along with audited report of expenditure incurred; purchase documents, photographs in support of implementation of activities, details of persons engaged for the implementation of OH&SP etc.
- 4) Environmental Management Plan (EMP) shall be implemented having budgetary provision of Rs 151.05 Lakh (Capital) & Rs 69.47 Lakh (recurring) which includes i) Pollution monitoring [Rs 8 Lakh (recurring)], ii) Dust Suppression [Rs 50 Lakh (Capital), Rs 12 Lakh (recurring)], iii) Plantation [Rs 42.49 Lakh (Capital), Rs 9.51 Lakh (recurring)], iv) Rainwater Harvesting [Rs 3.0 Lakh (Capital), Rs 2.0 Lakh (recurring)], v) Haul Road & Other road repair [Rs 40 Lakh (Capital), Rs 8.0 Lakh (recurring)], vi) Pre-Monsoon & Post Monsoon Survey [Rs 15.56 Lakh (Capital), Rs 20 Lakh (recurring)], and vii) manpower for implementation of EMP [Rs 9.96 Lakh (recurring with 10% annual increment) for Manager (EHS-@ Rs 25000/month), Asst. Manager (EHS-@ Rs 20000/month), Environmental Engineer (EHS-@ Rs 20000/month), Horticulture (@ Rs 10000/month), and supervisor (@ Rs 8000/Month)]. The budget earmarked throughout the life of mine towards EMP is Rs 637.34 Lakh. The amount proposed in the EMP shall be kept in separate bank account and same needs to be audited annually. The Proponent should annually (before 1st June of every year for proceeding year) submit the detailed report to Regional Office, MoEF&CC on implementation of EMP along with audited report of expenditure incurred; purchase documents, photographs in support of implementation of activities, Geo-location of the monitoring stations, plantation sites, details of persons engaged for the implementation of EMP etc.

- 5) Afforestation Plan as a part of EMP shall be implemented with budgetary support of Rs 42.49 Lakh (Capital) & Rs 9.51 Lakh (recurring). The proposal includes 31455 saplings to be planted on 20.97 Ha area covering 7 villages [Rattewali (7290 saplings), Ganeshpur (2475 saplings), Bharoli (1875 saplings), Amrala (2805 saplings), Alipur (2325 saplings), Parwala (4680 saplings), Kambala (3180 saplings), Taparian (4545 saplings), and Kanauli (2280 saplings)]. Effort should be made to increase the number of 35000 in 7 year period by villages plantation on Village Road, Panchayat Bhawan, Community Center, School and Public Health Centre. In addition, 3545 sapling in 7.5 meter safety zone of mining lease boundary. The PP should engage experts (or in consultation with forest department) to decide on the sapling to be planted. The Proponent should annually (before 1st June of every year for proceeding year) submit the detailed report to Regional Office, MoEF&CC on implementation of plantation activity (as a part of EMP) along with audited report of expenditure incurred; purchase documents, photographs in support of implementation of activities, Geo-location of the plantation sites, details of persons/expert engaged for the implementation of plantation activity etc.
- 6) Corporate Environment Responsibility (CER) shall be implemented with budgetary support of Rs 67.29 Lakh (Capital) and Rs 21.0 Lakh (recurring) [Rs 147 Lakh recurring over the life of mine 7 years] which includes i) Rs 40 Lakh (Capital) for Construction cost for New Classroom (2 nos @ 5.0 Lakh/each in each Government School, timeline: 1st ,3rd,5th & 7th year) of village Rattewali, Shamtu, Parwala, and Tibbi; ii) Rs 2.8 Lakh (Capital) for Construction of new Toilet for students in Government primary and secondary school, (Total No. of New Toilet – 16 (8 male & 8 females; cost Rs. 17,500/- per toilet, timeline: in first 2 years); iii) Rs 2.8 Lakh (Capital) & Rs 2.5 (Recurring) for Toilet Repair in nearby villages other than new construction including septic tank and soak pit (Total No. of Toilet repair –16; @Rs. 17,500/-) (time line 6 in first 2 years and thereafter 2 each year); iv) Rs 7.2 Lakh (Capital) for Renovation of computer lab in 4 secondary Government school (6 computers with table will be installed in each school @ Rs 30,000/ each; timeline: 1st ,3rd,5th & 7th year); v) Rs 7.84 Lakh (Capital) & Rs 4 Lakh (recurring) for Drinking water R.O. installation in at Public Health Centre and Bus Stand of village Rattewali, Shamtu, Parwala, and Tibbi. Total No. of water ATM Machine to be installed @98,000/- each (timeline: 1st & 2nd year); vi) Rs 3.75 Lakh (Capital) & Rs 1 Lakh (recurring) to Organize Health check-up camps and Medicine distribution programme Malnutrition checkup and free diagnostic Treatment Programmes to the nearest habitation of village Rattewali, Shamtu, Parwala, and Tibbi. (Health check-up camp in each village @ 75,000/- village 5 x Rs. 75,000/-, timeline: every year for consecutive 5 years); vii) Rs 2.9 Lakh (Capital) & 1 Lakh (Recurring) for awareness through distribution of Sanitary napkin made by S.H.G. (Women's Empowerment & Health & hygiene). Awareness on Personal Hygiene. Cost of 1 Packet: 40/- INR Estimated Beneficiaries: Approx. between 3,500 - 6,000/- Total: 6,000 Beneficiaries, timeline: 1st, 3rd, 5th & 7th year. The remaining recurring expenditure ₹ 12.5 Lakh/annum shall be used for supporting the education of children's of poor family (5 family/village), providing assistance for medical treatment of critically ill persons (2 person/village), and providing assistance for higher education of meritorious youth of the village (5 youth/village).

The amount proposed under CER shall be kept in a separate bank account which is to be audited annually. The Proponent should annually (before 1st June of every year for the compliance of proceeding years) submit the detailed report to Regional Office, MoEF&CC on implementation of the activities proposed in CER along with audited report of expenditure incurred; purchase documents, photographs in support of implementation of activities, etc. At the 7th year if any amount left in this budget head then the same shall be utilized for the infrastructural development of the four villages in consultation with local administration.

- 7) Wildlife Conservation Plan (WCP) for 4 Schedule-1 species viz. Leopard, Indian Peafowl and Indian Python & Pangolin, a budget of is Rs 23.60 Lakh should be provided for implementation of the plan. The PCCF (Wildlife), Panchkula, Haryana has approved the conservation plan (total amount ₹ 15 Lakh) vide LR No 1912 dated 30.08.2018 for the three schedule-1 species. The PP should deposit the amount proposed for WCP in government account. The PP within 6 months of the issuance of EC submits the approved conservation plan for the Pangolin to MoEF&CC.
- 8) Approval/permission of CGWA/SGWA shall be obtained before drawing ground water for the project activities. State Pollution Control Board (SPCB) concerned shall not issue Consent to Operate (CTO) till the project proponent obtains such permission in pursuant to Ministry's O.M. No. 21-103/2015-IA.III dated 2.11.2018. This Environmental Clearance is subject to obtaining permission from CGWA for withdrawal of ground water.
- 9) The Project Proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted in the study area.
- 10) The PP shall comply with recommendation of High Powered Committee (NGT order dated 4.09.2018 in O.A 173 of 2018) as applicable for the project proponent and other applicable provisions of Sustainable Sand Mining and Management Guidelines, 2016 issued by MoEF&CC and as amended from time to time.
- 11) The Hon'ble NGT recently in its order dated 4.09.2018 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 public domain. In the course of such environmental audit, a three-member committee of the local inhabitants will also be associated. Composition of three members committee may preferably include ex-servicemen, former teacher and former civil servant. The Committee will be nominated by the District Magistrate.*" Thus, PP and State Government should comply with the order of Hon'ble NGT (Order dated 4.09.2018 in the matter of Sudarsan Das Vs. State of West Bengal & Ors in O.A 173 of 2018) and submit an annual environmental audit report to the Ministry and keep the same in public domain as proposed above.

- 12) The proponent shall construct 2 dedicated roads for the transportation of the mineral from mining lease to nearest tar road. The number of trucks/tippers shall not exceed the estimated quantity of 56 trucks/tippers per day from each road. The transport of mineral will not be done through villages / habitations for which dedicated roads needs to be provided so that the impact of sound, dust and accidents could be mitigated. The PP shall engage sufficient staff for traffic management and keep proper record of trucks passing through each road. The PP shall deploy the machine for excavation as approved by EAC during appraisal process.
- 13) Project Proponent shall ensure proper maintenance of transportation roads for transport of minerals as per the IRC Guidelines (traffic congestion and density). The PP shall ensure regular cleaning & grading of the roads used for transportation for smooth traffic movement.
- 14) Demarcation of mining area with pillars and geo-referencing should be done prior to start of mining. The area should be properly surveyed and mapped with the help of DGPS to assign geo-coordinates and accordingly erect boundary pillars so as to avoid illegal and unscientific mining. Permanent pillars have to be constructed to demarcate width of extraction of RBM leaving 40 meter inside buffer distance from lease boundary and 7.5 meter from the bank of wetted perimeter of lean channel.
- 15) The profile of river has been considered as per latest satellite image and in case river changes its course during the contract period (7 years) and goes outside the mining lease then mining should be stopped immediately and can be resumed only after obtaining permission from MoEF&CC. The maximum minable depth shall be as per para 1 of specific conditions or water level of river bed, whichever is achieved early, and the production thereafter shall be based on the actual replenishment study report as approved by EAC.
- 16) PP shall comply with the other combined conditions prescribed by concerned regulatory authority arising out of mines in the same cluster but including i) transportation of the mineral from the mining leases should be diverted so as to avoid traffic congestion, ii) plantation should be carried out on the haul roads jointly by the different mining lease holders, iii) water spraying needs to be carried out by sharing the resources so as to optimize the water requirement and to ensure effective dust suppression, iv) traffic management needs to be done jointly, v) movement of tippers should be away from the habitation and dedicated roads may be constructed for this purpose, vi) maintenance of the roads needs to be carried out on regular interval , vii) tippers to be covered with tarpaulin & spillage of the mineral to be avoided and viii) crop conditions on both side of the roads needs to be monitored regularly so as to avoid any damage to crop production.
- 17) PP shall scrupulously follow the Enforcement & Monitoring Guidelines for Sand published by Ministry on its website on 27.01.2020.



- 18) In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

B. Special Conditions: (As per Sustainable Sand Mining Management Guidelines 2016)

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 essential.
	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	No River sand mining be allowed in rainy season.
	9	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.
	10	Mining shall be done in layers to avoid ponding effect and after first layer is excavated, the process will be repeated for the next layers.
	11	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.

	12	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.
	13	No blasting shall be resorted to in River mining and without permission at any other place.
	14	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.
Monitoring the Mining of Mineral and its Transportation	15	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.
	16	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.
	17	Use of 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 shall be made.
Noise Management	18	Noise arising out of mining and processing shall be abated and controlled at source to keep within permissible limit.
	19	Restricted working hours. Sand mining operation has to be carried out between 6 am to 7 pm.
Air Pollution and Dust Management	20	The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly.
	21	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.
	22	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	23	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	24	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.
	25	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.
	26	Protection of turtle and bird habitats shall be ensured.

	27	Spring sources should not be affected due to mining activities. Necessary Protection measures are to be incorporated.
Management of Instability and Erosion	28	The EC should stipulate conditions for adequate steps to check soil erosion and control debris flow etc. by constructing engineering structures
	29	Use of oversize material to control erosion and movement of sediments
	30	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.
	31	No extraction of stone / boulder / sand in landslide prone areas.
	32	Controlled clearance of riparian vegetation to be undertaken
Waste Management	33	Site clearance and tidiness is very much needed to have less visual impact of mining.
	34	Rubbish burial shall not be done in the Rivers.
Pollution Prevention	35	Effluent discharge should be kept to the minimum and it should meet the standards prescribed.
Protection of Infrastructure	36	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.
	37	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 of Road Safety	38	Vehicles used for transportation of sand are to be permitted only with fitness and PUC Certificates.
	39	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.
	40	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 Guidelines with respect to complying with traffic congestion and density.
	41	No stacking allowed on road side and also along National Highways.
Closure and Reclamation of Mined Out Area	42	The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
	43	Site specific plan with eco-restoration should be in place and implemented.
	44	Health and safety of workers should be taken care of.

Health and Safety	45	Transport of mineral will not be done through villages / habitations.
	46	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.
	47	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.
	48	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	49	The Project Proponent shall report monitoring data on replenishment, traffic management, levels of production, River Bank erosion and maintenance of Road etc.

C: Standard Conditions: (As Ministry's O.M No 22-34/2018-IA.III dated 8.01.2019)

I. Statutory compliance

- 1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- 2) The Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- 3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- 4) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.

- 5) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- 6) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- 7) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- 8) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- 9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA. II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- 10) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- 11) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- 12) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- 13) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.

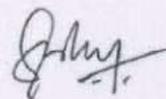
- 14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- 15) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCII, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- 16) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- 17) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- 18) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring



of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

- 19) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- 20) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- 21) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- 22) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.

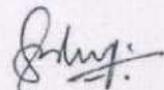
- 23) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- 24) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- 25) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- 26) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- 27) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining plan

- 28) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management , O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.



- 29) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- 30) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

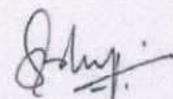
VI. Land reclamation

- 31) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- 32) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- 33) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- 34) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- 35) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.

- 36) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- 37) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- 38) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- 39) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- 40) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging



system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

- 41) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- 42) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- 43) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- 44) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- 45) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- 46) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining

activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carry out Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.

- 47) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carry out base line HRA for all the category of workers and thereafter every five years.
- 48) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- 49) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain,

Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.

- 50) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- 51) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- 52) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

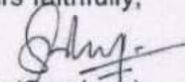
- 53) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- 54) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEFCC and its concerned Regional Office.

XI. Miscellaneous

- 55) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEFCC.

- 56) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- 57) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- 58) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- 59) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.
22. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
23. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
24. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.
25. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,

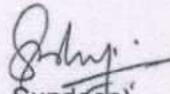

(Sundeeep)

Director/Scientist 'F'

Copy to:

1. **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.

2. **The Secretary**, Department of Mines & Geology, Government of Haryana, Chandigarh.
3. **The Secretary**, Department of Environment, Government of Haryana, Chandigarh.
4. **The Secretary**, Department of Forest, Government of Haryana, Chandigarh.
5. **The Chief Wildlife Warden**, Government of Haryana, C-18, Van Bhawan, Sec-6, Panchkula -134109
6. **The Principal Chief Conservator of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office (NZ), Bays No. 24-25, Sector 31 A, Dakshin Marg, Chandigarh – 160030
7. **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
8. **The Chairman**, Haryana Pollution Control Board, C-11, Sector-6, Panchkula, Haryana 134109
9. **The Member Secretary**, Central Ground Water Authority, A-2, W3, Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. **The Executive Engineer**, Department of Irrigation, Government of Haryana, Sinchai Bhawan, Sector-5, Panchkula, Haryana
11. **The District Collector**, District Panchkula, State of Haryana.
12. **Guard File**
13. **MoEFCC website (Parivesh Portal)**


Sundeeep
Director/Scientist 'F'



HARYANA STATE POLLUTION CONTROL BOARD

SCO 116, Ist & IInd Floor, Sector 25, Panchkula
Ph. 0172-2566286 Email:- hspcbropkl@gmail.com
E-mail: hspcb@hry.nic.in



No. HSPCB/Consent/ : 313100422PANCTO25083536

Dated:22/07/2022

To.

M/s :Tirupati Roadways
 Village Rattewali

Subject: Grant of consent to operate to M/s Tirupati Roadways.

Please refer to your application no. 25083536 received on dated 2022-06-09 in regional office Panchkula. With reference to your above application for consent to operate, M/s Tirupati Roadways is here by granted consent as per following specification/Terms and conditions.

Consent Under	BOTH
Period of consent	01/10/2022 - 30/09/2024
Industry Type	Mining and ore beneficiation
Category	RED
Investment(In Lakh)	444.35001
Total Land Area(Sq. meter)	450000.0
Total Builtup Area(Sq. meter)	200.0
Quantity of effluent	
1. Trade	0.0 KL/Day
2. Domestic	3.5 KL/Day
Number of outlets	1.0
Mode of discharge	
1. Domestic	Septic Tank
2. Trade	NA
Domestic Effluent Parameters	
1. NA	0
Trade Effluent Parameters	
1. NA	0
Number of stacks	1
Height of stack	
1. NA	0 NA
Emission parameters	
1. NA	0
Product Details	

1. Boulder, Gravel and Sand (GBS) Minor Minerals	6334 Metric Tonnes/day
Capacity of boiler	
1. NA	0
Type of Furnace	
1. NA	0 NA
Type of Fuel	
1. Diesel	.001 KL/day
Raw Material Details	
Boulder, Gravel and Sand (GBS) Minor Minerals	6334 Metric Tonnes/Day

*Regional Officer, Panchkula
Haryana State Pollution Control Board.*

Terms and conditions

1. The applicants shall maintain good house keeping both within factory and in the premises. All hose pipelines valves, storage tanks etc. shall be leak proof. In plant allowable pollutants levels, if specified by State Board should be met strictly.
2. The applicant/company shall comply with and carry out directive/orders issued by the Board in this consent order at all subsequent times without negligence of his /its part. The applicant/company shall be liable for such legal action against him as per provision of the law/act in case of violation of any order/directives. Issued at any time and or non compliance of the terms and conditions of his consent order.
3. The applicant shall make an application for grant of consent at least 90 days before the date of expiry of this consent.
4. Necessary fee as prescribed for obtaining renewal consent shall be paid by the applicant alongwith the consent application.
5. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above required variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard vary all or such condition and there upon the applicant shall be bound to comply with the conditions so varied.
6. The industry shall provide adequate arrangement for fighting the accidental leakages, discharge of any pollutants gas/liquids from the vessels, mechanical equipment etc. which are likely to cause environment pollution.
7. The industry shall comply noise pollution (Regulation and control) Rules, 2000.
8. The industry shall comply all the direction/Rules/Instructions as may be issued by the MOEF/CPCB/HSPCB from time to time.
9. The industry shall ensure that various characteristics of the effluents remain within the tolerance limits as specified in EPA Standard and as amended from time to time and at no time the concentration of any characteristics should exceed these limits for discharge.
10. The industry would immediately submit the revised application to the Board in the event of any change in the raw material in process, mode of treatment/discharge of effluent. In case of

change of process at any stage during the consent period, the industry shall submit fresh consent application alongwith the consent to operate fee, if found due, which may be on any account and that shall be paid by the industry and the industry would immediately submit the consent application to the Board in the event of any change during the year in the raw material, quantity, quality of the effluent, mode of discharge, treatment facilities etc.

11. The officer/official of the Board shall reserve the right to access for the inspection of the industry in connection with the various process and the treatment facilities. The consent to operate is subject to review by the Board at any time.

12. Permissible limits for any pollutants mentioned in the consent to operate order should not exceed the concentration permitted in the effluent by the Board.

13. The industry shall pay the balance fee, in case it is found due from the industry at any time later on.

14. If the industry fails to adhere to any of the conditions of this consent to operate order, the consent to operate so granted shall automatically lapse.

15. If the industry is closed temporarily at its own, they shall inform the Board and obtain permission before restart of the unit.

16. The industry shall comply all the Directions/ Rules/Instructions issued from time to time by the Board.

Specific Conditions :

1. That the unit will comply the order/ direction issued by the Hon'ble Supreme Court of India, Punjab & Haryana High Court, NGT, Environment Court or any other court.
2. That the unit will apply for renewal of consent to operate before 90 days from the expiry of this CTO.
3. That the unit will comply with the all the Rules/ Regulations/ Acts/ Notification issued by CPCB/ HSPCB and MOEF&CC.
4. In case, any violations is found at any stage, then this CTO, so granted, shall be revoked without giving show cause notice.
5. Unit will also comply with all the conditions imposed in Environmental Clearance, CTE & CTO.
6. Unit will submit 06 monthly compliance report in future also.

***Regional Officer, Panchkula
Haryana State Pollution Control Board.***

From

Principal Scientist
HARSAC, Node Gurugram
GIS LAB, 3rd Floor, New Labour Court Building
Mini Secretariat, Gurugram-122001

To

Sh. Dalbir Singh
Inspector of Police,
State Vigilance Bureau Haryana
Headquarters, Sector-23, Panchkula

Letter No: HARSAC/GGM/2022/203-205

Date: 06-06-2022

Subject: Regarding submission of report to measure volume of material extracted from the mine at Rattewala Village, District Panchkula, Haryana.

With reference to letter no. Spl 01/PS/SVB/PKL dated 12.05.2022 Superintendent of Police State Vigilance Bureau, Panchkula, Haryana. The analysis and survey report including tables, fact, and conclusions is enclosed herewith (Annexure-1, Page no. 1 to 20).

Submitted for your kind reference.


(Principal Scientist)

CC:

1. Director General, Mines and Geology Haryana, Chandigarh, for the necessary information, please.
2. The Director, HARSAC, for the information, please

11

Subject: - Report Submission Regrading to volume measurement of material extracted from Ratewala mining site.

With reference to letter no. Spl 01/PS/SVB/PKL dated 12.05.2022 Superintendent of Police State Vigilance Bureau, Panchkula, Haryana has to requested to HARSAC to measure the volume of material extracted from mines at village Ratewala, by M/s Tirupati Roadways Minning site. Therefore, HARSAC has conducted the DGPS survey at Ratewala mining site on 13.05.2022 along with Officials of State Vigilance Bureau, Sr. Surveyor of head office Mines and Geology, and Mining officer Panchkula, Haryana as per their directions and requirements. Below (table 1) displaying result of Surface Volume analysis of material extracted from M/s Tirupati Roadways Minning site village Ratewala.

Location map of Ratewala mining Area

The location map is presented in Figure 1.

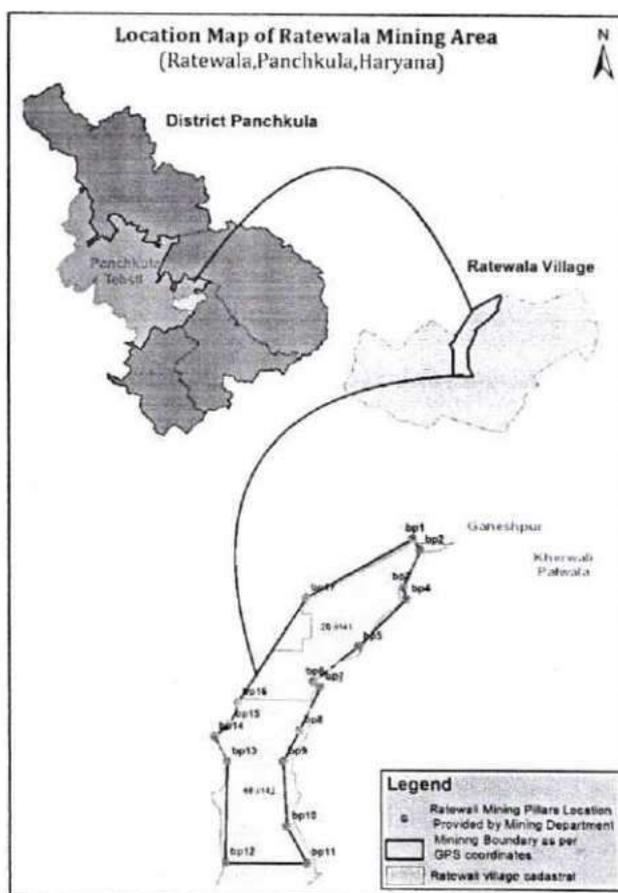


Figure 1: Location map of The Ratewala mining Area

B

Methodology for calculation volume of Extracted Material

To perform the following analysis of surface volume and extracted material from the river bed at very first we have to fix a ground level contour from SOI toposheet. The vertical accuracy of the Differential Global Positioning System (DGPS) instrument is evaluated by comparing with Survey of India (SOI) 360m contour of the M/S Tirupati Roadways and its Surroundings area through DGPS readings. It seems that the DGPS, Z value approximately (± 1.14) is high from the SOI contour. So, the observed value from DGPS surveyed points are subtracted by the value of 1.14 m to achieved the nearest correct Z value. With the help of corrected DGPS points we have created digital elevation model (DEM) raster surface to put forwarding the process we have generate surface contour using GIS Environment. After that we have proceed to the calculating process. The flow chart of adopted methodology is shown in Figure 2.



Figure 2: Methodology for calculation volume of Extracted Material

13

Table: 1 Surface Volume analysis of material extracted from M/s Tirupati Roadways Mining site village Ratewala.

A	B	C	D	E	F
Sr. No	Contour Max	Contour Min	Elevation Difference from Existing Level of River Bed	Area in sqm	Volume in MT (E*D*2), here 2 is bulk density as per mining plan
Volume Calculation of mining done up to permissive Level in Riverbed (356.8m - 353.8m)					
1.	356.80	355.80	1.00	8118.71	16237.41
2.	355.80	354.80	2.00	15603.71	62414.83
3.	354.80	353.80	3.00	13888.79	83332.73
			Total	37611.20	161984.97
Volume Calculation below permissive Level (353.8m - 342.303m)					
4.	353.80	352.80	4.00	18746.91	149975.30
5.	352.80	351.80	5.00	28872.61	288726.07
6.	351.80	350.80	6.00	34576.34	414916.13
7.	350.80	349.80	7.00	27318.01	382452.13
8.	349.80	348.80	8.00	30032.94	480527.07
9.	348.80	347.80	9.00	29398.44	529171.93
10.	347.80	346.80	10.00	27023.68	540473.51
11.	346.80	345.80	11.00	28523.47	627516.39
12.	345.80	344.80	12.00	17561.80	421483.14
13.	344.80	343.80	13.00	17450.90	453723.38
14.	343.80	342.80	14.00	10792.79	302198.15
15.	342.80	342.30	14.50	446.01	12931.51
			Total	270743.90	4604094.71
			Over All total	308355.10	4766079.68

Note: The maps specifying the mining area and volume of each contour interval of 1 m (where total number of contours is 15); falling within the range of Contour Max: 356.80m to Contour Min: 342.30m as mentioned in Table.1 are also being prepared and shown in Annexure 1 to 16.

(17)

As per the Mining plan the existing River Bed Level value is 356.8 m and permissible River Bed Level value is 353.8m subject to verify from mining department. The current deepest River Bed Level measured on one site is 342.30m through DGPS survey. Elevation difference is 11.497 meters beyond the permissive level. Total Mining Area is 45 hectares as per Mining Plan and mining activity occurred in 30.84 hectares.

Conclusion: Based on interpretation / analysis of mining plan it is seems that the existing River Bed Level value is fixed but the river bed level is dependent on gradient variations due to slope, and aspect, geological structure, elevation pattern, nature of rocks, hydrological settings and Land-Use Land-Cover. Thus, it is submitted that the volume calculation is not fixed for the entire area of interest (AOI) due to the above-relevant factors. The entire report is prepared as per the information (existing level of river bed and permissive level of riverbed) available in the mining plan provided by email dated 17/05/2022.

Disclaimer Note: It is clarified that HARSAC shall not be responsible or liable in any manner before any court of law/authority/tribunal/forum in this regard to the submission of this report. It is further clarified that if any notice is issued or received to HARSAC in this regard, then only the concerned stake holder may be held responsible to respond to the same and not HARSAC because HARSAC is only technical facilitator to the Government Department.

ANNEXURE 1

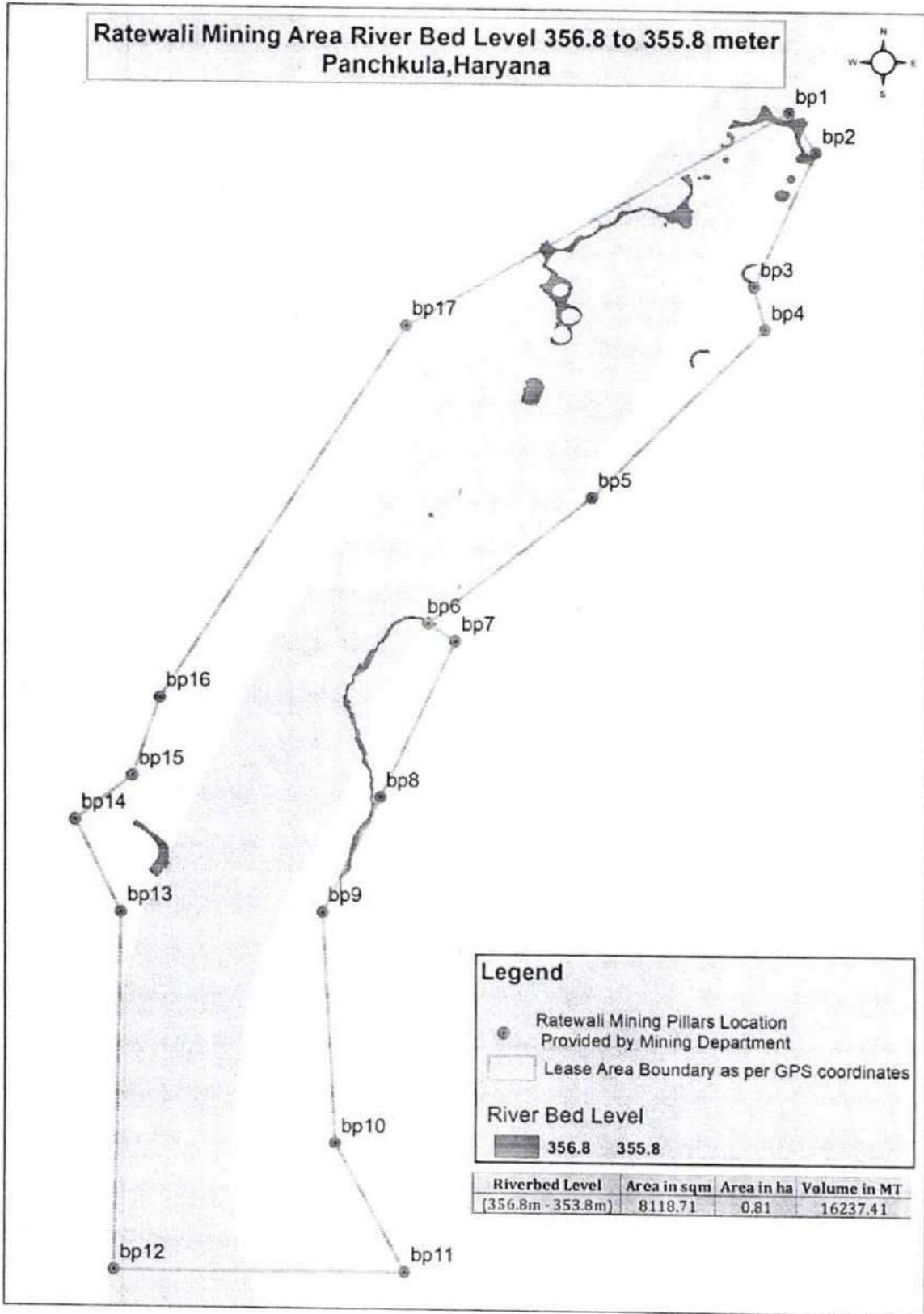


Figure :3 Displaying the area between 356.8-to-355.8-meter contour interval

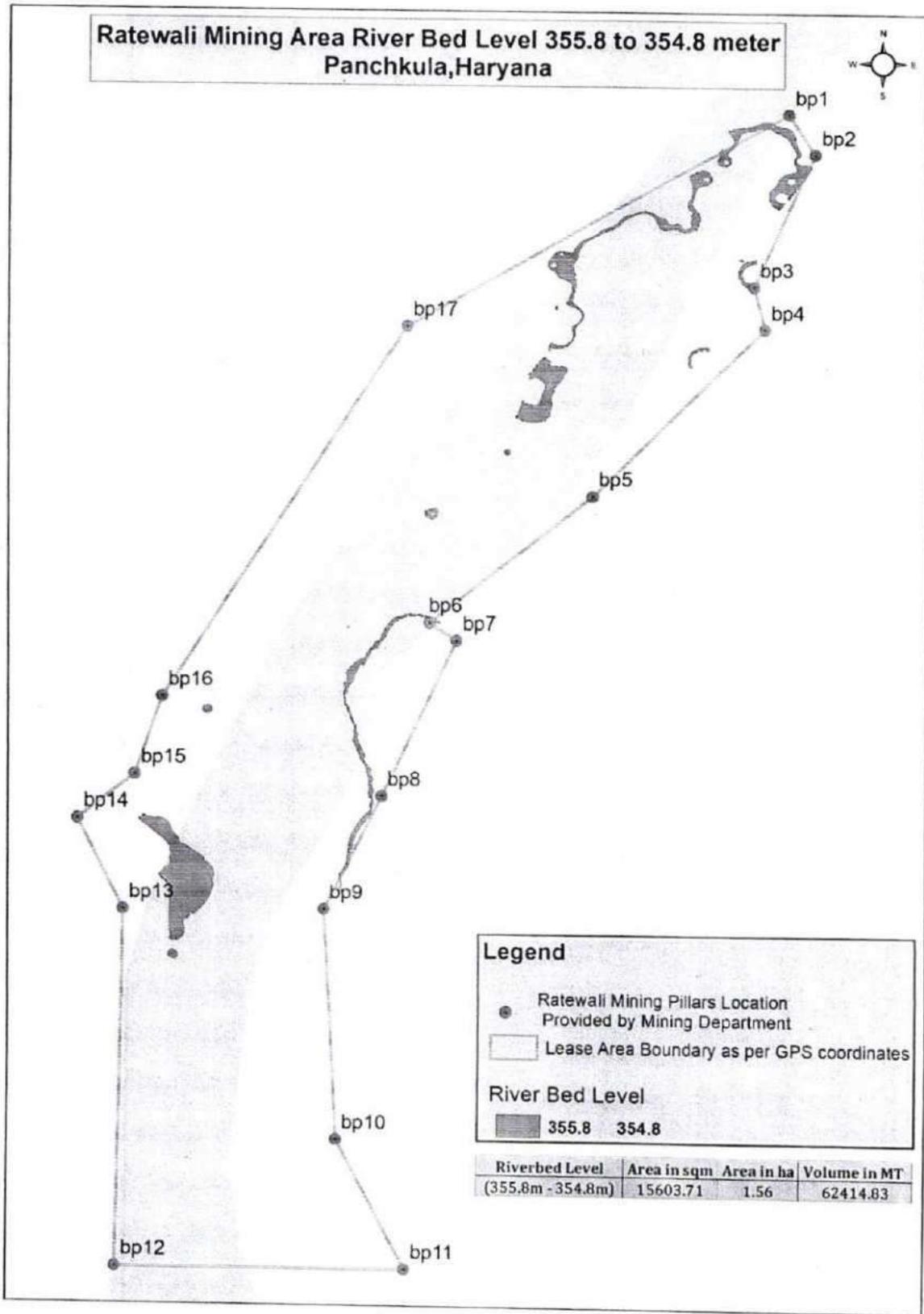


Figure :4 Displaying the area between 355.8-to-354.8-meter contour interval

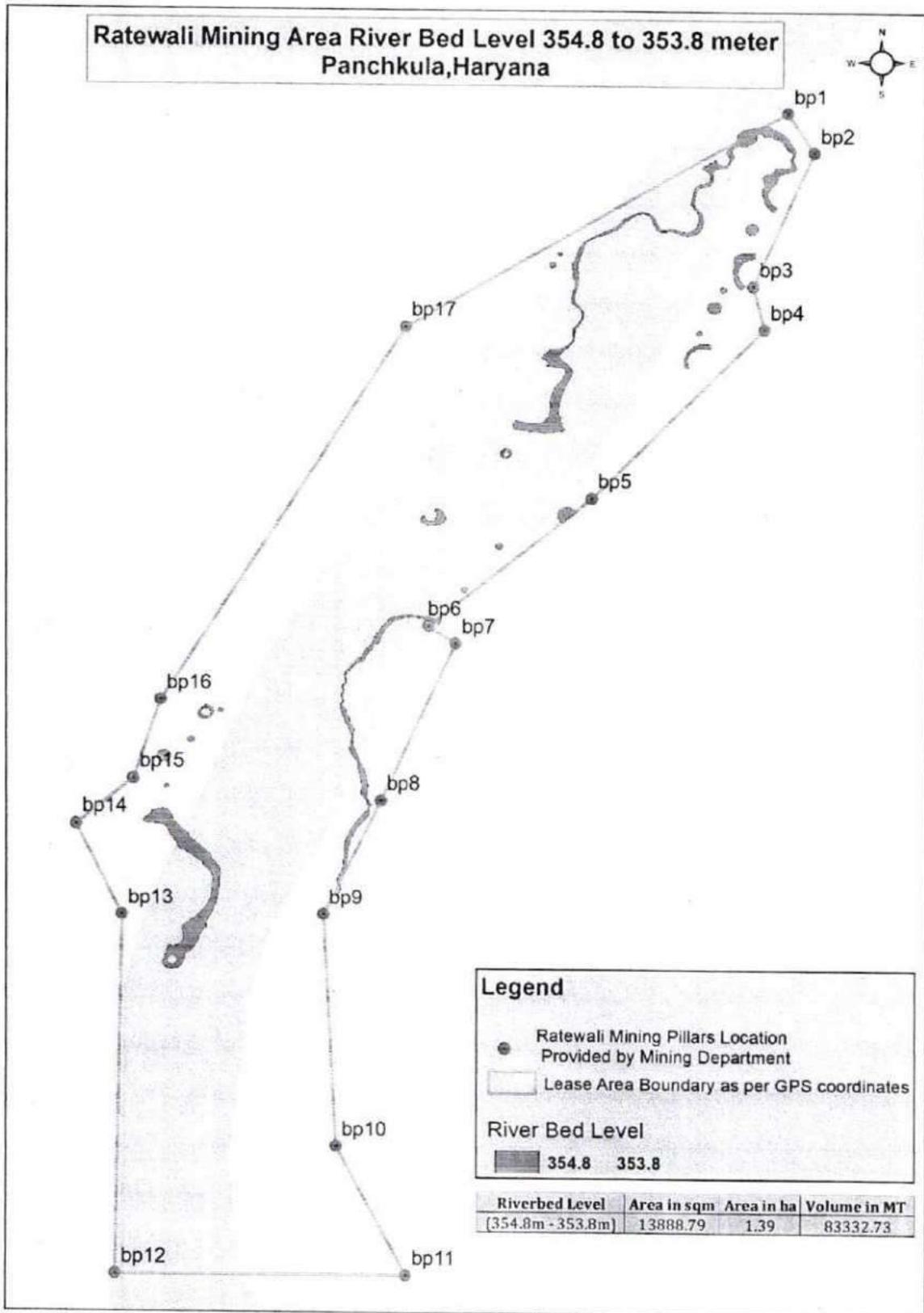


Figure :5 Displaying the area between 354.8-to-353.8-meter contour interval

ANNEXURE 4

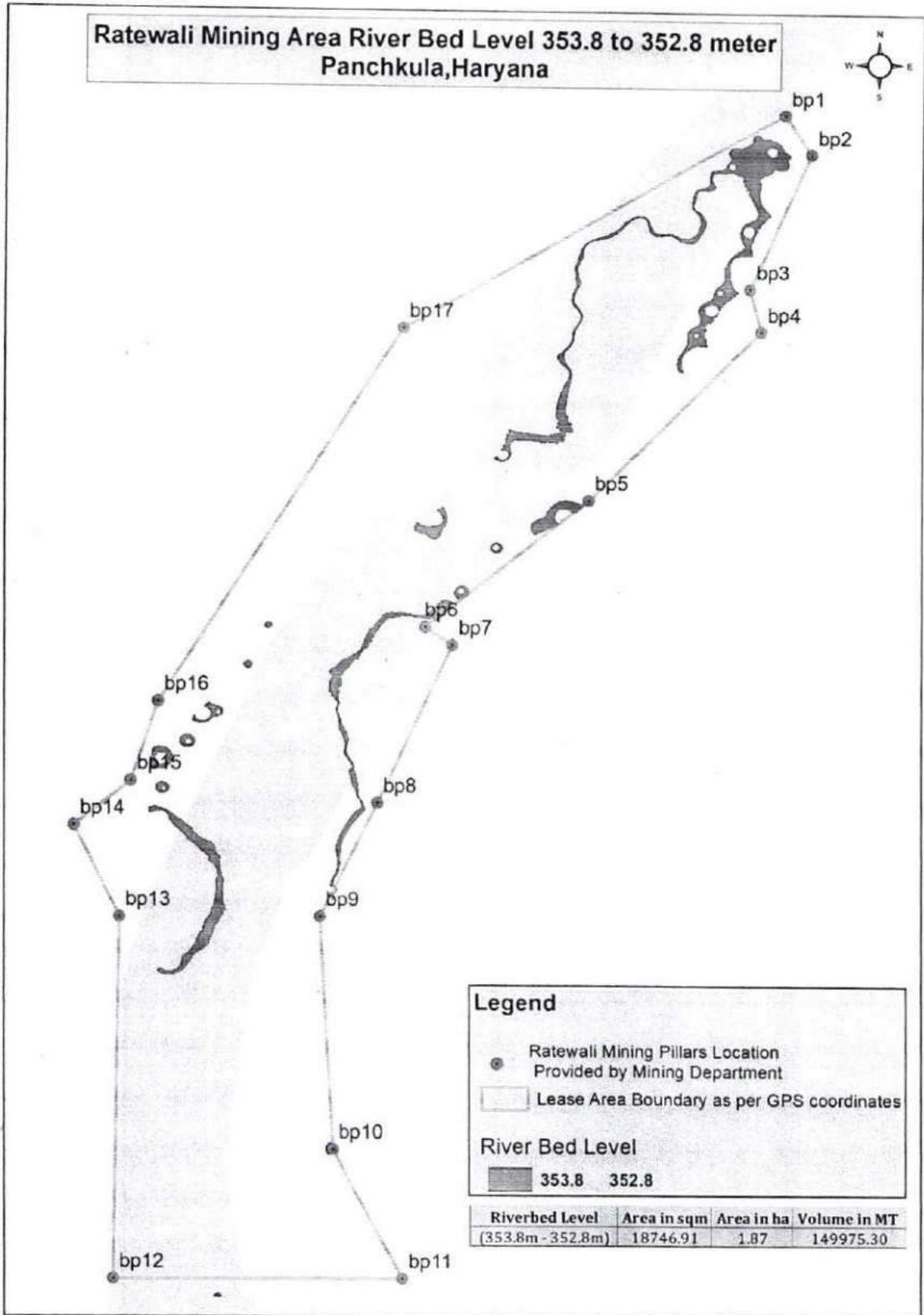


Figure :6 Displaying the area between 353.8-to-352.8-meter contour interval

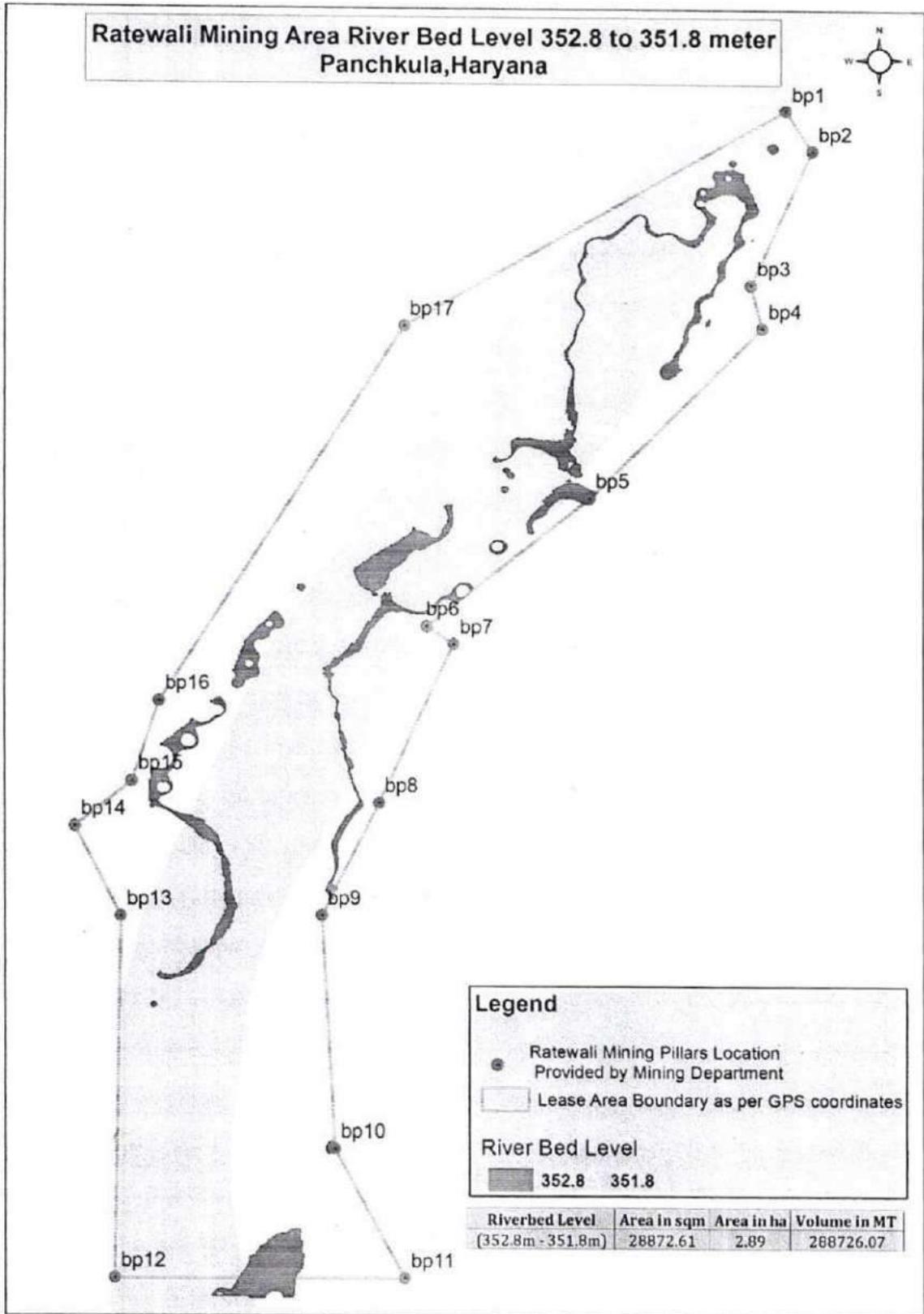


Figure :7 Displaying the area between 352.8-to-351.8-meter contour interval

ANNEXURE 6

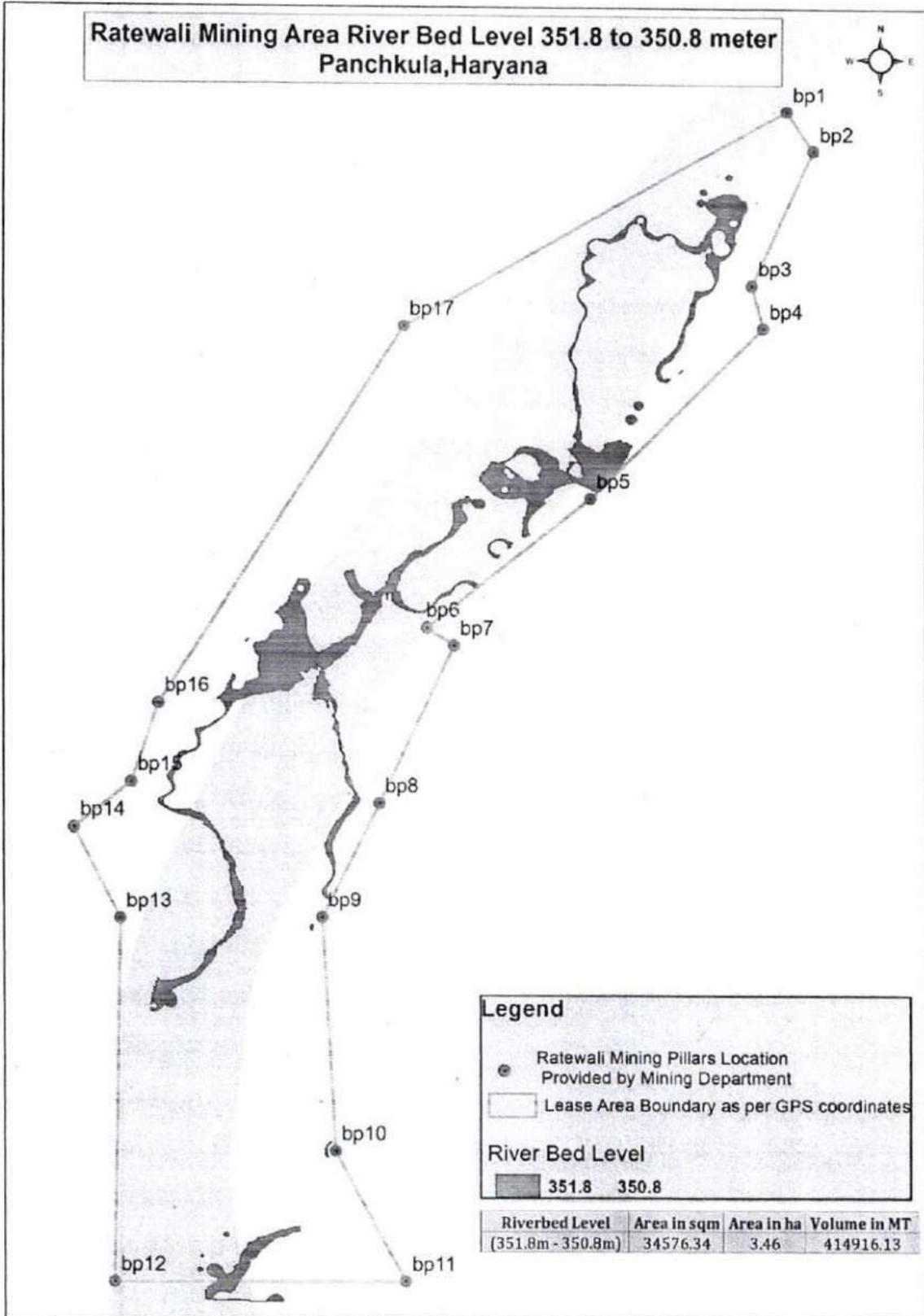


Figure :8 Displaying the area between 351.8-to-350.8-meter contour interval

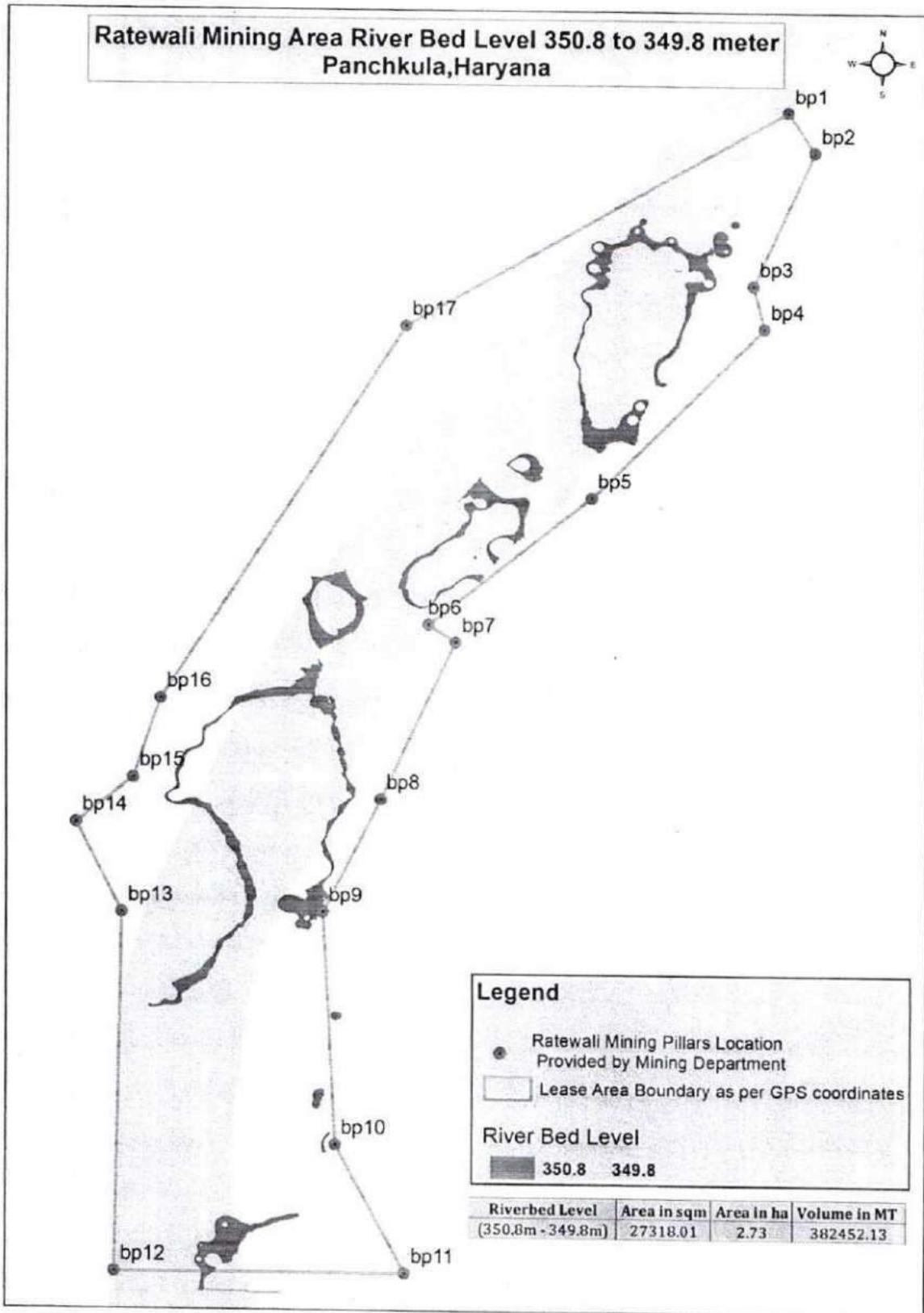


Figure :9 Displaying the area between 350.8-to-349.8-meter contour interval

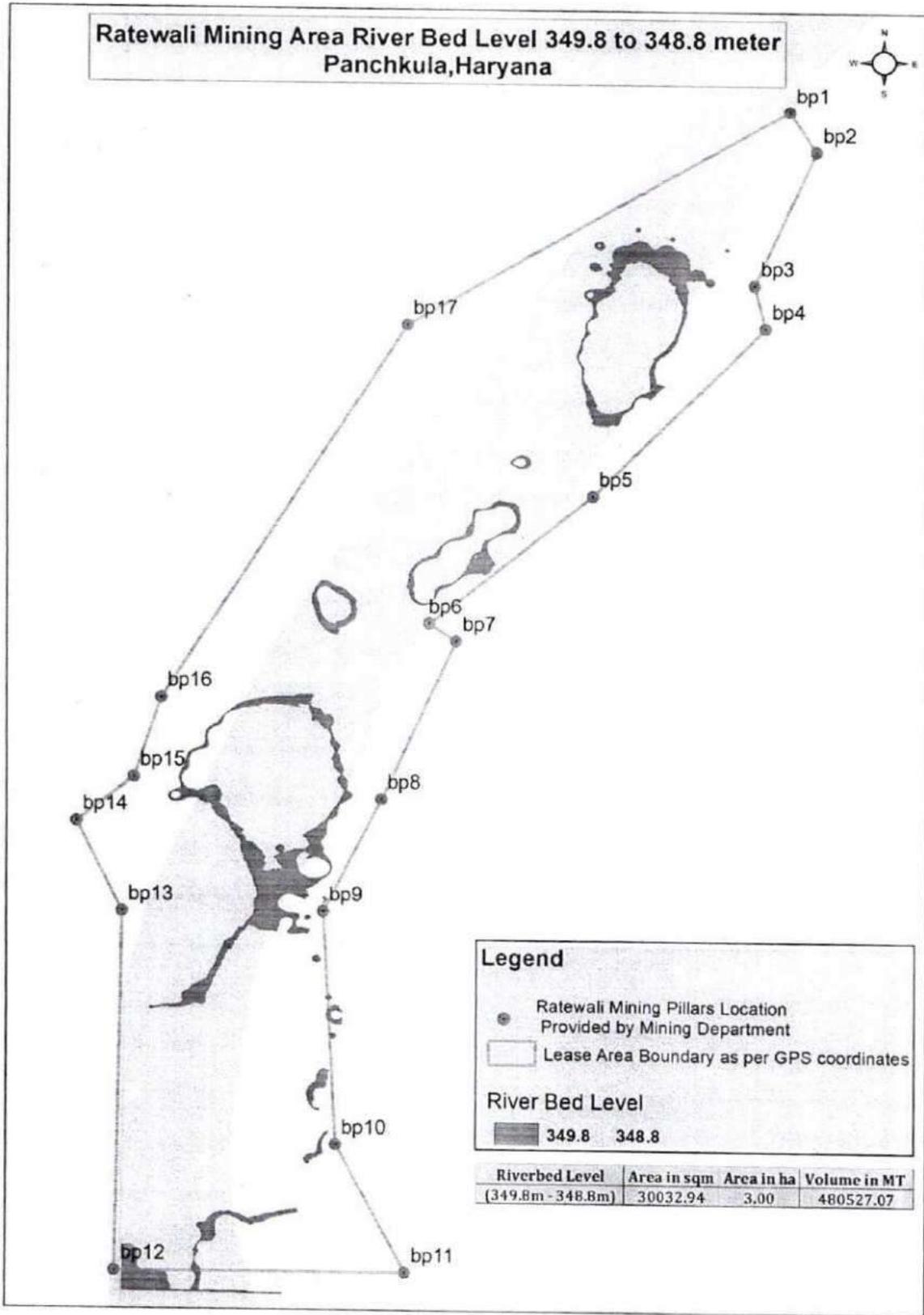


Figure :10 Displaying the area between 349.8-to-348.8-meter contour interval

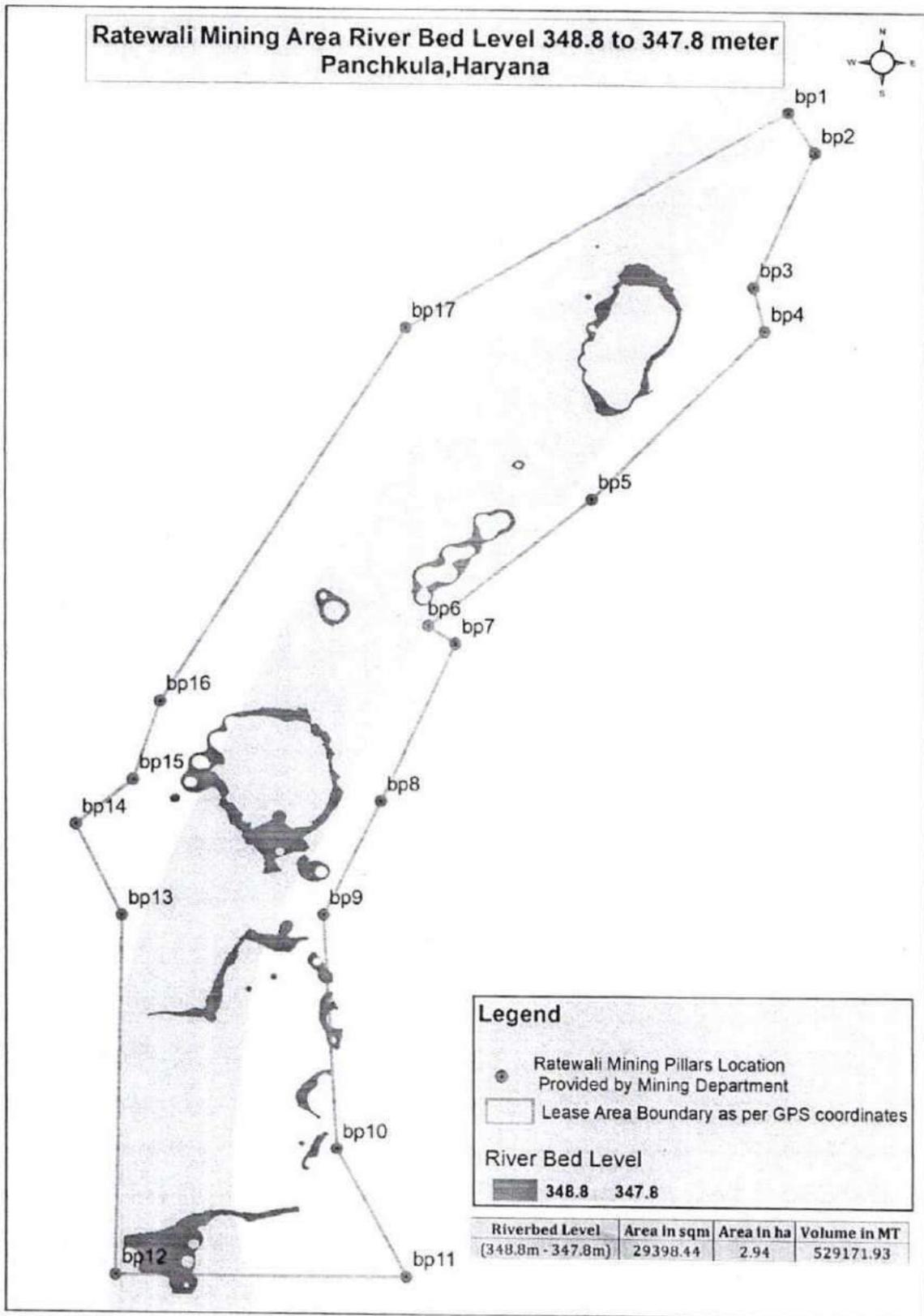


Figure :11 Displaying the area between 348.8-to-347.8-meter contour interval

ANNEXURE 10

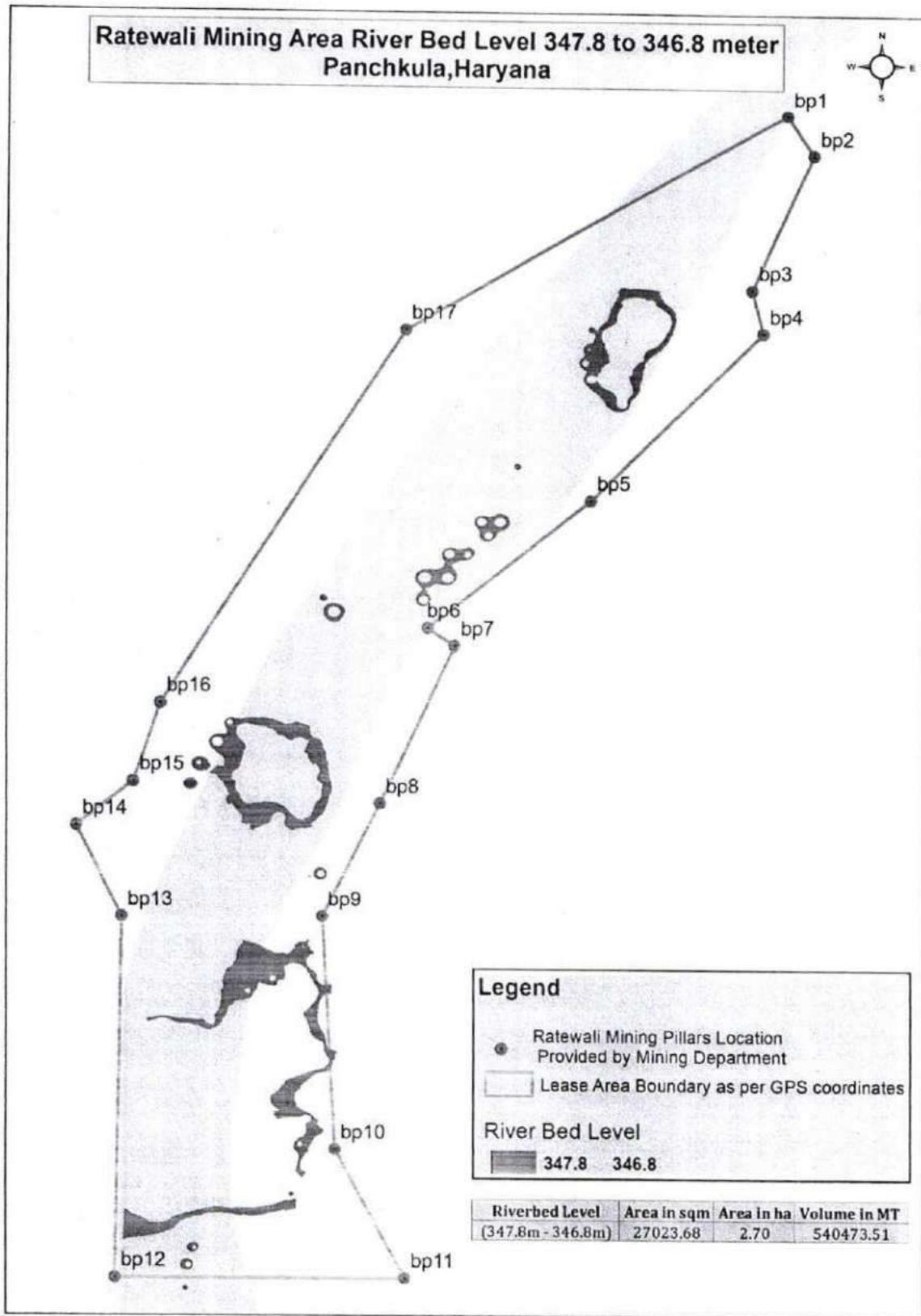


Figure :12 Displaying the area between 347.8-to-346.8-meter contour interval

ANNEXURE 11

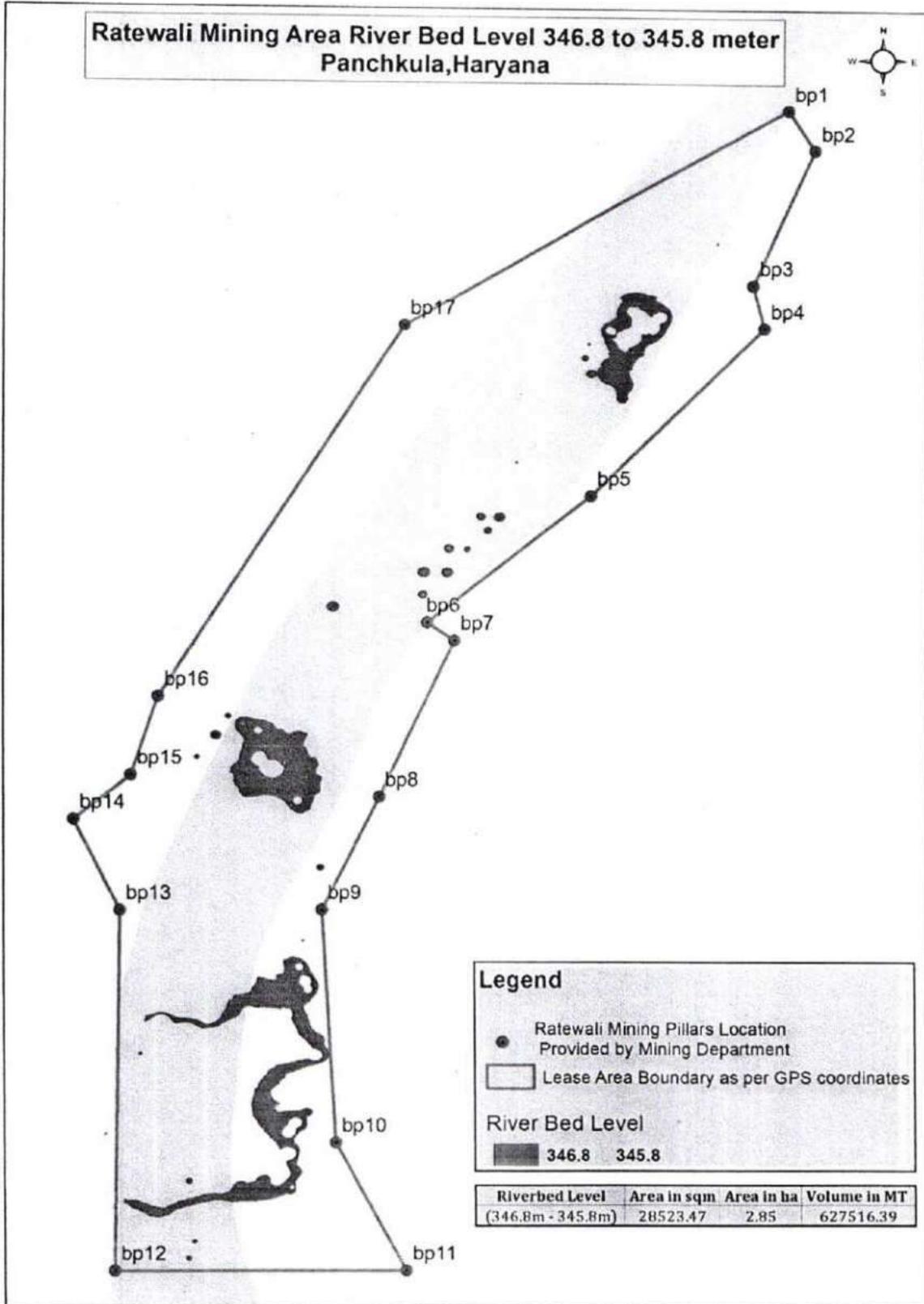


Figure :13 Displaying the area between 346.8-to-345.8-meter contour interval

ANNEXURE 12

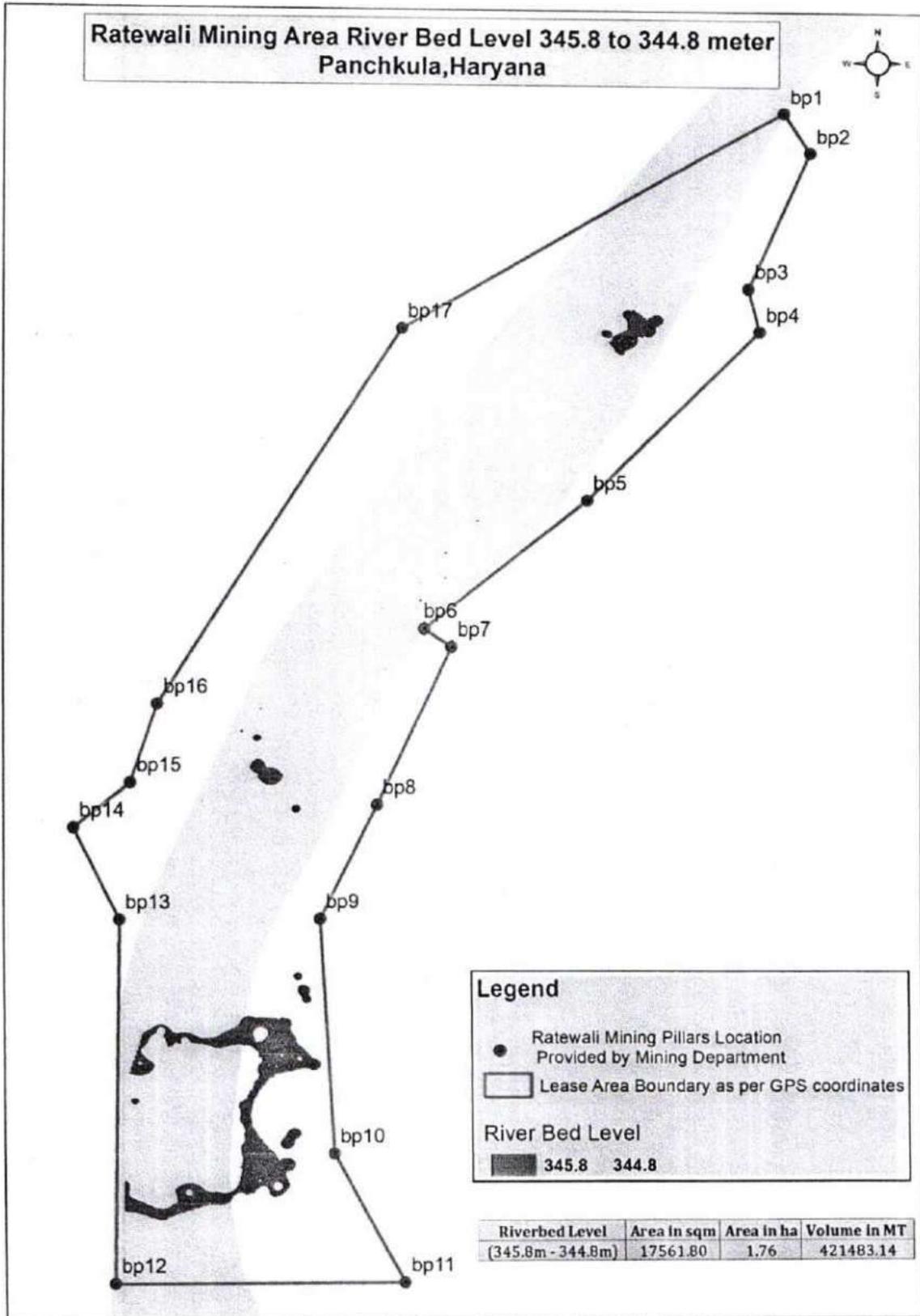


Figure :14 Displaying the area between 345.8-to-344.8-meter contour interval

ANNEXURE 13

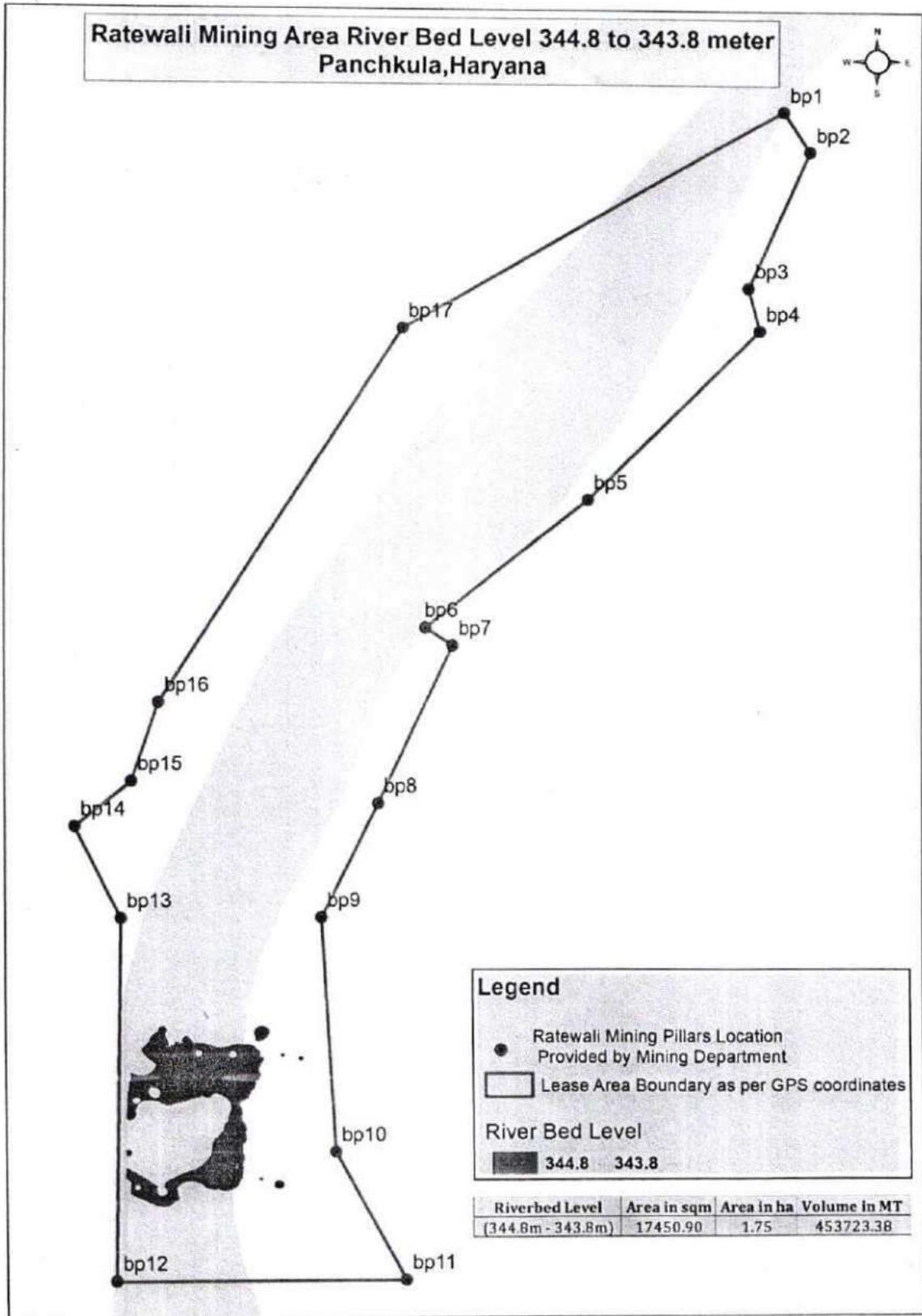


Figure :15 Displaying the area between 344.8-to-343.8-meter contour interval

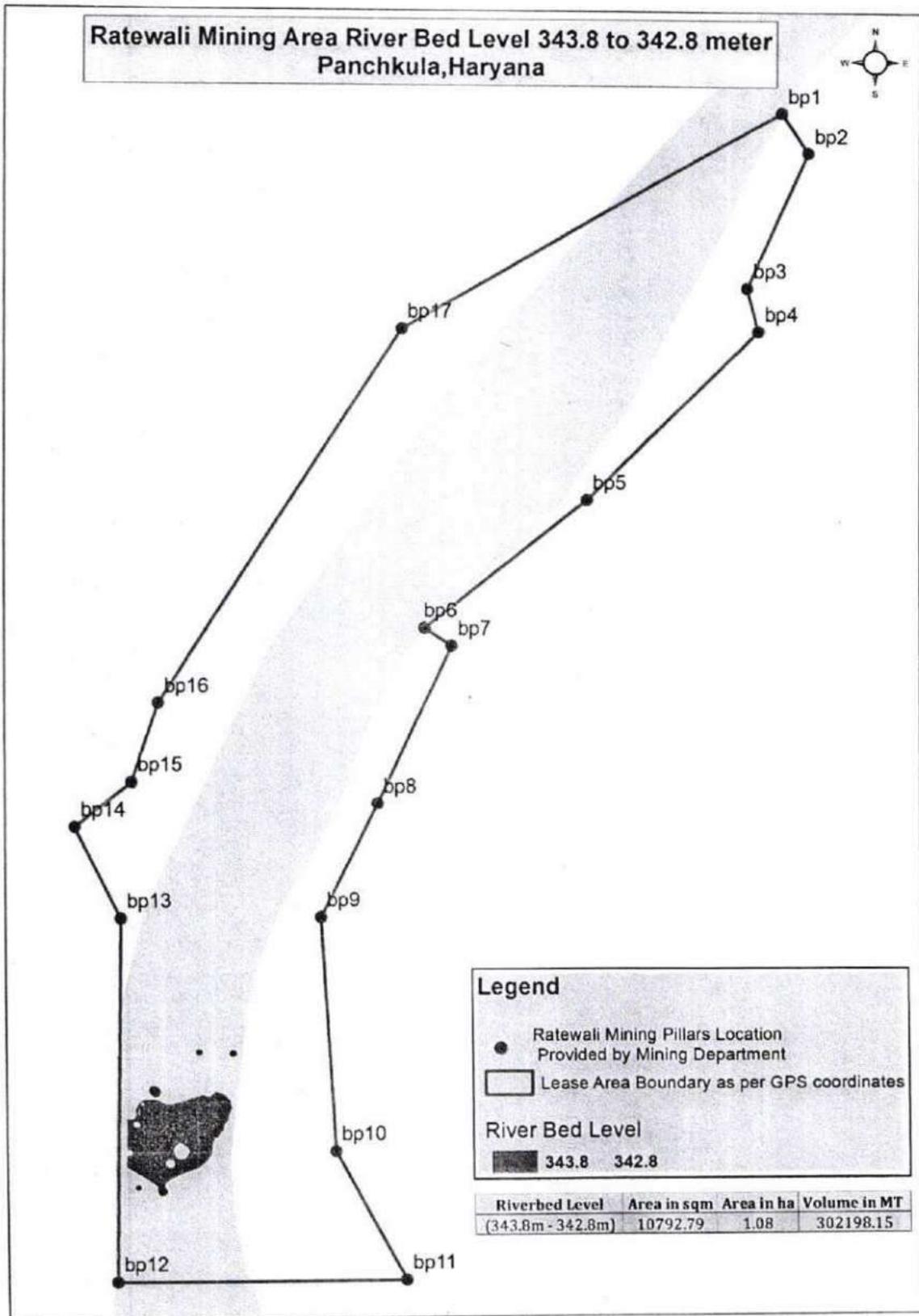


Figure :16 Displaying the area between 343.8-to-342.8-meter contour interval

ANNEXURE 15

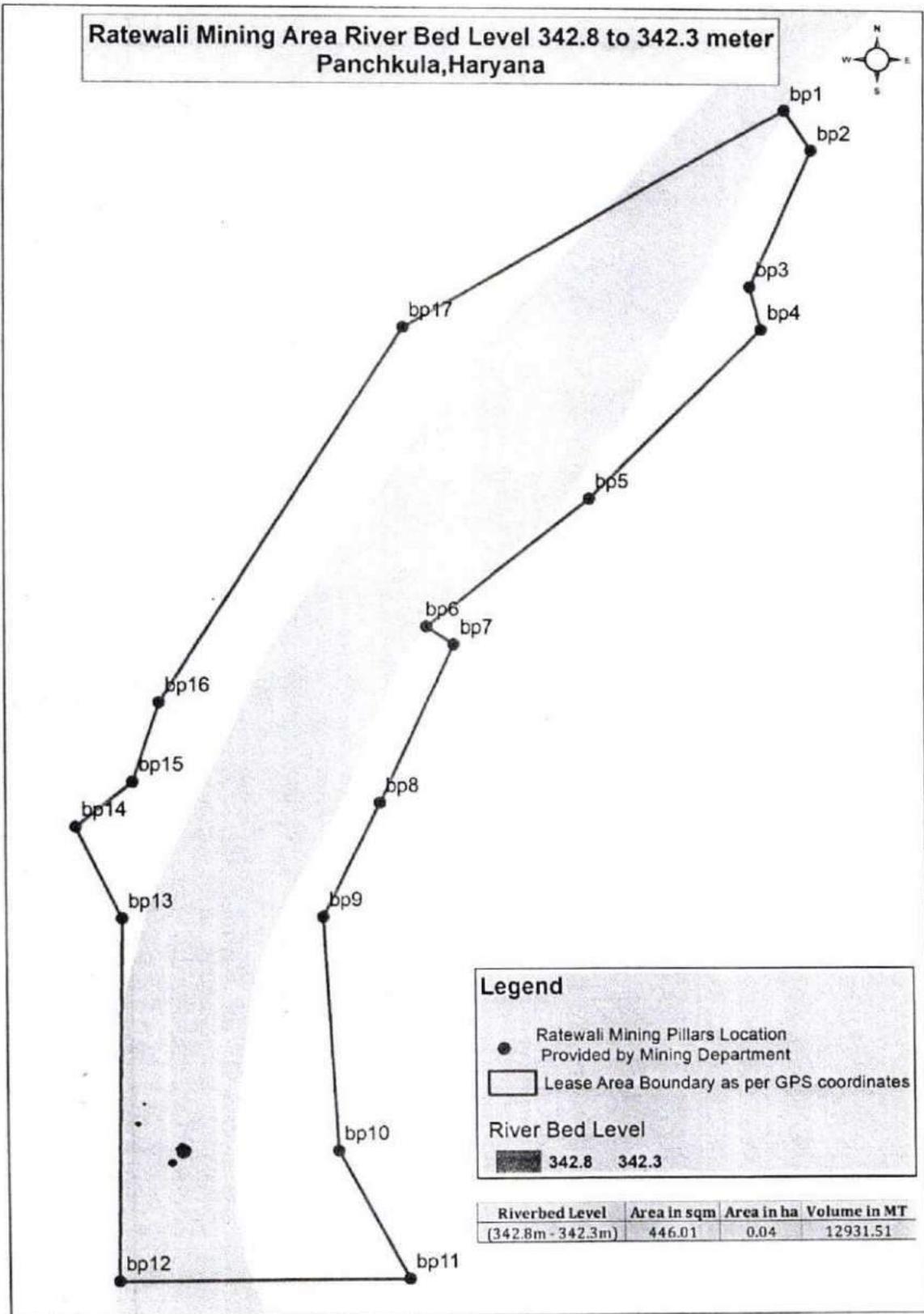


Figure :17 Displaying the area between 342.8-to-342.3-meter contour interval

49

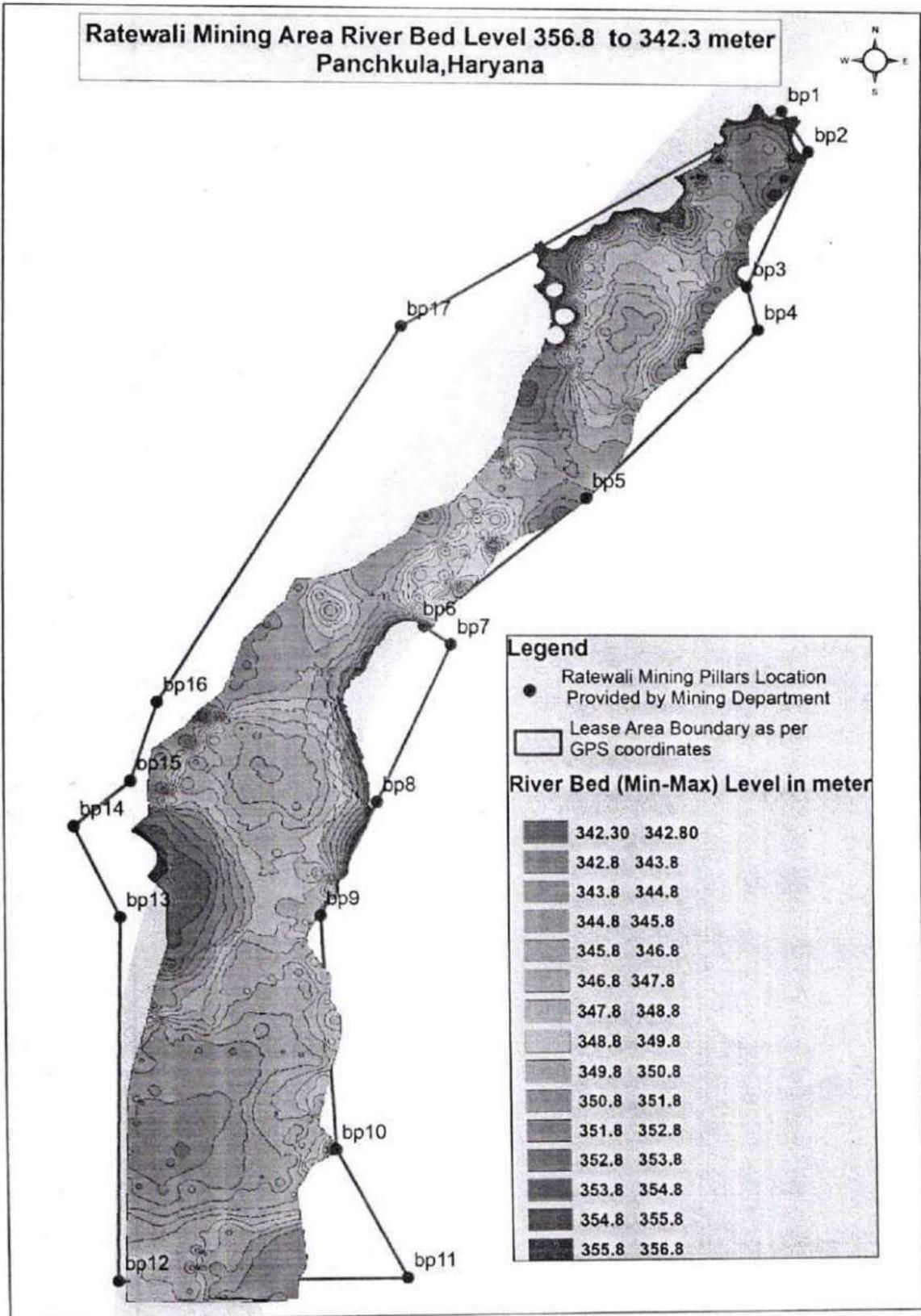


Figure :18 Displaying the area between 356.8-to-342.3-meter contour interval

From

The Director General,
Mines and Geology, Haryana, DHL Square, Plot No. 9,
2nd Floor, Sector-22, IT Park,
Panchkula, Haryana.

To

District Magistrate,
Panchkula.

Memo No. DMG/HY/OA No. 752/2023/ 2050
Dated- 25.04.2024

Subject: Inspection Report of Rattewali Mining Block/ PKL B-10".

On the subject noted above.

2. In this regard, as you aware that in compliance with the orders dated 04.01.2024 passed in OA No.752 of 2023 Narender Kumar Vs. Union of India, the Joint committee so constituted was required to carry out the site inspection, examine the relevant record and submit the report relating to extent of illegal mining by the Contractor Company and extent of environmental process as well as its remedial action. The Committee after visiting the site, sought the report from this office about mining operations being undertaken at present.

3. In this behalf before discussing the findings of the inspection, it is worth to inform you that earlier also the department has imposed fine on M/s Tirupati Roadways, the contractor company of Rattewali block after observing that they had under taken illegal mining. The details of earlier action/penalty imposed are as under:-

- a. On receipt of the complaint by the Anti Corruption Bureau, the contract area was got assessed through HARSAC along with mining officials, in terms of the Quantity of mineral excavated by the contractor company. Observing that the contractor company has extracted a quantity of 47,66,079 MT illegally, a total amount of Rs. 35 crore of revenue loss was reported.
- b. Subsequently, a committee of departmental officers also inspected the contract area on 11.10.2022 wherein it was found by the committee that a quantity of 2,93,923 MT has been illegally excavated other than above.

- c. Thereafter again a team of departmental officer inspected the contract are on 15.06.2023 and again found that the contractor company has illegally extracted a further quantity of 16,44,500 MT by illegal mining.
- d. That in the light of above, following total penalty amount was imposed on the contractor company by the Mining Officer, Panchkula:

Sr. No.	Date of inspection	Quantity (in MT)	Penalty @ 200 per MT
1.	13.05.2022	47,66,079	95,32,16,000
2.	11.10.2022	2,93,923	5,87,84,600
3.	15.06.2023	16,44,500	32,89,00,000
Total		67,04,502	134,09,00,600

4. Now coming to the present OA filed by the applicant, the Hon'ble NGT vide orders dated 04.01.2024 constituted a joint committee comprising of Member Secretary, CPCB, Director Mines and Geology, Member Secretary, Haryana State Pollution Control Board, Representative of IG, Vigilance Department and District Magistrate, Panchkula. The DM Panchkula has been appointed as Nodal Agency for this purpose.

5. In compliance with the above orders, the joint committee visited the mining contract area on 08.02.2024 and thereafter sought the report from the respective/ Mining Department. Acting on the same, the inspection was made by the departmental team, wherein following has been found/observed during the inspection:-

- a. As per elevation readings within river bed taken by the surveyor, the depth under mined area varies from 0.3 to 2m at different points/ location at which readings were noted down and by averaging the same it comes out to be 1.0735m. The area where depth of mining operations has exceeded 1.33 m comes approximately 1.5 hectare from which approx 18,228 MT has been excavated.
- b. Fresh mining was observed on the southern-eastern side of the allocated area. i.e adjoining to the GPS Coordinates reading 76°59'24.808" & 30°38'41.856". The same was not within the river but rather was towards the bank side/ edge though is part of allocated area which accounts to violation of grant.

- c. Apart from this, the members of earlier committee, who inspecting the site earlier on 15.06.2023, observed that mining under point b above is new to them qua being undertaken in virgin area which was not observed in the past by them. Hence apart from the quantity of 67,04,502 MT extracted illegally previously, a quantity of 18,228 MT has been extracted in violation of the permissible depth.

It may be noted that the above findings of the committee is for the current ongoing pre monsoon season. The map as well as section prepared by the surveyor in this behalf is also attached as Annexure-1.

This is for your information and necessary action.



State Mining Engineer,
For Director General, Mines and Geology,
Haryana, Panchkula

982
18/06/24Before the Appellate Authority-cum-Director General,
Mines & Geology Department

Appeal under sub-rule (1) of Rule 109 of Haryana Minor Mineral Concession, Stocking and Transportation of Mineral and Prevention of Illegal Mining Rules, 2012 (hereinafter referred as State Rules, 2012) for setting aside the impugned demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 issued by Mining Officer, Mines and Geology, Panchkula.

M/s Tirupati Roadways.

---Appellant

Vs.

Mining Officer, Mines and Geology, Panchkula.

---Respondent

Present:-

1. Vaneet Soni, Advocate

...on behalf of the appellant.

2. Deepak Kumar, State Geologist.

.....on behalf of the Department.

ORDER

The present appeal has been filed by the appellant Shri Gurpreet Singh Sabharwal through his Counsels Vaneet Soni (P/1239/2011) & Naveen Kumar (P/2459/2014), Advocates, challenging the demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 issued by Mining Officer, Mines and Geology, Panchkula. In the interest of natural justice, appellant was afforded opportunity of hearing on 08.05.2024 and on request of the counsel for the appellant, next date was fixed 22.05.2024. Advocate Vaneet Soni, appeared on behalf of the appellant firm and Deepak Kumar, State Geologist was present on behalf of the department.

2. On asking about the facts of the case, Deepak Kumar, State Geologist submitted that in the e-auction held on 24.05.2017 and 25.05.2017 at the State Government web portal, appellant-M/S Tirupati Roadways gave highest bid of Rs. 11,72,50,000/- per annum for the grant of mining contract of Rattewali Block/PKL B-10, district Panchkula having an area of 45 hectares for extraction of boulder, gravel and sand for a period of seven years. The highest bid of the appellant was accepted by the State Government and a "Letter of Intent" was granted to him on 16.06.2017 so as

to enable him to get environment clearance (EC) from the Ministry of Environment, Forest and Climate Change, Government of India (in short MoEF&CC) under its notification dated 14.09.2006.

3. That, a contract agreement on Form MC-1 of the State Rule 2012 was also executed on 4.12.2018 by the appellant and his solvent sureties with the DGMG on behalf of the State Government. In compliance with condition No 3(xvii) and 3(xviii) of the LOI referred to above appellant obtained environment clearance from the State Environment Impact Assessment Authority (SEIAA) on the recommendations of State Environment Appraisal Committee (SEAC) on 21.02.2020. Its perusal shows that the appellant was permitted to extract 8,39,000/- MT of boulder, gravel and sand per annum. After seeking Consent to Establish and Consent to Operate from Haryana State Pollution Control Board, the appellant commenced mining w.e.f.21.03.2020.

4. That it is pertinent to point out that a surprise checking was conducted by the State Vigilance Bureau, Haryana (ACB) at the site of M/s Tirupati Roadways and during inspection, it was found that the contractor i.e. M/s Tirupati Roadways had misappropriate the Government property and extracted 47,66,079.68 MT of mineral illegally. Further to verify the fact, the then DMG Haryana constituted a committee. The said committee, inspected the mine of the appellant on 23.11.2022 and further detected illegal mining to the tune 18,467 MT (allegedly mining done up to the depth of 1.75 meter instead of permissible 1.33 meter) inside the contracted area and 2,75,456 MT from the area adjoining the contracted area. Further, the said team again inspected the above said area on 15.06.2023 and also found fresh illegal excavation of mineral to the tune of 16,44,500 MT. Mining Officer, Panchkula issued a show cause notice to the appellant firm on 22.8.2023 based on direction of the then Director, Mines and Geology Haryana in light of report given by the inspection team and directed the appellant firm to deposit a sum of Rs 134,09,45,600/- as royalty, price and fine for 67,04,503 MT of boulder, gravel and sand illegally mined by appellant firm. On the said notice, the contractor firm submitted their response on 04.09.2023. The contents in the reply were found not on merits/satisfactory by the Mining Officer, Panchkula therefore the same was rejected by him and the contractor firm was directed to pay the price, royalty and fine against the total quantity which comes out of Rs.1,34,09,45,600/- into Government Treasury within a period 07 days failing which no further opportunity shall be afforded and mining operation of Rattewali Block/PKL B10, District Panchkula would be suspended and the case for termination

of your contract will also be forwarded to the Director, Mines and Geology, Haryana and Government dues shall be recovered under Arrear of Land Revenue Act.

5. Thereafter, the appellant firm filed Civil Writ Petition No. 1254 of 2024 titled as Tirupati Roadways V/s State of Haryana and others before the Hon'ble Punjab and Haryana High Court, Chandigarh and the said case was disposed of by Hon'ble Mr. Justice Sureshwar Thakur and Hon'ble Mrs. Justice Sukhvinder Kaur, the contents of order dated 20.01.2024 exactly reads as under:-

**"CORAM: HON'BLE MR. JUSTICE SURESHWAR THAKUR
HON'BLE MRS. JUSTICE SUKHVINDER KAUR**

**Present: Mr. R.S. Rai, Sr. Advocate with
Mr. Vaneet Soni, Advocate for the petitioner.**

**Mr. Ankur Mittal, Addl. AG Haryana with
Mr. Saurabh Mago, DAG, Haryana.**

SURESHWAR THAKUR, J. (ORAL)

1. Learned State counsel, does not oppose the prayer made today before this Court, by the learned counsel for the petitioner, that the Authority which issued impugned notices, but without at this stage making any insistence, upon the petitioner to make the deposit of the amounts mentioned in the table, as, occurring in Annexures P-16 and P-18, may proceed to afford an opportunity of personal hearing to the petitioner.

2. Consequently, the writ petition is disposed of with a direction to the author of the above annexures, to within a period of 10 days from today, afford an opportunity of personal hearing to the petitioner.

3. Furthermore, after the said opportunity becoming granted to the present petitioner, he shall expeditiously proceed to, in accordance with law, if otherwise deemed fit, re-draw fresh notices.

**(SURESHWAR THAKUR)
JUDGE**

**(SUKHVINDER KAUR)
JUDGE"**

20.01.2024

6. In compliance of above order, the Mining Officer, Panchkula afforded an opportunity of personal hearing to the petitioner/appellant firm on 15.02.2024 wherein

Gurpreet Singh Sabharwal appeared on behalf of the contract firm. He stated response to notice dated 22.08.2023 issued by the department, a reply/response was submitted by the firm vide their letter dated 04.09.2023. The Mining Officer, Panchkula after examining the contents/facts of reply dated 04.09.2023 concluded that same was without any merit, therefore the same was rejected by him in the light of report submitted by the Vigilance Department and inspection reports of the Departmental Committee constituted by the Director, Mines and Geology, Haryana.

7. Aggrieved by the above order of Mining Officer, Panchkula, the contractor firm now through counsels namely Vaneet Soni (P/1239/2011) & Naveen Kumar (P/2459/2014), Advocates has filed the present appeal for setting aside the impugned demand notices dated 22.08.2023, 18.10.2023 and 19.02.2024 passed by the Mining Officer, Panchkula

8. During course of hearing, counsel of the appellant firm stated that they were awarded the contract to mine an area of 45 hectares situated in Rattewali Block/PKL B-10 in District Panchkula. Since 21.03.2020, Tirupati has been carrying out mining in the contract area in accordance with the law.

9. That notice dated 19.02.2024 was given by Mining Officer is not a speaking order and against the principle of natural justice. He (counsel of the appellant) further stated that while deciding the matter, Mining officer, Panchkula did not consider their reply dated 04.09.2023 annexed as Annexure A-4. Para No. 4 to 16 of reply by the appellant are relevant so as to prove their contentions. With this counsel of the appellant said that main contention against the notice dated 19.02.2024 are two fold. One is regarding quantity shown as extracted illegally within contract area beyond depth and second is regarding quantity shown as extracted illegally outside the contract area.

10. With regard to quantity shown as extracted illegally from outside the contract area, he stated that prior to the grant of mining contract, there was rampant illegal mining in the area and qua the same various FIR's had been registered by the office of Mining Officer, Panchkula and the appellant was not even in the picture at that stage. The appellant firm is only responsible for mining within the allocated area and has no relation whatsoever with any mining outside the mining area. Any such mining is illegal and deserves to be investigated to determine the actual culprits involved in the case. Copy of the FIRs registered by the department between the years 2017 to 2020 have also been provided by them at various occasions to the Mining Officer,

Panchkula and they cannot be burdened with the cost of material so excavated by those persons.

11. Further with regards to Vigilance inspection, they claimed that vigilance inspection was done without following scientific measures, it was duly objected and on 5th December 2022 a proper survey report submitted to the Vigilance Department. The counsel for the appellant also stated that they have filed a CWP before Hon'ble High Court qua quashing of the FIR filed by the Vigilance department and same is listed for final arguments on 11.07.2024.

12. They further also stated that appellants were neither issued any notice nor associated with any inspection done by the department. Appellant submitted that with regards to first allegation qua illegal mining outside the contract area, they are in no position to make submissions in respect of this finding as they were/are not concerned with mining outside the mining area and it was the duty of the department to ensure that illegal mining is not carried out.

13. With regards to the second allegation pertain to exceeding the depth prescribed for mining in 7.68 acres of land. No details of the land area were provided along with this notice, neither the copy of the report prepared behind their back was supplied and the extent of illegal mining being alleged is not possible considering that the mined mineral has to be transported on open roads, where nakkas are setup and regular checking are made.

14. That appellant were surprised to receive a letter dated 22nd August 2023 demanding a sum of Rs.134,09,45,600/- which is not only without basis but also exaggerated. Response to this notice requires the segregation of the demand into area which falls within the mining contract and that which falls outside and this has no concern with the mining contract.

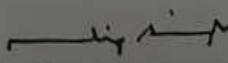
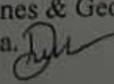
15. Appellant has also submitted a report of Tehsildar/ Patwari wherein it was stated that they are doing mining within pillar erected by them and no illegal mining observed outside.

16. Whereas on asking, Mining Engineer, Head Quarter stated that whenever visit was conducted, the contractor firm was informed by the Mining Officer Panchkula well within time and representatives and their staff were always present during every inspection done and nothing had been done on their back. This is strengthened by the fact that this is an active mine with staff of the appellant always present at the site. The demand notices given are valid in lines with inspection so conducted by

Vigilance department and the department. Further he also submitted that in compliance of direction of Hon'ble National Green Tribunal in OA No.752 of 2023, another inspection was made by a committee constituted by Hon'ble NGT. He further stated that Copy of the FIRs between years 2017 to 2020 submitted by the appellant firm have also been examined and they have no proper details of areas which can relates that the same were being done for the alleged adjoining area for which demands are raised by the Mining Officer. With regards to the report of Tehsildar he stated that the report prepared without ascertaining boundary pillars with any technical instruments.

I have gone through the records and facts placed before me and after giving thoughtful consideration to the facts and record it is being observed the Vigilance department (Now ACB) conducted survey involving surveyors of the department and HARSAC which is an established technical organisation of the State with expertise in Geo surveys. To assist ACB, they prepared a detailed report with depth level maps. However, the same has been challenged by the appellant before Hon'ble High Court but there is no stay qua applicability. With regard to illegal excavation detected near the contract area by department teams, it has not been established that the earlier FIRs submitted by the appellant relates to these specific areas. Therefore, it is clear that all the demand notices given by the Mining Officer were/are valid as they are based on inspection reports of Vigilance (ACB) as well as the department and the appellant firm were well aware of the said inspections. Further since they have not deposited any amount demanded under the impugned notices so as to prove their bonafide therefore their mining operation are suspended with immediate effect with direction to deposit penalty as demanded by the Mining Officer, Panchkula. If the penalty demanded by the mining Officer is not deposited within one month, the contract will be terminated with other consequences as per law.

Panchkula, Dated the
22nd May, 2024

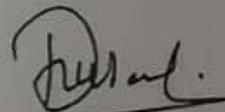

(Mandip Singh Brar, IAS)
Director General, Mines & Geology,
Haryana. 

Endst. No.: DMG/HY/Cont./Rattewali-Block/PKL-10/2017/2489

Dated: 22/05/2024

A copy is forwarded to the following for information and necessary action:-

1. The Deputy Commissioner, Panchkula.
2. Assistant Mining Engineer, Mines and Geology Department, Panchkula with the direction to ensure that no mining activity takes place at the site till further orders.
3. M/s Tirupati Roadways, #3, Sadashiv Properties, Katras Road Bank More, Dhanbad, Jharkhand, Haryana.



State Geologist,
for Director General, Mines & Geology,
Haryana.

Item No. 09

Court No. 1

**BEFORE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 752/2023

Narender Kumar

Applicant

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 19.11.2025

**CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: Mr. Gaurav Kumar Bansal, Ms. Nandita Bansal & Ms. Chandrika
Upadhyaya, Advs. for Applicant

Respondents: Mr. Rahul Khurana, Adv. for Respondent No. 3 to 7
Mr. Saurabh Rajpal & Mr. Vinay Kumar Singh, Advs. for R - 10
Mr. Attin Shankar Rastogi & Mr. Pratyush Singh, Advs. for MoEF & CC
Mr. Anuj Kumar Sharma, Adv. for CPCB (Through VC)

ORDER

1. When the matter was listed on 18.09.2025, learned Counsel appearing for the Respondents No. 3 and 4 had made a submission that the final report from the Haryana Space Applications Centre (HARSAC) was received and same would be placed on record within one week.

2. The Tribunal in the proceedings dated 18.09.2025 had also granted last opportunity to the parties to complete and exchange the pleadings within six weeks.

3. One week period for filing the report and six weeks period for completing the pleadings is over and three months have passed thereafter. Yet the Respondents No. 3 and 4 have not placed on record the final report from HARSAC. A prayer for grant of further two weeks' time has been made

by submitting that the final report of HARSC is to be routed through the Joint Committee, no such statement was made earlier.

4. Hence, in the circumstances of the case noted above, we grant further two weeks' time to Respondents No. 3 and 4 to place on record the final report of HARSAC, subject to deposit of cost of Rs. 50,000/- with the NGT Bar Association within one week.

5. List on 12.01.2026.

Prakash Shrivastava, CP

Dr. A. Senthil Vel, EM

November 19, 2025
Original Application No. 752/2023
dv

Details

Computer No :	4056863	Receipt No :	4056863/2025/DISPATCHER
Subject :	Submission of report on High-Resolution assessment of Rattewali Mining Area.	File No :	
From :	Senior Scientist HARSAC CCS HaU, Campur, Hisar	Designation :	
Main Category :	General	Sub Category :	
Address :	Hisar	Letter Ref. No :	311-314
Letter Date :		Sender Type :	
Delivery Mode :	By Hand	Enclosure/Remarks :	

From
Senior Scientist
HARSAC CCS HAU Campus, Hisar

To
The Director General
Department of Mines and Geology, Haryana
Plot No 09 2nd Floor, DHL Square,
IT Park Sector -22 Panchkula

Letter No. HARSAC/GGM/2025/ 311-314

Dated: 18-08-2025

Subject: Submission of Report on High-Resolution Assessment of Rattewali Mining Area

Respected Sir,

With reference to the subject cited above, please find enclosed herewith the report on High-Resolution Assessment of Rattewali Mining Area. The analysis and findings along with tabulated facts, conclusions and annexures are enclosed from 1 to 127.

Submitted for your information, please.

Senior Scientist

For HARSAC NRI, Gurugram
HARSAC

Copy to:

1. Commissioner, and Secretary, Mining and Geology, Department, Haryana
2. The Director HARSAC, for the necessary information please.
3. The State Geologist, Mines and Geology, Haryana for the necessary information please

Authorised Signatory



HIGH RESOLUTION ASSESSMENT OF RATTEWALI MINING AREA

Rattewali report

ABSTRACT

1. **Proper Survey Report:** Prepared using DGPS, satellite, drone, and revised mining layout plan data (Page no. 1-17).
2. **Extent of Illegal Mining:**
 - ~167k sqm within lease (buffer zone)
 - ~207k sqm outside lease boundary
3. **Total Excavated Mineral:**
 - 11.79 million MT (till May 2022)
 - 0.95 million MT (May 2022–May 2024, drone-based)
4. **Mining Beyond Contract Area:** Confirmed, evident in satellite/drone imagery.
5. **Depth Beyond Permissible Limit:** Mining pits exceeded allowable depth by 9–16 m.



HARSAC, CRID, CCS HAU Campus Hisar
Rattewali Site Report

Executive Summary – Rattewali Mining Area Assessment Report (Based on HARSAC Analysis, August 2025)

This is an official **geo-spatial and volumetric mining assessment** conducted by HARSAC for the **Rattewali mining site (M/s Tirupati Roadways, Panchkula, Haryana)** at the request of the **State Vigilance Bureau** and the **Department of Mines & Geology, Haryana**.

Here are the key highlights:

1. Background

- The assessment was initiated following a **request from the State Vigilance Bureau (SVB), Panchkula** after a surprise check (11.05.2022) revealed excavation beyond permissible limits by **M/s Tirupati Roadways at Rattewali Mining Site, Panchkula**.
- HARSAC conducted a **DGPS survey (May 2022)** and subsequent analyses using **satellite data (2017–2024), drone survey (2024), and revised mining plans (2018)**.
- Despite repeated requests, the **Department of Mines & Geology (DMG)** did not provide complete reference datasets. HARSAC therefore used a combination of official inputs and independent geospatial datasets to ensure objective reporting.

2. Methodology

- **Surveys/Inputs Used:**
 - DGPS survey – May 2022
 - Satellite stereo data – 2019 & 2023
 - Drone data – 2024 (provided by DRIISHYA)
 - Revised Mining Plan (2018)
- **Analysis Covered:**
 - Land use changes (2017–2024)
 - Mining signatures (extent of activity)
 - Volumetric assessment of extracted material
 - Depth-wise and boundary-wise compliance check

3. Key Findings

a) Mining Area

- Lease Area: ~45 hectares
- Actual Mined Area: ~30.84 hectares

b) Excavated Mineral (Up to May 2022)

- **9.07 million MT** (density 2.0)
- **11.79 million MT** (density 2.6, revised plan)
- Of this, only ~2.4 million MT was within permissible limits; the majority exceeded depth restrictions.

c) Excavated Mineral (2019–2024, Satellite + Drone)

- Total: **6.32 million MT**
- Within permissible depth: ~1.38 million MT
- Beyond permissible depth: ~4.95 million MT

d) Depth of Mining

- Permissible depth: **1.33 m (revised)** / earlier 3 m
- Actual observed depth: **9.77 m – 16.37 m beyond permissible limit**

e) Illegal Mining Extent

- **Within lease but beyond 40 m buffer (no-mining zone):** ~166,878 sqm
- **Outside lease boundary:** ~206,812 sqm (2018–2024)

4. Comparative Volumetric Assessment (Highlights)

- Depending on datasets, total extracted mineral ranged from **~0.95 million MT to ~11.9 million MT**.
- Differences arose due to reference elevation changes and revised bulk density values.
- Consistent across methods: **majority of mining exceeded both depth and boundary limits.**

5. Compliance Observations (As Requested by DMG & NGT)

1. **Proper Survey Report:** Prepared using DGPS, satellite, drone, and revised mining plan data.
2. **Extent of Illegal Mining:**
 - ~167k sqm within lease (buffer zone)
 - ~207k sqm outside lease boundary
3. **Total Excavated Mineral:**
 - 11.79 million MT (till May 2022)
 - 0.95 million MT (May 2022–May 2024, drone-based)
4. **Mining Beyond Contract Area:** Confirmed, evident in satellite/drone imagery.
5. **Depth Beyond Permissible Limit:** Mining pits exceeded allowable depth by 9–16 m.

6. Conclusion & Recommendations

- The analysis provides **conclusive evidence of excessive, illegal, and unscientific mining** in the Rattewali block, both in terms of **depth** and **extent (inside buffer & outside lease)**.
- Exact volumes may undergo minor revision once DMG supplies missing benchmark/reference datasets, but **overall findings are robust and consistent**.
- Immediate attention is required from **ACS, Mines & Geology Department** to:
 1. **Finalize reference elevations, permissible limits, and density values.**
 2. **Take enforcement action** against excess and out-of-bound mining.
 3. **Submit factual compliance to Hon'ble NGT (OA No. 752/2023)** using this report.

 **Disclaimer:** HARSAC has acted solely as a **technical facilitator** using geospatial tools and available data. Responsibility for policy enforcement and legal compliance rests with the **Department of Mines & Geology and the project proponent**.

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Rattewali Mining Area Report

Background

The analysis was started after request from Superintendent of Police State Vigilance Bureau, Panchkula, Haryana wide office letter number Spl 01/PS/SVB/PKL dated 12.05.2022 ([Annexure-1](#)). HARSAC measured the volume of material extracted from mines at village Rattewali, by M/s Tirupati Roadways Mining site using Differential Global Positioning System (DGPS) survey data and inputs from Mining and Geology Department. The HARSAC has conducted the DGPS survey at Rattewali mining site on 13.05.2022 along with officials of State Vigilance Bureau, Sr. Surveyor of head office Mines and Geology, and Mining officer Panchkula, Haryana as per their directions and requirements. Location map of Rattewali mining area is presented in [Figure 1](#). Below ([Table 1](#)) displaying result of Surface volume analysis of material extracted from M/s Tirupati Roadways Mining site village Rattewali using DGPS survey data and inputs from Mining and Geology Department and submitted to the concerned wide office letter number HARSAC/GGM/2022/203-205 dated 06-06-2022 is provided in details at [Annexure-2](#).

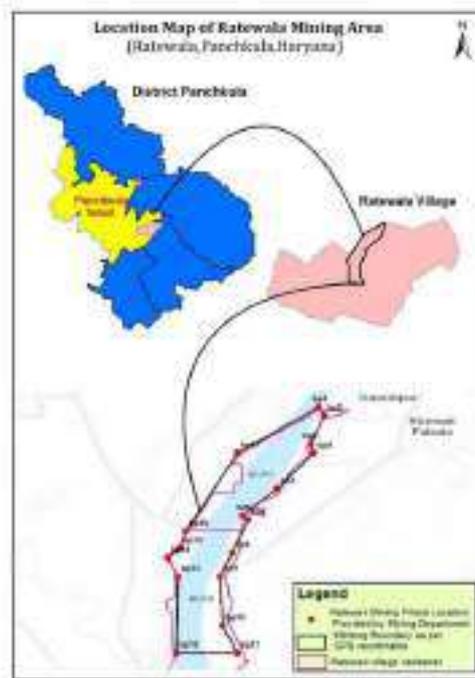


Figure 1: Location map of the Rattewali mining area

Table: 1 Surface Volume analysis of material extracted from M/s Tirupati Roadways Mining site village Ratewala.

A	B	C	D	E	F
Sr. No	Contour Max	Contour Min	Elevation Difference from Existing Level of River Bed	Area in sqm	Volume in MT (E*D*2), here 2 is bulk density as per mining plan
Volume Calculation of mining done up to permissive Level in Riverbed (356.8m - 353.8m)					
1.	356.80	355.80	1.00	8118.71	16237.41
2.	355.80	354.80	2.00	15603.71	62414.83
3.	354.80	353.80	3.00	13888.79	83332.73
			Total	37611.20	161984.97
Volume Calculation below permissive Level (353.8m - 342.303m)					
4.	353.80	352.80	4.00	18746.91	149975.30
5.	352.80	351.80	5.00	28872.61	288726.07
6.	351.80	350.80	6.00	34576.34	414916.13
7.	350.80	349.80	7.00	27318.01	382452.13
8.	349.80	348.80	8.00	30032.94	480527.07
9.	348.80	347.80	9.00	29398.44	529171.93
10.	347.80	346.80	10.00	27023.68	540473.51
11.	346.80	345.80	11.00	28523.47	627516.39
12.	345.80	344.80	12.00	17561.80	421483.14
13.	344.80	343.80	13.00	17450.90	453723.38
14.	343.80	342.80	14.00	10792.79	302198.15
15.	342.80	342.30	14.50	446.01	12931.51
			Total	270743.90	4604094.71
			Over All total	308355.10	4766079.68

A physical meeting was held with worthy/ACS, Mining and Geology Department, Government of Haryana, in his office at Panchkula, on 22 January, 2025, in presence of officials from HARSAC, Mining and Geology department and Lease and it was informed that the mining plan submitted earlier by Lease got revised meanwhile, and a new assessment of extracted volume would be required to understand the actual facts, and volume extracted from the M/s Tirupati Roadways Mining site.

Simultaneously, official communications from the Mining and Geology Department, Government of Haryana have also been done in this regard vide memo no. DMG/HY/PKL/O.A. No. 752/2023/4689, 4881, and 4976 dated 10-10-2024, 24-10-2024, and 4/11/2024 ([Annexure-3](#)).

HARSAC has requested essential inputs from the Mining and Geology Department, Government of Haryana vide several emails dated, **27 January 2025, 04 February 2025, 01 March 2025, 04 March 2025, 11 April 2025, 3 June 2025, 11 June 2025, 20 June 2025, 23 July 2025, 26 July 2025, and 12 August 2025 (Annexure-4)** for the assessment. The partial information was supplied vide Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/376 dated 30-01-2025 and Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/605 dated 19-02-2025 (**Annexure-5**) which was not able to suffice the analysis. Simultaneously, it was decided from the Mining and Geology Department, Government of Haryana that an appropriate-level meeting will be required to take decision in supplying these information's (**Annexure-6**) which have not been done till date. Despite these many circumstances, HARSAC has done analysis taking a pro-active approach and visualising various scenarios using geospatial inputs (**Annexure-12**). The analysis includes land use pattern and related changes during 2017 to 2024, Mining signature-based mining area demarcations, and volumetric analysis of mined material during 2019-2024 through various options available.

Findings

Following has been identified during the geo-enable analysis of Rattewali mining site:

1. The name of the site seems changed from Ratewala (as per Spl 01/PS/SVB/PKL dated 12.05.2022 (**Annexure-1**)) to Rattewali vide office letter number Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/376 dated Panchkula the 30-01-2025 (**Annexure-5**). This may be the spelling mistake in the earlier report submitted by HARSAC or in this letter and may be verified by the Mining and Geology Department, Government of Haryana.
2. Total Mining Area is ≈ 45 hectares as per Revised layout Plan (as obtained from https://environmentclearance.nic.in/auth/ECGeneral_Report.aspx?pid=12277 and **Annexure-5**) and mining activity occurred in 30.84 hectares (**Annexure-2**).
3. The report submitted vide office letter number HARSAC/GGM/2022/203-205 dated 06-06-2022 (**Annexure-2**) were based on availability of datasets and old mining layout plan (**Annexure-7**).
4. The volume 4766079.68 MT (**Annure-2**) is correct based on criteria adopted (DGPS survey) and information supplied by the mining department such as river bed level, old mining layout plan etc.
5. Based on modified/revised mining layout plan (**Annexure-8**) received from the Mines and Geology Department, Government of Haryana, the elevation values range from 356 m to 360.40 m (page 29 of revised mining plan). However, the point-wise elevation as

requested wide mail dated 04-Feb-2025 (**Annexure-4**) was not made available either in the revised mining layout plan or through mail.

6. Necessary information's regarding site details, layout plans, etc. were taken from government of India website https://environmentclearance.nic.in/auth/ECGeneral_Report.aspx?pid=12277 for the current analysis.
7. Analysis (based on DGPS survey data and revised mining layout plan) showed that a total of 9068737 MT material has been extract up to May 2022 if the material density is 2. However, as reported in Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/376 dated Panchkula the 30-01-2025 (**Annexure-5**) the material density is now to be considered as 2.6 hence the total material extract is 11789358 MT (**Table 2**).
8. The increase in quantity of material extracted was due to change in reference elevation as supplied by Mining and Geology Department varies between 358 m to 376 m, which was earlier used 356.8 m (only single point of downstream location).

Table 2: Volume analysis as per revised mining layout plan up to May 2022

A	B	C	D	E	F	G
Sr. No	Reference Contour (2018)	Contour Min (2022)	Elevation Difference from Existing Level of Riverbed (as in mining plan)	Area in sqm	Volume in MT(E*D*2), here 2 is bulk density as per mining plan	Volume in MT(E*D*2.6), here 2.6 is bulk density as per revised mining plan
1	368.3	355.8	12.5	8118.7	202458.0	263195.5
2	365.9	354.8	11.1	15603.7	345991.9	449789.5
3	366.4	353.8	12.6	13888.8	349098.2	453827.6
4	367.2	352.8	14.4	18746.9	541563.4	704032.4
5	364.6	351.8	12.8	28872.6	739225.8	960993.5
6	365.2	350.8	14.4	34576.3	994956.2	1293443.0
7	364.6	349.8	14.8	27318.0	807743.9	1050067.1
8	363.6	348.8	14.8	30032.9	890347.7	1157452.0
9	362.6	347.8	14.8	29398.4	869400.9	1130221.2
10	362.9	346.8	16.1	27023.7	869955.3	1130941.8
11	362.6	345.8	16.8	28523.5	955640.4	1242332.5
12	361.0	344.8	16.2	17561.8	567650.1	737945.1
13	359.5	343.8	15.7	17450.9	547629.7	711918.6
14	360.0	342.8	17.2	10792.8	371256.4	482633.4
15	360.0	342.3032	17.7	446.0	15819.0	20564.7
	Total				9068736.8	11789357.9

9. Out of the total 9068736.8 MT material (with reference to material density 2), 1850130.62 MT was within permissible limit (within 3 m) and 7218606.33 MT was

beyond permissible limit. If the permissible depth limit is fixed to 1.33m, the material beyond the permissible limit would be 8248512.38 MT with material density 2.

10. When the revised material density was being used (i.e. 2.6 instead of 2 as used in earlier assessment) along with revised mining layout plan, the total material extracted was estimated to be 11789358 MT out of which 2405169.81 MT was within permissible limit and 9384188 MT was beyond permissible limit (i.e. allowed depth 3 m). Details are provided in **Table 2 and Table 3**.
11. This was measured to be 4766079.67 MT (with reference to material density 2) as a total in earlier report, where 161984.97 MT was within permissible limit and 4604094.71 MT beyond permissible limit. In this case if the material density is considered 2.6, the total material extract would be 6195903.6 MT.
12. The difference in both these measurements is due to the change in riverbed level as provided in the revised mining layout plan (358m to 376m) and material density (2.6) as suggested by Mining and Geology department.

Table 3: Volume extracted beyond permissible limit at each contour interval up to May 2022.

A	B	C	D	E	F	G	H
Sr. No	Reference Contour	Contour Min	Elevation Difference from Existing Level of Riverbed (Reference Elevation-3)	Area in sqm	Volume in MT(E*D*2.6), here 2.6 is bulk density as per mining plan	Elevation Difference from Existing Level of Riverbed (Reference Elevation-1.33)	Volume in MT(E*G*2.6), here 2.6 is bulk density as per mining plan
1	368.3	355.8	9.5	8118.7	199869.5	11.17	235783.285
2	365.9	354.8	8.1	15603.7	328080.6	9.77	396365.187
3	366.4	353.8	9.6	13888.8	345495.1	11.27	406969.618
4	367.2	352.8	11.4	18746.9	557806.5	13.07	637057.156
5	364.6	351.8	9.8	28872.6	735787.2	11.47	861038.677
6	365.2	350.8	11.4	34576.3	1023747.5	13.07	1174971.83
7	364.6	349.8	11.8	27318.0	836986.6	13.47	956730.996
8	363.6	348.8	11.8	30032.9	923195.1	13.47	1051812.22
9	362.6	347.8	11.8	29398.4	900913.4	13.47	1029590.76
10	362.9	346.8	13.1	27023.7	920157.2	14.77	1037764.13
11	362.6	345.8	13.8	28523.5	1019849.4	15.47	1147272.22
12	361.0	344.8	13.2	17561.8	600963.1	14.87	678974.312
13	359.5	343.8	12.7	17450.9	575801.5	14.37	652000.526
14	360.0	342.8	14.2	10792.8	398449.6	15.87	445332.514
15	360.0	342.3	14.7	446.0	17085.8	16.37	18982.652
	Total				9384188.0		10730646

13. Reference contour represents the mean value of contours from revised mining layout plan 2018 within contour interval of one meter and Contour min is minimum value of contour for that interval. A value of 3 meter has been subtracted from all the elevation difference values to segregate the total material in to permissible limit and beyond permissible limit because it has been allowed depth as per earlier communication. Since, in revised communication the permissible limit of depth was 1.33m, a separate analysis for material extracted beyond limit has been done and presented in **Table 3**. Taking this revised depth limit the total material extracted was found to be 10730646.1 MT.
14. Further HARSAC has procured satellite data to examination reference elevation values and analyse the required points raised vide Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/376 dated 30-01-2025 and Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/605 dated 19-02-2025 (**Annexure-5**). The stereo-satellite data of 2019 and stereo-satellite data of 2023 were used to generate topography of the Rattewali site including DSM and DTM (**data specifications are provided in Annexure-9**).
15. The analysis done only based on satellite measurements (Stereo-satellite data of 2019- reference, and 2023- post mining) showed 5718173 MT of total material extracted out of which 1220736 MT were within permissible limit and 4497437 MT beyond permissible limit (**Table 4**).
16. The volumetric analysis between satellite data of 2019 and DGPS survey data (2022) have also been done and a total of 6154485 MT material were found to be extracted during 2019 to 2022 out of which 3400918 MT were beyond permissible limit (i.e. 1.33m) and 2753567 MT were within permissible depth limit (i.e. 1.33m).

Table 4: Satellite (2019) vs. Satellite (2023) measurement comparison

SL. No	Parameters of comparison	Results (limit 1.33 m)	Results (limit 3 m)
1	Year of Comparison	2019-2023	2019-2023
2	Data Compared	Satellite vs Satellite	Satellite vs Satellite
3	Total Volume (Cubic Meter)	2199297	2199297
4	Volume Within Permissible Limit (Cubic Meter)	469514	1059065
5	Volume Beyond Permissible Limit (Cubic Meter)	1729783	1140233
6	Total Material Extracted (MT)	5718173	5718173
7	Total Material Extracted Within Permissible Limit (MT)	1220736	2753568
8	Total Material Extracted Beyond Permissible Limit (MT)	4497437	2964605

Drone/High resolution Satellite Data-Based Analysis

17. A fresh Drone-based analysis was suggested by the Mining and Geology Department, Government of Haryana wide office letter 5682/MA/MC-4, dated 26-04-2024 (**Annexure-10**). The images data in this regard has been submitted to the Department by DRIISHYA (**Annexure-11**).
18. Now the Mining and Geology Department, Government of Haryana has requested HARSAC to submit a report "Regarding analysis of survey report conducted by DRIISHYA in the matter of OA. No- 752/2023 titled as Narender Kumar V/s Union of India and Ors" vide office memo no. DMG/HY/PKL/O.A. No. 752/2023/489 dated Panchkula the 10/02/2025 (**Annexure-3**).
19. In this memo, the HARSAC has been requested following requirements:
 - a. Proper survey report
 - b. Extent of illegal mining
 - c. Total excavated mineral by the project Proponent, M/s Tirupati Roadways, Village Ratiewali, Panchkula,
 - d. Mining beyond the contract area
 - e. The depth of mining beyond the permissible depth
20. It is again to be mentioned here that the required information's have not been shared with HARSAC by the mining department till date hence a delay has been occurred. However, HARSAC has procured satellite data proactively and analyse the points requested vide office memo no. DMG/HY/PKL/O.A. No. 752/2023/489 dated Panchkula the 10/02/2025 (**Annexure-3**) in comparison to the drone data provided by Mining and Geology Department. The same analysis has also been done for Drone data and elevation values provided in the revised mining layout plan and separate results are presented in respective sections (**Point no. 26, Table 8**).
21. Based on the analysis of drone data provided by Mining and Geology Department, Government of Haryana in comparison to the revised mining plan and satellite data procured by HARSAC following has been observed:
 - a. The mining beyond defined area (40 meters inside the mining lease boundary i.e. $\frac{1}{4}$ of the river width as defined in sustainable sand mining management guideline 2016 of government of India at page no. 123 available at https://www.greentribunal.gov.in/sites/default/files/news_updates/1722230358_pagenumber.pdf) has been done, from 2019 to 2024 as identified in satellite-based mining signature. The year-wise area mapped showed variable spatial coverage (**Figure 2 a and b**). In year 2020 the mining signatures were covering an

area of 12167.54 Sqm. Subsequently, the area increases during 2021 and reaches up to 44901.40 Sqm in addition to the area in 2020. The mining signatures were covering an area of 43625.71 Sqm during 2022, 62310.92 Sqm during 2023, and 3872.32 Sqm during 2024 (Table 5). The Northern part where mining pits and vehicles were visible on the satellite images of May 2023 showed filling of pits in 2024 due to monsoon flow of material (Figure 2).

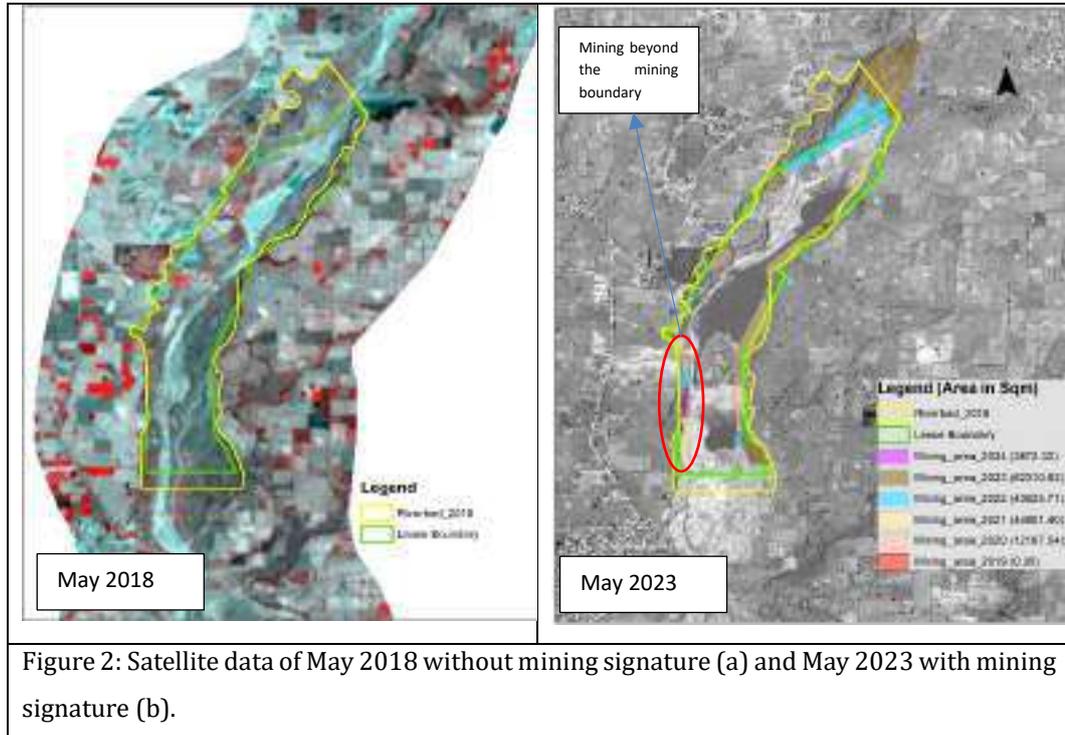


Figure 2: Satellite data of May 2018 without mining signature (a) and May 2023 with mining signature (b).

Table 5: Area (Sqm) coverage of mining signatures beyond permissible limit i.e. beyond 40 meters inside of the mining lease boundary (to be defined as no mining Zone)

Year	Month of Analysis	Area (Sqm) Showed Mining Signatures beyond limit
2020	November	12167.54
2021	May and Nov.	44901.4
2022	May and Nov.	43625.71
2023	May and Nov.	62310.92
2024	May and Nov.	3872.32
	Total	166877.89

- b. It is also depicted that the depth crosses the limit as permitted in the revised mining plan i.e. 1.33 m which indicates that the mining beyond permissible depth has been done (Table 3).

- c. **Total excavated mineral in** Village Ratiewali, Panchkula, is 9384188.0 MT during Nov 2018 to May 2022 (based on revised mining layout plan and DGPS survey with permissible depth of 3m), and 947885 MT during May 2022 to May 2024 (based on DGPS survey 2022, and Drone survey 2024 with permissible depth of 3 m).
- d. However, based on satellite measurements (stereo-satellite data 2019 and 2023) the material extracted were varying in comparison to the measurements of 2022 due to monsoon filling of material. **Table 6** below showed a comparative assessment totally based on satellite (reference) and drone (post mining).

Table 6: Comparative analysis and results from satellite (2019) and drone (2024) measurements.

SL. No	Parameters of comparison	Results (1.33 m)	Results (3 m)
1	Year of Comparison	2019-2024	2019-2024
2	Data Compared	Satellite vs Drone	Satellite vs Drone
3	Total Volume (Cubic Meter)	2430934.231	2430934.231
4	Volume Within Permissible Limit (Cubic Meter)	469084.6154	1058096.154
5	Volume Beyond Permissible Limit (Cubic Meter)	1961849.615	1372838.077
6	Total Material Extracted (MT)	6320429	6320429
7	Total Material Extracted Within Permissible Limit (MT)	1219620	2751050
8	Total Material Extracted Beyond Permissible Limit (MT)	5100809	3569379

22. **Mining beyond the contract area** is visible in satellite images (**Figure 3 and 4**). The area under mining signatures is tabulated at **Table 7**. Other details obtained from geo-enable analysis are provided at **Annexure-12**.

Table 7: Mining signature area outside the lease boundary in various years (2018-2024)

Sl No.	Year	Cumulative Area (Sqm)
1	2018	0.0
2	2019	0.0
3	2020	0.0
4	2021	43439.86
5	2022	50248.42
6	2023	204423.72
7	2024	206811.58

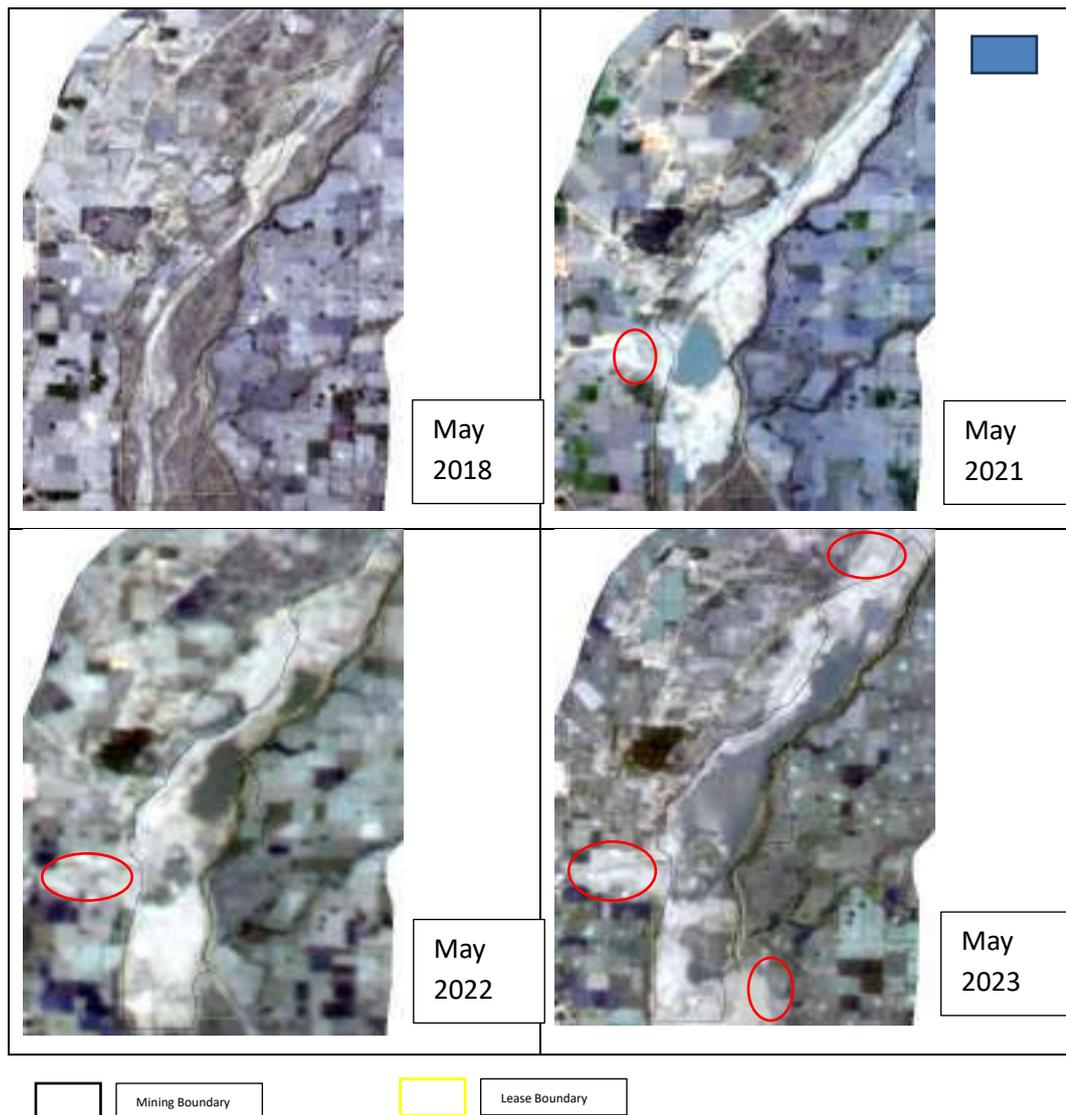


Figure 3: Satellite data showing mining signatures beyond the lease boundary

23. The satellite and drone-based analysis showed 6320429 MT material has been extracted during 2019 to 2024 out of which 1219620 MT were within permissible depth limit (i.e. 1.33m) and 5100809 MT beyond permissible limit.
24. In addition to the above, details of satellite/drone images, satellite-based analysis, and data along with specifications and corresponding results are provided at [Annexure-12](#). The analysis provides clear cut evidence of mining activities over the Rattewali site both in terms of extent and depth.

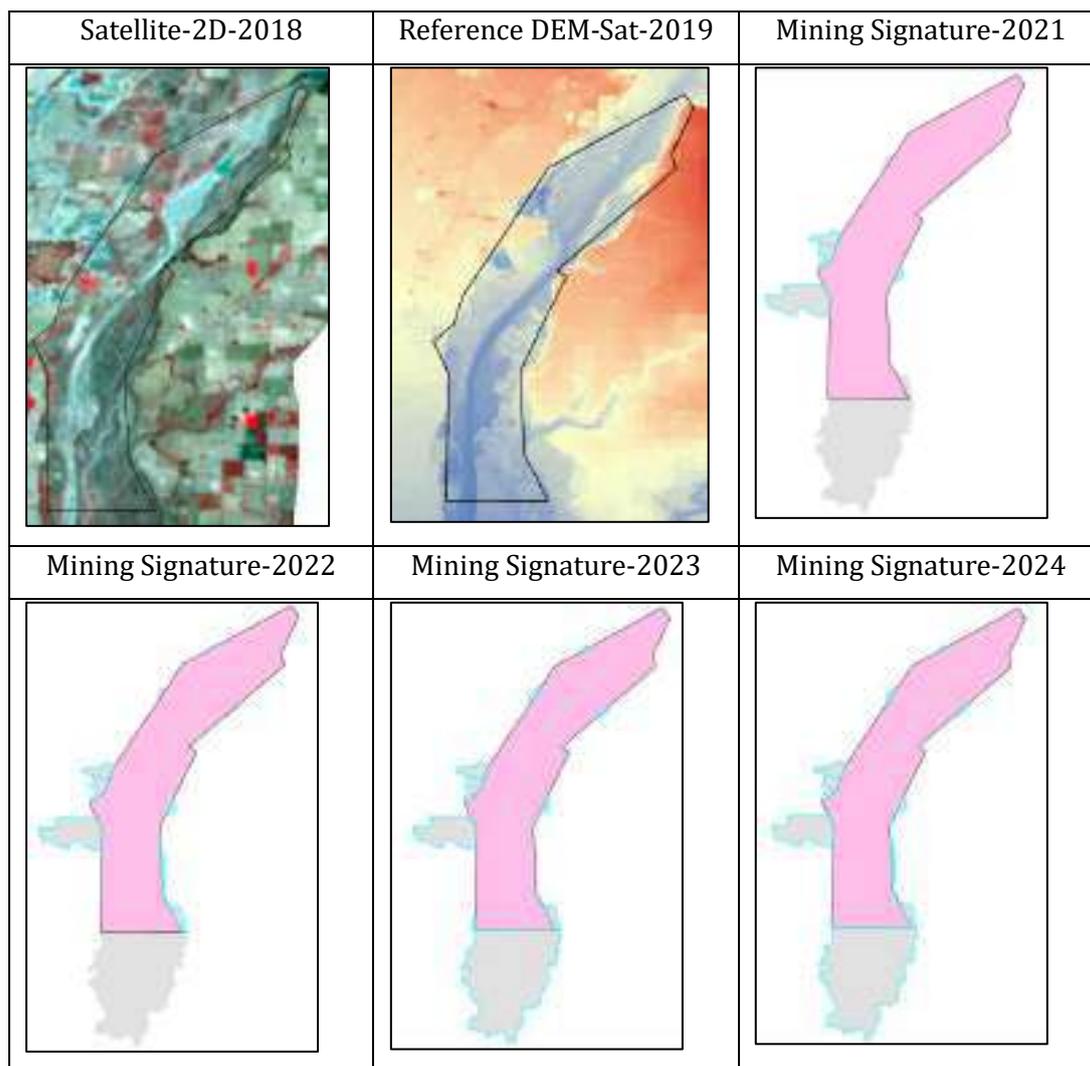


Figure 4: Progression of mining activities outside lease boundary during 2018 to 2024

25. The analysis was done based on various available options as mentioned below, in the absence of correct, concrete and concise information from the Mining and Geology Department:

- a. Reference elevation of revised mining layout plan vs DGPS survey of Year 2022.
- b. Reference elevation of revised mining layout plan vs. satellite image of Year 2023.
- c. Reference elevation of revised mining layout plan vs. Drone image of year 2024.
- d. Satellite image-based elevations of 2019 and 2023.
- e. Elevation values of satellite image of 2019 and elevation obtained from drone images of 2024.
- f. Elevation values of DGPS survey (2022) and Drone data (2024)

- g. Elevation values of Sateelite-2019 and DGPS survey (2022)
- h. Elevation Values of satellite image of 2023 and elevation obtained from drone images of 2024
- i. Elevation Values of DGPS survey 2022 and elevation obtained from satellite image of 2023

26. Volumetric results obtained through various options mentioned above are provided in Table 8 below:

Table 8: Quantity of materials extracted as assessed through various options

Sl. No.	Options	Material extracted (Total) in MT	Material Extracted (Within Permissible limit) in MT with 3m depth limit	Material Extracted (Beyond Permissible limit) in MT with 3m depth limit	Material Extracted (Within Permissible limit) in MT with 1.33m depth limit	Material Extracted (Beyond Permissible limit) in MT with 1.33m depth limit
1	Reference elevation of revised mining plan vs DGPS survey of Year 2022	11789358	2405170	9384188	1058712	10730646
2	Reference elevation of revised mining plan vs. satellite image of Year 2023	11339399	2515156	8824243	1221205	10118194
3	Reference elevation of revised mining plan vs. Drone image of year 2024.	11934252	2744739	9189513	1219858	10714394
4	Satellite image-based elevations of 2019 and 2023	5718173	2753568	2964605	1220736	4497437
5	Elevation Values of satellite image of 2019 and elevation obtained from drone images of 2024	6320429	2751050	3569379	1219620	5100809
6	Elevation values of DGPS survey (2022) and Drone data (2024)	947885	-----	947885	-----	947885
7	Elevation values of Satellite-2019 and DGPS survey (2022)	6154485	2753567	3400918	1220736	4933749
8	Elevation Values of satellite image of 2023 and elevation obtained from drone images of 2024	917865	-----	917865	-----	917865
9	Elevation Values of DGPS survey 2022 and elevation obtained from satellite image of 2023	-436433	-----	-----	-----	-----

Conclusions

27. In absence of required information, HARSAC has done analysis based on available datasets from satellite and drone measurements, and partial information's provided by Mining and Geology Department. There would be minor changes in the estimates once the correct required information's are provided to HARSAC.

28. As requested by the mining and geology department, Government of Haryana points wise-conclusive remarks are provided below in [Table 9](#).

Table 9: Point-wise requirement of Mining and Geology Department and delivery by HARSAC

Sl. No.	Requirement of Department of Mines and geology	Action and results by HARSAC
1	Proper survey report	<ul style="list-style-type: none"> Report is prepared based on various datasets including, revised mining plan (2018), DGPS survey (2022), and satellite data of 2017-2024, and drone data of 2024 (Page No. 1-17).
2	Extent of illegal mining	<ul style="list-style-type: none"> Year-wise assessment of mining signature was done through Planet scop daily data and significant amount of extent has been observed as illegal. A total of 166877.89 Sqm area were found as illegal (Table 5). Simultaneously a total of 206811.58 Sqm area was found outside the lease boundary (Table 7). This may be ensured by MO weather this was done by project Proponent, M/s Tirupati Roadways or someone else.
3	Total excavated mineral by the project Proponent, M/s Tirupati Roadways, Village Ratiewali, Panchkula	<ul style="list-style-type: none"> As per revised plan the total mineral excavated was 11789357.9 MT out of which 2405169.81 MT is within limit and 9384188.23 MT beyond permissible limit up to May 2022 (Table 2, Table 3, and Table 8). This may be ensured by MO

		<p>weather this was done by project Proponent, M/s Tirupati Roadways or someone else.</p> <ul style="list-style-type: none"> The total excavated mineral is 947885 MT during May 2022 to May 2024 as obtained from Drone-based analysis (Table 8). This may be ensured by MO weather this was done by project Proponent, M/s Tirupati Roadways or someone else.
4	Mining beyond the contract area	<ul style="list-style-type: none"> Yes, the mining beyond contract area have been done and made available as Table 7 of the Report. A total of 50255.1 Sqm area were seen as mining up to year 2022. This may be ensured by MO weather this was done by project Proponent, M/s Tirupati Roadways or someone else. Mining beyond the contract area can be visualised on satellite data and marked at Table 5 and 7 of Drone/high resolution satellite data-based analysis section.
5	The depth of mining beyond the permissible depth	<ul style="list-style-type: none"> The depth of mining beyond permissible depth ranges from 9.77m- 16.37m meter and can be depicted at Table 3 of this report.

Disclaimer Note: It is clarified that HARSAC shall not be responsible or liable in any manner before any court of law/authority/tribunal/forum in this regard to the submission of this report. It is further clarified that if any notice is issued or received to HARSAC in this regard, then only the concerned stake holder (DGM Haryana) may be held responsible to respond to the same and not HARSAC because HARSAC is only technical facilitator to the Government Department.

.....END.....

1

State Vigilance Bureau, Haryana,
Sector-23, Panchkula

To :

The Director
Mines Department of Haryana,
Plot No. 9, 2nd Floor, IT Park, Sector 22,
Panchkula, Haryana.

No. Spl 01 /PS/SVB/PKL dated 12.5.2022

Sub : **Surprise Check of M/s Tirupati Roadways Mine at village Ratewala, district Panchkula.**

Sir,

A surprise check of the above site of M/s Tirupati Roadways Mine at village Rate Wala, district Panchkula was conducted on 11.05.2022 by the team of State Vigilance Bureau, Panchkula. During the surprise check, it has come to notice that the mine has been dug more than permissible limit.

It is therefore requested that a team may please be deputed today itself on 12.05.2022 to measure volume of material extracted from the mine.



(Dalbir Singh)

Inspector of Police

State Vigilance Bureau, Haryana
Headquarter, Sect-23, Panchkula
Panchkula (9468255636)

Email address dalbirsinghdeswal@gmail.com

Date: 12.05.2022

From

Principal Scientist
HARSAC, Node Gurugram
GIS LAB, 3rd Floor, New Labour Court Building
Mini Secretariat, Gurugram-122001

To

Sh. Dalbir Singh
Inspector of Police,
State Vigilance Bureau Haryana
Headquarters, Sector-23, Panchkula

Letter No: HARSAC/GGM/2022/203-205

Date: 06-06-2022

Subject: Regarding submission of report to measure volume of material extracted from the mine at Rattewala Village, District Panchkula, Haryana.

With reference to letter no. Spl 01/PS/SVB/PKL dated 12.05.2022 Superintendent of Police State Vigilance Bureau, Panchkula, Haryana. The analysis and survey report including tables, fact, and conclusions is enclosed herewith (Annexure-1, Page no. 1 to 20).

Submitted for your kind reference.


(Principal Scientist)

CC:

1. Director General, Mines and Geology Haryana, Chandigarh, for the necessary information, please.
2. The Director, HARSAC, for the information, please.

Methodology for calculation volume of Extracted Material To perform the following analysis of surface volume and extracted material from the river bed at very first we have to fix a ground level contour from SOI toposheet. The vertical accuracy of the Differential Global Positioning System (DGPS) instrument is evaluated by comparing with Survey of India (SOI) 360m contour of the M/S Tirupati Roadways and its Surroundings area through DGPS readings. It seems that the DGPS, Z value approximately (± 1.14) is high from the SOI contour. So, the observed value from DGPS surveyed points are subtracted by the value of 1.14 m to achieved the nearest correct Z value. With the help of corrected DGPS points we have created digital elevation model (DEM) raster surface to put forwarding the process we have generate surface contour using GIS Environment. After that we have proceed to the calculating process. The flow chart of adopted methodology is shown in Figure 2.

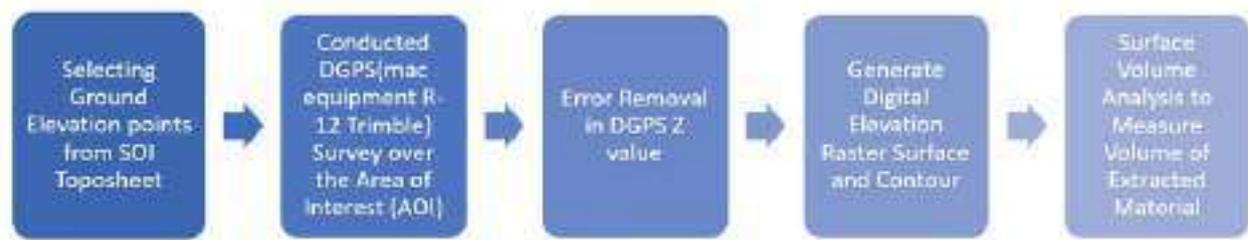


Figure 2: Methodology for calculation volume of Extracted Material

Table: 1 Surface Volume analysis of material extracted from M/s Tirupati Roadways Mining site village Ratewala.

A	B	C	D	E	F
Sr. No	Contour Max	Contour Min	Elevation Difference from Existing Level of River Bed	Area in sqm	Volume in MT ($E \cdot D \cdot 2$), here 2 is bulk density as per mining plan
Volume Calculation of mining done up to permissive					
Level in Riverbed (356.8m - 353.8m)					
1.	356.80	355.80	1.00	8118.71	16237.41
2.	355.80	354.80	2.00	15603.71	62414.83
3.	354.80	353.80	3.00	13888.79	83332.73
			Total	37611.20	161984.97
Volume Calculation below permissive Level (353.8m - 342.303m)					
4.	353.80	352.80	4.00	18746.91	149975.30
5.	352.80	351.80	5.00	28872.61	288726.07
6.	351.80	350.80	6.00	34576.34	414916.13
7.	350.80	349.80	7.00	27318.01	382452.13
8.	349.80	348.80	8.00	30032.94	480527.07
9.	348.80	347.80	9.00	29398.44	529171.93
10.	347.80	346.80	10.00	27023.68	540473.51
11.	346.80	345.80	11.00	28523.47	627516.39
12.	345.80	344.80	12.00	17561.80	421483.14
13.	344.80	343.80	13.00	17450.90	453723.38
14.	343.80	342.80	14.00	10792.79	302198.15
15.	342.80	342.30	14.50	446.01	12931.51
			Total	270743.90	4604094.71
			Over All total	308355.10	4766079.68

Note: The maps specifying the mining area and volume of each contour interval of 1 m (where total number of contours is 15); falling within the range of Contour Max: 356.80m to Contour Min: 342.30m as mentioned in Table.1 are also being prepared and shown in Annexure 1 to 16.

As per the Mining plan the existing River Bed Level value is 356.8 m and permissible River Bed Level value is 353.8m subject to verify from mining department. The current deepest River Bed Level measured on one site is 342.30m through DGPS survey. Elevation difference is 11.497 meters beyond the permissive level. Total Mining Area is 45 hectares as per Mining Plan and mining activity occurred in 30.84 hectares.

Conclusion: Based on interpretation / analysis of mining plan it is seems that the existing River Bed Level value is fixed but the river bed level is dependent on gradient variations due to slope, and aspect, geological structure, elevation pattern, nature of rocks, hydrological settings and Land-Use Land-Cover. Thus, it is submitted that the volume calculation is not fixed for the entire area of interest (AOI) due to the above- relevant factors. The entire report is prepared as per the information (existing level of river bed and permissive level of riverbed) available in the mining plan provided by email dated 17/05/2022.

Disclaimer Note: It is clarified that HARSAC shall not be responsible or liable in any manner before any court of law/authority/tribunal/forum in this regard to the submission of this report. It is further clarified that if any notice is issued or received to HARSAC in this regard, then only the concerned stake holder may be held responsible to respond to the same and not HARSAC because HARSAC is only technical facilitator to the Government Department.

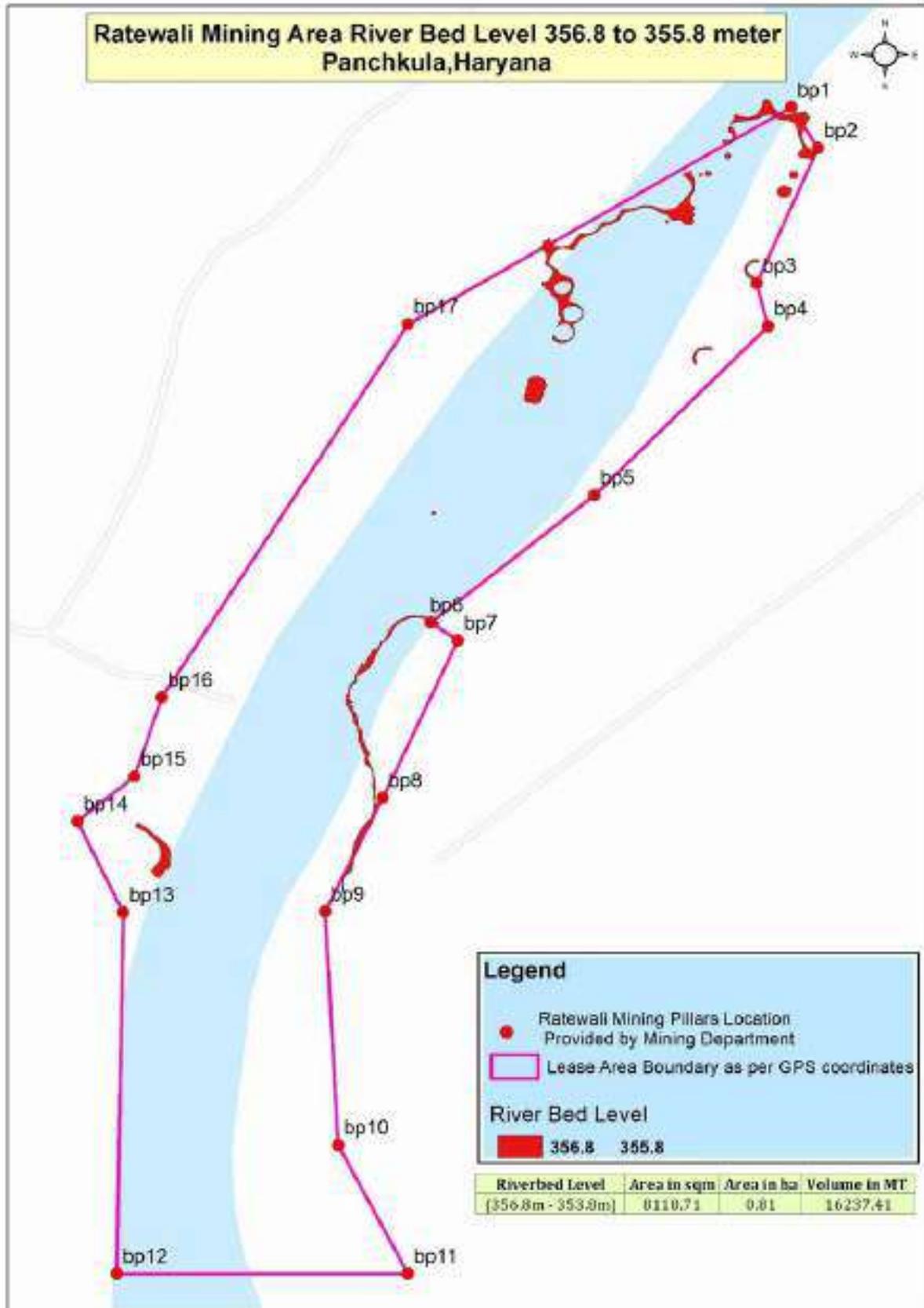


Figure :3 Displaying the area between 356.8-to-355.8-meter contour interval

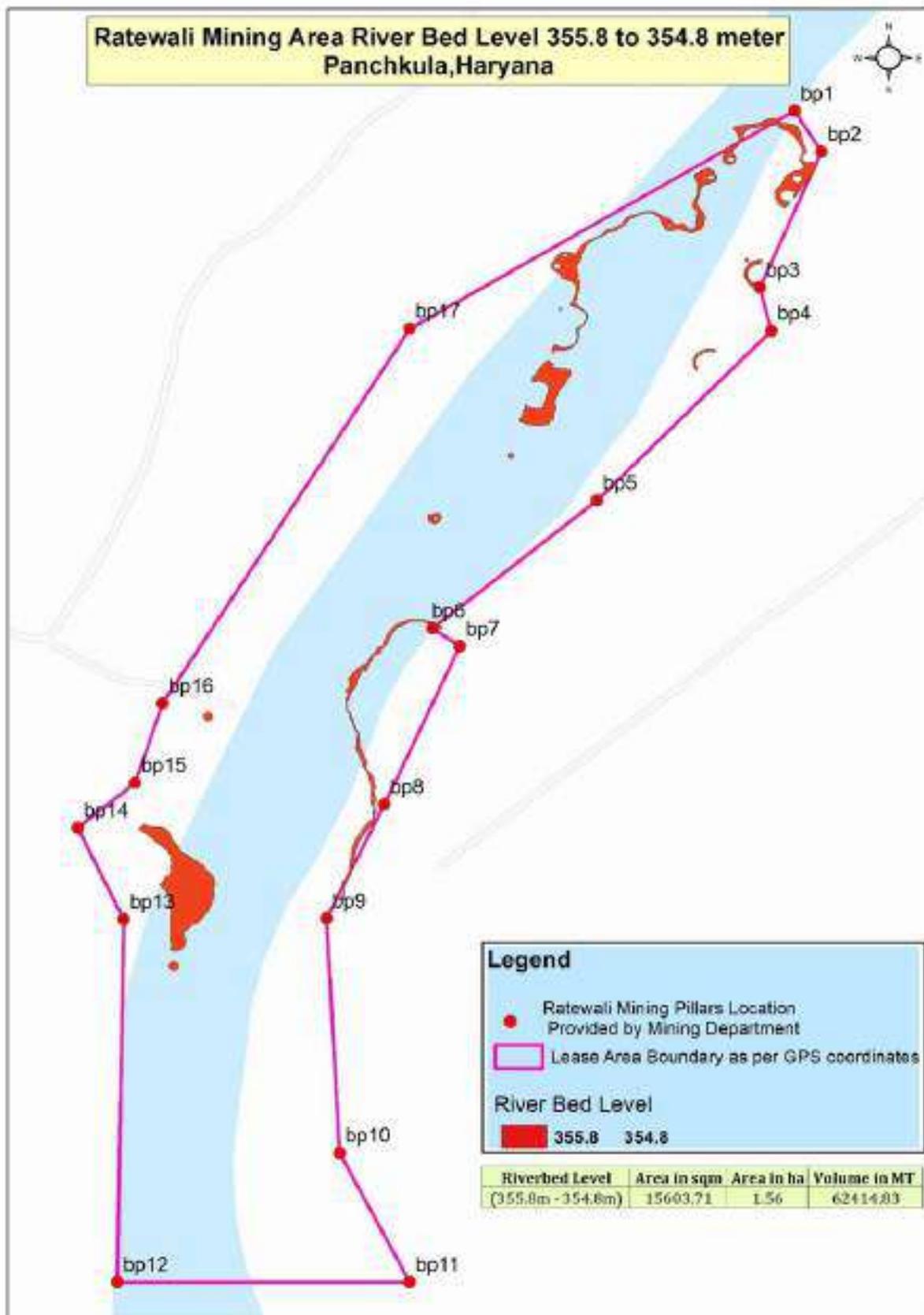


Figure :4 Displaying the area between 355.8-to-354.8-meter contour interval

ANNEXURE 3

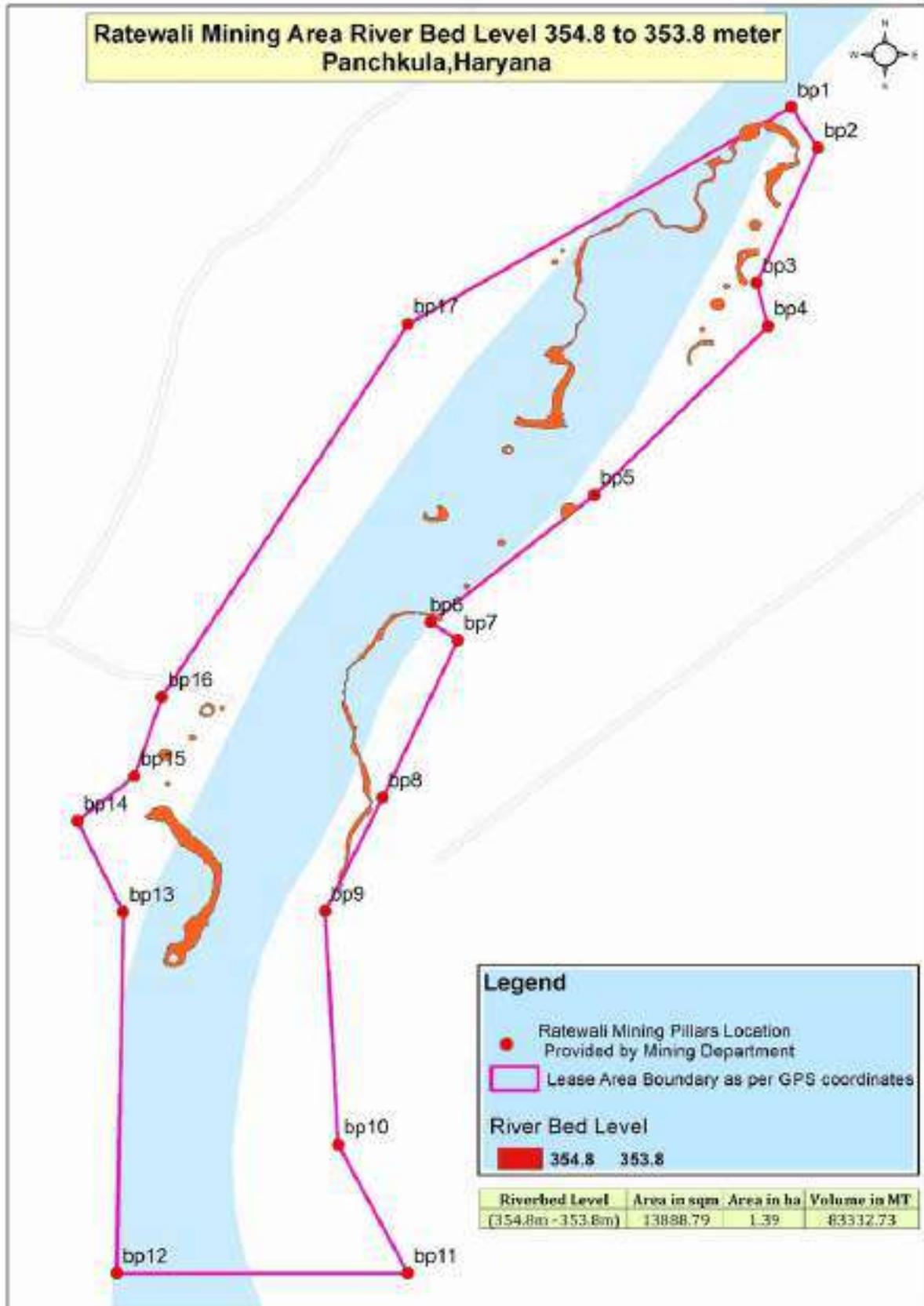


Figure :5 Displaying the area between 354.8-to-353.8-meter contour interval

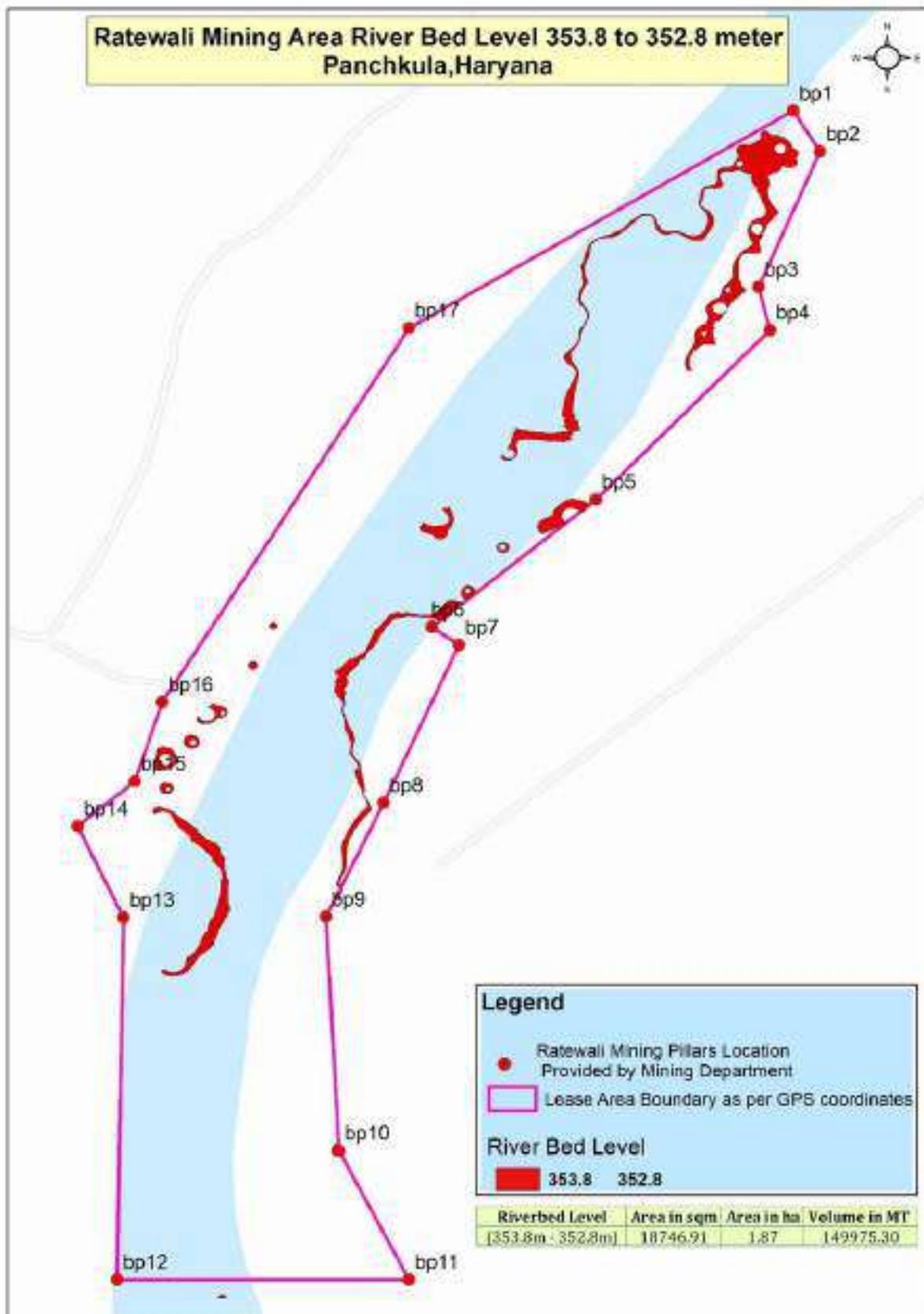


Figure :6 Displaying the area between 353.8-to-352.8-meter contour interval

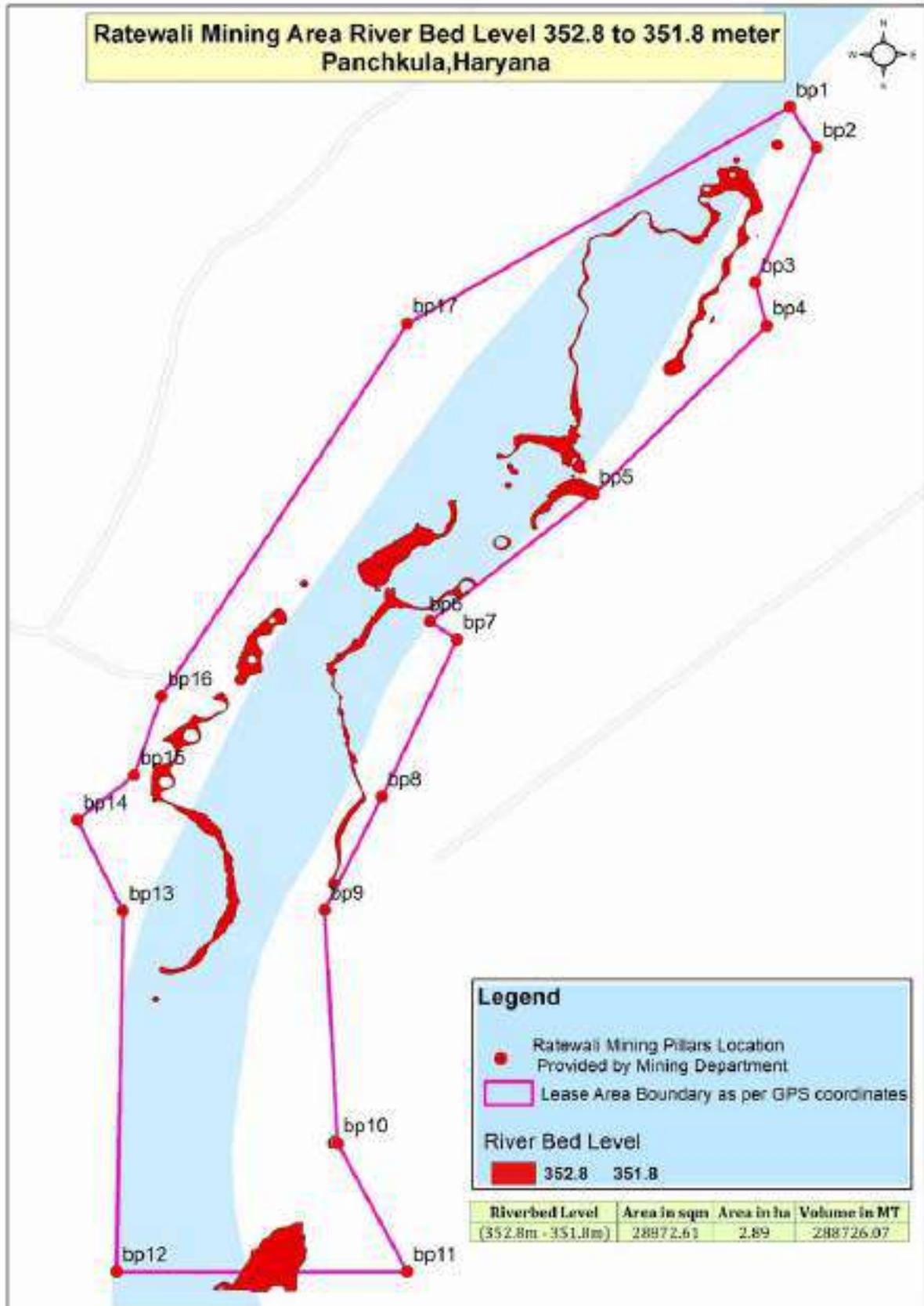


Figure :7 Displaying the area between 352.8-to-351.8-meter contour interval

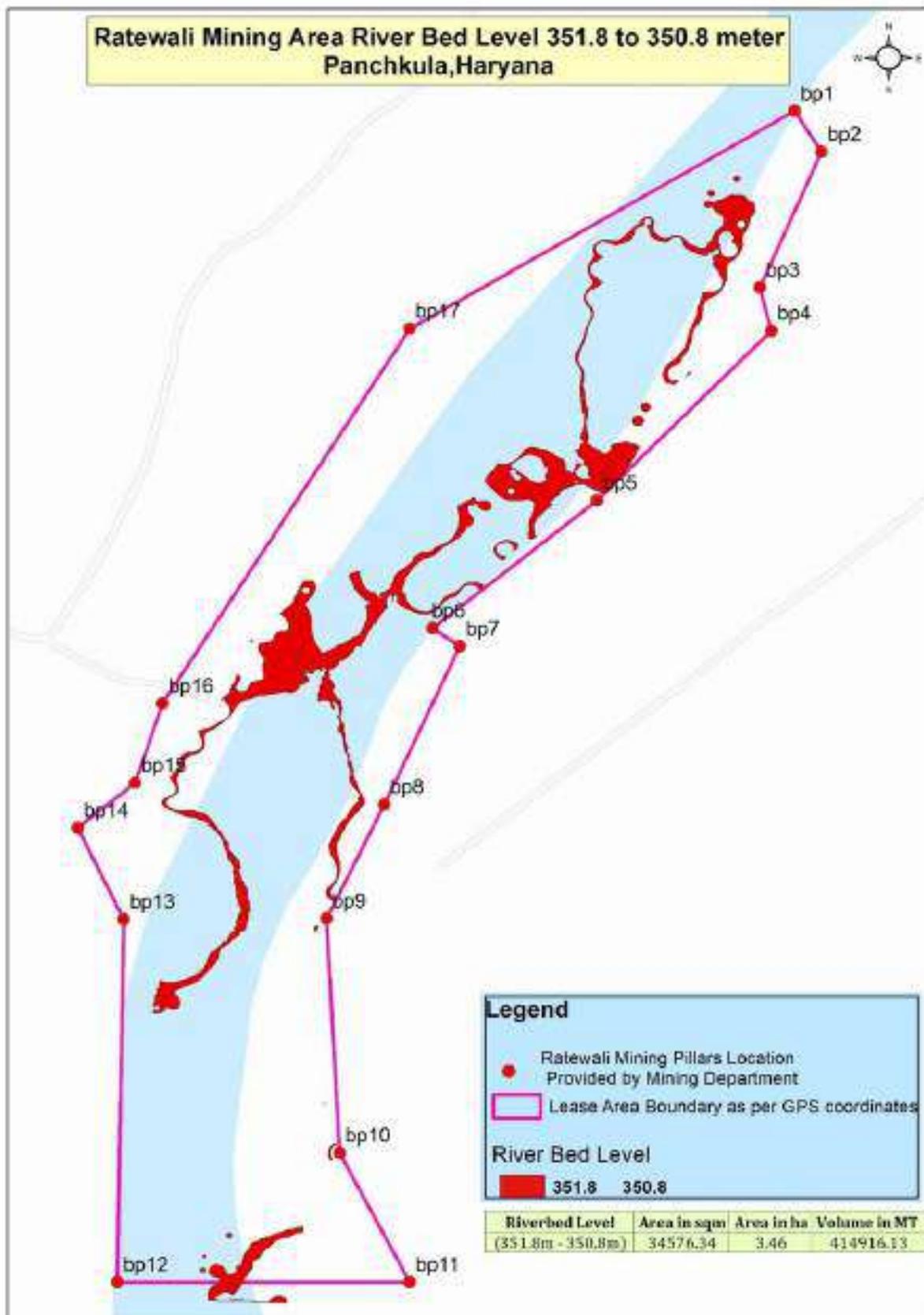


Figure :8 Displaying the area between 351.8-to-350.8-meter contour interval

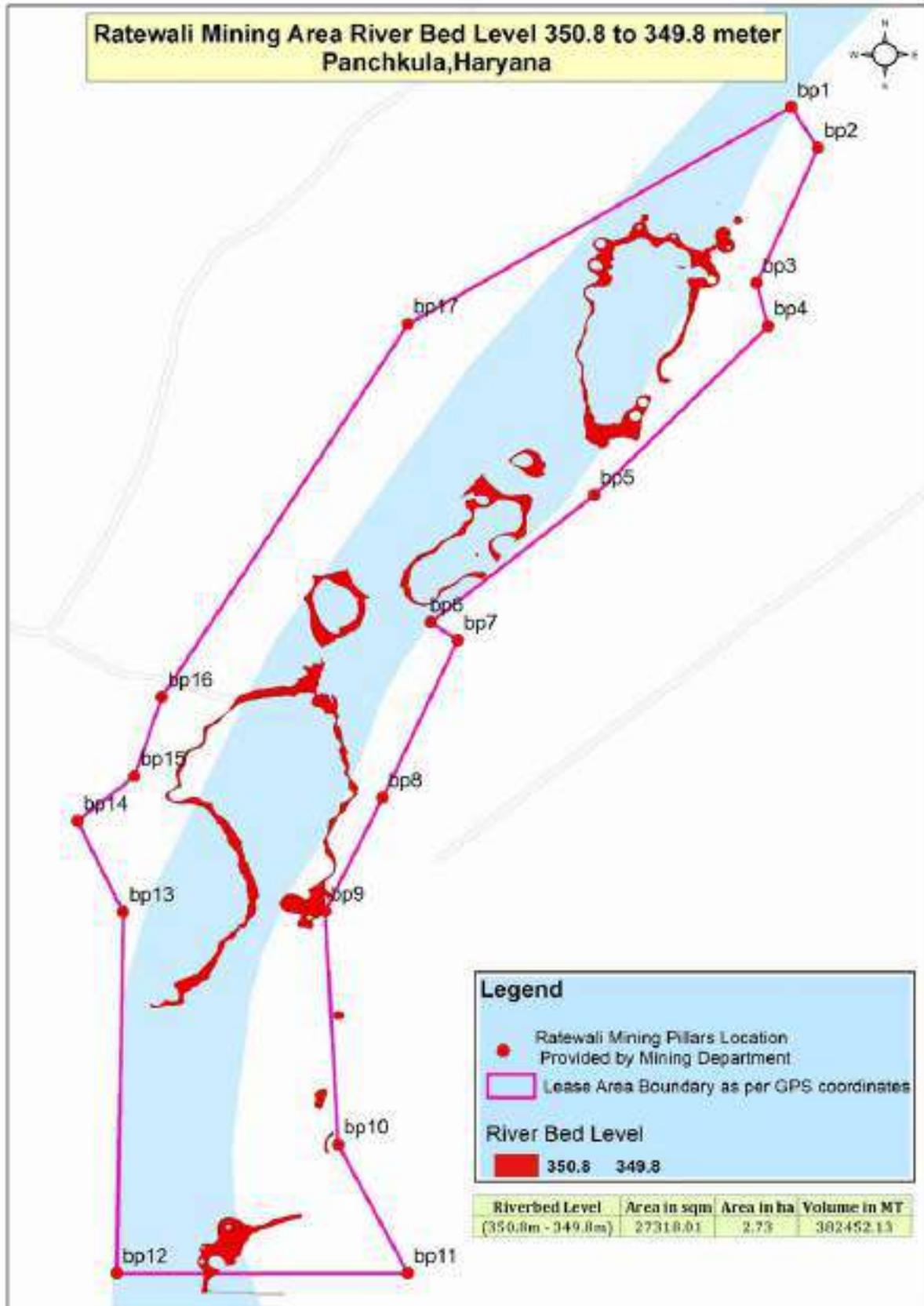


Figure :9 Displaying the area between 350.8-to-349.8-meter contour interval

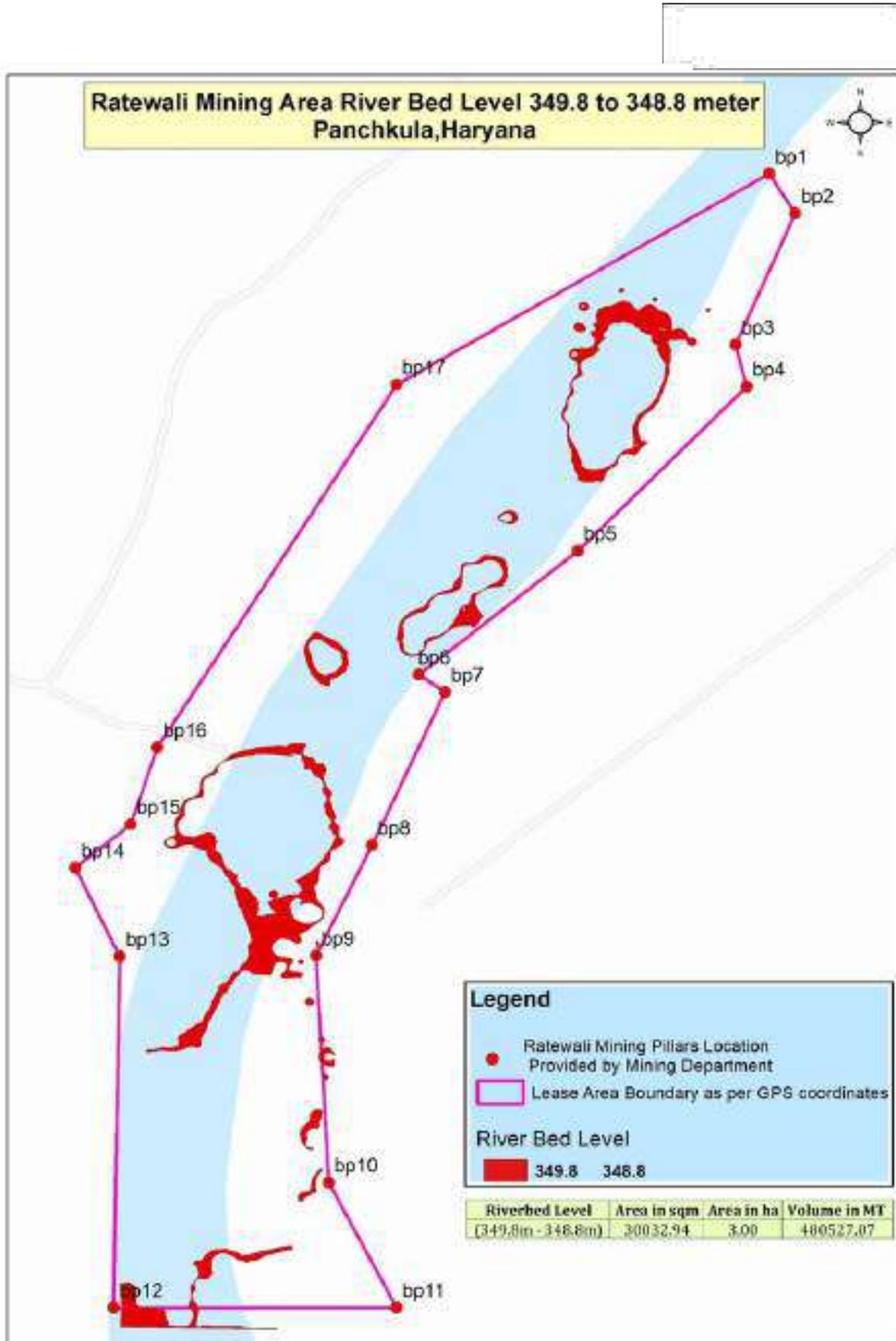


Figure :10 Displaying the area between 349.8-to-348.8-meter contour interval

ANNEXURE 9

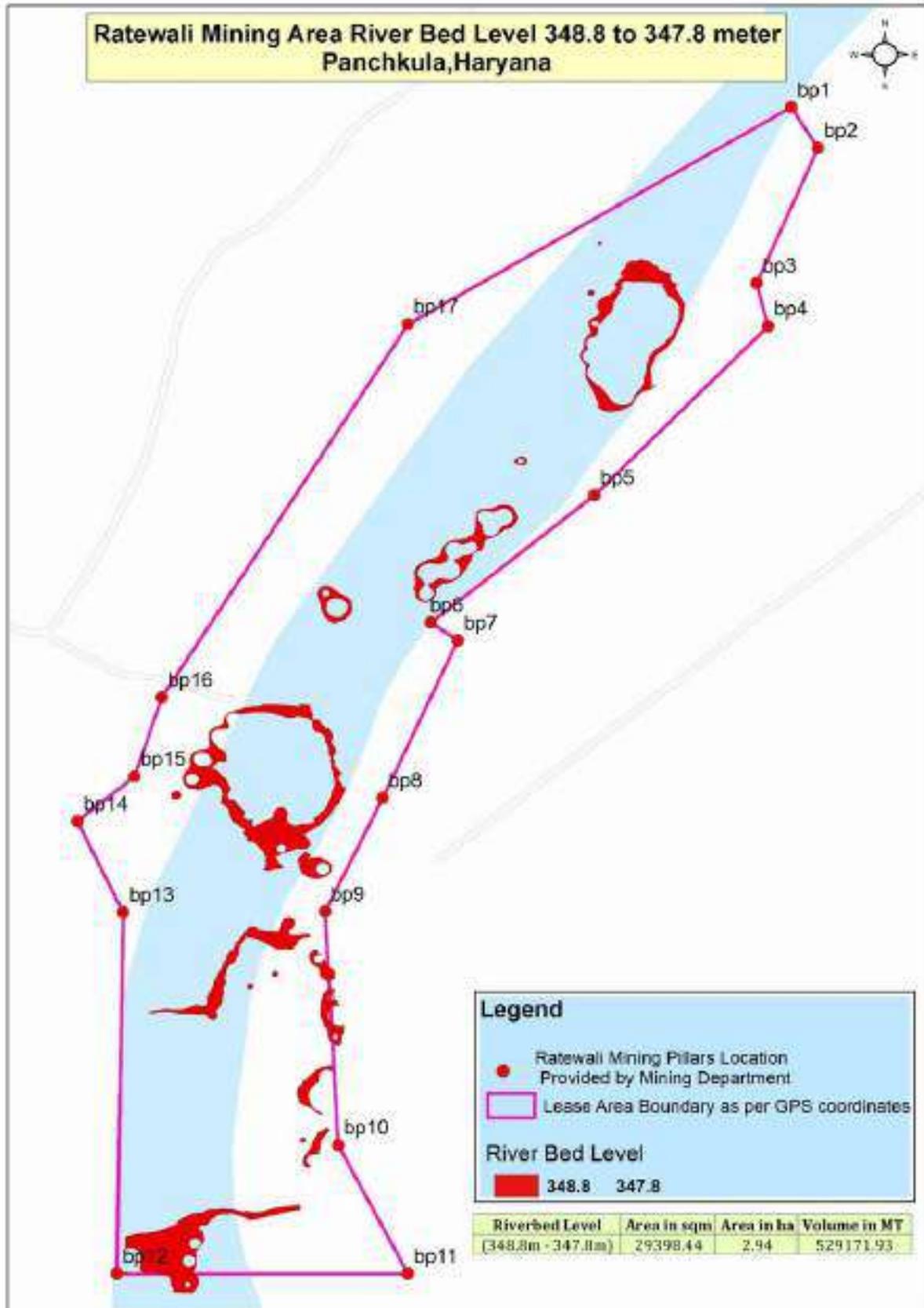


Figure :11 Displaying the area between 348.8-to-347.8-meter contour interval

ANNEXURE 10

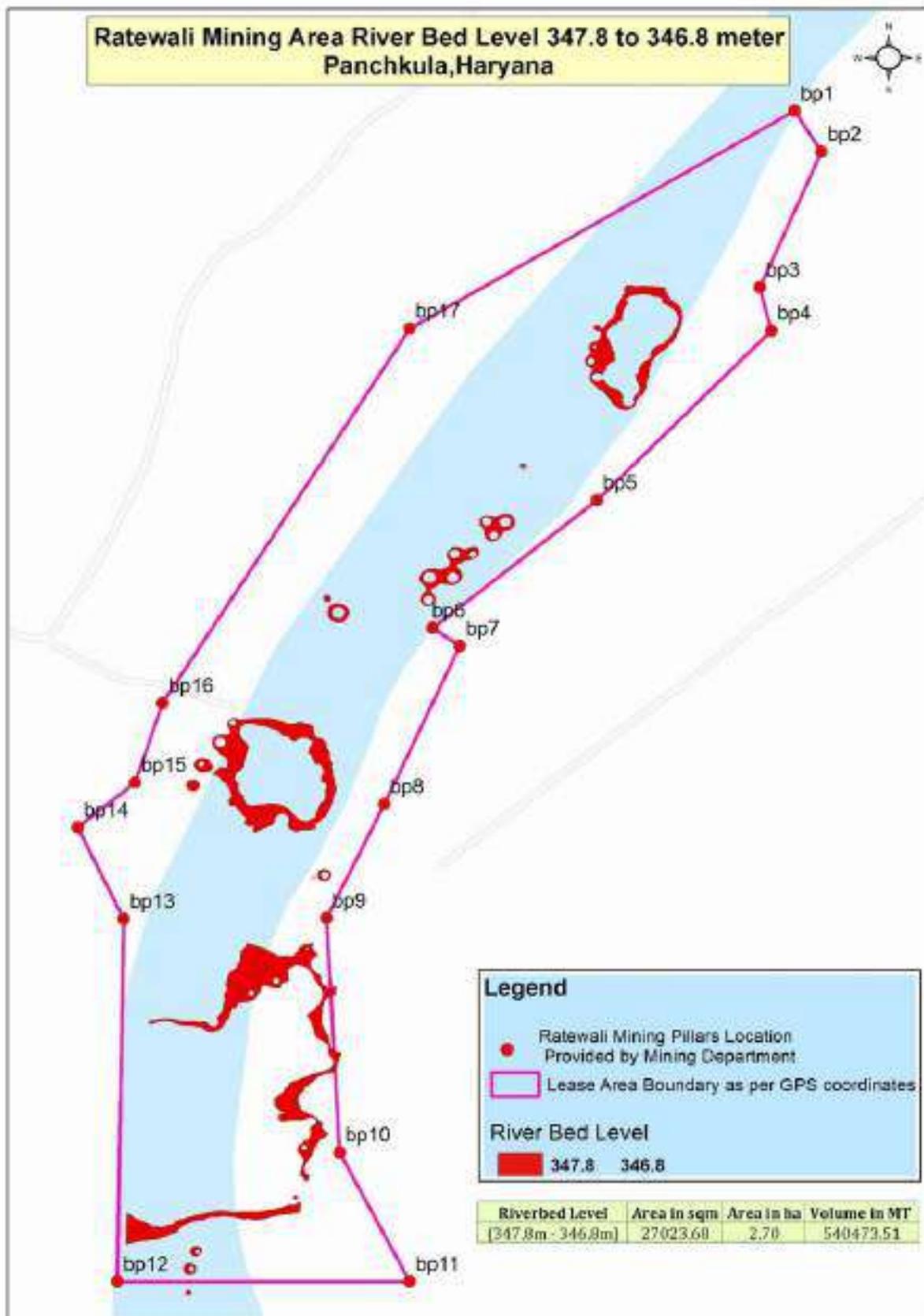


Figure :12 Displaying the area between 347.8-to-346.8-meter contour interval

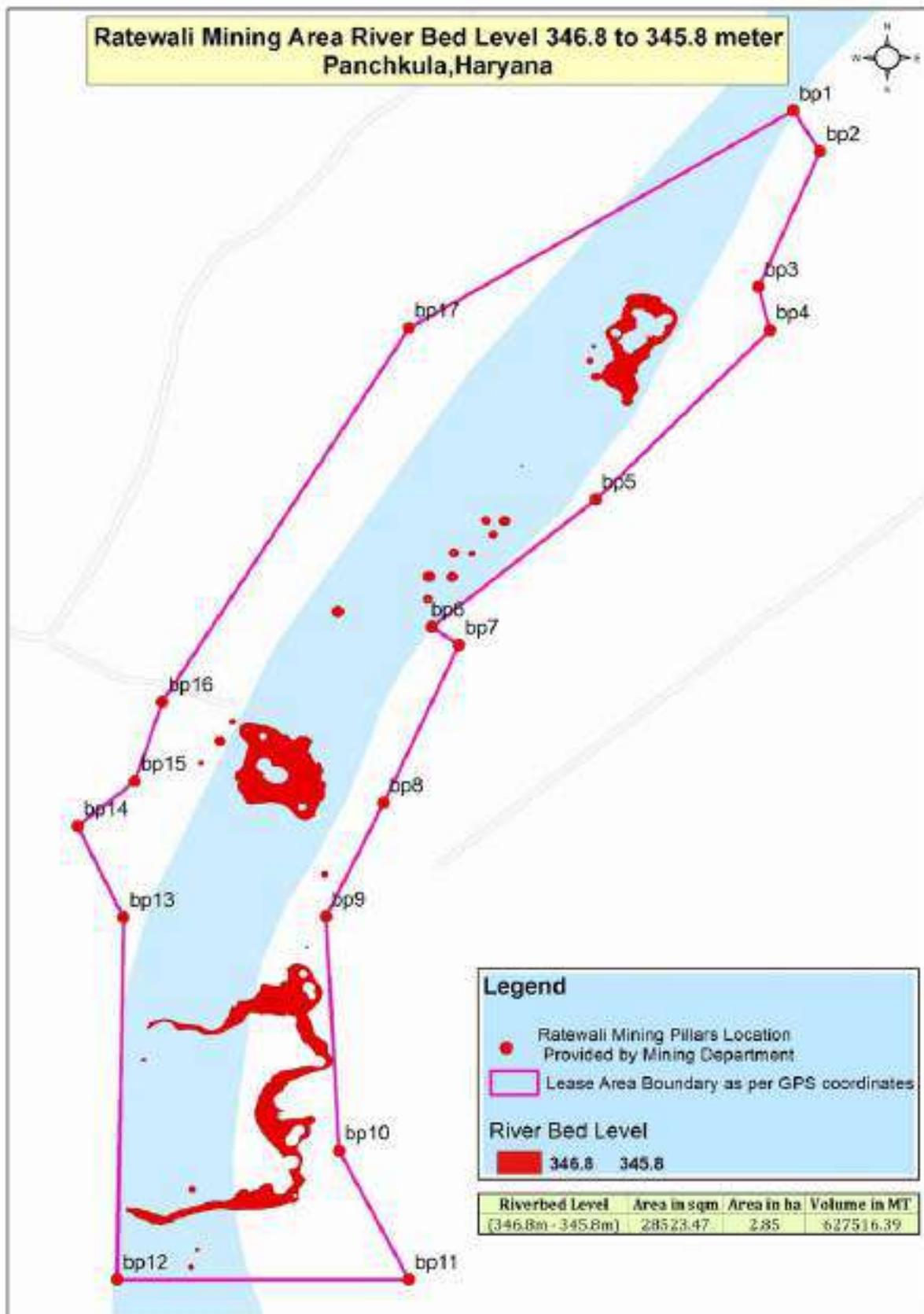


Figure :13 Displaying the area between 346.8-to-345.8-meter contour interval

ANNEXURE 12

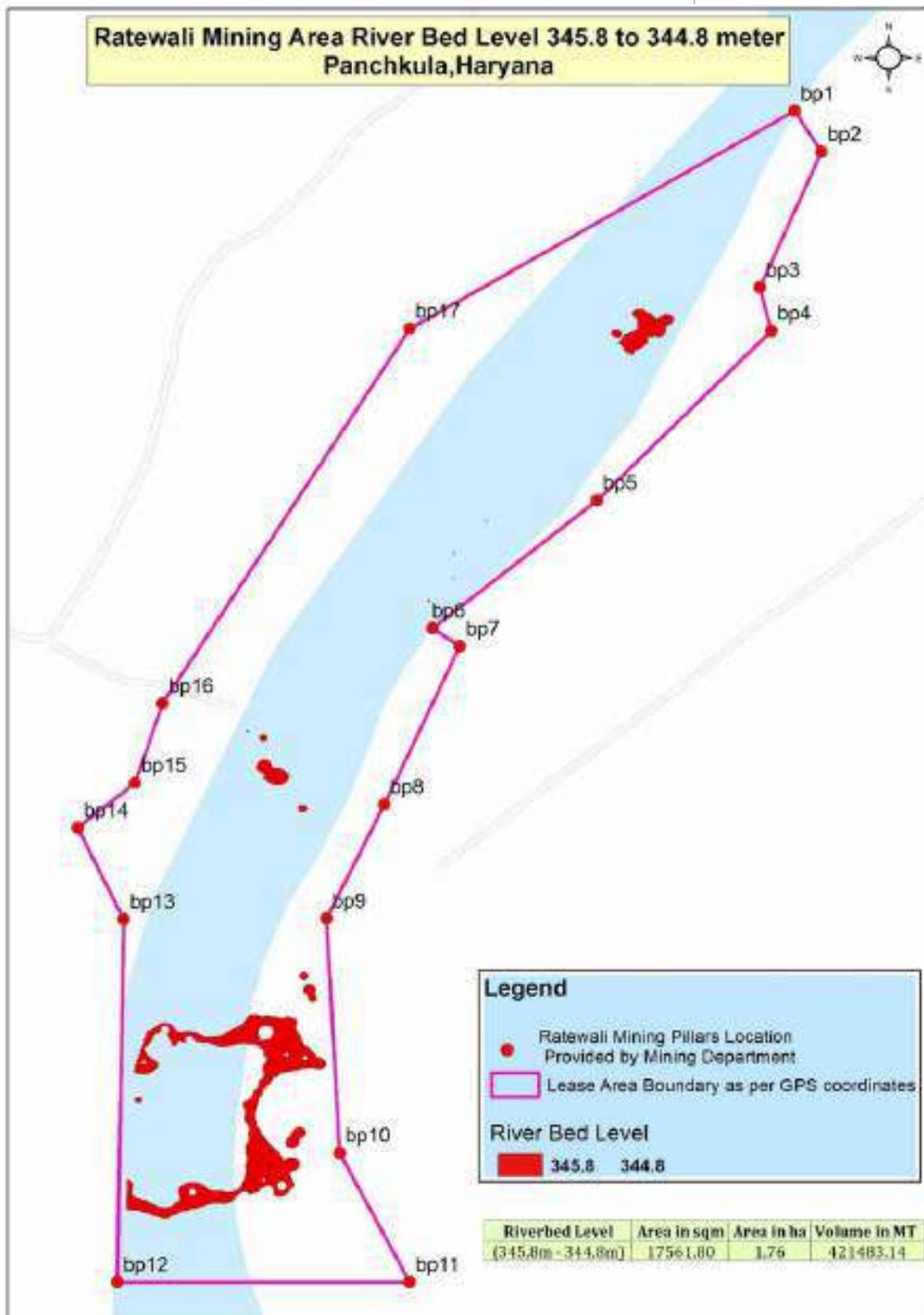


Figure :14 Displaying the area between 345.8-to-344.8-meter contour interval

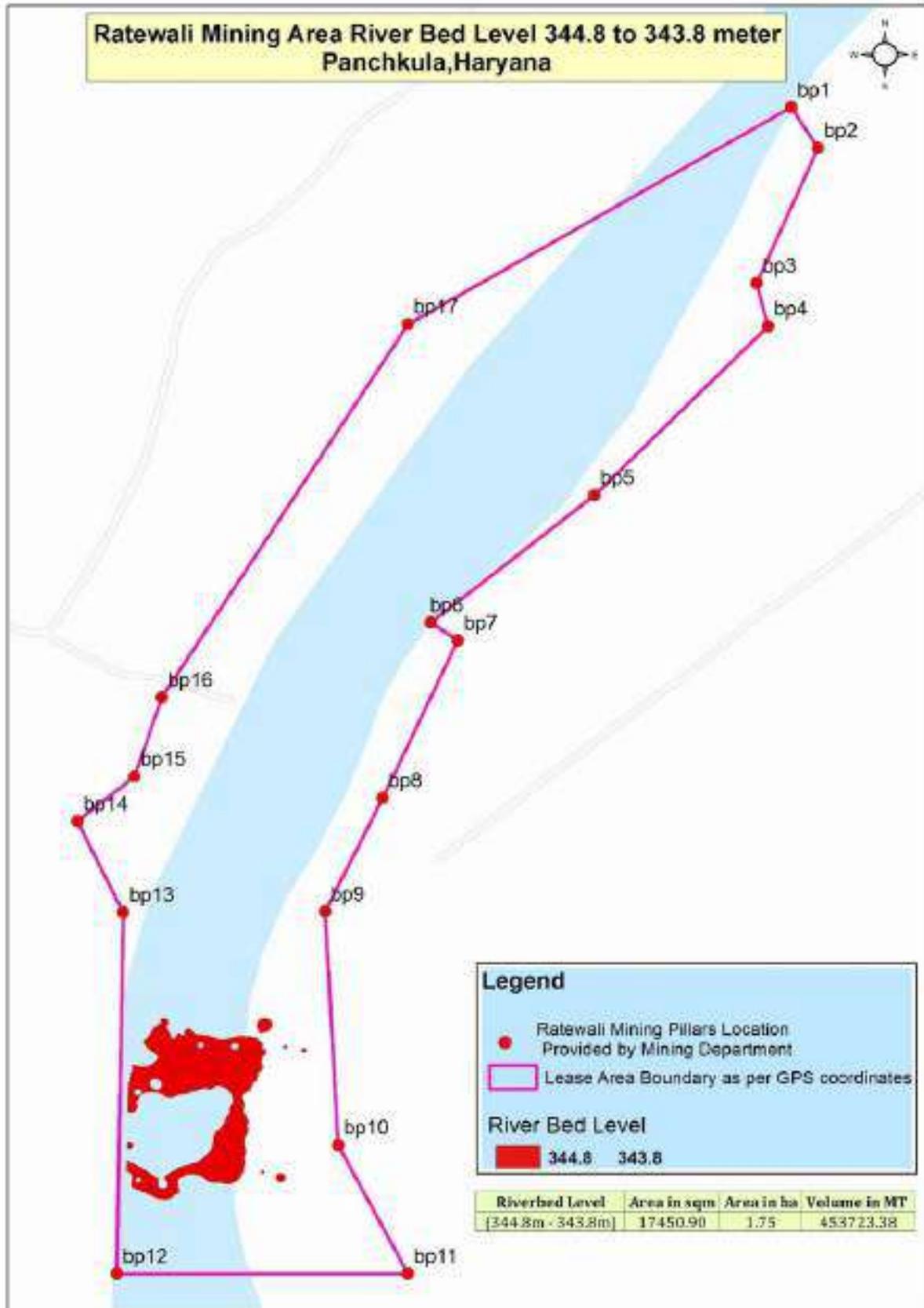


Figure :15 Displaying the area between 344.8-to-343.8-meter contour interval

ANNEXURE 14

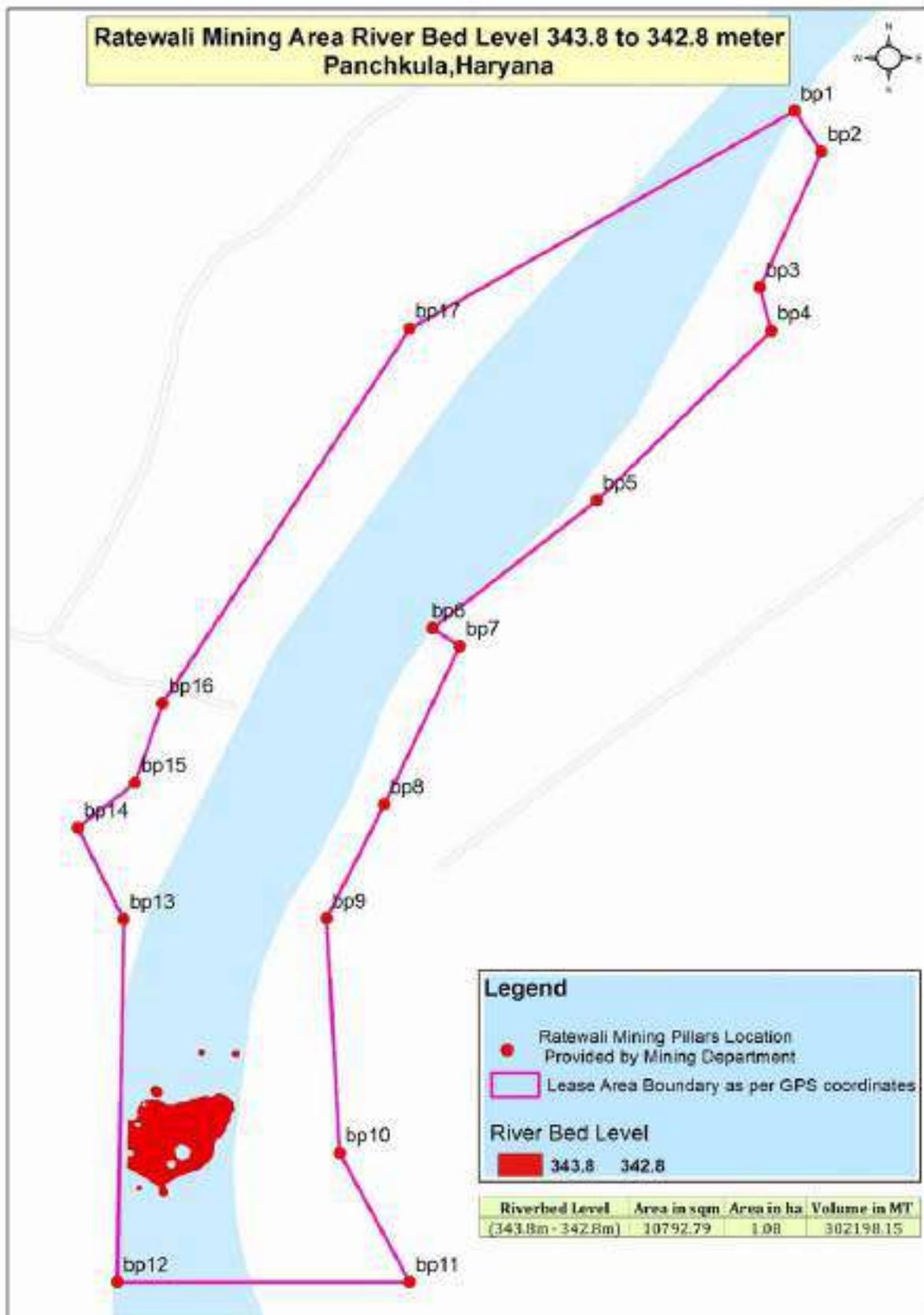


Figure :16 Displaying the area between 343.8-to-342.8-meter contour interval

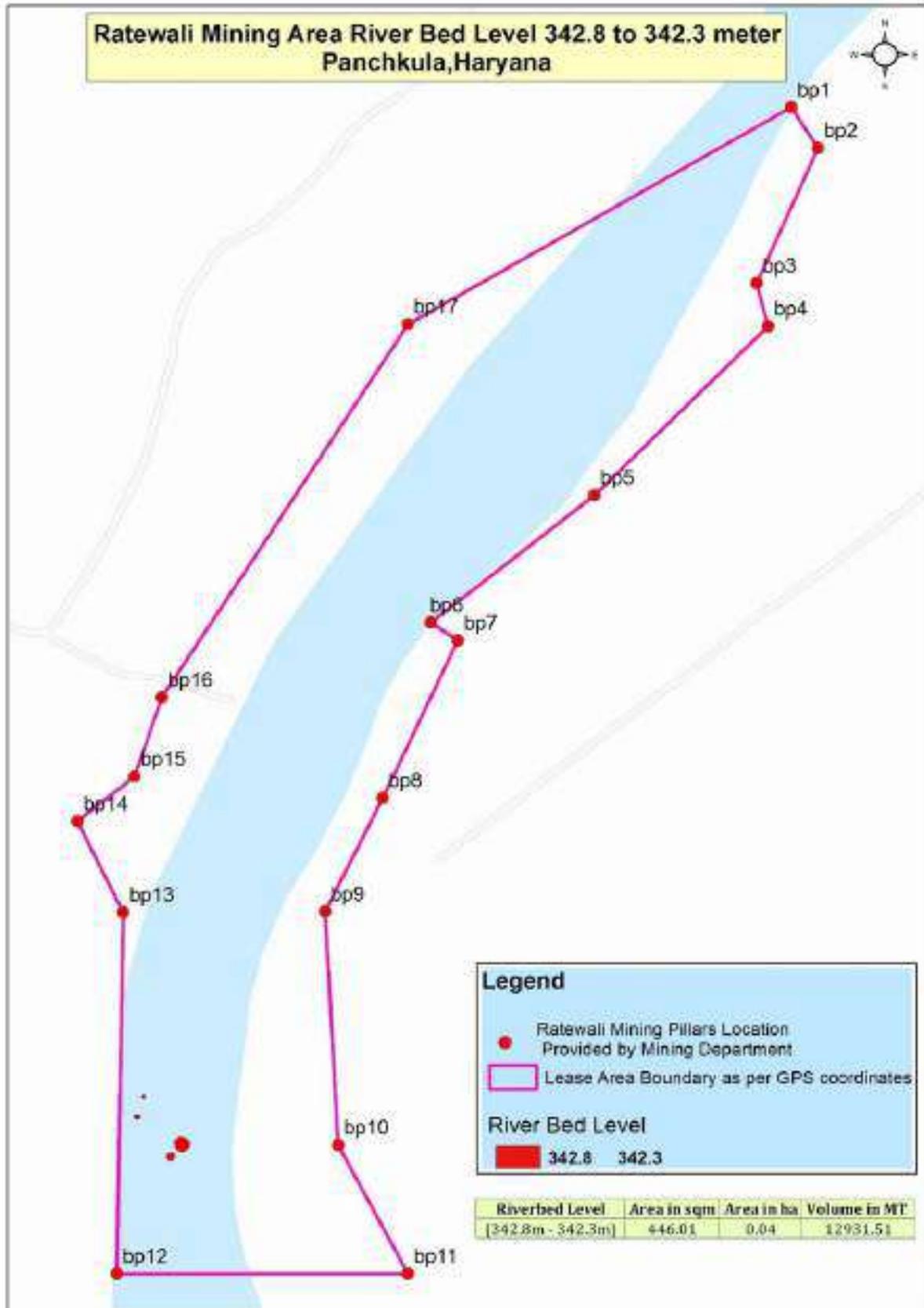


Figure :17 Displaying the area between 342.8-to-342.3-meter contour interval

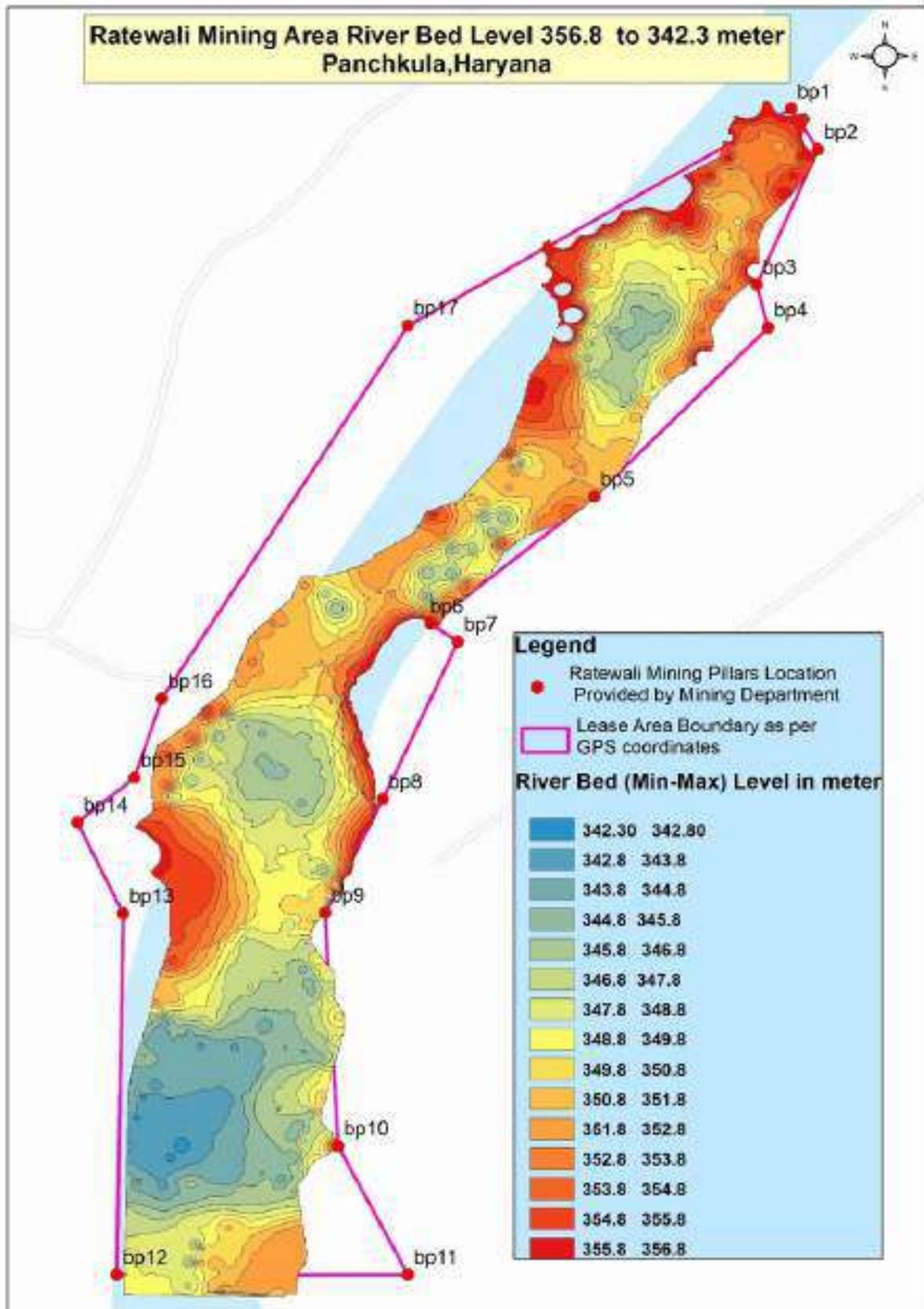


Figure :18 Displaying the area between 356.8-to-342.3-meter contour interval



DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA

REMINDER-VIII

REGISTERED/SPEED POST/THROUGH EMAIL

To

Principal Scientist,
HARSAC Node,
Gurugram, Haryana.

Memo No. DMG/HY/PKL/O.A. No.752/2023/ 489
Dated Panchkula the 10/2/2025

Sub:- Regarding analysis of survey report conducted by DRIISHYA in the matter of OA. No. 752/2023 titled as Narender Kumar V/s Union of India and Ors.

This is in reference to this office memo No. 4689 dated 10.10.2024 & No. 4881 dated 24.10.2024, No.4976 dated 04.11.2024, No. 5165 dated 20.11.2024 & No.5388 dated 09.12.2024 & No.126 dated 09.01.2025, No. 293 dated 22.01.2025 on the subject noted above.

2. Vide letters under reference, you are being requested again & again to provide the proper survey report to the extent of illegal mining, total excavated mineral by the Project Porponent M/s Tirupati Roadways, Village Rattewali, Panchkula, mining beyond the contract area as well as the depth of mining beyond the permissible depth, so that the report could be submitted before the Hon'ble NGT well before the next date of hearing i.e. 05.03.2025 before the Hon'ble NGT, but the report is still awaited from your side despite repeated reminders as well telephonic discussions.

3. You are again requested to provide the same at the earliest, so that the report could be submitted well in time in Hon'ble NGT well before the next date of hearing i.e. 05.03.2025.

State Mining Engineer,
for Director-General, Mines and Geology,
Haryana

Endst. No. DMG/HY/PKL/O.A. No.752/2023/ 490

Dated: - 10/2/2025

A copy is forwarded to the following for information and necessary action: -

1. The Deputy Commissioner, Panchkula.
2. Sh Pardeep Kumar, IAS, Member Secretary, HSPCB, Panchkula.
3. The Director, Haryana Space Applications Centre (HARSAC), Mini Secretariat, Old Railway Rd, Shaheed Sukhdev Block, Shanti Naga Shivaji Nagar, Sector 11, District Gurugram -122001, Haryana.
4. Sh Vijay Kumar nehra, DSP, ACB, Panchkula.
5. Sh. Narender Sharma, Regional Director, CPCB.



**DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA**

6. The Regional Office, Panchkula Region, HSPCB, SCO 115-116, 1st Floor,
Sector-25, Panchkula.

State Mining Engineer,
for Director General, Mines and Geology,
Haryana

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Dharmendra Singh <dsbaghel0184@gmail.com>

Requirement of necessary details regarding Rattewali mining site

1 message

Contact Harsac <contact@harsac.org>

To: dmg.mines-hry@gov.in

Mon, Jan 27, 2025 at 4:19 PM

Cc: hspcbms@gmail.com, sultan_harsac@yahoo.co.in, directorharsac@gmail.com, Dharmendra Singh <dsbaghel0184@gmail.com>

Respected Sir,

Hope this email finds you well.

Meeting with the Mining Department on 22.01.2025 and the is stated that necessary details are required regarding the Rattewali mining site, as mentioned below: With reference to the m email dated 23.01.2025, it

- 1. The Mining Plan-revised and original (pre-revised) scan copy are required.
2. The reference point (x-y-z value) of benchmarks for the 2020 survey & 2024 survey are required w.r.t the reports submitted by M/s Tirupati Roadways.
3. The coordinate points (x-y-z value) of all benchmarks in Mining Plan-revised and original (pre-revised) are required w.r.t the mining plans submitted by M/s Tirupati Roadways.
4. The details of methodology used for volume calculation by the Cut & Fill method during the 2020 survey and 2024 are required w.r.t the reports submitted by M/s Tirupati Roadways along with the datasets.
5. It is mentioned in M/s Tirupati's report that the reference point is taken from an undisturbed area during DGPS Survey in 2024. Kindly provide the x-y-z value of the reference point in an undisturbed area.
6. What is the bulk density of sand that is to be used for the calculation of excavated material?

Further, after the thorough review of the reports submitted by the M/S Tirupati Roadways (05.12.2022 report and 2024 report), it is observed that the following points are required to be clarified regarding the survey methodology and volume calculation:

- leased area river ground? Kindly provide the x-y-z value of the survey locations.
i. Pre-Mining survey done in March 2020 through the total station, a Leica TS-02. What was the status of the at each interval with the help of ETS and DGPS during the survey in 2020 and 2024, respectively?
ii. Whether the survey is done along one side of the river or both? How is the cross-section survey completed leased area river ground? Kindly provide the x-y-z value of the survey location.
iii. Post-mining survey done in September 2022 through multi-copter/UAV, then what was the status of the value of the reference point. Kindly provide the x-y-z
iv. It is not mentioned from where the reference point of (RL & ML) has been taken.
v. Kindly provide the DGPS survey data in Rinex format and ETS survey data in csv format.
vi. What was the method of calculating the volume of extracted material in the pre-mining survey is not clear? Kindly provide details of the methodology used.
vii. How were the cross section interval at 10 m used for volume calculation through the DGPS Survey in 2024 but the cross section interval at 50 m was used for volume calculation through ETS Survey in 2020 report submitted by M/s Tirupati Roadways. Kindly provide the specific reason and reference for usage of 10 m and 50 m cross sections during 2024 and 2020, respectively.

ix. What are the quality parameters followed during the fly of the drone (in post-monsoon 2022) and processing of raw data by the M/s Tirupati Roadways? Kindly provide information on the following parameters:

- a. What is the flight altitude?
- b. What is the side and forward overlap of the Nadir camera?
- c. Which flight pattern is used for drone imaging?
- d. What is the grid cell size of ortho-images, DTM, and DSM?
- e. What is the horizontal accuracy of ortho-images?
- f. What is the vertical accuracy of DTM and DSM?
- g. Which reference is used for orthometric height calculation?
- h. Does the Drone imaging involved establishment of ground control points in the area of interest? If yes, what is the x-y-z value of GCP's?

Moreover, it is also requested to provide the **District Survey Report** of Rattewali mining site before the grant of mining lease in order to analyse the initial condition/status of the mining site before the mining activities.

Regards,

Dr. Dharmendra Singh

Senior Scientist

HARSAC Node, Gurugram



Gmail - Inspection report regarding M_s Tirupati Roadways Rattewali block distt Panchkula_.pdf

98K



Dharmendra Singh <dsbaghel0184@gmail.com>

Requirement of necessary details regarding Rattewali mining site

1 message

Contact Harsac <contact@harsac.org>

To: dmg.mines-hry@gov.in

Tue, Feb 4, 2025 at 1:12 PM

Cc: hspcbms@gmail.com, directorharsac@gmail.com, sultan_harsac@yahoo.co.in, Dharmendra Singh <dsbaghel0184@gmail.com>, priti.harsac@gmail.com

Gentle Reminder

Respected Sir, _____ is stated that the necessary details/ data are **still** _____ regarding the Rattewali mining site, as mentioned below:

With reference to the email dated 27.01.2025, it

awaited

i. The Mining Plan-revised and original (pre-revised) scan copy are required.

ii. The reference point (x-y-z value) of benchmarks for the 2020 survey & 2024 survey are required w.r.t the reports submitted by M/s Tirupati Roadways.

iii. The coordinate points (x-y-z value) of all benchmarks in Mining Plan-revised and original (pre-revised) are required w.r.t the mining plans submitted by M/s Tirupati Roadways.

iv. The details of methodology used for volume calculation by the Cut & Fill method during the 2020 survey and 2024 are required w.r.t the reports submitted by M/s Tirupati Roadways along with the datasets.

v. It is mentioned in M/s Tirupati's report that the reference point is taken from an undisturbed area during DGPS Survey in 2024. Kindly provide the x-y-z value of the reference point in an undisturbed area.

vi. What is the bulk density of sand that is to be used for the calculation of excavated material?

Further, after the thorough review of the reports submitted by the M/S Tirupati Roadways (05.12.2022 report and 2024 report), it is observed that the following points are required to be clarified regarding the

leased area river ground: Kindly provide the x-y-z value of the survey locations.

i. Pre-Mining survey done in March 2020 through the total station, a Leica TS-02. What was the status of the

completed at each interval with the help of ETS and DGPS during the survey in 2020 and 2024, respectively?

ii. Whether the survey is done along one side of the river or both? How is the cross-section survey

leased area river ground: Kindly provide the x-y-z value of the survey location.

iii. Post-mining survey done in September 2022 through multi-copter/UAV, then what was the status of the value of the reference point. Kindly provide the x-y-z

iv. It is not mentioned from where the reference point of (RL & ML) has been taken.

v. Kindly provide the DGPS survey data in Rinex format and ETS survey data in csv format.

vi. What method was used for calculating the volume of extracted material in the pre-mining survey is not clear? Kindly provide details of the methodology used.

vii. The cross-section interval at 10m was used for volume calculation through the DGPS Survey in 2020, but the cross section interval at 50m was used for volume calculation through ETS Survey in 2024 report submitted by M/s Tirupati Roadways. Kindly provide the specific reason and reference for usage of 10m and 50m cross sections during 2020 and 2024, respectively.

ix. What are the quality parameters followed during the flight of the drone (in post-monsoon 2022) and processing of raw data by the M/s Tirupati Roadways? Kindly provide information on the following parameters:

- a. What is the flight altitude?
- b. What is the side and forward overlap of the Nadir camera?
- c. Which flight pattern is used for drone imaging?
- d. What is the grid cell size of ortho-images, DTM, and DSM?
- e. What is the horizontal accuracy of ortho-images?
- f. What is the vertical accuracy of DTM and DSM?
- g. Which reference is used for orthometric height calculation?
- h. Does the Drone imaging involved establishment of ground control points in the area of interest? If yes, what is the x-y-z value of GCP's?

Moreover, it is also requested to provide the **District Survey Report** of Rattewali mining site before the

grant of mining lease in order to analyse the initial condition/status of the mining site before the mining activities.

Thanks & Regards

Dr. Dharmendra Singh

Senior Scientist

HARSAC Node, Gurugram

Mobile: 70151-12625

 Gmail - Inspectionreport regarding M_s Tirupati Roadways Rattewali block distt Panchkula_.pdf
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Dharmendra Singh <dsbaghel0184@gmail.com>

Fwd: Requirement of necessary details regarding Rattewali mining site

18 messages

Director Harsac <directorharsac@gmail.com>

To: Dharmendra Singh <dsbaghel0184@gmail.com>, priti.harsac@gmail.com

Wed, Feb 19, 2025 at 12:05 PM

Cc: "Dr. Sultan Singh" <sultan_harsac@yahoo.co.in>

----- Forwarded message -----

From: **K. Makrand Pandurang** <dmg.mines-hry@gov.in>

Date: Wed, Feb 19, 2025 at 11:46 AM

Subject: Requirement of necessary details regarding Rattewali mining site

To: directorharsac <directorharsac@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, ps ggm <ps.harsac.ggm@gmail.com>

Cc: priynkadhiman1999 <priynkadhiman1999@gmail.com>

Please find the attachment

--
Director
Haryana Space Applications Centre (HARSAC)
(Citizen Resources Information Department, Haryana)
CCS HAU Campus, Hisar 125004

IMG_0001_IMG_0002_merged.pdf
4834K

Dharmendra Singh <dsbaghel0184@gmail.com>

Sat, Mar 1, 2025 at 5:43 PM

To: Contact HARSAC <contact@harsac.org>

Cc: sultan harsac <sultan_harsac@yahoo.co.in>

Dear Sir /madam .

Please find the attached MoM for online discussion held on 17 Feb 2025 on the subject in the trailing mail requested with the concerned mining officers and Engineers associated with this issue to visit HARSAC Node Gurugram on 18-02-2025 at 2:30 PM to discuss and deliberate the remaining queries for more clarity so that the consolidated report can be submitted. This mail needs to be communicated to the following mail ID on an urgent basis.

1. dmg.mines-hry@gov.in
2. priynkadhiman1999@gmail.com
3. madhvigupta34@yahoo.co.in

with CC to

4. priti.harsac@gmail.com

5. <directorharsac@gmail.com>, <sultan_harsac@yahoo.co.in>, <ps.harsac.ggm@gmail.com>

[Quoted text hidden]

Online Meeting held on 27_feb_2025.pdf
149K

Dharmendra Singh <dsbaghel0184@gmail.com>

Sat, Mar 1, 2025 at 6:05 PM

To: Contact HARSAC <contact@harsac.org>

Cc: sultan harsac <sultan_harsac@yahoo.co.in>

Kindly ignore the earlier mail and attachment.

Please send the following mail to the concerned as suggested.

Dear Sir /madam .

Please find the attached MoM for online discussion held on 17 Feb 2025 on the subject in the trailing mail.

Now it is requested with the concerned mining officers and Engineers associated with this issue to visit HARSAC Node Gurugram on 18-02-2025 at 2:30 PM to discuss and deliberate the remaining queries for more clarity so that the consolidated report can be submitted. This mail needs to be communicated to the following mail ID on an urgent basis.

1. dmg.mines-hry@gov.in
2. priynkadhiman1999@gmail.com
3. madhvigupta34@yahoo.co.in

with CC to

4. priti.harsac@gmail.com

5. <directorharsac@gmail.com>, <sultan_harsac@yahoo.co.in>, <ps.harsac.ggm@gmail.com>

[Quoted text hidden]

Online Meeting held on 27_feb_2025.pdf
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Dharmendra Singh <dsbaghel0184@gmail.com>
To: Contact HARSAC <contact@harsac.org>
Cc: sultan harsac <sultan_harsac@yahoo.co.in>

Kindly ignore the earlier mails and attachments.
Please send the following mail to the concerned as suggested.
Dear Sir /madam,
Please find the attached MoM for online discussion held on 27 Feb 2025 on the subject in the trailing mail.

Now it is requested with the concerned mining officers and Engineers associated with this issue to visit HARSAC Node Gurugram on 03-03-2025 at 2:30 PM to discuss and deliberate the remaining queries for more clarity so that the consolidated report can be submitted. This mail needs to be communicated to the following mail ID on an urgent basis.

1. dmg.mines-hry@gov.in
 2. priynkadhiman1999@gmail.com
 ३. madhvigupta34@yahoo.co.in
- with CC to
१. priti.harsac@gmail.com
 ०. <directorharsac@gmail.com>, <sultan_harsac@yahoo.co.in>, <ps.harsac.ggm@gmail.com>

[Quoted text hidden]

 **Online Meeting held on 27_feb_2025.pdf**
149K

Dharmendra Singh <dsbaghel0184@gmail.com>
To: Contact HARSAC <contact@harsac.org>
Cc: sultan harsac <sultan_harsac@yahoo.co.in>

Tue, Mar 4, 2025 at 6:33 PM

Dear Sir/Madam,

Neither any officials from the Mining department had visited the HARSAC as requested in the trailing mail nor any reply on the trailing mail has been received. Kindly respond properly so that further required action may be taken from HARSAC side. Thus you are again requested to visit and respond properly so that necessary reports can be provided from the HARSAC side. This mail needs to be communicated to the following mail ID on an urgent basis.

1. dmg.mines-hry@gov.in
 2. priynkadhiman1999@gmail.com
 ३. madhvigupta34@yahoo.co.in
- with CC to
१. priti.harsac@gmail.com
 ०. <directorharsac@gmail.com>, <sultan_harsac@yahoo.co.in>

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>
To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Tue, Mar 4, 2025 at 7:10 PM

Dear Sir/Madam,

Please refer to the trailing mail and mail done from contact@harsac.org dated 1 March 2025. Neither any officials from the Mining department had visited the HARSAC as requested in the trailing mail nor any reply on the trailing mail has been received. Kindly respond properly so that further required action may be taken from HARSAC side. Thus you are again requested to visit and respond properly so that necessary reports can be provided from the HARSAC side. See the attachment as well.

[Quoted text hidden]

 **Online Meeting held on 27_feb_2025.pdf**
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Dharmendra Singh <dsbaghel0184@gmail.com>
To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Fri, Apr 11, 2025 at 6:39 PM

Respected Sir/madam,

Please provide information on queries raised and attached in the trailing mail and visit HARSAC at a suitable time so that further necessary action can be taken.

Thanks and Regards

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>
To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Tue, Jun 3, 2025 at 7:20 PM

Respected Sir/Madam,

With reference to trailing mail a visit of officials from mining department happened on 02-06-2025. The minutes of the meeting is provided below:

Sub: Minutes of Meeting held between HARSAC and Mining Department at HARSAC Node Office Gurugram on 02-06-2025
A meeting was held between the officials of HARSAC and Mining and Geology Department, Government of Haryana on 02-06-2025 at HARSAC Node Gurugram.

Following points were discussed in the Meeting regarding Rattewali mining site:

1. The communications done so far are incomplete and not suitable to draw any conclusion on the Rattewali issue.

- 2. The reference points provided are in meters however required in Degree decimals.
- 3. The revised mining plans should be used or pre-revised mining plans should be used is not clear.
- 4. The reference elevation values are not finalized and communicated with HARSAC as per the requirement.
- 5. As per approved guidelines the permissible depth is 1.33 m. However, it needs to be verified and finalized by Higher authorities.
- 6. The final decision on reference elevation points, mining plan, permissible limit of the mining, and material density needs to be taken by Higher authorities preferable by ACS, Mining and geology Department, in presence of HARSAC and officials from mining department.
- 7. Raw data of the initial survey done by the project proponent needs to be provided to the HARSAC at the earliest for accurate analysis.
- 8. Extent of analysis needs to be provided by the Mining and Geology Department, Government of Haryana.

These points need to be communicated with Higher authorities also for further actions.

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com> Wed, Jun 11, 2025 at 8:08 PM
 To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
 Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Respected Sir/Madam,

With reference to our ongoing communication regarding the Rattewali issue, this is to reiterate that the required information is still awaited. Despite repeated follow-ups, the **RAW data of the reference survey** has not been made available to HARSAC. The necessary decisions related to the matter are also pending, which are critical for the timely finalization of the report.

We wish to place on record that the delay in submission of the report is solely due to the non-receipt of essential information and data from the concerned organization(s). HARSAC, as the technical facilitator for the Government of Haryana, cannot proceed in the absence of these crucial inputs. Hence, **HARSAC shall not be held responsible or liable** for any delays caused by this non-compliance.

Furthermore, it is important to clarify that HARSAC functions purely in a technical advisory capacity and **is not accountable to any court, legal, or enforcement authority** for delays arising from lapses beyond its mandate.

In view of the above, it is once again requested to provide the pending information and reference data **at the earliest** to enable HARSAC to complete the report and fulfill its responsibilities as per the assigned scope.

Submitted for your urgent attention and necessary action, please.

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com> Fri, Jun 20, 2025 at 7:46 AM
 To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
 Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Reminder,

Respected Sir/Madam,

With reference to our ongoing communication regarding the Rattewali issue, this is to reiterate that the required information is still awaited. Despite repeated follow-ups, the **RAW data of the reference survey** has not been made available to HARSAC. The necessary decisions related to the matter are also pending, which are critical for the timely finalization of the report.

We wish to place on record that the delay in submission of the report is solely due to the non-receipt of essential information and data from the concerned organization(s). HARSAC, as the technical facilitator for the Government of Haryana, cannot proceed in the absence of these crucial inputs. Hence, **HARSAC shall not be held responsible or liable** for any delays caused by this non-compliance.

Furthermore, it is important to clarify that HARSAC functions purely in a technical advisory capacity and **is not accountable to any court, legal, or enforcement authority** for delays arising from lapses beyond its mandate.

In view of the above, it is once again requested to provide the pending information and reference data **at the earliest** to enable HARSAC to complete the report and fulfill its responsibilities as per the assigned scope.

If information sought are not provided, HARSAC has to close the issue on note that the assessment is not possible due to absence of essential information and will not be able to submit any report.

Submitted for your urgent attention and necessary action, please.

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com> Wed, Jul 23, 2025 at 2:50 PM
 To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in
 Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Final request on: Requiring Clarification from the Department of Mines & Geology (DMG) Regarding Rattewali Issue and regarding issues raised in trailing mail.

1. Incomplete Communication
The communications received so far from DMG are incomplete and not adequate to draw any definitive conclusions on the Rattewali matter.
2. Incorrect Reference Format
The reference points provided are in meters, whereas they are required in degree decimal format. Clarification is needed from DMG.
3. Uncertainty in Mining Plans
It is unclear whether the revised mining plans or the pre-revised plans are to be considered for analysis. DMG must provide clear direction.
4. Elevation Data Not Finalized
The reference elevation values have not been finalized or officially communicated to HARSAC as per the operational requirement.
5. Permissible Depth Confirmation Pending
Although the approved guideline indicates a permissible mining depth of 1.33 meters, it needs to be verified and confirmed by DMG.
6. Final Decision Pending on Key Parameters
DMG is required to take the final decision on the following:
 - Reference elevation points
 - Applicable mining plan
 - Permissible mining depth
 - Material density to be used in analysis
7. Raw Survey Data Not Shared

The raw data from the initial survey conducted by the project proponent has not yet been shared with HARSAC. This data is critical for accurate analysis and should be provided at the earliest.

8. Scope of Analysis Not Defined

The extent and scope of analysis to be undertaken must be clearly communicated by the Department of Mines & Geology, Government of Haryana.

[Quoted text hidden]

K. Makrand Pandurang <dmg.mines-hry@gov.in>

Fri, Jul 25, 2025 at 1:12 PM

To: Dharmendra Singh <dsbaghel0184@gmail.com>

Cc: madhvigupta34 <madhvigupta34@yahoo.co.in>, Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

R/Sir/Ma'am,

This is to inform you that a meeting through video conference (VC) has been scheduled under the Chairmanship of Worthy Director General, Mines and Geology, Haryana on July 25, 2025 at 04:00 PM. This is for your information and further necessary action.

Thank & regards,

Mines and Geology Department

--- On Wed, 23 Jul 2025 14:50:33 +0530

Dharmendra Singh <dsbaghel0184@gmail.com> wrote ---

[Quoted text hidden]

K. Makrand Pandurang <dmg.mines-hry@gov.in>

Fri, Jul 25, 2025 at 1:21 PM

To: Dharmendra Singh <dsbaghel0184@gmail.com>

Cc: madhvigupta34 <madhvigupta34@yahoo.co.in>, Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Agenda of the meeting is regarding the submission of the final report of Tirupati Mines (Rattewali) based on modified mining plan.

Thank & regards,

Mines and Geology Department

--- On Fri, 25 Jul 2025 13:12:17 +0530 **K. Makrand Pandurang** <dmg.mines-hry@gov.in> wrote ---

[Quoted text hidden]

K. Makrand Pandurang <dmg.mines-hry@gov.in>

Fri, Jul 25, 2025 at 4:00 PM

To: Dharmendra Singh <dsbaghel0184@gmail.com>

Cc: Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Please see the link for the VC

<https://meet.google.com/dbu-oszv-pqp>

--- On Fri, 25 Jul 2025 13:21:58 +0530 **K. Makrand Pandurang** <dmg.mines-hry@gov.in> wrote ---

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>

Fri, Jul 25, 2025 at 4:01 PM

To: "K. Makrand Pandurang" <dmg.mines-hry@gov.in>

Cc: madhvigupta34 <madhvigupta34@yahoo.co.in>, Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Respected Sir/Madam,

There is no VC link attached. Kindly provide the same please so that we can join the meeting.

[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>

Sat, Jul 26, 2025 at 6:58 PM

To: "K. Makrand Pandurang" <dmg.mines-hry@gov.in>

Cc: madhvigupta34 <madhvigupta34@yahoo.co.in>, Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Respected Sir/Madam,

It is to be communicated that HARSAC has an online meeting with DGM on 25-07-2025 through online mode at 4 PM where it was suggested to join the online meeting again at 5 PM on the same date. However, the same could not happen probably due to paucity of time. HARSAC is willing to close the analysis after discussion with the DGM at the earliest. For this, HARSAC needs some key information which was communicated many times (see trailing mail). The same is below again.

Requirement of necessary details regarding Rattewali mining site raised through various mails dated (Mar 1, 2025, Mar 4, 2025, Apr 11, 2025, Jun 3, 2025, Jun 11, 2025, Jun 20, 2025, Jul 23, 2025).

Queries	Remarks	Roles/Responsibility
1. Incomplete Communication		
The communications received so far from DMG are incomplete and not adequate to draw any definitive conclusions on the Rattewali matter.	Confirmation on reference elevation values, mining plans, initial survey data etc. are missing 51	DGM and Tirupati both

1051

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<p>2. Incorrect Reference Format The reference points provided are in meters, whereas they are required in degree decimal format. Clarification is needed from DMG.</p>	<p>Reference zone provided is wrong. The degree decimals of reference points are not provided.</p>	<p>Tirupati</p>
<p>3. Uncertainty in Mining Plans It is unclear whether the revised mining plans or the pre-revised plans are to be considered for analysis. DMG must provide clear direction.</p>	<p>No reply was received yet</p>	<p>DGM</p>
<p>4. Elevation Data Not Finalized The reference elevation values have not been finalized or officially communicated to HARSAC as per the operational requirement.</p>	<p>It is not confirmed that the elevation values mentioned in the revised mining plan are to be used as reference values</p>	<p>DGM</p>
<p>5. Permissible Depth Confirmation Pending Although the approved guideline indicates a permissible mining depth of 1.33 meters, it needs to be verified and confirmed by DMG.</p>	<p>Confirmation is not received.</p>	<p>DGM and Tirupati both</p>
<p>6. Final Decision Pending on Key Parameters</p>		
<p>DMG is required to take the final decision on the following:</p>		
<ul style="list-style-type: none"> • Reference elevation points 	<p>Confirmation is not received. Confirmation is not received.</p>	<p>DGM, DGM, DGM, DGM is not</p>
<ul style="list-style-type: none"> • Applicable mining plan 	<p>received.</p>	<p>Tirupati both</p>
<ul style="list-style-type: none"> • Permissible mining depth 	<p>Confirmation is not received.</p>	<p>DGM</p>
<ul style="list-style-type: none"> • Material density to be used in analysis 	<p></p>	<p></p>
<p>7. Raw Survey Data Not Shared</p>		
<p>The raw data from the initial survey conducted by the project proponent has not yet been shared with HARSAC. This data is critical for accurate analysis and should be provided at the earliest.</p>	<p>In case of non-availability, confirmation from the DGM is not provided on key points.</p>	<p>DGM and Tirupati both</p>
<p>8. Scope of Analysis Not Defined</p>		
<p>The extent and scope of analysis to be undertaken must be clearly communicated by the Department of Mines & Geology, Government of Haryana.</p>	<p>What exactly/additionally is needed to be discussed.</p>	<p>DGM</p>
<p>Conclusions: Since the receipt of requirement HARSAC has done one online meeting (Priyanka, Deepak Hooda and team), one physical meeting (Priyanka and Deepak Hooda) and communicated requirements 7 times through mail but did not get relevant information. HARSAC can submit the report in five working days once the key information is confirmed and communicated in a physical meeting also.</p>		

Submitted for information and supply of information please,
[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>
To: stategeologist2019@gmail.com

Tue, Aug 5, 2025 at 6:40 PM

Respected sir,
Please see the mail.
[Quoted text hidden]

Dharmendra Singh <dsbaghel0184@gmail.com>
To: "K. Makrand Pandurang" <dmg.mines-hry@gov.in>
Cc: madhvigupta34 <madhvigupta34@yahoo.co.in>, Priyanka Dhiman <priyankadhiman1999@gmail.com>, sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>, stategeologist2019@gmail.com

Tue, Aug 12, 2025 at 3:34 PM

Respected Sir/Madam,

This in continuation to the trailing mail regarding providing the necessary details to HARSAC on Rattewali mining site. It is to inform you that the HARSAC has requested correct information from the department several times through mails (**Mar 1, 2025, Mar 4, 2025, Apr 11, 2025, Jun 3, 2025, Jun 20, 2025, Jul 23, 2025, and 26 Jul**). You are again requested to provide the necessary correct details within Hal

matter is not so serious and we will submit the report based on available data with HARSAC. Kindly consider this as final request.

Regards,
Dr. Dharmendra Singh
Sr. Scientist, HARSAC

[Quoted text hidden]



**DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA**

REGISTERED/SPEED POST/THROUGH EMAIL

To

The Director, Haryana Space Applications Centre (HARSAC),
Mini Secretariat, Old Railway Rd,
Shaheed Sukhdev Block, Shanti Naga Shivaji Nagar,
Sector 11, District Gurugram -122001, Haryana..

Memo No. DMG/Hy/Cont./Rattewali Block/Panchkula B-10/2017/376
Dated Panchkula the 30-01-2025

Sub- Requirement of necessary details regarding Rattewali mining site.

This is in reference to your e-mail dated 27.01.2025 on the subject noted above.
The point-wise reply is as below-

1. The scanned copy of Mining Plan-revised and original (pre-revised) is attached herewith.
3. The scanned copy of District Survey Report is also attached herewith.
6. The bulk density of mineral Boulder Gravel Sand (mineral as per Mining Plan) is 2 as per mining plan and 2.6 as per modified mining plan.

It is also to inform that other information will be provided by the mining contractor of Rattewali M/s Tirupati Roadways, Village Rattewali, Panchkula as the survey for preparation of mining plan was done by the contractor at his own level. Hence, other information will be provided by the said contractor directly to your esteemed Department.

This is for your information and necessary action in the matter.

State Geologist,
for Director General, Mines and Geology,
Haryana



**DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA**

From

Director General,
Mines & Geology Department,
Plot No. 09, DHL Square Building, Sector-22, IT Park,
Panchkula

To

The Director, Haryana Space Application Centre (HARSAC),
Mini Secretariat, Old Railway Rd,
Shaheed Sukhdev Block, Shanti Nagar Shivaji Nagar,
Sector 11, District Gurugram-122001, Haryana.

Memo No. Dmg/Hy/Cont./Rattewali Block/Panchkula B-10/2017/ 605
Dated Panchkula the 19.02.2025

Sub:- Requirement of necessary details regarding Rattewali mining Site.

With reference to this office letter No. 376 dated 30.01.2025 on the above noted subject.

2. Vide letter under reference, some information regarding Rattewali Mining Site, sought by you i.e. 1. the scanned copy of Mining Plan-revised and original(pre-revised)
3. The scanned copy of District Survey Report and 6. the scanned copy of modified mining plan, has already been provided to you, through email dated 30.01.2025 & 04.02.2025.

3. As you are aware that the Mining Contractor of M/s Tirupati Roadways, Rattewali Block, District Panchkula has already been directed vide this office letter dated 30.01.2025, to provide the rest information regarding Rattewali mining site. Accordingly, the Mining Contractor of Rattewali Mining Site has provided the sought information (Copy Attached), which are reproduce as under:-

Point-Wise Reply

i. Point No. 2:- "The reference point (x-y-z value) of benchmark for the 2020 survey & 2024 survey are required w.r.t. the reports submitted by M/s Tirupati Roadways."

ii. Reply:- The Value of benchmark considered :-

Year of Survey	Location of Benchmark	Remarks
In the year 2020 Survey	X= 691144.808 Y= 3393292.304 Z= 372.6979	Marked on plan as Pillar No. 1
In year 2024 Survey	X= 690482.416 Y= 3392066.875 Z= 359.028	Marked on plan as Temple



**DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA**

iii. Point No. 3:- "The Coordinate points (x-y-z value) of all benchmarks in Mining Plan-revised and original (pre-revised) are required w.r.t. the mining plans submitted by M/s Tirupati Roadways."

iv. Reply:-

Year of Survey	Location of Benchmark	Remarks
In the year 2017 Approved plan	X= 691157.7752 Y= 3392769.7173 Z= 360.00	Marked on plan as Pillar No. 5
In year 2018 Approved plan	X= 690573.95 Y= 3391780.03 Z= 366.83	Marked on plan as Pillar No. 12

v. Point No. 4:- "The details of methodology used for volume calculation on by the Cut & Fill method during the 2020 survey and 2022 are required w.r.t. the reports submitted by M/s Tirupati Roadways alongwith the datasets."

vi. Reply:-

a. The methodology used for volume calculation is cut and fill method where the field survey (physical & aerial) and the data generation thereof for the pre-mining 2020 and post monsoon season of 2022 was undertaken by the technical agency and the data were compiled and analyzed with the help of standard engineering and mining software (AutoCAD, Civil3D, Global Mapper, etc.);

b. In the approved modified Mining plan (Refer page no. 23 of Modified Mining Plan) the reserve calculation was done by cross-sectional area method by preparing around 61 cross sections at 25m interval. To compute the volume, the cross-sectional area was multiplied by 25m. The cumulative of all the section's volume represented the overall reserve present in the lease area;

c. The similar methodology has been prescribe by MOEF in Point No. 8 of Para 5.2.1 of the *Enforcement & Monitoring guidelines for sand mining-January, 2020* as under:-

"The volume will be estimated by multiplying the distance between two cross-sections with the average of net area of the two consecutive cross-sections."

vii. **Point No. 5:-** "It is mentioned in M/s Tirupati's report that the reference point is taken from an undisturbed area during the DGPS Survey in 2022. Kindly provide the x-y-z value of the reference point in an undisturbed area."



DIRECTORATE OF MINES AND GEOLOGY, HARYANA,
PLOT NO. 9, DHL SQUARE, 2ND FLOOR,
I.T. PARK, SECTOR-22, PANCHKULA

Viii. Reply:- The values of benchmarks considered in 2022 Survey area (x=691144.808, Y= 3393292.304, & z= 372.6979) "Marked in plan as Pillar No. 1"

4. In this context, the parawise reply submitted by the mining contractor of Rattewali mining site has been send to you for information and further necessary action please.

DA: As above.

Mining Officer,
for Director General, Mines & Geology,
Haryana, Panchkula

Re: Requirement of necessary details regarding Rattewalli mining site by HARSAC for preparing inspection report based on modified mining plan.

GS Gurpreet Sabharwal <gurpreetsabharwal@hotmail.com>

Thu, 11 Sep 2025 12:54:10 PM +0530

- To: "K. Makrand Pandurang" <dmg.mines-hry@gov.in>
Cc: "stategeologist2019" <stategeologist2019@gmail.com>

To:

State Geologist
Director General, Mines and Geology
Haryana

SUBJECT- With reference to your Letter Memo No. DMG/Hy/Cont./Rattewalli Block/Panchkula/10/2017/374 dated 30.1.2025 seeking the certain data to HARSAC under endorsement of your Office;

AND

With respect to certain critical issues that would go to the root of the matter for consideration of same in a purposeful, meaningful and holistic manner.

Hon'ble Sir,

With respect to the subject letter, our comments and compliances maybe noted as under:-

1. We can provide the reference points used in all surveys conducted since the commencement of mining operations. These surveys were carried out using DGPS as part of the drone survey recommended by MoEF during the Environmental Clearance (EC) grant process.
2. Since the Modified Mining Plan (Order No. DMG/HY/MP/Rattewalli Block/PKL/B-10/3992 dated 07-08-2018) has superseded the original Mining Plan (Order No. DMG/HY/MP/Rattewalli Block/PKL/B-10/2017/405-408 dated 24/01/2018), we request the department to consider the Surface Plan of the Modified Mining Plan as the authentic reference for calculation purposes, rather than the outdated Mining Plan.
3. We request the department to provide a copy of the 2022 raw DGPS survey data to enable us to cross-check the quantity of excavated material at our end.
4. As the Modified Mining Plan was approved by the department with the assistance of a competent officer, its drawings should be given due importance in all assessments.
5. We would like to review the Mining Plans of other lessees operating along the same river or its tributaries, as approved by the department. This will help us understand the Benchmarks (B.M.) and riverbed elevations for a more accurate assessment.
6. The department has not provided clear and proactive directions regarding Standard Operating Procedures (SOPs) for surveys or quantity calculations for Sand Mining. In the absence of standardized guidelines, calculation methodologies remain uncertain and lack uniformity.

POINT-WISE REPLY

i. **Point No. 2:-** "The reference point (x-y-z value) of benchmarks for the 2020 survey & 2024 survey are required w.r.t the reports submitted by M/s Tirupa Roadways."

ii. **Reply:- The values of benchmarks considered:-**

Year of Survey	Location of Benchmark	Remarks
In Year 2020 Survey	X=691144.808, Y=3393292.304, Z=372.6979	Marked on plan as Pillar No. 1
In Year 2024 Survey	X=690482.416, Y=3392066.875,	Marked on plan as Temple

iii. **Point No. 3:-** "The coordinate points (x-y-z value) of all benchmarks in Mining Plan- revised and original (pre- revised) are required w.r.t the mining plans submitted by M/s Tirupati Roadways."

iv. Reply:-

Year of Survey	Location of Benchmark	Remarks
In Year 2017 plan	Approved X=691157.7752 Y=3392769.7173 Z=360.00	Marked on plan as Pillar No. 5
In Year 2018 plan	Approved X=690373.95 Y=3391780.03 Z=366.83	Marked on plan as Pillar No. 12

v. **Point No. 4 :-** "The details of methodology used for volume calculation on by the Cut & Fill method during the 2020 survey and 2022 are required w.r.t the reports submitted by M Tirupati Roadways along with the datasets."

vi. Reply:-

a. The methodology used for volume calculation is cut and fill method where the field survey (physical & aerial) and the data generation thereof for the pre-mining 2020 and post monsoon season of 2022 was undertaken by the technical agency and the data were compiled and analyzed with the help of standard engineering and mining software (AutoCAD Civil3D, Global Mapper, etc);

b. In the approved modified Mining Plan (Refer page no. 23 of Modified Mining Plan) the reserve calculation was done by cross-sectional area method by preparing around 61 cross sections at 25m interval. To compute the volume, the cross-sectional area was multiplied by 25m. The cumulative of all the section's volume represented the overall reserve present in the lease area;

c. The similar methodology has been prescribe by MOEF in In Point No. 8 of Para 5.2.1 of the *Enforcement & Monitoring guidelines for sand mining-January, 2020* as under:-

"The volume will be estimated by multiplying the distance between two cross-sections with the average of net area of the two consecutive cross-sections"

vii. **Point No 5:-** "It is mentioned in M/s Tirupati's report that the reference point is taken from an undisturbed area during the DGPS Survey in 2022. Kindly provide the x-y-z value of the reference point in an undisturbed area."

viii. Reply:- The values of benchmarks considered in 2022 Survey area (x=691144.808, Y=3393292.304, & z=372.6979) "Marked in plan as Pillar No. 1"

HUMBLE REQUEST

In the wake of the foregoing, please take the details as mentioned above on record as this would ensure necessary compliance with your Letter.

We request the department to provide a copy of the **2022 raw DGPS survey data** to enable us to cross-check the **quantity of excavated material** at our end.

Thanking you,

Regards

Gurpreet Singh Sabharwal

Tirupati Roadways

On 30 Jan 2025, at 3:19 PM, K. Makrand Pandurang <dmg.mines-hry@gov.in> wrote:



Dharmendra Singh <dsbaghel0184@gmail.com>

Fwd: Requirement of necessary details regarding Rattewali mining site

Dharmendra Singh <dsbaghel0184@gmail.com>

Tue, Jun 3, 2025 at 7:20 PM

To: madhvigupta34@yahoo.co.in, Priyanka Dhiman <priynkadhiman1999@gmail.com>, dmg.mines-hry@gov.in

Cc: sultan harsac <sultan_harsac@yahoo.co.in>, Contact HARSAC <contact@harsac.org>, Director Harsac <directorharsac@gmail.com>, Priti Attri <priti.harsac@gmail.com>

Respected Sir/Madam,

With reference to trailing mail a visit of officials from mining department happened on 02-06-2025. The minutes of the meeting is provided below:

Sub: Minutes of Meeting held between HARSAC and Mining Department at HARSAC Node Office Gurugram on 02-06-2025

A meeting was held between the officials of HARSAC and Mining and Geology Department, Government of Haryana on 02-06-2025 at HARSAC Node Gurugram.

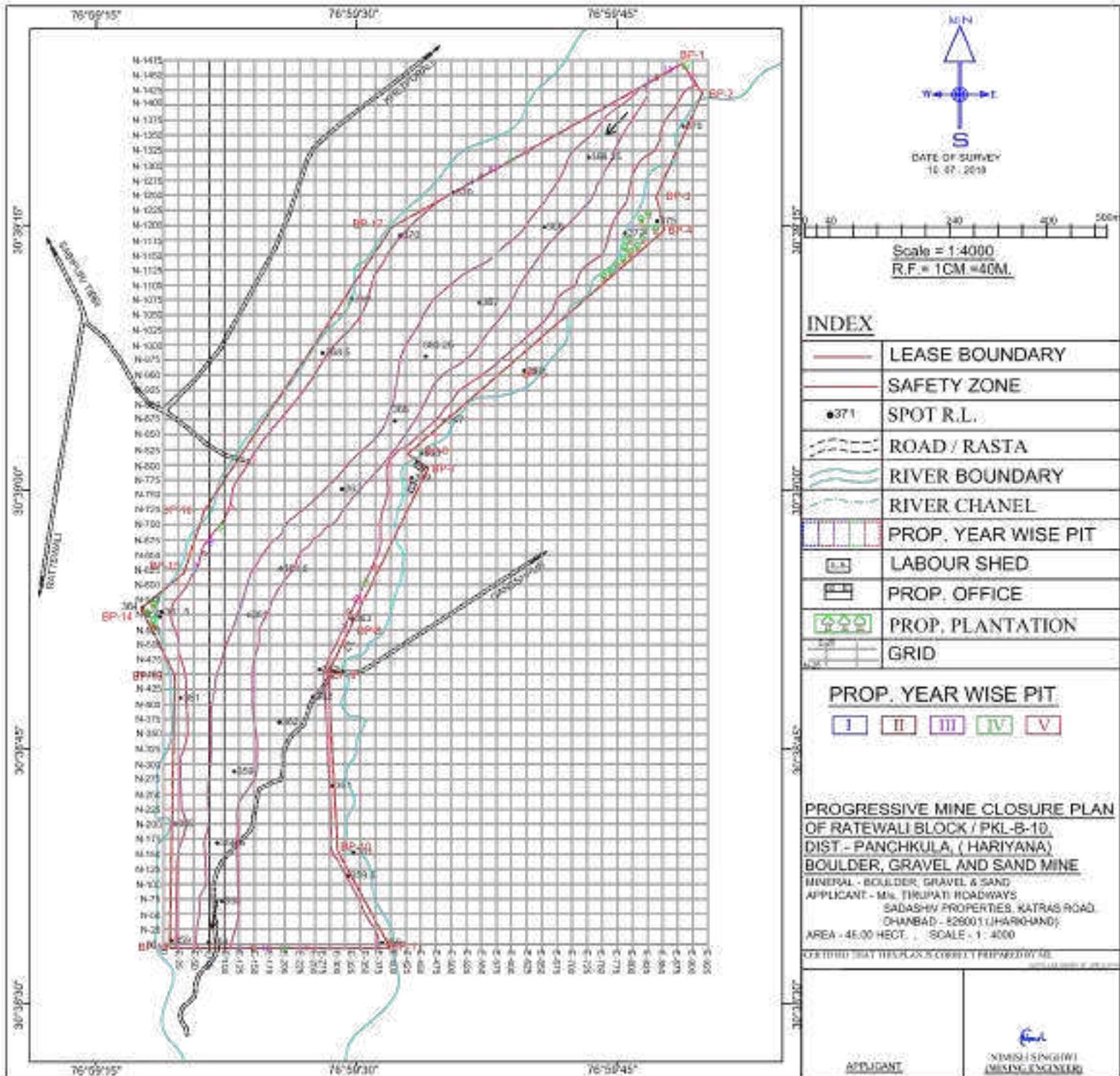
Following points were discussed in the Meeting regarding Rattewali mining site:

१. The communications done so far are incomplete and not suitable to draw any conclusion on the Rattewali issue.
२. The reference points provided are in meters however required in Degree decimals.
३. The revised mining plans should be used or pre-revised mining plans should be used is not clear.
४. The reference elevation values are not finalized and communicated with HARSAC as per the requirement.
५. As per approved guidelines the permissible depth is १.३३ m. However, it needs to be verified and finalized by Higher authorities.
६. The final decision on reference elevation points, mining plan, permissible limit of the mining, and material density needs to be taken by Higher authorities preferable by ACS, Mining and Geology Department, in presence of HARSAC and officials from mining department.
७. Raw data of the initial survey done by the project proponent needs to be provided to the HARSAC at the earliest for accurate analysis.
८. Extent of analysis needs to be provided by the Mining and Geology Department, Government of Haryana.

These points need to be communicated with Higher authorities also for further actions.

[Quoted text hidden]

Modified/Revised Mining layout Plan



INDEX

	LEASE BOUNDARY
	SAFETY ZONE
	SPOT R.L.
	ROAD / RASTA
	RIVER BOUNDARY
	RIVER CHANEL
	PROP. YEAR WISE PIT
	LABOUR SHED
	PROP. OFFICE
	PROP. PLANTATION
	GRID

PROP. YEAR WISE PIT

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PROGRESSIVE MINE CLOSURE PLAN OF RATEWALI BLOCK / PKL-B-10, DIST - PANCHKULA, (HARIYANA) BOULDER, GRAVEL AND SAND MINE
 MINERAL - BOULDER, GRAVEL & SAND
 APPLICANT - M/s. THIRUPATI ROADWAYS
 SADASHIV PROPERTIES, KATRAS ROAD, CHANBAD - 526011 (HARKHAND)
 AREA - 45.00 HECT. , SCALE - 1 : 4000

DATE: 10-07-2018
 PREPARED BY: M/S. NIMISH SINGHWI (MINE ENGINEER)

Specification of Satellite Data (2D) used in Land use creation of Lease area

Date	Satellite Name	Data Type	Sensor	Spatial Resolution	Band	Purpose of Use
21-11-2017	PlanetScope	Raster	Optical	3 Meter	4	Creating LandUse map
23-10-2018	PlanetScope	Raster	Optical	3 Meter	4	Creating LandUse map
25-11-2019	PlanetScope	Raster	Optical	3 Meter	4	Creating LandUse map
07-10-2020	PlanetScope	Raster	Optical	3 Meter	4	Creating LandUse map
19-10-2021	PlanetScope	Raster	Optical	3 Meter	4	Creating LandUse map
14-10-2022	PlanetScope	Raster	Optical	3 Meter	8	Creating LandUse map
25-10-2023	PlanetScope	Raster	Optical	3 Meter	8	Creating LandUse map
24-10-2024	PlanetScope	Raster	Optical	3 Meter	8	Creating LandUse map

Technical specifications for High resolution satellite imagery

S.No.	Parameter	Description
1.	Name of shapefile	Satpalda_band
2.	Size of the shapefile in Sq.Kms (in case of multiple shapefiles, please mention the size separately for each shapefile)	11515470 Sq.Kms
3.	Product Type	Ortho Ready 50cm or better resolution archive Stereo Imagery (OR2A Stereo)
4.	Resolution	Imagery should be collected using satellite sensors with better than 50cm GSD at nadir
5.	Bands	PANCHROMATIC or 4 Band (R,G,B, NIR)
6.	Fresh Tasking / Archive data	Archive data
7.	Period of interest	2019
8.	Cloud% acceptable	≤ 10%
9.	Off Nadir Angle (ONA) acceptable	0-35 Deg
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13	Format	GeoTiff
14	Bit Depth	16 bit
15	Tiling	default
16	License	Internal Use
17	Segment	Commercial
18	End application	Test
19	Any other additional/Specific requirements	<ol style="list-style-type: none"> 1. Complete coverage details for archive data (50 cm or higher resolution) shall be shared by the distributor on the letterhead for the department to evaluate. 2. Compliance with the technical specifications needs to be given on OEM letterhead (Not reseller /Distributor). 3. Authorization letter with Tender reference number, addressed to the department, to the IN-SPACE empanelled bidder should be provided by OEM (Not a reseller/distributor).

1063

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Yash Garg, IAS



5682/MA/MC-4
 Deputy Commissioner,
 Panchkula.
 Tel. No. 2565313 (O) 2565000 (FAX)
 2565777 (R) 2571666 (FAX)

Dated: 26-04-2024

Respected Sir,

Subject:- Regarding survey of M/s Tirupati Roadways, Rattewali, Block/PKL B10, Panchkula.

① In this connection, it is intimated that an OA No. 752 of 2023 was filed before the Hon'ble NGT alleging violation of EC conditions by the M/s Tirupati Roadways. It was specifically alleged that they have done the mining much in excess of the permissible limit. The Hon'ble NGT formed a committee appointing District Magistrate, Panchkula as the nodal agency and to submit the report relating to the extent of illegal mining in the area.

In view of above, you are hereby requested to kindly ^② assist us by conducting a ^③ drone survey, so that the extent of the illegal mining done by M/s Tirupati Roadways, Rattewali, Block/PKL B10, Panchkula can be determined. An early action is solicited as the report has to be submitted before the next date of hearing i.e. 10.05.2024 in the Hon'ble NGT. Regional Officer, Panchkula, Haryana State Pollution Control Board shall provide all assistance for the field visit to the team.

Regards,

(Yash Garg, IAS)

Sh. T.L. Satyaprakash, IAS
 Chief Executive Officer,
 DRIISHYA, Haryana.

Rattewali Mining Area (Required Information)

Sf. No.	Topic	Required Information (Please fill the required information)
1.	Requirement letter received on:	03/05/24
2.	Planning Date:	
3.	Survey Date:	08/05/24 - 09/05/24
4.	Start Time of Survey (AM/PM):	10:00 AM
5.	Surveyed By (Pilot/Copilot details):	Two Pilots & Two Co-pilots 1. Rohit Chauhan - Pilot 2. Rajinder Chauhan - Pilot 3. Sahil - Co-pilot 4. Rahul - Co-pilot
6.	Contact detail of Mining officer whom survey team contacted during survey	N/A
7.	Information/Data Available from Mining Department	Survey done as per w/order from DC Office PKL and Aol defined in terms of kml files by CISO office.
8.	No. of Flights (with time):	07 (Flight1 - 43 m, Flight2 - 45 m, Flight 3 - 38 m, Flight 4 - 48 m, Flight 5 - 42 m, Flight 6 - 40 m, Flight 7 - 48m)
9.	No. of Images per flight:	Flight1 - 634, Flight2 - 530, Flight 3 - 625, Flight 4 - 658, Flight 5 - 573, Flight 6 - 549, Flight 7 - 467)
10.	Total Area Surveyed:	5.198 Sq. Km
11.	Drone Specifications:	Mapping Drone (SNAP-M)
	Endurance	50+ min.
	Wind Resistance	>8m/s
	Weight	2.7kg
	Takeoff Altitude	5000 m AMSL
	Battery	Lithium Based (International Standard compliant)
	RTK-PPK GNSS Bands	Dual Frequency L1, L2, G1, G2
	GNSS Constellations	GPS, GLONASS, Galileo

		C2 Link	AES 128 Bit Encryption
		Compliance	DGCA Type Certified
		Accuracy X/Y	<10 cm
		Accuracy Z	<20 cm
		GSD @120m	3 cm
12.	Sensor Specifications:	RGB Sensor (20 MP) ILCE-5000, E 11mm F1.8 (11mm)	
13.	Drone parameters while flight planning: <ul style="list-style-type: none"> • GSD • Overlap • Flight height • Any Other 	<ul style="list-style-type: none"> • GSD - 5.03 cm • Forward Overlap 80% • Side Overlap 60% • Flight Altitude 400 Feet 	
14.	No. of GPS Points Taken:	14	
15.	DGPS Specification (with accuracy):	Leica DGPS (Requisitioned from Survey of India)	
16.	DGPS Parameters while survey: <ul style="list-style-type: none"> • Projection & Coordinate system, Accuracy level • Base/CORS information • Minimum satellite in networking, Time taken for each point collection • Any Other info 	<p>2 – 3 cm or less</p> <p>Minimum satellite 15, Time taken – 120 seconds</p>	
17.	Flight Plan (attach Log File):	Shape file Received from HARSAC node office GGN	
18.	Drone Data Checked report (Before Handover to GIS) <ul style="list-style-type: none"> • Total files • Folders • Format of required file • Size of data 		
19.	Drone Data Checked report (After Handover to GIS)	No of folder: 35 Total files: 4064 Total Size: 32.7 GB	

		Detail information in attached
20.	Drone Data Processed by (Name)	<ul style="list-style-type: none"> • Seuti Patra - GIS technician • Surabhi Manna - GIS technician • Arindam Mandal - GIS technician • Anwasha Dinda - GIS technician • Parmod Kumar - GRP
21.	Geotagged Data (Flight/Size of Data)	No of flights: 7 Size of geotagged data: 68.5 GB (including Raw Data)
22.	Processed Data (Resolution/Size); <ul style="list-style-type: none"> • DSM: • DTM: • Ortho: • Contour: 	DSM Resolution: 15 cm / Size: 872 MB DTM Resolution: 30 cm / Size: 649 MB Ortho Resolution: 5 cm / Size: 1.94 GB Contour Interval: 0.5 m & 1 m & 5 m/ Size: 72.5 MB
23.	Drone data processed report	Processed data report attached in PDF with details parameters and accuracy
24.	Report containing Maps and Data Specifications:	Map composition completed (A3 Size) and also A0 map with all information.
25.	Report prepared by	
26.	Report Checked by	
27.	Overall Submission Remarks	Total Size of Data – 72 GB (Files – 8181, Folder – 47 Folders)

Agisoft Metashape

Processing Report
09 July 2024



Index	Name	Value	Unit
1	Area	1234567.89	sq. m
2	Perimeter	12345.67	m
3	Volume	123456.78	cu. m
4	Surface Area	1234567.89	sq. m
5	Centroid	12345.67	m

Survey Data

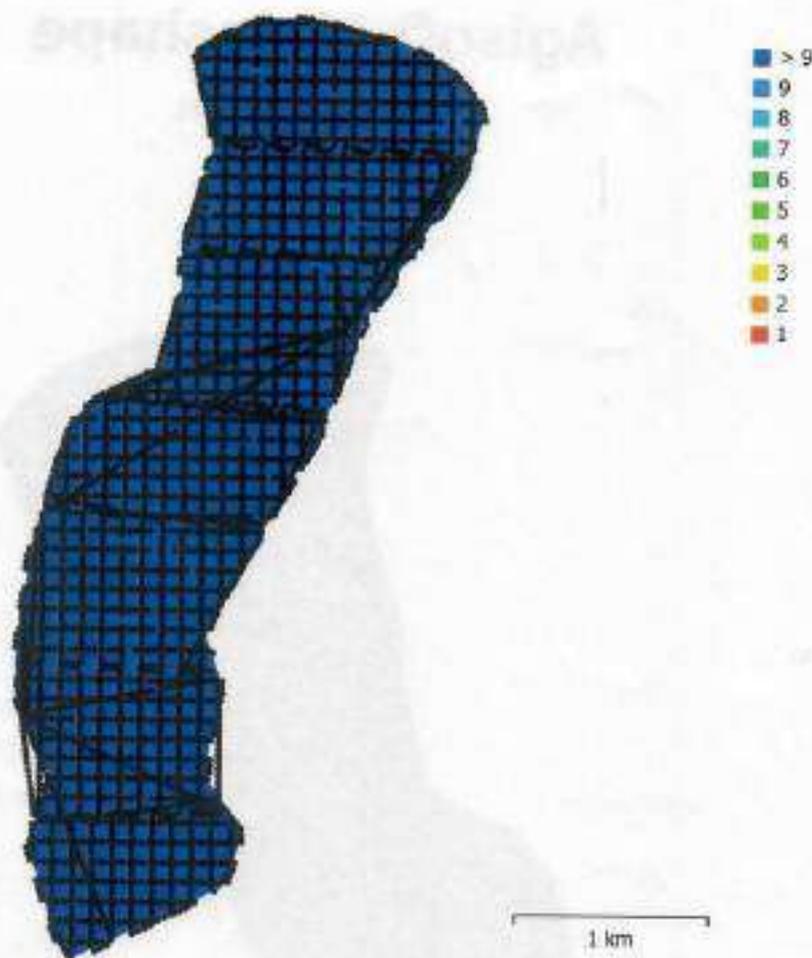


Fig. 1. Camera locations and image overlap.

Number of images:	4,036	Camera stations:	4,014
Flying altitude:	132 m	Tie points:	11,042,806
Ground resolution:	5.03 cm/pix	Projections:	52,855,036
Coverage area:	5.18 km ²	Reprojection error:	1.62 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μ m	No
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μ m	No
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μ m	No
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μ m	No
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μ m	No

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μm	No
ILCE-5000, E 11mm F1.8 ...	5456 x 3632	11 mm	4.54 x 4.54 μm	No

Table 1. Cameras.

Sl. No.	Name of the Person	Designation	Department	Address	Mobile No.	Signature	Date
1							
2							
3							
4							
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11							
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49							
50							

Camera Calibration

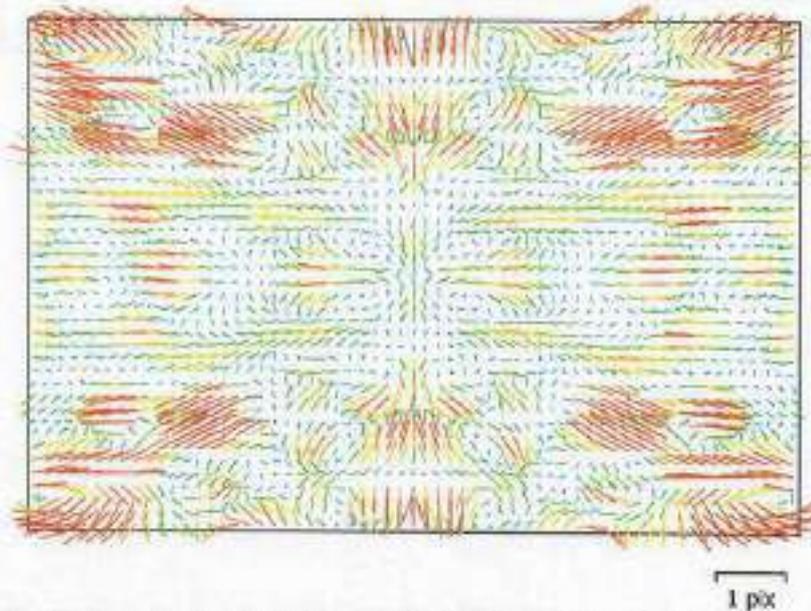


Fig. 2. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

634 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2517.82	0.16	1.00	0.01	-0.27	0.01	-0.89	0.88	-0.85	0.82	0.01	-0.01
Cx	-15.729	0.031		1.00	-0.01	0.29	-0.01	0.01	-0.01	0.01	0.90	-0.01
Cy	18.9	0.034			1.00	-0.07	0.08	-0.09	0.08	-0.08	-0.01	0.79
B2	-0.219119	0.0042				1.00	-0.00	0.00	-0.00	0.00	0.14	-0.07
K1	-0.0338317	0.00022					1.00	-0.99	0.97	-0.94	-0.01	0.02
K2	0.0375266	0.0003						1.00	-0.99	0.97	0.01	-0.02
K3	-0.0174255	0.00019							1.00	-0.99	-0.01	0.02
K4	0.00320638	4.2e-05								1.00	0.01	-0.02
P1	-0.000282559	7.7e-06									1.00	-0.01
P2	0.000407513	7.7e-06										1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

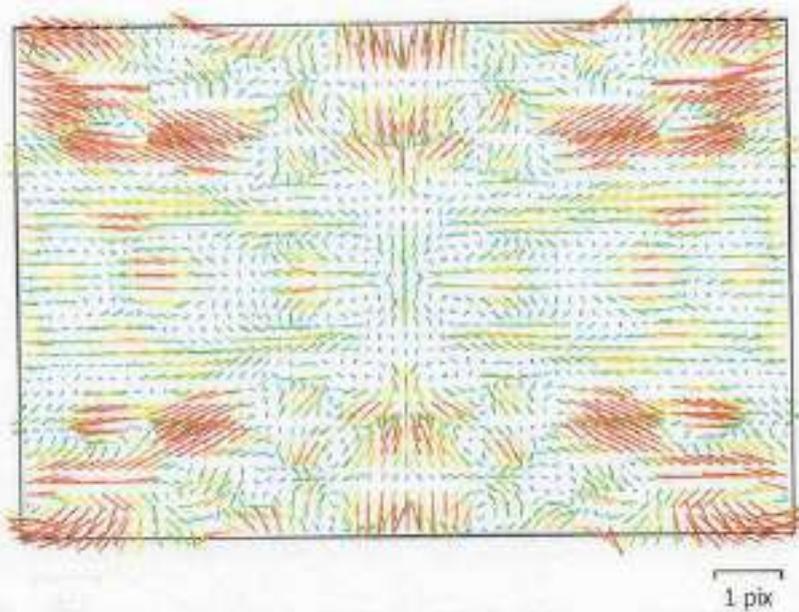


Fig. 3. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

530 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2518.71	0.15	1.00	0.00	-0.19	-0.01	-0.93	0.92	-0.89	0.85	0.01	-0.01
Cx	-15.4013	0.031		1.00	-0.00	0.24	-0.00	0.00	-0.00	0.00	0.92	-0.00
Cy	18.027	0.033			1.00	-0.05	0.06	-0.07	0.06	-0.06	-0.01	0.84
B2	-0.0729762	0.0041				1.00	0.00	-0.00	0.00	-0.00	0.13	-0.06
K1	-0.0335158	0.00022					1.00	-0.99	0.97	-0.94	-0.01	0.02
K2	0.0367969	0.0003						1.00	-0.99	0.97	0.01	-0.02
K3	-0.0167461	0.00019							1.00	-0.99	-0.00	0.02
K4	0.00300669	4.3e-05								1.00	0.00	-0.02
P1	-0.000327347	7.9e-06									1.00	-0.01
P2	0.000335495	7.6e-06										1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

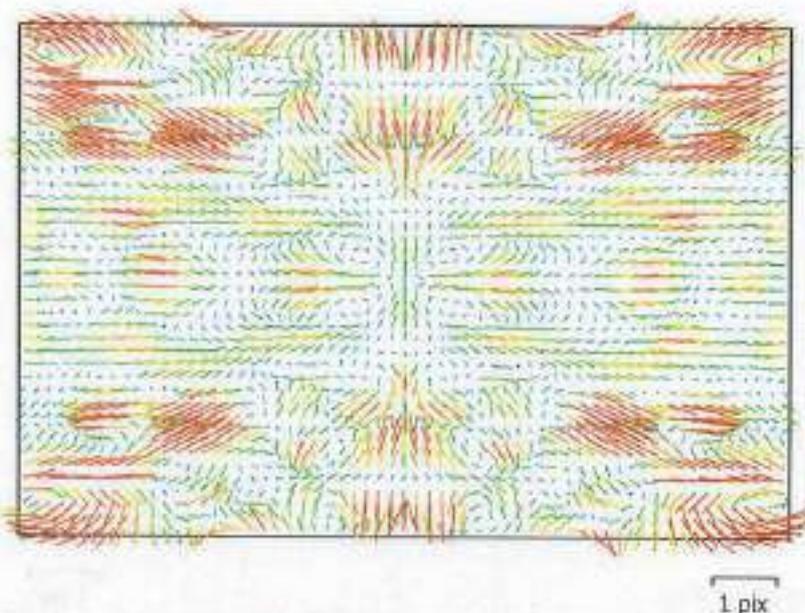


Fig. 4. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

625 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2517.4	0.14	1.00	0.01	-0.18	0.01	-0.95	0.93	-0.90	0.86	0.01	-0.01
Cx	-13.7635	0.027		1.00	-0.01	0.21	-0.00	0.00	-0.00	0.00	0.93	-0.00
Cy	18.3096	0.028			1.00	-0.08	0.06	-0.07	0.06	-0.06	-0.00	0.84
B2	-0.136701	0.0036				1.00	-0.00	0.00	-0.00	0.00	0.13	-0.08
K1	-0.0328602	0.00019					1.00	-0.99	0.97	-0.94	-0.00	0.02
K2	0.0358519	0.00027						1.00	-0.99	0.97	0.00	-0.02
K3	-0.0162139	0.00017							1.00	-0.99	-0.00	0.02
K4	0.00290194	3.8e-05								1.00	0.00	-0.02
P1	-0.000306799	6.9e-06									1.00	-0.00
P2	0.000260334	6.7e-06										1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration

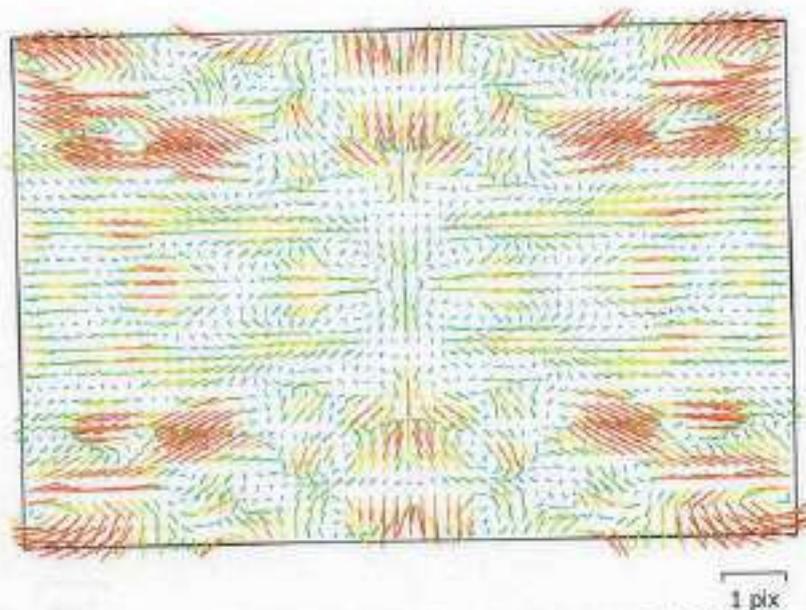


Fig. 5. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

658 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2515.43	0.14	1.00	0.02	-0.17	0.01	-0.95	0.93	-0.90	0.86	0.01	-0.02
Cx	-14.1169	0.027		1.00	-0.02	0.25	-0.01	0.01	-0.01	0.01	0.93	-0.00
Cy	23.1035	0.028			1.00	-0.06	0.06	-0.07	0.06	-0.06	-0.01	0.85
B2	-0.215232	0.0037				1.00	-0.00	0.00	-0.00	0.00	0.16	-0.06
K1	-0.0312697	0.0002					1.00	-0.99	0.97	-0.94	-0.01	0.02
K2	0.0333983	0.00027						1.00	-0.99	0.97	0.01	-0.02
K3	-0.0145623	0.00017							1.00	-0.99	-0.01	0.02
K4	0.00249181	3.8e-05								1.00	0.01	-0.02
P1	-0.000212506	7e-06									1.00	-0.00
P2	0.000478116	6.8e-06										1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

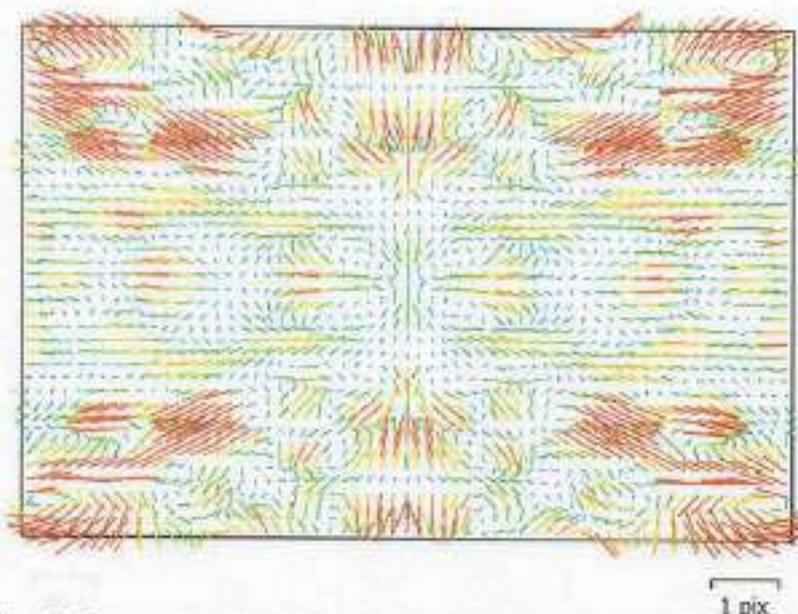


Fig. 6. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

573 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2516.03	0.17	1.00	0.01	-0.29	-0.01	-0.90	0.88	-0.85	0.82	0.01	-0.01
Cx	-15.7901	0.032		1.00	-0.01	0.23	0.00	-0.00	0.00	-0.00	0.90	0.00
Cy	13.5727	0.036			1.00	-0.04	0.08	-0.08	0.08	-0.07	-0.01	0.77
B2	-0.188579	0.0043				1.00	0.00	-0.00	0.01	-0.01	0.08	-0.06
K1	-0.0347374	0.00022					1.00	-0.99	0.97	-0.94	-0.00	0.01
K2	0.0385905	0.00031						1.00	-0.99	0.97	0.00	-0.01
K3	-0.0179261	0.00019							1.00	-0.99	0.00	0.01
K4	0.00328722	4.3e-05								1.00	-0.00	-0.01
P1	-0.000263596	8e-06									1.00	-0.00
P2	5.14086e-05	7.8e-06										1.00

Table 6. Calibration coefficients and correlation matrix.

Camera Calibration

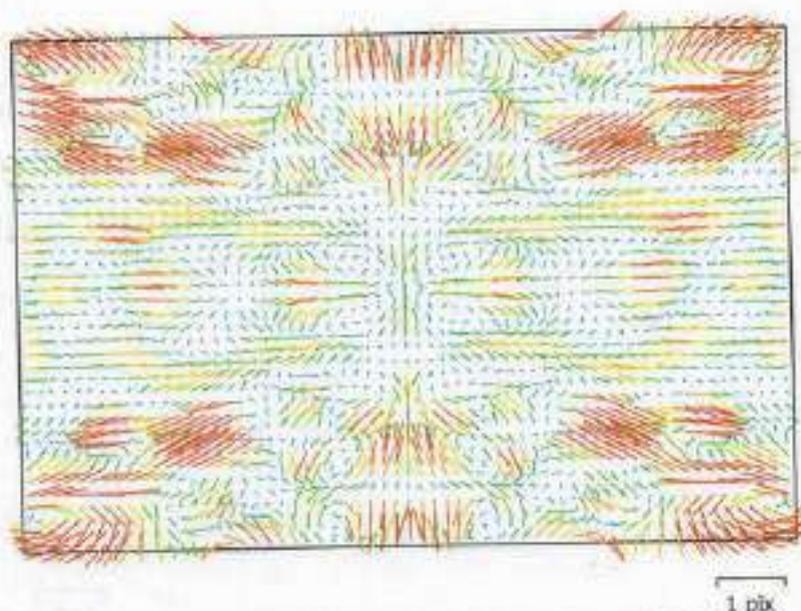


Fig. 7. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

549 images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2518.17	0.17	1.00	-0.01	-0.28	0.01	-0.90	0.88	-0.86	0.82	0.00	-0.00
Cx	-13.3341	0.032		1.00	0.00	0.17	0.00	-0.00	0.00	-0.00	0.91	-0.00
Cy	5.34244	0.035			1.00	-0.06	0.07	-0.07	0.07	-0.07	-0.01	0.77
B2	-0.279478	0.0042				1.00	0.00	-0.00	0.00	-0.00	0.02	-0.05
K1	-0.032579	0.00022					1.00	-0.99	0.97	-0.94	-0.00	0.00
K2	0.035297	0.00031						1.00	-0.99	0.97	-0.00	-0.00
K3	-0.0158237	0.00019							1.00	-0.99	0.00	0.00
K4	0.00280702	4.3e-05								1.00	-0.00	-0.00
P1	-0.000187178	7.9e-06									1.00	-0.00
P2	-0.000255846	7.7e-06										1.00

Table 7. Calibration coefficients and correlation matrix.

Camera Calibration



Fig. 8. Image residuals for ILCE-5000, E 11mm F1.8 (11mm).

ILCE-5000, E 11mm F1.8 (11mm)

467 Images, additional corrections

Type	Resolution	Focal Length	Pixel Size
Frame	5456 x 3632	11 mm	4.54 x 4.54 μm

	Value	Error	F	Cx	Cy	B2	K1	K2	K3	K4	P1	P2
F	2517.61	0.18	1.00	0.00	-0.33	-0.01	-0.87	0.86	-0.83	0.79	0.00	-0.01
Cx	-9.74419	0.035		1.00	0.00	0.36	-0.00	0.00	-0.00	0.00	0.99	0.00
Cy	27.8654	0.038			1.00	-0.02	0.10	-0.10	0.10	-0.09	-0.00	0.75
B2	-0.125257	0.0046				1.00	0.00	-0.00	0.00	-0.00	0.19	-0.03
K1	-0.0344947	0.00023					1.00	-0.99	0.97	-0.94	-0.00	0.03
K2	0.0381209	0.00032						1.00	-0.99	0.97	0.00	-0.03
K3	-0.0176622	0.0002							1.00	-0.99	-0.00	0.03
K4	0.00323665	4.5e-05								1.00	0.00	-0.02
P1	-0.00018392	8.5e-06									1.00	0.00
P2	0.000679595	8.2e-06										1.00

Table 8. Calibration coefficients and correlation matrix.

Camera Locations

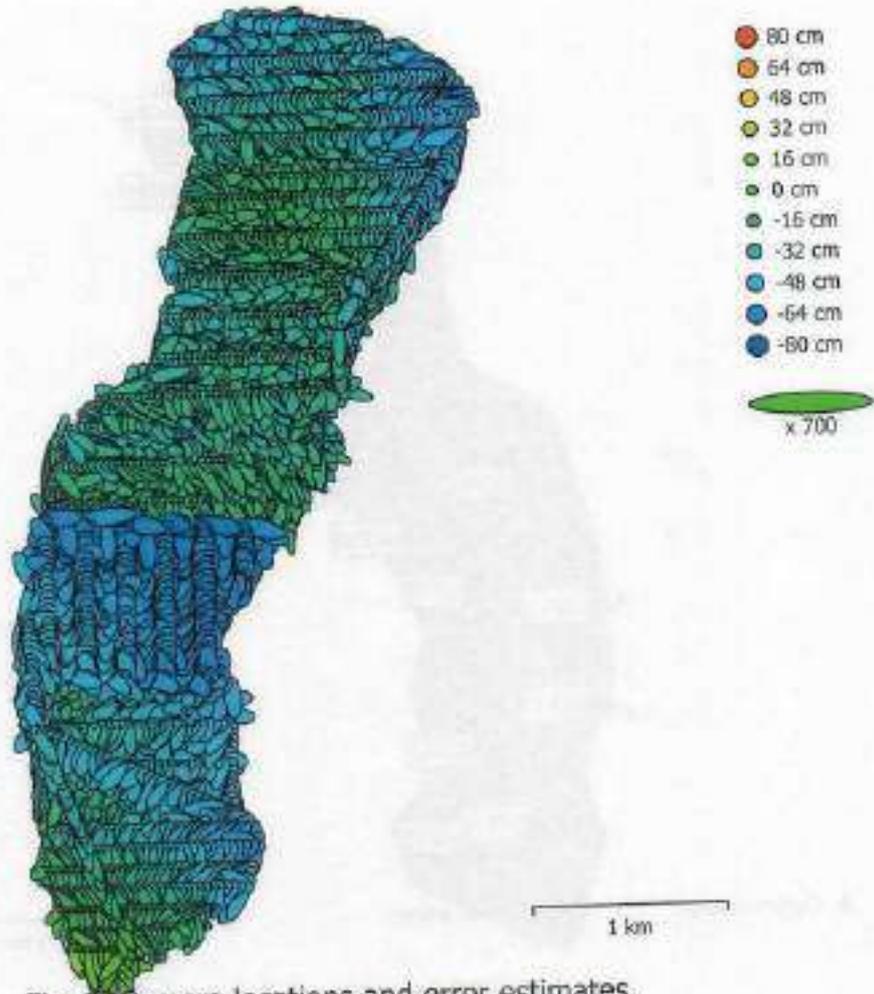


Fig. 9. Camera locations and error estimates.
 Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
 Estimated camera locations are marked with a black dot.

X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
9.1763	12.4598	35.8691	15.4742	39.0646

Table 9. Average camera location error.
 X - Longitude, Y - Latitude, Z - Altitude.

Ground Control Points



Fig. 10. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape. Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
15	1.19654	1.35642	0.449241	1.80875	1.8637

Table 10. Control points RMSE.

X - Longitude, Y - Latitude, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
GCP1	0.503164	0.636256	0.13888	0.822972	0.738 (30)
GCP2	-0.0818677	-1.64685	0.246135	1.66715	0.996 (26)
GCP3	1.31475	0.277464	-0.315521	1.38025	0.852 (43)
GCP4	-1.22198	-0.213746	-0.486304	1.33245	1.048 (32)
GCP5	-0.176926	0.644766	0.0701931	0.672274	0.974 (39)
GCP6	-1.71086	0.893904	0.515724	1.99802	0.972 (46)
GCP7	-1.97237	-1.42242	-0.385821	2.46218	1.047 (24)
GCP8	2.60263	4.02436	0.189214	4.79635	1.017 (43)
GCP9	-0.82731	-1.5977	0.177973	1.80797	0.921 (24)
GCP10	0.203711	-0.728056	0.0658359	0.75888	0.892 (31)
GCP11	1.20191	-1.09528	-0.456692	1.68902	0.756 (27)
GCP12	1.24863	-0.477702	-0.190726	1.35043	0.878 (26)
GCP13	-0.253929	0.62968	0.53725	0.865803	0.878 (43)
GCP14	-0.756523	-0.0558465	-0.926351	1.19732	0.968 (40)
GCP15	-0.071574	0.121806	0.85327	0.864886	0.894 (32)
Total	1.19654	1.35642	0.449241	1.8637	0.929

Table 11. Control points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

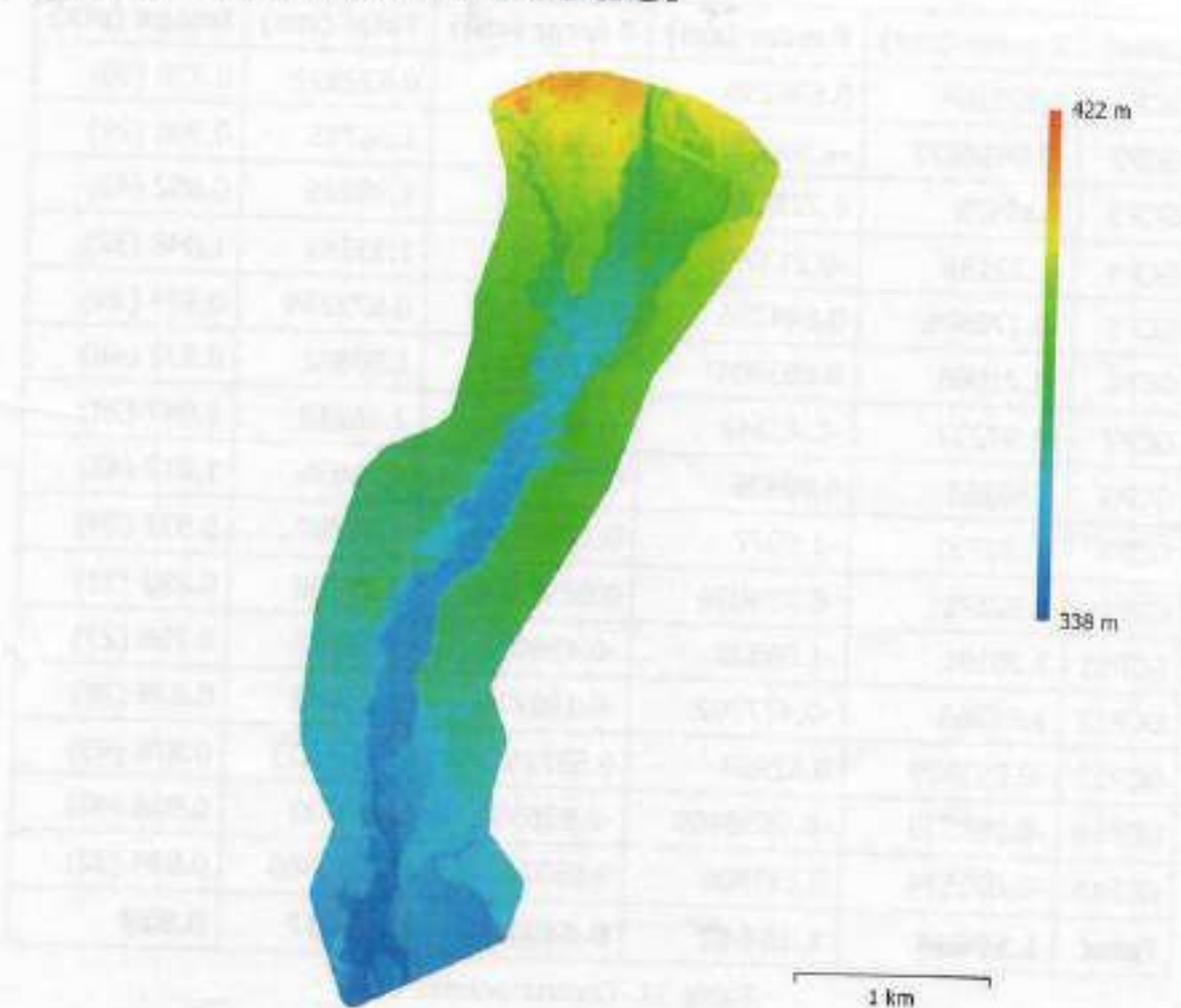


Fig. 11. Reconstructed digital elevation model.

Resolution: 20.1 cm/pix
Point density: 24.7 points/m²

Processing Parameters

General

Cameras	4036
Aligned cameras	4014
Markers	15
Shapes	
Polygon	1
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	11,042,806 of 12,094,330
RMS reprojection error	0.189819 (1.62018 pix)
Max reprojection error	0.908719 (102.086 pix)
Mean key point size	7.51194 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	5.57453

Alignment parameters

Accuracy	Medium
Generic preselection	Yes
Reference preselection	Source
Key point limit	400,000
Key point limit per Mpx	1,000
Tie point limit	40,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	28 minutes 37 seconds
Matching memory usage	5.07 GB
Alignment time	57 minutes 59 seconds
Alignment memory usage	6.29 GB

Optimization parameters

Parameters	f, b2, ox, cy, k1-k4, p1, p2
Fit additional corrections	Yes
Adaptive camera model fitting	No
Optimization time	6 minutes 47 seconds
Date created	2024:07:01 12:51:04
Software version	1.8.5.15139
File size	1.29 GB

Depth Maps

Count	4014
-------	------

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	1 hours 21 minutes
Memory usage	3.57 GB
Date created	2024:07:02 07:19:04
Software version	1.8.5.15139
File size	8.06 GB

Dense Point Cloud

Points	200,569,511
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	1 hours 21 minutes
Memory usage	3.57 GB
Dense cloud generation parameters	
Processing time	1 hours 45 minutes
Memory usage	20.06 GB
Points classification parameters	
Confidence	0.06
Classification time	1 hours 15 minutes
Classification memory usage	55.63 GB
Date created	2024:07:02 09:04:56
Software version	1.8.5.15139
File size	2.85 GB
DEM	
Size	13,028 x 25,724
Coordinate system	WGS 84 / UTM zone 43N (EPSG::32643)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	22 minutes 1 seconds
Memory usage	311.84 MB
Date created	2024:07:02 10:42:46
Software version	1.8.5.15139
File size	624.61 MB
Orthomosaic	
Size	52,111 x 102,895
Coordinate system	WGS 84 / UTM zone 43N (EPSG::32643)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Enable ghosting filter	Yes
Processing time	2 hours 53 minutes
Memory usage	29.04 GB
Date created	2024:07:02 11:09:43
Software version	1.8.5.15139
File size	66.48 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.8.5 build 15139
OS	Windows 64 bit
RAM	255.66 GB
CPU	Intel(R) Xeon(R) Gold 6336Y CPU @ 2.40GHz
GPU(s)	RTX A6000

Specification of Satellite Data (2D) used in Land use creation of Lease area

Date	Satellite Name	Data Type	Sensor	Spatial Resolution	Band	Purpose of Use
2017-23-11-	PlanetScope	Raster	Optical	3 Meter	3 4 4 4	Creating LandUse map
2018-25-11-	PlanetScope	Raster	Optical	Meter	3 4 4 8	Creating LandUse map
2019-07-10-	PlanetScope	Raster	Optical	Meter	3 8 8	Creating LandUse map
2020-19-10-	PlanetScope	Raster	Optical	Meter	3	Creating LandUse map
2021-14-10-	PlanetScope	Raster	Optical	Meter	3	Creating LandUse map
2022-25-10-	PlanetScope	Raster	Optical	Meter	3	Creating LandUse map
2023-24-10-	PlanetScope	Raster	Optical	Meter	3	Creating LandUse map
2024-	PlanetScope	Raster	Optical	Meter		Creating LandUse map

Technical specifications for High resolution satellite imagery

S.No.	Parameter	Description
1.	Name of shapefile	Satpalda_band
2.	Size of the shapefile in Sq.Kms (in case of multiple shapefiles, please mention the size separately for each shapefile)	11515470 Sq.Kms
3.	Product Type	Ortho Ready 50cm or better resolution archive Stereo Imagery (OR2A Stereo)
4.	Resolution	Imagery should be collected using satellite sensors with better than 50cm GSD at nadir
5.	Bands	PANCHROMATIC or 4 Band (R,G,B, NIR)
6.	Fresh Tasking / Archive data	Archive data
7.	Period of interest	2019
8.	Cloud% acceptable	≤ 10%
9.	Off Nadir Angle (ONA) acceptable	0-35 Deg
10.	Delivery Media	Hard Disk
11.	Datum / Projection	UTM, WGS-84
12.	Resampling Kernel	Cubic Convolution / Pansharpened or equivalent
13.	Format	GeoTiff 86

14.Bit Depth	16 bit
15.Tiling	default
16.License	Internal Use
17.Segment	Commercial
18.End application	Test
19.Any other additional/Specific requirements	<p>1. Complete coverage details for archive data (50 cm or higher resolution) shall be shared by the distributor on the letterhead for the department to evaluate.</p> <p>2. Compliance with the technical specifications needs to be given on OEM letterhead (Not reseller /Distributor).</p> <p>3. Authorization letter with Tender reference number, addressed to the department, to the IN-SPACE empanelled bidder should be provided by OEM (Not a reseller/distributor).</p>

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Rattewali Mining Area (Required Information)

Sl. No.	Topic	Required Information (Please fill the required information)
1.	Requirement letter received on:	03/05/24
2.	Planning Date:	
3.	Survey Date:	08/05/24 - 09/05/24
4.	Start Time of Survey (AM/PM):	10:00 AM
5.	Surveyed By (Pilot/Copilot details):	Two Pilots & Two Co-pilots 1. Rohit Chauhan - Pilot 2. Rajinder Chauhan - Pilot 3. Sahil - Co-pilot 4. Rahul - Co-pilot
6.	Contact detail of Mining officer whom survey team contacted during survey	N/A
7.	Information/Data Available from Mining Department	Survey done as per w/order from DC Office PKL and Aol defined in terms of kml files by CISO office.
8.	No. of Flights (with time):	07 (Flight1 - 43 m, Flight2 - 45 m, Flight 3 - 38 m, Flight 4 - 48 m, Flight 5 - 42 m, Flight 6 - 40 m, Flight 7 - 48m)
9.	No. of Images per flight:	Flight1 - 634, Flight2 - 530, Flight 3 - 625, Flight 4 - 658, Flight 5 - 573, Flight 6 - 549, Flight 7 - 467)
10.	Total Area Surveyed:	5.198 Sq. Km
11.	Drone Specifications:	Mapping Drone (SNAP-M)
	Endurance	50+ min.
	Wind Resistance	>8m/s
	Weight	2.7kg
	Takeoff Altitude	5000 m AMSL
	Battery	Lithium Based (International Standard compliant)
	RTK-PPK GNSS Bands	Dual Frequency L1, L2, G1, G2
	GNSS Constellations	GPS, GLONASS, Galileo

		C2 Link	AES 128 Bit Encryption
		Compliance	DGCA Type Certified
		Accuracy X/Y	<10 cm
		Accuracy Z	<20 cm
		GSD @120m	3 cm
12.	Sensor Specifications:	RGB Sensor (20 MP) ILCE-5000, E 11mm F1.8 (11mm)	
13.	Drone parameters while flight planning: <ul style="list-style-type: none"> • GSD • Overlap • Flight height • Any Other 	<ul style="list-style-type: none"> • GSD - 5.03 cm • Forward Overlap 80% • Side Overlap 60% • Flight Altitude 400 Feet 	
14.	No. of GPS Points Taken:	14	
15.	DGPS Specification (with accuracy):	Leica DGPS (Requisitioned from Survey of India)	
16.	DGPS Parameters while survey: <ul style="list-style-type: none"> • Projection & Coordinate system, Accuracy level • Base/CORS information • Minimum satellite in networking, Time taken for each point collection • Any Other info 	<p>2 – 3 cm or less</p> <p>Minimum satellite 15, Time taken – 120 seconds</p>	
17.	Flight Plan (attach Log File):	Shape file Received from HARSAC node office GGN	
18.	Drone Data Checked report (Before Handover to GIS) <ul style="list-style-type: none"> • Total files • Folders • Format of required file • Size of data 		
19.	Drone Data Checked report (After Handover to GIS)	No of folder: 35 Total files: 4064 Total Size: 32.7 GB	

		Detail information in attached
20.	Drone Data Processed by (Name)	<ul style="list-style-type: none"> • Seuti Patra - GIS technician • Surabhi Manna - GIS technician • Arindam Mandal - GIS technician • Anwasha Dinda - GIS technician • Parmod Kumar - GRP
21.	Geotagged Data (Flight/Size of Data)	No of flights: 7 Size of geotagged data: 68.5 GB (including Raw Data)
22.	Processed Data (Resolution/Size); <ul style="list-style-type: none"> • DSM: • DTM: • Ortho: • Contour: 	DSM Resolution: 15 cm / Size: 872 MB DTM Resolution: 30 cm / Size: 649 MB Ortho Resolution: 5 cm / Size: 1.94 GB Contour Interval: 0.5 m & 1 m & 5 m/ Size: 72.5 MB
23.	Drone data processed report	Processed data report attached in PDF with details parameters and accuracy
24.	Report containing Maps and Data Specifications:	Map composition completed (A3 Size) and also A0 map with all information.
25.	Report prepared by	
26.	Report Checked by	
27.	Overall Submission Remarks	Total Size of Data – 72 GB (Files – 8181, Folder – 47 Folders)

Land use Analysis (2017-2024)

For the purpose of creating land use maps, PlanetScope satellite imagery was utilized over a period of time from 2017 to 2024. A total of eight datasets were acquired during post monsoon season (Table xx). All data were **raster** format and captured using **optical sensors** with a spatial resolution of **3 meters**, ensuring detailed surface feature representation. From 2017 to 2021, **4 Bands** was primarily acquired and from 2022 to 2024 **8 Bands** are acquired. Detailed specification of datasets is provided at table S1.

Table S1: Specification of Satellite Data (2D) used in Land use creation of Lease area

Date	Satellite Name	Data Type	Sensor	Spatial Resolution	Band	Purpose of Use	
2017 21-11-	PlanetScope	Raster	Optical	3 Meter	3	4 4 4	Creating LandUse map
2018 23-10-	PlanetScope	Raster	Optical	Meter	3	4 4 8	Creating LandUse map
2019 25-11-	PlanetScope	Raster	Optical	Meter	3	8 8	Creating LandUse map
2020 07-10-	PlanetScope	Raster	Optical	Meter	3		Creating LandUse map
2021 19-10-	PlanetScope	Raster	Optical	Meter	3		Creating LandUse map
2022 14-10-	PlanetScope	Raster	Optical	Meter	3		Creating LandUse map
2023 25-10-	PlanetScope	Raster	Optical	Meter	3		Creating LandUse map
2024 24-10-	PlanetScope	Raster	Optical	Meter	3		Creating LandUse map
2024	PlanetScope	Raster	Optical	Meter			Creating LandUse map

Land use mapping for the Rattewali region was conducted using Planet imagery spanning the years 2017 to 2024. The classified land use categories include **Agriculture, River (main course), River Bed, Shrub Area, and Water** (Figure F1-F9). The classes spatially river (main course), river bed, and shrubs fallen inside the lease area are the potential sites of mining and expected to be change in due course of time over a site where mining is being practised. Simultaneously increased in water during post monsoon also depicts the mining area over the lease site. Details of area under the land use category is provided in Table S2. The temporal analysis of these categories indicates significant changes over the years, particularly in the **River Bed** and **Shrub Area**, influenced largely by anthropogenic activities like mining (Table S2). The analysis shows that from 2017 to 2020 river (main course) are almost same while it decreased afterward and reached up to 0. The decrease in area of river (main course) during 2021 to 2024 are probably due to mining activities. The shrubs area after 2020 has been decreased and reached up to 10.7 ha in 2024 as compare to 24.9 ha in 2017 (virgin leased area). In the similar pattern river bed has increased up to 34.3 ha in the year 2024 as compare to 11.3 ha in the year 2017. Changes in both shrub area and river bed again indicates the mining activities over the lease site (Table S2).

Table S2: Land Use Statistics (in ha) during 2017 to 2024:

Year	River (main course)	Shrub Area	River Bed	Water	Agriculture	Total
2017	6.8 6.3	24.9 25.7	11.3 11.6	0.1 0.1	1.9 1.3 2.6	45.0
2018	6.2 7.3	25.9 31.8	10.3 2.4	0.1 3.5	0.0 0.0 0.0	45.0
2019	0.0 0.0	15.9 13.2 9.6	25.6 31.8	3.5 0.0	0.0 0.0	45.0
2020	0.0 0.0	10.7	35.4 34.3	0.0 0.0		45.0
2021						45.0
2022						45.0
2023						45.0
2024						45.0

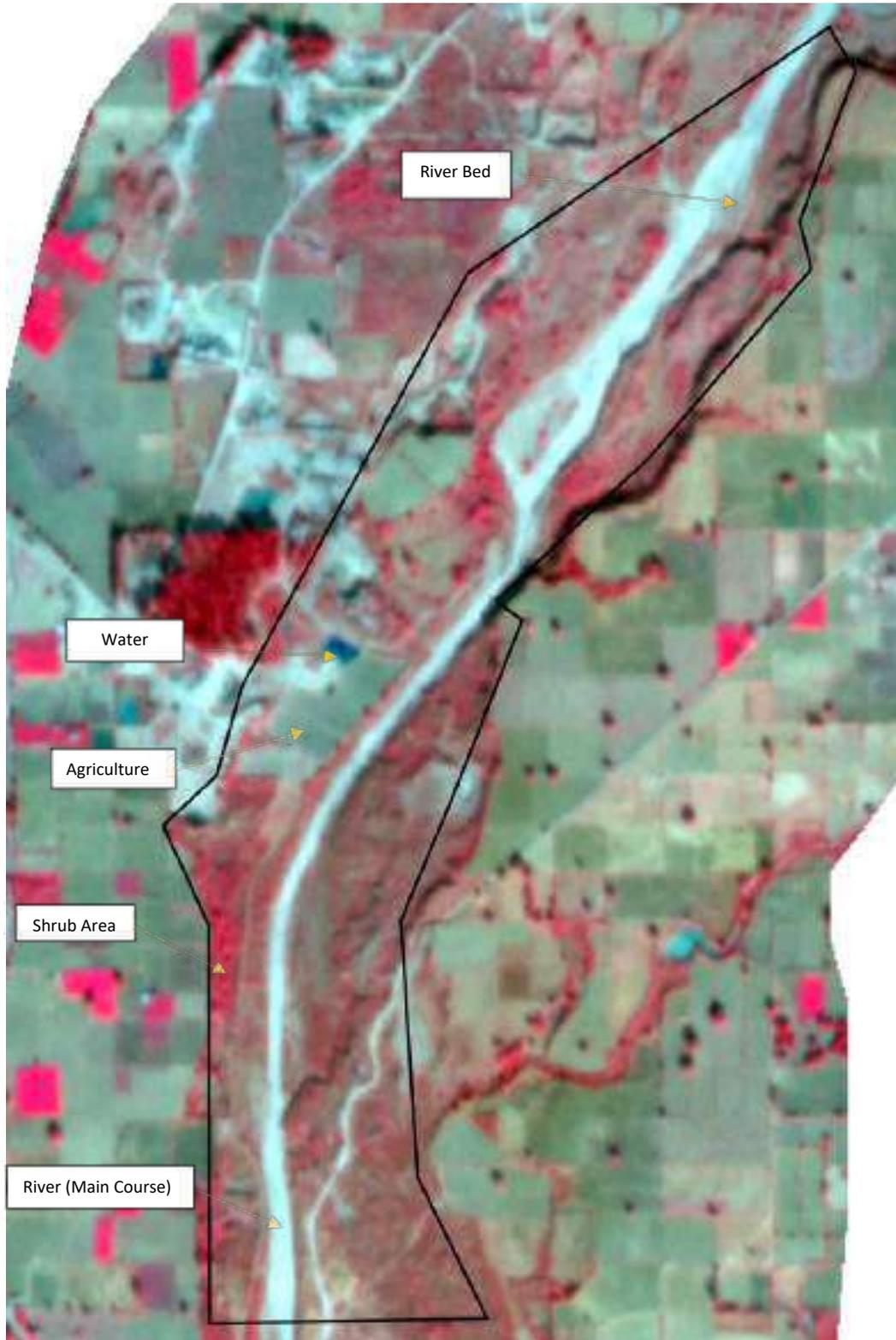


Figure F1: Showing the land use features

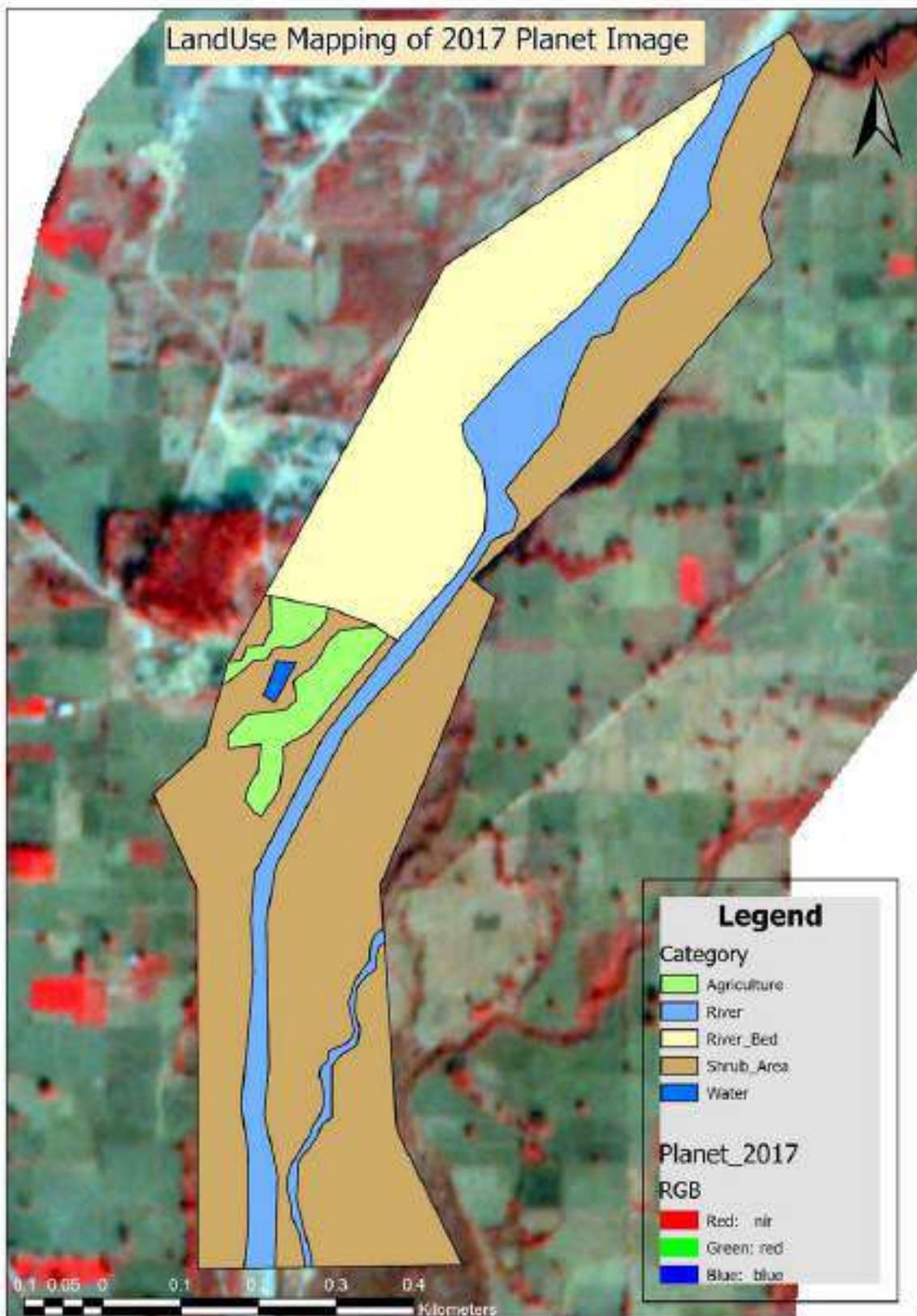


Figure F2: Land Use Mapping of Rattewali Site Using Planet image of 2017

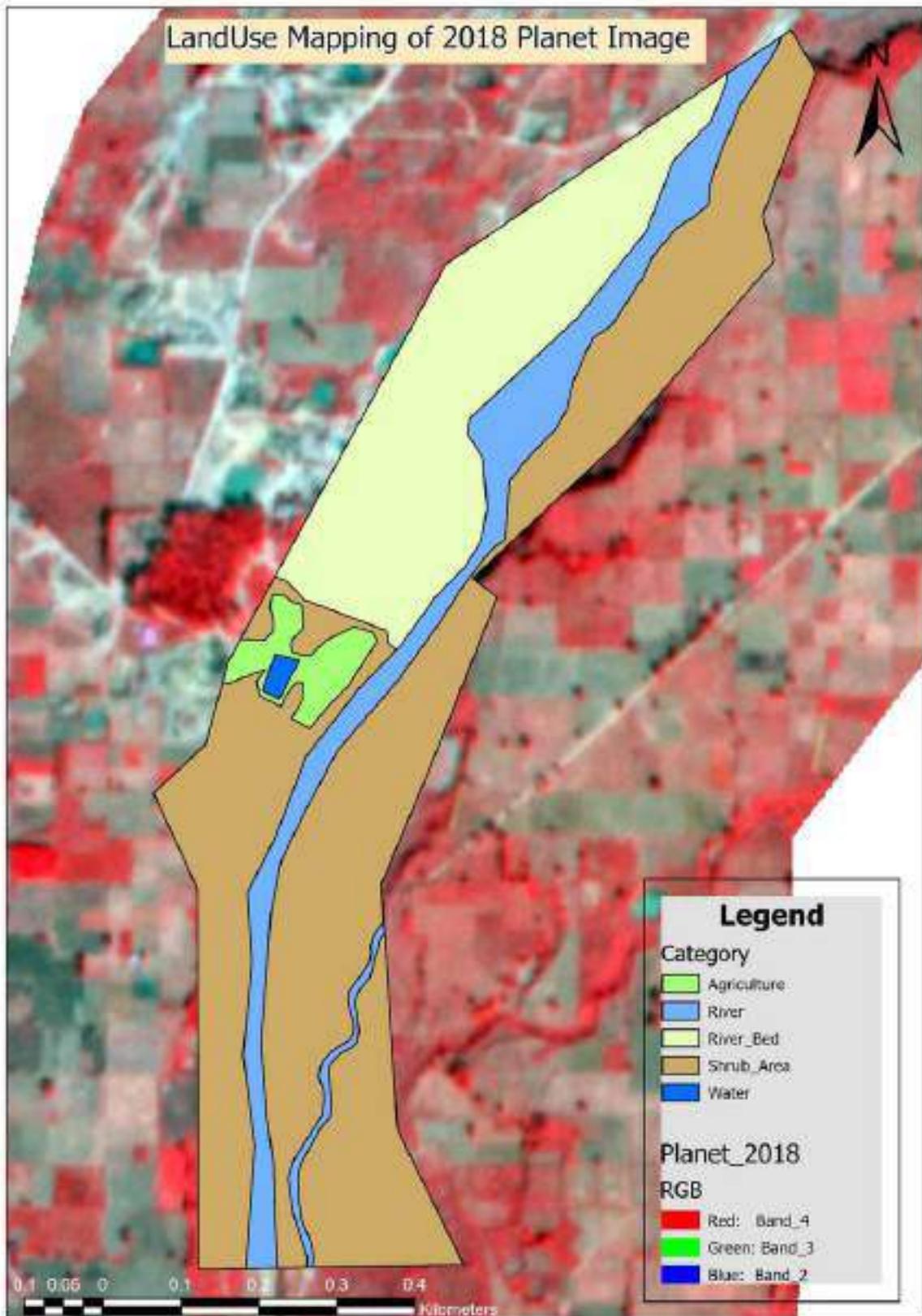


Figure F3: Land Use Mapping of Rattewali Site Using Planet image of 2018

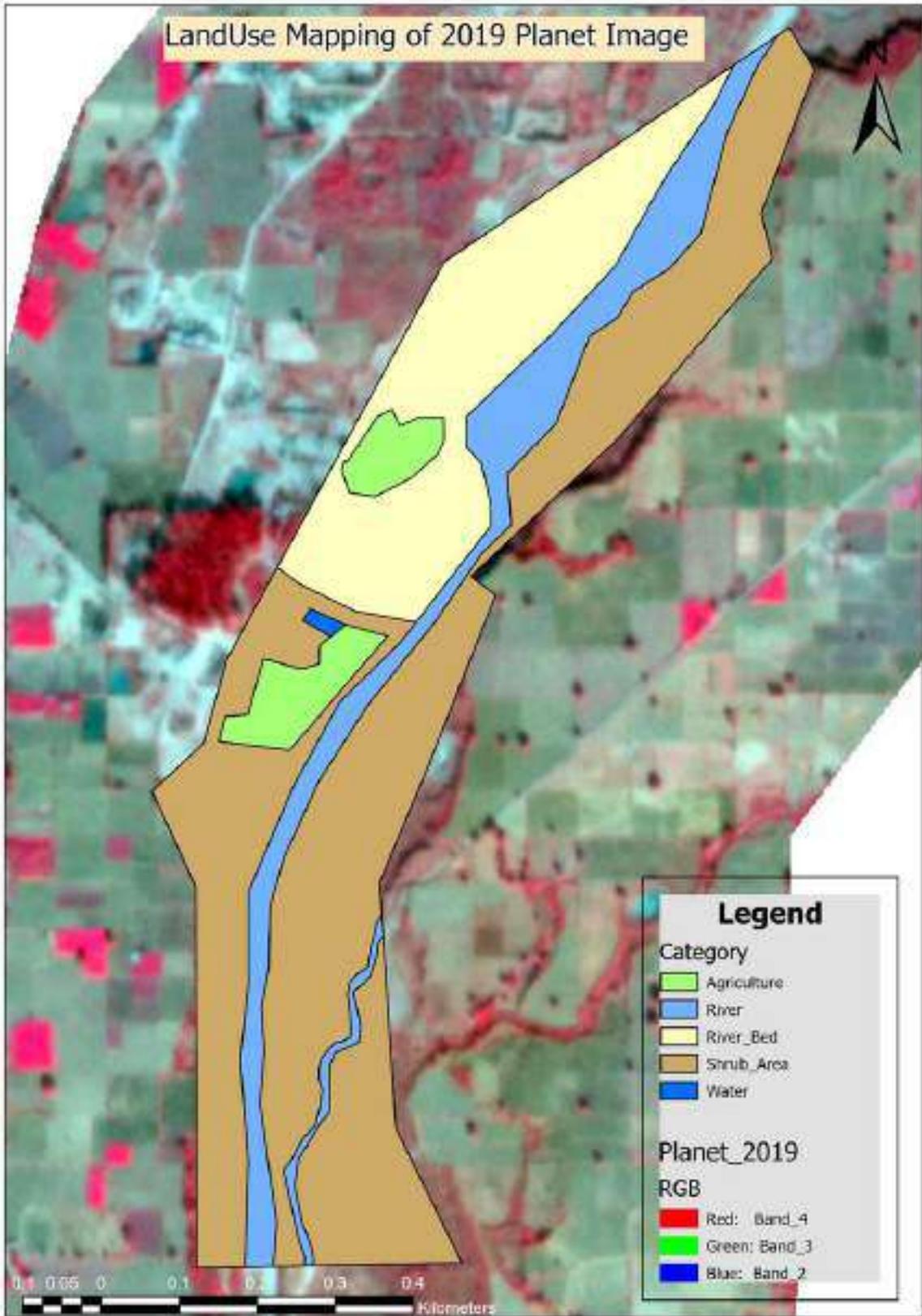


Figure F4: Land Use Mapping of Rattewali Site Using Planet image of 2019

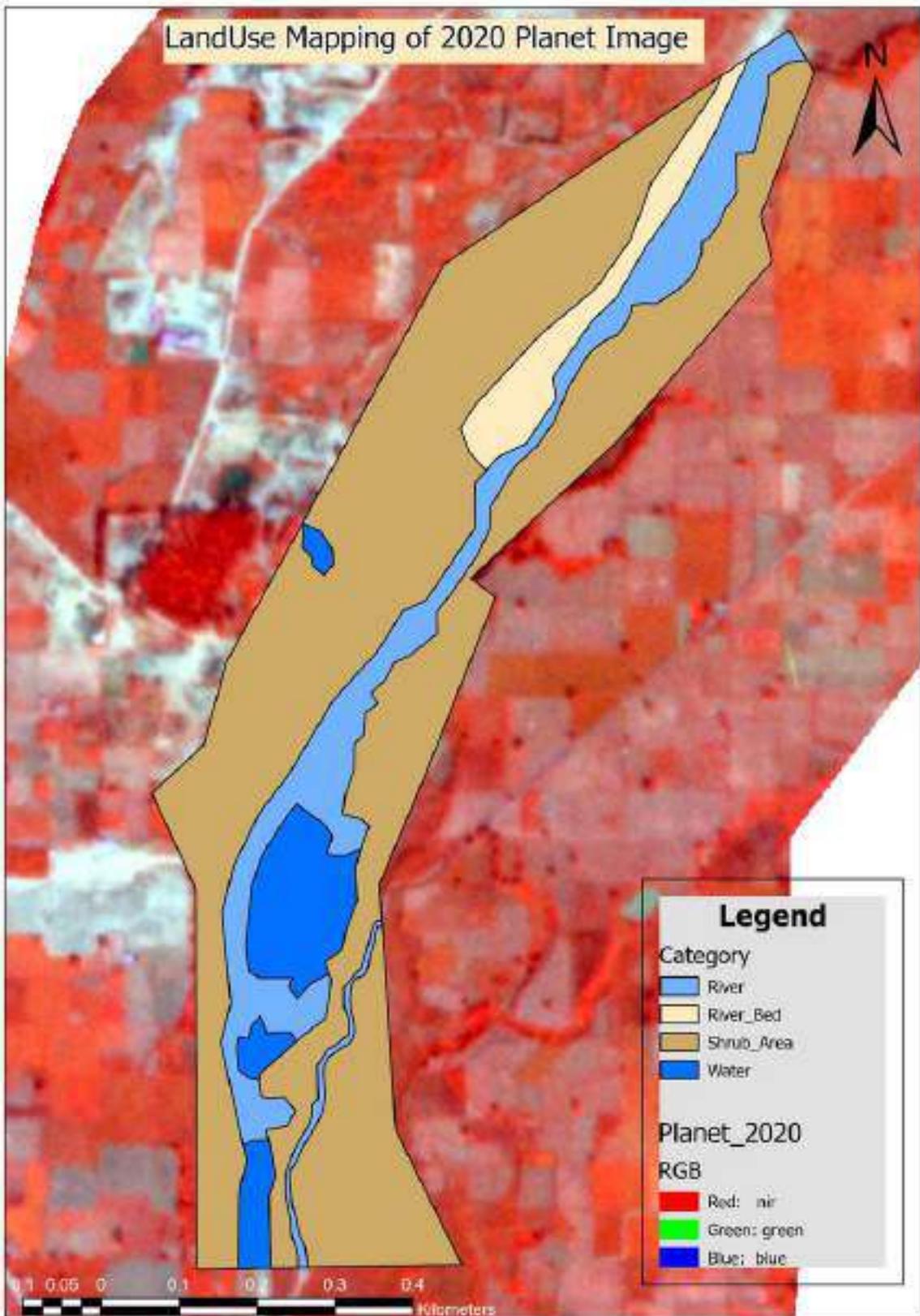


Figure F5: Land Use Mapping of Rattewali Site Using Planet image of 2020

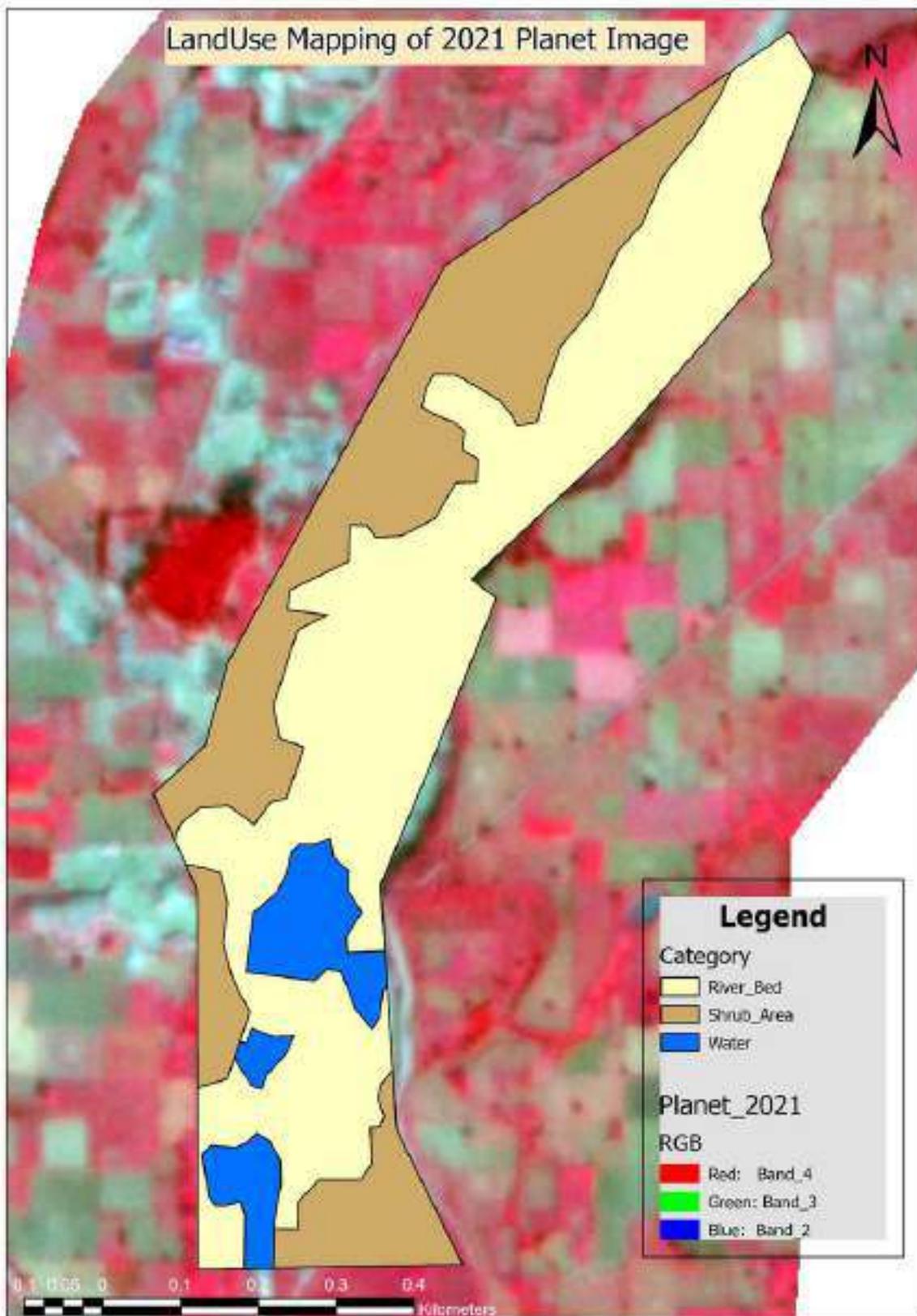


Figure F6: Land Use Mapping of Rattewali Site Using Planet image of 2021

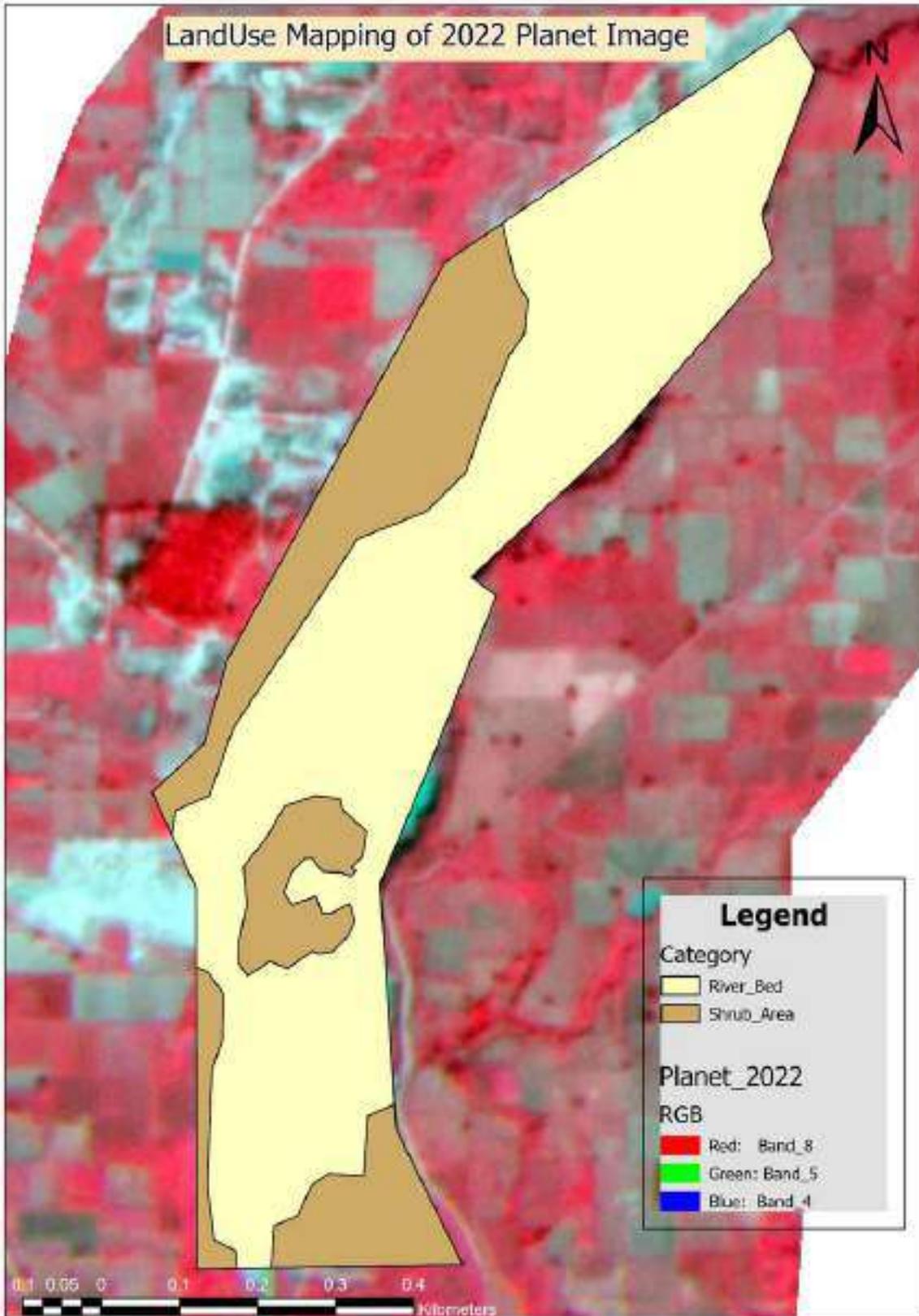


Figure F7: Land Use Mapping of Rattewali Site Using Planet image of 2022

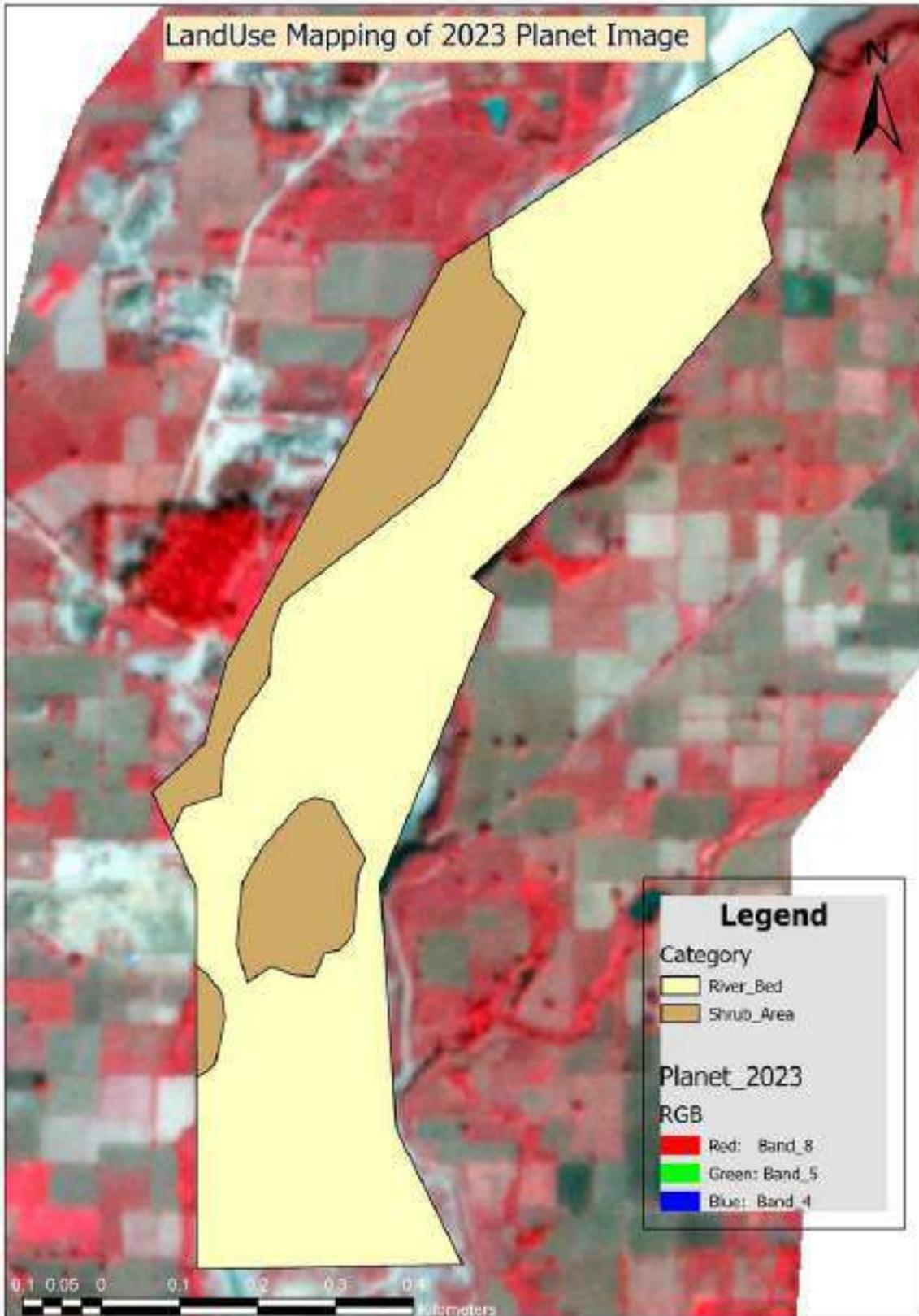


Figure F8: Land Use Mapping of Rattewali Site Using Planet image of 2023

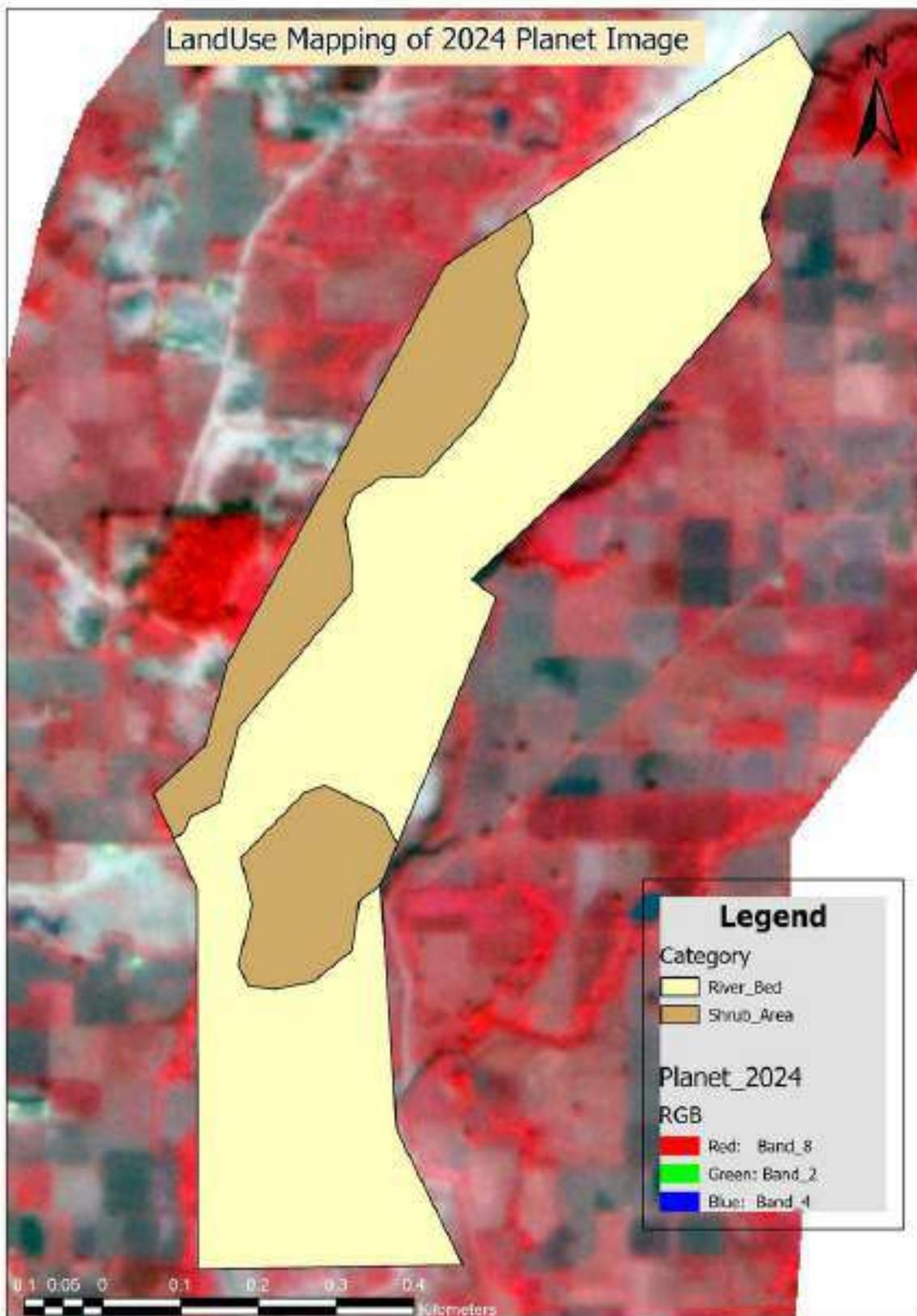


Figure F9: Land Use Mapping of Rattewali Site Using Planet image of 2024

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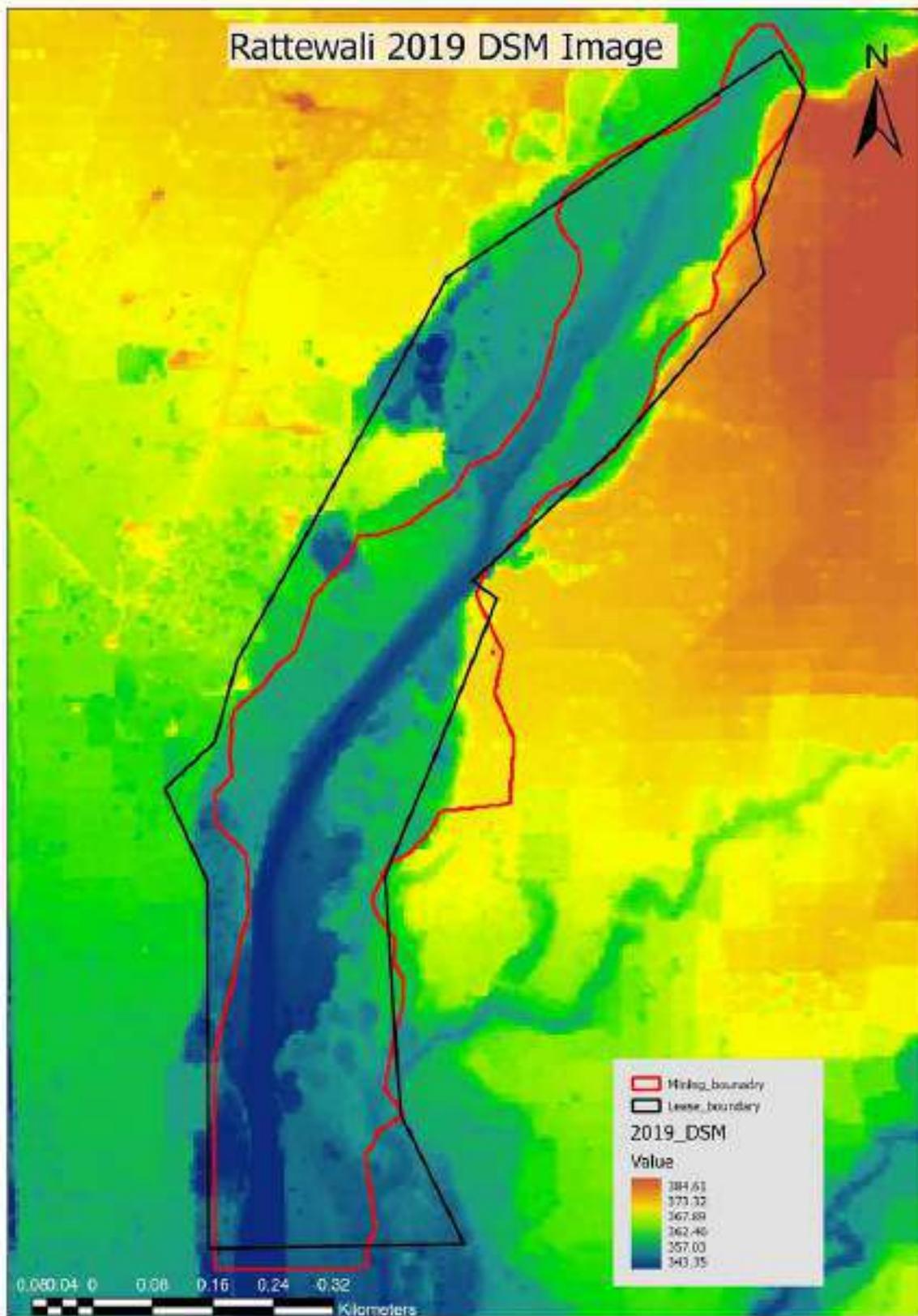


Figure F10 : DSM 2019 indicating Elevation Variation of Surface

3D Volumetric Analysis

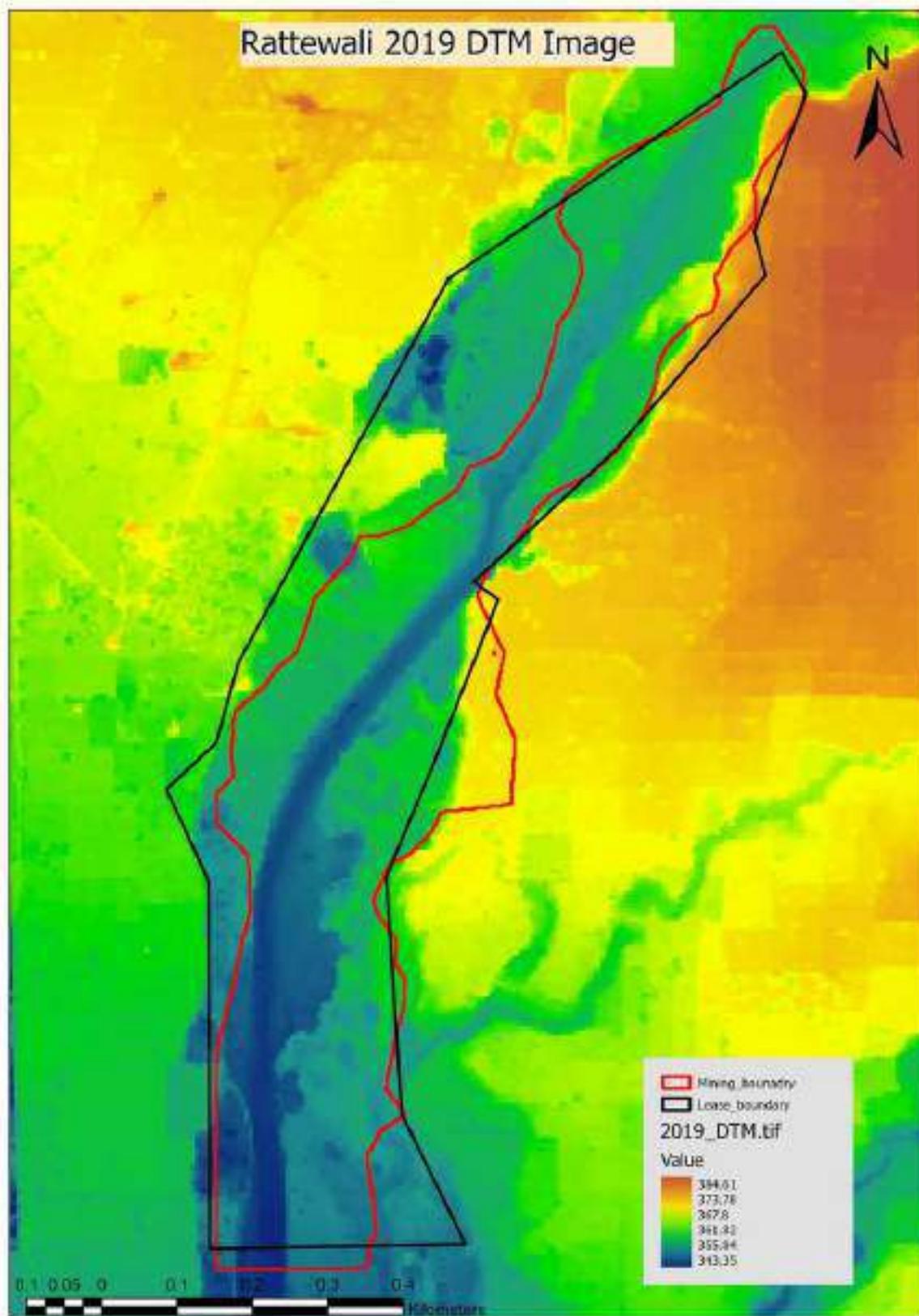


Figure F11 : DTM 2019 indicating Elevation Variation of Terrain

3D Volumetric Analysis

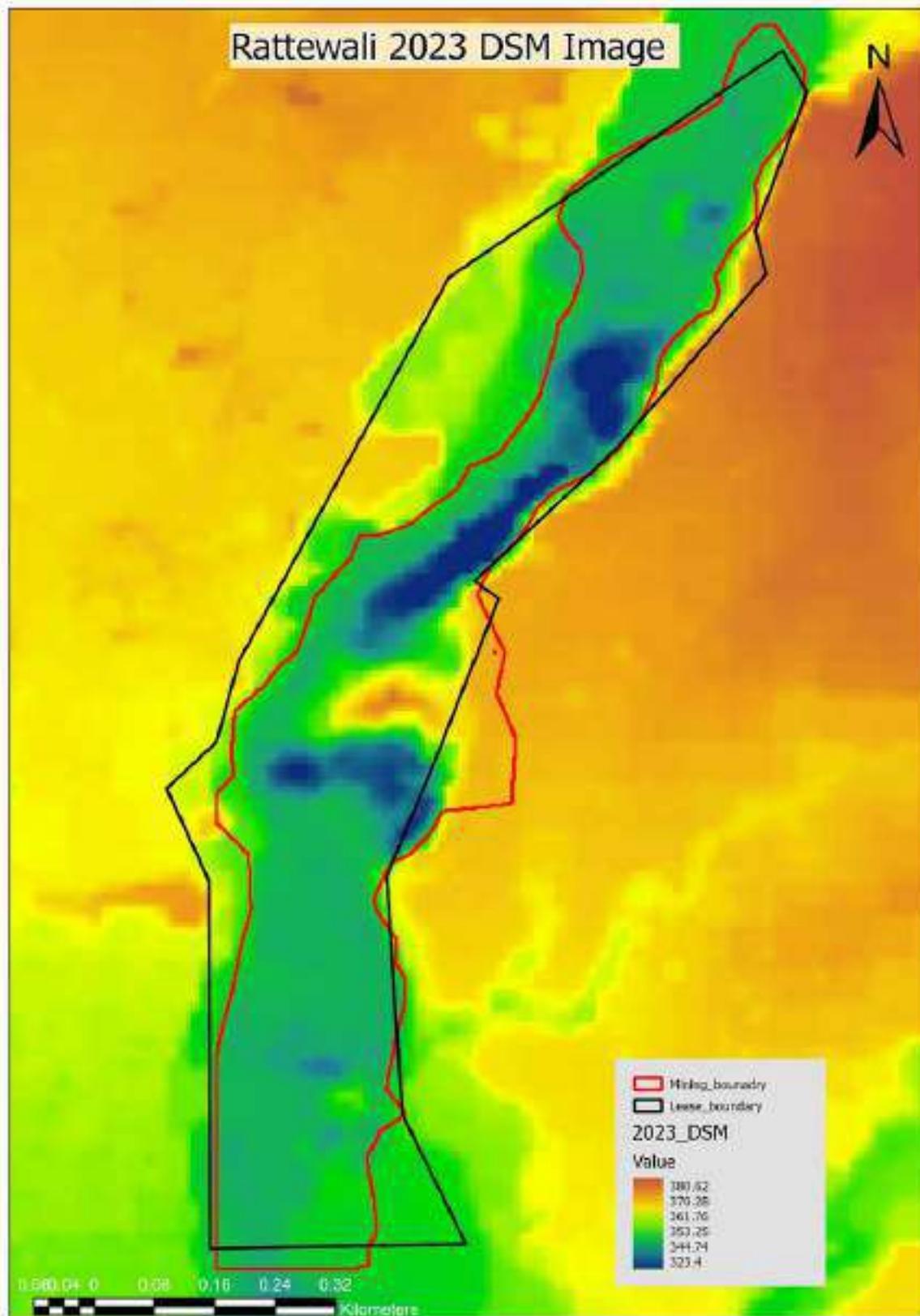


Figure F12: DSM 2023 indicating Elevation Variation of Surface

3D Volumetric Analysis

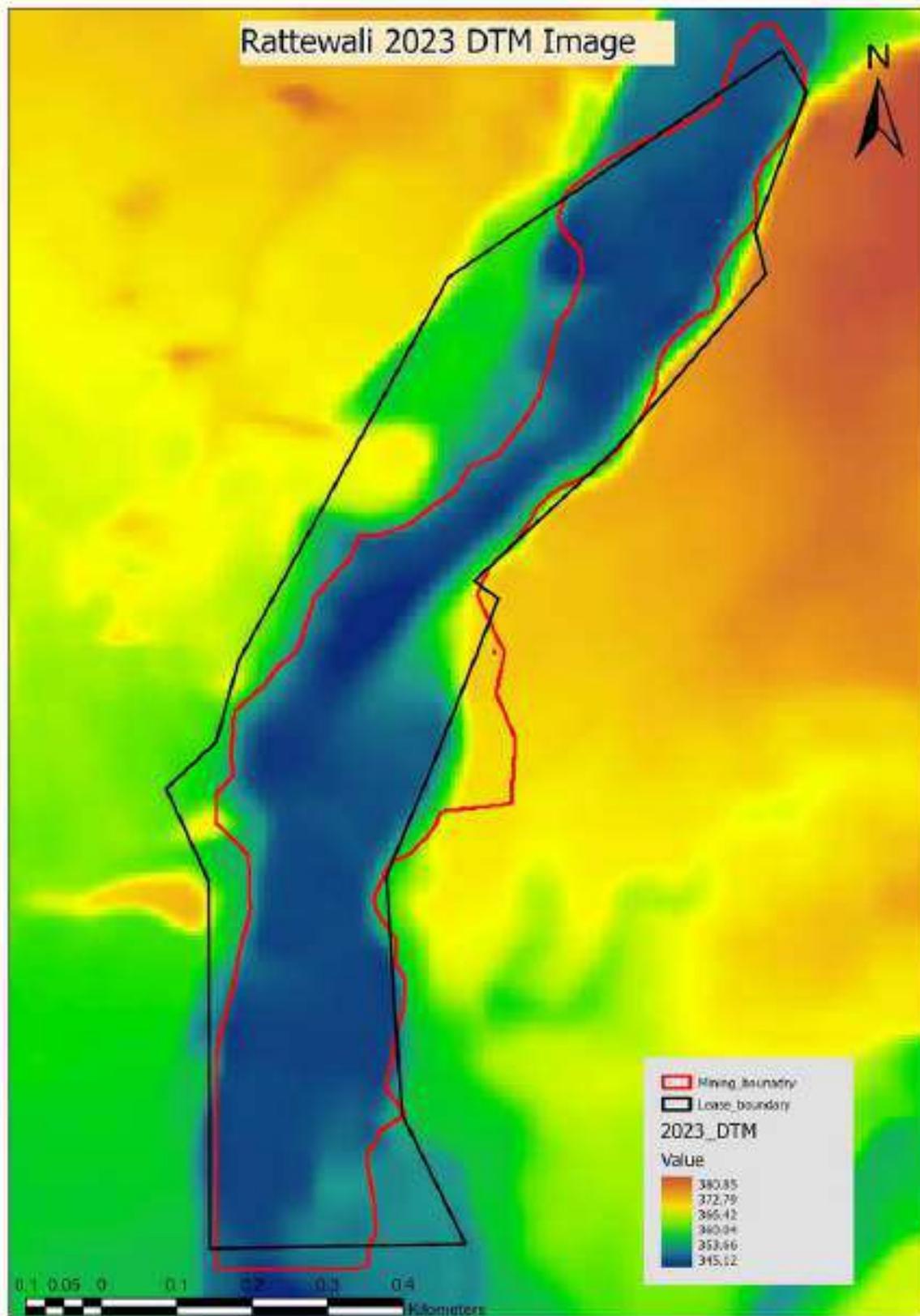


Figure F13 :DSM 2023 indicating Elevation Variation of Terrain

3D Volumetric Analysis

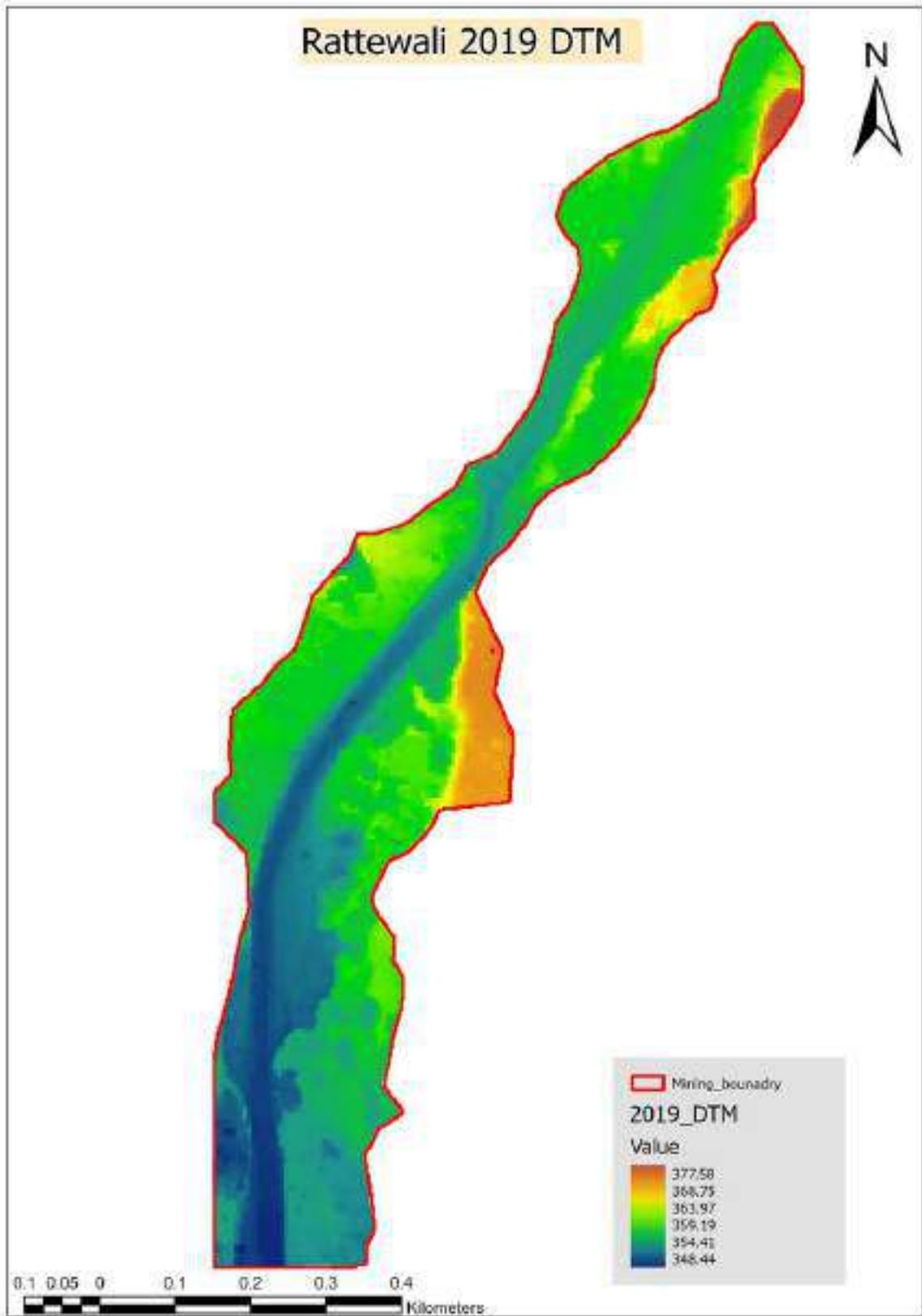


Figure F14: DTM 2019 indicating Elevation Variation of Terrain Within Mining Boundary

3D Volumetric Analysis

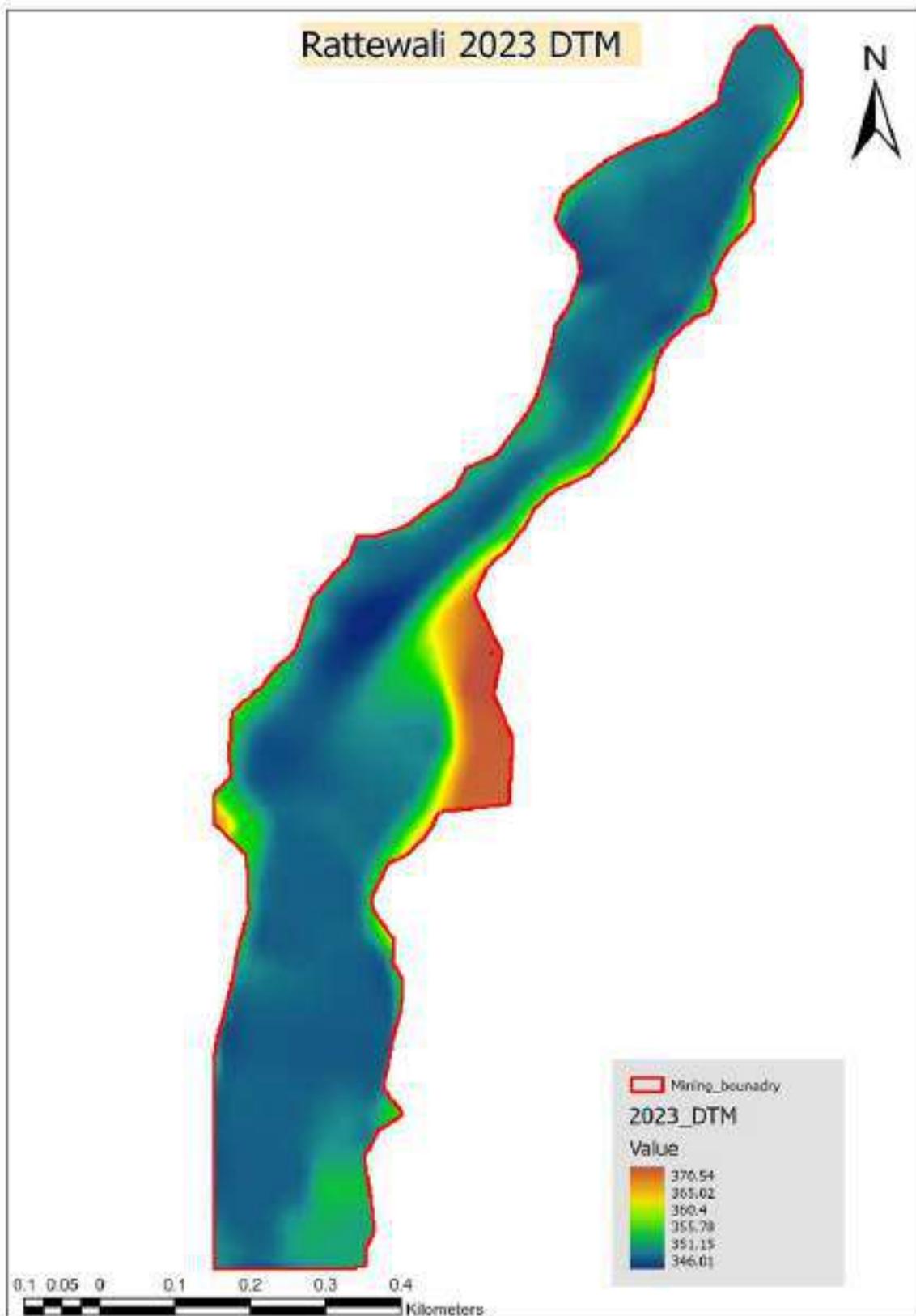


Figure F15: DTM 2023 indicating Elevation Variation of Terrain Within Mining Boundary

3D Volumetric Analysis

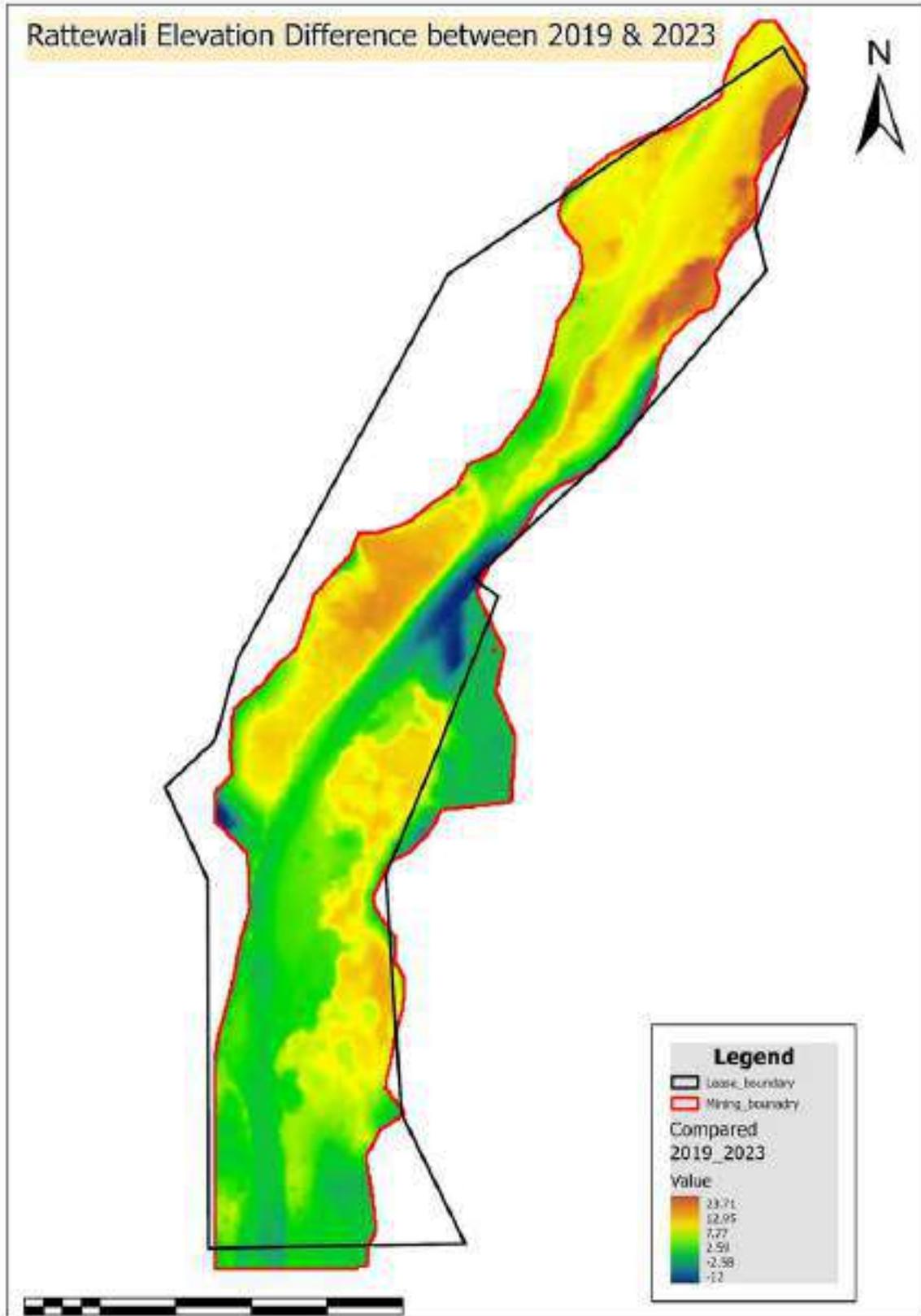


Figure F16: Comparison between DTM of 2019 & 2023 indicating Elevation Variation of Terrain Within Mining Boundary

3D Volumetric Analysis

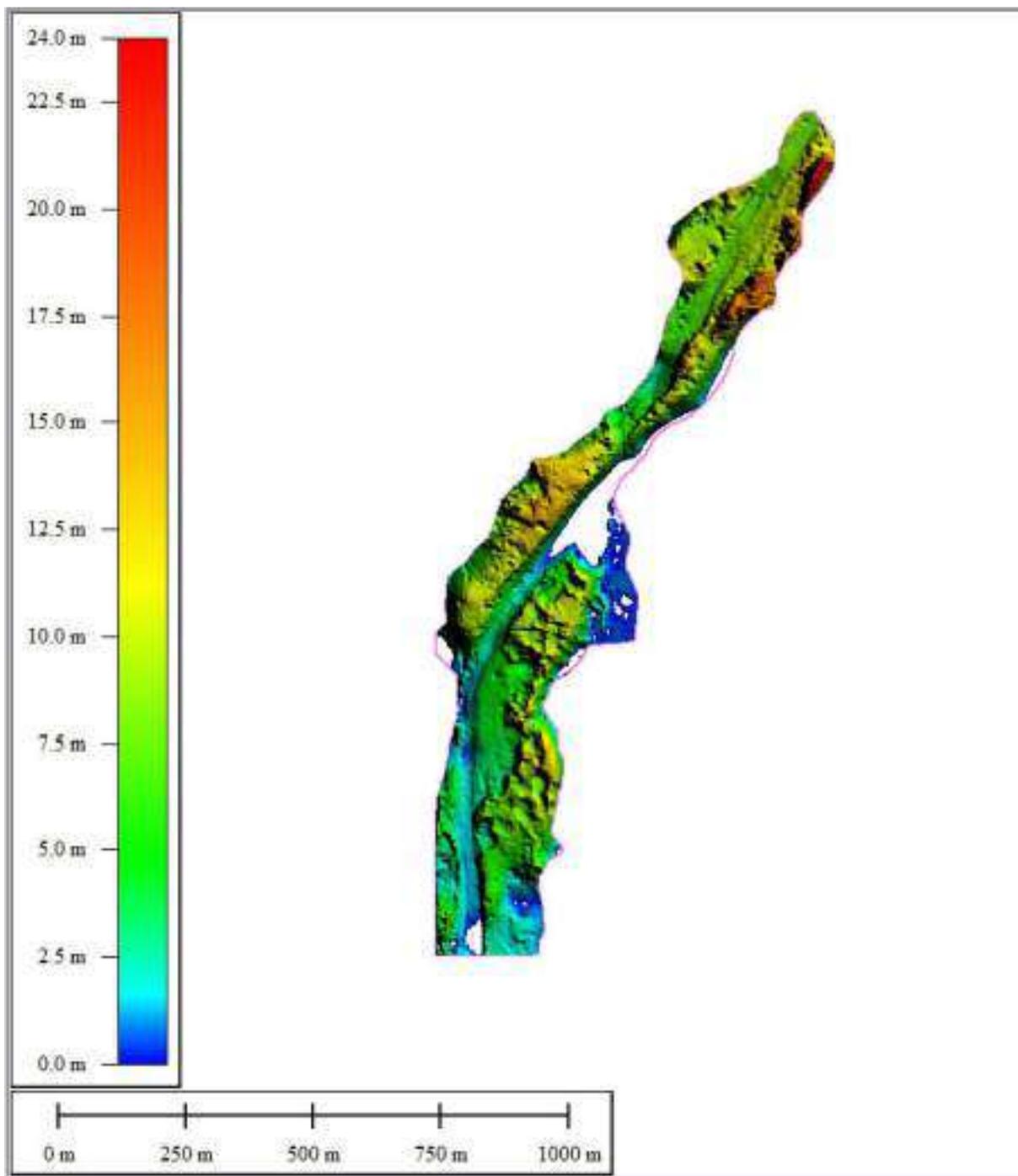


Figure F17 : Showing Cut of DTM of 2019 & 2023 Within Mining Boundary

3D Volumetric Analysis

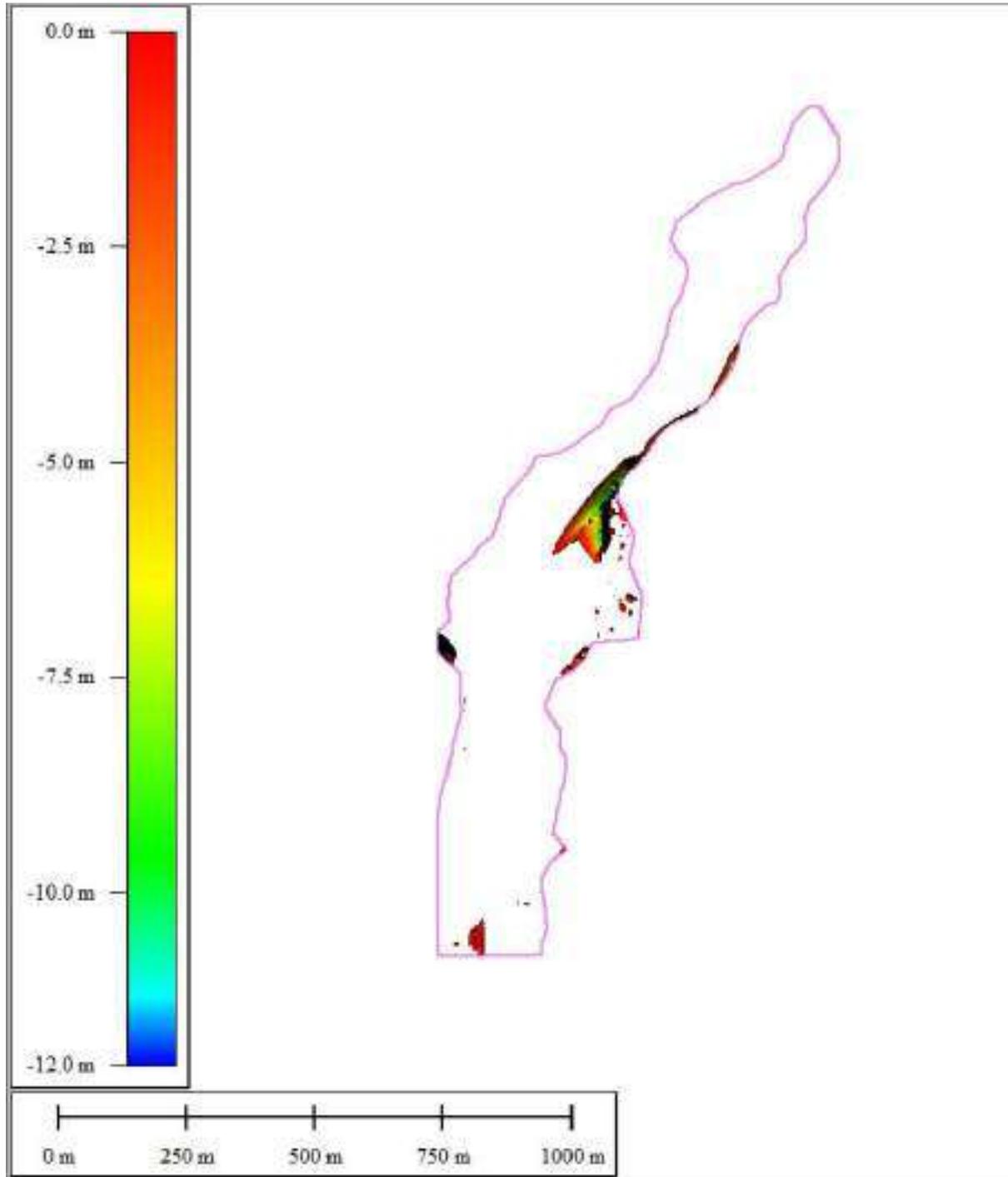


Figure F18 : Showing Fill of DTM of 2019 & 2023 Within Mining Boundary

3D Volumetric Analysis

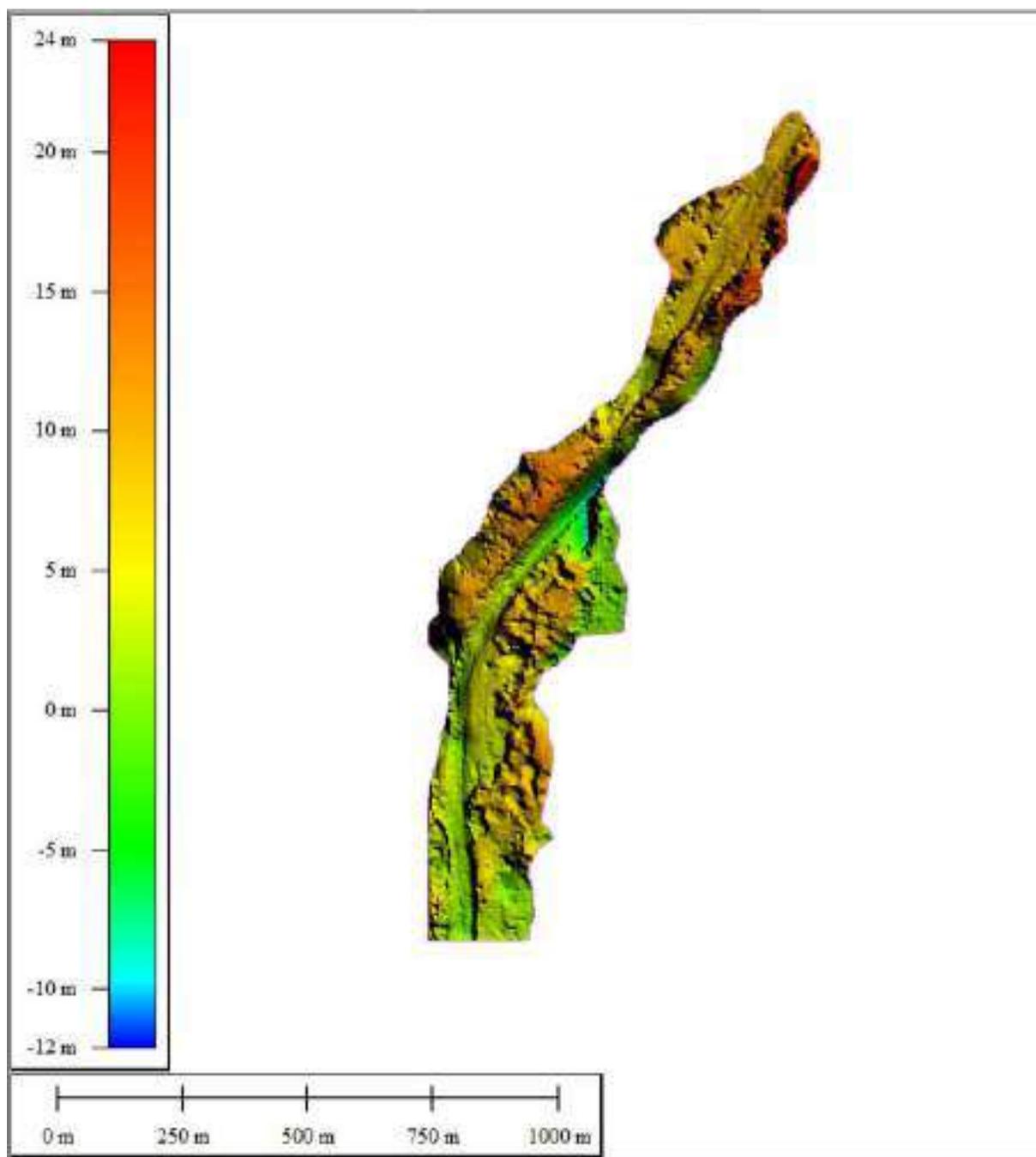


Figure F19: Showing Cut & Fill of DTM of 2019 & 2023 Within Mining Boundary

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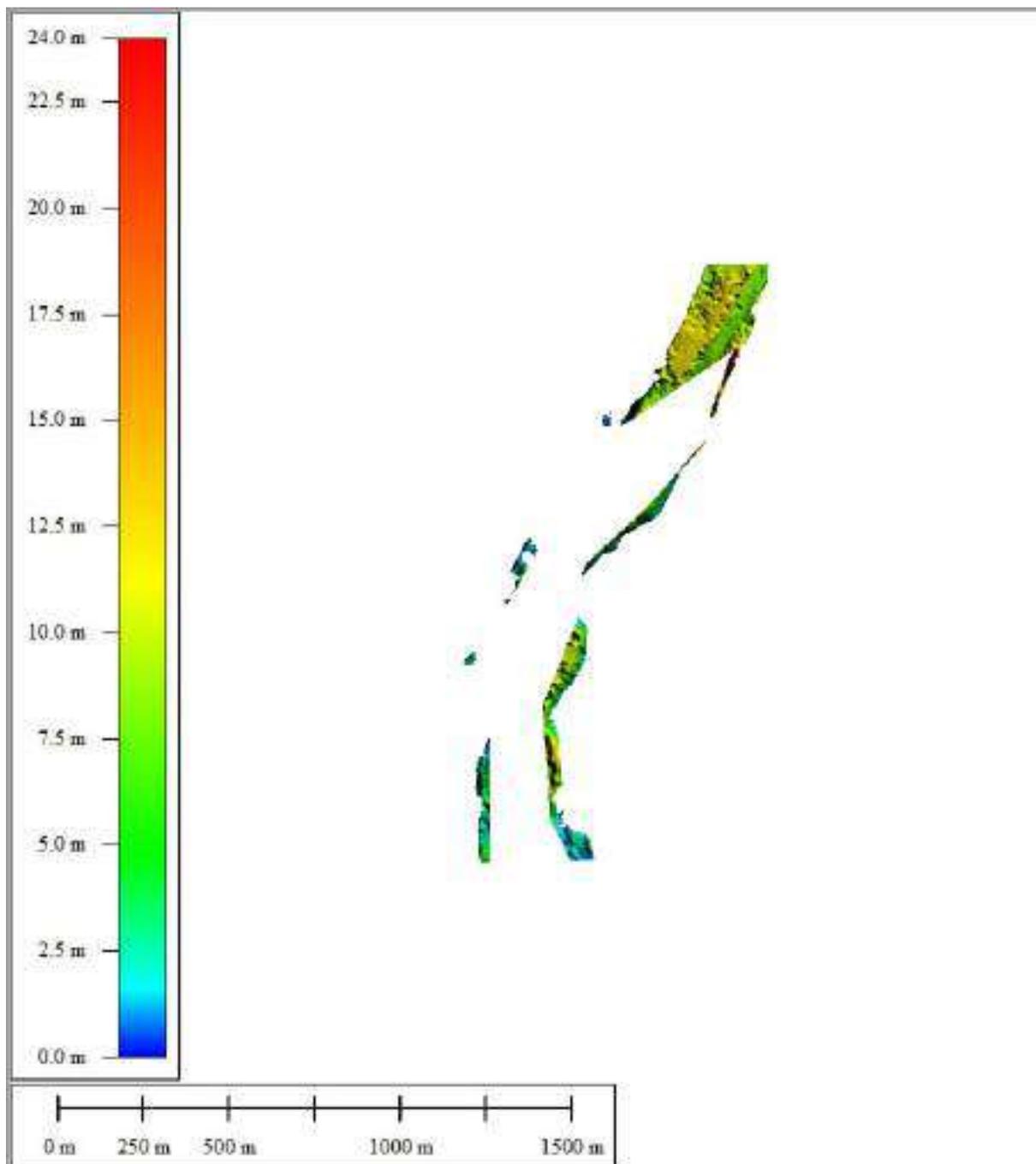


Figure F20 : Showing Cut & Fill Patches of DTM of 2019 & 2023

3D Volumetric Analysis

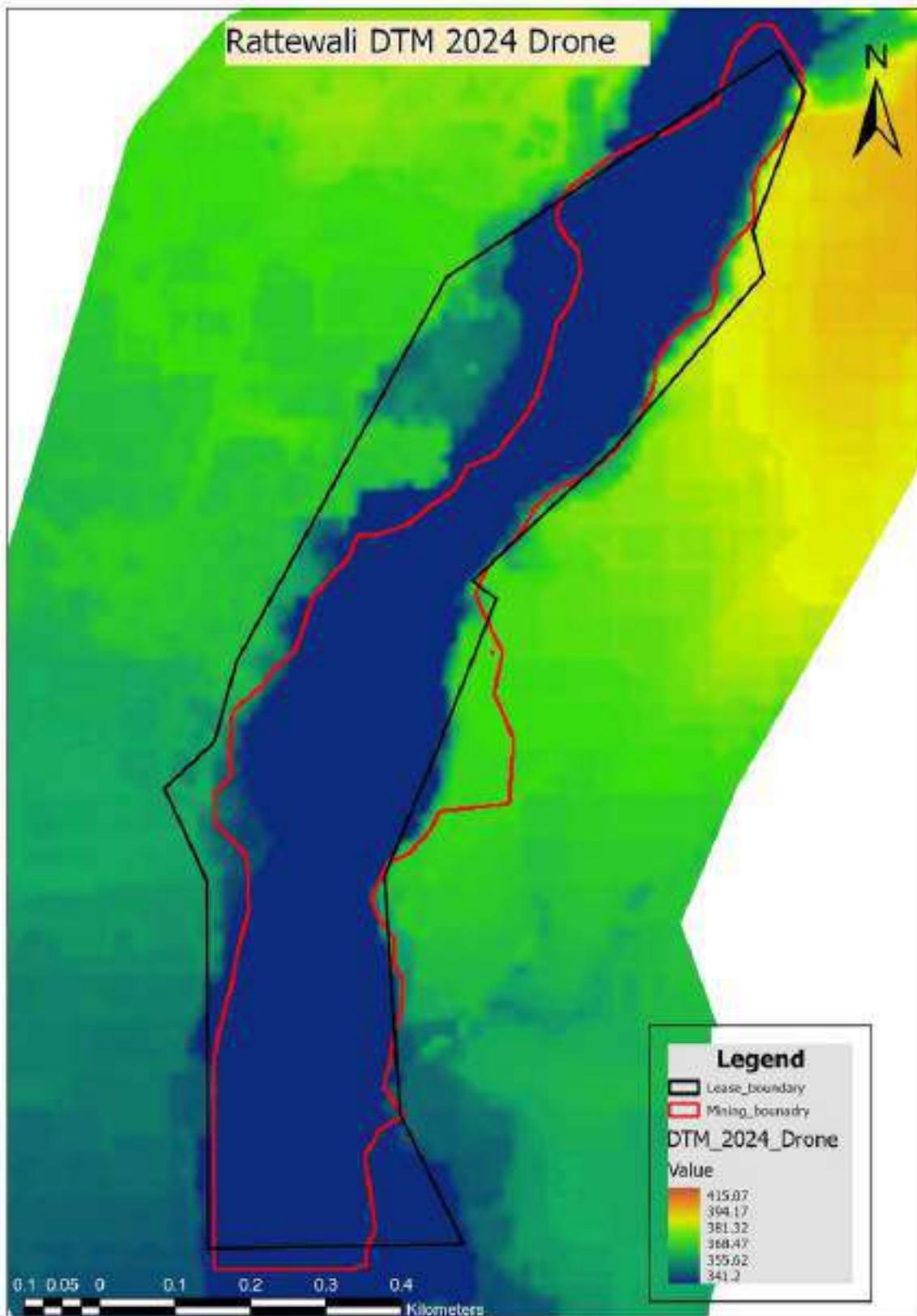


Figure F21 : DTM 2024 Drone Image indicating Elevation Variation of Terrain

3D Volumetric Analysis

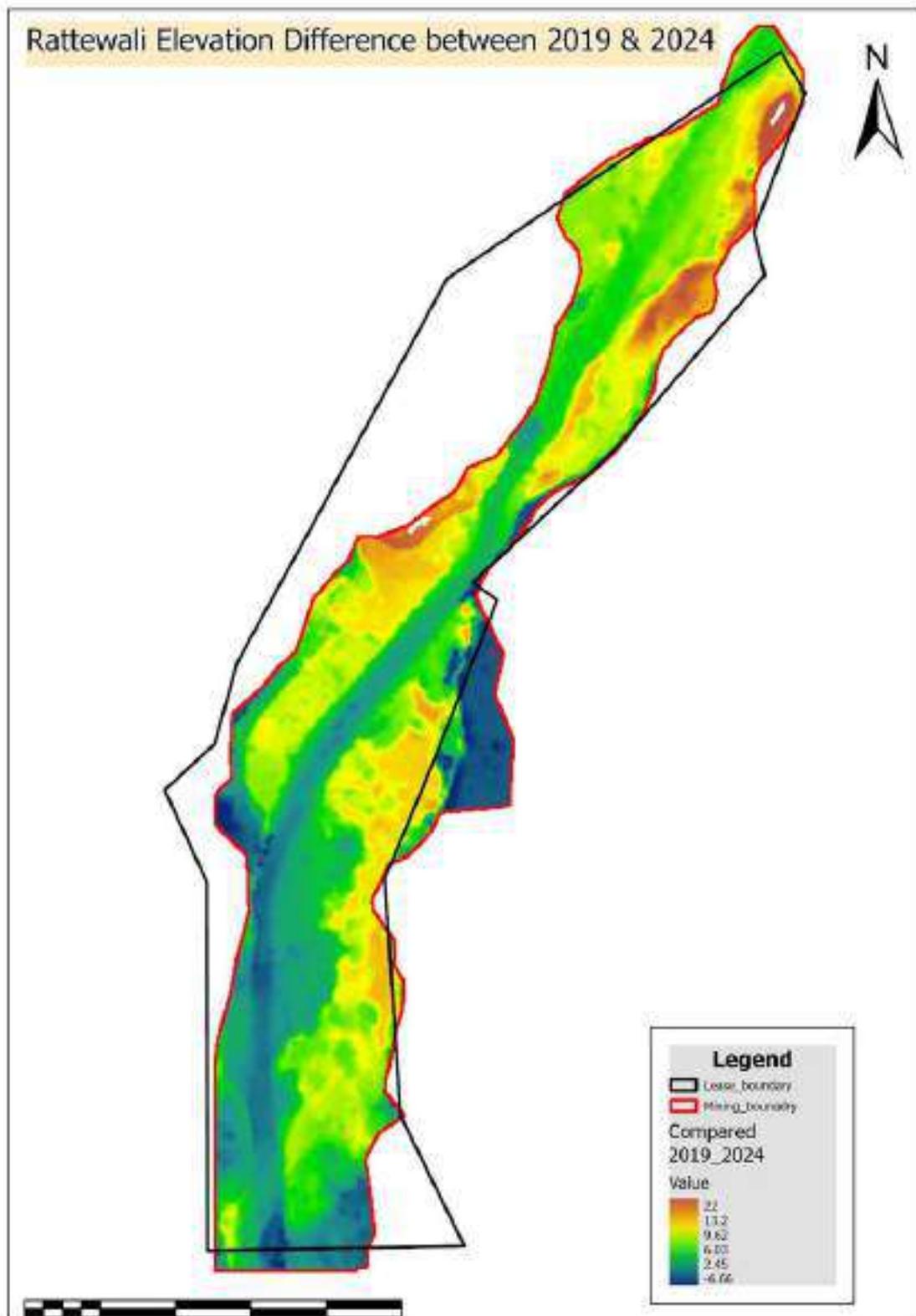


Figure F22 : Comparison between DTM of 2019 & 2024 indicating Elevation Variation of Terrain Within Mining Boundary

3D Volumetric Analysis

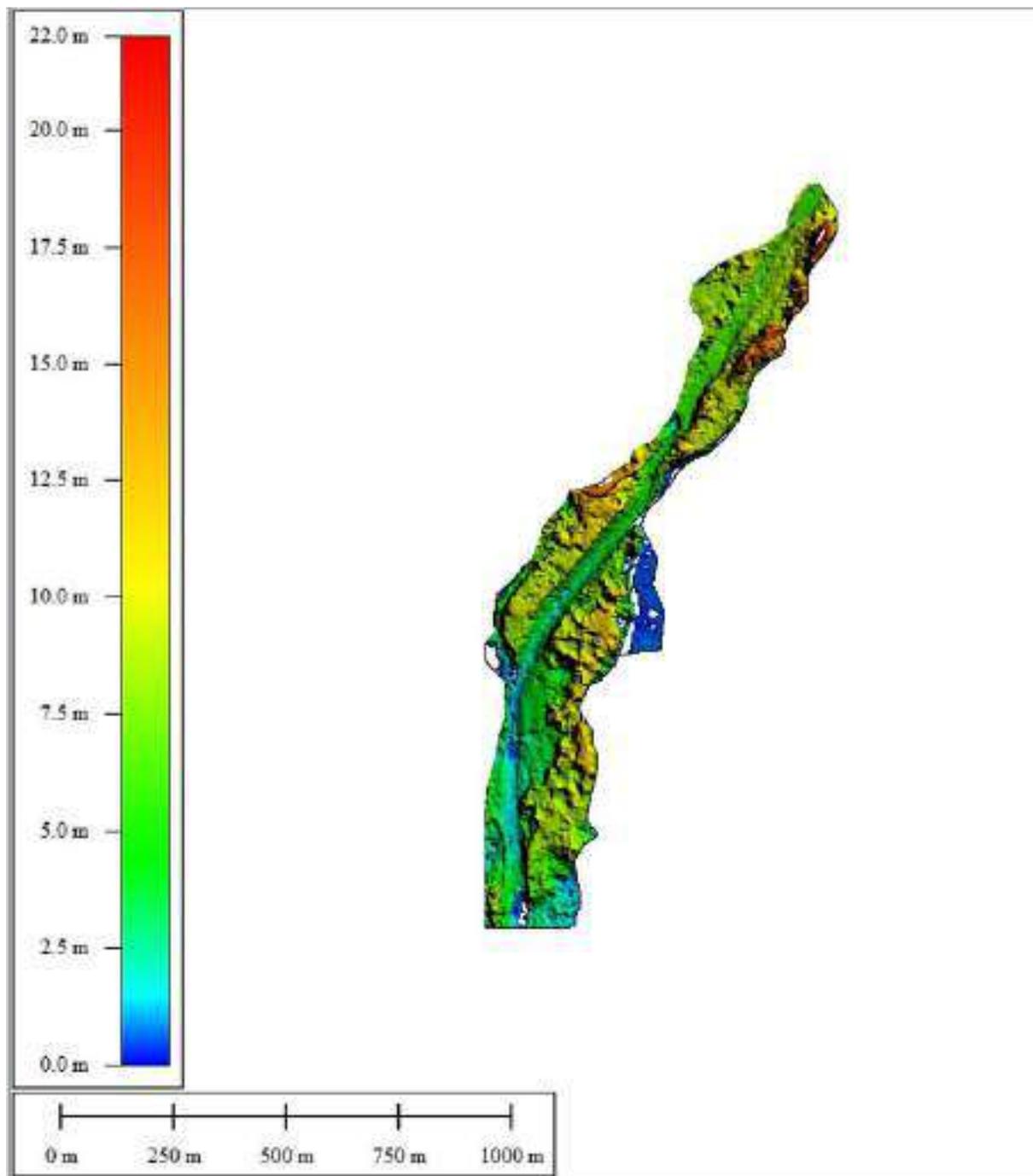


Figure F23 : Showing Cut of DTM of 2019 & 2024 Within Mining Boundary

3D Volumetric Analysis

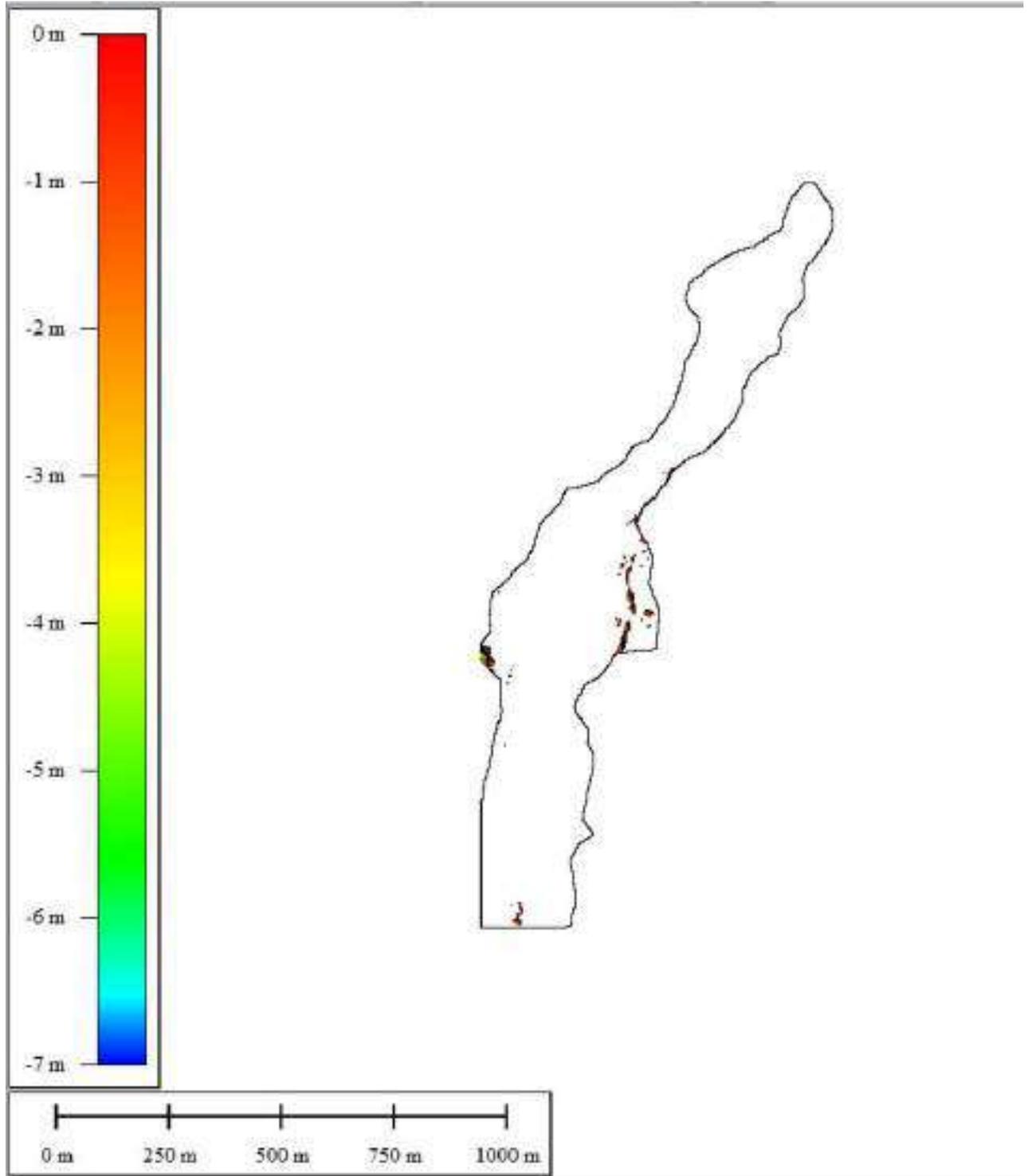


Figure F24 : Showing Fill of DTM of 2019 & 2024 Within Mining Boundary

3D Volumetric Analysis

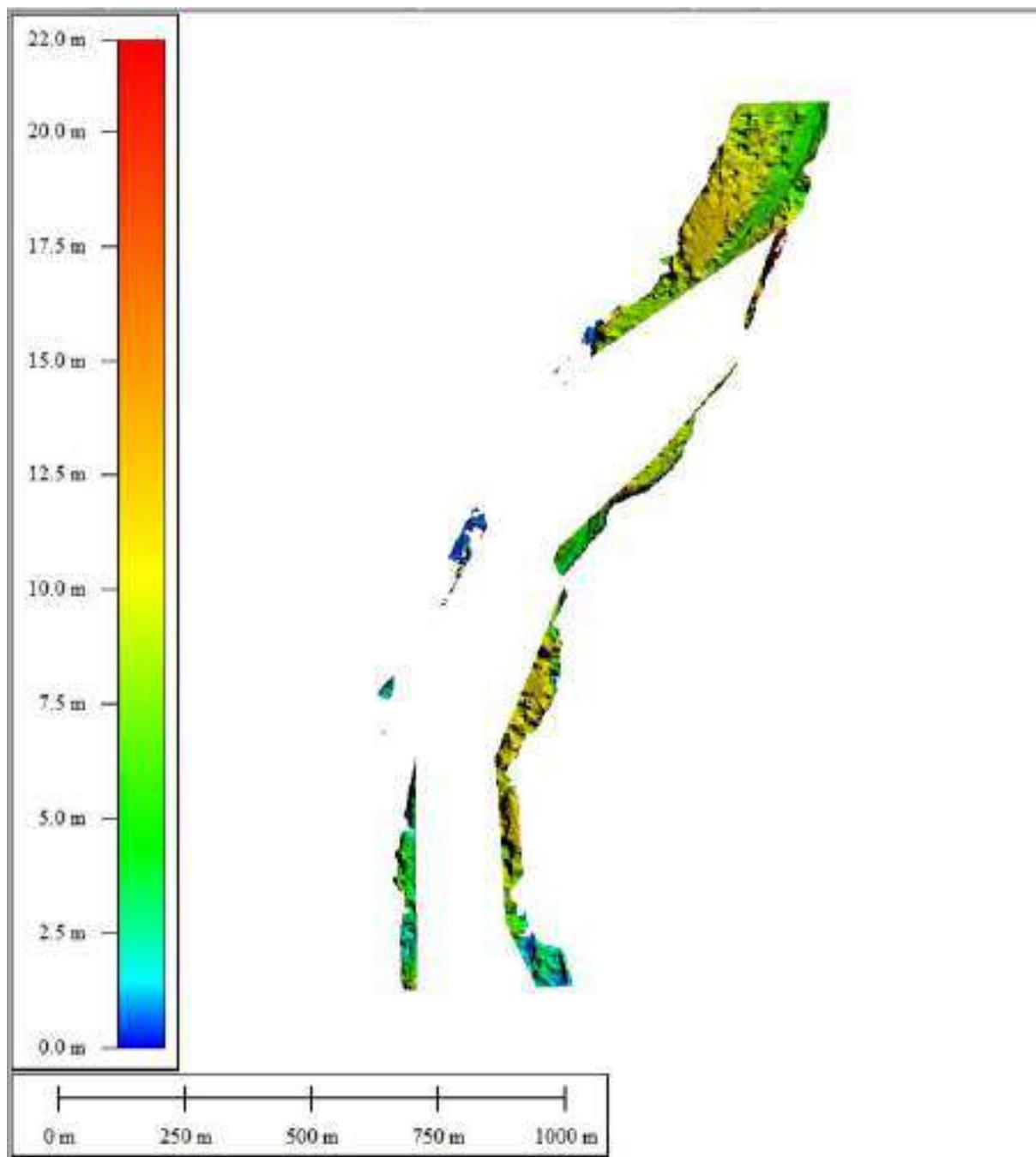


Figure F26 : Showing Cut & Fill Patches of DTM of 2019 & 2024

3D Volumetric Analysis

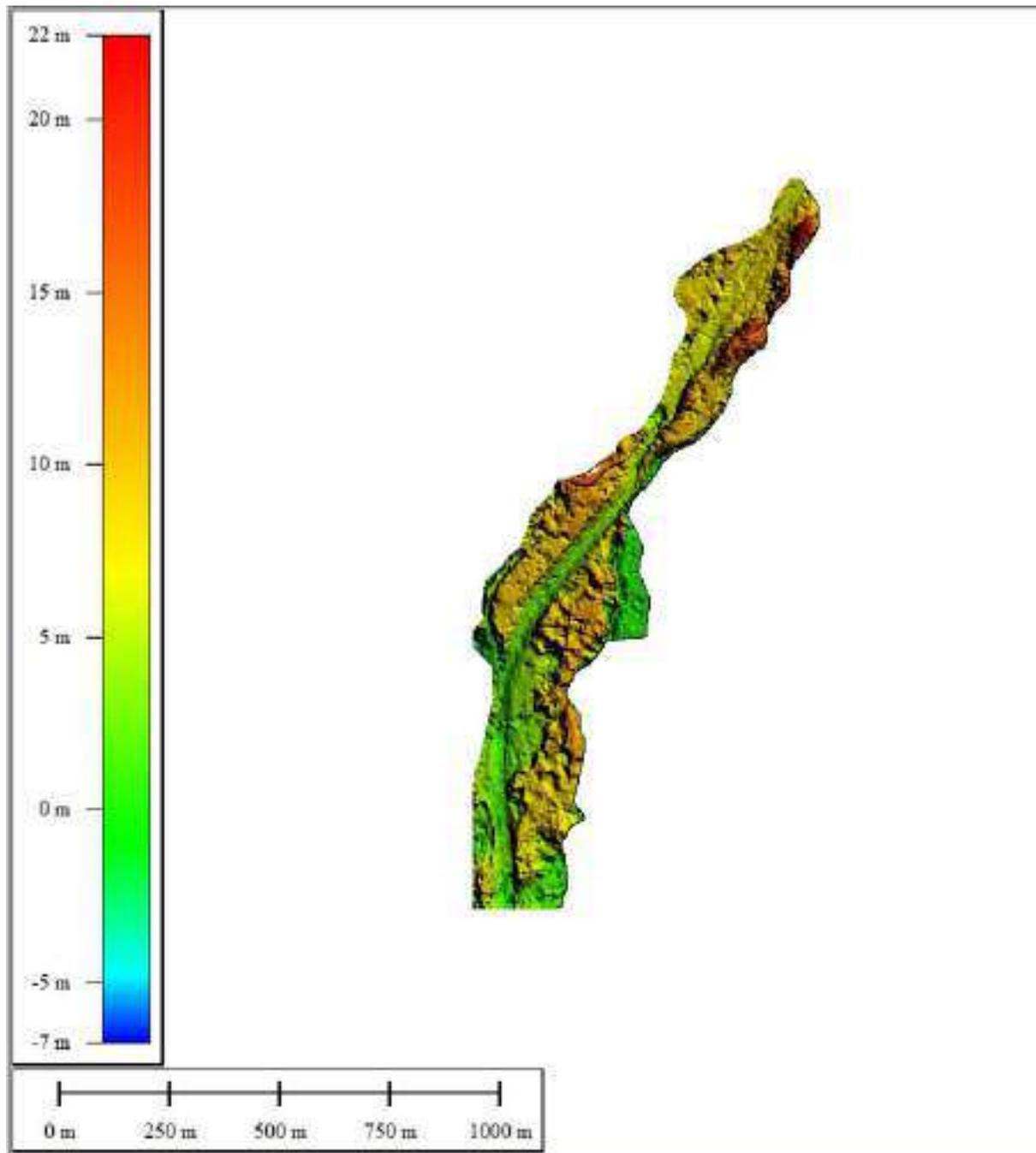
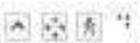
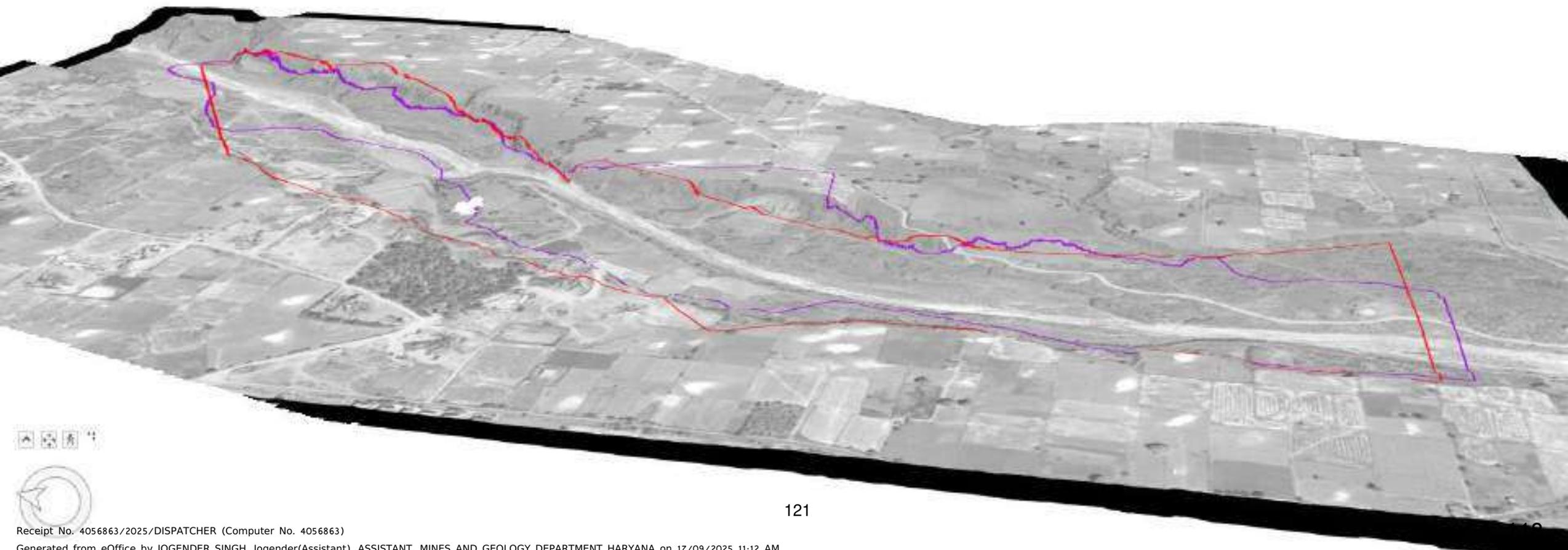
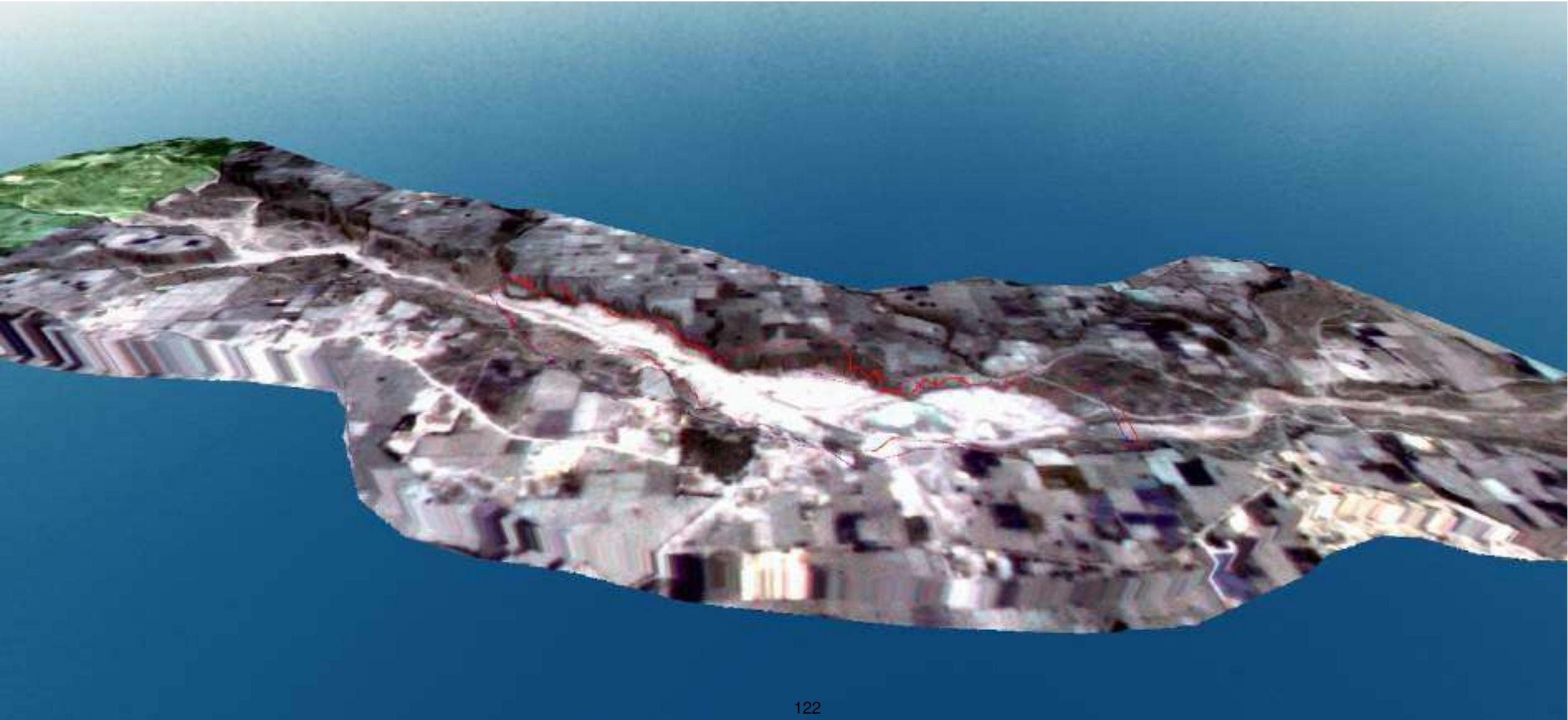


Figure F25 : Showing Cut & Fill of DTM of 2019 & 2023 Within Mining Boundar







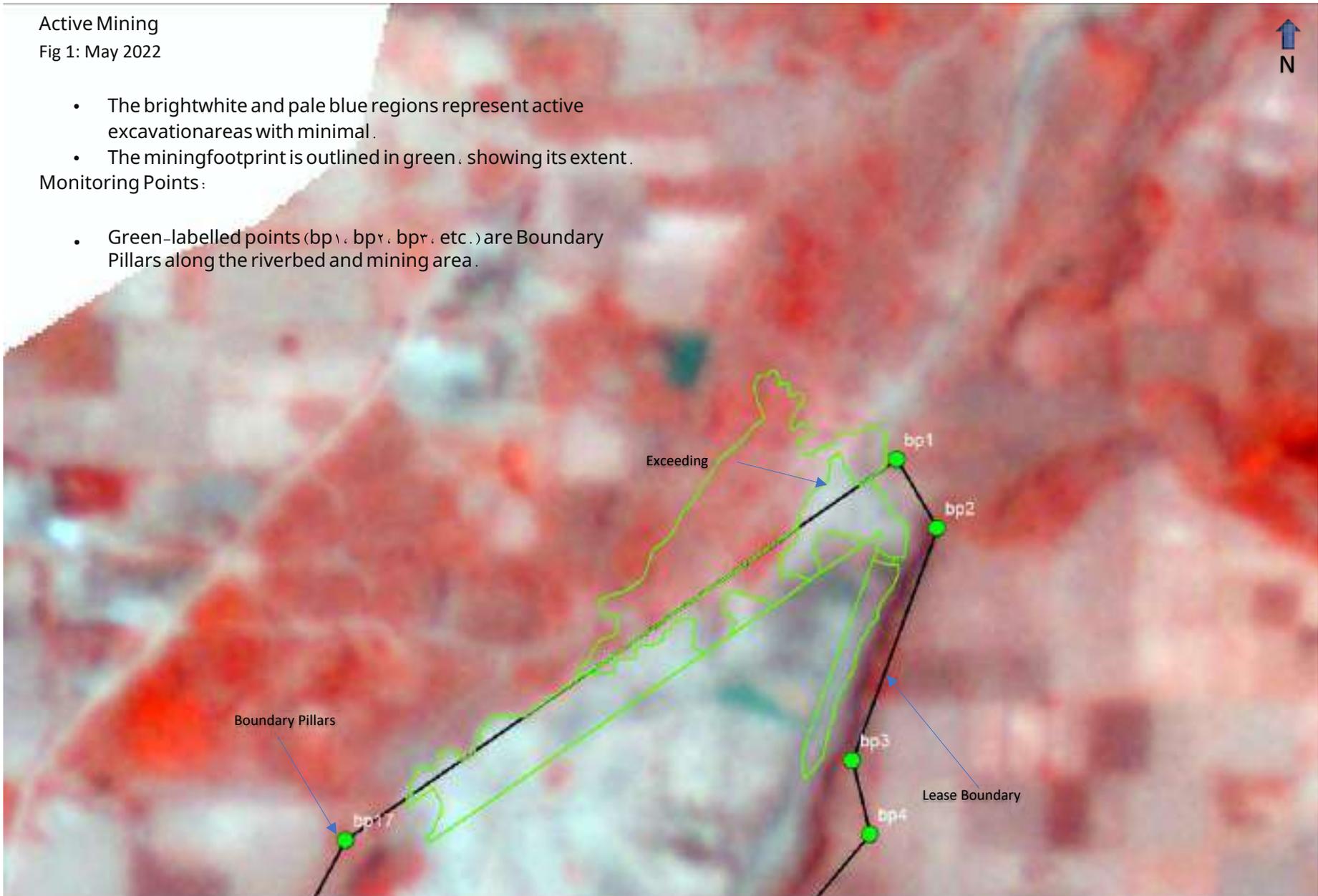
Active Mining

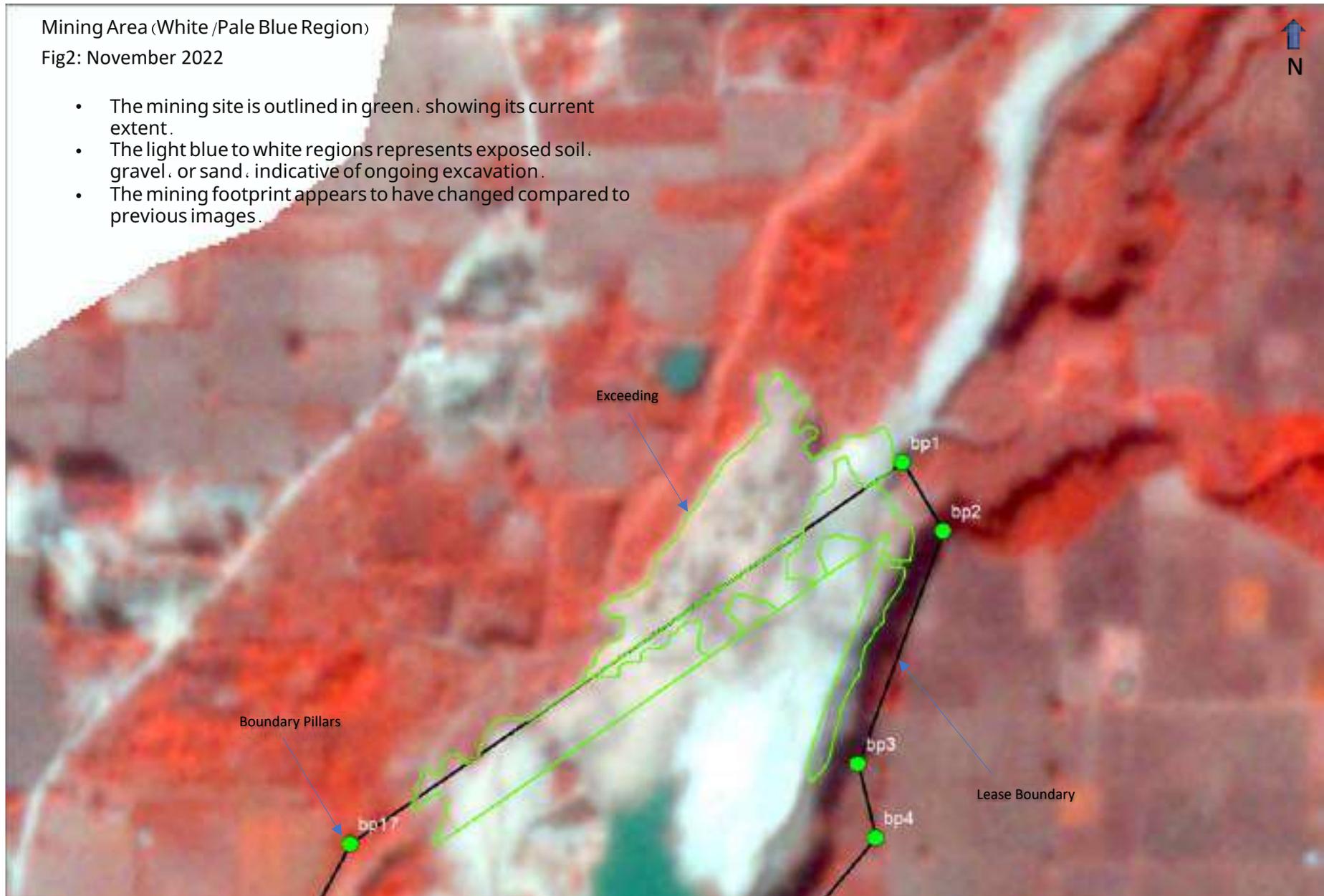
Fig 1: May 2022

- The brightwhite and pale blue regions represent active excavation areas with minimal.
- The mining footprint is outlined in green, showing its extent.

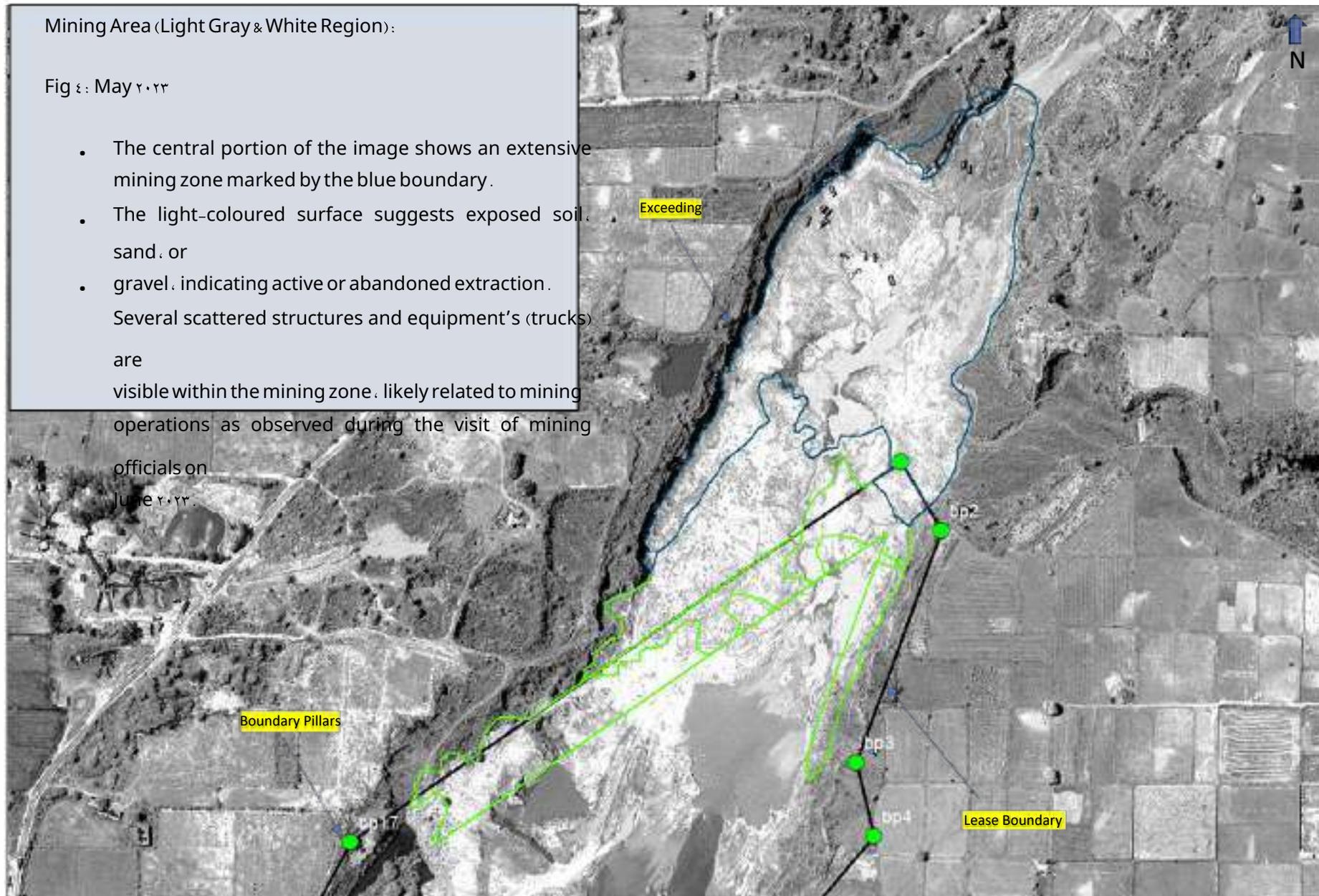
Monitoring Points:

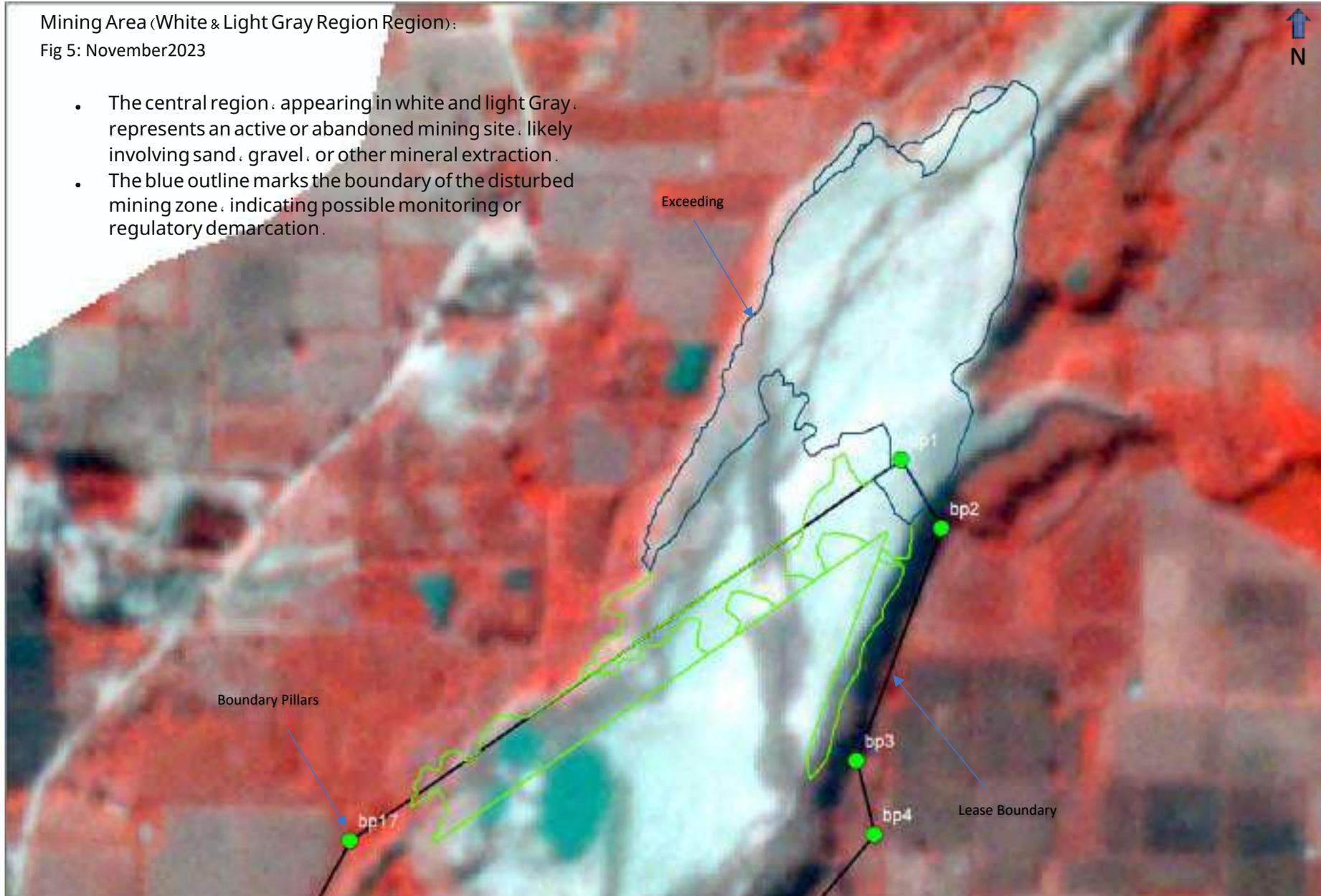
- Green-labelled points (bp1, bp2, bp3, etc.) are Boundary Pillars along the riverbed and mining area.









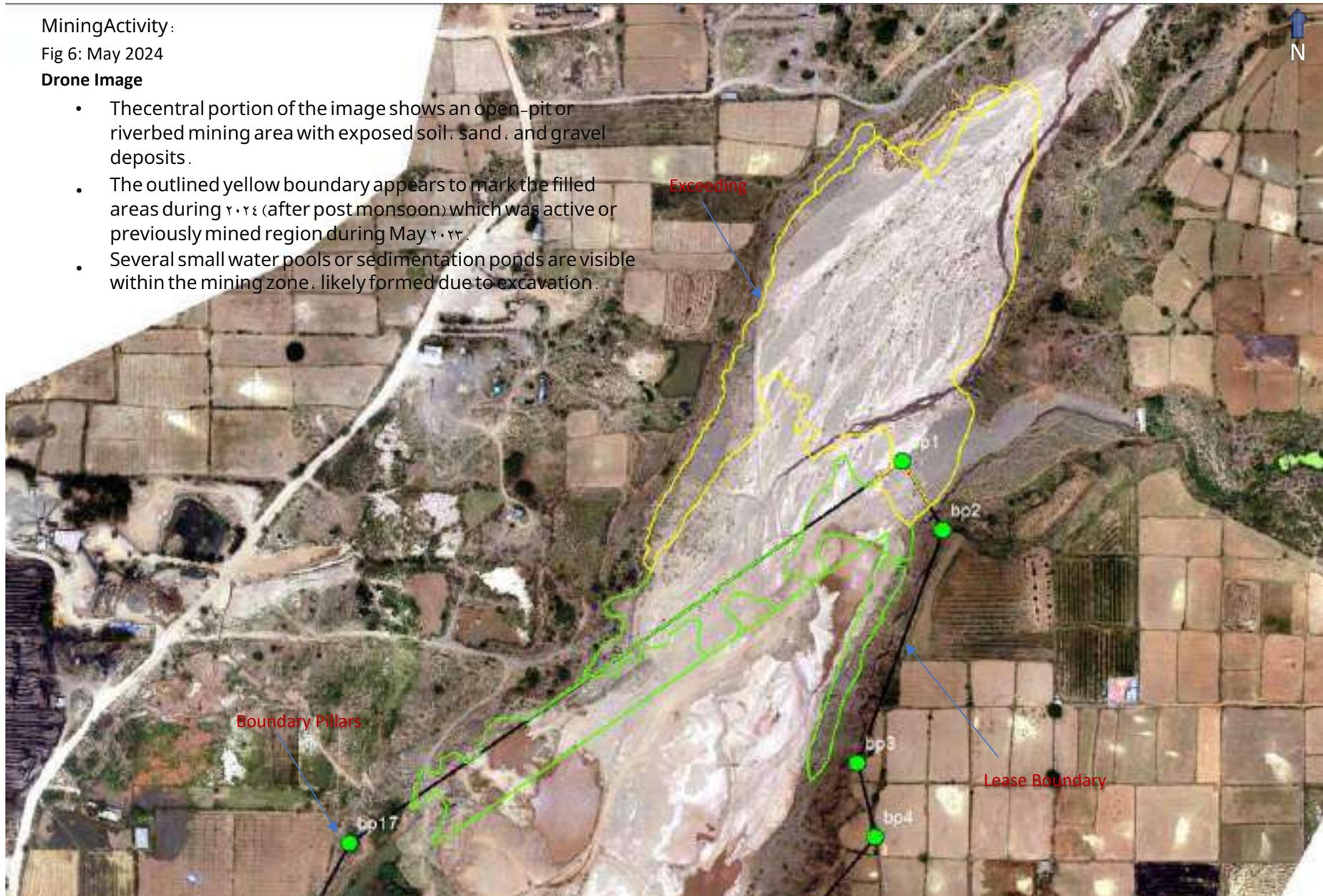


Mining Activity:

Fig 6: May 2024

Drone Image

- The central portion of the image shows an open-pit or riverbed mining area with exposed soil, sand, and gravel deposits.
- The outlined yellow boundary appears to mark the filled areas during 2023 (after post monsoon) which was active or previously mined region during May 2023.
- Several small water pools or sedimentation ponds are visible within the mining zone, likely formed due to excavation.



Mining Activity over Rattewali site since 2020 to 2024

