

ମହାନଦୀ କୋଲ୍ ଫିଲ୍ଡ୍ସ ଲିମିଟେଡ୍
महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Office of the General Manager (Environment and Forest)
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MCL

Ref: MCL/SBP/GM(E&F)/Basundhara Washery/2018/ 4994

Dt: 28/11/18

To,

The Additional Director/Member Secretary (IA-Coal Mining)
Ministry of Environment, Forests & Climate Change
Indira Paryavaran Bhavan, Jor Bagh Road
New Delhi - 110 003.

Sub: Supplementary reply on the observations of the 6th EAC (T&C) meeting held on 27-28 February, 2017 in respect of Basundhara Washery 10 MTPA of M/s Mahanadi Coalfields Limited in a total area of 27.66 ha located in District Sundergarh (Odisha).

Ref no.: 1. Proposal no.: **IA/OR/CMIN/20520/2013**
2. MoEFCC file number: **J-11015/435/2013-IA.II(M)**

Dear Sir,

Supplementary reply on the observations of the 6th EAC (T&C) meeting held on 27-28 February, 2017 in respect of Basundhara Washery 10 MTPA is being submitted in online portal of MoEF&CC. Kindly find enclosed Supplementary reply along with the following supporting documents.

- i) Approval of the Mine Closure Status Report by the Company Board(Annexure-1)
- ii) Approved Mine Closure Status Report (Annexure-2)
- iii) The time line for implementation of the action plan (Annexure-3)
- iv) Minutes of the 6th EAC meeting held on 27th – 28th February 2017(Annexure-4)

Enclosure: As Above

Yours Sincerely,

G.M. (Envt & Forest) 28/11/18

Reply to the observations of EAC in the 6th EAC meeting held on 27th - 28th February 2017.

The proposal is for grant of environmental clearance to the Basundhara Coal Washery of 10 MTPA in an area 43.90 ha of M/s Mahanadi Coalfields Limited, located in District Sundergarh (Odisha).

The proposal was considered in the 1st EAC meeting held on 27th December, 2016 & further considered in the EAC meeting held in the 6th EAC meeting held on 27th - 28th February 2017.

In the 6th EAC meeting held on 27th - 28th February 2017, the EAC observations were

“The EAC, after detailed deliberations, decided not to recommend the proposal, but to wait for the firm action plan to be submitted adequately addressing the requirements contained in the mine closure status report”.

Reply :

The Mine Closure Status Report has been approved by the Company Board in its 205th meeting held on 23rd October 2018 & communicated vide letter no.MCL/SBP/CS/BD-205/Exct/2018/266 dt: 31-10-2018. (copy enclosed at Annexure-1)

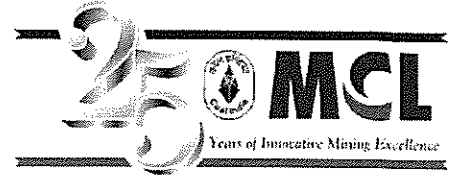
Approved Mine Closure Status Report is enclosed at Annexure-2

The time line for implementation of the action plan for reclamation/restoration of Basundhara(E) mine is enclosed at Annexure-3

Minutes of the 6th EAC meeting held on 27th - 28th February 2017, in respect of Basundhara Washery (copy enclosed at Annexure-4)

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महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
 (A subsidiary of Coal India Limited)

Office of the Company Secretary
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Ref. No. MCL/SBP/CS/BD-205/Exct/2018/ **266**

Date: 31.10.2018

गोपनीय/CONFIDENTIAL

सेवा में,
GM(P&P)
 महानदी कोलफील्ड्स लिमिटेड

Sub: Extract from the minutes of the 205th Board meeting of MCL held at 2.00 PM on Tuesday the 23rd October, 2018 at MCL Office, Plot No G-3, Gadakana, Bhubaneswar-751012.

प्रिय महोदय,

आप के सूचनार्थ एवं उचित कार्यवाही हेतु एम.सी.एल. निदेशक मण्डल की 205 वी बैठक का उद्धृत दिया जा रहा है।

205.C/1 Approval for sanction of total project cost of Scheme and estimates for "Construction of internal mine coal transportation roads in Talcher coalfields at Hingula OCP, Balram OCP, Bharatpur OCP, Jagannath OCP, Ananta OCP, Bhubaneswari OCP and Lingaraj OCP of MCL."

- 1.1 The Board deliberated on the proposal in detail. The D(T) P&P explained that in 2010 IIT, Kharagpur were asked to propose an alignment for constructing a coal corridor with arterial roads connecting to the stockyards. Basing on their recommendations tenders were called for and work orders were placed. But the agencies did not execute the jobs because of which the contracts were terminated. Subsequently, the Board approved awarding of fresh work orders for constructing the Coal Corridor on a fresh alignment and the job is progressing well with almost 70% completed so far. However, the arterial roads also need to be aligned and constructed for which the present proposal has been brought.

During deliberation, the following queries were raised:-

- a) What is the possibility that there will not be any further change in the alignment of the proposed arterial roads?
- b) Has any External Organization studied the current alignment?
- c) If work is started at a time in seven Areas, will it lead to severe disruption in dispatch / transportation of Coal.

- 1.2 Replying to the queries, Director (T/P&P) assured the Board that
- a) Internal MCL Team has studied the alignment of the arterial roads and confirmed that there will not be any change in its alignment.

(a) As we are having internal expertise, external agencies were not called for this purpose. In fact, the Coal Corridor, which is under construction, has been taken up as per the alignment drawn up by the internal team and not the one recommended by IIT, Kharagpur.

(b) Further, he stated that simultaneous construction of the road at seven areas will not affect the current transportation and dispatch from the Area.

1.3

Based on the assurance given, the Board approved the proposal for sanction of total project cost of Scheme and Estimates for construction of internal mine coal transportation roads in Talcher Coalfields at Hingula OCP, Balram OCP, Bharatpur OCP, Jagannath OCP, Ananta OCP, Bhubaneswari OCP and Lingaraj OCP of MCL for a total project cost of Rs. 241,69,01,766.97 (Rupees Two Hundred Forty One Crore Sixty Nine Lakh One Thousand Seven Hundred Sixty Six and Paise Ninety Seven) only as an independent scheme with provision of fund from the balance unutilized fund of previous approved schemes as per the details brought out in the agenda note.

205.C/5

Approval of Mining Plan and Mine Closure Plan for Lakhanpur-Belpahar-Lilari Integrated OCP (40 MTY) with estimated mine closure cost of Rs.54271.8022 Lakhs compounded @ 5% annually for 41 years.

5.1

The Board deliberated on the proposal in detail and based on the clarifications offered and facts brought out in the agenda note, approved the Mining Plan and Mine Closure Plan Lakhanpur-Belpahar-Lilari Integrated OCP (40 MTY) with estimated mine closure cost of Rs.54271.8022 lakhs compounded @ 5% annually for 41 years as per the details brought out in the agenda note.

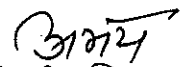
205.C/6

Approval for Mine Closure Status Report of Basundhara (East) OCP.

6.1

The Board deliberated on the proposal in detail and based on the clarifications offered and facts brought out in the agenda note, approved the mine closure status report of Basundhara (East) OC as per the details brought out in the agenda note.

भवदीय,


कंपनी सचिव

STRICTLY RESTRICTED

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The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL/Government.

MINE CLOSURE STATUS REPORT FOR BASUNDHARA EAST OCP

**IB-VALLEY COALFIELD
MAHANADI COALFIELDS LIMITED**



OCTOBER, 2018

CENTRAL MINE PLANNING & DESIGN INSTITUTE LIMITED

(A Subsidiary of Coal India Ltd.)

REGIONAL INSTITUTE-VII

BHUBANESWAR-751013

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2	Plan showing fixation of adjustment of mine boundary of Basundhara West OCP	2
3	Plan showing present status and proposed reclamation plan	3

LIST OF ANNEXURES

Sl. No	Annexure No	Particulars
1	Annexure-I	Copy of D(T) to DGMS regarding fixation of adjustment of mine boundary.
2	Annexure-II	Copy of letter of DGMS to Agent & Project Officer, Basundhara (West)
3	Annexure-III	Copy of letter of GM (P&P) for review of MCSR of Basundhara (E) dated 8 th August,2018
4	Annexure-IV	Copy of letter of P.O Basundhara dated 25.9.2018 regarding post mining details to be incorporated in MCSR of Basundhara (E) OCP
5	Annexure-V	Extract of Basundhara East Study report by NIT, Rourkela

TEXT

MINE CLOSURE STATUS REPORT OF BASUNDHARA EAST OCP

1.0 BACKGROUND

There are legal provisions to plan for mine closure for the new & ongoing mines but there are many mines which have been closed prior to formulation of the new laws. To deal with such abandoned mines, vide letter no CIL/DT/122/16/254 Dt. 07.11.2016, the Director Technical, CIL communicated the minutes of meeting of Secretary (Coal), with Coal India Management held on 2nd Nov., 2016 at CIL, HQ, Kolkata, regarding status of Mine Closure Plan (MCP) of mines closed (abandoned) prior to August, 2009 against which no provision for Escrow account (as per the guidelines of MCP, issued by Ministry of Coal) has been made, wherein it was desired that such Mines too need to have Mine closure status reports.

It was also pointed out that officials of State & Central Government have also been pointing out that a number of old pits/quarries have been left abandoned & unattended which are a source of serious hazard for the public & nuisance for the community.

For the compliance of above directive, it was proposed that

- 1.1 All mines of all the subsidiaries of coal India which have been closed / abandoned prior to August 2009 need to be identified for preparation of Mine closure status reports (MCSR). For this purpose those mines are to be considered for which notice under Form-1 of Regulation.6 and AMP under regulation 61 of CMR 1957 have been submitted to the office of the DGMS & their receipts are available at the mines.
- 1.2 Regional institutes of CMPDI were entrusted to prepare these reports after field inspection, verification of Form-1, AMP's along with detailed DGMS circulars, protective works, fencing, landscaping, photographing and documenting all details with the copy of certified AMP.
- 1.3 All such MCSR to be numbered catalogued & copies to be submitted to respective subsidiaries, CMPDI (HQ) & CIL (HQ).

The mine closure status report of Basundhara (E) prepared in August, 2017 is being reviewed as desired by MCL vide letter No. MCL/HQ/SMBP/GM(P&P)/18/447-H, dated 8.8.2018.

2.0 OBJECTIVE OF PREPARATION OF MINE CLOSURE STATUS REPORT (MCSR)

The main objective of MCSR is to know the status of compliance of **statutory requirements applicable to abandoned** mines and the following precautionary and control measures mentioned below:

- Adequate measures that have been taken to prevent unauthorized access or entry to the mine; this should include “No Entry” signage in a prominent place and considerations for appropriate barriers.
- Adequate precautions taken to prevent inadvertent access to open pit workings;
- Adequate precautions taken to ensure that all plant and equipment have been removed or secured and left in a safe condition;
- Adequate precautions taken to remove or properly dispose of all hazardous substances at the mine.
- Measures taken for Rehabilitation/separation of workers affected due to the closure
- Measures taken for Maintaining/relocation of the facilities made available to the local populace during operation of the mine.

3.0 SCOPE OF WORK

Preparation of Mine closure Status report (MCSR) of Mines closed before 2009 after field inspection, verification of Form-1, AMP's along with detailed DGMS circulars, protective works, fencing, landscaping, photographing and documenting all details with the copy of certified AMP's

4.0 INTRODUCTION

Basundhara sector of Gopalpur block is located in North-western part along the northern flank of Ib River coalfield. It falls in the Himgir Tehsil of Sundergarh district, Odisha at a distance of 46 km from Sundergarh town Basundhara (East) OCP was started in the year 1996 for a rated capacity of 0.6Mty with a life period of 11 years excluding construction period of 2 years. The project was operational for 10 years. Production from the mine stopped from 29/06/2005 due to exhaustion of reserve. In 2008 the mine boundary of adjoining Basundhara west OCP was re-adjusted and Basundhara East came within new mine boundary of Basundhara West Opencast mine.

5.0 GEO-MINING FEATURES OF MINE

The geo-mining parameters as per approved PR are given below:

Table no: 1
GEO-MINING FEATURES OF MINE

Sl. No.	Particulars	Unit	Quantity
1	Mineable reserve	Mt	6.32
2	Overburden	Mcum	3.5
3	Stripping ratio	Cum/t	0.55
4	Depth of quarry		
	Maximum	M	54
	Minimum	M	6
5	Strike length		
	Maximum	M	470
	Minimum	M	400
6	Av. Gradient		1 in 11
7	Annual target capacity	Mt	0.6
8	Life(excluding construction period of 2 years)	Years	11

6.0 LAND DETAILS

EIA/EMP was approved vide letter No.J-11015/31/93-IA.II (M), dated 30.01.1995.

The land detail as per approved EMP is given below in Table-2.

Table no: 2
Land Details of Basundhara (E) OCP

Sl. No.	Particulars	ML Area (Ha)	Outside ML Area (Ha)	Total Area (Ha)
1.	Forest	21.58	37.66	59.24
2.	Govt. Non-Forest	27.956	0.00	27.956
3.	Tenancy	48.22	0.00	48.22
	Total Area	97.756	37.66	135.416

The details of post mining land use as envisaged in EIA/EMP is given in table no-3 and proposed post mining land use is given in table no-4

Table no: 3
Post Mining Land use as per EIA/EMP

Category	Land Use (in Ha)					
	Plantation	Water Body	Haul Road & Dip Side Slope	Existing Forest	Built-up area	Total
Excavation	17.29	6.89	9.60	0.00	0.00	33.78
Safety Zone/Barrier (300m)	33.32	0	0	36.81	4.843	74.973
Infrastructure	4.2	0	0	0.85	21.613	26.663
Total	54.81	6.89	9.60	37.66	26.456	135.416

Table no: 4
Post mining land use proposed for final mine closure

Category	Land Use (in Ha)					
	Plantation	Water Body	Haul road & Dip Side Slope	Existing Forest	Built-up Area	Total
Excavation	17.29	12.69	3.80	0.00	0.00	33.78
Safety Zone/barrier (300m)	14.50	2.50	2.37	36.81	18.793	74.973
Infrastructure	4.2	0	0	0.85	21.613	26.663
Total	35.99	15.19	6.17	37.66	40.406	135.416

7.0 PRESENT STATUS OF MINE CLOSURE ACTIVITIES

Production from Basundhara east stopped in 2005 due to exhaustion of reserve. However, in the year 2008, an application for adjustment of the boundary of Basundhara West under Regulation-107(1) of CMR-1957 was made to DGMS vide letter no. MCL/D(T)/SAMB/ 2007/401 dated 11/1/2008 (copy enclosed as Annexure-I). The new boundary of Basundhara west OCP includes the entire area of Basundhara East including supporting infrastructure except a small area which is covered by plantation where no mining activity exists.

DGMS gave the permission to change the mine boundary vide letter no.CR/667 dated 7/3/2008 (copy enclosed as Annexure-II). The Mine closure activities undertaken by the mine management are detailed below:

7.1 MINED OUT AREA / EXCAVATED AREA/RECLAMATION

Total quarry excavation area, as per EMP is 33.78ha which has been backfilled leaving a water body. The area of the void of Basundhara (E) OCP (12.69Ha), is used as water reservoir and is being utilized for both Domestic as well as Industrial purpose.

The details of backfilled area are as follows:

Table no: 5

a)	Backfilled Area	21.09Ha
	• Area backfilled and technically reclaimed	11.29Ha
	• Area backfilled and biologically reclaimed	8.68Ha
	• Existing Road	0.44Ha
	• Proposed concrete road	0.68Ha

A detail of Mine Void of Basundhara (E) OCP is given below:

Table no: 6

Sump name	Actual Area (m ²)	Depth (m)	Volume/Capacity (L m ³)
Basundhara East Sump	126900	25	~32

Table no: 7

Surface run-off calculation of Basundhara (E) Sump

Name of catchment area	Area (m ²)	Average Rainfall (m)	Coefficient	Quantity (L m ³)	Evaporation losses	Net quantity (L m ³)
B(E) OCP sump	800000	1.43	0.8	9.152	0.457	8.69
B(W) OCP Main sump	1290955	1.43	0.8	14.77	0.738	14.03
B(W) OCP Mid sump	833009	1.43	0.8	9.53	0.476	9.05

Basundhara East sump is an important surface water resource, which facilitates harvesting and storage of rainwater through its catchment areas and replenishment of the ground water and is a life-line for Basundhara coalfields. The anticipated water consumption from Basundhara East Sump for both industrial as well as domestic purpose is as given below:

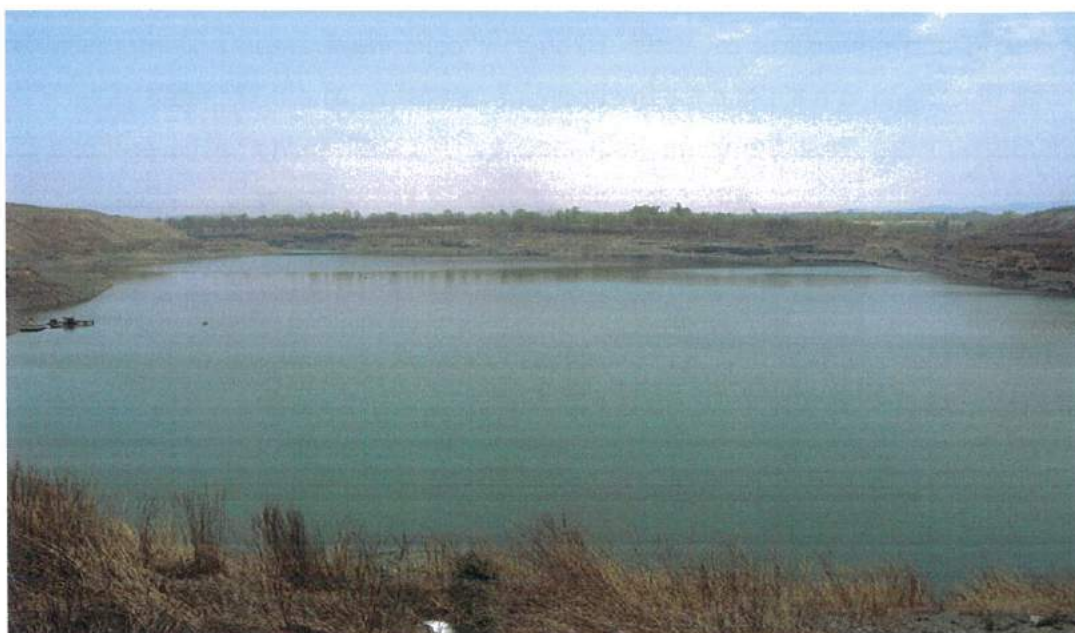
Table no: 8

Anticipated water consumption from Basundhara East sump

Sl. No.	Purpose	Consumption per day	Annual Requirement
1	Domestic for residential colony of Basundhara Area (For 365 days)	1000 KLD	365000 KL
2	Industrial use – Industrial cooling, spraying, dust suppression in Basundhara project (For 330 days)	350 KLD	115500 KL
3	Kulda OCP – domestic (For 365 days)	50 KLD	18250 KL
4	Basundhara Washery (10 Mty) (For 330 days – Proposed)	2222 KLD	733260 KL
	Total (KL)	3622 KLD	1232010 KL
	Total in L.M³		12.32



Photograph showing external OB dump of Basundhara East mine



Photograph of Basundhara East Water body

7.2 FENCING

Fencing has been provided on one side of the water body and backfilled area. As on 01.08.2018, fencing of 400m is already present around the water body as well as the backfilled area of Basundhara (E) OCP, a remaining length of 3160m of fencing is proposed to be erected all along the mine boundary of Basundhara (E) OCP, in order to restrict the illegal trespassing, along with adequate no. of sign boards and check gates. The total estimated value for the accomplishment of the work is Rs.42,51,022.76 (Forty two lakh fifty one thousand and twenty two rupees and seventy six paise only), including the fencing cost of Basundhara (W) OCP. The work is expected to be completed before 31.12.2019.



Photograph showing fencing around backfilled area



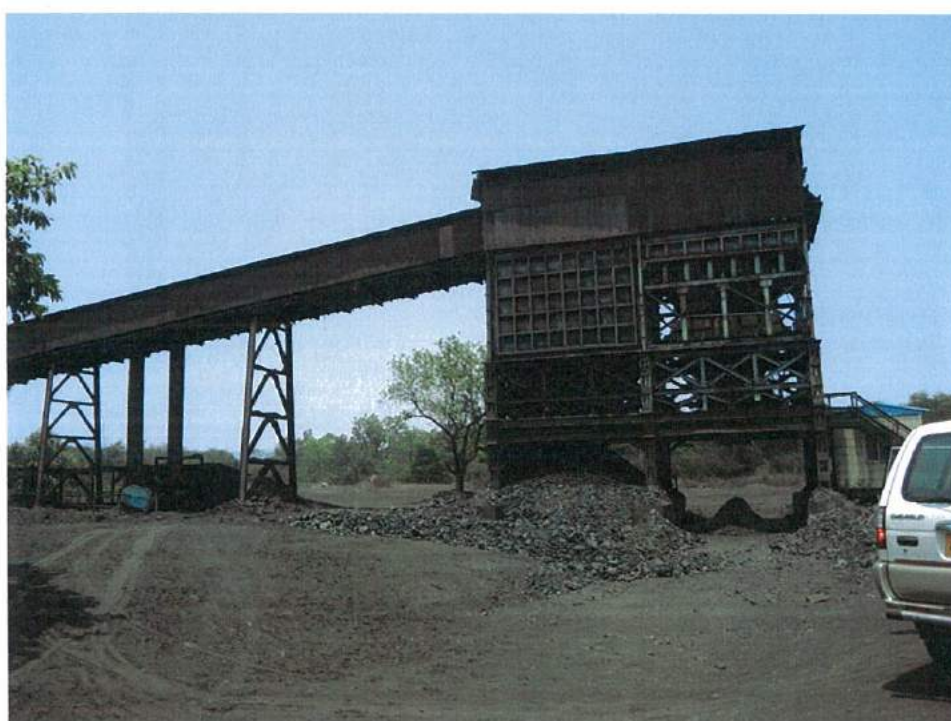
Photograph showing fencing around water body

7.3 MANAGEMENT OF HAZARDOUS WASTE

Presently there is no hazardous waste generated under Basundhara (E) OCP, Basundhara (W) OCP is using the plant and machinery (like CHP, Workshops, and substation etc.) of Basundhara (E) OCP, hence the waste so generated is being handled by Basundhara (W) OCP. The hazardous waste is sent to Regional Store of Basundhara Area from where it is auctioned to the agency/recyclers that are authorized by State Pollution Control Board (SPCB), Odisha.

7.4 COAL HANDLING PLANT/ WORKSHOP/SUB-STATION

All the supporting infrastructures like CHP, workshop, 33kv substation, weighbridges of Basundhara East have been diverted for use of Basundhara (west) OCP mine.



Photograph showing the CHP of Basundhara East

7.5 PLANTATION

Total quantities of 68450nos. of plants have been planted in an area of 29.81Ha. Out of total Excavated Area of 17.29Ha, 8.68Ha of land has already been planted and remaining area of 8.61 ha has been proposed for plantation. The break-up of the plantation area is as given below:

Table no: 9

Status of plantation under Basundhara (E) OCP

Sl. No.	Plantation Site	Area	No. of plants
1	Infrastructure	4.20Ha	10500
2	Safety Zone	14.50Ha	36250
3	Excavated Area	8.68Ha	21700
	TOTAL:	27.38	68450 nos.



Photograph showing plantation and water sprinkler system



Photograph showing plantation

7.6 SERVICE BUILDINGS

The service buildings are being used by other projects of MCL.

7.7 RESIDENTIAL COLONY

The residential colony is being used by other projects of MCL.

8.0 REGULATORY COMPLIANCE OF ABANDONMENT/ DISCONTINUANCE

8.1 NOTICE OF ABANDONMENT OR DISCONTINUANCE UNDER CMR 1957 REGULATION NO.6

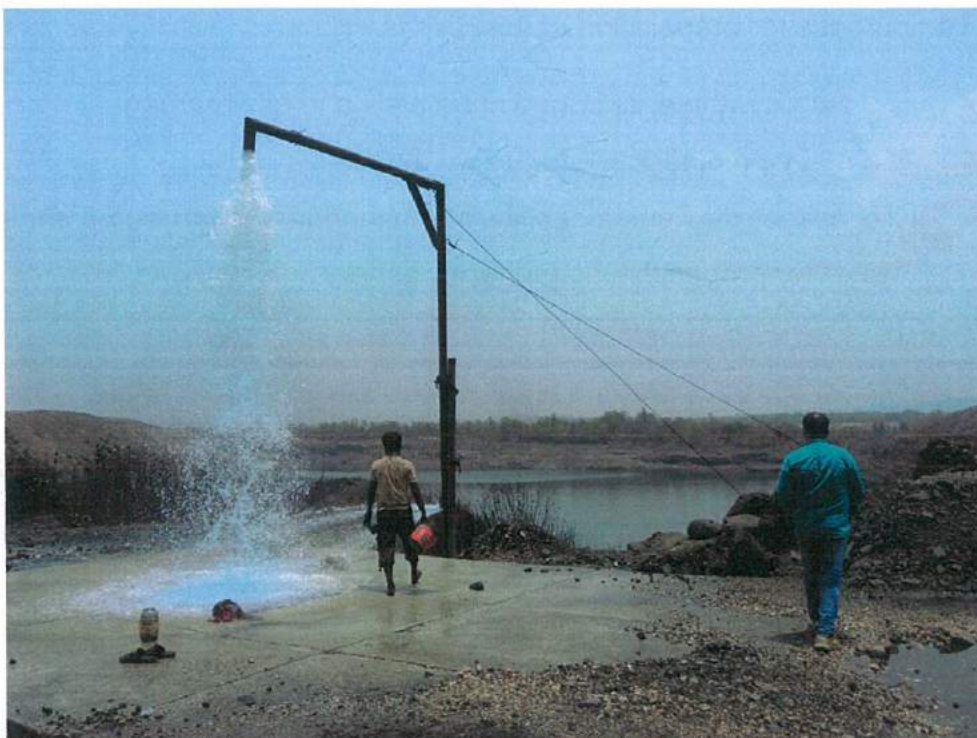
The mine was closed due to exhaustion of reserve on 29/06/2005. Notice of abandonment under the regulation has not been submitted as boundary of the mine was adjusted with Basundhara west OCP with the permission obtained from Director of Mine safety, Chaibasa region on 07.03.2008 under regulation 107(1) of CMR 1957 (copy enclosed as Annexure-I & II).

8.2 REG 188: NOTICES

Notice of prohibition of unauthorized entry has been posted at conspicuous places at every entry to the place



Photograph showing notice board near water body of mine



Photograph showing water filling facility to water tankers

9.0 ACTION PLAN FOR RECLAMATION/RESTORATION OF BASUNDHARA EAST MINE

9.1 PURPOSE

The purpose for preparation of this plan is

- To stabilize the abandoned mine area and environment
- To maintain landscape for visual aesthetics
- To assess the sustainability of Basundhara mine sump for supplying water for proposed Basundhara washery.

9.2 ACTION PLAN FOR RECLAMATION OF MINED OUT LAND

Total excavated area is 33.78 ha. Out of 33.78 ha of excavated land 8.68 ha has been biologically reclaimed and 11.29ha has been technically reclaimed, existing road is on 0.44ha and 0.68 ha will be used for concrete road for coal transportation and 12.69ha has been left for mine sump. The technically reclaimed area of 11.29ha will be taken up for plantation in 2018-19.

All areas where attempts to establish vegetation were not successful will be identified and re-vegetated. Regular monitoring of back filled area will be done to check soil erosion and gully formation.

AFFORESTATION

Afforestation of the mined - out and other available areas which are not fragmented but are degraded due to mining activity is the main component of re-vegetation process to mitigate the negative impacts of the mining on environment. By afforestation, restoration of the ecosystem if not as the original but almost similar vegetation prior to pre-mining period is possible and can be accomplished. In the context of the mines under study the mine lease area, an afforestation plan has been formulated considering the closure plan of the mine. The afforestation covering 2500 trees/ shrubs per ha will be done.

SPECIES SELECTION AND PLANTATION

While selecting the plant species utmost care will be taken so that natural habitat surrounding the mine lease area is not altered. The balance between soil, micro flora and the surrounding atmosphere will be maintained. The ultimate objective of biological measures is to restore the natural vegetation occurring in and around the area.

9.3 ACTION PLAN FOR RESTORATION OF EXTERNAL OB DUMP

A vegetative cover has been made over the external OB dump by planting trees to check erosion and thereby improving the environment. Garland drains will be provided all along the periphery of the dump to collect storm water

9.4 ACTION PLAN FOR INFRASTRUCTURES

All the infrastructures of Basundhara East mine like CHP, E&M Workshop, Excavation Workshop, 33KV substation weighbridges magazine, site office, and water tank are being used by Basundhara west mine and in future will be used by other upcoming projects in the area.

9.5 ACTION PLAN FOR RESTORATION OF ROAD

The entire stretch of coal transportation road from Basundhara to Sardega siding passing through Basundhara east mine will be concreted. This will reduce the generation of coal dust. Water sprinklers will be provided along the road. Drains for collection of storm water will be constructed on both side of road.

9.6 ACTION PLAN FOR MINE WATER UTILIZATION

The mine void of 12.69ha in Basundhara east mine is filled with water known as Basundhara sump. This sump is the life line of the Basundhara Garjanbahal area as all the water requirement of the area is being fulfilled by this sump. Anticipated

water consumption from Basundhara East sump has been given in Table no.8 of this report. The capacity of Basundhara East sump is sufficient to handle the water consumption anticipated for domestic, industrial and proposed Basundhara West washery. However, in emergency or dry season, water from Basundhara West sump will be pumped into the Basundhara East sump to meet the water requirement of the area.

Adequate garland drains have been made around the catchment area for proper drainage of water into the sump area. All efforts will be made by management to check soil erosion in the catchment area which may reduce the sump capacity. Garland drains will be regularly cleaned to maintain the water flow.

Hydrologic balance, that is, the relationship between quality and quantity of water inflow to water outflow from the sump area shall be maintained.

Study of mine surface run off and preparation of management plan for 15 mines of MCL was prepared by NIT, Rourkela in August, 2015. The extract of the report covering Basundhara OCP is being reproduced as Annexure in this report.

9.7 SAFETY AND SECURITY

To prevent unauthorized access or entry to the mine fencing of 400m has been provided on one side of water body and backfilled area. The remaining area shall be fenced by barbed wire fencing of 3160m length. Lighting of all the strategic places shall be maintained in order. Sign boards of potential hazards & danger and notices restricting unauthorized entry will be installed around the site perimeter and maintained. Proper lighting arrangement will be made at all the conspicuous places of the mine.

9.8 ESTHETICS AND VISUAL VALUES

All efforts shall be made to increase the Esthetic and visual value of the abandoned mine area.

9.9 CARE AND MAINTENANCE

Care and maintenance of the reclamation effort will involve regular inspection of mine to monitor slope movement, soil erosion and vegetation growth.

Reclamation will be deemed complete once the reclaim surfaces have been made safe and stable, access restriction measures are in place and statutory body verifies that the mine management has fulfilled the requirement of the proposed action plan.

ANNEXURES



MAHANADI COALFIELDS LIMITED

(A Subsidiary of Coal India Limited)

OFFICE OF THE DIRECTOR (TECHNICAL)/NOMINATED OWNER

HEAD OFFICE - MCL COMPLEX, JAGRITI VIHAR,

PO: U.C.E, BURLA - 768020, DIST: SAMBALPUR (ORISSA)

Phone : 0663-2542775 (O), 2542004 (R),

Fax: 0663-2542360/ 2542307/ 2542770,

E mail: dt_mcl@yahoo.co.in



Ref.No.MCL/D(T)/SAMB/2007/ 401

Date: 11/01/2008

To
The Director General of Mines Safety
Hirapur, Dhanbad, (Jharkhand).
Pin: 826001.

Sub: Fixation & adjustment of mine boundary of Basundhara (West) OCP of Basundhara Garjanbahal Area (MCL) under Regulation - 107 (1) of CMR-1957.

Dear Sir,

Basundhara (East) OCP was opened in 1996-97 with permission from your good office vide letter No.CSU/PERM./98(1)(3)/262, dtd.20/01/1997 with mine boundary A - B - C - D - E - F - G - H - I - J - K - L - M - N - O - L₁₂ to L₃₆ - R - S - T - U - V - W - X - Y - Z - Z₁ - L₃ - L₂ - Z₂ - A, which has been shown in green colour on the enclosed plan. After extraction of the total coal of the mine, its all supporting infrastructures viz CHP, weigh-bridges, HEMM workshop, E&M workshop, 33KV sub-station, diesel generator & coal stock No.2,3 & 4 have been diverted for use of Basundhara (West) OCP mine, as both mines belong to same Owner.

Basundhara (West) OCP mine with approved capacity of 2.4 MTY was opened in 2004 with permission from your good office vide letter No. Chaibasa Region/466, dtd.16/02/2004 without having any fixed-mine boundary as the process of land acquisition was in-progress in respect of Kulapara Basti of Gopaipur village.

Basundhara (West) OCP is located on the North Central part of Ib Valley Coalfields (Latitudes 22° 03'58" - 22° 04' 11" N & Longitudes 83° 42' 46" - 83° 44' 45" E) in Sundargarh district in the state of Orissa. The surface rights have been acquired under OGLS Act & F.C Act. In general, seams dip towards South-West ranging in magnitude from 5° - 8°.

Now the total land of proposed mine boundary has been acquired and compensation thereof has been paid to the tenants and evacuation of the villages is in progress.

It is proposed to fix-up the mine boundary of Basundhara (West) OCP as Q₂₄ to Q₃₅ - Q_{35(A)} - Q₃₆ - Q_{36(A)} - Q₃₇ to Q₅₉, L₁- L₅₆ - L₅₇- L₅₈- L₁₀- L₁₁- L₁₂ to L₅₅ - Q₂₄, which has been shown in red colour on the enclosed plan. Mine boundary covers an area of 259.86 hectares with inclusion of area of Basundhara (East) OCP having supporting infrastructure as mentioned above except the area L₁₁. E - F - G - H - I - J - K - L - M - N - O - L₁₂. The aforesaid area is excluded in the proposed mine boundary of Basundhara(West)OCP as because there is no mining activity in the said area. Moreover, this area is already covered with plantation.

Contd...Page No.2

The Basundhara river flows along South & West side of the proposed mine boundary. The HFL of Basundhara river have been shown in the mine plan. Though the name is Basundhara river, but virtually it is a seasonal nullah and as such there is no danger of inrush of water into the mine workings. However, from safety point of view, it is proposed to construct embankment along the river in between the proposed mine working and bank of the river by overburden dumping of the mine.

We have already constructed an embankment in South side 450m long, 40 m in width at its base and the RL of top of the embankment is 272 m as against the HFL of 261 m at that place. The construction of the embankment will continue further simultaneously with the progress of Basundhara (W) OCP towards West direction. The embankment will be constructed of adequate strength and dimension with the height of 3 mtr. above HFL. Necessary arrangement will be made to protect it from erosion.

The land that falls within the proposed mine boundary is already acquired under C.B.A (A&D) Act - 1957. There is no any adjoining mine (underground or opencast) around the mine boundary of the Basundhara (West) OCP except Basundhara (East) which is already exhausted. There is no any permanent structure, not belonging to MCL, within or in and around the boundary except "Kulapara Basti" located at a distance of 800 mtrs. from existing working edge which is likely to be shifted very soon. The village Sardega is situated at a distance of about more than 500 mtr. from Northern side of the boundary.

However, there will be no excavation by drilling and blasting within 300 m of the structure of the village not belonging to MCL till such time the village is vacated and permanent structures are demolished and physical possession of land on which the structures exists is obtained by the mine. In case the circumstances so demand urging any excavation by drilling and blasting within 300 meter of the structure of the village not belonging to MCL, then necessary permission as per provision under regulation - 170(1A) & 170(1B) of CMR-1957 shall be taken.

In light of above, you are requested to grant permission to fix-up the mine boundary in respect of Basundhara (West) OCP as proposed above.

Encl: As above.

Yours faithfully,

(V.K Jain)

Director (Technical)/Nominated Owner,
Basundhara (West) Opencast Project,
Mahanadi Coalfields Limited.

[Signature]

CC to:-

1. The Dy. Director General of Mines Safety, S-E Zone, Ranchi.
2. The Director of Mines Safety, Chaibasa Region, Chaibasa - 833201,
Dist: West Singh Bhum, Jharkhand.

MINE BOUNDARY OF BASUNDHARA (WEST) OCP.

The co-ordinates of mine boundary points are as follows:-

Sl.No.	Point No.	Latitude	Departure
1	Q24 -	895645.104	2971981.674
2	Q25 -	895616.200	2971744.120
3	Q26 -	895753.831	2971483.484
4	Q27 -	895790.807	2971099.001
5	Q28 -	895786.259	2970999.318
6	Q29 -	895784.904	2970450.450
7	Q30 -	895777.670	2970754.460
8	Q31 -	895696.590	2970640.823
9	Q32 -	895665.438	2970582.890
10	Q33 -	895675.450	2970412.393
11	Q34 -	895681.810	2970293.015
12	Q35 -	895680.235	2970080.356
13	Q35A -	895648.160	2969932.130
14	Q36 -	895600.250	2969800.410
15	Q36A -	895530.300	2969730.110
16	Q37 -	895440.230	2969699.523
17	Q38 -	895296.365	2969676.745
18	Q39 -	895300.432	2969844.153
19	Q40 -	895230.717	2969930.260
20	Q41 -	895206.609	2969960.236
21	Q42 -	895180.016	2969972.863
22	Q43 -	895123.074	2969997.391
23	Q44 -	895076.590	2970032.593
24	Q45 -	895072.552	2970062.038
25	Q46 -	895054.278	2970258.523
26	Q47 -	894971.932	2970584.007
27	Q48 -	894914.188	2970648.652
28	Q49 -	894882.746	2970714.614
29	Q50 -	894824.862	2970877.010
30	Q51 -	894838.381	2971137.756
31	Q52 -	894858.625	2971221.076
32	Q53 -	894801.793	2971377.684
33	Q54 -	894792.462	2971508.142
34	Q55 -	894576.365	2971596.178
35	Q56 -	894512.356	2971726.365
36	Q57 -	894604.620	2971993.420
37	Q58 -	894504.520	2972212.130
38	Q59 -	894458.120	2972468.410
39	L1 -	894492.250	2972276.120
40	L56 -	894492.110	2972800.230
41	L57 -	894523.140	2973063.220
42	L58 -	894572.070	2973363.150
43	L10 -	894786.420	2973216.200
44	L11 -	894774.330	2973304.320

Contd/Page2

[Signature]
Agent/Project Officer
Basundhara (W) OCP
28/12/07

28.12.07
SOM/ Manager
Basundhara(W) OCP

BK
Surveyor
Basundhara(W) OCP
28/12/07

76

Govt of India
Ministry of Labour & Employment
Directorate General of Mines Safety
Chaibasa Region, Chaibasa

Phone :
06582 256480 (O)
06582 256223 (R)

No. CR/

667-

Dated, Chaibasa, the

7/3/08

From :
M. Tandi
Director of Mines Safety
Chaibasa Region, Chaibasa- 833 201
Dist - West Singhbhum (Jharkhand)

To
Agent & Project Officer,
Basundhara West Opencast Mine,
M/s. Mahanadi Coalfields Ltd.,
At - Tiklipara, Post - Basundhara, 770 076,
Dist. Sundergarh (Orissa)

Subject :- Permission under Regulation 107(1) of the Coal Mines Regulation 1957 to change Mine Boundary of Basundhara West Opencast Mine with the adjoining Basundhara East Opencast Mine.

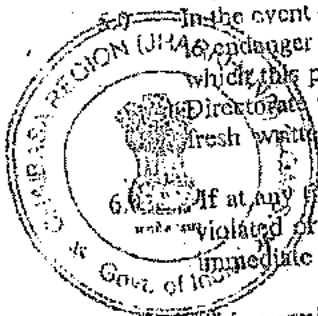
Sir,

Please refer to letter No. MCL/DCT/ SAMB/2007/401, dated 11.01.2008 submitted by Nominated Owner on the above subject, enclosing therewith Surface Plan No MCL/BA/B(W)OCP/SUR00(A), dated 04.08.2003 of the mine duly signed by the Owner, manager and surveyor, showing the two mines namely Basundhara East mine and Basundhara West mine which are adjacent and final mine boundary covering the two mines.

This matter has been considered and examined in the light of the particulars furnished by you. In exercise of the powers conferred on the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under provisions of Regulations 107(1) of the Coal Mines Regulation 1957 and in exercise of the authorisation granted to me by the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under Section 6(1) of the Mines Act, 1952, I hereby permit you to change the mine boundary of your Basundhara West mine covering the adjoining Basundhara East mine as indicated on the enclosed plan MCL/BA/B(W)OCP/SUR00(A), dated 04.08.2003 in red colour subject to the following conditions that -

- 1.0 As required under Regulation 3 of the Coal Mines Regulations, 1957, a plan showing the new boundary of the above mines shall be submitted within seven days of the said change to the Director-General of Mines Safety and the concerned Dy. Director-General of Mines Safety and Director of Mines Safety. The plans shall also show the statutory barrier in green-hatched lines on sides of the boundary, as required under Regulation 107(2).
- 2.0 Re-adjusted/New mine boundary shall be marked on the surface by suitable boundary pillars and shall also be shown on all the statutory plans maintained under Regulation 59 of the Coal Mines Regulations, 1957.

- 3.0 Letter number and conditions of this permission shall be shown on all statutory plans.
- 4.0 This permission is being issued under Regulation 10(1) of the Coal Mines Regulations, 1957 only without prejudice to any other provisions of law, which may be or may become applicable at any time.



5.0 In the event of any change in the circumstances connected with this permission, which is likely to endanger the life of persons employed in the mine or the mines, the mining operations for which this permission has been granted shall be stopped forthwith and intimation sent to this Directorate forthwith. The said mining operations shall not be resumed without express and fresh written permission from this Directorate.

6.0 If at any time any one of the conditions subject to which this permission has been granted is violated or not complied with, this permission shall be deemed to have been revoked with immediate effect.

7.0 This permission may be amended or withdrawn at any time if considered necessary in the interest of safety and/or conservation of coal.

Yours faithfully,

(Signature)
(M. Tandi)

Director of Mines Safety,
Chaibasa Region, Chaibasa.
Director of Mines Safety
Chaibasa Region (Jharkhand)
Ministry of Labour & Employment
Govt. of India



क्रमांक : एम.सी.एल / मुख्यालय /सम्बलपुर/ महाप्रबंधक (परियोजना एवं योजना)/18/ 447-H

दिनांक: 8-Aug-18

✓ सेवा मे,
क्षेत्रीय निदेशक,
क्षेत्रीय संस्थान- 7,
सेंट्रल माईन प्लानिंग एंड डिजाइन इंस्टिट्यूट लिमिटेड (सी.एम.पी.डी.आई.एल),
सामंतपुरी (गान्धी पार्क के नजदिक), आर. आर. एल. भुवनेश्वर - 751 013 (ओडिशा)



विषय: **Review of Mine Closure Status Report of Basundhara (East) OCP**

संदर्भ : 1. CMPDI/RI-7/P&D/1300 dtd 23.08.2017

2. MCL/HQ/SBP/GM(P&P)/18/ 67 dtd 19.04.2018

Dear Sir,

The Mine Closure Status Report of the Basundhara (East) OCP was submitted by RI-7, CMPDI vide ref.-1 above. During the EAC meeting held on 27/28 Feb-2017, regarding consideration of the Basundhara Coal Washery (10 MTPA), it was recommended that:

Quote

The project proponent shall be required to formulate an action plan, which would essentially take care of restoration/reclamation of the abandoned mine and thus the management of mine water also.

Unquote

We have received some inputs regarding the above mentioned subject from the Project Officer Basundhara (East) OCP, which needs to be incorporated in the Revised Mine Closure Status Report of Basundhara (East) OCP.

Therefore, it is requested to review the issues and make necessary changes in the Mine Closure Status Report of Basundhara (East) OCP and submit the revised report for approval of Competent Authority.

संलग्न: यथोपरि

HOD(P&D) for n.c.
निदेशक

U.K. Singh
14/8

भवदीय

08/08/2018

महाप्रबंधक(परियोजना एवं योजना)

क्षेत्रीय निदेशक
सूचनाय:

निदेशक-(तकनीकी/ परियोजना एवं योजना), एम.सी.एल.

प्रतिलिपि:

1. महाप्रबंधक, पर्यावरण और वन (समन्वय के लिए)
2. महाप्रबंधक, बसुन्धरा क्षेत्र
3. कार्यालय कापी

ମହାନଦୀ କୋଲ୍‌ଫିଲ୍ଡ୍‌ସ୍ ଲିମିଟେଡ୍
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Office of the Project Officer
Basundhara (W) OCP
Basundhara Area
VTEO, Basundhara 760176
Dist. Sambalpur (Orissa)



MCL

Ref No: MCL/BA/PO/B(W)OCP/Envt./18-19/25

Date: 25/09/18

To,

The General Manager (E&F),
MCL, HQ, Burla,
Sambalpur, Odisha.

Sub: Regarding Post mining Details to be incorporated in MCSR of Basundhara (E) OCP

Respected Sir,

Please find in attachment the details regarding the post mining land use as per EIA/EMP and post mining land use proposed for final mine closure with respect to Basundhara (E) OCP. The details after verification, is being recommended by the project to be incorporated in the MCSR of Basundhara (E) OCP.

The provided data is hereby submitted for your kind information and necessary action.

Thanking you,

Encl. As above.

Yours faithfully,


Project Officer,
Basundhara (W) OCP,
MCL, Basundhara Area

Copy To:

GM, Basundhara Area - For kind information
SO (E&F), Basundhara Area
O/C


Basundhara (E)

POST MINING LAND USE AS PER EIA/EMP

Category	Land use (in Ha)					
	Plantation	Water body	Haul Road & Dip Side Slope	Existing Forest	Built-up area	Total
Excavation	17.29	6.89	9.60	0.00	0.00	33.78
Safety zone/barrier (300 m)	33.32	0	0	36.81	4.843	74.973
Infrastructure	4.2	0	0	0.85	21.613	26.663
Total	54.81	6.89	9.60	37.66	26.456	135.416

POST MINING LAND USE PROPOSED FOR FINAL MINE CLOSURE

Category	Land use (in Ha)					
	Plantation	Water body	Haul Road & Dip Side Slope	Existing Forest	Built-up area	Total
Excavation	17.29	12.69	3.80	0.00	0.00	33.78
Safety zone/barrier (300 m)	14.50	2.50	2.37	36.81	18.793	74.973
Infrastructure	4.2	0	0	0.85	21.613	26.663
Total	35.99	15.19	6.17	37.66	40.406	135.416



**STUDY OF MINE-WISE SURFACE RUNOFF AND PREPARATION
OF MANAGEMENT PLAN FOR 15 OPENCAST MINES OF MCL**



**DEPARTMENT OF MINING ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008
AUGUST 2015**

XIV. BASUNDHARA (W) OCP

Basundhara and Kulda opencast projects are located in Sundargarh district of Odisha are located close to each other. Basundhara OCP has derived its name from Basundhara River which is flowing on the western boundary of the mine (Figure 70). Work in Basundhara (East) OCP has been completed and it is being used as a sump (Figure 71). The DEM of the mine has been presented in Figure 72. Depending upon the flow patterns the area has been divided into 3 zones (R1 to R3). 3-D views of the DEM has been presented Figures 73(a) and (b). The important surface features in the mining area has been presented Figure 74. Calculation of surface runoff and the sump capacity has been presented in Tables 33 and 34 respectively.

The region R5 (External) in Figure 57 is not within the mine boundary, but is a major external OB dump, hence is shown in the DEM as a separate region

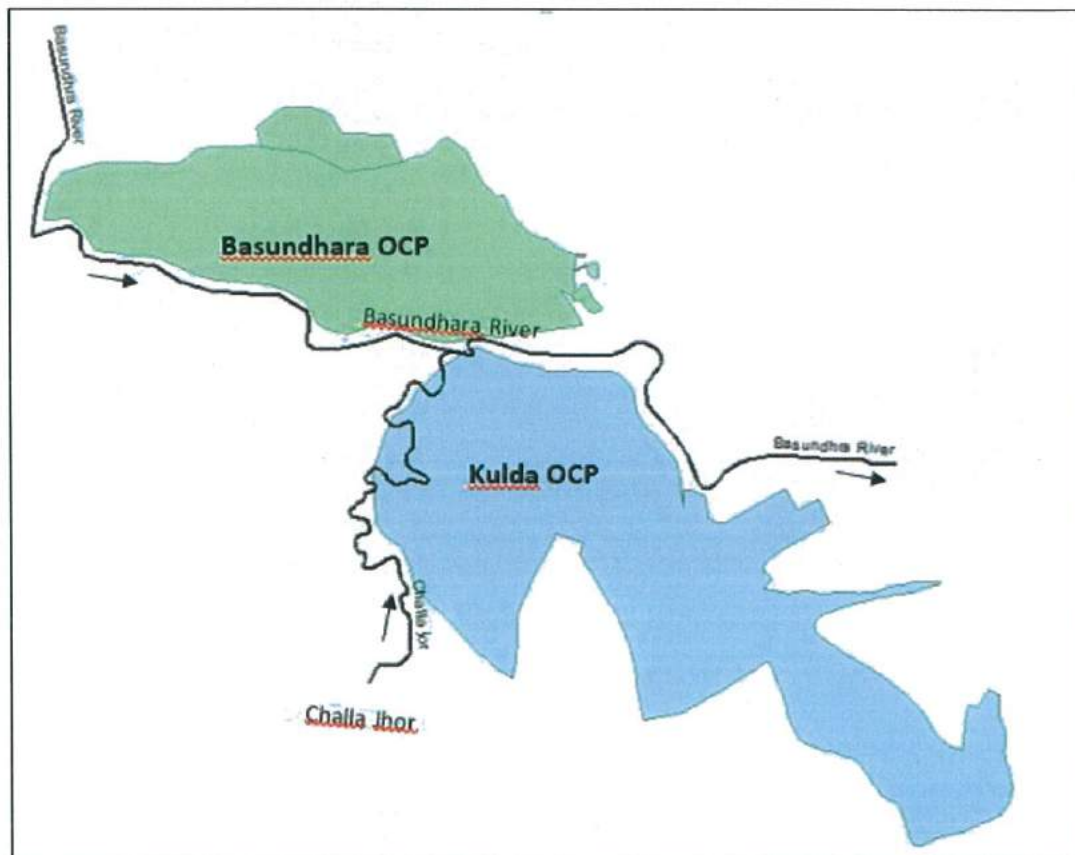


Fig. 70: Basundhara and Kulda OCP



Fig. 71: Basundhara (East) OCP, now being used as a sump

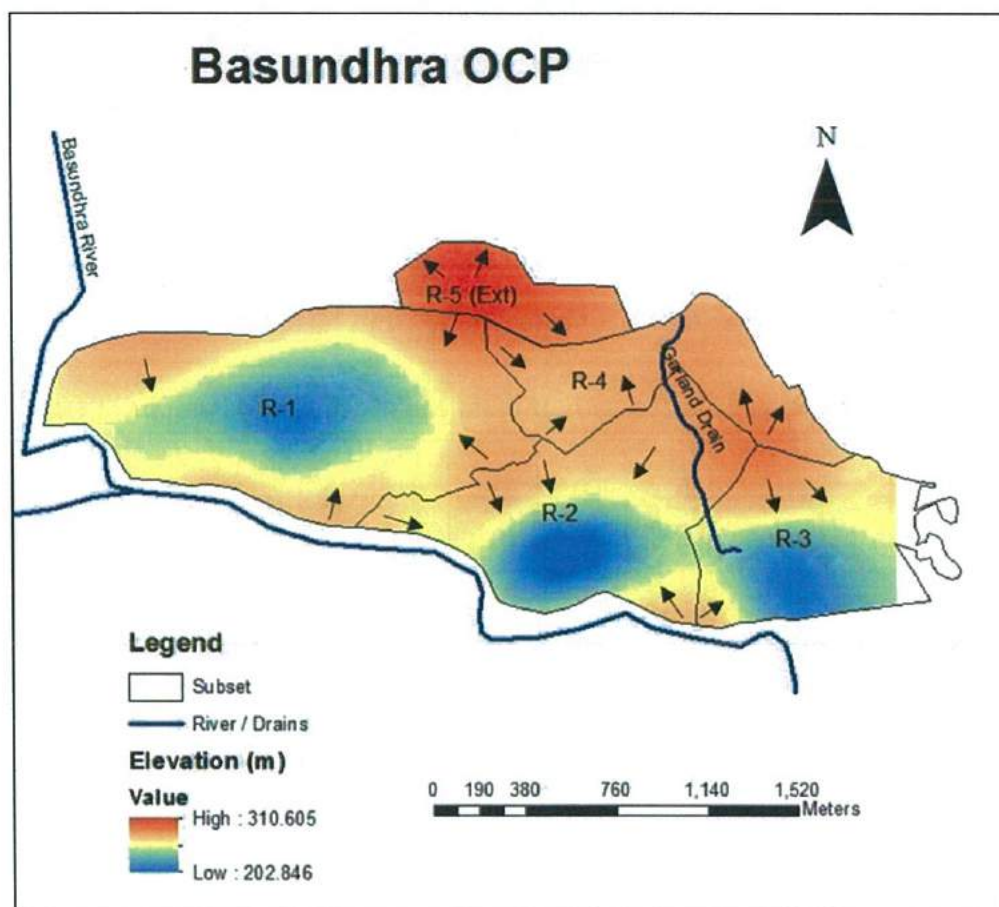


Fig. 72: Digital Elevation Model of Basundhara OCP with arrows denoting the flow direction of water

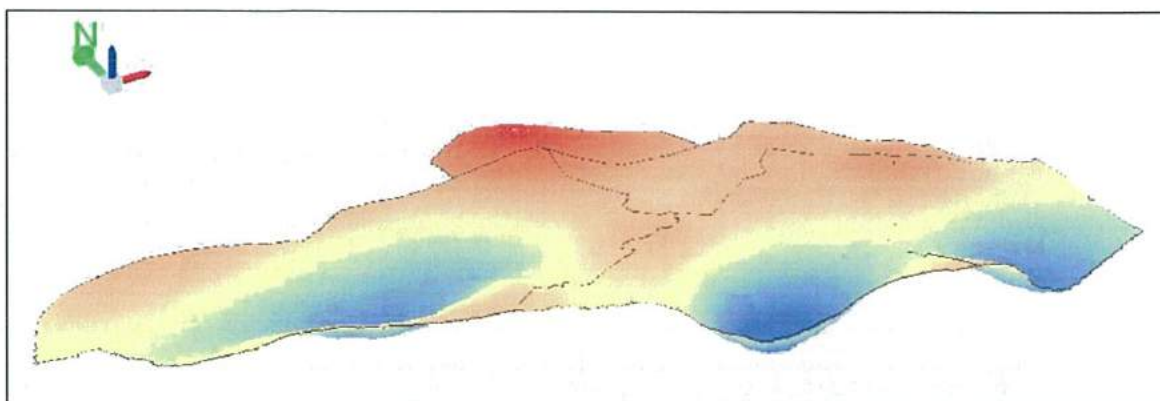


Fig. 73(a): 3-D view of DEM of Basundhara OCP

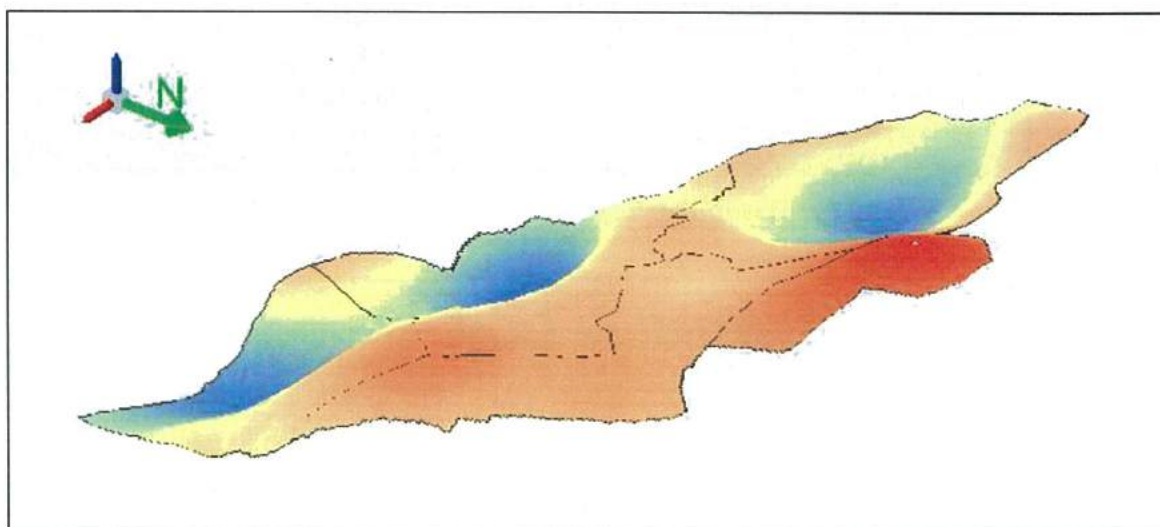


Fig. 73 (b): 3-D view of DEM of Basundhara OCP

Table 33: Surface runoff from each region in Basundhara OCP

Name	Area (m ²)	Rainfall (m)	Coefficient	Quantity (Lac m ³)	Evaporation Losses	Net Quantity (Lac m ³)	Water Flow Direction	Inside	Outside
R-2	833009	1.35	0.8	9	0.4	8.6	Inflow	8.6	
R-5 (Ext)	247843	1.35	0.8	2.7		2.7	Outflow		2.7
R-1	1290955	1.35	0.8	13.9	0.19	13.71	Inflow	13.71	
R-4	480700	1.35	0.8	5.2		5.2	Outflow		5.2
R-3	590721	1.35	0.8	6.4	0.36	6.04	Inflow	6.04	
Total	3443228					36.25		28.35	7.9

Monsoon consumption = 0.53 Lakh m³

Net Quantity of runoff to be stored during Monsoon = 35.78 Lakh m³

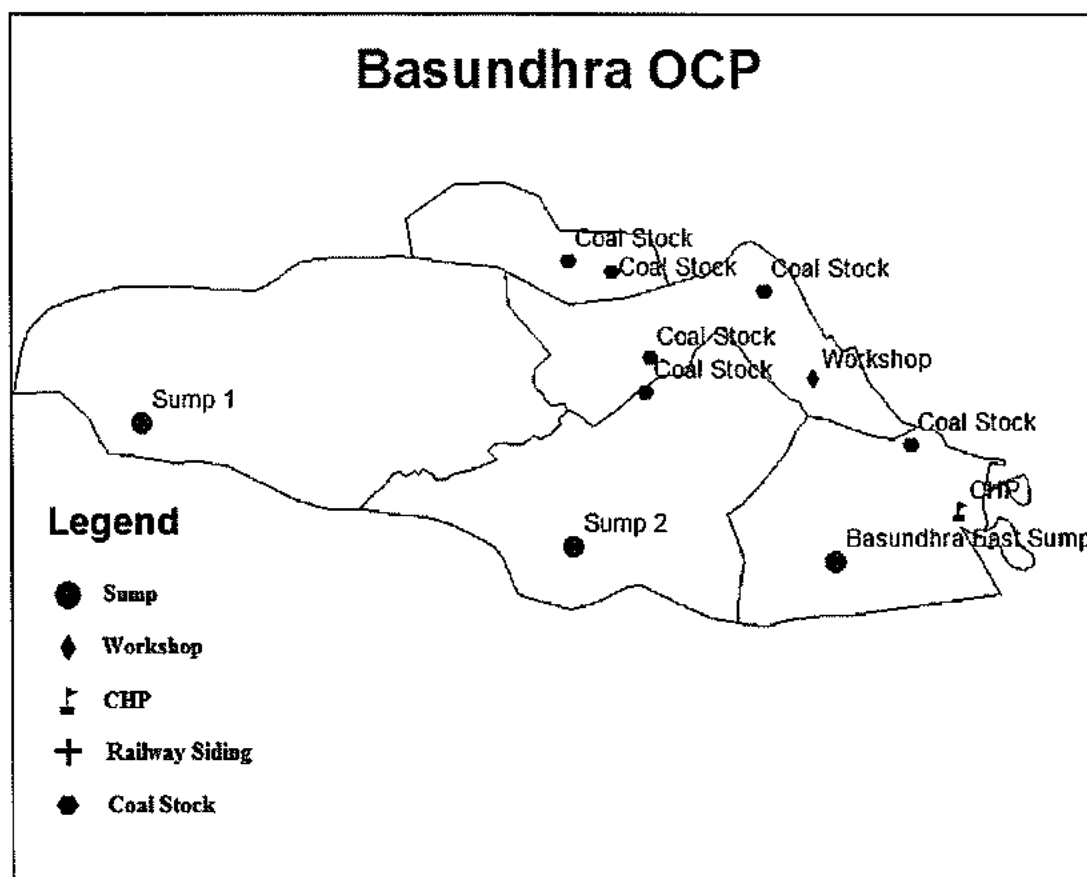


Fig. 74 : Location of important features in Basundhara OCP

Table 34: Determination of sump capacity in Basundhara OCP

Sump Name	Actual Area (m ²)	Depth (m)	Volume (Lakh m ³)
Sump 1	48346	5	2.42
Sump 2	104109	30	31.23
Basundhara East Sump	95290	30	28.59
Total :			62.24

Recommendation

1. Basundhara OCP has ample capacity to store the runoff generated during the monsoon the monsoon months. If required, it can also accommodate water from neighboring mines.
2. Excess water from R1 can be pumped to Sump 2, which can be subsequently pumped into Basundhara East Sump (which is an abandoned quarry).
3. Runoff from R5 (External) OB dump flowing northwards should be channelized back to the main sumps by construction of a new garland drain.

4. Runoff from Eastern side of R4 is flowing outwards which should be collected by constructing a new garland drain and channelized into east sump.
5. Proper soil and water conservation measures should be adopted in the OB dumps as mentioned in section 10.
6. Water from Western side of R4 is collected in Basundhara East Sump via an existing garland drain. This garland drain is expected to handle run-off from the OB dumps, coal stock and transportation roads.
7. The southern banks of Basundhara East Sump should have proper embankments to avoid any unwanted/accidental discharge of water into the Basundhara river (Fig. 75).

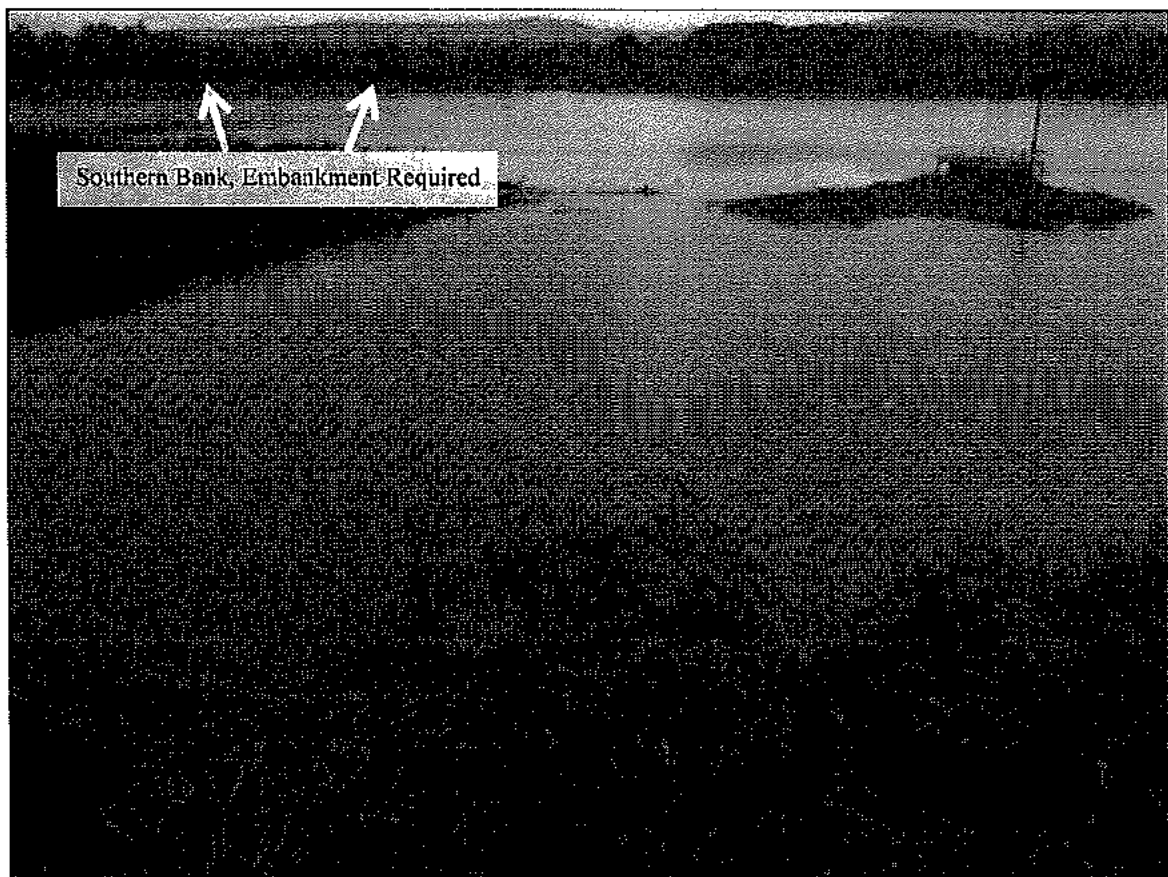
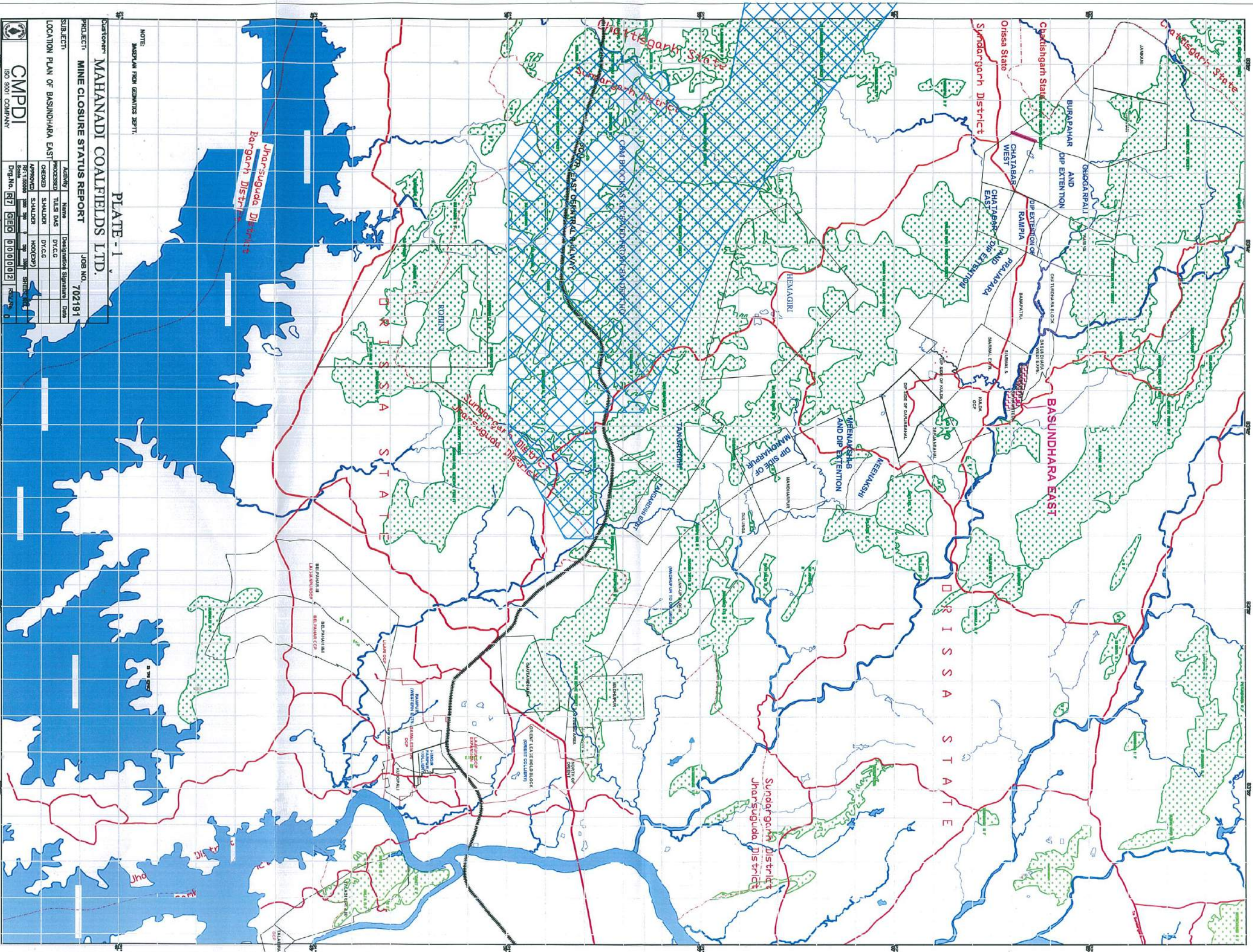


Fig. 75: A view of Basundhara East Sump where embankment may be constructed

PLATES



NOTE:
BASED ON FROM GEOMATICS DEPTT.

PLATE - 1

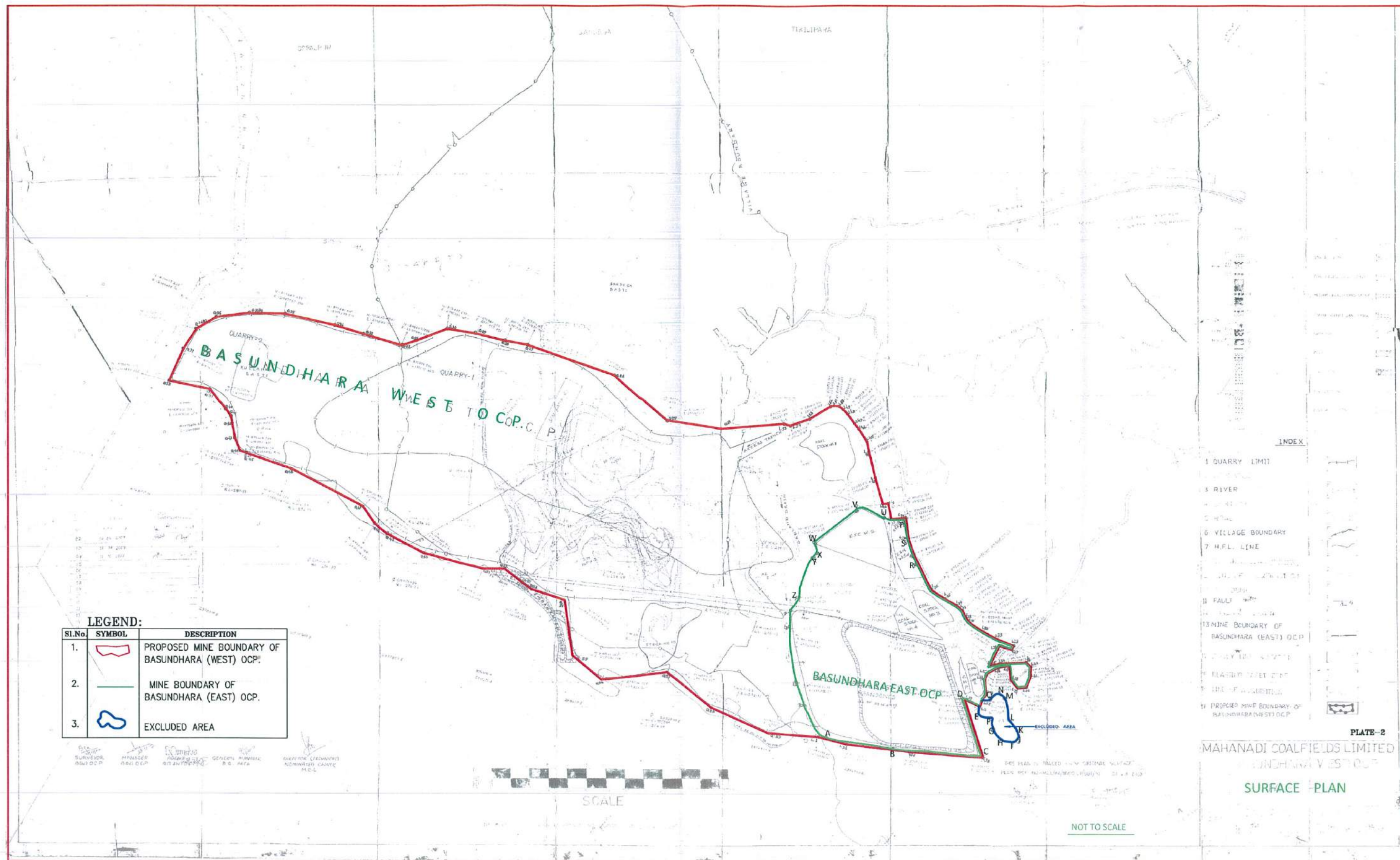
Customer: **MAHANADI COALFIELDS LTD.**
PROJECT: **MINE CLOSURE STATUS REPORT** JOB NO. **702191**

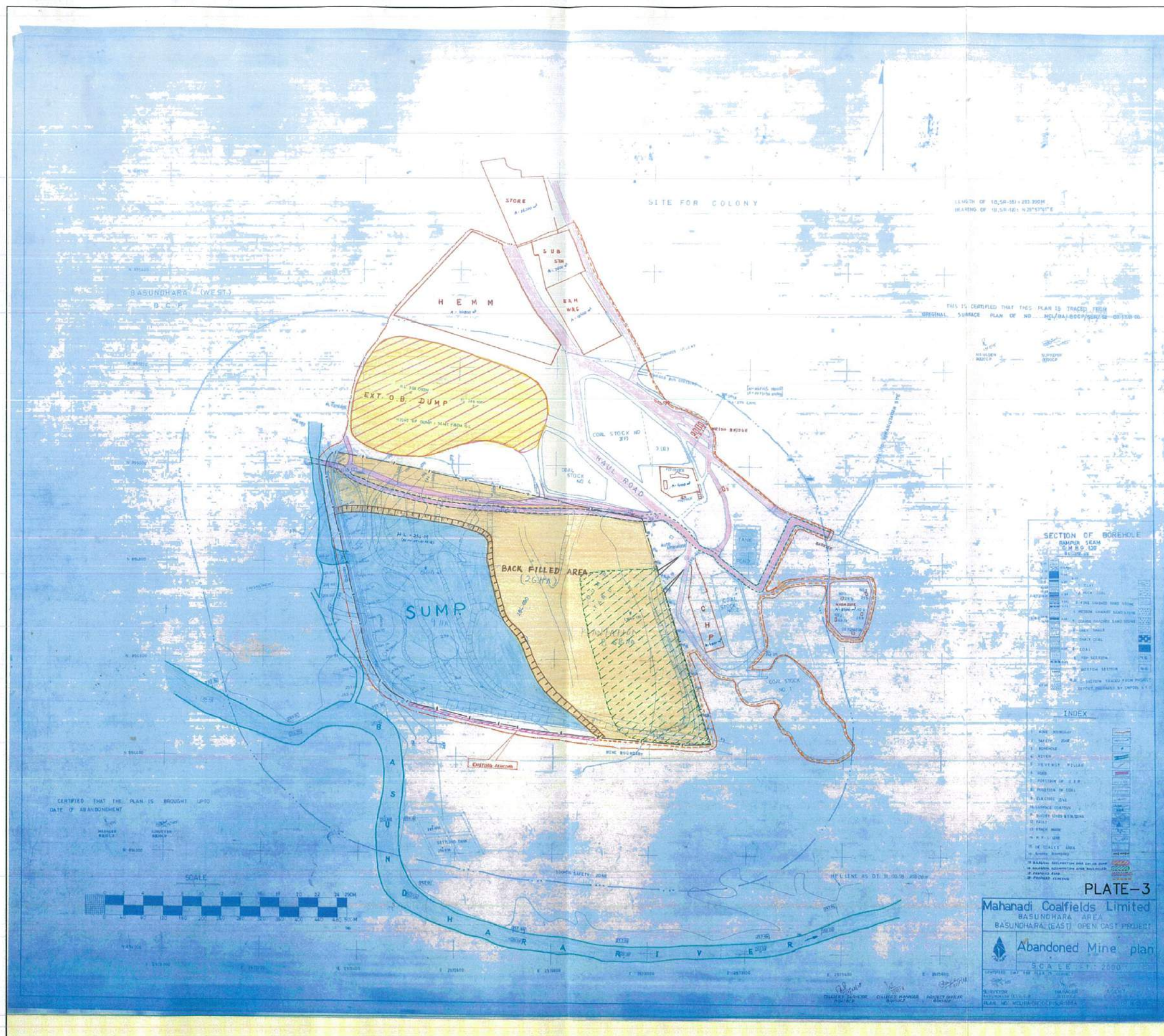
Activity	Name	Designation	Signature	Date
PROCESSED	TULSI DAS	DY.C.G.		
CHECKED	S. K. JALDER	DY.C.G.		
APPROVED	S. K. JALDER	HOD (C&P)		

SUBJECT: **LOCATION PLAN OF BASUNDHARA EAST**
Drg. No. **R7** **GEO** **0000002** **0000002**



ISO 9001 COMPANY





- INDEX
- 1. BOREHOLE
 - 2. SAFETY ZONE
 - 3. BOREHOLE
 - 4. REVENUE
 - 5. REVENUE MILEAGE
 - 6. ROAD
 - 7. POSITION OF C.R.P.
 - 8. POSITION OF COAL
 - 9. CLAYING ZONE
 - 10. CLAYING ZONE
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PLATE-3

Mahanadi Coalfields Limited
BASUNDHARA AREA
BASUNDHARA (EAST) OPEN CAST PROJECT

Abandoned Mine plan

SCALE: 1:2000

DATE: 10/05/06

PROJECT: BASUNDHARA (EAST) OPEN CAST PROJECT

PLANS: MC/BA/BOC/SUR/02-08/10-06

ମହାନଦୀ କୋଲଫିଲ୍ଡସ୍ ଲିମିଟେଡ୍
महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Office of The Project Officer
Basundhara (W) OCP
Basundhara-Garjanbahal Area
AT/PO:-Basundhara-770076
Dist:-Sundargarh (Orissa)



MCL

Ref: MCL/BA/PO/B(W)OCP/ENVT/2018-19/ 33

Date: 14/11/18

To,

General Manager (E & F)
The MCL, HQ, Burla, Sambhalpur,
Odisha.

Sub: Timeline for the implementation of action plans for the reclamation/restoration of Basundhara (E) OCP.

Ref: The minutes of the 6th meeting of the EAC held on 27-28 Feb, 2017 for Thermal and Coal Mining Sector Projects, Agenda 6.11 (Page 22-24)


Respected Sir,

In connection to the above mention subject,

Please find in the attachment, the duly signed copy of "Timeline for the implementation of action plans for the reclamation/restoration of Basundhara (E) OCP". This is for your kind perusal and necessary action. Thanking you.

Encl: As above

-Yours faithfully,


14/11/18
Project Officer,
Basundhara (W) OCP

Copy To:

- General Manager, Basundhara Area - For kind information
- Staff Officer (Envr.), Basundhara Area
- O/C

Timeline for the implementation of action plans for the reclamation/restoration of Basundhara (E) OCP, as per the minutes of the 6th meeting of the EAC held on 27-28 Feb, 2017 for Thermal and Coal Mining Sector Projects, Agenda 6.11 (Page 22-24)

S.No.	Description of the work/activity	Tentative time for the completion of the work/activity	Remarks
1	Reclamation of Mined out land (11.29Ha)	2019-20 to 2024-25	Plantation and its maintenance will be done for five years
2	Restoration of External OB Dump	2019-20 to 2024-25	Plantation and its maintenance will be done for five years
3	Restoration of road	31.01.2019	4050m of road from Basundhara (W) OCP's check gate to Sardega railway siding (includes Basundhara (E) OCP)
4	Fencing of mines	2019-20	3160m Barbed wire fencing all around the existing mines of Basundhara E and (W) OCP

Rajiv
14.11.18

Project Officer,

Basundhara (W) OCP

Project Officer, Basundhara (W) OCP
परियोजना अधिकारी, बसुंधरा (प) ओसीपी

hcm
14.11.18

Manager

Basundhara (W) OCP

Subodh
14.11.18

P.E.(C)

Basundhara (W) OCP

N.O. Envt
14.11.18

N.O. (Envt)

Basundhara (W) OCP

(xii) There are no court cases/violation pending with the project proponent.

6.10.3 During deliberations, the EAC noted the following:-

(i) The instant proposal as well as the proposal listed at Agenda 6.9, although uploaded separately on the Ministry's website but contained the same details. Project proponent was asked not only to rectify the same but also to withdraw the remaining four proposals displayed on the portal, which are reported to be infructuous.

(ii) The RO at Nagpur has inspected the site in December, 2016, but no compliance status of the earlier EC conditions was submitted. The same was the essential requirement earlier desired by the EAC to consider the proposal further.

6.10.4 The proposal was observed to be incomplete, and therefore deferred.

Agenda 6.11

Basundhara Coal Washery of 10 MTPA in an area 27.66 ha of M/s Mahanadi Coalfields Limited, located in District Sundergarh (Odisha) - For further consideration of EC

6.11.1 The proposal is for grant of environmental clearance to the Basundhara Coal Washery of 10 MTPA in an area 27.66 ha of M/s Mahanadi Coalfields Limited, located in District Sundergarh (Odisha).

6.11.2 The proposal was last considered in the 1st EAC meeting held on 27th December, 2016., wherein observations of the Committee were as under:-

(a) Out of total area of 43.90 ha proposed for washery, forest area involved is 29.41 ha. There being no stage-I forest clearance for the said forest land in terms of the Forest (Conservation) Act, 1980, its diversion for non-forestry purposes may not be permissible at present.

(b) Mine closure activities already undertaken in respect of Basundhara (East) Coal mine has to be in conformity with the approved mining plan, conditions stipulated in EC in this regard, if any, and the other relevant statutory provisions.

(c) Basundhara (East) coal mine is reported to be abandoned and the total process water requirement of 2222 cum/day for coal beneficiation has been proposed to be utilized from the abandoned mine through 3.5 km long pipeline. Detailed study regarding sustenance of water availability throughout life of the washery has not been substantiated by the project proponent.

6.11.3 In response to the observations of EAC, the details submitted by the project proponent and/or as informed during the meeting, are as under:-

(i) The forest diversion proposal for 29.41 ha is in the advance stage for grant of Stage-I forest clearance. The forest diversion proposal after all compliances has been forwarded to AIG Forests, MoEFCC, GoI, New Delhi vide no. 5-ORC291/2016-BHU, Dtd. 01.11.2016 by Conservator of Forest (Central), MoEFCC, BBSR.

(ii) The Environment Clearance for Basundhara (East) OCP was granted vide letter No.J-11015/31/93-IA.II(M) dated 30th January, 1995 and the mining has been completed and coal production has been stopped since 29.06.2005. Out of 33.78 ha of quarry area, 12.69 ha has been left as void for water body and rest of the land has been technically & biologically reclaimed.

This post-mining land use is as per the EC issued. As per Post mining land use in EIA-EMP, out of 33.78 Ha of quarry area, 17.29 Ha was proposed to be afforested & remaining 16.49 was proposed to be left for water body, haul road & dipside slope.

Since the mining was stopped much before the Mine closure guideline was issued by Ministry of Coal, the mine does not have an approved mine closure plan. However, for mines closed before August 2009, CIL has issued guideline, vide letter no. CIL/DT/122/16/254 dated 7th November, 2016, for preparation of Mine Closure Status Report (MCSR) instead of Mine Closure Plan. Accordingly, CMPDIL has been requested to prepare the MCSR for Basundhara (East) OCP.

(iii) A comprehensive report on sustenance of Basundhara East Quarry as a water source: 12.69 ha of Basundhara(East) OCP has been left as void and rest of the land has been technically & biologically reclaimed. This void is being used as an artificial water reservoir and is a source of water for domestic & industrial use for the whole area. Basundhara(West) OCP is an adjoining mine with common boundary with Basundhara(East) OCP. The total quarry area of Basundhara East Sump is calculated to be 126900 Sq.Mtr. Basundhara East Sump has ample capacity to store the runoff generated during the monsoon. If required, it can also accommodate water from neighboring mines as well. At present the runoff generated from Basundhara (West) and land outside the mine boundary (North Side) also has been channelized to the East Sump by means of garland drains. The Digital Elevation Model showing the flow patterns in the area of the mine has been presented in Figure 03. Calculation of sump capacity and surface runoff has been presented in Tables 1 and 2 respectively.

Table - 1 Calculation of Sump Capacity

Sump Name	Actual Area (m ²)	Depth (m)	Volume (Lakh m ³)
Basundhara East Sump	126900	25	~32

Table - 2 Calculation of Surface run-off inflow to Basundhara East Sump

Name	Area (M ²)	Average Rainfall (m)	Coefficient	Quantity (L m ³)	Evaporation losses	Net quantity (L m ³)
R3 Area	800000	1.43	0.8	9.152	0.457	8.69
R1 Area	1290955	1.43	0.8	14.77	0.738	14.03
R2 Area	833009	1.43	0.8	9.53	0.476	9.05
					Total	31.77

Table - 3 Calculation of Anticipated Water consumption from Basundhara East Sump

Sl.no.	Purpose	Consumption per day	Annual Requirement
01.	Domestic use for residential colony of Basundhara Area (For 365 days)	1000 KLD	365000 KL
02.	Industrial use – Industrial cooling, spraying, Dust suppression in Basundhara Project (For 330 days)	350 KLD	115500 KL
03.	Kulda OCP – Domestic (For 365 days)	50 KLD	18250 KL

04	Basundhara Washery (10 Mty) (For 365 days)	2222 KLD	733260 KL
	Total (KL)	3622 KLD	1232010 KL
	Total in L.M³		12.32

Table - 4 Abstract

SI.No.	Description	Quantity
1	Sump Volume (From Table -1)	~32 L.m ³
2	Surface Run-off accumulated on annual basis in Basundhara East Sump (From Table -2)	~31 L.m ³
3	Water Consumption on annual basis (From Table -3) a) Industrial & Domestic b) Basundhara Washery (10 Mty) Total	4.99 L.m ³ 7.33L.m ³ 12.32 L.m ³ ~ 12 L.m ³

Basundhara East Sump is an important surface water resource, which facilitates harvesting and storage of rainwater through its catchment areas and replenishment of the ground water and is a life-line for Basundhara coalfields. Its sustenance can be assessed by its existence in the same form and quantum since last 10 years. It can easily serve as an important source of water for Basundhara Washery which has an annual requirement of 7.33 lakh cum. Hence, it is assured that Basundhara (East) Sump, as shown in mine voids, will remain as water reservoir for Basundhara Washery.

6.11.4 During deliberations, the EAC noted the following:-

- (i) The proposal is for environmental clearance to the Basundhara Coal Washery of 10 MTPA in a total area of 43.90 ha. Out of it, the forest area involved is 29.41 ha for which Stage-I FC is yet under consideration.
- (ii) As per the detailed study regarding sustenance of water availability throughout mine life, it appears that the total process water requirement of 2222 cum/day would be adequately met with.
- (iii) The Mine Closure Plan for Basundhara (East) Coal Mine was not applicable since the mining was stopped much before the Mine Closure guidelines issued by Ministry of Coal on 7th November, 2016.
- (iv) As per the Mine Closure guidelines, mines closed before August, 2009, are required for preparation of Mine Closure Status Report instead of Mine Closure Plan. Presently, Mine Closure Status Report is under preparation for Basundhara (East) OCP by CMPDIL.
- (v) Mine Closure Status Report would take another 3-6 months for its finalization and approval by the Ministry of Coal. The project proponent shall be required to formulate an action plan, which would essentially take care of restoration/reclamation of the abandoned mine and thus the management of mine water also.

6.11.5 *The EAC, after detailed deliberations, decided not to recommend the proposal, but to wait for the firm action plan to be submitted adequately addressing the requirements contained in the mine closure status report.*