

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH AT KOLKATA**

O.A. No. 189 OF 2024/EZ

In the Matter of:

Ranjit Chaudhary

...Applicant(s)

-Versus-

Department of Environment, Forest and
Climate Change, Govt. of Bihar & Ors.

...Respondent(s)

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Date: 30/06/2025.

Place: Patna, Bihar.

Anamika Pandey
Adv
F/748/2009

Filed by:

Ms. Anamika Pandey,
Advocate,

7C, K. S. R. Road, 2nd Floor, Room
No. 206, Kol-1.M:8336835229
E: legumjure@gmail.com



**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH AT KOLKATA**

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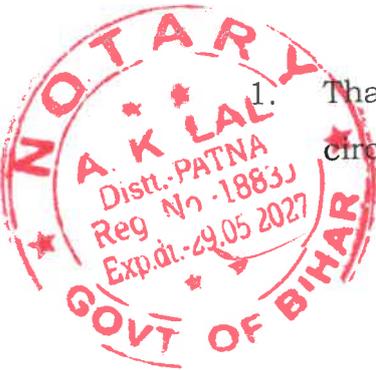
...Respondent(s)

**Supplementary Additional Counter Affidavit filed on behalf of
Respondent no. 5(i.e. SEIAA, Bihar)**

I, Abhay Kumar s/o Late Sheodayal Sharma aged about 50 years old, by occupation – Government Service, presently posted as Member Secretary of the State Environment Impact Assessment Authority, (SEIAA) Bihar working for gain at the “Beltron Bhawan”, 2nd Floor, Shastri Nagar, Bailey Road, Patna, Bihar- 800023, do hereby solemnly affirm and state as followed:

1. That I have made myself acquainted with the facts and circumstances of the Original Application filed by the applicant

Abhay Kumar
who is identified by signature. He is solemnly affirmed as a Justice. This is his affidavit apart from this nothing in this affidavit is true etc. 1/5/24 Sub rule 4(1) of the Act.



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and I have thoroughly gone through all the documents pertaining to the subject matter of this instant case and I am competent to file the instant Affidavit before this Hon'ble Tribunal.

2. That under the order dated 29.05.2025 this Hon'ble Tribunal directed SEIAA, Bihar to give a categorical reply on the issue as to whether JCB is permissible machine for excavation or not.
3. That in compliance therewith it is stated and submitted that use of manual/semi mechanized method comprising use of crawler mounted JCB/excavator backhoe (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for primary excavation/winning and loading of sand and JCB load of secondary loading of sand on the river banks is permissible in the present project as the same is part of the approved mining plan and environment impact assessment study report which were taken into consideration during appraisal of the projects of the three project proponents relating to Sone River, Aurangabad, Bihar. However, preference is to be given to manual method of mining as per the environmental clearance conditions.
4. That in this case, the project proponents relating to three sand mining projects [Aurangabad Sone -04, 09 and 21, River Sone, District Aurangabad, State Bihar] had submitted their duly approved mining plan signed and issued by the Mines and Geology Department, Government of Bihar, Patna.

In the mining plan chapter - 5 under clause 5.1 (Mining methodology) the mining plan was approved with use of manual/semi mechanized method comprising use of crawler mounted JCB/excavator back hoe (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for



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primary excavation/winning and loading of sand and JCB load of secondary loading of sand on the river banks. Trucks or tippers of 12 metric tonne capacity and requisite manpower shall be put to use to support the operating machinery.

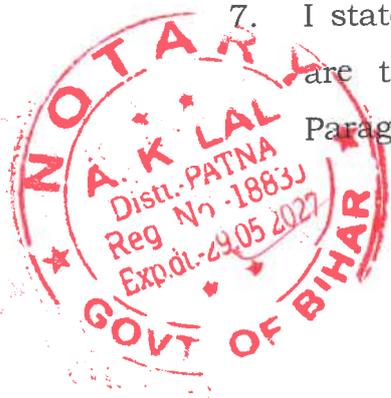
The copies of Mining plans (in part) for Sone river, Aurangabad ghat no 04, Sone river, Aurangabad ghat no 09, and Sone river, Aurangabad ghat no 21 are annexed herewith and marked with Letter- R-3/ AA, AB and AC respectively

5. The answering respondent states that even in the final EIA/EMP Reports relating to these three-sand mining ghats, the mining plans as approved have been reiterated and thus the appraisal was done by SEAC in view of the EIA Study report and use of semi mechanized method was permitted with preference to manual mining. Accordingly, ECs were issued with preference to manual mining related condition.

The copies of final EIA/EMP Report(in part) for Sone river, Aurangabad ghat no 04, Sone river, Aurangabad ghat no 09, and Sone river, Aurangabad ghat no 21 are annexed herewith and marked with Letter- R-3/ AD, AE and AF respectively

6. That I have thoroughly gone through the contents of this counter affidavit and I have fully understood the same I am competent to file and sign the instant Affidavit before this Hon'ble Tribunal.

7. I state that the statements contained in Paragraphs no. 1 and 2 are true to my personal knowledge, whereas those made in Paragraphs 3 to 6 are true to the best of my knowledge and belief



an.

and the rest are my humble submissions before this Hon'ble Court.

Abhay Kumar
DEPONENT

Prepared in my office.

Identified by me

Advocate.

VERIFICATION

Verified at Patna, Bihar by the deponent above named on this the 30th day of June, 2025, and say that the contents of this affidavit made in paragraph nos. 1 to 2 are true to my knowledge, those made in paragraph no. 3 to 6 are information derived from records which I verily believe to be true and the rest are my respectful submissions before this Hon'ble Tribunal.

Abhay Kumar
Deponent

Identified by me

Anomita Pandey
Adv
F/748/2009

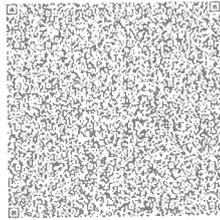




भारत सरकार
Government of India

नामांकन क्रम/ Enrolment No.: 0013/66005/02993

To
अभय कुमार
Abhay Kumar
S/O: Sheo Dayal Sharma,
401, Ganga-4,
Jalalpur City,
Ramjaipal Road,
Belly Road Patna,
VTC: Dinapur-Cum-Khagaul,
PO: Danapur Cantt,
Sub District: Danapur,
District: Patna,
State: Bihar,
PIN Code: 801503,
Mobile: 7033039319



आपका आधार क्रमांक / Your Aadhaar No. :

3006 3965 3108

VID : 9131 5703 9008 4400

मेरा आधार, मेरी पहचान



भारत सरकार
Government of India



Aadhaar no. issued: 21/02/2015



अभय कुमार
Abhay Kumar
जन्म तिथि/DOB: 17/03/1974
पुरुष/ MALE

आधार पहचान का प्रमाण है, नागरिकता या जन्मतिथि का नहीं।
इसका उपयोग सार्वजनिक (ऑनलाइन प्रमाणीकरण, या क्यूआर कोड/
लॉकनाइन एक्सप्रेशन की स्वीचिंग) के साथ किया जाना चाहिए।
Aadhaar is proof of identity, not of citizenship
or date of birth. It should be used with verification (online
authentication, or scanning of QR code / offline XML).

3006 3965 3108

मेरा आधार, मेरी पहचान



भारत सरकार
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सूचना / INFORMATION

- आधार पहचान का प्रमाण है, नागरिकता या जन्मतिथि का नहीं। जन्मतिथि आधार नंबर धारक द्वारा प्रस्तुत सूचना और विनिर्दिष्ट जन्मतिथि के प्रमाण के दस्तावेज पर आधारित है।
- इस आधार पर को यूआईडीएआई द्वारा नियुक्त प्रमाणीकरण एजेंसी के जरिए ऑनलाइन प्रमाणीकरण के द्वारा सत्यापित किया जाना चाहिए या ऐप स्टोर में उपलब्ध एमआधार या आधार क्यूआर कोड स्कैनर ऐप से क्यूआर कोड को स्कैन करके या www.uidai.gov.in पर उपलब्ध सुरक्षित क्यूआर कोड रीडर का उपयोग करके सत्यापित किया जाना चाहिए।
- आधार विशिष्ट और सुरक्षित है।
- पहचान और पते के समर्थन में दस्तावेजों को आधार के लिए नामांकन की तारीख से प्रत्येक 10 वर्ष में कम से कम एक बार आधार में अपडेट कराना चाहिए।
- आधार विभिन्न सरकारी और गैर-सरकारी फायदों/सेवाओं का लाभ लेने में सहायता करता है।
- आधार में अपना मोबाइल नंबर और ईमेल आईडी अपडेट रखें।
- आधार सेवाओं का लाभ लेने के लिए एमआधार ऐप डाउनलोड करें।
- आधार/बायोमेट्रिक्स का उपयोग न करने के समय सुरक्षा सुनिश्चित करने के लिए आधार/बायोमेट्रिक्स लॉक/अनलॉक सुविधा का उपयोग करें।
- आधार की मांग करने वाले सहमति लेने के लिए बाध्य हैं।
- Aadhaar is proof of identity, not of citizenship or date of birth (DOB). DOB is based on information supported by proof of DOB document specified in regulations, submitted by Aadhaar number holder.
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- Download mAadhaar app to avail of Aadhaar services.
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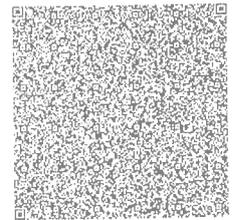


भारतीय विशिष्ट पहचान प्राधिकरण
Unique Identification Authority of India



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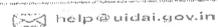


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Abhay Kumar

Annexure R-3/ AA

Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -04 on River Sone; District, Aurangabad, State - Bihar of Area 86.85 Hectare.

CHAPTER-5

5.1 Mining methodology:

- The mining for the entire stretch of proposed sand ghats of river Sone which have been referred to in Table no.3 and subsequent paragraphs in the report shall be performed using Manual/Semi Mechanized Method comprising use of crawler mounted JCB / excavator back hoe (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for primary excavation/winning and loading of sand , and JCB loader for secondary loading of sand on the river banks. Trucks or tippers of 12 metric tonne capacity and requisite manpower shall be put to use to support the operating machinery.
- The lessee shall erect boundary pillars at regular intervals (not exceeding 20 m in any case) at the boundary of the lease hold area. The said boundary pillars should be made of reinforced concrete pillars of dimension of minimum one square feet and height of 1.5 m, 1/3rd of which shall be erected below the ground. The part of the pillars above the ground shall be painted in white and black color so as to render it distinctly visible alternately (in Zebra Style) so as to render it distinctly visible. The distance of 7.5 m shall be further marked from the lease boundary and this zone constituting the 'safety zone' shall be identified. Pillaring will be done every year after mousoon retreats.
- The excavated sand shall be sieved at pit head to remove the silt load washed in. It shall be used in making river bank embankment to raise the bank height. This shall prevent flooding of adjoining areas.
- The sand only fraction shall be loaded primarily at the pit head and unloaded at the secondary loading point/location on the river bank.
- At the secondary loading point requisite no of JCB loaders shall be deployed as given in Table to follow. The secondary loading operations shall be day and night in order to meet the demands.
- No mining activities shall be undertaken within this 'safety zone'. This shall be in accordance of Metalliferous Mines Regulations 1961 (MMR-1961) vide Chapter-XI sr.no. 111 and section 3[(2)].
- The sand shall be mined out in successive vertical benches/slices from top of ground surface or sand surface downwards, and shall be each of 1.0 meter thick.
- At no point of time the vertical mine face shall be more than 1.0 m high. Further, the width of the bench shall be minimum 1.5 m in width in

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Consultant: United Exploration India Pvt. Ltd.

OC/NABET Certificate No. 11/2021/PA-MPPA/LA/006 Valid up to 11th March, 2024



Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -04 on River Sone; District, Aurangabad, State - Bihar of Area 86.85 Hectare.

horizontal plane in accordance with the MMR-1961 (And amended thereof) sub rules. This shall prevent development of mine face more than 1.0 m high which may be cause of concern from the safety aspects. This is important to prevent machine operators/ workers from falling into the pit while working near the machinery.

- The mining operations shall be performed between sunrise to sun set hours.
- The use of semi mechanized mining shall require use of electricity to illuminate the working area and accordingly electricity shall be tapped after grant of due approval/ permission from competent authorities concerned

5.2 Year wise production details: - Give details as per project.

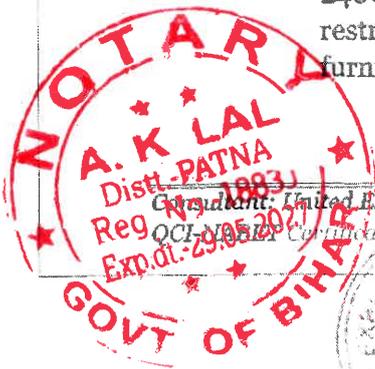
Sand mining will be carried out about 240 days in a year and confined in the day light only. Per day productions are thus estimated based on 10 hours of operation only. Detail estimation based on the first year's production which is maximum has been tabulated in table no. 5.1.

Table No. 5.1: Calendar Plan for Excavation.

Serial Year	Production in Cum
Year-1	2480844
Year-2	2042478.865
Year-3	2042478.865
Year-4	2042478.865
Year-5	2042478.865
Total	10650759.46

In five years of lease period, total production will be 10.65 Million cum. The considering density of 1.8, the total production comes to 19.7 Million tou.

As per bench slope configuration, total mineable reserve is calculated as 2480844 cum but as per EMSGM Guideline, the mineable reserve will be restricted to 1563300 cum. The calculation and five year plan has been furnished below:



Consultant: United Exploration India Pvt. Ltd.
OCI No. 2021/006 Valid up to 11th March, 2024

Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -04 on River Sone; District, Aurangabad, State - Bihar of Area 86.85 Hectare.

Mining Area(ha)	Maximum Depth(m)	Geological Reserve(cum)	Replenishable reserve(cum)	Mineable Reserve(cum)
86.85	3	2605500	2145108.15	1563300

Serial Year	Production in Cum
Year-1	1563300
Year-2	1563300
Year-3	1563300
Year-4	1563300
Year-5	1563300
Total	7816500

u five years of lease period, total production will be 7.81 Million cum. Considering deusity of 1.8, the total production comes to 14.058 Million ton.

It has been envisaged to deploy JCB/ Excavator of excavatiou of sand while tippers of 12 tons will be deployed for transportation of sand from river bed to nearby stacking area at distance of 5 km from the project site. Estimated numbers of equipment along with their fuel consumption are given below in tables.

S. L. No.	Name of Machinery	Capacity (Cum) / Ton	Max. Nos.	Fuel Consumptions (Lit Per Hour)	Fuel Consumption in day (Liters)
1	JCB/ Shovel	1.20	3	12	360
2	Trucks Tippers	12	28	7.0	1960
3	Water Sprinklers	4	3	4	120
4	Light vehicles	-	4	3	120
5	Tractor	4	15	2.5	375
TOTAL					2935

Consultant: United Exploration India Pvt. Ltd.

Distt.-PATNA Certificate No. BET/APA-MPPA/LA/006 Valid up to 11th March, 2024



Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -04 on River Sone; District, Aurangabad, State - Bihar of Area 86.85 Hectare.

Category	No. of Shift	Absenteeism	Total Manpower
Transport Manager	1	10%	8
Supervisor	1	10%	3
Time Office	1	10%	3
Others	1	-	25
Operators	1	10%	60
TOTAL			99



Consultant: United Exploration India Pvt. Ltd.

OCF-NABET Certificate No. MPA-MPPA/IA/006 Valid up to 11th March, 2024



Annexure R-3/ AB

Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone - 09 on River Sone; District, Aurangabad, State - Bihar of Area 94.88 Hectare.

CHAPTER-5**5.1 Mining methodology:**

- The mining for the entire stretch of proposed sand ghats of river Sone which have been referred to in Table no.3 and subsequent paragraphs in the report shall be performed using Manual/Semi Mechanized Method comprising use of crawler mounted JCB / excavator back hoe (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for primary excavation/winning and loading of sand, and JCB loader for secondary loading of sand on the river banks. Trucks or tippers of 12 metric tonne capacity and requisite manpower shall be put to use to support the operating machinery.
- The lessee shall erect boundary pillars at regular intervals (not exceeding 20 m in any case) at the boundary of the lease hold area. The said boundary pillars should be made of reinforced concrete pillars of dimension of minimum one square feet and height of 1.5 m, 1/3rd of which shall be erected below the ground. The part of the pillars above the ground shall be painted in white and black color so as to render it distinctly visible alternately (in Zebra Style) so as to render it distinctly visible. The distance of 7.5 m shall be further marked from the lease boundary and this zone constituting the 'safety zone' shall be identified. Pillaring will be done every year after monsoon retreats.
- The excavated sand shall be sieved at pit head to remove the silt load washed in. It shall be used in making river bank embankment to raise the bank height. This shall prevent flooding of adjoining areas.
- The sand only fraction shall be loaded primarily at the pit head and unloaded at the secondary loading point/location on the river bank.
- At the secondary loading point requisite, no of JCB loaders shall be deployed as given in Table to follow. The secondary loading operations shall be day and night in order to meet the demands.
- No mining activities shall be undertaken within this 'safety zone'. This shall be in accordance of Metalliferous Mines Regulations 1961 (MMR-1961) vide Chapter-XI sr.no. 111 and section 3[(2)].
- The sand shall be mined out in successive vertical benches/slices from top of ground surface or sand surface downwards, and shall be each of 1.0 meter thick.
- At no point of time the vertical mine face shall be more than 1.0 m high. Further, the width of the bench shall be minimum 1.5 m in width in horizontal plane in accordance with the MMR-1961 (And amended

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Consultant: United Exploration India Pvt. Ltd.

OCI-NABET Certificate No.: NABET/APA-MPPA/IA/006 Valid up to 11th March, 2024

GAUTAM FILLING CENTRE

Proprietor

Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone - 09 on River Sone; District, Aurangabad, State - Bihar of Area 94.88 Hectare.

thereof) sub rules. This shall prevent development of mine face more than 1.0 m high which may be cause of concern from the safety aspects. This is important to prevent machine operators/ workers from falling into the pit while working near the machinery.

- The mining operations shall be performed between sunrise to sun set hours.
- The use of semi mechanized mining shall require use of electricity to illuminate the working area and accordingly electricity shall be tapped after grant of due approval/ permission from competent authorities concerned

5.2 Year wise production details: - Give details as per project.

Sand mining will be carried out about 240 days in a year and confined in the day light only. Per day productions are thus estimated based on 10 hours of operation only. In five years of lease period, total production will be 8.5392 Million cum. The considering density of 1.8, the total production comes to 15.37056 Million ton.

As per bench slope configuration, total mineable reserve is calculated as 2846400 cum but as per EMSGM Guideline, the mineable reserve will be restricted to 2343441.12 cum. The calculation and five-year plan have been furnished below

Mining Area(ha)	Maximum Depth(m)	Geological Reserve(cum)	Replenishable reserve(cum)	Mineable Reserve(cum)
94.88	3	2846400.00	2343441.12	1707840

Serial Year	Production in Cum
Year-1	1707840
Year-2	1707840
Year-3	1707840
Year-4	1707840
Year-5	1707840
Total	8539200

In five years of lease period, total production will be 8.5392 million cum. Considering density of 1.8, the total production comes to 15.37056 million ton.



Consultant: United Exploration India Pvt. Ltd.

QCI-NABER Certificate No. NABET/APA-MPPA/IA/000 Valid up to 11th March, 2024

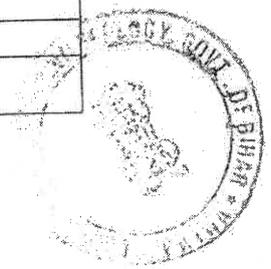
17
CARTON FILLING CENTR

**Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone
on River Sone; District, Aurangabad, State - Bihar of Area 94.88
Hectare.**

It has been envisaged to deploy JCB/ Excavator of excavation of sand while tippers of 12 tons will be deployed for transportation of sand from river bed to nearby stacking area at distance of 5 km from the project site. Estimated number of equipment along with their fuel consumption are given below in tables.

S. L. No.	Name of Machinery	Capacity (Cum) / Ton	Max. Nos.	Fuel Consumptions (Lit Per Hour)	Fuel Consumption in day (Litrs)
1	JCB/ Shovel	1.20	3	12	360
2	Trucks Tippers	12	31	7.0	2170
3	Water Sprinklers	4	4	4	160
4	Light vehicles	-	4	3	120
5	Tractor	4	17	2.5	425
TOTAL					3235

Category	No. of Shift	Absenteeism	Total Manpower
Transport Manager	1	10%	11
Supervisor	1	10%	11
Time Office	1	10%	11
Others	1	-	64
Operators	1	10%	11
TOTAL			108



Handwritten signature and date.

Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -21 on River Sone; District, Aurangabad, State - Bihar of Area 87.92 Hectare.

- The excavated sand shall be sieved at pit head to remove the silt load washed in. It shall be used in making river bank embankment to raise the bank height. This shall prevent flooding of adjoining areas.
- The sand only fraction shall be loaded primarily at the pit head and unloaded at the secondary loading point/location on the river bank.
- At the secondary loading point requisite, no of JCB loaders shall be deployed as given in Table to follow. The secondary loading operations shall be day and night in order to meet the demands.
- No mining activities shall be undertaken within this 'safety zone'. This shall be in accordance of Metalliferous Mines Regulations 1961 (MMR-1961) vide Chapter-XI sr.no. 111 and section 3[(2)].
- The sand shall be mined out in successive vertical benches/slices from top of ground surface or sand surface downwards, and shall be each of 1.0 meter thick.
- At no point of time the vertical mine face shall be more than 1.0 m high. Further, the width of the bench shall be minimum 1.5 m in width in horizontal plane in accordance with the MMR-1961 (And amended thereof) sub rules. This shall prevent development of mine face more than 1.0 m high which may be cause of concern from the safety aspects. This is important to prevent machine operators/ workers from falling into the pit while working near the machinery.
- The mining operations shall be performed between sunrise to sun set hours.
- The use of semi mechanized mining shall require use of electricity to illuminate the working area and accordingly electricity shall be tapped after grant of due approval/ permission from competent authorities concerned

5.2 Year wise production details: - Give details as per project.

Sand mining will be carried out about 240 days in a year and confined in the day light only. Per day productions are thus estimated based on 10 hours of operation only. Detail estimation based on the first year's production which is maximum has been tabulated in table no. 5.1.

Table No. 5.1: Calendar Plan for Excavation.

Serial Year	Production in Cum
-------------	-------------------



Consultant: United Exploration India Pvt. Ltd.
 UCI-NABET Certificate No.: NABET/APA-MPPA/LA/006 Valid up to 11th March, 2024



Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -21 on River Sone; District, Aurangabad, State - Bihar of Area 87.92 Hectare.

Year-1	2518602
Year-2	207356502.7
Year-3	207356502.7
Year-4	207356502.7
Year-5	207356502.7
Total	831944612.6

In five years of lease period, total production will be 8.31 Million cum. The considering density of 1.8, the total production comes to 14.958 Million ton.

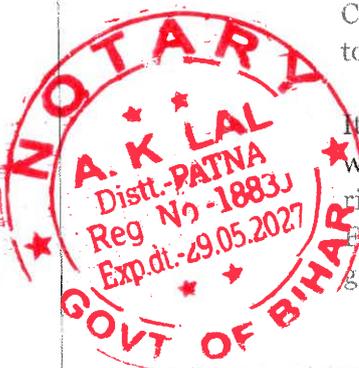
As per bench slope configuration, total mineable reserve is calculated as 2518602 cum but as per EMSGM Guideline, the mineable reserve will be restricted to 1582560 cum. The calculation and five-year plan have been furnished below

Mining Area(ha)	Maximum Depth(m)	Geological Reserve(cum)	Replenishable reserve(cum)	Mineable Reserve(cum)
87.92	3	2637600	2171536.08	1582560

Serial Year	Production in Cum
Year-1	1582560
Year-2	1582560
Year-3	1582560
Year-4	1582560
Year-5	1582560
Total	7912800

In five years of lease period, total production will be 7.91 million cum. Considering density of 1.8, the total production comes to 14.238 million ton.

It has been envisaged to deploy JCB/ Excavator of excavation of sand while tippers of 12 tons will be deployed for transportation of sand from river bed to nearby stacking area at distance of 5 km from the project site. Estimated number of equipment along with their fuel consumption are given below in tables.



Consultant: United Exploration India Pvt. Ltd.
QCI-NABET Certificate No. 081104, MPPA, IA/006 Valid up to 11th March, 2024



Mining Plan including Progressive Mine Closure Plan of Aurangabad Sone -21 on River Sone; District, Aurangabad, State - Bihar of Area 87.92 Hectare.

S. L. No.	Name of Machinery	Capacity (Cum) / Ton	Max. Nos.	Fuel Consumptions (Lit Per Hour)	Fuel Consumption in day (Litrs)
1	JCB/ Shovel	1.20	3	12	360
2	Trucks Tippers	12	28	7.0	1960
3	Water Sprinklers	4	3	4	120
4	Light vehicles	-	4	3	120
5	Tractor	4	15	2.5	375
TOTAL					2935

Category	No. of Shift	Absenteeism	Total Manpower
Transport Manager	1	10%	8
Supervisor	1	10%	3
Time Office	1	10%	3
Others	1	-	25
Operators	1	10%	60
TOTAL			99



Annexure R-3/ AD

Final EIA/EMP Report for Proposed Sand Mining Project of Area 86.85 Ha at Aurangabad Ghat 04 on Sone River of District-Aurangabad, State-Bihar

2.7 Method Mining

2.7.1 Proposed Mining Method –Semi Mechanized Mining.

1. The mining for the entire stretch of proposed sand ghats of river Sone, using Semi-Mechanized Method comprising use of crawler mounted JCB / Poclairn back hoc (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for primary excavation/winning and loading of sand, and JCB loader for secondary loading of sand on the river banks. Trucks or tippers of 12 metric tonne capacity and requisite manpower shall be put to use to support the operating machinery.
2. The mining lease area shall be demarcated and pillars of appropriate material shall be erected at reasonable distance to identify the same. The distance of 7.5 m shall be further marked from the lease boundary and this zone constituting the 'safety zone' shall be identified.
3. The excavated sand shall be sieved at pit head to remove the silt load washed in. It shall be used in making river bank embankment to raise the bank height. This shall prevent flooding of adjoining areas.
4. The sand only fraction shall be loaded primarily at the pit head and unloaded at the secondary loading point/location on the river bank.
5. At the secondary loading point requisite, no of JCB loaders shall be deployed as given in Table to follow. The secondary loading operations shall be day and night in order to meet the demands.
6. No mining activities shall be undertaken within this 'safety zone'. This shall be in accordance of Metalliferous Mines Regulations 1961 (MMR-1961) vide Chapter-XI sr.no. 111 and section 3[(2)].
7. The sand shall be mined out in successive vertical benches/slices from top of ground surface or sand surface downwards, and shall be 1.0 meter thick.
8. At no point of time the vertical mine face shall be more than 1.0 m high. Further, the width of the bench shall be minimum 1.5 m in width in horizontal plane in accordance with the MMR-1961 sub rules. This shall prevent development of mine face more than 1.0 m high which may be cause of concern from the safety aspects. This is important to prevent machine operators/ workers from falling into the pit while working near the machinery.



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9. The mining operations shall be performed between sunrise to sun set hours.
10. The use of semi mechanized mining shall require use of electricity to illuminate the working area and accordingly electricity shall be tapped after grant of due approval/ permission from competent authorities concerned.

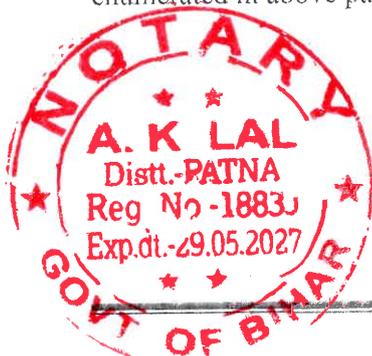
2.7.2 Conceptual Plan of Mining

The lease period for Five years from the date of execution. Considering individual sand deposits and restricting the mining to top 3 m from the present ground surface, the sand deposit shall be worked upon up to a depth of 3 m. The mining shall cease at a depth of 3 m. A pole (wooden or metal) shall be fixed in the sand deposit at a suitable location, with datum levels - 0m to 3m painted on it to work as a guide in depth restriction. The river channel is free of water and the ground water table lies about 6-8 m below the dry channel of the river exposed. In general, this condition prevails in almost all of the sand deposits on this river stretch.

The mineralized zone or the sand zone in particular of the river does not follow any specific trend. It occurs as lensoid body. The relative occurrence of ground surface with the sand zone thickness varies from place to place and depends upon factors such as stream/river flow characteristics, geometry of the river banks, sediment load, rate of water flow, rainfall and surface run off characteristics etc. However, due to UNFC guidelines on reserve estimation, sand reserves have been considered too few meters below the minable depth of 3 m.

In view of this, it is not possible to prepare a conceptual plan due to lack of specific spatial trend of the sand zone.

The longitudinal section of the river channel is explained in the Figure 2-6 given below. The longitudinal section exhibits the generic upstream to downstream flow of river along with the sand deposits contained with it. AS seen in the illustration, the top surface of the sand deposit is undulating and gently dipping and the contours of sand deposit vary with the factors an enumerated in above paragraph.



Final EIA/EMP Report for Proposed Sand Mining Project of Area 86.85 Ha at Aurangabad Ghat 04 on Sone River of District-Aurangabad, State-Bihar

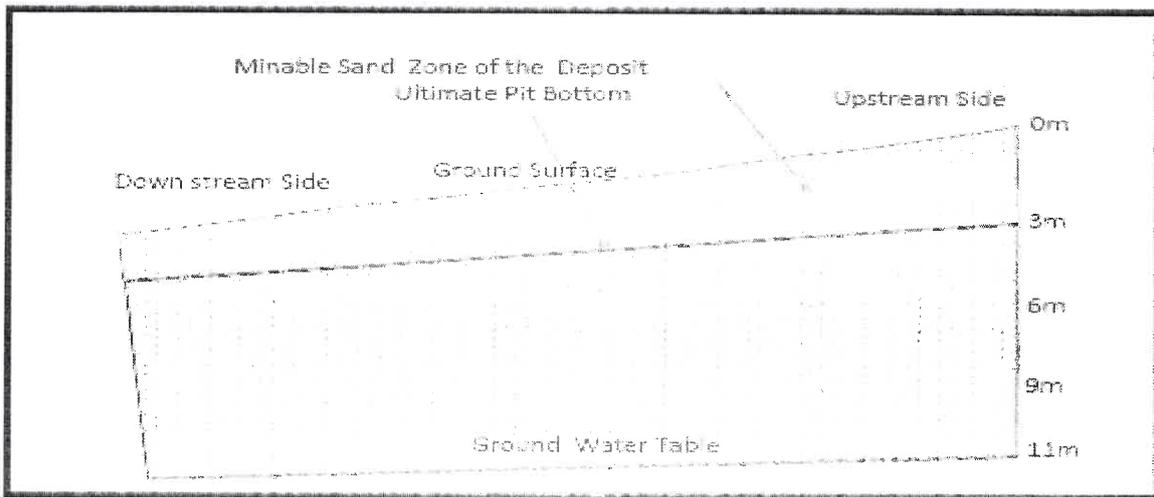


Figure 2-5: Conceptual Longitudinal Section of River Channel

2.7.3 Machinery Requirement

This is a new mining contract. Following equipment's are proposed to be deployed for the desired production.

Table 2-4: List of Machinery

S. L. No.	Name of Machinery	Capacity (Cum) / Ton	Max. Nos.	Fuel Consumptions (Lit Per Hour)	Fuel Consumption in day (Liters)
1	JCB/ Shovel	1.20	3	12	360
2	Trucks Tippers	12	28	7.0	1960
3	Water Sprinklers	4	3	4	120
4	Light vehicles	-	4	3	120
5	Tractor	4	15	2.5	375
TOTAL					2935

2.8 Transportation of Minerals

Mineral Sand will be transported by trucks. Loaded trucks will travel on Kaccha road made for plying of trucks. The temporary road will provide access to the river bed and the movement of



Final EIA/EMP Report for Proposed Sand Mining Project of Area 94.88 Ha at Aurangabad Ghat 09 on Sone River of District- Aurangabad, State- Bihar

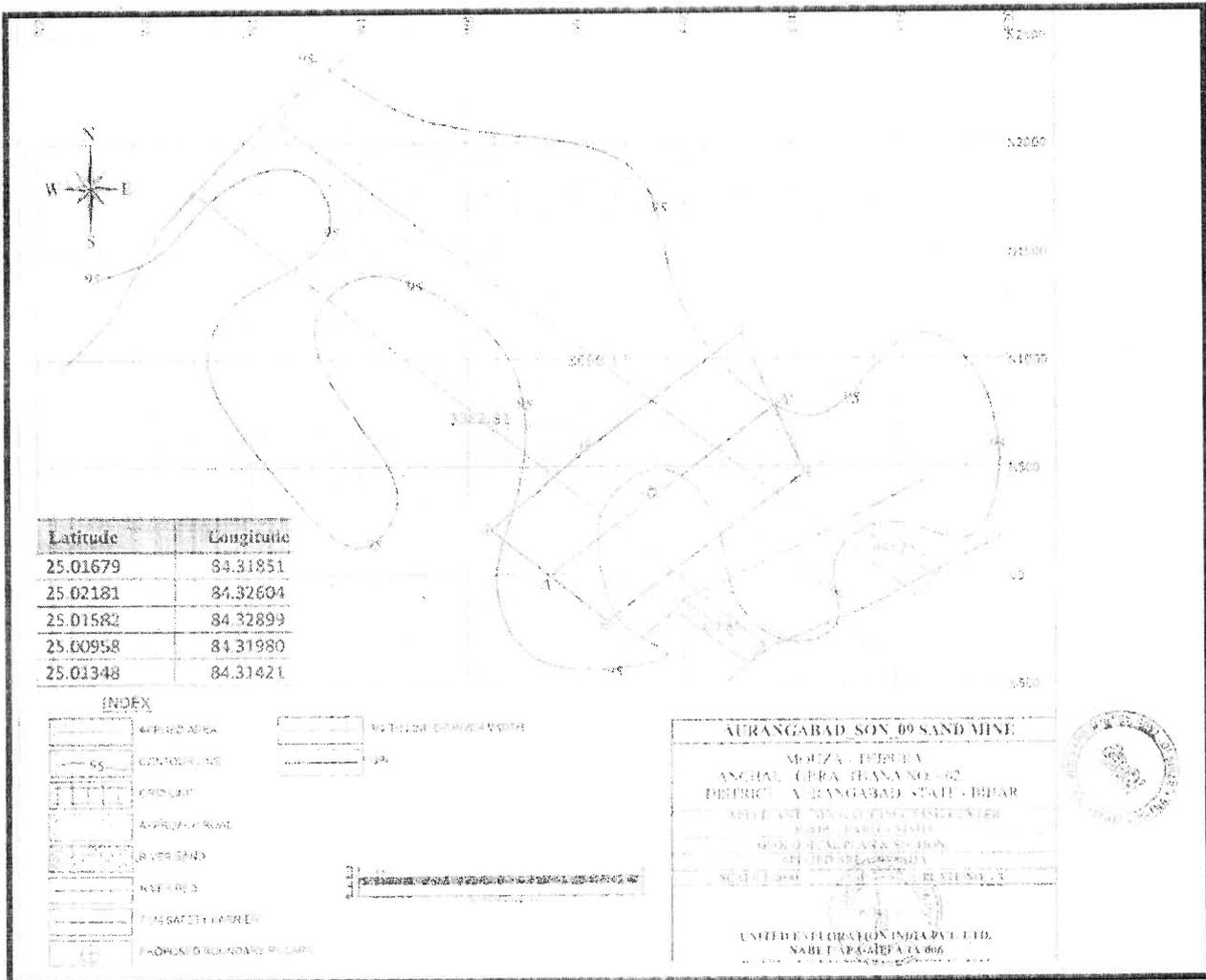


Figure 2-5: Geological Plan of Aurangabad 09 Balu Ghat

2.7 Method Mining

2.7.1 Proposed Mining Method –Semi Mechanized Mining.

1. The mining for the entire stretch of proposed sand ghats of river Sone, using Semi-Mechanized Method comprising use of crawler mounted JCB / Poclairn back hoe (bucket capacity varying between 0.42 m³ to 1.2 m³ depending upon the quantity of sand reserves) for primary excavation/winning and loading of sand, and JCB loader for secondary loading of sand on the river banks. Trucks or tippers of 12 metric tonne capacity and requisite manpower shall be put to use to support the operating machinery.

NOTARY
A. K. LAL
 Distt.-PATNA
 Reg No -1883J
 Exp.dt.-29.05.2027
STATE OF BIHAR

Final EIA/EMP Report for Proposed Sand Mining Project of Area 94.88 Ha at Aurangabad Ghat 09 on Sone River of District- Aurangabad, State- Bihar

2. The mining lease area shall be demarcated and pillars of appropriate material shall be erected at reasonable distance to identify the same. The distance of 7.5 m shall be further marked from the lease boundary and this zone constituting the 'safety zone' shall be identified.
3. The excavated sand shall be sieved at pit head to remove the silt load washed in. It shall be used in making river bank embankment to raise the bank height. This shall prevent flooding of adjoining areas.
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9. The mining operations shall be performed between sunrise to sun set hours.
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2.7.2 Conceptual Plan of Mining

The lease period for Five years from the date of execution. Considering individual sand deposits and restricting the mining to top 3 m from the present ground surface, the sand deposit shall be



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The mineralized zone or the sand zone in particular of the river does not follow any specific trend. It occurs as lensoid body. The relative occurrence of ground surface with the sand zone thickness varies from place to place and depends upon factors such as stream/river flow characteristics, geometry of the river banks, sediment load, rate of water flow, rainfall and surface run off characteristics etc. However, due to UNFC guidelines on reserve estimation, sand reserves have been considered too few meters below the minable depth of 3 m.

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The longitudinal section of the river channel is explained in the Figure 2-6 given below. The longitudinal section exhibits the generic upstream to downstream flow of river along with the sand deposits contained with it. AS seen in the illustration, the top surface of the sand deposit is undulating and gently dipping and the contours of sand deposit vary with the factors an enumerated in above paragraph.

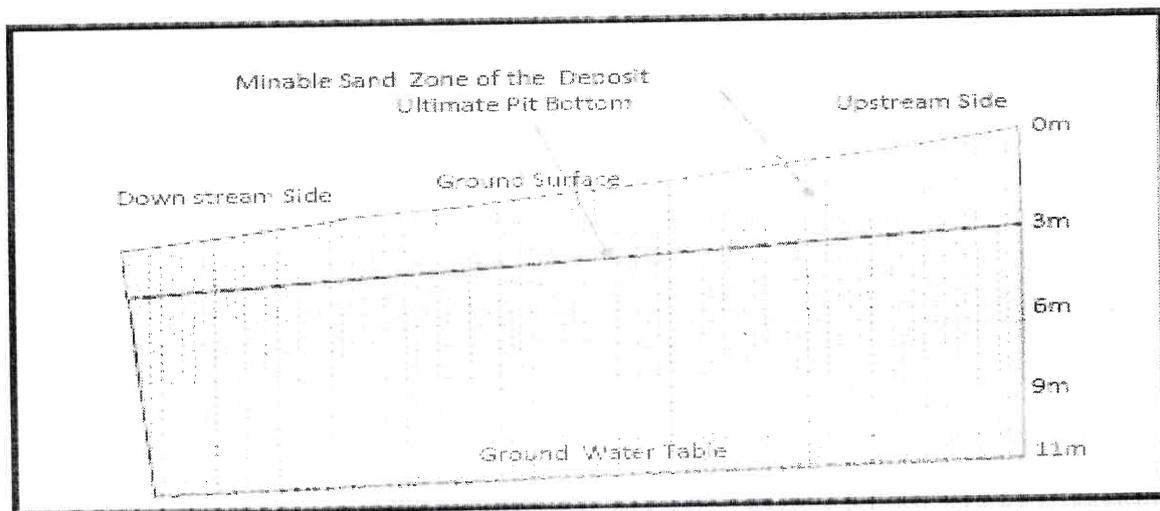
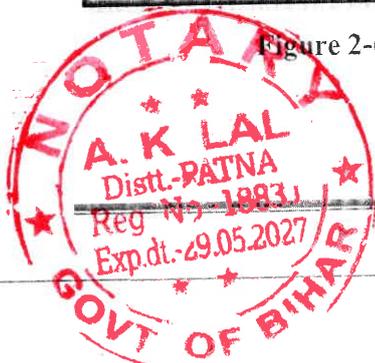


Figure 2-6: Conceptual Longitudinal Section of River Channel



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S. L. No.	Name of Machinery	Capacity (Cum) / Ton	Max. Nos.	Fuel Consumptions (Lit Per Hour)	Fuel Consumption in day (Litrs)
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2	Trucks Tippers	12	31	7.0	2170
3	Water Sprinklers	4	4	4	160
4	Light vehicles	-	4	3	120
5	Tractor	4	17	2.5	425
TOTAL					3235

2.8 Transportation of Minerals

Mineral Sand will be transported by trucks. Loaded trucks will travel on Kaccha road made for plying of trucks. The temporary road will provide access to the river bed and the movement of loaded trucks. The village has its outlet meeting the tar road on the nearby villages and from where the mineral is sent to various destinations. Similarly, mineral will be transported on the other side through approach roads which finally merge with tar roads for final destinations.

2.9 Stacking of Mineral Rejects and Disposal of Waste

The present sand mining locations do not have significant top soil/clay layer to be preserved elsewhere during the mining operations.

The sand deposits inherit gravels, pebbles with them being a part and parcel of river system. During the field visit and information gathered during discussions with concerned people, 5% of the geological reserves occurring in the sand ghats are provided for these inclusions and accordingly these have been considered during the minable sand reserves.



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2.7 Method Mining

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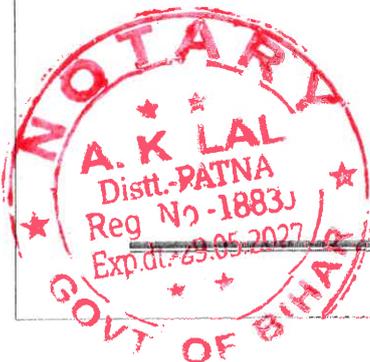
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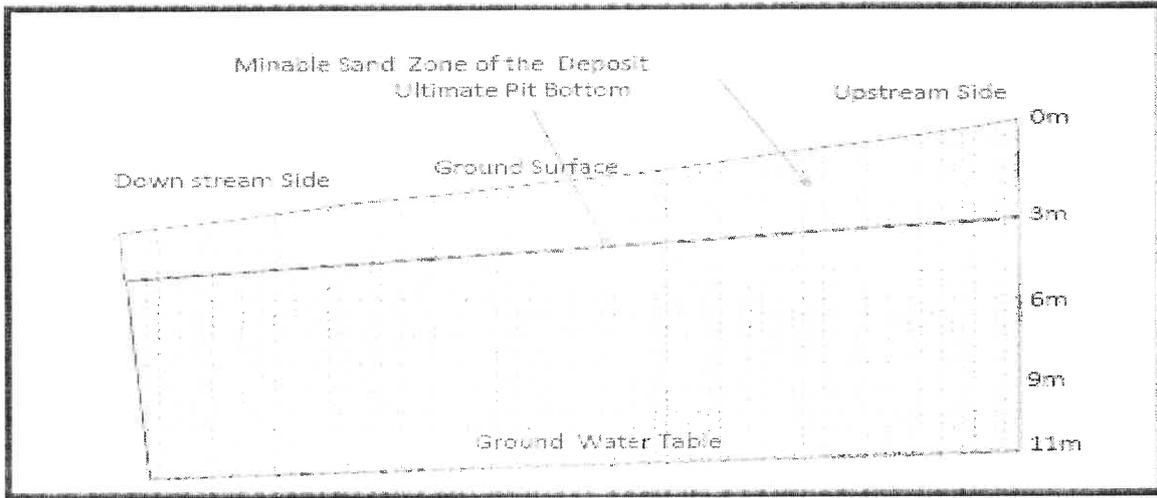


Figure 2-5: Conceptual Longitudinal Section of River Channel

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