

FORM - F
Intimation to Successful Bidder
[See rule 10(11), 16(9), 27(6)]

Letter No. 4610

Dated 20.11.2020

From

Tahasildar, Talcher
At - Talcher
Dist - Angul

To

Sanghamitra Bhutia.
At - Bihariapur P.O. Kankele
Dist - Angul No - 9938134424

Sub: Intimation to successful bidder.

Sir/Madam,

This is to intimate that you have been selected as the successful bidder for the prospecting license-cum- mining lease/mining lease/ quarry lease (strike off the lease not intended for) described below, namely:—

Sirigida Sand Quarry.

(Name of lease, area, period of lease) based on your application for the said lease. The amount of additional charge bid by you and accepted is Rs. 504/- per tonne/cubic metre (strike off whichever is not applicable).

The mining plan and the environment clearance for the said lease has been obtained/ has not been obtained (strike-off whichever is not applicable). The tentative selection is subject to the provisions of the OMMC Rules, 2016, and to the terms and conditions annexed with this letter.

You are directed to convey your acceptance to the terms and conditions and to deposit an amount as prescribed under rule 10(12) & (13)/ 16(10) & (11)/ 27(7) & (9) (strike-off whichever is not applicable). Proof of deposit of the aforesaid amount along with acceptance should reach the undersigned within fifteen days of the date of issue of this letter failing which this intimation shall stand automatically revoked without any further notice and the earnest money shall stand forfeited.

You are also directed to execute deed in respect of the prospecting license-cum-mining lease/ mining lease/ quarry lease (strike-off whichever is not applicable) for the aforesaid area within the period specified in sub-rule (1) of rule 43 of the Odisha Minor Mineral Concession

Yours faithfully

[Signature]
20.11.2020

Tahasildar Talcher
(Competent Authority)

Rules, 2016.
Received Form of
Original Mining plan.
Sanghamitra Bhutia
20/11/20

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OFFICE OF THE TAHASILDAR, TALCHER

Letter No. 4529 Dt. 11.11.20

To

The Secretary State Level Expert Appraisal Committee, Paradesh Blawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012, Odisha.

Sub- Regarding grant of Environmental Clearance of Minor Mineral Proposals.

Sir,

With reference to the letter on the subject cited above, I am to inform you that, as per the DLC database available in this office, the following Minor Mineral Sources are not coming under the DLC report. Further, the latitude and longitude of the proposed quarry and nearest quarry are mentioned below.

| Sl No. | Name of the source | Name of the village | Type of source | Khata No. | Plot No. | Area in Ac. | Kisam | Co-ordinate of the source |
|--------|--------------------------|---------------------|----------------|-----------|----------|-------------|-------|--|
| 1 | Sirigida Sand Quarry | Sirigida | Sand | 142 | 1791 | 18.00 | Nadi | Longitude-85°13'32.68" to 85°13'20.55" Latitude-21°00'52.89" to 21°00'55.79" |
| 2 | Gopinathpur Sand Quarry | Gopinathpu | Sand | 83 | 100/343 | 22.51 | Nadi | Longitude- 85°14'29.15" to 85°14'38.43" Latitude-20°56'04.95" to 20°56'05.28" |
| 3 | Nizgarhazami Sand Quarry | Nizgarhazami | Sand | 446 | 3695 | 24.86 | Nadi | Longitude 85°14'19.86" to 85°14'31.67" Latitude-20°55'25.52" to 20°55'20.56" |
| 4 | Dhobapal Sand Quarry | Dhobapal | Sand | 22 | 181/186 | 18.00 | Nadi | Longitude 85°14'19.76" E to 85°14'18.192"E Latitude-20°55'25.175" N to 20°55'22.020"N |
| 5 | Haturipal Sand Quarry | Haturipal | Sand | 34 | 1 | 26.50 | Nadi | Longitude 85°15'13.39" to 85°15'22.36" Latitude-20°53'34.00' to 20°53'32.98" |
| 6 | Santhapada A Sand Quarry | Santhapada | Sand | 480 | 4198 | 18.00 | Nadi | Longitude 85°14'02.8" to 85°14'02.9" Latitude-20°54'45.0" to 20°54'49.5" |

You are therefore requested to give necessary clearance on the above siral sources at an early date for further action at this end.

Yours faithfully,

G Naik

11/11/20
Tahasildar, Talcher

Memo No. 4530 /Dt. 11.11.20

Copy submitted to the Chairman, State Environmental Impact Assessment Authority, Qr. No. SRF-2 I, Unit-IX, Bhubaneswar-751022 for favour of kind information and necessary action.

G Naik

11/11/20
Tahasildar, Talcher

Memo No. 4531 /Dt. 11.11.20

Copy submitted to the Addl. District Magistrate(RIV),Angul Sub-Collector, Talcher for favour of kind information and necessary action.

G Naik

11/11/20
Tahasildar, Talcher

11/11/20



MINING PLAN

(Prepared under Rule 28 (4) of the Odisha Minor Mineral Concession Rules, 2016)

OF

SIRIGIDA SAND QUARRY

OVER 7.28 HA OR 18.00 ACRES IN VILLAGE SIRIGIDA
UNDER TALCHER TAHASIL OF ANUGUL DISTRICT, ODISHA

APPLICANT -: TAHASILDAR, TALCHER

PREPARED BY

BIPIN BEHARI KHANDUAL

RQP/OD/049/2016

GEO CONSULTANTS PVT LTD,

BHUBANESWAR

APPROVED
Kuldeep
01/06/2016
Joint Director of Geology,
Zonal Survey, Dhenkanal



CONSENT LETTER FROM APPLICANT

The Mining Plan of the Sirigida Sand Quarry in respect of the Quarry Lease area over an area of 7.28 Ha or 18.00 Acres in village Sirigida under Talcher Tahasil of Angul, District, Odisha, has been prepared by Sri Bipin Behari Khandual, Consulting Geologist, Regn. No. RQP/OD/049/2016. I request the Authorised Officer, O/o The Joint Director Geology, Zonal Survey, Dhenkanal, Odisha, to make further correspondence regarding final approval of the mining plan, with the said recognised person in his following address.

Geo Consultants Pvt. Ltd.
853, Gobind Prasad (Medical Lane)
In front of Reliance fresh (Radhika Complex)
Bhubaneswar-751006
Phone - 0674-2575702
Email - consultants_geo@yahoo.co.in
Mobile - +91-9437019019

I hereby undertake that all modifications so made in the mining plan by the said recognised person be deemed to have been made with my knowledge and consent and shall be acceptable to me.

B. N. K.

Name of the applicant
Tahasildar, Talcher
Tahasildar, Talcher

Place : Talcher

Date :



UNDERTAKING

This is to undertake that the financial assurance related to the Progressive Mine Closure Plan of the Mining Plan in respect of the Sirigida Sand Quarry in respect of the Quarry Lease area over an area of 7.28 Ha or 18.00 Acres in village Sirigida under Talcher Tahasil of Angul, District, Odisha, will be submitted by the successful auction holder in the form of bank guarantee from any nationalized bank as and when required by the competent authority.

[Handwritten Signature]

Name of the applicant
Tahasildar, Talcher
Tahasildar, Talcher

Place : Talcher

Date :



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APPROVED


01/6/2016
Joint Director of Geology
Zonal Survey, Dhenkanal


BIPIN BEHARI KHANDUAL
ROP/OD/049/2016



LIST OF PLATES

| Plate No | Description | Scale (R F) |
|----------|-------------------------------|--------------|
| I | Key Plan | 1 : 50,000 |
| II | Lease plan | 16" = 1 mile |
| III | Surface Plan | 1 : 1,000 |
| IV | Geological Plan | 1 : 1,000 |
| V | Composite development plan | 1 : 1,000 |
| VI | Progressive Mine Closure Plan | 1 : 1,000 |

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APPROVED

[Signature]
21/6/2016
Joint Director of Geology
Zonal Survey, Dhenkanal

[Signature]
BIPIN BEHARI KHANDUA
RQP/OD/049/2016



LIST OF ANNEXURES

| DESCRIPTION | ANNEXURE NO. |
|--|--------------|
| Copy of letter of Tahasildar to prepare mining plan | I |
| Copy of RQP certificate | II |
| Copy of letter of Revenue Authority in Support of demarcation of area on field | III |

APPROVED

[Signature]
21/6/2016
Joint Director of Geology
Zonal Survey, Dhenkanal

[Signature]
BIPIN BEHARI KHANDUA
RQP/OD/049/2016



CHAPTER -0.0

Introduction:

The area over 18.00 Ac. or 7.28 Ha under reference is located in village Sirigida of Talcher Tahasil in Angul district of Odisha. Quarry lease for minor mineral (River Sand) has been proposed to be granted by the Tahasildar, Talcher to the highest auction holder only after obtaining statutory clearances like mining plan and environmental clearance for five years (Annexure 1). However, the lease period will be effective from the date of execution.

The area under reference is featured in the Survey of India Topo-sheet no. 73G/4 and bounded between the latitudes of 21°00'46.07" N to 21°00'55.79"N and longitudes of 85°13'19.56"E to 85°13'32.80"E. The area is located at a distance of 21 Km from the district head quarters Anugul and is at a distance of 130 Km from the state capital Bhubaneswar.

In the absence of boundary description of the area by the competent authority, the area as shown by the Revenue authority has been surveyed by the RQP through hand held GPS for obtaining the co-ordinates and RL's of the required points. The co-ordinates of boundary corner points are listed in the Surface Plan (Plate NO III).

| Sirigida Lease Pillar Coordinate | | |
|----------------------------------|--------------|--------------|
| Pillar_No | Longitude | Latitude |
| 1 | 85°13'32.68" | 21°00'52.89" |
| 2 | 85°13'32.80" | 21°00'46.07" |
| 3 | 85°13'28.69" | 21°00'47.39" |
| 4 | 85°13'26.03" | 21°00'48.36" |
| 5 | 85°13'25.00" | 21°00'47.93" |
| 6 | 85°13'24.39" | 21°00'48.09" |
| 7 | 85°13'24.21" | 21°00'48.52" |
| 8 | 85°13'21.95" | 21°00'49.03" |
| 9 | 85°13'19.56" | 21°00'49.85" |
| 10 | 85°13'20.55" | 21°00'55.79" |



FORM-O

[See Rule 28 (4) of the Odisha Minor Mineral Concession Rules, 2016]

MINING PLAN FOR WINNING OF RIVER SAND FROM BRAHMANI RIVER UNDER SIRIGIDA VILLAGE IN TALCHER TAHASIL OF ANGUL DISTRICT.

CHAPTER -1

1. Name & Address of the Lessee : Tahasildar, Talcher vide Annexure- I
wants to prepare the mining plan of the area after which the sairat will be auctioned for leasing purpose. Hence, at present there is no lessee.
2. Particulars of the area(Acreage, Boundary Description & Land Schedule): : Name of the Quarry- Sirigida sand Quarry
Area- 18.00 acres or 7.28 hectares
Land schedule mentioned on plan provided by revenue Authority and attached as *Plate no -II*. Location Map- Ref. Plate no- I, Surface Plan - Ref. Plate no- III.
(Attach location map and surface plan showing the existing features of the area with contours at 2 m interval)
3. Status of the Lessee(Private individual/ Private Company/ Public sector Undertaking / Joint sector Under taking/ Others) : The sairat will be leased out by the Tahasildar after obtaining statutory clearances.
4. Period of Concession : For 5 years.
: River Sand
5. Mineral intended to be won



6. Name, Address & Regd. No. of RQP preparing the mining plan with validity of Recognition : Bipin Behari Khandual
Geo Consultants Pvt. Ltd.
853, Gobind Prasad (Medical Lane)
In front of Reliance fresh (Radhika Complex)
Bhubaneswar-751006
Phone - 0674-2575702
Email - consultants_geo@yahoo.co.in
Mobile - 9437019019
Registration No - RQP/OD/049/2016
Valid up to-02.08.2026

7. Order No. & date of competent Authority granting the Concession (copy of the Order to be attached) : Not applicable as the area is yet to be leased out.

8. If, forest area, whether forest clearance Obtained (attach copy of forest clearance) : The total area is non-forest Govt. land as deciphered from the land schedule of the area.
Hence, Forest clearance is not required.

APPROVED
Bipin
Joint Director of Geology
Zonal Survey, Dhenkanal



CHAPTER -2

9. Reserve (Estimation to be based on the Exploration, if any, carried out in the area or on local Parameters):

The reserve is estimated based on local parameters. The lease area belongs to recent quaternary River bed deposits consisting of sand, silt, clay, gravel and alluvial deposits.

a. Physiography:

The Sand bed is on the river Brahmani. The Sirigida sand bed deposit represents a gently sloping to almost flat terrain with highest altitude of ~59 mRL to the central part of the lease area. Vegetation is scanty with small bushes existing in the auction hold area. There is no human settlement within the area.

b. Regional Geology:

Gondwana Group Palaeozoic-Mesozoic Upper Mahanadi valley basin which is in this basin, the Gondwana sediments unconformably overlie the Precambrian basement; the latter comprising migmatitic granitic gneiss, amphibolite, schist and quartzite traversed by pegmatite and quartz veins. Era (Upper Carboniferous – Early Permian) - Glacio-lacustrine and fluvial sediments were deposited in linear basins along faulted troughs over the Precambrian basement. These sediments, characterized by fluvial assemblages of interbedded sandstone-shale sequence. While the Lower Gondwana rocks are a vast repository of coal, the Upper Gondwana witness sandstones of Palaeozoic-Mesozoic era. Gondwana rocks are exposed over a large area along NW-SE trending linear belt in the Mahanadi valley rift/graben in three major basin (Tcher, Ib river & athgarh). Beside these, a number of small patches outliers) of Gondwana rocks occur in Angul, Dhenkanal districts and others. The lower Gondwana rocks have vast resources of coal. The Stratigraphic successions are as bel



Stratigraphic set-up

| | | |
|---------------------------|---|--------------------------------------|
| Upper Gondwana | Migmatitic granitic gneiss, amphibolite, schist and quartzite | Palaeozoic |
| | Conglomerate, sandstone, shale fireclay | Lower Cretaceous |
| Middle Gondwana | Conglomerate, ferruginous sandstone, red shales | Lower to Middle Triassic |
| ----- Un-conformity ----- | | |
| Lower Gondwana | Fine to medium grained sandstone, siltstone, clay-beds, coal | Upper Permian |
| | Sandstone, shale, clay, ironstone shale | Middle Permian |
| | Conglomerate, sandstone, shale, fireclay, coal | Lower Permian |
| ----- Un-conformity ----- | | |
| | Boulder Bed, green shale, sandstone, marlstone | Upper carboniferous to lower Permian |
| ----- Un-conformity ----- | | |
| | Grinite, greisses, amphibolites, migmatites | Precambrian |

c. Local Geology

The sand deposit in Brahmani River near Sirigida belongs to recent to sub recent deposits of Holocene age. Beach Sand, younger and older alluvium also belongs to the same age. The proposed area is occupied by a gently sloping to almost flat deposits of sand.

The basement consists of Tertiary deposits and the sequence of litho-units encountered in the auction hold area is as follows:





d. **Lithology:**

The characteristic features of the litho units of the area are described below:

Sand: The area under reference is covered with grey to white sand deposits with average thickness of 1 m throughout the lease area. Sand by definition is a loose, incoherent mass of mineral materials and is a product of natural processes. These processes are the disintegration of rocks and corals under the influence of weathering and abrasion. When sand is freshly formed, the particles are usually angular and sharply pointed, but they grow gradually smaller and more rounded as they become constantly worn down by the wind or water. Sand particles tend to settle quite rapidly because of their shape, density and size. Therefore, the concentration of sand is highest near the bed of a river and lowest near the surface. Clean sand is indeed a rare commodity on land, but common in sand dunes and beaches.

The composition of sand is highly variable in nature, depending on the local rock types/sources and conditions, but the most common constituent of sand in inland continental settings and non-tropical coastal settings is silica (silicon dioxide or SiO_2), usually in the form of quartz which because of its chemical inertness and considerable hardness, is the most common mineral resistant to weathering.

Alluvium: Decomposed vegetal materials admixed with clay and soil constitutes alluvium which is underlain by the sand bed with some clayey matter.

e. **Reserve**

The Geological reserve has been estimated by considering the following parameters.

- i) Outcome of geological mapping: No existing quarry/excavated patch is present in the applied lease area. River sand occurs throughout the applied area.



- ii) In the particular area, the difference in elevation between the highest and lowest points is much less i.e. around 1m. Gradient of the river is also very low. Therefore, Surface area method has been adopted for estimation of reserve for this river bed sand.
- iii) Thickness of sand zone: The mRL of the surface sand zone is around 59m. Considering the geological mapping, and RL of water level the thickness of sand is taken as 1m.
- iv) The area of occurrence of river bed sand bed within the proposed lease area has been demarcated on the Geological plan. (Plate No IV).
- v) The reserve has been calculated under probable category as there is no quarry.

Probable reserve:

No existing quarry/excavated patch is present in the applied lease area. Considering the geological mapping, adjacent quarry and as revealed from the applicant the thickness of sand is taken as 1m.

Mineable Reserve:

Safety Zone area with 7.5 m barrier all along the applied lease boundary has been excluded for computation of mineable reserve.

- vi) The foreign particles in the sand such as wood and other floating waste have been considered as waste. However, the volume of waste is negligible in quantity and in practice the waste will not be separated during mining. So recovery factor has been taken as 100% for sand.
- vii) Total volume of excavation of sand is saleable.

Calculation of Reserve:

Based on the above considerations, site specificity & chosen local parameters, the reserve has been calculated for river bed sand zone by surface area method.



Formula adopted for calculation of volume of river sand is $V = A \times T \times RF$.

Where,

V is total volume of river sand in m^3

A is the surface area of occurrence of sand bed.

T is the average thickness of sand bed in m &

RF is recovery factor in %.

The total geological reserve has been estimated as **121510 Cum.**

Similarly, the mineable reserve of river bed sand is worked out to be **64289Cum.**

The geological reserve and mineable reserve of sand Quarry calculated under various categories are given in table no.1 & 2 respectively as follows:

Table.No.1

CATEGORY WISE GEOLOGICAL RESERVE OF SAND BED

| GEOLOGICAL RESOURCE CALCULATION OF FOR THE QL PERIOD OF FIVE YERAS | | | | |
|--|-----------------------|-----------------------------|---------------------------------------|----------|
| AREA OF POTENTIAL SAND ZONE (m^2) | THICKNESS OF SAND (m) | REPLENISHMENT FACTOR (100%) | GEOLOGICAL RESOURCE OF SAND (m^3) | CATEGORY |
| A | B | C | D= A X B X C | E |
| 75541 | 1 | 2 | 151082 | PROBABLE |
| TOTAL | | | 151082 | |

Table No.2

CATEGORY WISE MINEABLE RESERVE OF SAND BED

| MINEABLE RESERVE CALCULATION FOR THE QL PERIOD | | | | | |
|---|-----------------------|-----------------------------|------------------------------------|------------------------------|----------|
| AREA OF POTENTIAL SAND ZONE EXCLUDING SAFETY ZONE (m^2) | THICKNESS OF SAND (m) | REPLENISHMENT FACTOR (100%) | MINEABLE RESERVE OF SAND (m^3) | EXTRACTABLE MINEABLE RESERVE | CATEGORY |
| A | B | C | D=A X B X C | E= D X 0.6 | F |
| 53574 | 1 | 2 | 107148 | 74289 | PROBABLE |
| TOTAL | | | | | |

Right now, the sand resource available within the source is $40977 m^2 \times 1m = 40977 m^3$ which is more than the MGQ provided by the Tahasildar.

APPROVED
 Joint Director of Geology
 Zonal Survey, Tinnakani


BIPIN BEHARI KHANDUAL
 ROB/OD/049/2016



CHAPTER -3

10. Mining

a. **Whether manual or semi-mechanized or mechanized**

Manual only. Mining shall be undertaken to extract sand, mainly through an open pit spread over the river course devoid of water or nominal water that may be encountered below.

Mining Method:

The mode of the deposit, geomorphology of the area and its hydrological condition are some of the factors those favour the open cast method of mining.

Mining will be done with manual excavation & loading into trucks/ tractors and transported from sand quarry to the users/destination through trucks/tractors. The mining will be undertaken on single shift basis. The local man power shall be engaged in the mine.

b. **If semi-mechanized or mechanized, number, type and capacity of machines to be used:**

Exaction & loading of sand into the trucks/tractors will be done by manual means. The transportation from the sand quarry site to respective users/destinations shall be achieved by trucks/tractors. The no. of fleets with their capacity is as below:

| Sl. no | Name | Capacity | No. of Fleet | Make |
|--------|--|----------|--------------|-----------|
| 1 | Trucks/Tractors | 6 /3Cum | 8/15 | Tata/ M&M |
| 2 | Safety gears Helmets, safety shoes, Goggles, & Hand gloves | ----- | As required | |



- c. **Whether drilling and blasting will be made use of, If yes, state monthly quantity of explosive consumed:**

As such the river bed sand are loose. No drilling & blasting is required.

- d. **Benching pattern (Height x Width):** Benching pattern is not feasible in case of sand, as the angle of repose of sand is 35° , based on this the Ultimate pit slope Limit has been taken as 35° . The maximum depth of mining will be of 2m or up to water table whichever is less.

- e. **Proposed pit face lay out (Plate No-V):**

As there is no existing quarry with the applied area, hence development for five year plan period is proposed accordingly in fresh area. First year is proposed in the western part of the lease area due to presence of accessible road. It will gradually progress towards east in subsequent years of the plan period. The composite year wise development plan for five years has been provided on a scale 1:1000 in *Plate-V*.

- f. **Quarry Floor Level (RL) at the end of the year or period of the concession:**

58 mRL or up to water table whichever is less. The present level of the lease area is 59mRL. During plan period, the quarry floor will be 58 mRL or up to water table whichever is less. The proposed pit lay out have been shown in the development plan and also in Progressive Mine Closure Plan (*Ref Plate-V & Plate-VI*).

- g. **Quantity of mineral to be won (Annual Level of Production) :**

Total available mineable reserve over the area has been estimated considering the probable zone of occurrence of river sand bed within the proposed area which will be extracted year wise during the plan period. Based on the total extractable mineable reserve, the MGQ has been fixed by the competent authority and this much quantity of sand has been planned to be extracted each year from the source as mentioned below:



Table No.3
YEAR WISE PRODUCTION OF SAND DURING PLAN PERIOD

| YEAR | PRODUCTION (m ³) |
|----------------------|------------------------------|
| 1 ST YEAR | 10700 |
| 2 ND YEAR | 10700 |
| 3 RD YEAR | 10700 |
| 4 TH YEAR | 10700 |
| 5 TH YEAR | 10700 |
| TOTAL | 53500 |

In case the lessee finds the resource of sand is not sufficient to stick to the production program of this plan, he may modify the plan within the QL period after seeking permission of the competent authority. But this exercise can be done just after the monsoon any substantiating year of the QL period before undertaking any excavation within the area.

The above annual production has been determined on the basis of availability of mineable sand within the proposed area. It is not possible to adhere to the minimum guaranteed quantity suggested by the competent authority as because the quantity of mineable reserve available within the area is less than the minimum guaranteed quantity. Planning has been made for the reserve which is available right now within the area without any extrapolation for future replenishment.

h. Quantity of overburden to be removed (Show location of such disposal in development plan) :

Since the river bed sand deposit is devoid of any over burden, development for over-burden does not arise.

i. Whether heavy blasting to be adopted: If yes, location of nearest habitation (to be shown in the surface plan)

No blasting is required for sand mining.

j. Safety precautions to be adopted:

No safety measures are required as there will no blasting operations.

k. Brief description on the method of Procurement and storage of explosives:

Not applicable.

APPROVED
Joint Director of Geology
Zonal Survey, Dhenkanal


JIPIN BEHARI KHANDUA
RQP/OD/049/2016



CHAPTER -4

11. Waste disposal:

(a) Location (show it in the development plan): No dump has been proposed as there will be no generation of waste in this case.

(b) Area covered: Not applicable as no dump has been proposed.

(c) Environment safeguards for such disposal: Not applicable as no dump has been proposed.

APPROVED


Joint Director of Geology
Zonal Survey, Dhenkanal



CHAPTER -5

12 Mine drainage :

(Give details of total make of water during dry and rainy season and its method of handling)

The shallow depth excavation on dry/nominally wet sand close to the bank or dry river bed has been proposed, which will have negligible or no impact on drainage. Abandoned stream channels on terrace and inactive flood plains have been preferred rather than active channels and flood-plains.

Water that might percolate (if any) into excavation area has to be pumped out to channelize to river course during excavation. Stream will not be diverted to form inactive channel. Mining below subterranean water level will be avoided as a safeguard against any water contamination. Excavation at the concave side of river bank/channel has been avoided to prevent bank erosion.

It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies between 4m to 14 m from the surface level depending upon seasonal variations. During dry season the water table falls to 14m from the surface where as during rainy season the water table remains at 4m from the surface. As the mining activities presently proposed are maximum up to 1m that to within the river course and the total mining operation will be achieved through manual means, so there will be no effect on ground water table.

APPROVED

M. L. Khuntia
Joint Director of Geology
Zonal Survey, Dhenkanal

CHAPTER -6



13. **Mineral Processing : (Give details of processing including sizing, Sorting, generation of rejects/fines etc)**

Sand excavation from the river bed mining is not required to be processed as the end consumer will purchase the sand as such for their requirement.

APPROVED

Joint Director of Geology
Zonal Survey, Dhenkanal

CHAPTER -7



14. a) **No. of trees to be uprooted due to mining operation:**

There is no tree within the auction area on the river-bed sand and hence not applicable.

b) **Programme of Plantation:**

It is proposed for planting @50 saplings of suitable species per annum by the lessee in vicinity of the river bank as avenue plantation which is to be undertaken in consultation with the concerned authority.

APPROVED
[Signature]
21/6/2016
Joint Director of Geology
Zonal Survey, Dhenkanal



CHAPTER -8

15. Manpower:

a) Supervisory (inclusive of statutory personnel's) :

1 (one) number of supervisory personnel preferably Mining Mate with Certificate of Competency from DGMS will be employed.

b) Non- Supervisory (skilled, semi-skilled & unskilled):

Skilled: 3

Semi-skilled-3

Unskilled-10

Total- 16+1

c) OMS

| | |
|--|-------------------------------|
| Total production during plan period | : 53500Cum |
| Average ore production /annum | : 10700 Cum |
| Working days in the year | : 200 days (on an average) |
| Production per day | : $10700/200= 53.5\text{Cum}$ |
| Output per man shift (OMS)= $53.5/17=3.14$ Cum | |

APPROVED


Joint Director of Geology,
Zonal Survey, Dhenkanal



CHAPTER -9

16. Use of Mineral : (Specification and monthly quantity to be dispatched be furnished)

a) **For domestic use:** For construction purpose the sand of Brahmani river will be used. 10700 Cum of sand per annum likely to be dispatched by the lessee (auction holder) to domestic users only

b) **For export:** No material will be exported at present.

APPROVED
[Signature]
21/6/2016
Joint Director of Geology,
Zonal Survey, Dhenkanal



CHAPTER -10

17. Mine Closure Plan:

- a) Describe the process/activities to be undertaken for reclamation and Rehabilitation in respect of the following:
- i) **Mined out land:** During plan period the mined out land will be **5.36 ha.**

The Sirigida sand Quarry comprises of 18.00 acres or 7.28 hectares under Talcher Tahasil of Anugul district. The entire area is of river bed and devoid of any forest growth. Since it is a sand quarry and the total mining activities will be confined to the Brahmani river sand bed, no reclamation measure is proposed for mine closure. Invariably, the volume of sand extracted in each year will be re-deposited in subsequent years during rainy season. The replenishment of sand in the mining lease area is sufficient to sustain the mining operations at prescribed levels, restricted to <3m as per guidelines. Therefore, only avenue plantation has been proposed @50 saplings per annum on the river bank adjacent to his leasehold.

The existing land use as well as proposed land use of the area is given as below:

| Type of land use | Area (Ha) |
|--|-------------|
| Water channel area | 1.20 |
| Left over area adjacent to water channel | 0.30 |
| Quarry Safety zone area | 0.42 |
| Potential Mineable surface area within the plan period | 5.36 |
| Total | 7.28 |



- ii) **Waste/reject dump:** Does not arise as there will be no generation of waste.
- iii) **Topsoil stack and its utilization:** There will be no generation of top soil in this Quarry since the mining for sand will be carried out within the river bed

b) Financial assurance: (To be furnished as a bank guarantee)

The area to be put to use will be 5.36Ha. Hence the financial assurance as decided by the competent authority would be submitted by the auction holder on demand. Also, the auction holder has to pay 5% of the royalty towards environment management fund.

APPROVED
[Signature]
Joint Director of Geology
Zonal Survey, Dhenkanal



CERTIFICATE

18.0

I, Gouri Naik, OAS (JB), Tahasildar, Talcher hereby solemnly affirm that the plans and programmes in this mining plan will be scrupulously implemented by the auction holder of the lease of the Sirigida Sand Quarry in respect of the Quarry Lease area over an area of 7.28 Ha or 18.00 Acres in village Sirigida under Talcher Tahasil of Angul, District, Odisha, and will be strictly held responsible for any deviation thereof.

I also hereby certify that the provisions of Mines and Minerals (Development & Regulation) Act, 1957, and the Mines Act, 1952 and Rules and Regulations made under these Acts, along with the provisions of Odisha Minor Mineral Concession Rules, 2016 will be strictly adhered to by the auction holder while implementing this Mining Plan and wherever specific permissions will be required the auction holder will approach the concerned authorities of Directorate General of Mines Safety and the State Government as the case may be.

Gouri Naik

Name of the applicant
Tahasildar, Talcher
Tahasildar, Talcher

Place : Talcher

Date :

ANNEXURE -1

OFFICE OF THE TAHASILDAR, TALCHER

Letter No: - 1454, Date 21.05.2020



To

Mr Chandrabhanu Das
Recognised Qualified person
O/o Geo Consultants Pvt. Ltd
Bhubaneswar.

Sub: Preparation of Mining Plans.

Ref: Your letter no. 512, dated 21.02.2020

Sir,

In inviting reference on the subject cited above I am to say that the quantum of suggestive MGQ reported under reference is here by accepted and the mining plan of the following minor mineral sources under Talcher Tahasil to be prepared by RQP of your office accordingly as per the MGQ of each source as mentioned below.

| Sl No | Name of the source | Area in Ac | Suggestive MGQ in m ³ Per Year |
|-------|--------------------------|------------|---|
| 1 | Gopinathpur Sand Quarry | 9.11 Ha. | 19500 |
| 2 | Dhobapal Sand Quarry | 18.00 | 14500 |
| 3 | Nizgarhazami Sand Quarry | 10.06 Ha. | 18000 |
| 4 | Sirigida Sand Quarry | 18.00 | 10700 |
| 5 | Santhapada Sand Quarry-A | 18.00 | 24800 |
| 6 | Haturipai Sand Quarry | 26.50 | 9000 |
| 7 | Dasanali Sand Quarry | 18.00 | 13500 |
| 8 | Santhapada Sand Quarry-B | 28.00 | 16500 |
| 9 | Kankili Sand Quarry | 18.00 | 11500 |

This is for your information and necessary action.

Yours Faithfully,

[Signature]
21.05.2020

Tahasildar, Talcher

[Signature]
SIPIN BEHARI KHANOUAI
RQP/OD/049/2016

ANNEXURE - II



GOVERNMENT OF ODISHA
DEPARTMENT OF STEEL AND MINES
DIRECTORATE OF MINES

CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON
(Under sub-rule (2) of rule 20 of Odisha Minor Mineral Concession Rules, 2004)

Sri Bipin Behari Khandual, S/o Nabaghana Khandual,
At/P.O. Dhunpur, Via: Tiran, Dist: Jagatsinghpur - 754138,
whose photograph and signature are affixed herein, having
given satisfactory evidence of his qualification and
experience, is hereby recognised under sub-rule (2) of rule
20 of Odisha Minor Mineral Concession Rules, 2004 as a
qualified person to prepare Mining Plans for Minor
Minerals within the State of Odisha, India.



Bipin Behari Khandual

His Registration No. is

RQP/OD/049/2016

This Recognition is valid for a period of 10 years ending on 02-08-2026.
This certificate will be liable to be withdrawn/ cancelled in the event of furnishing
wrong information/ documents in the Mining Plans to be submitted by him.

Place: Bhubaneswar

Date: 03.08.2016

Bipin
31/8/2016
DIRECTOR OF MINES, ODISHA
BHUBANESWAR

Bipin
BIPIN BEHARI KHANDUAL
RQP/OD/049/2016



CERTIFICATE OF REVENUE INSPECTOR

This is to intimate that the area proposed to be granted for quarry lease in respect of the Sirigida Sand Quarry in respect of the Quarry Lease area over an area of 7.28 Ha or 18.00 Acres in village Sirigida under Talcher Tahasil of Angul, District, Odisha, has been demarcated on field by me with the help of existing revenue village sheets of the adjoining area for preparation of mining plan.

Date:-

Place:-


Signature
R.I, Godibandha

N
ଅଞ୍ଚଳ - ବିଭାଗ
୧/୧ - ଚାନ୍ଦିନୀ
୨ - ଲକ୍ଷ୍ମୀବିହାର
କୋଡ଼ ୧୫ = ୧୧୧୩

APPROVED



୧୩୧

Signature
Joint Director of Geology
Zonal Survey, Dhenkanal

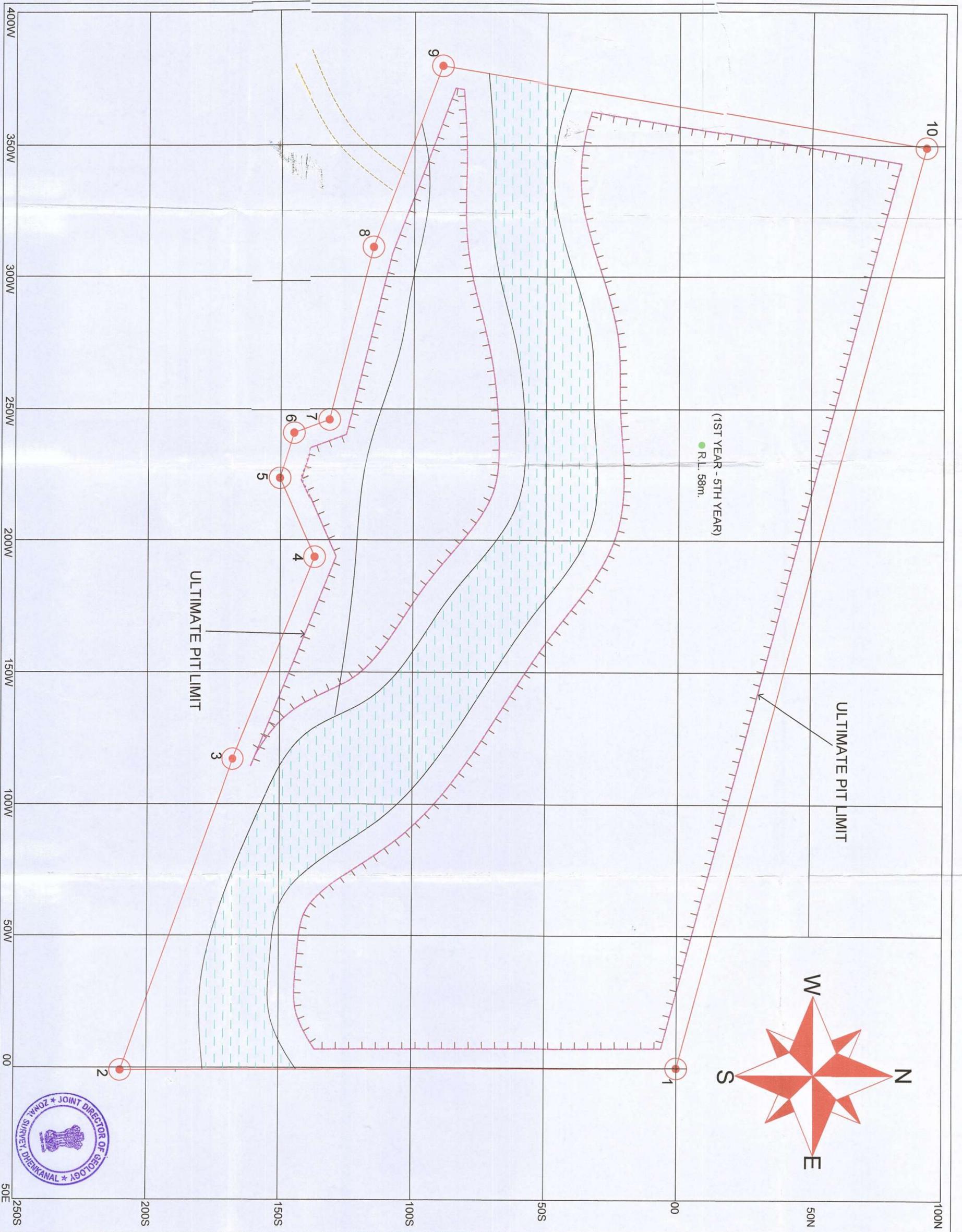
Area AC/8-a
marked as red.

IT IS HEREBY CERTIFIED THAT THIS
PLATE IS CORRECT AND UP TO DATE

Signature
BIPIN BEHARI KHANDUAL
RQP/OD/049/2016

Signature
R.I. Godibardla





(1ST YEAR - 5TH YEAR)
● R.L. 58m.

ULTIMATE PIT LIMIT

ULTIMATE PIT LIMIT

(DATE OF SURVEY - 15.02.2020) PLATE-V

SIRIGIDA SAND QUARRY
OVER 7.28 HECT. / 18.00 ACRE
IN ANGUL DISTRICT, ODISHA.

DEVELOPMENT PLAN

APPLICANT:- TAHASILDAR, TALCHER

APPROVED

IT IS HEREBY CERTIFIED THAT THIS
PLATE IS CORRECT AND UP TO DATE.



Joint Director of Geology
Zonal Survey, Dhenkanal

BIPIN BEHARI KHANDUAL
RQP/OD/049/2016

INDEX

TOPOGRAPHICAL FEATURES

● QUARRY LEASE AREA

— SAFETY ZONE

— APPROACH ROAD

— WATER LOGGED AREA

GEOLOGICAL FEATURES

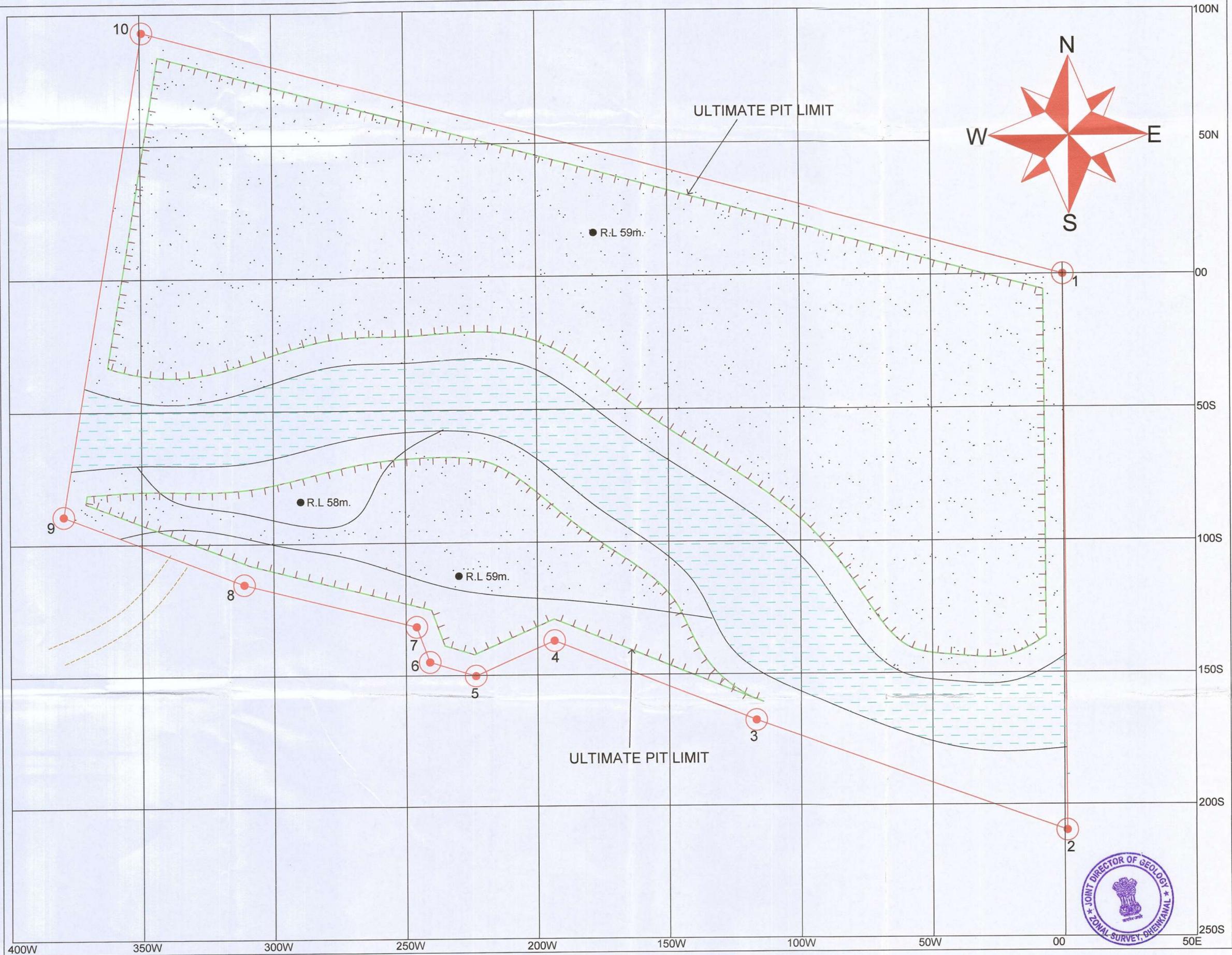
— POTENTIAL AREA FOR SAND DEPOSITION

— ULTIMATE PIT LIMIT

PROPOSED FEATURES

— AREA OF EXCAVATION DURING 1ST YEAR - 5TH YEAR

● R.L. 58m. PROPOSE R.L.



(DATE OF SURVEY - 15.02.2020)

PLATE-IV

INDEX

TOPOGRAPHICAL FEATURES

- QUARRY LEASE AREA
- SAFETY ZONE
- APPROACH ROAD
- WATER LOGGED AREA
- SPOT R L

GEOLOGICAL FEATURES

- EXISTING SAND DEPOSIT
- POTENTIAL AREA FOR SAND DEPOSITION
- ULTIMATE PIT LIMIT

SIRIGIDA SAND QUARRY
OVER 7.28 HECT. / 18.00 ACRE
IN ANGUL DISTRICT, ODISHA.

GEOLOGICAL PLAN

R.F. 1:1,000

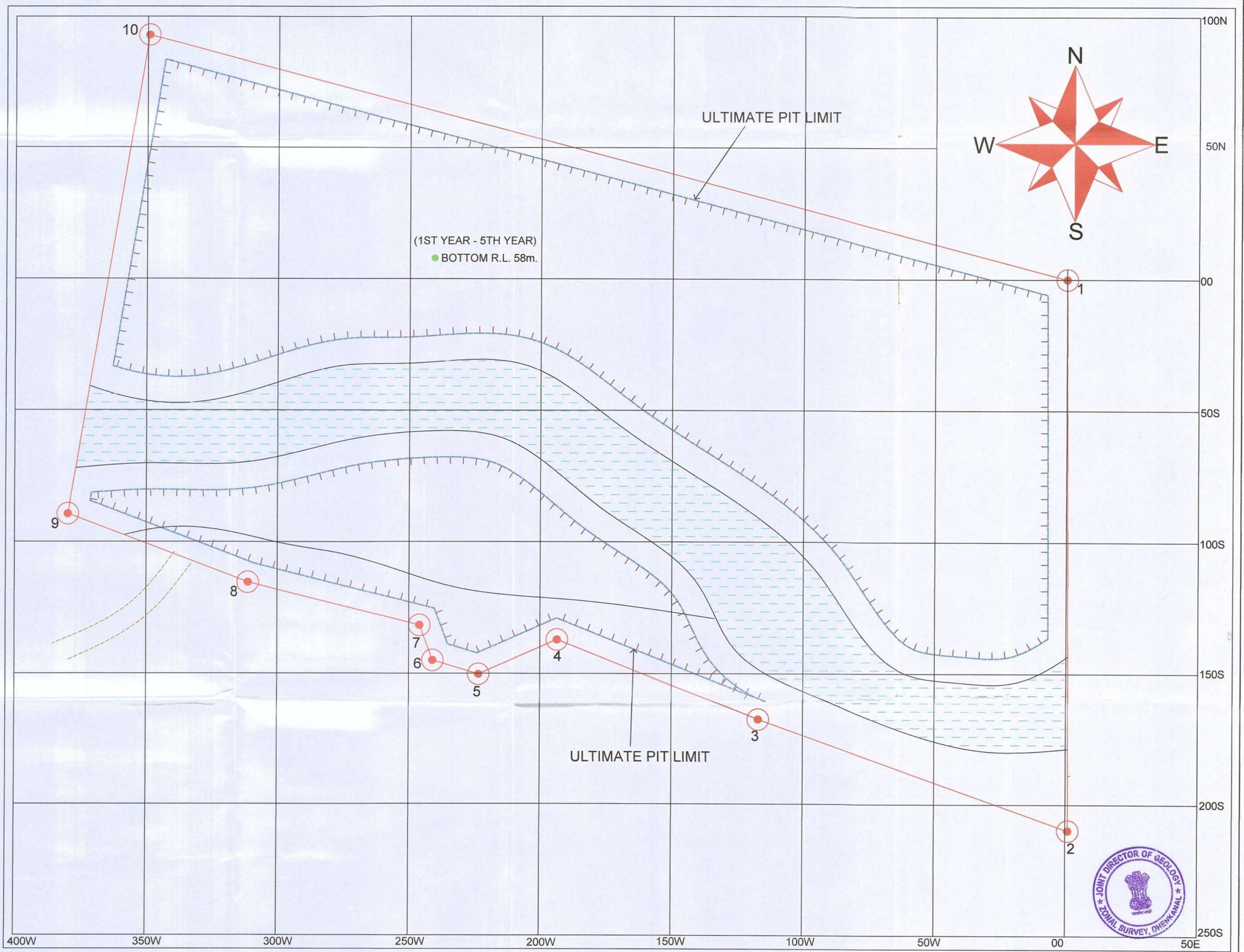
APPLICANT:- TAHASILDAR, TALCHER

APPROVED

(Signature)
Joint Director of Geology
Zonal Survey, Bhubaneswar

IT IS HERE BY CERTIFIED THAT THIS
PLATE IS CORRECT AND UP TO DATE

(Signature)
BIPIN BEHARI KHANDUAL
RQP/OD/049/2016



(DATE OF SURVEY - 15.02.2020)

PLATE-VI

SIRIGIDA SAND QUARRY
OVER 7.28 HECT./ 18.00 ACRE
IN ANGUL DISTRICT, ODISHA.

PROGRESSIVE MINE CLOSURE PLAN

R.F. 1:1,000

APPLICANT:- TAHASILDAR, TALCHER

APPROVED

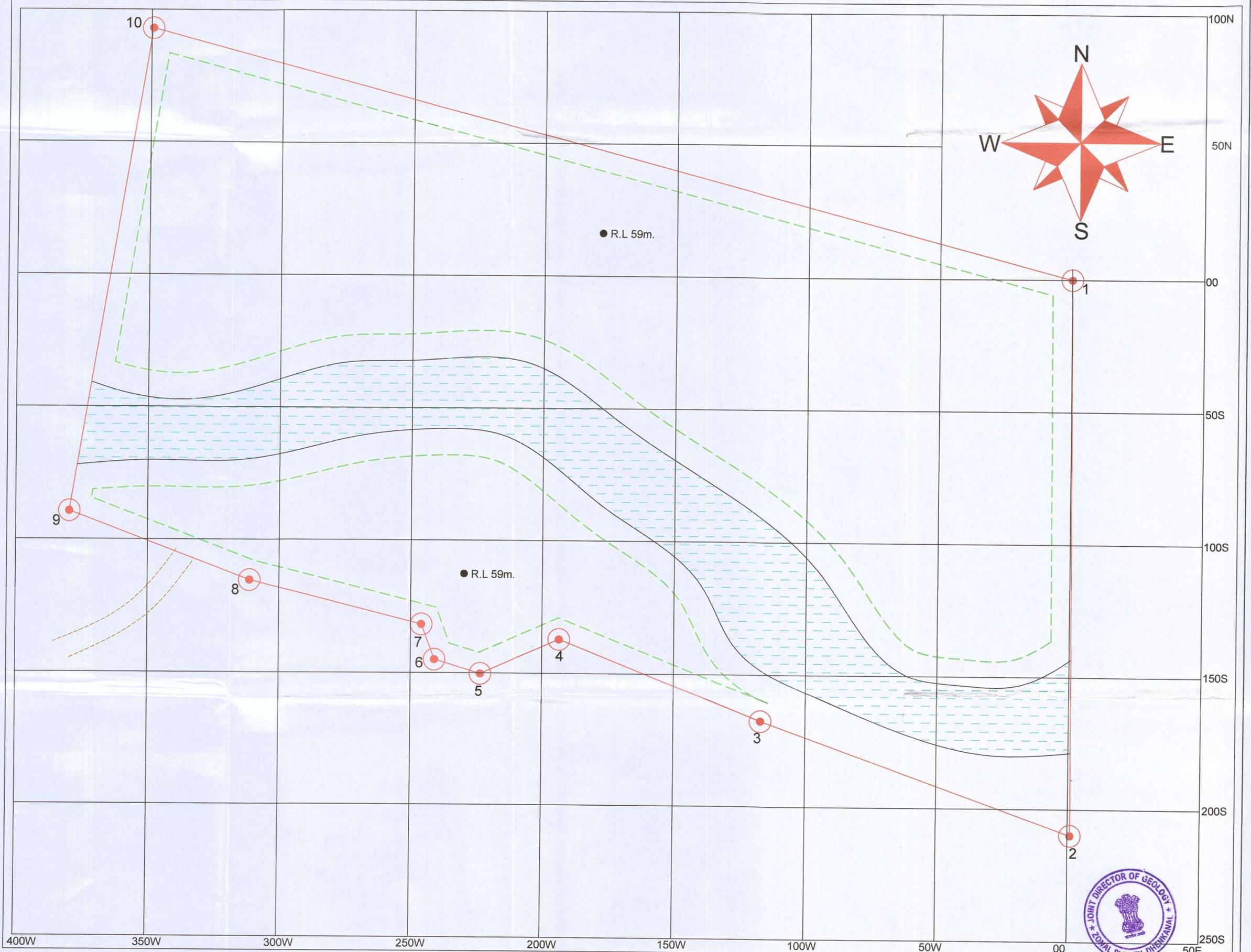
IT IS HERE BY CERTIFIED THAT THIS
PLATE IS CORRECT AND UP TO DATE

Joint Director of Geology
Zonal Survey, Dhenkanal

BIPIN BEHARI KHANDUAL
RQP/OD/049/2016

INDEX

- QUARRY LEASE AREA
- SAFETY ZONE
- APPROACH ROAD
- WATER LOGGED AREA
- ULTIMATE PIT LIMIT
- AREA OF EXCAVATION DURING
1ST YEAR - 5TH YEAR
- R.L. 58m. PROPOSE R L



(DATE OF SURVEY - 15.02.2020)

PLATE-III

INDEX

TOPOGRAPHICAL FEATURES

- QUARRY LEASE AREA
- SAFETY ZONE
- APPROACH ROAD
- WATER LOGGED AREA
- SPOT R L

| Sirigida_Bnd_Co-ordinates | | |
|---------------------------|--------------|--------------|
| Pillar_Id | Longitude | Latitude |
| 1 | 85°13'32.68" | 21°00'52.89" |
| 2 | 85°13'32.80" | 21°00'46.07" |
| 3 | 85°13'28.69" | 21°00'47.39" |
| 4 | 85°13'26.03" | 21°00'48.36" |
| 5 | 85°13'25.00" | 21°00'47.93" |
| 6 | 85°13'24.39" | 21°00'48.09" |
| 7 | 85°13'24.21" | 21°00'48.52" |
| 8 | 85°13'21.95" | 21°00'49.03" |
| 9 | 85°13'19.56" | 21°00'49.85" |
| 10 | 85°13'20.55" | 21°00'55.79" |

SIRIGIDA SAND QUARRY
OVER 7.28 HECT./ 18.00 ACRE
IN ANGUL DISTRICT, ODISHA.

SURFACE PLAN



APPLICANT:- TAHASILDAR, TALCHER

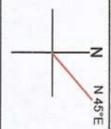
APPROVED

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(Signature)
Joint Director of Geology
Zonal Survey, Dhenkanal

(Signature)
BIPIN BHARI KHANDUAL
RQP/OD/049/2016

PREDOMINANT WIND DIRECTION
N N 45°E



INDEX
 Q.L. AREA
 OVER 7.28 Ha.

(DATE OF SURVEY - 15.02.2020)



PLATE-I

**SIRIGIDA SAND QUARRY
 OVER 7.28 HECT. / 18.00 ACRE
 IN ANGUL DISTRICT, ODISHA.**

KEY PLAN

(Showing all features within 5 Km. radius Zone)
 Ref. Toposheet No.73 G/4, G/8, H/1 & H/5
 Scale 1:50,000

APPLICANT:- TAHASILDAR, TALCHER

APPROVED

IT IS HERE BY CERTIFIED THAT THIS
 PLATE IS CORRECT AND UP TO DATE

(Signature)
 Joint Director of Geology
 Zonal Survey, Dhenkanal

(Signature)
 BIPIN BEHARI KHANDUAL
 RQP/OD/049/2016

CONVENTIONAL SYMBOLS

| | | |
|---|--|-----|
| Express highway: with toll; with bridge; with distance stone | | 20 |
| Roads, metalled: according to importance | | 20 |
| Roads, double carriageway: according to importance | | 20 |
| Unmetalled road: Cart-track; Rock-track with pass; Foot-path | | 20 |
| Straights: with track in bed; unforded; Canal | | 20 |
| Dams: masonry or rock-filled; airwork; Weir | | 20 |
| River: dry with water channel; with land & rocks; Tidal river | | 20 |
| Submerged rocks; Shoal; Swamp; Reeds | | 20 |
| Wells: lined; unlined; Tube-well; Spring; Tanks; perennial; dry | | 20 |
| Embankments: road or rail; tank; Broken ground | | 20 |
| Railways: broad gauge; double; single with station; under constn | | 20 |
| Railways, other gauges; double; single with distance stone; do. | | 20 |
| Mineral line or tramway; Kin. Cables with tunnel | | 20 |
| Contours with sub-features; Rocky slopes; Cliff | | 20 |
| Stand features: (Tilted)23and-till; (perennial); (Gladwell)shifig | | 20 |
| Towns or Villages: inhabited; deserted; Fort | | 20 |
| Huts: permanent; temporary; Tower; Antiquities | | 20 |
| Temple; Chhatri; Church; Mosque; Idgh; Tomb; Graves | | 20 |
| Lighthouses; Lightship; Buoy; lighted; unlighted; Anchorage | | 20 |
| Mine; Vire on trails; Gues; Scrub | | 20 |
| Palms; palms; other; Plantain; Conifer; Bamboo; Other trees | | 20 |
| Areas: cultivated; wooded; Surveyed tree | | 20 |
| Boundary, International | | 20 |
| Boundary pillars: surveyed; unlocated | | 20 |
| Height: triangulated; station; point; approximate | | 200 |
| Bench-mark: geodetic; tertiary; canal | | 200 |
| Post office; Telegraph office; Overhead tank | | 200 |
| Rest house or inspection bungalow; Circuit house; Police station | | 200 |
| Camping ground; Forest: reserved; protected | | 200 |
| Special names: administrative; locality or tribal | | 200 |
| Hospital; Dispensary; Veterinary; Hospital / Dispensary | | 200 |
| Aerodrome; Helipad; Tourist site | | 200 |
| Power line: with pylons surveyed; with poles unsurveyed | | 200 |

| | | |
|---|--------------------------------------|---|
| F45M15 (73C/15) Dangari ORISSA | F45N3 (73G/3) | F45N7 (73G/7) Kendujhar ORISSA |
| F45M16 (73C/16) | F45N4 (73G/4) Anugul ORISSA | F45N8 (73G/8) |
| F45S13 (73D/13) | F45T1 (73H/1) | F45T5 (73H/5) Dhenkanal ORISSA |