

18/12/19

# REPORT OF ENQUIRY

UNDER SECTION 23(2) OF THE MINES ACT, 1952  
INTO THE FATAL ACCIDENT DUE TO

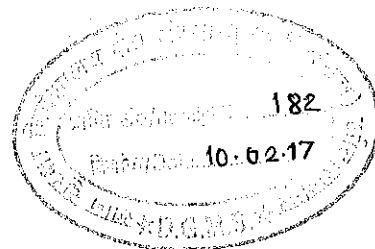
**OVERBURDEN DUMP SLIDE**

AT

**RAJMAHAL OPENCAST PROJECT,  
M/S EASTERN COALFIELDS LIMITED**

ON

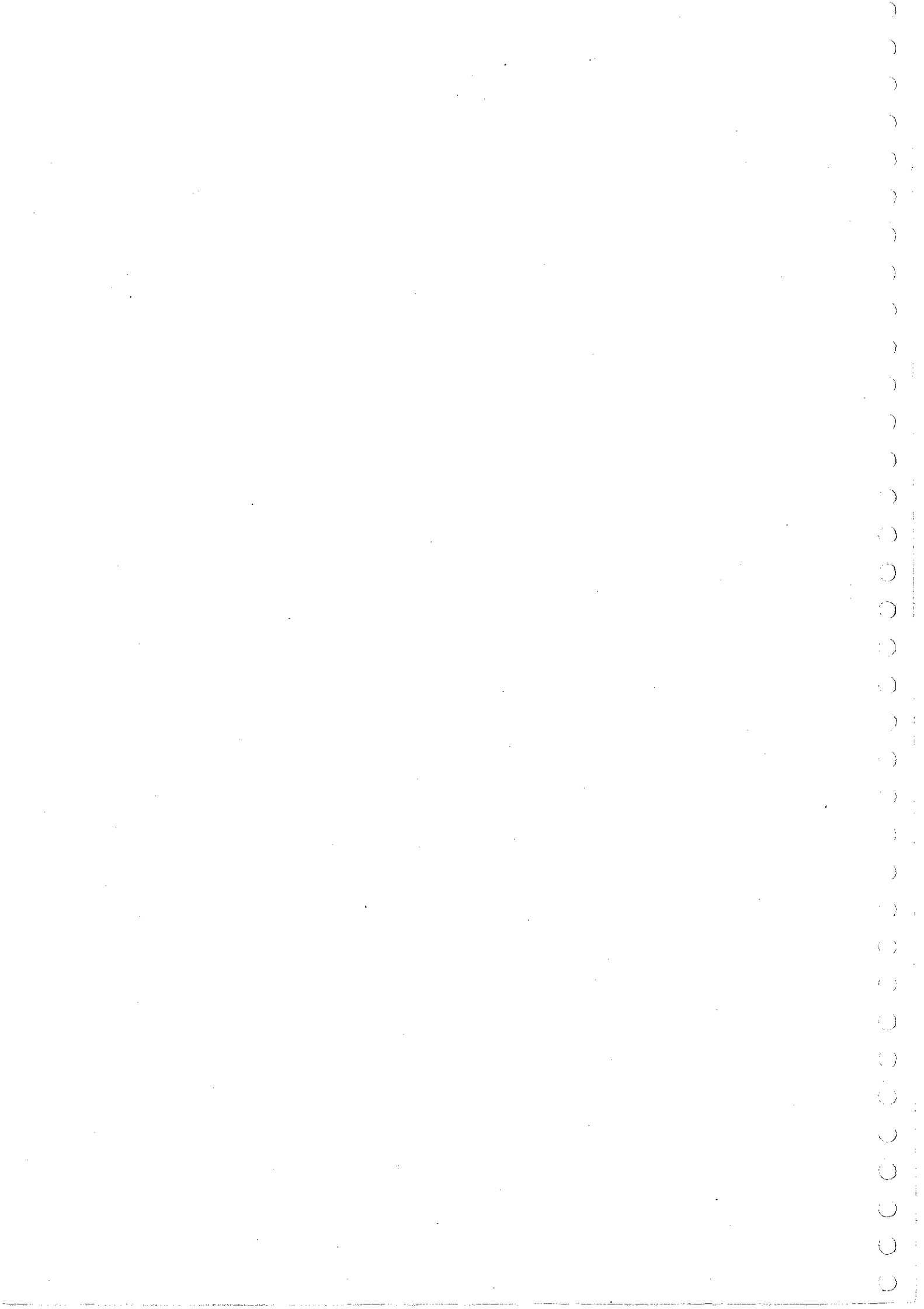
**29.12.2016**





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**VOLUME-I**

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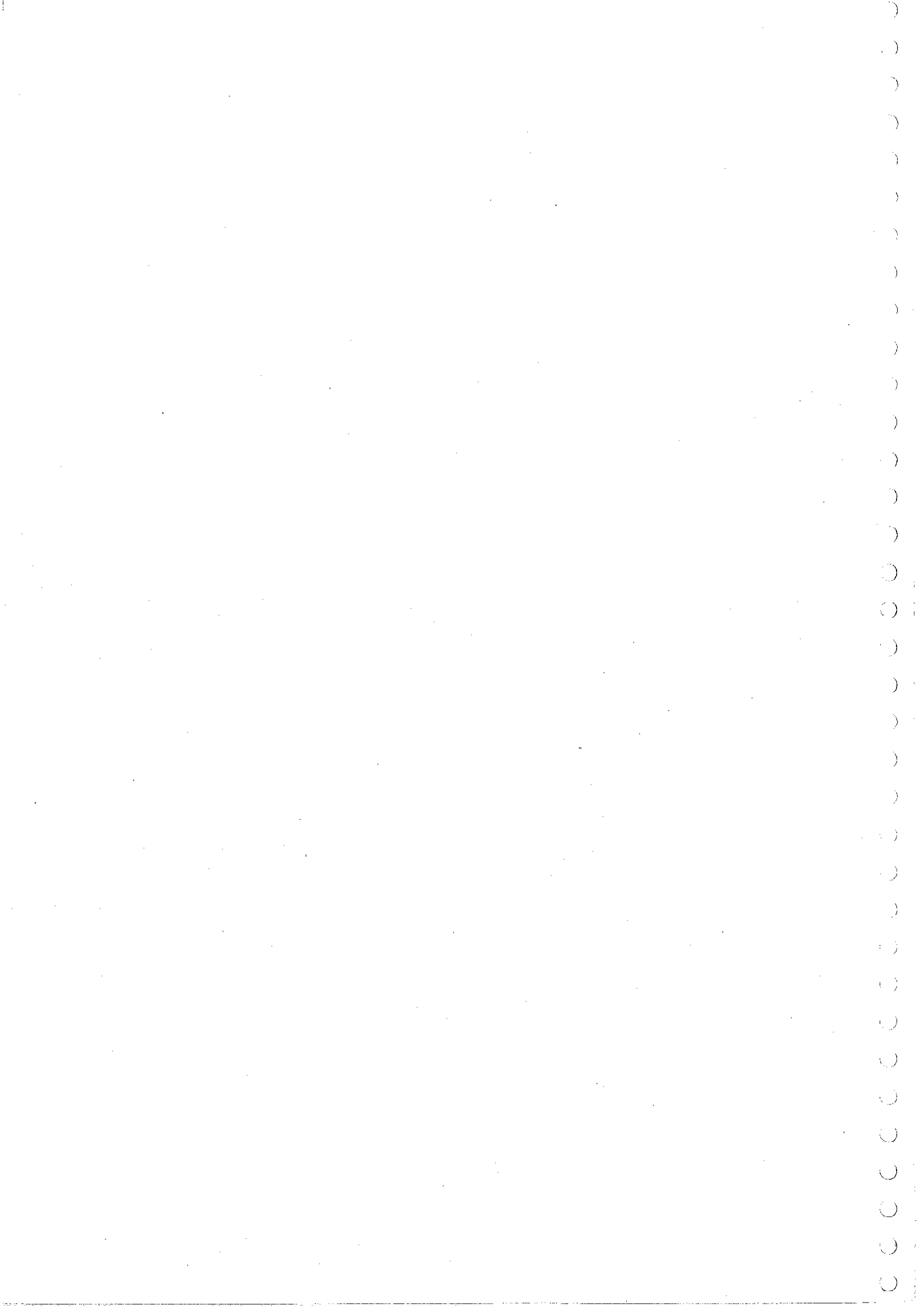
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## CHAPTER – I

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11. Name of the investigation officer : Shri Utpal Saha, DDG (Eastern Zone), Sitarampur  
(Date & time of such inspection) : Shri Niranjana Sharma, DMS (Region No.3)  
Shri Md. Niyazi, DDMS (Region No.3)  
30.12.2016
12. Precautionary measures, if any, adopted :  
To prevent further danger : The affected area has been cordoned off  
to prevent thoroughfare except those  
required for rescue
13. Total number of persons employed in :  
The mine and the number unemployed : Employed - 2100 (approx)  
as a result of the accident : Unemployed - Nil
14. Total output and the output affected : Output Overburden -20000m<sup>3</sup> approx.  
by the accident
15. Any other remarks : Officers from DGMS have rushed to the site of accident to  
monitor the rescue operation which is under progress.

  
(Utpal Saha) 30/12/2016  
Dy. Director-General of Mines Safety,  
Eastern Zone, Sitarampur

PRELIMINARY REPORT ON MAJOR ACCIDENT

1. Name of the Mine : Rajmahal Open cast Project
2. Situation
  - (a) District : Godda
  - (b) State : Jharkhand
  - (c) Distance from the headquarters of the Officer who first reached the spot after the accident : 220 km
3. Ownership : M/s Eastern Coalfields Ltd.
4. Management (Name and qualification of the Manager and other important Supervisory staff) : Shri B.N.Shukla (DT, Operation), FCC  
Shri S.K.Singh, General Manager, FCC  
Shri D.K.Nayak, Agent , FCC  
Shri Promod Kumar , Manager, FCC
5. Date and time of the accident : 29.12.2016 at around 08:00 pm
6. When information of the accident Was received by the Directorate : Around 09:40 pm on 29.12.2016
7. Number of persons
  - (a) Killed : Exact figure is not known but expected death toll -10
  - (b) Injured : Not known
8. Cause of the accident : Sliding of overburden dump over an area measuring around 300m X 110m X 35m
9. Responsibility so far as can readily be Fixed : Being enquired
10. Rescue measures adopted immediately after the accident : (i) Rescue team from MRS, Sitarampur, M/s ECL have rushed to the site of the accident  
(ii) SP & SDPO from Godda have also reached to the site of the accident to maintain law and order situation,  
(iii) Mine management at the site formed teams for rescue operation.

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Eastern Coalfields Limited  
Office of the General Manager(OP)/Agent,  
Rajmahal OCP

Ref: ECL/RJML/MGR/OCP/07

Dated 30:12:16

From: Manager,  
Rajmahal OCP,  
M/s ECL, PO. - Lalmatia,  
Dist.- Godda (Jharkhand)- 814165

To  
The Director General of Mines Safety,  
Dhanbad - 826001

The Dy. Director General of Mines Safety,  
Eastern Zone, Sitarampur, Dist. Burdwan(WB)

The Director of Mines Safety,  
Region-III, Sitarampur, Dist. Burdwan(WB)

Sub: Fatal accident in Rajmahal OCP on 29:12:2016 at about 7.00 PM at Dhaharnangi patch/20 million Cu.mtr.  
patch

Dear Sir(s),

This is for your kind information that an accident occurred at Rajmahal OCP on 29:12:2016 at about 7.00 PM. The work of overburden removal by benching of internal OB dump was being carried out. Suddenly, land mass measuring about 300 Mtr x 110 mtr slide down by about 30 mtr due to which the excavator and tippers standing on the bench slide down. 23 Nos. of persons are suspected to be buried in the debris. So far till 30:12:2016, 7 tippers, 3 excavator and 1 Dozer have been traced. 11 nos. of dead bodies have been recovered. Rescue & recovery is going on in full swing. List of persons suspected to be involved is enclosed. The form IVA shall be submitted as soon as the rescue and recovery work is completed.

Thanking you,

Yours faithfully,

(P. Kumar) 116

Manager,  
Rajmahal OCP

Encl: As stated above/

c.c.to:


The DDMS, Region-III, Sitarampur, PO- Sitarampur, Dist. Burdwan(WB)  
The GM(I/c), Rajmahal Group of Mines  
The GM(Safety), ECL, Sanctoria  
The GM(OP), Rajmahal OCP  
The Area Safety Officer, Rajmahal Area  
The Safety Officer, Rajmahal OCP





List of persons suspected to be involved

1. Rajendra Yadav, Excavator Optr : Body recovered
2. Hari Kishor Yadav, Excavator Optr : Body recovered
3. Brajesh Yadav, Excavator Optr : Body recovered
4. Javed Akhtar, Excavator Optr : Body recovered
5. Ajit Patel, Excavator Optr : Body recovered
6. Nageshwar Paswsan, Tipper Driver : Body recovered
7. Jai Prakash Roy, Tipper Driver : Body recovered
8. Sanjay Kumar Sahi, Tipper Driver : Body recovered
9. Sakil Khan, Tipper Driver : Body recovered
10. Vikash Patel, Tipper Driver : Body recovered
11. Md. Nurul, Tipper Driver : Body recovered
12. Sunil Bhengra, Tipper Driver
13. Ajay Kumar Kuswaha, Dozer Optr
14. Md. Julfikar, Tipper Driver
15. Md. Jamir, Tipper Driver
16. Raj Kumar Goswami, Tipper Driver
17. Sanjit Biswakarma, Tipper Driver
18. Lallu Khan, Supvr.
19. Gagan Singh, Supvr
20. Madhur Shyam Patel, Supvr.
21. Laddu Prasad, Excavator Optr
22. Bhimram, Tipper Driver
23. Parwej Alam, Tipper Driver

  
39/4/16  
Manager  
Rajmahal OCP



Eastern Coalfields Limited  
Office of the General Manager(I/c)  
Rajmahal Group of Mines

Ref.No. ECL/RJML/MGR/OCP/31

Date. 04.01.2017

From:  
The Manager,  
Rajmahal OCP  
M/s ECL, PO- Lalmatia  
Dist: Godda (Jharkhand)-814165

To,  
The Director General of Mines Safety  
Dhanbad-826001

The Dy. Director General of Mines Safety  
Eastern Zone, Sitarampur, Dist.- Burdwan (WB)

The Director of Mines Safety,  
Region-III, Sitarampur, Dist.- Burdwan (WB)

Sub: Form IV-A & Form IV-B in respect of fatal accident in Rajmahal OCP on 29:12:2016 at  
about 7:30 PM at Daharnangi patch/20 million Cu.mtr patch

Dear Sir(s),

Further to our letter no. ECL/RJML/MGR/OCP/07 dated 30:12:2016 enclosed please find herewith Form IV-A & Form IV-B in respect of the above mentioned accident 23 persons are suspected to be involved in the accident. Forms IV-A & Form IV-B in respect of 18 persons are being submitted herewith as their bodies have been recovered. The name of the rest 5 persons shall be submitted as soon as their bodies are recovered.

The details of 05(five) persons are given below:

|                       |               |      |                   |
|-----------------------|---------------|------|-------------------|
| 1. Lallu Khan         | Supervisor    | Male | Contractor Worker |
| 2. Madhur Shyam Patel | Supervisor    | Male | Contractor Worker |
| 3. Gagan Singh        | Supervisor    | Male | Contractor Worker |
| 4. Parweej Alam       | Tipper Driver | Male | Contractor Worker |
| 5. Bheem Ram          | Tipper Driver | Male | Contractor Worker |

Thanking you

Encl.: As stated above

Yours faithfully

(P Kumar)

Manager  
Rajmahal OCP

c.c to:

The DDMS, Region-III, Sitarampur, PO- Sitarampur, Dist.- Burdwan (WB)

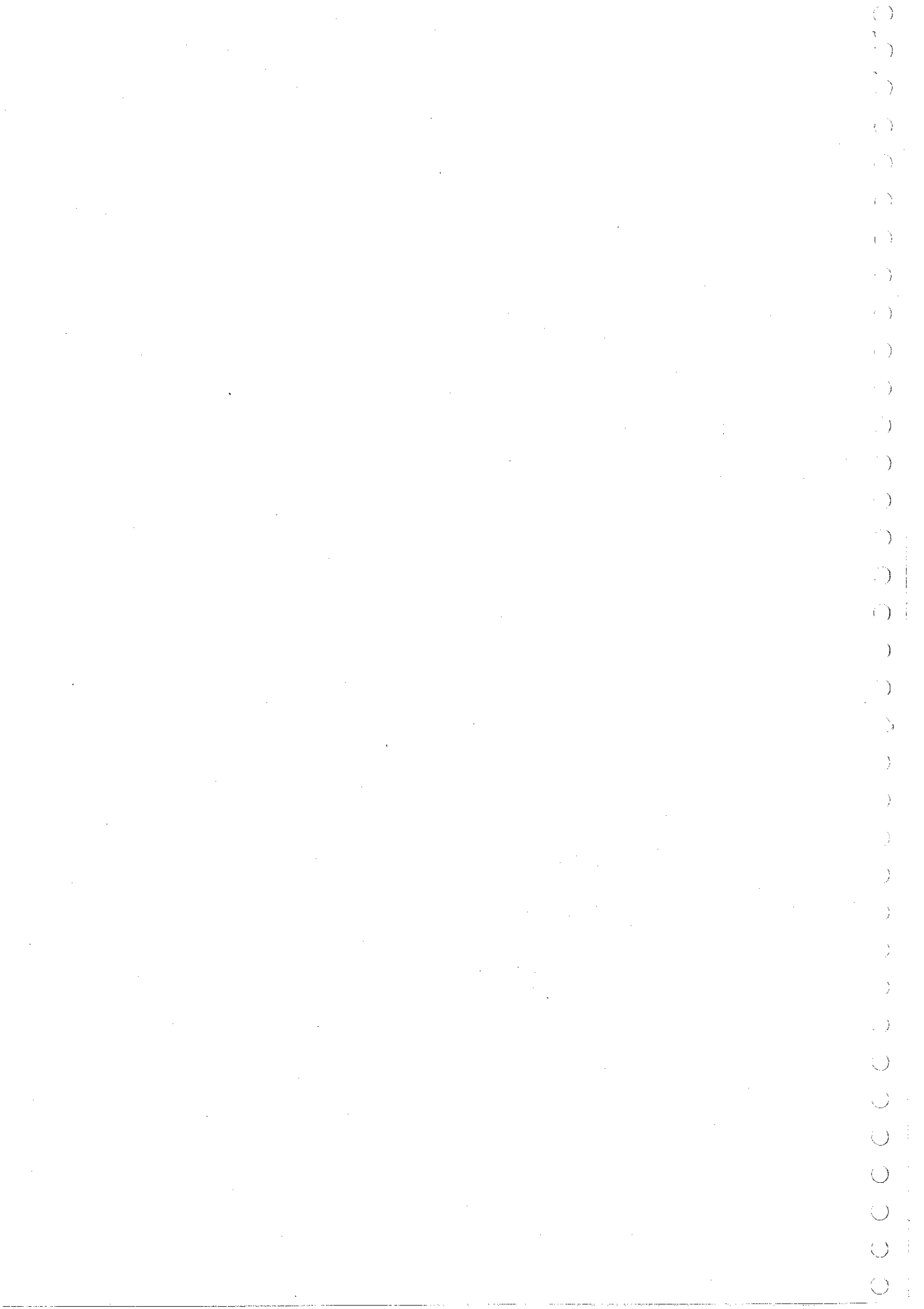
The GM (I/c), Rajmahal Group of Mines

The GM (Safety), ECL, Sanctoria

The GM (OP), Rajmahal OCP

The Area Safety Officer, Rajmahal Area

The Safety Officer, Rajmahal OCP



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FORM-IV-A  
(See Regulation 9)

## Notice of Accident/Occurrence

From : The Agent/Manager, Rajmahal OCP, ECL, Dist. Godda (Jharkhand).

- To : 1. The Chief Inspector of Mines/Director General of Mines Safety, Dhanbad-826001  
 2. The Regional Inspector of Mines/Director of Mines Safety region III/Dy. Director in charge of Sub-region, Sitarampur (W.B.)  
 3. The District Magistrate/District Collector, Godda.  
 4. The Electrical Inspector of Mines/Director/Dy. Director of Mines Safety (Electrical) electrical accidents only)

Sir,

I have to furnish the following particulars of a fatal accident/a dangerous occurrence ( ) which occurred at the Rajmahal OCP { " } mine. of ECL owner )

- 1.0 Mine code {nnnnn} 11047  
 2.1 Date of accident {dd/mm/yy} 29.12.2016  
 3.0 Particulars of the mine (if mine code is not known) 2.2 Time of Accident (hhmm) : 07:00 pm  
 3.1 Mineral : Coal 3.2 Village : Lalmatia  
 3.3 Post Office : Lalmatia 3.4 Pin code : 814165  
 3.5 Police Station : Lalmatia 3.6 Sub Division/Taluq : Mahagama  
 3.7 District : Godda 3.8 State : Jharkhand  
 3.9 Owner's address : DT(OP), ECL, HQ, Sanctoria  
 4.0 Particulars of the Accident :  
 4.1 No/Name of shift : 2nd Shift  
 4.2 Cause code : (nnnn)  
 4.3 Place Code (n) : 2 4.3.1 Workings code (n): 5 4.3.2 Site code (n) : 4  
 4.4 No. of persons killed 18 4.5 no. of persone serious 10  
 4.6 Location of accident OB Bench  
 4.61 Pit/Incline No.: Nil  
 4.63 Seam/vein : III, II bottom, II top  
 4.65 Distance from the face (in mtrs) { if within district }  
 4.62 District/Panel/outside working district :  
 4.64 Level, dip No.:  
 4.69 Details and covered above:

## 5.0 Particulars of person (s) involved :

| Sl.No. | Name of Victim                            | Designation      | Desig. Code (nn) | If Contractor Workers (Y/N) | Sex (M/F) | Age (Years) {nn} | Hours at work (hhmm) | Nature of injury and cause of death |
|--------|---|------------------|------------------|-----------------------------|-----------|------------------|----------------------|-------------------------------------|
| 1      | Hari Kishore Yadav                        | Excavator Oprtr. | 79               | Y                           | M         | 27               | 6                    | Fatal                               |
| 2      | Javed Akhtar                              | Excavator Oprtr. | 79               | Y                           | M         | 20               | 6                    | Fatal                               |
| 3      | Rajendra Yadav alias Bonal                | Excavator Oprtr. | 79               | Y                           | M         | 29               | 6                    | Fatal                               |
| 4      | Brijesh Yadav                             | Excavator Oprtr. | 79               | Y                           | M         | 23               | 6                    | Fatal                               |
| 5      | Sanjay Kr.Sahi                            | Tipper Driver    | 72               | Y                           | M         | 36               | 6                    | Fatal                               |
| 6      | Md. Nurul                                 | Tipper Driver    | 72               | Y                           | M         | 26               | 6                    | Fatal                               |
| 7      | Jai Prakash Rai                           | Tipper Driver    | 72               | Y                           | M         | 38               | 6                    | Fatal                               |
| 8      | Nageshwar Paswan                          | Tipper Driver    | 72               | Y                           | M         | 30               | 6                    | Fatal                               |
| 9      | Ajit Patel                                | Excavator Oprtr. | 79               | Y                           | M         | 27               | 6                    | Fatal                               |
| 10     | Sakil Khan                                | Tipper Driver    | 72               | Y                           | M         | 27               | 6                    | Fatal                               |
| 11     | Vikash Patel                              | Tipper Driver    | 72               | Y                           | M         | 30               | 6                    | Fatal                               |
| 12     | Sunil Bhengra                             | Tipper Driver    | 72               | Y                           | M         | 29               | 6                    | Fatal                               |
| 13     | Ajay Kumar Kushwaha alias Kuleshwar Kumar | Dozer Oprtr.     | 79               | Y                           | M         | 21               | 6                    | Fatal                               |
| 14     | Md.Juifkar                                | Tipper Driver    | 72               | Y                           | M         | 25               | 6                    | Fatal                               |
| 15     | Md.Jamir                                  | Tipper Driver    | 72               | Y                           | M         | 28               | 6                    | Fatal                               |
| 16     | Raj Kamal Goswami                         | Tipper Driver    | 72               | Y                           | M         | 24               | 6                    | Fatal                               |
| 17     | Sanjit Viswakarma                         | Tipper Driver    | 72               | Y                           | M         | 25               | 6                    | Fatal                               |
| 18     | Laddu Yadav alias Laddu Prasad            | Excavator Oprtr  | 79               | Y                           | M         | 30               | 6                    | Fatal                               |

## 6 Brief description of the cause of accident:-

An accident occurred at Rajmahal OCP on 29.12.2016 at about 7:00 PM. The work of over burden removal by benching of internal dump was being carried out. Suddenly a land mass measuring about 300 m x 110 m slid down by about 30 m due to which excavator and tippers working on the bench buried in the over burden. 23 number of persons involved were reportedly buried in slid over burden. Rescue and recovery work is going on. So far, 18 bodies have been recovered. Form-IV-A for rest of the persons involved shall be submitted on recovery of their bodies.

## 7.0 Immediate last accident :

## 7.1 Type of accident :

Particulars in respect of every person killed or injured in form IV-B are enclosed/shall be forwarded within a week { ' }

F

## 7.2 Date of immediate last accident

dd mm yy  
12 05 16

Date 04-01-17  
 Place Rajmahal OCP

Yours faithfully,

Designation: (Owner/Agent/Manager)  
 Rajmahal OCP



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FORM IV-B  
(See Regulation 9)

Particulars of deceased/injured person(s) (to be submitted within 7 days of occurrence)

- 1.0 General  
 1.1 Name of the Mine: Rajmahal OCP 1.2 Mine Code 11047  
 1.3 Name of Owner: DT(OP) ECL 1.4 Date of accident : 29-12-2016  
 1.5 Time of accident: 07:30 PM (Approx)  
 2.0 Details of the injured/Deceased workers

| S.N | Name of Victim             | Injury Code | Body part Code | Exgratia payment made | Compensation paid(Rs.) | Other benefits if any | Total Experience(months) | What was the Job being done at the time of accident | Experience of victim (month) | if vocation ally trained | Initial vocational training | Date of refresher training | Nature of job | Cause of death             |
|-----|----------------------------|-------------|----------------|-----------------------|------------------------|-----------------------|--------------------------|---|------------------------------|--------------------------|-----------------------------|----------------------------|---------------|----------------------------|
| 1   | Hari Kishore Yadav         | 4           | 99             | Nil                   | Under Process          | Nil                   | 16                       | Excavator Opt.                                      | 16                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 2   | Javed Akhtar               | 4           | 99             | Nil                   | Under Process          | Nil                   | 5                        | Excavator Opt.                                      | 5                            | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 3   | Rajendra Yadav alias Bonal | 4           | 99             | Nil                   | Under Process          | Nil                   | 32                       | Excavator Opt.                                      | 32                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 4   | Brijesh Yadav              | 4           | 99             | Nil                   | Under Process          | Nil                   | 2                        | Excavator Opt.                                      | 2                            | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 5   | Sanjay K. Sahi             | 4           | 99             | Nil                   | Under Process          | Nil                   | 22                       | Tipper Driver                                       | 22                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 6   | M.D. Nurul                 | 4           | 99             | Nil                   | Under Process          | Nil                   | 5                        | Tipper Driver                                       | 5                            | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 7   | Jai Prakash Rai            | 4           | 99             | Nil                   | Under Process          | Nil                   | 54                       | Tipper Driver                                       | 54                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 8   | Nageshwar Paswan           | 4           | 99             | Nil                   | Under Process          | Nil                   | 2                        | Tipper Driver                                       | 2                            | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 9   | Ajit Patel                 | 4           | 99             | Nil                   | Under Process          | Nil                   | 16                       | Excavator Opt.                                      | 16                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 10  | Sakil Khan                 | 4           | 99             | Nil                   | Under Process          | Nil                   | 15                       | Tipper Driver                                       | 15                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 11  | Vikash Patel               | 4           | 99             | Nil                   | Under Process          | Nil                   | 19                       | Tipper Driver                                       | 19                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |
| 12  | Sunil Bhengra              | 4           | 99             | Nil                   | Under Process          | Nil                   | 19                       | Tipper Driver                                       | 19                           | Yes                      | Yes                         | -                          | Temporary     | Post-Mortem Report awaited |





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|    |  |   |    |     |               |     |    |               |    |     |     |   |           |                               |
|----|--|---|----|-----|---------------|-----|----|---------------|----|-----|-----|---|-----------|-------------------------------|
| 13 | Ajay Kumar<br>Kushwaha alias<br>Kuleshwar<br>Kumar | 4 | 99 | Nil | Under Process | Nil | 38 | Dozer Opt.    | 38 | Yes | Yes | - | Temporary | Post Mortem<br>Report awaited |
| 14 | Mr. Jitkar   | 4 | 99 | Nil | Under Process | Nil | 23 | Tipper Driver | 23 | Yes | Yes | - | Temporary | Post-Mortem<br>Report awaited |
| 15 | Mr. Jannir   | 4 | 99 | Nil | Under Process | Nil | 7  | Tipper Driver | 7  | Yes | Yes | - | Temporary | Post-Mortem<br>Report awaited |
| 16 | Raj Kamal<br>Goswami                               | 4 | 99 | Nil | Under Process | Nil | 21 | Tipper Driver | 21 | Yes | Yes | - | Temporary | Post-Mortem<br>Report awaited |
| 17 | Sanjit<br>Viswakarna                               | 4 | 99 | Nil | Under Process | Nil | 22 | Tipper Driver | 22 | Yes | Yes | - | Temporary | Post-Mortem<br>Report awaited |
| 18 | Laddu Yadav<br>alias Laddu<br>Prasad               | 4 | 99 | Nil | Under Process | Nil | 21 | Excavator Opt | 21 | Yes | Yes | - | Temporary | Post-Mortem<br>Report awaited |

## 3.0 Responsibilities for the accident

| Sl. No | Name(s) of Person(s) held Responsible | Desig. Code (nn) | Designation | Rules/Reg.<br>contravention | Nature of Contravention | Action Taken |
|--------|---------------------------------------|------------------|-------------|-----------------------------|-------------------------|--------------|
|        | Enquiry under progress                | -                | -           | -                           | -                       | -            |

## 4.0 As a sequel to this accident

4.1 Loss of production (in tonnes)

3.5 lakh tonnes


4.2 Loss of manshifts (indirect loss)

1.1200 approx.

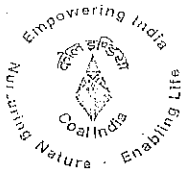
5.0 Could the accident have been averted, if  
as, how? Enquiry under  
progress

Date: 04.01.2017

Place: Rajmahal OCP

  
 P. Kumar  
 Manager  
 Rajmahal OCP





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**Eastern Coalfields Limited**  
(A Subsidiary of Coal India Limited)  
Office of the General Manager Operation)  
Rajmahal OCP

PO: Lalmatia Colliery, Dist-Godda-814165 (Jharkhand)

So  
18/1/17

Ref.No.ECL/ROCP/GM(OP)/Manager/ 340

Date:12.01.2017

From:  
The Manager  
Rajmahal OCP  
M/s. Eastern Coalfields Limited  
PO: Lalmatia  
Dist: Godda(Jharkhand)

To:  
The Director of Mines Safety  
Region No:3, Sitarampur  
Eastern Zone  
PO: Sitarampur  
Dist: Burdwan(WB)

R. Prasad (B) P. Singh  
J. C. S. P. S. 18/1/17  
de/05/01/17

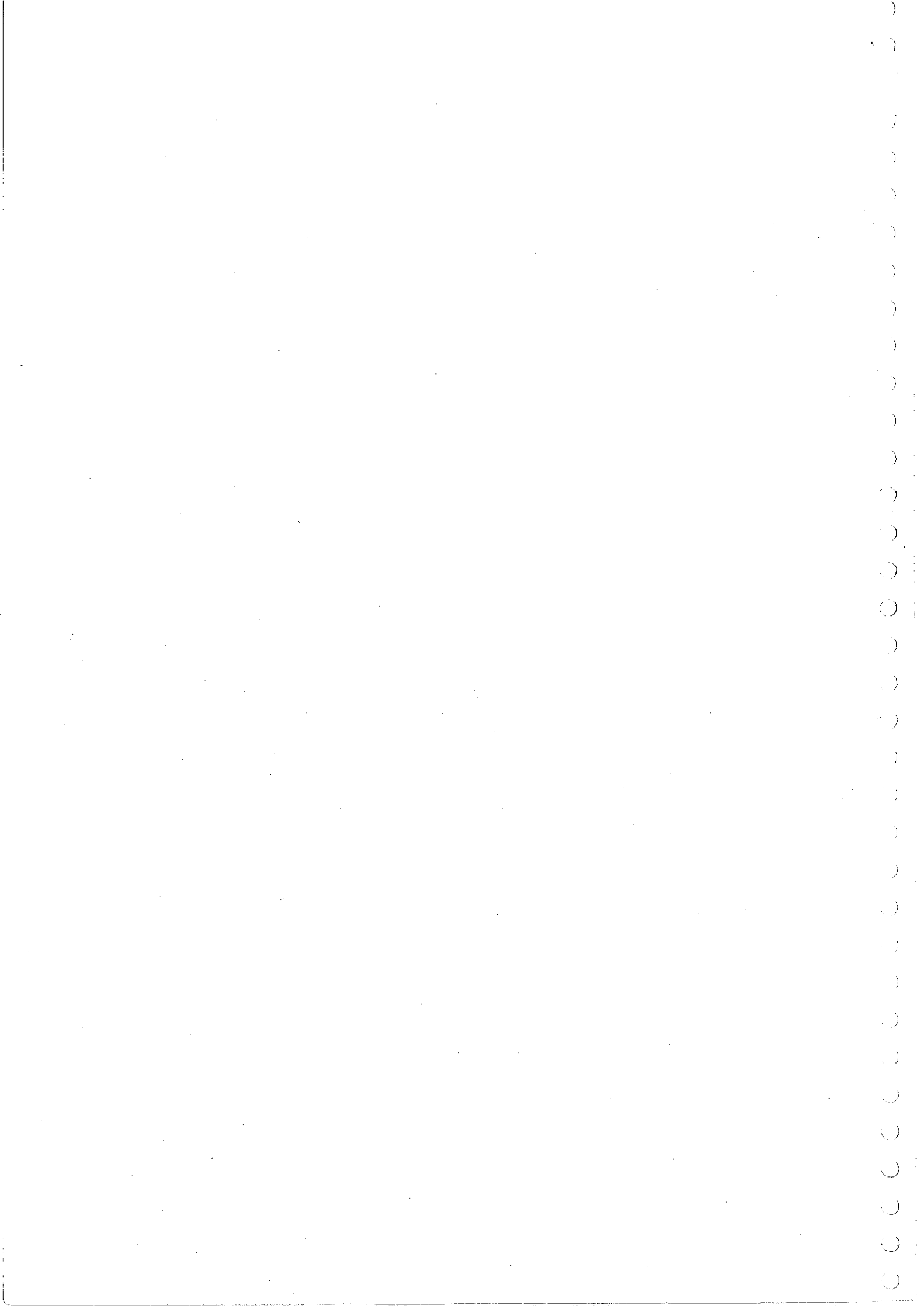
Sub: Information regarding the accident on 29.12.2016.

Dear Sir,

As per the information received from M/s. MIPL-NKAS(JV) vide letter No: Nil dated 01.01.2017, this is for your kind information that on 29.12.2016 in second shift an accident has occurred in their working patch in which 12 nos. of tippers namely 171, 172, 173, 193, 362, 364, 365, 367, 368, 386, 387, 391 and five nos. of Volvo machines bearing no.70, 33, 39, 48, 84 and one no. Dozer (catter pillar make) are missing. Rest of the tippers and machines are available in camp and are in their custody. In the second shift following 23 out of total deployed persons are missing. Rest of the persons deployed in the mine have been accounted for.

Details of deceased employees of M/s. MIPL-NKAS(JV)

| SN | Name of deceased           | Designation     | Fathers Name     | Date of Body recovered | Address:-  |
|----|----------------------------|-----------------|------------------|------------------------|--|
| 1  | Hari Kishore Yadav         | Excavator Opnr. | Dadan Yadav      | 30.12.2016             | Vill+PO- Jalalpur, Thana-Daranda, Dist-Siwan(Bihar)              |
| 2  | Javed Kumar                | Excavator Opnr. | Jasmuddin Ansari | 30.12.2016             | Vill-Parihara, Post-Nildam/Tildam, Thana+Dist-Garwa(Jharkhand)   |
| 3  | Rajendra Yadav alias Bonal | Excavator Opnr. | Ram Naresh Yadav | 30.12.2016             | Vill-Patdi, Post-Maharajganj, Dist-Siwan(Bihar)                  |
| 4  | Brijesh Yadav              | Excavator Opnr. | Kamaldeo Yadav   | 30.12.2016             | Vill- Chitoura, Post+Thana-Sahanwar, Dist-Balia(UP)              |
| 5  | Sanjay Kr. Sahi            | Tipper Driver   | Sujit Sahni      | 30.12.2016             | Vill- Deoria, Dist-Lohardagga, Jharkhand                         |
| 6  | Md. Nurul                  | Tipper Driver   | Md. Raffique     | 30.12.2016             | Vill & PO-Pahari, Thana-Sahapur, Tahsil-Bhoulganj, Dist-Riwa(MP) |

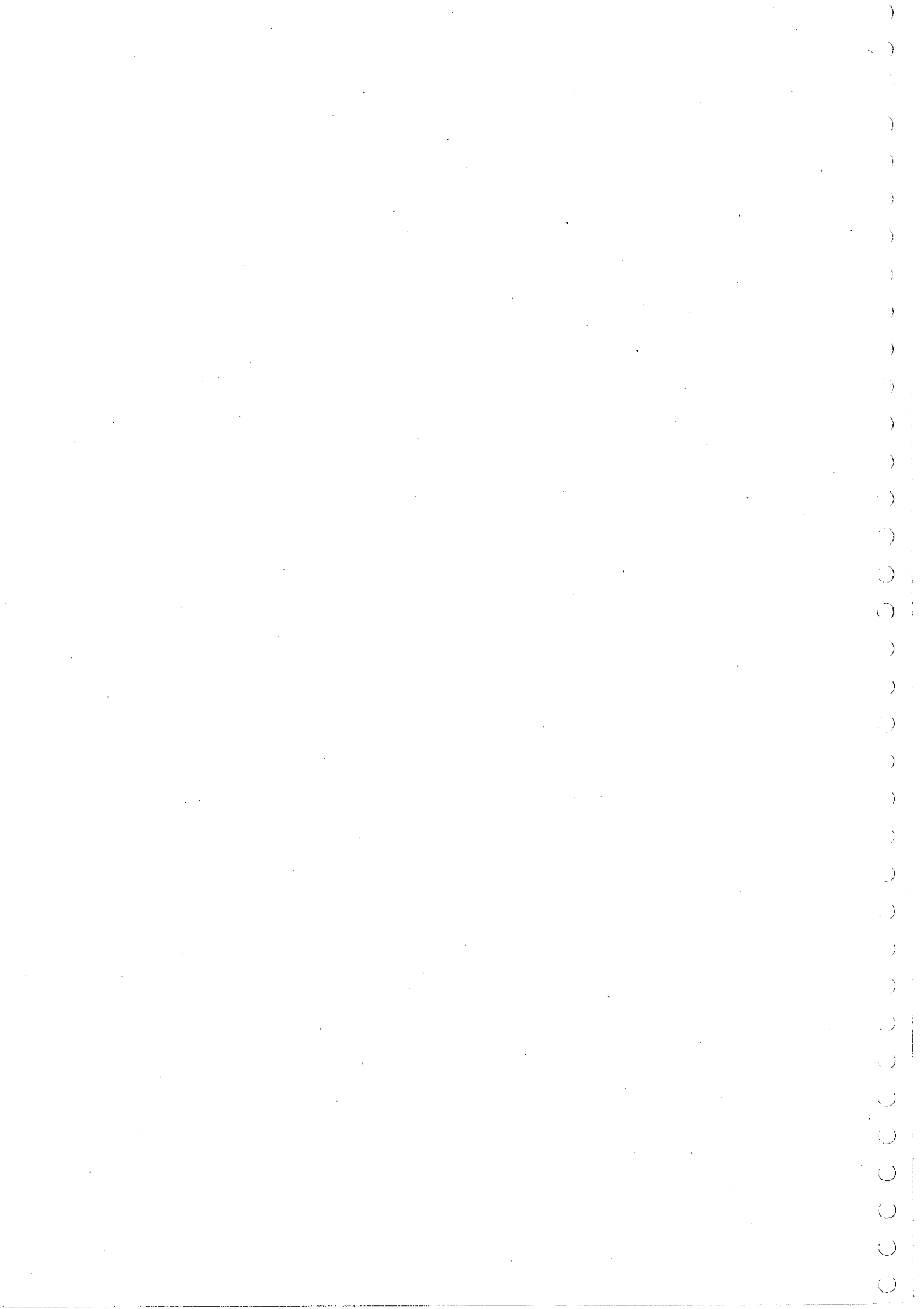


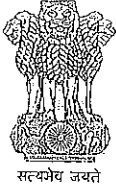
|    |                    |                 |                      |            |  |
|----|--------------------|-----------------|----------------------|------------|--|
| 7  | Jai Prakash Rai    | Tipper Driver   | Tola Rai             | 30.12.2016 | Vill- Lal Jhapra, Dist- Muzzaffarpur (Bihar)                       |
| 8  | Nageshwar Paswan   | Tipper Driver   | Sakhichand Paswan    | 30.12.2016 | Vill- Barun, Thana-Paru, Dist-Mazzaffarpur(Bihar)                  |
| 9  | Ajit Patel         | Excavator Opnr. | Dinesh Prasad Patel  | 30.12.2016 | Vill- Lilna, PO-Bamuji, Thana-Amliya, Dist-Siddhi (MP)             |
| 10 | Sakil Khan         | Tipper Driver   | Yunush Khan          | 30.12.2016 | Vill- Mandar, Dist-Ranchi, Jharkhand                               |
| 11 | Vivek Patel        | Tipper Driver   | K. P. Patel          | 30.12.2016 | Vill- Dadjir, Post-Sonbarsha, Siddhi (MP)                          |
| 12 | Sunil Bhengra      | Tipper Driver   | Laxman Bhengra       | 30.12.2016 | Vill- Post- Koira, Dist- Odisha                                    |
| 13 | Ajay / Kuleswar    | Dozer Opnr.     | Baleswar Mahto       | 30.12.2016 | Vill- Goriyakarma, Post-Barhi, Dist-Hazari bag, Jharkhand          |
| 14 | Md. Julfkar        | Tipper Driver   | Saffi Mohammad       | 30.12.2016 | Vill- Baldhi, PS-Chitaranjan, Dist-Singrauli (MP)                  |
| 15 | Md. Jamir          | Tipper Driver   | Lal Mohammad         | 30.12.2016 | Vill-Kunjhun, Post- Nagjhar, Dist-Siddhi (MP)                      |
| 16 | Raj Kamal Goswami  | Tipper Driver   | Sudama Goswami       | 30.12.2016 | Vill-Bathaya, Post-Chitoria, PS-Amelia, Dist-Siddhi(MP)            |
| 17 | Sanjit Viswakarma  | Tipper Driver   | Ram Patik Viswakarma | 01.01.2017 | Vill-Kodi har, Post-Sonbarsha, Dist-Siddhi(MP)                     |
| 18 | Laddu Yadav        | Excavator Opnr. | Yogeshwar Yadav      | 01.01.2017 | Vill-Bsanda, Thana-Channi, Dist-Nalanda (Bihar)                    |
| 19 | Lalu Khan          | Incharge        | Sattar Khan          |            | Vill- Lilkar, Post-Basuri, Thana-Avilia, Dist-Siddhi (MP)          |
| 20 | Madhur Shyam Patel | Supervisor      | Karamshi Patel       |            | Vill-Mayapur, Thana-Nakhatrana, Dist-Bhuj, Gujrat                  |
| 21 | Gagan Singh        | Supervisor      | Ashish Singh         |            | Vill-Dungachi, Post-Tadrash, Thana-Sanhaura, Dist-Bhagalpur(Bihar) |
| 22 | Parwez Alam        | Driver          | Samsuddin            |            | Vill- Hehal, Post-Chasigada, PS-Patratu, Dist- Ramgarh (Jharkhand) |
| 23 | Bheem Ram          | Driver          | Antu Ram             |            | Vill+Post-Bhitashibag, Thana-Karamchak, Dist-Koinur(Bihar)         |

This is for your kind information.

Yours fatefully

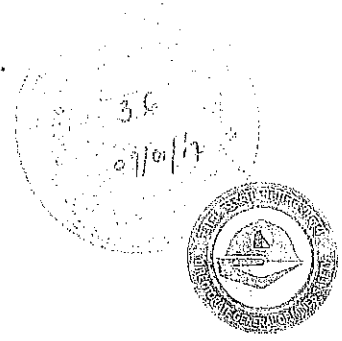
Manager  
Rajmahal OCP



R  
02/01/17

सत्यमेव जयते

भारत सरकार  
Government of India  
श्रम एवं रोजगार मंत्रालय  
Ministry of Labour & Employment  
खान सुरक्षा महानिदेशालय  
Directorate General of Mines Safety



No. Z-20025/4/2016/MAMID/

Dhanbad, dated : / /2016

**OFFICE ORDER**

An Inquiry Committee consisting of the following officers of the Directorate is hereby formed to enquire into the causes and circumstances leading to the accident occurred at Rajmahal Opencast Project of M/s Eastern Coalfields Ltd. on 29.12.2016,

1. Shri Utpal Saha, Dy. Director General, Eastern Zone, Sitarampur - Chairman
2. Shri Niranjan Sharma, Director, Region No. 3, Eastern Zone, Sitarampur - Member
3. Md. Niyazi, Dy. Director, Region No. 3, Eastern Zone, Sitarampur - Member
4. Shri Sudhir Bhaisare, Dy. Director (Mech), Eastern Zone, Sitarampur - Member
5. Shri Inumula Satyanarayana, Dy. Director (SOMA), HQ, Dhanbad - Member

In addition to above, another Sub-committee consisting of the following officials shall conduct survey works related to the accident, mentioned above, and shall assist the Inquiry Committee, constituted above,

1. Shri Kondabattini Gyaneswar, Dy. Director (HQ), Dhanbad - Leader
2. Shri Rajib Mandal, Head Surveyor (HQ), Dhanbad - Member
3. Shri Gorakh Singh, Surveyor (CZ), Dhanbad - Member
4. Shri Tapas Rajwar, Surveyor (HQ), Dhanbad - Member
5. Shri Rajib Ranjan Sinha, Surveyor (HQ), Dhanbad - Member

Sd/-

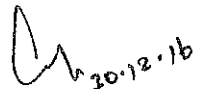
(Rahul Guha)  
Director General of Mines Safety

12/12/16

Memo No. Z-20025/4/2016/MAMID/ 71 87 - 97 Dhanbad, dated : 30 / 12 / 2016

Copy forwarded for information and necessary action to

- ✓
- 6/11/2017
1. Shri Utpal Saha, Dy. Director General, Eastern Zone, Sitarampur
  2. Shri Niranjana Sharma, Director, Region No. 3, Eastern Zone, Sitarampur
  3. Md. Niyazi, Dy. Director, Region No. 3, Eastern Zone, Sitarampur
  4. Shri Sudhir Bhaisare, Dy. Director (Mech), Eastern Zone, Sitarampur
  5. Shri Inumula Satyanarayana, Dy. Director (SOMA), HQ, Dhanbad
  6. Shri Kondabattini Gyaneswar, Dy. Director (HQ), Dhanbad
  7. Shri Rajib Mandal, Head Surveyor (HQ), Dhanbad
  8. Shri Gorakh Singh, Surveyor (CZ), Dhanbad
  9. Shri Tapas Rajwar, Surveyor (HQ), Dhanbad
  10. Shri Rajib Ranjan Sinha, Surveyor (HQ), Dhanbad
  11. Concern File in SOMA Section

  
30.12.16  
Director General of Mines Safety



13/12/16



भारत सरकार  
Government of India  
श्रम एवं रोजगार मंत्रालय  
Ministry of Labour & Employment  
खान सुरक्षा महानिदेशालय  
Directorate General of Mines Safety



सं० जेड.-20025/4/2016/मामिड/

धनबाद, दिनांक

2016

### कार्यालय आदेश

मेसर्स इस्टर्न कोलफिल्ड्स लिमिटेड के राजमहल ओपनकास्ट प्रोजेक्ट में दिनांक 29.12.2016 को हुई दुर्घटना के कारणों एवं परिस्थितियों की जाँच के लिए इस निदेशालय के निम्नलिखित अधिकारियों की एक जाँच समिति का गठन किया गया है:-

- |  |   |         |
|--|---|---------|
| 1. श्री उत्पल साहा, खान सुरक्षा उपमहानिदेशक, पू. अंचल, सीतारामपुर, | - | अध्यक्ष |
| 2. श्री निरंजन शर्मा, खान सुरक्षा निदेशक, सीतारामपुर क्षेत्र-3,    | - | सदस्य   |
| 3. मो० नियाजी, खान सुरक्षा उपनिदेशक, सीतारामपुर क्षेत्र-3,         | - | सदस्य   |
| 4. श्री सुधीर भैंसारे, उपनिदेशक (यांत्रिक), पू. अंचल, सीतारामपुर,  | - | सदस्य   |
| 5. श्री इनमूला सत्यनारायणा, उपनिदेशक (सोमा), मुख्यालय धनबाद        | - | सदस्य   |

इसके अतिरिक्त इस दुर्घटना से संबंधित सर्वे कार्य के लिए दूसरी उप-समिति का गठन किया गया है जिसमें निम्नलिखित अधिकारियों का चयन किया गया है। ये उप-समिति उपरोक्त जाँच समिति को सहयोग करेगी:-

- |   |   |       |
|---|---|-------|
| 1. श्री कोण्डाबतिनी जानेश्वर, उपनिदेशक (मु०), धनबाद | - | लीडर  |
| 2. श्री राजीव मंडल, मु० सर्वेयर (मु०), धनबाद        | - | सदस्य |
| 3. श्री गोरख सिंह, सर्वेयर (मध्य अंचल), धनबाद       | - | सदस्य |
| 4. श्री तापस राजवार, सर्वेयर (मु०), धनबाद           | - | सदस्य |
| 5. श्री राजीव रंजन सिन्हा, सर्वेयर (मु०), धनबाद     | - | सदस्य |

ह/०

(राहुल गुहा)

खान सुरक्षा महानिदेशक

सं० जेड.-20025/4/2016/मामिड/ 1187-97

धनबाद, दिनांक 30/12/2016

प्रतिलिपि सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित:-

1. श्री उत्पल साहा, खान सुरक्षा उपमहानिदेशक, पू. अंचल, सीतारामपुर,
2. श्री निरंजन शर्मा, खान सुरक्षा निदेशक, सीतारामपुर क्षेत्र-3,
3. मो० नियाजी, खान सुरक्षा उपनिदेशक, सीतारामपुर क्षेत्र-3,
4. श्री सुधीर भैंसारे, उपनिदेशक (यांत्रिक), पू. अंचल, सीतारामपुर,
5. श्री इनुमूला सत्यनारायणा, उपनिदेशक, सोमा, मुख्यालय धनबाद
6. श्री कोण्डाबतिनी ज्ञानेश्वर, उपनिदेशक (मु०), धनबाद
7. श्री राजीव मंडल, मु० सर्वेयर (मु०), धनबाद
8. श्री गोरख सिंह, सर्वेयर (मध्य अंचल), धनबाद
9. श्री तापस राजवार, सर्वेयर (मु०), धनबाद
10. श्री राजीव रंजन सिन्हा, सर्वेयर (मु०), धनबाद
11. संबंधित संचिका, खा० सु० म० नि०, सोमा अनुभाग, धनबाद

5.35  
30/12  
(राहुल गुहा)

खान सुरक्षा महानिदेशक

15/12/16

**Government of India  
Ministry of Labour & Employment  
Directorate General of Mines safety  
Eastern Zone, Sitarampur**

**Camp: Rajmahal OCP/01**


**dated 01-01-17**

**NOTICE OF ENQUIRY**


Enquiry under Section 23 of the Mines Act, 1952 into fatal accident involving 23 persons (bodies recovered - 18 nos. till 01.01.17) which occurred on 29.12.2016 at about 07.30 PM during 2<sup>nd</sup> shift due to collapse of benches (in overburden & coal) at M/s Mahalaxmi (Daharnangi) patch in Rajmahal OCP of M/s Eastern Coalfields Limited.

Notice is hereby given to Owner, Agent & Manager and all persons affected and concerned of Rajmahal OCP Colliery of M/s ECL that the undersigned will record evidences and take statements under Section 23 of the Mines Act, 1952 at 10.30 AM onwards at the mine area office, Rajmahal OCP on 02.01.2017 that had occurred on 29.12.2016 at about 07.30 PM during 2<sup>nd</sup> shift due to collapse of benches (in overburden & coal) at M/s Mahalaxmi (Daharnangi) patch in Rajmahal OCP of M/s Eastern Coalfields Limited.


All eye-witness to the said accident concerned mine officials and any other worker or interested person who wish to adduce any evidence or wants his views to be heard may inform the undersigned immediately and present himself at the aforesaid places on the above mentioned dates.

  
01/01/17  
Name of the Enquiry Officer  
(Niranjan Sharma)  
Director of Mines Safety,  
Sitarampur Region No.3, EZ

Signature of Owner/Agent/Manager

  
01/01/17

It is directed that the above notice is displayed on all notice boards.

*Received one copy*  
  
24/1/17 for note  
S. Venkatesh  
24/1/17

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Government of India  
Ministry of Labour & Employment  
Directorate General of Mines Safety  
Eastern Zone, Sitarampur

Camp: Rajmahal OCP/01

dated 01-01-17...

**NOTICE OF ENQUIRY**

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All eye-witness to the said accident, concerned mine officials and any other worker or interested person who wish to adduce any evidence or wants his views to be heard may inform the undersigned immediately and present himself at the aforesaid place on the above mentioned date onward. Also thereafter at the office of undersigned.

*(Signature)*  
Name of the Enquiry Officer  
(Niranjan Sharma)  
Director of Mines Safety,  
Sitarampur Region No.3, E?

Signature of Owner/Agent/Manager  
*(Signature)*

It is directed that the above notice be put up on all notice boards.

Eastern Coalfields  
A Subsidiary of Coal  
RAJMAHA

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PTICE

म दिनांक 25

म कोषीय कार्यालय Office of  
कर्मचारी से अनुमत the tr  
नाम प्रदान करने विलय of:

कन दे।

Signature

Print

Under Signature

mentioned employees are hereby  
with their educational  
and 11.07.17 certificate

(P) ROCP  
Manager, ROCP  
Manager (M) ROCP  
(Manager) ROCP  
Officer (P) ROCP  
in Office, W&E ZHP

प्रत्यक्ष

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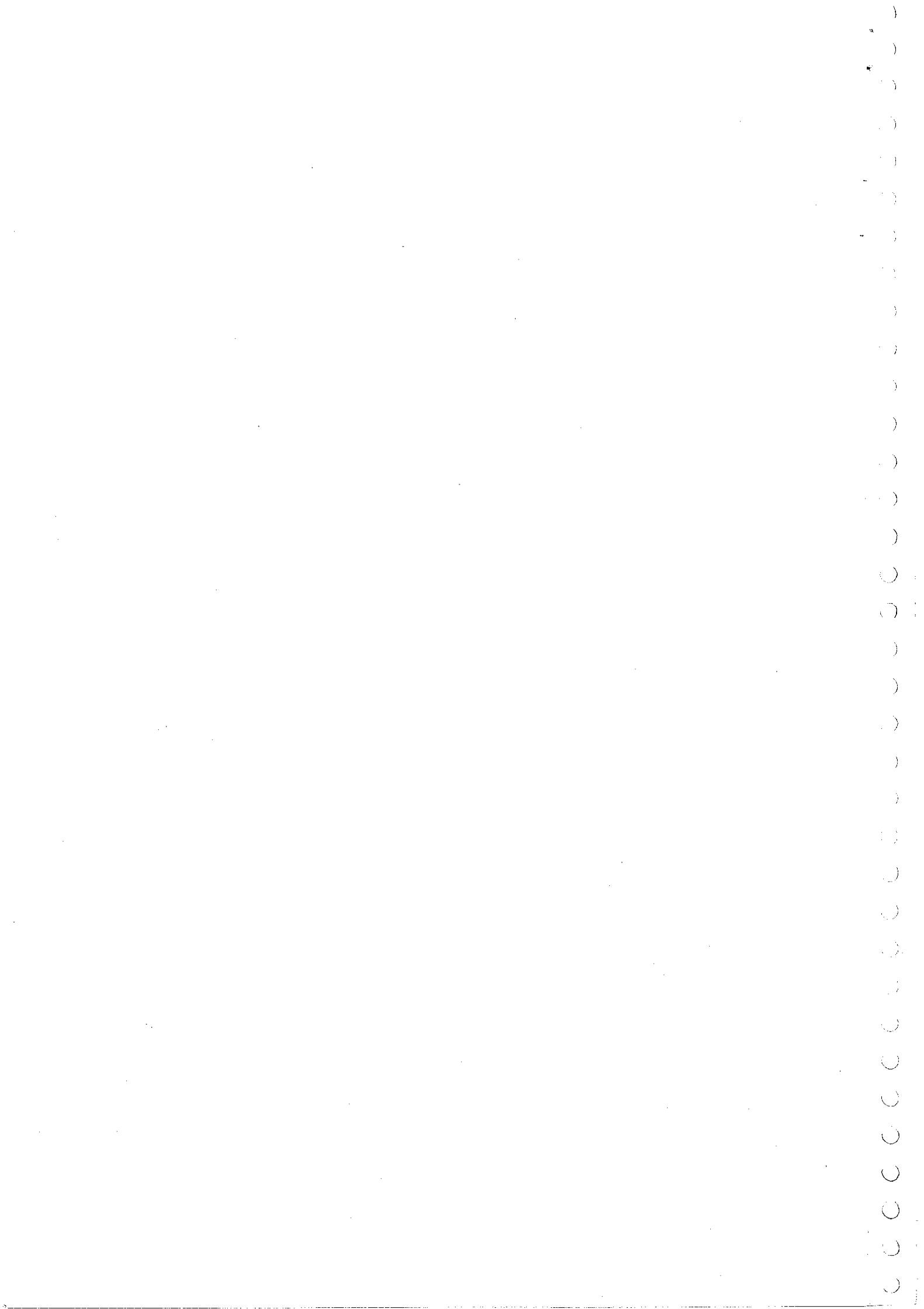
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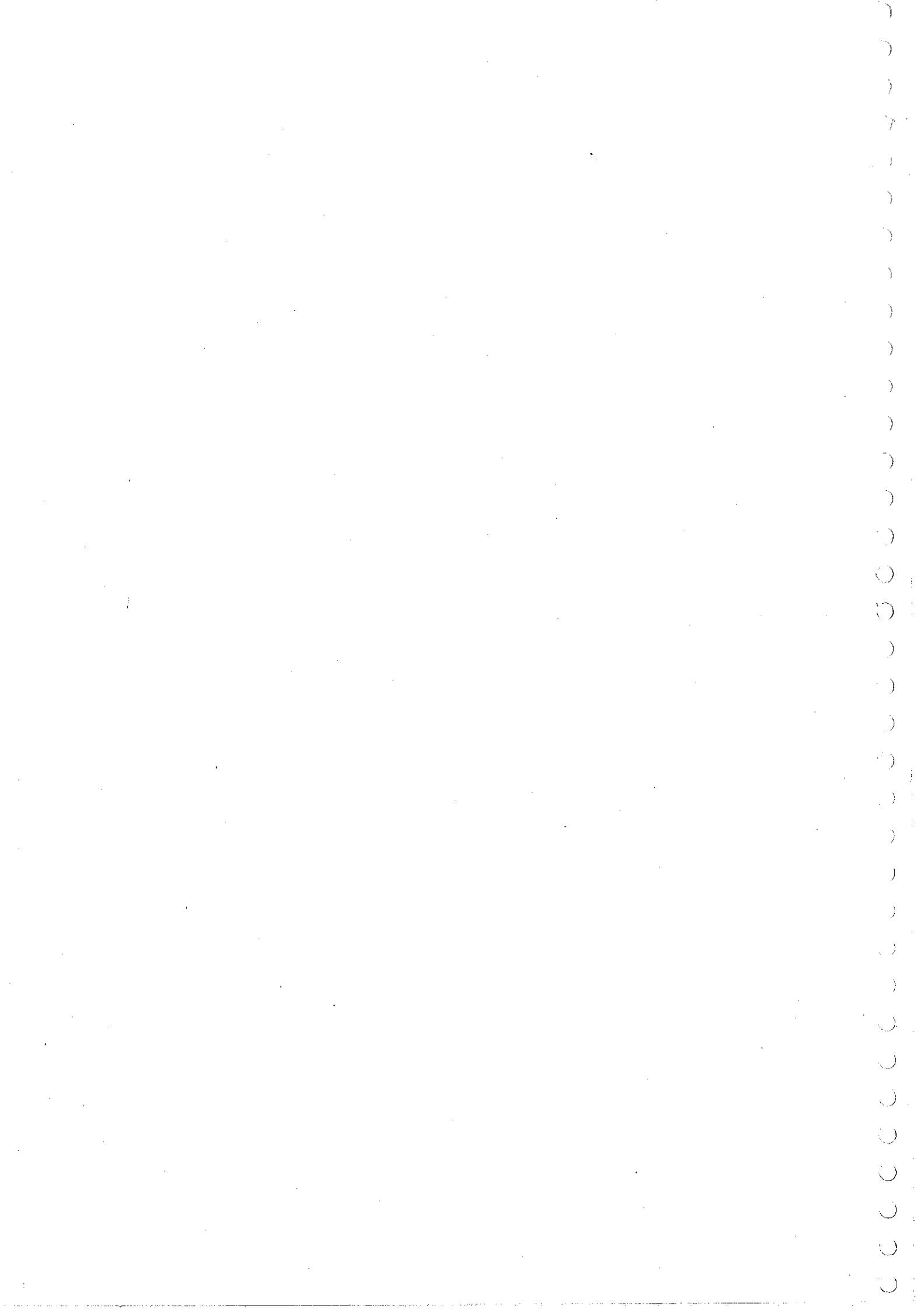
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## **CHAPTER-II**





## **CHAPTER – II**

| <b>Sl. No.</b> | <b>TITLE</b>   | <b>PAGES</b> |
|----------------|----------------|--------------|
| 1.             | CIM- 30 Form   | 17-18        |
| 2.             | Cause          | 19           |
| 3.             | Responsibility | 20-23        |



**DIRECTORATE-GENERAL OF MINES SAFETY**  
**FATAL ACCIDENT REPORT**  
**RAJMAHAL OPENCAST PROJECT**

No.S3/011047/FA/2016/ 174

Sitarampur, dated, 10.02.2017

**REPORT ON FATAL ACCIDENT BY****BY CAUSE:** Dump Slide (0118)**PLACE:** Waste dump & OB benches (0241&0213)**DATE:**  
29.12.2016**TIME:**  
07:00 pm.**HOURS AT WORK:**  
05.00 hrs**MINE :**  
Rajmahal OCP  
LIN:1517219762**OWNER :**  
M/s Eastern Coalfields Limited;**AGENT:**  
Sri D K Nayak**MANAGER**  
Sri Pramod Kumar**MINERAL WORKED**  
Coal

| S I. No | KILLED                                 | AGE | SEX  | OCCUPATION         |
|---------|--|-----|------|--------------------|
| 1       | Hari Kishore Yadav                     | 26  | Male | Excavator Operator |
| 2       | Javed Akhtar                           | 20  | Male | Excavator Operator |
| 3       | Rajendra Yadav                         | 28  | Male | Excavator Operator |
| 4       | Brijesh Yadav                          | 23  | Male | Excavator Operator |
| 5       | Sanjay Kumar Sahi                      | 36  | Male | Tipper Driver      |
| 6       | Mohd. Noorul                           | 26  | Male | Tipper Driver      |
| 7       | Jay Prakash Rai                        | 38  | Male | Tipper Driver      |
| 8       | Nageshwar Paswan                       | 29  | Male | Tipper Driver      |
| 9       | Ajeet Patel                            | 27  | Male | Excavator Operator |
| 10      | Shakil Khan                            | 27  | Male | Tipper Driver      |
| 11      | Vikash Patel                           | 29  | Male | Tipper Driver      |
| 12      | Sunil Bhengra                          | 29  | Male | Tipper Driver      |
| 13      | Kuleshwar Kumar alias<br>Ajay Kushwaha | 20  | Male | Dozer operator     |
| 14      | Julfkar Mohammad                       | 25  | Male | Tipper Driver      |
| 15      | Jameer Mohammad                        | 28  | Male | Tipper Driver      |
| 16      | Raj Kamal Goswami                      | 25  | Male | Tipper Driver      |
| 17      | Sanjeet Vishawakarma                   | 25  | Male | Tipper Driver      |
| 18      | Laddu Prasad (Yadav)                   | 30  | Male | Excavator Operator |
| 19      | Lallu Khan                             | 36  | Male | Supervisor         |
| 20      | S. Madhur Shyam Patel                  | 39  | Male | Supervisor         |
| 21      | Gagan (Kumar) Singh                    | 27  | Male | Supervisor         |
| 22      | Parwej Alam                            | 28  | Male | Tipper Driver      |
| 23      | Bhim Ram                               | 26  | Male | Tipper Driver      |

| SERIOUSLY INJURED | AGE | SEX | OCCUPATION |
|-------------------|-----|-----|------------|
|-------------------|-----|-----|------------|

|               |  |  |  |
|---------------|--|--|--|
| -----NIL----- |  |  |  |
|---------------|--|--|--|

**PLACE:** Waste dump & OB benches in hard rock of Dahernangi patch at Rajmahal OCP

**CAUSE:** Separate Sheet is enclosed.

**RESPONSIBILITY:** Separate Sheet is enclosed.

**ORDERS OF DIRECTOR-GENERAL OF MINES SAFETY:**

**CAUSE:**

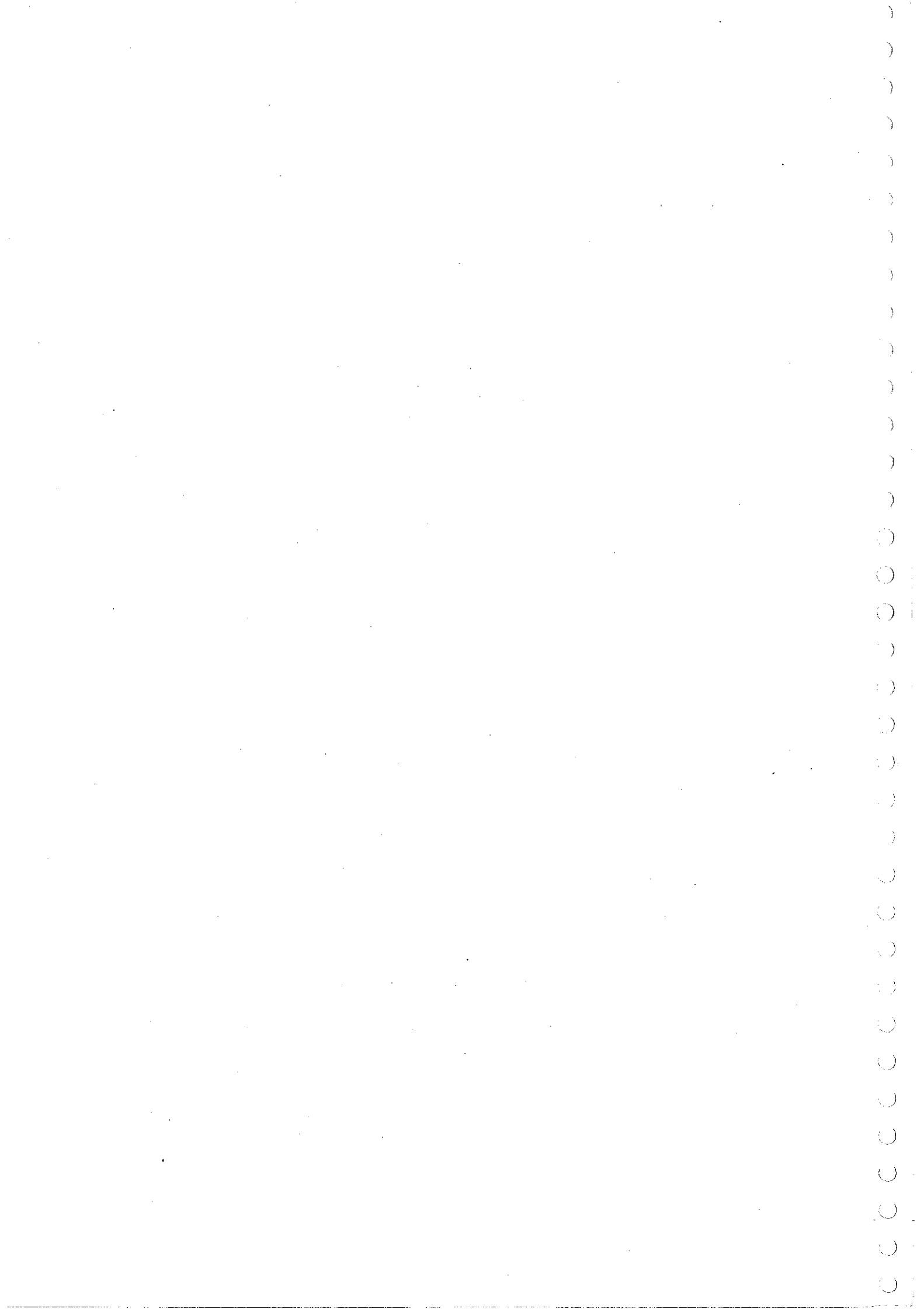
While contractual workers and machineries were deployed to form benches in dumped overburden, in-situ overburden and coal in an opencast mine containing known geological disturbances; cracks developed due to dead weight of dumped overburden, deep hole blasting and repeated plying of HEMMs, resulting into violent failure of in-situ overburden and coal benches, followed by instant sliding of dump in an area of 720m x 366m burying 23 workers along with 18 HEMMs.

Had,

1. no work against the geological disturbances been done by continuous removal of in-situ OB and coal by regular conduct of deep hole blasting and thereby not disturbing the stability of the strata and OB dump,
2. OB dump been totally removed by de-capping from top downwards in consultation with a scientific agency for formation of proper benches in OB dump without causing destabilization prior to removing in-situ OB and coal by repeated blasting,
3. no men or machineries been deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads of OB dump and along the edges of OB benches,
4. special care been taken while working in the vicinity of the geologically disturbed area to prevent danger to the work person(s),
5. sides in OB and coal been kept sloped to prevent danger from fall of sides,
6. slope of waste dump been maintained at a safe natural angle of repose not exceeding  $37.5^{\circ}$  and kept benched in such a way that no bench exceeded 30m in height and the general slope not exceeding 1 vertical to 1.5 horizontal,
7. observations of the unqualified site supervisors been heeded to,
8. intimation to DGMS been given in Form-I as required under the statute when the premature collapse of benches occurred on 09.08.2016 & 23.12.2016,
9. intimation to DGMS been given in Form-I about the dangerous occurrences of significant cracks which were noticed in the OB dumps, in-situ OB benches above coal benches during the last one month period prior to the occurrence of the accident as required under the statute and
10. mining operations at contractual patch been conducted in accordance with the Act, Rules, Regulations, bye- laws, permissions and orders made thereunder,

this, accident could have been averted.

**Fault of the management and supervisors.**



**RESPONSIBILITY:**

| Sl. No. | Name of the Person held Responsible | Designation                            | Responsibility Code | Nature of Violations  | Sec./Reg./Rule Contravened  |
|---------|-------------------------------------|--|---------------------|---|---|
| 1       | Sri B. N. Shukla.                   | Director Technical cum Nominated Owner | 0201                | He failed to comply with the conditions of permission letter issued vide no.S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to ensure the slope of spoil bank face by natural angle of repose i.e. $37.5^{\circ}$ and undertake a scientific study, prior to commencement of work in this patch, thereby not carrying out mining operations in accordance with the provisions of the statute.  | Section 18(4) of the Mines Act, 1952 read with clause no. 3.4, 3.6, 5.1.1, and 5.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957.                                |
| 2       | Sri S. K. Singh.                    | General Manager (I/C).                 | 0202                | He failed to comply with the conditions of permission letter issued vide no.S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to ensure the slope of spoil bank face by natural angle of repose i.e. $37.5^{\circ}$ and undertake a scientific study, prior to commencement of work in this patch and heed to the observations of the unqualified site supervisors, thereby not carrying out mining operations in accordance with the provisions of the statute. | Section 18(4) of Mines Act, 1952 and Regulation 8A (3) of CMR, 1957 read with clause no. 3.4, 3.6, 5.1.1, and 5.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957. |

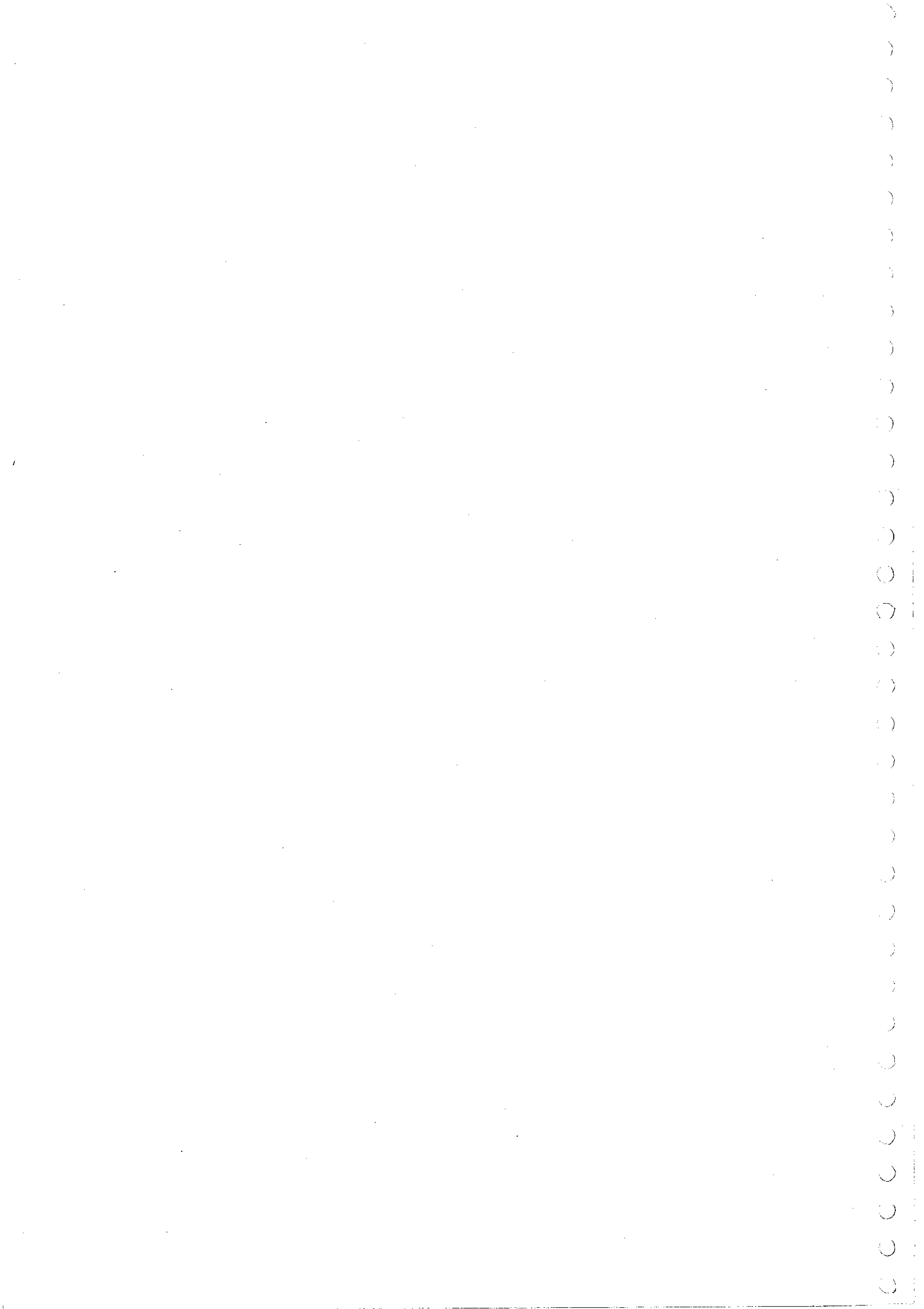
|   |                   |                           |      |  |  |
|---|-------------------|---------------------------|------|--|--|
| 3 | Sri D. K. Nayak.  | General Manager and Agent | 0202 | He failed to comply with the conditions of permission letter issued vide no.S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to ensure the slope of spoil bank face by natural angle of repose i.e. $37.5^{\circ}$ and undertake a scientific study, prior to commencement of work in this patch and heed to the observations of the unqualified site supervisors, thereby not carrying out mining operations in accordance with the provisions of the statute.  | Sections 18(4) and 2(c) of Mines Act, 1952 and regulation 8A of CMR, 1957 read with clause no. 3.4, 3.6, 5.1.1, and 5.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957.                |
| 4 | Sri Pramod Kumar. | Mine Manager              | 0203 | He failed to comply with the conditions of permission letter issued vide no.S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to ensure the slope of spoil bank face by natural angle of repose i.e. $37.5^{\circ}$ , intimate DGMS, in Form-I when the premature collapse of benches occurred on 09.08.2016 & 23.12.2016 and occurrences of significant cracks noticed in the OB dumps, in-situ OB benches above coal benches during the last one month period prior to the occurrence of the accident. Further he failed to withdraw men & machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads of OB dump & along edges of the OB benches and to heed observations of the unqualified site supervisors, thereby not carrying out mining operations in accordance with the provisions of the statute. | Section 17(2) & 18(4) of Mines Act, 1952 and Regulation 9(1) (a)(viii) & 41 of CMR, 1957 read with clause no. 3.4, 3.6, 5.1.1, and 5.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957. |



|   |                          |                                    |      |  |  |
|---|--------------------------|------------------------------------|------|--|--|
| 5 | Sri Devendra Kumar Sinha | Chief Manager, Excavation/Engineer | 0206 | He failed to ensure safe workings of the HEMM deployed at Dahernangi Patch as required under the statute.  | Regulation 50 (a) & (d) and read with clause no. 14.1 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957.                            |
| 6 | Sri Vinay Prakash Singh  | Senior Manager, E & M/Engineer     |      | -----do-----   | -----do-----   |
| 7 | Sri Dilip Roy.           | Assistant Manager                  | 0204 | He failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to withdraw men & machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads of OB dump and along edges of the OB benches and heed to the observations of the unqualified site supervisors, thereby not carrying out mining operations in accordance with the provisions of the statute. | Regulation 42 of CMR, 1957 read with clause no. 3.4, 3.6, 5.1.1, 5.1.2 and 9.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957. |
| 8 | Sri V. K. Singh.         | Assistant Manager                  | 0204 | ---do---   | ---do---   |
| 9 | Sri R. K. Singh.         | Assistant Manager                  | 0204 | ---do---   | ---do---   |

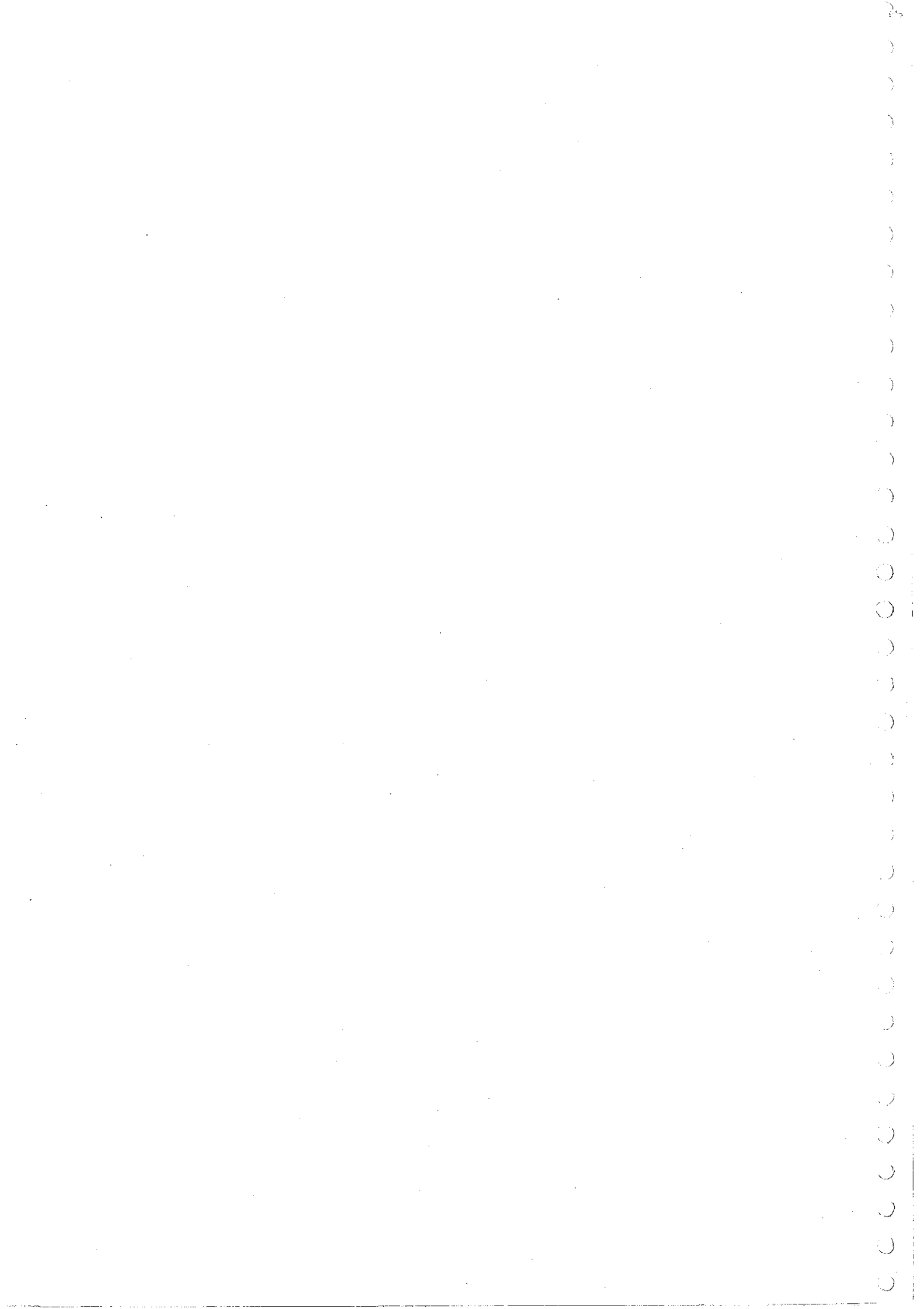
|    |                          |                   |      |   |  |
|----|--------------------------|-------------------|------|---|--|
| 10 | Sri P C Dhar             | Assistant Manager | 0204 | ---do---  | ---do---   |
| 11 | Sri Neraj Sinha          | Assistant Manager | 0204 | ----do----  | ----do---  |
| 12 | Sri S.P. Barnwal.        | Safety Officer    | 0211 | He failed to ensure compliance of the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area, and the sides in OB and coal should have been kept sloped to prevent danger from fall, thereby failed to apprise the manager of all possible sources of dangers in the mine as required under the statute. | Regulation 41A (1)(b)(iii), (f) & (h) of CMR, 1957 read with clause no. 3.4, 3.6, 5.1.1, and 5.1.2 of the annexure of permission letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 issued under regulation 98(1) & (3) of the CMR, 1957. |
| 13 | Sri D. Ram.              | Colliery Surveyor | 0306 | He failed to record the facts of workings of the mine approaching within 75m of disused workings (waste dump) and maintain accurate plans and section indicating side fall that had occurred time to time as required under statute.  | Regulation 49(1)(a) & (2)(a) of the CMR, 1957.   |
| 14 | Sri Nandan Kumar.        | Surveyor          | 0306 | ---do---  | ---do---   |
| 15 | Sri Sujay Kumar.         | Overman           | 0301 | He failed to report continued unsafe condition of the mine workings, remove danger observed and enforce the provisions of Act, regulations and orders made thereunder and to secure safety of the persons employed therein  | Regulation 43(1) (e) & (6) of the CMR, 1957.   |
| 16 | Md. Ejaz Hussain Ansari. | Mining Sirdar     | 0302 | He failed to observe dangerous place in the patch and also failed to withdraw persons from there by putting a fence to prevent persons from inadvertently entering dangerous place.   | Regulation 44(1) (b) & (6) (a) of the CMR, 1957.   |

### **CHAPTER-III**



### CHAPTER – III

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**DETAILED ENQUIRY REPORT**

On 30.12.2016, 31.12.2016 & 01.01.2017 to 14.01.2017, I, Utpal Saha, Dy. Director General of Mines Safety, Eastern Zone and Chairman of Inquiry Committee along with the committee members S/Sri Niranjana Sharma, Director of Mines Safety, Region No. 3, Sitarampur, Md. Niyazi, Dy. Director of Mines Safety, Region No.3, S G Bhaisare, Dy. Director of Mines Safety (Mech.), Eastern Zone, Sitarampur, I Satyanarayana, Dy. Director of Mines Safety, SOMA, DGMS, Dhanbad called at the mine and inspected the site of accident and inquired into the causes & circumstances leading to it.

A survey team from DGMS, Dhanbad led by Sri K. Gyaneswar, Dy. Director of Mines Safety, Dhanbad had conducted the survey of the site of accident and prepared plans and sections in consultation with the mine surveyors of Rajmahal OCP.

My report is as follows:

## 1.0 FIRST INFORMATION:

- 1.1 Intimation about the occurrence of an overburden dump slide involving lives and machineries was reported by Sri S K Singh, General Manager, In-charge, Rajmahal Area to Sri Niranjana Sharma, Director of Mines Safety, Region No.3 over his mobile phone at about 09:35pm on 29.12.2016 without any clarity in respect of number of casualties and involvement of machineries in the accident. Subsequently, the information about the occurrence of OB dump slide was communicated to me by Sri Niranjana Sharma, Director of Mines Safety at about 09:40pm and he also informed the same to Sri Md. Niyazi, Dy. Director of Mines Safety, Region No.3. GM, in-charge of Rajmahal Area also reported about the occurrence of OB dump slide to me at about 10:40pm. Information of OB dump slide was communicated by me to Sri Rahul Guha, Director General of Mines Safety, Dhanbad at about 10:55pm.

Sincere efforts were made by Md Niyazi, Dy. Director to know from the mine manager Sri Pramod Kumar and Area Safety Officer Sri S R P Verma, about the details in respect of men and machineries involved in the above dump slide but failed since local villagers had not permitted mine manager to reach to the site of accident. They had informed that district administration had been requested to provide security to reach to the site for carrying out rescue and recovery operations. There was no clarity of the information about the occurrence till late night in spite of continuous efforts (up to 2:00am on 30.12.2016) made by Director and Dy. Director of Mines Safety.

- 1.2 Manager of Rajmahal OCP Sri Pramod Kumar vide letter no. ECL/RJML/MGR/OCP/07 dated 30.12.2016 informed this Directorate about the occurrence of fatal accident in Rajmahal OCP on 29.12.2016 at about 7:00pm at Dahernangi /20 million Patch. The letter further stated that while the work of overburden removal by benching of internal OB dump was being carried out, suddenly a land mass measuring about 300m x 110m slid down about 30m due to which the excavators, tippers standing on the benches slid down. 23 persons were suspected to be buried in the debris. So far i.e. upto 30.12.2016, 7 tippers, 3 excavators and 1 dozer and 11 dead bodies had been recovered. Rescue and recovery was going on in full swing. List of the suspected persons involved in the accident was enclosed.

List of persons suspected to be involved were:-

- |  |                   |
|--|-------------------|
| 1. Rajendra Yadav, Ecvator Oprt.       | : Body Recovered. |
| 2. Hari Kishore Yadav, Excavator Oprt. | : Body Recovered. |
| 3. Brijesh Yadav, Excavator Oprt.      | : Body Recovered. |
| 4. Javid Akhthar, Excavator Oprt.      | : Body Recovered. |
| 5. Ajit Patel, Excavator Oprt.         | : Body Recovered. |
| 6. Nageshwer paswan, Tipper Driver     | : Body Recovered. |
| 7. Jai Prakash Roy, Tipper Driver      | : Body Recovered. |
| 8. Sanjay Kumar Sahi, Tipper Driver    | : Body Recovered. |
| 9. Sakil Khan, Tipper Driver           | : Body Recovered. |
| 10. Vikash Patel, Tipper Driver        | : Body Recovered. |
| 11. Md. Nurul, Tipper Driver           | : Body Recovered. |
| 12. Sunil Bhengra, Tipper Driver       |                   |
| 13. Ajay kumar Kuswaha, Dozer Oprt.    |                   |
| 14. Md Julfikar, Tipper Driver         |                   |



15. Md Jamir, Tipper Driver
16. Raj kumar Goswami, Tipper Driver
17. Sanjit Bishwakarma, Tipper Driver
18. Lallu Khan, Supervisor
19. Gagan Singh, Supervisor
20. Madhur shyam Patel, supervisor
21. Laddu Prasad, Excavator Optr.
22. Bhimram, Tipper Driver,
23. Parwej Alam, Tipper Driver.

- 1.3 Manager vide letter no. ECL/RJML/MGR/OCP/31 dated 04.01.2017 submitted Form IV-A & Form IV-B informing this Directorate the detail of 18 persons, whose bodies were recovered from the site of accident and also submitted the names of 5 persons whose bodies were yet to be recovered.
- 1.4 Manager vide letter no. ECL/ROCP/GM (OP)/Manager/340 dated 12.01.2017 informed this Directorate that on 29.12.2016 in 2<sup>nd</sup> shift an accident had occurred in M/s MIPL-NKAS(JV) patch in which 12 volvo tippers bearing serial nos. 171, 172, 173, 193, 362, 364, 365, 367, 368, 386, 387, 391; five volvo excavators bearing nos. 70, 33, 39, 48, 84 and one caterpillar dozer were missing in mine slide and rest of the tippers and machines were available in camp and were in custody. 23 persons, out of total 31 deployed, were missing. Rests of the persons deployed in the mine had been accounted for.

Details of deceased of M/s MIPL-NKAS (JV) were as follows:-

| S no. | Name of deceased           | Designation   | Fathers Name        | Date of Body recovered | Address  |
|-------|----------------------------|---------------|---------------------|------------------------|--|
| 1     | Harikishore Yadav          | Exc. Optr.    | Dadan Yadav         | 30.12.2016             | Vill. & PO: Jalalpur, PS: Daranda, Dist: Siwan (Bihar)             |
| 2     | Javed Kumar                | Exc. Optr.    | Jasmuddin Ansari    | 30.12.2016             | Vill: Parihara, PO: Nildam/Tildam, PS & Dist: Garwa (Jharkhand)    |
| 3     | Rajendra Yadav alias Bonal | Exc. Optr.    | Ram Naresh Yadav    | 30.12.2016             | Vill: Patdi, PO: Maharajganj, Dist: Siwan (Bihar)                  |
| 4     | Brijesh Yadav              | Exc. Optr.    | Kamaldeo Yadav      | 30.12.2016             | Vill: Chitoura, PO & PS: Sahanwar, Dist: Balia (UP)                |
| 5     | Snjay Kr. Sahi             | Tipper Driver | Sujit Sahi          | 30.12.2016             | Vill: Deoria, Dist: Lohardagga, Jharkhand                          |
| 6     | Md. Nurul                  | Tipper Driver | Md. Raffique        | 30.12.2016             | Vill & PO: Pahari, PS: Sahapur, Tahasil: Bhoguanj, Dist: Riwa (MP) |
| 7     | Jai Prakash Rai            | Tipper Driver | Tola Rai            | 30.12.2016             | Vill: Laijnappa, Dist: Muzzaffarpur (Bihar)                        |
| 8     | Nageshwar Paswan           | Tipper Driver | Sakkhichand Paswan  | 30.12.2016             | Vill: Barun, PS: Paru, Dist: Muzzaffarpur (Bihar)                  |
| 9     | Ajit Patel                 | Exc. Optr.    | Dinesh Prasad Patel | 30.12.2016             | Vill: Lilna, PO: Bamuji, PS: Amliya, Dist: Siddhi (MP)             |
| 10    | Sakil Khan                 | Tipper Driver | Yunush Khan         | 30.12.2016             | Vill: Mandar, Dist: Ranchi, Jharkhand                              |

|    |                                     |                |                       |            |  |
|----|-------------------------------------|----------------|-----------------------|------------|--|
| 11 | Vivek Patel                         | Tipper Driver  | K.P.Patel             | 30.12.2016 | Vill: Dadjir, PO: Sonbarsha, Dist: Siddhi(MP)                      |
| 12 | Sunil Bhengra                       | Tipper Driver  | Laxman Bhengra        | 30.12.2016 | Vill: & PO: Koira, Dist: (Odisha)                                  |
| 13 | Kuleshwar kumar alias Ajay Kushwaha | Dozar Opnr.    | Baleshwar Mahto       | 30.12.2016 | Vill: Gorla Karma, PO: Barhi, Dist: Hazaribag, Jharkhand.          |
| 14 | Md. Julfkar                         | Tipper Driver  | Saffi Mohammad        | 30.12.2016 | Vill: Baldhi, PS: Chittaranjana, Dist: Singrauli(MP)               |
| 15 | Md. Jamir                           | Tipper Driver  | Lal Mohammad          | 31.12.2016 | Vill: Kunjhun, PO: Nagihar, Dist: Siddhi(MP)                       |
| 16 | Raj Kamal Goswami                   | Tippetr Driver | Sudama Goswami        | 31.12.2016 | Vill; Bathaya, PO: Chitoria, Dist; Siddhi(MP)                      |
| 17 | Sanjit Vishwakarma                  | Tipper driver  | Ram Patik Vishwakarma | 01.01.2017 | Vill; Kodihar, Po: Sonbarsha, Dist: Siddhi(MP)                     |
| 18 | Laddu Yadav                         | Exc. Opnr.     | Yogeshwar Yadav       | 01.01.2017 | Vill: Bsanda, PS: Channi, Dist: Nalaanda(Bihar)                    |
| 19 | Lalu Khan                           | Incharge       | Sattar Khan           |            | Vill:Lilkar, PO: Basuri, PS: Avilia, Dist: siddhi(MP)              |
| 20 | Madhur Shyam Patel                  | Supervisor     | Karamshi Patel        |            | Vill: Mayapur, PS: Nakhatrana, Dist: Bhuj, Gujarat                 |
| 21 | Gagan Singh                         | Supervisor     | Ashish Singh          |            | Vill: Dungachi, PO: Tadrash, Ps: Sanhuura, Dist: Bhagalpur(Bihar)  |
| 22 | Parwej Alam                         | Driver         | Samsuddin             |            | Vill: Hehal, PO: Chasigada, PS: Patratu, Dist: Ramgarh( Jharkhand) |
| 23 | Bheem Ram                           | Driver         | Antu Ram              |            | Vill: & PO: Bhitashibag, PS: Karamchak, Dist: Koinur(Bihar)        |

## 2.0 BACKGROUND INFORMATION OF THE MINE :

- 2.1 Rajmahal Opencast Project is a Mega Project of M/s Eastern Coalfields Limited. It is located at a distance of about 230km from Sitarampur Zonal/Regional office. This project is situated in the district of Godda of Jharkhand State. The Rajmahal OCP is connected by Deogarh/Dumka-Godda-Sahebgunj metal road which passes along the western fringe of the area. The Burdwan-Sahebgunj-Bhagalpur loop line of Eastern Railway passes about 30km North of the area. The nearest railway head is Pirpainthi. Farakka Barrage is situated about 80km East of Rajmahal OCP.
- 2.2 The Rajmahal Coal fields, commonly known as Lalmatia Coal Block, comprised of North part of the Hura Basin and is located at a latitude of  $25^{\circ} 1' 12''$  &  $25^{\circ} 3' 15''$  N and longitude of  $87^{\circ} 21' 0''$  &  $87^{\circ} 24' 0''$  E in an area of  $15\text{km}^2$ . It is included in the Survey of India Topo Sheet No. 72-0/8. The block marks geological setting of Lower Gondwana- Barakar. Strike is generally N-S and dip generally  $2^{\circ}$ - $3^{\circ}$  but towards south part of the block it is  $5^{\circ}$ - $10^{\circ}$ . The general dip direction is towards East. The Lalmatia Block is generally a plain land except for the N-S trending Lalmatia hill in the Western part. An E-W trending Ganesswari/Kasgaria Pahar (Hill) marks approximately the south limit of the Block. A large alluvium tract under cultivation formed the major portion in the central and eastern part of the area. However, there is narrow tract of underlying barren lands devoid of vegetation all along the foot hill. On the plains the relief varies between 70m-100m above MSL with general slopes towards NE and W on either side of the Lalmatia hill. The max. elevation of Lalmatia hill is 204m on the North and 168m on the south above MSL. There is no river or prominent streamlet flowing through the area. The ephemeral surface drainage in the form of small nullah in the block joined a small streamlet nullah which flowed about 6km on the NE of the Block.
- 2.3 Surface features of the mine consisted of 7 small water tanks within the leasehold area, water garland drain situated along East-West on the south side of the property, Farakka assisted railway siding (for coal transportation to power plant) was situated on the North. On the East, Moza No. 45, Adivasi college, Chotasimra, Bhadotola, Abhitola and Bathantola villages are situated. On the West Taljahari village and on the South Chhotabhouri and other villages and forest land exists.

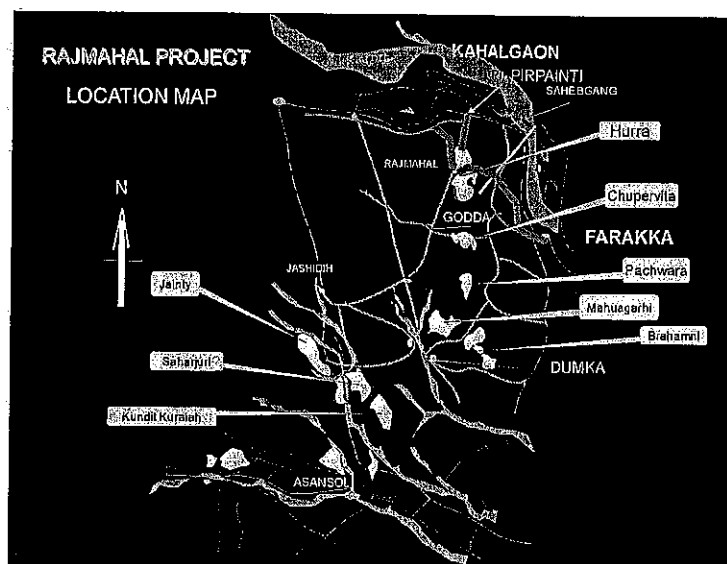


Fig:-1 Location Map of Rajmahal OCP

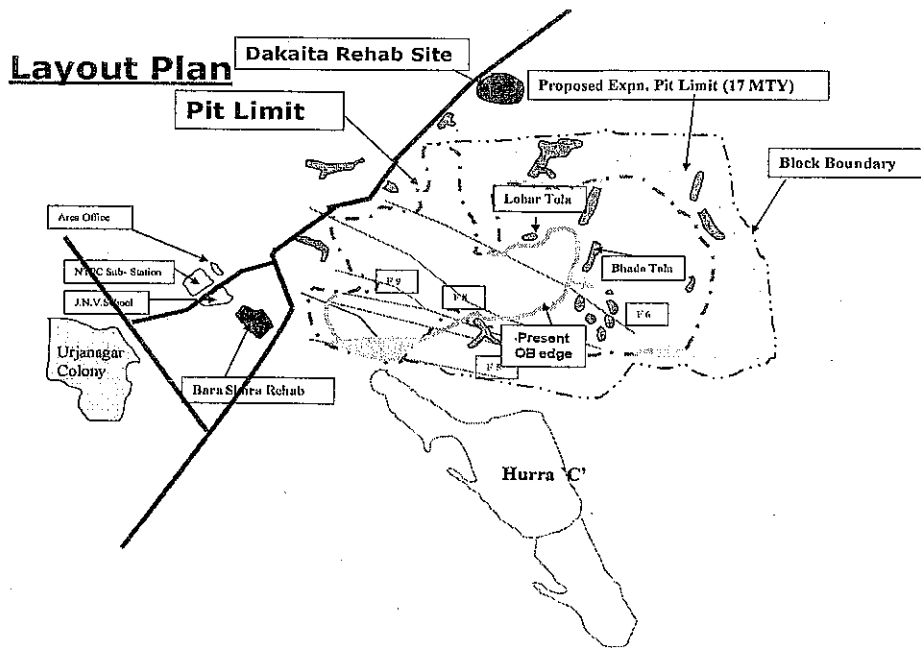


Fig:-2 Layout Plan of Rajmahal OCP

- 2.4 Mine Operations Commenced at the mine in the year 1987. Total leasehold area of the mine was 1978 hectare. In year 1988, 10.5MTY project expansion was approved by the Govt. of India and was implemented with Canadian assistance. Second expansion was approved by Govt. of India for 17MTY in the year 2006. For the year 2015-16 a total of 15.549MT of coal was produced and for the financial year 2016-17 against the target of 17MT, 11.56MT of coal was produced till Dec, 2016. The entire coal produced by the mine was fed to M/s NTPC's two STPP's one at FARAKKA and other at KAHALGAON.
- 2.5 Rajmahal OCP lies within Lalmatia exploration block which covers on an area of about 15km<sup>2</sup>. Eight persistent coal horizons of barakar formations have been identified in this block. The seams within the leasehold area in the ascending order were I, II (bottom), II (top), III, IV, IX, X and XI. The seams II (bottom), II (top), III are highly interlaced in nature within the leasehold area. More than 95% of reserves in this block occurred in II (bottom), II (top) and III seams along with their various combinations. All the seams in-crops in the leasehold area under a thick alluvium cover of 15m to 30m. The III (top) seam, having thickness about 2m to 10m was in-cropping at a depth of cover about 25m. The next underlying II seam(top), having thickness about 7m to 9m, occurred at a parting of 4m to 6m from III seam and II seam (bottom) having thickness of about 8m to 17m occurred at a parting of about 6m-8m from II seam(top). General dip of all the seams is 1 in 20 due S30° E.
- 2.6 The area was structurally disturbed one. The south part was more disturbed than the North part. 17 nos. of faults had been intercepted within the leasehold area of the block. Among these, six south-wards heading faults, namely F5, F6, F8, F10, F13 and F15 were of major magnitude. The details were as below:

| Name of fault | Throw      | Amount of throw |
|---------------|------------|-----------------|
| F-5           | up throw   | 05m             |
| F-6           | down throw | 15m             |
| F-8           | down throw | 60m             |
| F-10          | down throw | 25m             |
| F-13          | down throw | 40m             |
| F-15          | up throw   | 10m             |

- 2.7 Rajmahal OCP Colliery, at present was being worked in three patches namely, (i) M/s Rajmahal Coal Mining Project Limited (RCML) Patch, (ii) Departmental(M/s ECL) patch and (iii) M/s Mahalaxmi Infra contract Private Limited and M/s NKAS Services Private Limited (MIPL-NKAS)(JV)/(20M) Patch.
- 2.8 **M/s Rajmahal Coal Mining Limited (M/s RCML) Patch:-** At this patch removal of overburden (inter burden OB) and extraction of coal was done contractually by M/s RCML,Kolkata (WB). 2m<sup>3</sup> capacity hydraulic excavators of Hitachi make, 20t capacity dumpers of Volvo make and one Writgen make Surface miner having capacity to produce 900t and pay loaders for coal gathering and loading into the trucks were deployed. On an average about 20,000m<sup>3</sup> of overburden and 40,000t of coal was being produced on daily basis from this patch.
- 2.9 **Departmental (M/s ECL) Patch:-** At this patch removal of overburden and extraction of coal was being done departmentally by deployment of 10m<sup>3</sup> and 20m<sup>3</sup> capacity electric rope shovels and transportation was done by 170t, 100t & 85t capacity dumpers. On an average of 22,000m<sup>3</sup> of overburden and 2,500t of coal was being produced on daily basis from this patch.
- 2.10 **M/s Mahalaxmi Infra contract Private Limited and M/s NKAS Services Private Limited (M/s MIPL-NKAS)-JV Patch:-** At this patch the total operations of overburden removal and coal extraction was outsourced to M/s MIPL-NKAS(JV), Rajkot (Gujarat). 2m<sup>3</sup> capacity hydraulic excavators and 20t capacity tippers were deployed at this patch. Simultaneous operations at three places i.e. dumped OB removal (re-handling) in OB dumps, in-situ OB removal by blasting at the OB benches above the coal seam and coal extraction by blasting at the coal seam were being done on regular basis for the last one month. On an average about 17,000t of coal, 22,000m<sup>3</sup> of overburden (in-situ) and 25,000m<sup>3</sup> of OB re-handling at the OB dump was being done on daily basis from this patch. Several agreements were signed between contractor and M/s ECL in this regard. Some of them were appended below:-
1. Vide Agreement No 02/HQ/2015-16 dated 16.06.2015 M/s MIPL-NKAS (JV) was permitted by the M/s ECL management for the removal of 200 Lakh m<sup>3</sup> of OB (in-situ) and for the extraction of 70 Lakh tonne of coal from the demarcated patch of area 0.6 km<sup>2</sup>.

2. In the 1<sup>st</sup> deviation management had granted change in slab rates but there was no change in quantity to the contractor vide No. ECL/HQ/CMC/2015/549 dated 10/11.08.2015
3. In the 2<sup>nd</sup> modification granted to the contractor by the M/s ECL management there were changes in the quantities as 165 Lakh m<sup>3</sup> of OB removal(in-situ) and 80.52 Lakh tonne of coal extraction vide letter ECL/HQ/CMC/2016/771 dated 26.08.2016.
4. Management had also permitted the contractor to re-handle i.e. removal of OB from Old OB dump for a quantity 13.44 Lakh m<sup>3</sup> vide work order no. ECL/HQ/CMC/ WO/ RJML/13.44Lm<sup>3</sup>/864 dated 27.09.2016.
5. In the 3<sup>rd</sup> modification granted to the contractor by M/s ECL management for an additional quantity of 17.30 Lakh m<sup>3</sup> of OB removal (re-handling) from old OB dumps in addition to the 2<sup>nd</sup> deviation quantities of OB (in-situ) removal and coal extraction in the designated patch vide letter no.ECL/HQ/CMC/1046 dated 29.12.2016.
6. In the month of Sept, 2016 M/s MIPL-NKAS (JV) had completed the job of OB removal from OB dumps by executing the awarded quantity of 13.44 Lakh m<sup>3</sup>. In respect of 3<sup>rd</sup> modification permitted to the contractor the job of OB removal started in the last week of November and continued in the month of Dec,2016 upto the date of accident i.e. 29.12.2016. They had removed a quantity of about 8-9 Lakh m<sup>3</sup> against the awarded quantity of 17.30Lakh m<sup>3</sup>.
7. In the month of August, 2016 there was no coal production from M/s MIPL-NKAS (JV) patch due to rise of water level in the sump area owing to monsoon to which coal seam got submerged in water. Coal production started in the last week of Sept, 2016 and picked up with increased trends and produced 3.89Lakh tonne in the month of Oct, 2016; 5.28 Lakh tonne in the month of Nov, 2016 and 4.04 Lakh tonne in the month of Dec, 2016. A total of 9.63 Lakh tonne of coal was produced during the year 2015-16 and 23.49 Lakh tonne of coal was produced during the year 2016-17 till Dec, 2016 upto the date of accident i.e. 29.12.2016.
8. In respect of OB (in-situ) a total of 98.27 Lakh m<sup>3</sup> was excavated during the year 2015-16 and 48.91 Lakh m<sup>3</sup> was excavated till Dec, 2016 during the year 2016-17.
9. There were three simultaneous activities by the contractor for performing three assigned jobs and they were:-
  - a. OB removal (re-handling) from OB dump.
  - b. In-situ OB removal from the OB benches above the coal seam by conducting deep hole blasting to be conducted by M/s ECL and

- c. Coal extraction from the coal seam benches by deep hole blasting to be conducted by M/s ECL.

The activities stated at point no. (b) & (c) were regular in nature since October 2016 till December 2016, where as the activity at point no. (a) was started in the last week of November and continued till 29<sup>th</sup> December, 2016.

- 2.11** The mine operates round the clock in three different shifts, each of eight hours duration i.e. 1<sup>st</sup> shift starting from 6.00hours, 2<sup>nd</sup> shift starting from 14.00hours and 3<sup>rd</sup> shift starting from 22.00hours and produces an average of about 57,000t- 60,000t of coal and excavates about 80,000m<sup>3</sup>-100,000m<sup>3</sup> of overburden per day with an average daily employment of 2216 persons of which 130 persons belongs to M/s MIPL-NKAS (JV) and 209 persons belongs to of M/s RCML.

- 2.12** Management were granted the following permissions:-

1. Permission under Regulation 98(1) & 98(3) of the Coal Mines Regulations 1957 for working the quarry with deep- hole blasting and heavy earth moving machineries and also under Regulations 100(1) of the Coal Mines Regulations 1957 for extraction of pillars in No. II seam Bottom (Top Section) by Opencast Method in Rajmahal Opencast Project vide letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987.
2. Permission under regulation 168(5) of the Coal Mines Regulations, 1957 to allow the explosives charge to sleep over in the shot hole at Rajmahal Opencast Project of M/s ECL vide letter no. S3/010798/II-B/2004/1585 Sitarampur dated 20.08.2004.
3. Permission under Regulation 161(1) and 168(5) of the Coal Mines Regulations, 1957 vide letter no. S3/010375/II-B/2007/1844 dated Sitarampur dated 15.10.2007.
4. Modification of the permission letter no. S4/03/26/006/II-B(87)/1182 dated 08.04.1987 granted under Regulation 98(1), 98(3) and 100(1) of the Coal Mines Regulation, 1957 to keep high benches in overburden and coal by using Heavy Earth Moving machinery for the extraction of developed pillars of coal and removal of overburden by Opencast Method in Seam II Top of Lalmatia Hill Patch marked by A,B,C,D,E & F in leasehold area of Rajmahal Opencast Project of M/s ECL vide letter no. S3/010357/II-B/98(1),(3) & 100(1)/1634, Sitarampur dated 05.07.2012.
5. Permission Under Regulation 170(1A) & (170(1B)(b) of the Coal Mines Regulations, 1957 to conduct controlled deep hole blasting within 300m but beyond 60m of private house, dwellings/hutments and other structures of permanent natures from villages at opencast workings of Rajmahal OCP of M/s ECL- Extension thereof vide letter no. S3/010375/II-B/170(1A),170(1B)(b)/2016/963 dated 29.06.2016.

### 3.0 MANAGEMENT:-

- 3.1 M/s ECL was one of the subsidiary companies of M/s CIL. Coal India was headed by Sri Sutirtha Bhattacharya, Chairman; of the holding company. M/s CIL was governed by a team of functional directors. It had an internal Safety department headed by Executive Director, Safety, who reported directly to the Chairman, of M/s CIL. He was assisted by senior level officers including General Manager Safety. M/s CIL had nine subsidiary companies under it of which 08 were coal producing companies and one was a Planning and design Institute. Each of these subsidiaries was headed by a Chairman cum Managing Director. M/s ECL was one of the subsidiary coal producing company under M/s CIL.
- 3.2 The Headquarter of M/s ECL was located at Sanctoria, Dishergarh, Asansol in the state of West Bengal. It was headed by Sri R. R. Mishra, Chairman cum Managing Director. He was assisted by Sri B. N. Sukla, Director Technical (Operations), who was also the Nominated Owner under Section 76 of the Mines Act 1952 for Rajmahal OCP, Sri A. K. Singh, Director Technical (Project & Planning), Sri K. S. Patro, Director (Personnel), and Sri A. M. Marathe, Director (Finance) were the other members of the functional Director's team. M/s ECL has Internal Safety Organization at the Head Quarter level and is headed by Sri S. Banerjee, General Manager, Safety, who was assisted by a team of senior officers in different disciplines to look after safety compliance of its mines at the corporate level of M/s ECL.
- 3.3 M/s CMPDIL (Central Mine Planning and Design Institute) Regional office was situated at Asansol, West Bengal. M/s ECL being its sister concern, CMPDIL, Asansol does all its major planning and design of projects in addition to the support of CMPDIL, Ranchi. The institute was headed by Sri Gopal Prasad, Regional Director and he was assisted by other scientists in different disciplines.
- 3.4 Rajmahal OCP comes under Rajmal Area of M/s ECL. The Rajmahal Area was headed by Sri S.K. Singh, General Manager, in-charge and at the area level he was assisted by number of senior executives which include Agent, Mine manager, Area Safety officer, Area Survey officer, Finance executives, Planning executive, Personnel officers etc. Rajmahal OCP was the only operating/producing mine under Rajmahal Area for the last one year or more.
- 3.5 Sri D. K. Nayak, General Manager (Operations) was the Agent of the mine. Sri Pramod Kumar was the Manager of the mine. Sri S. P. Barnwal, Safety Officer of the mine. All the three were holders of First Class Managers Competency Certificates granted under the Coal Mines Regulations 1957. The mine was broadly operated in three different patches namely Departmental patch, M/s RCML patch and M/s MIPL-NKAS (JV) patch. Each of the designated patches was headed by 1<sup>st</sup> class manager's certificate holders and was assisted by assistant/under managers, overman and mining sirdars in shifts.
- 3.6 Blasting operations were placed under the charge of a person holding 1<sup>st</sup> class competency certificate and he was assisted by one asst. manager holding 2<sup>nd</sup> Class competency certificate and one overman and three mining sirdars. The entire blasting section works in general shift i.e. 8:00 am to 4:00pm.



- 3.7 The survey section was under the charge of a colliery surveyor and he was assisted by three surveyors, each of them was assigned one patch of workings. There were many other departments in the mine like Electrical, Excavation, Civil, Coal dispatch and personnel headed by Excavation/Colliery engineer (Mech.), CE (Civil), personal officer, etc.
- 3.8 S/Sri Promod Kumar was the Agent cum Manager on the day of accident i.e. on 29.12.2016; S.P Barnawal, Safety officer; Dilip Roy, Asst. manager, in-charge of M/s MIPL-NKAS (JV) Patch, D. Ram, Colliery Surveyor, Nandan Kumar, Surveyor, in-charge of Dahernangi Patch, Suraj Kumar, overman, General shift, 2<sup>nd</sup> shift over all in-charge Sri R K Singh, asst. manager and each shift, patch workings were also placed under the charge of an asst. manager, overman and sirdar for the supervision of mine workings of the patch and the details are given below:

| Designation)  | 1 <sup>st</sup> Shift(6 am- 2pm) | 2 <sup>nd</sup> shift(2pm-10pm) | 3 <sup>rd</sup> shift (10pm-6am) |
|---------------|----------------------------------|---------------------------------|----------------------------------|
| Asst. Manager | P C Dhar, FCC                    | V K Singh, FCC                  | Neraj Sinha, SCC                 |
| Overman       | Nilam Toppo, Diploma             | Ezaj, Diploma                   | Arvind Kumar, Diploma            |
| Sirdar        | Goutam Kumar, Diploma            | Hemnarayan                      | Munna Pandit, Diploma            |

- 3.9 M/s MIPL-NKAS (JV) had appointed one site in-charge, under whom shift wise, place wise i.e. (coal benches, OB in-situ benches and OB benches in OB dumps separately) one un-qualified supervisor was appointed for supervising the mining works and the supervisors were Lallu Khan, Rajesh Patel and Krishnakath Upadhyia. Further unqualified supervisor was assisted by munshi's at different places as per the availability.

#### 4.0 THE EVENTS PRIOR TO ACCIDENT:

- 4.1 M/s MIPL-NKAS(JV) was awarded a contract Vide Agreement No. 02/HQ/2015-16 dated 16.06.2015 by the M/s ECL management for the removal of 200 Lakh m<sup>3</sup> of OB (in-situ) and extraction of 70 Lakh tonne of coal from the demarcated patch of area 0.6 km<sup>2</sup> also known as Dahernangi Patch. Workings were being done in this patch since 07.04.2015 because of letter of award issued to them vide No.ECL/HQ/CMC/LOA/Dahernangi OCP (RJML)/106 dated 10.02.2015. Accordingly, they were working and producing coal and in-situ OB from the patch. In this process, they had extracted 66.86Lakh m<sup>3</sup> of OB and 3.34 Lakh m<sup>3</sup> tonne of coal upto 29.12.2016. The workings were extended upto -52mRL in coal benches and the RL on OB dump varied from +142m to +146m.

On 04.01.2016, some minor cracks were found developed at top OB bench above the approach road to Dahernangi/20M patch and on 05.01.2016, also some cracks were found on the north high wall side associated by fractures and spalling at places. Seeing this observation by colliery management, a team comprised of GM (P&P), GM (Safety), GM (CMC) of ECL, HQ had visited the spot and suggested for de-capping the top OB and subsequent benching upto future workings. Thereafter, a proposal was sent from mine to GM, Rajmahal area for further reducing the dump near F-8 fault in the North side of the patch. LOA for this activity i.e. hiring of HEMM for re-handling of 13.44Lakh m<sup>3</sup> of OB along fault near Kaveri sump of Rajmahal OCP was awarded vide no.ECL/HQ/CMC/LOA/RJML-13.44L.cu.m/718 dt.05.08.2016. This work was being continued by M/s. MIPL-NKAS (JV).

On 09.08.2016, a part of benches formed in the OB dump failed and slid from 188925E to 189025E grid. Thereafter, another committee from ECL, HQ was constituted vide letter no. ECL/OP/TS/411 dated 23.08.2016 for inspection and recording observations in respect of this failure.

- 4.2 The above committee comprised of S/Sri B. Prasad, Chief Manager Safety, of safety cell; N Mishra, Sr. Manager (Mining), of P&P cell, A K Banerjee, Sr. Manager (Mining), of CMC cell and Pradip Kumar, Asst. Manager (Survey), of survey cell inspected the mine on 24.08.2016 & 25.08.2016.

The following were the observations of the Committee as per their letter No. ECL/Safety/ Rajmahal OB dump/135 dated 06.09.2016:-

1. OB dump near OB re-handling working (near Kaveri sump) was found unstable since the slope angle of OB dump was high. Prominent cracks were seen at the top of the OB dump (at +144mRL) along the edge.
2. Loose dump material was found slid over the bench having (+) 50mRL.
3. The colliery reported that the failure of the OB dump occurred on 09.08.2016 between the grids 188925 E to 189025 E. Cracks on the top of OB dump (at +144m RL) were filled by dozing.
4. The OB dump laid north side of Dahernangi/20M patch, on the north side of the old OB dump, where earlier departmental patch was in operation till about 01.01.2007. In this departmental patch, coal upto combined II (top & bottom) seam had been worked.

5. OB dumping was done between Dahernangi/20M patch and earlier departmental patch.
6. The OB dump, which failed was dumped from the floor level of (-) 5.8mRL in the earlier departmental patch on the upthrow side of the fault F-8. The departmental patch was operative till the year 2006. The OB dumping was continued till the end of the 2014 (approx).
7. The OB dump was unstable, since the slope angle was high and had started sliding down.
8. The mining operation like plying of dumpers on haul road and deployment of loading machines etc. in the Dahernangi/20M patch would be risky, if the mining operation extends towards the old OB dump.
9. A part plan as on 01.01.2007 was made available to this committee by the colliery. This plan was having insufficient data for the status of the departmental patch as on 01.01.2007. Hence the committee got prepared a plan co-relating the present plan with the plan as on 01.01.2007.
10. The above mentioned dump was reported for developing cracks earlier as on 04.01.2016 and was visited by a team comprising General Manager (P&P), GM (CMC) and GM (Safety) on 06.01.2016 and suggested for offloading the OB dump by making proper benches for safe ply of men and machineries.

For safe extraction of coal from the existing Dahernangi patch/20M patch, a proposal was approved by the competent authority forwarded by the area authority for re-handling 13.44Mm<sup>3</sup> of OB. The LOA of the re-handling of 13.44Lakh m<sup>3</sup> of OB was issued on 06.08.2016 and work of the same was continued.

The Following were the recommendations of the committee:-

1. "The data available in the plan as on 01.01.2007 provided by the colliery was not sufficient and does not show any barrier between previous workings in the north side of Dahernangi/20M patch, and the fault plane, F-8, so further scientific study for ascertaining of barrier and slope stability of OB dump was required.
  2. The OB dump spreads partially over the North side of existing pit limit of Dahernangi patch, further re-handling of materials from top downwards making proper benches after the completion of re-handling of 13.44Lakh m<sup>3</sup> of OB was required. And further study by the expert team was suggested for the stability of OB dump."
- 4.3 The committee report was discussed with Director Technical (Operations) on 10.09.2016 at M/s. ECL head quarter vide letter no. ECL/PM/Rajmahal/363, dated 12.09.2016 and this was informed to GM, Rajmahal by GM (P&P) with the requisition of following items for detail examination of the facts:-
- (i) A copy of plan and section showing the benches before sliding of OB dump.
  - (ii) A copy of plan and section of last final cutting showing the coal and OB benches before dumping of the said area.
  - (iii) Initial plan of 20M m<sup>3</sup> OB patch.
  - (iv) Updated plan of 20M m<sup>3</sup> patch
  - (v) Copy of the plan and section of departmental OB, measured by CMPDIL team yearly from 2007 onwards.

4.4 Thereafter, a board meeting viz. 294<sup>th</sup> was held at M/s ECL, HQ wherein Director Technical (OP) apprised the board "that OB dump contains clay and its water absorbing capacity is more, the OB becomes as good as black cotton soil, so the dump is sliding frequently. Earlier also this type of slide had occurred and had entrapped one shovel. Hence, to ensure safety at the workings of 20 million patch/Dahernangi patch and OB re-handling from the dumping is required. If OB re-handling is not done, then about 2.20 million tonnes of coal of 20 million patch would be blocked and approximately Rs.300 per tonne profit would be lost". Apart from the above OB dump, re-handling is emergent by outsourcing for the following unavoidable circumstances:

- (1) Deployment of departmental HEMM for re-handling of OB dump is not possible at a high altitude area for maintaining benches according to DGMS permission.
- (2) The OB transportation roadway and side of dump would be common for this re-handling OB and for the OB of 20 million patch. So, movement of departmental haul pack and contractual dumper would be on the same roadway which is surface.
- (3) Side slope of the dump is required to be maintained at an angle of 36 degree to avoid for the slide of dump.
- (4) RCML patch where at present departmental equipment are deployed is far away (about 2.6km) from the side of dump. So, it is very difficult to shift heavy machineries for operation to this side.

It was recommended to execute the above re-handling job by the existing contractor of Dahernangi OC Patch i.e. M/s MIPL -- NKAS (JV). It is not feasible to engage another contractor to execute the job as the new tender may take considerable time for finalization and there is immediate danger to men and machinery due to collapse of OB dump. So, in order to maintain production, the existing contractor may be engaged. A letter of approval of this proposal was issued to GM, Rajmahal Area vide no.ECL/HQ/CMC/1046 dt.29.12.2016.

4.5 Normal and continuous workings were being carried out by M/s MIPL-NKAS (JV) at In-situ OB benches above the coal seam. Coal extraction from the coal benches of the seam situated on the down throw side of the F-8 fault by conducting regular deep hole blasting in both in-situ OB benches and coal benches was being done during the months of October, November and December, 2016. Regularly, the benches were being advanced on the North direction i.e. towards the OB dump and in the process causing reduction in the existing barrier between the coal benches, in-situ benches with that of OB dump, also with respect to F-8 fault. The workings in the benches as detailed above during the month of November and December, 2016 had affected the stability of strata along the F-8 fault which was maintaining its equilibrium till that time. Further as per the survey data, there existed two more down throw faults i.e. F-10 & F-10A in the working areas of in-situ OB benches and Coal benches. In addition to the above jobs, simultaneous operations were also started in OB dump i.e. 2<sup>nd</sup> phase of contract of OB re-handling for a quantity of 17.33Lakh m<sup>3</sup>. This job started in the last week of November on the north side at a distance ranging between 0m-100m of the working benches of in-situ OB and coal. This operation had further disturbed the equilibrium of the strata due to deployment of large number of HEMMs and their movement over the benches in OB dump.

- 4.6 Significant cracks were observed in the operating area of M/s MIPL-NKAS (JV). These were authenticated by M/s MIPL-NKAS(JV) in a letter addressed to General Manager (I/C) on dated 16.10.2016, requesting for not to impose penalty for the less production of in-situ OB and coal, stating the reason of surfacing major cracks and strata failure in their operating area of M-20 patch. This was also brought to the knowledge of Manager, Agent and GM (I/C) who was also Engineer In-charge representing M/s ECL as per the contract agreement.
- 4.7 Again, the contractor had informed GM (I/C) on 17.11.2016, stating that coal from lower exposed bench in this patch was not extractable, since place was unapproachable due drowning of the area. Further, many cracks had developed on the upper benches, significant cracks were also observed in dumped OB area, haul roads, in in-situ OB and coal benches, that is to say in the entire area of operation on the Northern side.
- 4.8 Monitoring of cracks in OB dump near Kaveri sump was started by the surveyor Sri Nandan Kumar before initiating 13.44Lakh m<sup>3</sup> OB re-handling at OB dump. The observation of subsidence / displacement of the strata was being done at +42mRL bench at west side of boundary area of M/s MIPL-NKAS (JV)'s M-20 patch. The measurement was being done with the help of marked scale and plumb bob arrangement placed on the either side of the cracks. Management had installed four nos. of such types of arrangements with plumb-bobs, thread and scale for crack measurements/monitoring at the In-situ OB benches and as reported, it was being monitored by the mining supervisors and surveyor of M/s ECL. The place of monitoring was about 100m beneath top edge of OB dump. The objective of this monitoring was to study its nature and the place so chosen because cracks were formed thereat. The particular place for monitoring was 200m west of slided benches on dated 09.08.2016.

Photographs taken at these places prior to accident and produced by the M/s MIPL-NKAS (JV) supervisors during the enquiry also clearly indicated the formation of cracks in this zone.

- 4.9 M/s MIPL-NKAS (JV) suspended the work of in-situ OB removal from the third shift of 23.12.2016 to 27.12.2016 at the OB benches situated above coal seams due to frequent slide/ fall. This matter was communicated by the contractor's office through mobile telephone No.7762823595 to the mobile telephone numbers – 9771447176, 9771447173, 9771447252, 971447182, 9771447186, 9771447267, 9771447256 & 9939125273 belonging to GM (I/C), GM (OP)/Agent, Manager, Area safety officer, Safety officer, Patch in-charge asst. manager and others who were directly controlling the contractual operations at the patch. The receipt of SMS messages was confirmed by many of them while adducing their evidences. Hard copy of messages were enclosed as document of proof.

The coal production was also restricted only to daylight hours i.e. between 8:00 am to 5:00 pm from 25.12.2016 to 27.12.2016 apprehending danger of slide. This was also confirmed from the records/registers of M/s MIPL-NKAS (JV).

In this connection it is pertinent to mention here that the contractor used to withdraw their men and equipments as and when side falls of small nature were observed owing to the presence of cracked ground.

- 4.10 Chairman Cum Managing Director along with Director, Technical (Operations), GM, (I/C) and other senior officials of M/s ECL had visited Daharnangi patch workings of M/s MIPL-NKAS (JV) on 26.12.2016 between 11:30am to 2:15pm.
- 4.11 Management had conducted deep hole blasting at both in-situ OB as well as at coal benches on 28.12.2016 at M/s MIPL-NKAS (JV) patch and had worked in 1<sup>st</sup>, 2<sup>nd</sup> and partly in 3<sup>rd</sup> shift and produced 5848 tonne of coal and also removed 1600m<sup>3</sup> of OB (in-situ) from the patch.

Contractor had also engaged five excavators, one dozer and 20 of tippers at OB dump for its removal. This was a continuous activity in all the three shifts on 28.12.2016 and a total of 25808 m<sup>3</sup> of OB dump was re- handled and removed.

It further revealed during enquiry that on 28.12.2016 during 3<sup>rd</sup> shift there was heavy fog in the entire mine and Sri Chandrika Prasad Tiwari, supervisor of M/s MIPL-NKAS (JV) instructed all operators to stop the work at 2:00 am (29.12.2016). All men and machineries were withdrawn outside of the crack line formed on the haul road leading to OB re-handling area. The work was resumed at 6:00 am in the morning and at that time Sri Tiwari had observed that about 30 inches (75 cm) of sliding had occurred ahead of the crack line towards the working benches on S-E direction. He further stated that at monitoring station at in-situ OB bench a displacement of 15 inches (38 cm) was observed at 7:00 am. This was a clear cut indication that the movement of strata in the area was very much active and was of alarming in nature.

- 4.12 On 29.12.2016 in 1<sup>st</sup> shift 716 tonne of coal was produced and there was no work of in-situ OB removal in 1<sup>st</sup> shift by M/s MIPL-NKAS (JV) apprehending danger. Also at the OB dump re- handling area in 1<sup>st</sup> shift of 29.12.2016 OB re-handling was done by deploying five excavators and 25 tippers and an amount of 9680m<sup>3</sup> was re-handled.

## 5.0 OCCURRENCE OF THE ACCIDENT:-

- 5.1 On 29.12.2016 in the 2<sup>nd</sup> shift operations at Dahernanmgi patch started at 1:00pm by deploying five excavators, 25 tippers, one grader and one dozer at OB dump. Further in coal bench 1 excavator and 35 tippers (approx.) were deployed for excavation and transportation of coal. One excavator was also deployed at inter burden/in-situ OB bench along with 8 tippers. At about 3:30pm side fall was observed by S/Sri S. Hansda, excavator operator and K. K. Upadhya, supervisor of M/s MIPL-NKAS (JV) and workings at inter burden OB was stopped, the excavator was marched out to safe distance on the west side of the workings. S/Sri K. K. Upadhya and Rajesh Patel both discussed and coal loading was also stopped apprehending danger of slide. The excavator at the coal bench was also moved out to safety and marched on the west side of the workings. Till 3:50pm 870 tonne of coal was produced and some quantity of inter burden OB was removed from the workings before withdrawal of men and equipments. However, workings were continued at the OB dump re-handling area as per the schedule. The information of withdrawal of equipments and stoppage of work at coal bench was informed to shift asst. manager Sri V. K. Singh and he in turn informed the same to the mine manager Pramod Kumar. In the mean time Lallu Khan, over all in-charge of M/s MIPL-NKAS (JV) at the OB dump came down and discussed the matter with Rajesh Patel. Lallu Khan was told that there was movement of strata at the coal extraction benches and he was advised to stop workings at the OB dump to which he said that "I will look into it" and he proceeded to his place of supervision i.e. OB dump. The work at OB dump was thus being continued. In the mean time S/ Sri V. K. Singh and Pramod Kumar arrived at the operational site and after inspection they left without giving any direction to other ongoing operations at coal bench and left for the inspection of Upper OB dump benches at Dahernanagi Patch. They also left the OB dump bench area at 5:30 pm after discussion with Lallu Khan. The work at upper benches was continuing and as much as 6512m<sup>3</sup> OB was removed from the OB dump.
- 5.2 At about 7:00pm, a violent sound "BOOM" was heard, followed by sliding of cracked OB strata overlying the coal seam and subsequent collapse of OB dump (re-handling working area). At that instant, Krishna Goswamy, jeep driver of Lallu Khan was talking with Raj Kumar, spare excavator operator, standing only 03m away from Lallu Khan on east side on 4<sup>th</sup> bench of OB dump, heard huge sound and seen fast sliding of all benches towards E & SE sides downwards along with HEMMs and operators and Supervisors. He raised alarm towards Lallu Khan to run fast to save himself but in a fraction of moment, he saw Lallu Khan was going down along with slided OB benches vertically by about 40m-50m. He then observed further sliding of OB dump on North side burying Lallu Khan completely in slided debris. He and Raj Kumar ran towards west side for safety, but again the ground cracked and next slide took place in which both went down along with slide and landed over the fallen debris with legs partially buried upto knee level. They raised loud alarm "Bachao- Bachao". The occurrence of OB dump slide was also seen by Hemnarayan, mining sirdar along with pump operator Mahendra Mal who were present at the pump station at main sump on the west direction of the area of slide. Both of them were pushed by the gushing air column and dust. He raised alarm over walkie- takie to the control room saying "slide, slide, and huge slide hua". Other persons in the vicinity of OB dump also informed to M/s MIPL-NKAS (JV) camp about the slide. The occurrence of slide was witnessed by Sri Krishnakanth Upadhyay, Supervisor, M/s MIPL-NKAS (JV) who was standing along with one excavator operator near a preparatory haul road on the south side of the Deep

Mining Zone. At about 7:00 pm he heard a sound of falling of big stones/boulders and the voice of Sri Gagan Singh, supervisor over the walkie-talkie as "Ja raha hai, Ja raha hai". Immediately, he witnessed sliding of huge mass of in-situ OB benches & OB dump and quarry bottom got filled at the deep mining zone. The electricity supply at the area went off and the entire operational area plunged into darkness. OB (re-handling) benches slid by about 45m-50m. The slid mass of OB benches and OB dump along with men and equipments deployed thereat buried them in totality, subsequently another side fall of OB dump followed, causing the catastrophic disaster. The entire area got covered with dust. Thus the accident occurred.



## 6.0 RESCUE AND RECOVERY:-

- 6.1 The message of slide reported by Hemnarayan Yadav was received in the control room. The person in the control room informed V K Singh, Asst. Manager and in-charge of the shift and Pramod Kumar, Manager. Pramod Kumar then informed about the accident to all key officers of mine and area.
- 6.2 After raising alarm, Hemnarayan Yadav, mining sirdar and pump operator Mahendra Mal, tried to escape but they fell down on ground and in the process Hemnarayan received minor injuries. Sujay Kumar, Overman also witnessed the slide and joined with V K Singh and R K Singh, both Asst. Managers who heard the voice of Hemnarayan Yadav and proceeded towards pump station in search of him. These three persons rescued Hemnarayan Yadav, Mahendra Mal and one CISF constable. They were sent to Area hospital, at Urjanagar by V K Singh's vehicle.
- 6.3 S/Sri Krishna Goswamy, jeep driver and Raj Kumar, excavator operator who were partially buried in the slide up to knee level, raised loud alarm "Bachao Bachao". Supervisors, survivors & other persons available at contractor's camp rushed to the site. After about 10-15 minutes four-five persons rushed to them and rescued them. They did not receive any injuries but were under trauma and sent to the camp.
- 6.4 Upon receiving information of fall, S K Singh, GM (I/C), immediately issued an office order No.GMI/P&IR/5 dated 29.12.2016, to set up a control room in room no.9 of Expat hostel at area level in addition to one existing mine level control room. R R Amitabh, GM (M)/AM (PCD&E) was the over all in-charge and in the absence of Sri Amitabh, Sri Kishor Kumar was appointed the in-charge of control room. The control rooms were in operation round the clock in all the shifts and each of the shifts were headed by senior level executives with mobile nos. Officials of the control rooms were taking report from the mine and were transmitting the same to the M/s ECL head quarters.
- 6.5 Senior officials of mine tried to reach the site of accident. Meanwhile nearby villagers, other locals who heard a huge sound rushed to the mine premises and assembled there. Sensing the mob fury, ECL officers retreated back to GM's residence. GM spoke with Director Technical (Operation), who instructed to take necessary help from the district administration. GM then requested DC & SP of Godda district to provide police protection to their officers to commence rescue and recovery operations. The SP responded immediately and sent two vehicles full of police personnel for providing security. Then ECL officers along with police force went to the mine. Due to disruption of electricity supply in the slided area there was no illumination. Management arranged three lights by 11:25pm for approach roadway to commence rescue and recovery. At about 12:00 midnight one more light was fitted at the area of accident. Ambulances and doctors were kept ready at the top of the accident site. Two dozers and one pay loader were deployed for the preparation of approach road to reach the recovery site.
- 6.6 Director Technical (OP) and Director Technical (P&P) reached the site by 2:30am. Sri A Thakur, Superintendent, Mines Rescue Station along with one instructor, four brigade members and rescue van reached the site by 5:00am on 30.12.2016. M/s BCCL's rescue team reached the site by 12:00 noon (30.12.2016). S/Sri Niranjana Sharma, Director and Md. Niyazi Dy. Director from DGMS, Sitarampur arrived at the

site of accident by 1:45pm. Two rescue teams from Satgram Area and Sodepur area arrived at the site by 3:30pm. NDRF teams with sniffer dogs reached the site at about 4:00pm. Later more numbers of rescue teams from different areas and CMPDIL team with magnetometer having thermal imager also reached the site and joined in rescue and recovery operations.

- 6.7 At about 6:40am on 30.12.2016, two pay loaders, two excavators and five dozers were deployed to establish approach road to the recovery site. At about 6:45am, 4 tippers, 3 excavators and one dead body were located. Three more tippers were located by 8:10 am. The magnetometer and thermal imager can pierce upto 60m and detect the metal structures and it helped in detection of buried HEMM and dead bodies. 11 dead bodies were recovered at 9:00am, 9:25am, 9:55am, 10:10am, 10:22am, 10:45am, 11:00am, 12:30pm, 12:50pm, 3:50pm & 5:30pm. Three excavators and seven tippers were also recovered in damaged condition.
- 6.8 S/Sri Utpal Saha, Dy. Director-General of Mines Safety, DGMS, EZ along with S G Bhaisare, Dy. Director (Mech.), also arrived at about 6.30pm at Rajmahal OCP. S/Sri P K Sarkar, Dy. Director General of Mines Safety, HQ, DGMS, Dhanbad along with S S Prasad, Director, HQ, DGMS, Dhanbad and I Satyanaraya, Dy. Director, HQ, DGMS, Dhanbad also arrived at about 7.00pm at Rajmahal OCP for any assistance to be rendered.
- 6.9 On 31.12.2016, rescue and recovery operations continued by engaging 4 excavators, two dozers and two pay loaders. Five dead bodies were recovered at 10:20am, 12:30pm, 12:30pm, 3:30pm & 4:30pm. One excavator and one tipper and one dozer were recovered in broken condition. Arrangements were made to measure the strata movement near recovery zone at 8:00pm. I, along with team of enquiring officers of DGMS had inspected site of accident and the rescue and recovery operation at about 11:00am and watched recovery operations upto 6:15pm.
- 6.10 On 01.01.2017, Rescue and recovery operations continued by engaging 4 excavators, two dozers and two pay loaders, two dead bodies recovered at 11:00am and 6:15pm.
- 6.11 On 02.01.2017, Rescue and recovery operations continued by engaging 6 excavators; three dozers & one pay loaders but no dead body was recovered. However a jacket and driving license of Parweej Alam was found in the debris at 4:45pm. Rescue and recovery operations were discontinued from 5:45pm to 8:00am of 03.01.2017 due to unsafe condition at the recovery site.
- 6.12 On 03.01.2017, rescue and recovery operations continued by engaging 7 excavators, 7 dozers & two pay loaders but no dead body was recovered. Development of fresh cracks at top bench extending towards north-east direction in semi-circular manner as well as widening of old cracks were observed at 9:30pm.
- 6.13 On 04.01.2017 M/s MIPL-NKAS (JV) operators refused to work in recovery zone due to unsafe conditions. Therefore, one excavator, 4 dozers and two pay loaders of M/s ECL department were engaged for the recovery but no dead body was recovered. However, some parts of 4 tippers were traced and recovered.

- 6.14 On 05.01.2017 at about 7:00am crack observation team informed control room that cracks had developed 15mm vertically and 15mm horizontally in the top bench, 10mm horizontally in the middle bench and 5mm horizontally in lower bench. The risk assessment committee comprising of S R P Verma, Area Safety officer, S Dhibar, Area Survey officer and SP Barnwal, Safety officer inspected the area and informed that cracks on top OB benches were widened upto 15mm vertically towards slide and widened upto 25mm horizontally. Later Sri V. Lakshmi Narayana, DMS/SO, S Banerjee, GM (Safety& Rescue), K Gyaneshwer, Dy. Director, Survey (HQ), S R P Verma, Area Safety officer, S Dhibar, Area Survey officer, Surendra Murmu, Asst. manager, Alok Kumar, Asst. Manager inspected the crack zone. They observed that cracks were traversing NE-SW direction, 30mm wide horizontal and 15mm vertical on the top bench. Cracks were widened upto 270mm traversing E-W direction in lower benches. Fresh rolling of boulders and formation of fresh cracks were also observed. Cracks were further widened in 2<sup>nd</sup> shift; therefore, all rescue and recovery operations were brought to halt.
- 6.15 On 06.01.2017, Pit Safety Committee members (union representatives, management representatives, Contractor's representatives and Workmen Inspectors) inspected the recovery zone and a special safety committee meeting was conducted in presence of S/Sri Niranjan Sharma, Director and Md. Niyazi, Dy. Director and ECL senior officers at the Agent's office and modus of operandi for further recovery work looking into fresh development of cracks in slided area and endangering the lives of the persons engaged in rescue and recovery. Therefore, all members present in the meeting agreed unanimously to suspend rescue and recovery operations till an "action plan for safe operation for rescue and recovery" is made, vetted by ISO and approved by DGMS. Management have entrusted one scientific agency for study and preparation of action plan.
- 6.16 On 09.01.2017, I accompanied by other DGMS officials, GM (Safety & Rescue), Area GM (I/C) and other ECL officers inspected recovery zone. We observed development of new cracks on 4<sup>th</sup> bench and widening of old cracks. I directed the top mine officials not to resume recovery operations till a proper action plan is prepared.
- 6.17 Rescue and recovery operations were kept suspended from 05.01.2017 to till date. Only 18 bodies of the deceased out of 23 involved persons were recovered. All dead bodies were sent to Sadar Hospital, Godda for post-mortem examination and after post-mortem (autopsy) bodies were handed over to the legal heirs and sent to their respective native places by hired ambulances. Twelve tippers, five excavators and one dozer were also recovered in damaged condition from slided OB debris.
- 6.18 A date wise list of dead bodies recovered is appended below:-

| Sl.no. | Name of deceased   | Designation | Fathers Name     | Date of Body recovered | Address   |
|--------|--------------------|-------------|------------------|------------------------|---|
| 1      | Hari Kishore Yadav | Exc. Optr.  | Dadan Yadav      | 30.12.2016             | Vill. & PO:Jalalpur, PS: Daranda, Dist: Siwan(Bihar)        |
| 2      | Javed Akther       | Exc. Optr.  | Jasmuddin Ansari | 30.12.2016             | Vill: Parihara, PO:Nildam/Tildam,PS & Dist:Garwa(Jharkhand) |

|    |   |                  |                          |            |  |
|----|---|------------------|--------------------------|------------|--|
| 3  | Rajendra Yadav<br>alias Bonal             | Exc. Optr.       | RamNaresh<br>Yadav       | 30.12.2016 | Vill: Patdi, PO: Maharajganj,<br>Dist: Siwan( Bihar)                 |
| 4  | Brijesh Yadav                             | Exc. Optr.       | Kamaldeo<br>Yadav        | 30.12.2016 | Vill: Chitoura, PO &<br>PS: Sahanwar, Dist: Balia<br>(UP)            |
| 5  | Sanjay Kr. Sahi                           | Tipper<br>Driver | Sujit Sahi               | 30.12.2016 | Vill: Deoria, Dist:<br>Lohardagga, Jharkhand                         |
| 6  | Md. Nurul                                 | Tipper<br>Driver | Md. Raffique             | 30.12.2016 | Vill&PO: Pahari, PS: Sahapur,<br>Tahasil: Bhoganj, Dist:<br>Riwa(MP) |
| 7  | Jai Prakash rai                           | Tipper<br>Driver | Tola Rai                 | 30.12.2016 | Vill; Laijnpra, Dist;<br>Muzzaffatpur(Bihar)                         |
| 8  | Nageshwar<br>Paswan                       | Tipper<br>Driver | Sakkhichand<br>Paswan    | 30.12.2016 | Vill: Barun, PS: Paru, Dist:<br>Muzzaffarpur(Bihar)                  |
| 9  | Ajit Patel                                | Exc. Optr.       | Dinesh<br>Prasad Patel   | 30.12.2016 | Vill: Lilna, PO: Bamuji, PS:<br>Amliya, Dist: Siddhi(MP)             |
| 10 | Sakil Khan                                | Tipper<br>Driver | Yunush Khan              | 30.12.2016 | Vill: Mandar, Dist; Ranchi,<br>Jharkhand                             |
| 11 | Vikash Patel                              | Tipper<br>Driver | K.P.Patel                | 30.12.2016 | Vill: Dadjir, PO: Sonbarsha,<br>Dist: Siddhi(MP)                     |
| 12 | Sunil Bhengra                             | Tipper<br>Driver | Laxman<br>Bhengra        | 30.12.2016 | Vill: & PO: Koira, Dist:<br>(Odisha)                                 |
| 13 | Kuleshwar<br>Kumar alias Ajay<br>Kushwaha | Dozer Optr.      | Baleshwar<br>Mahto       | 30.12.2016 | Vill: Gorla Karma, PO: Barhi,<br>Dist: Hazaribag, Jharkhand.         |
| 14 | Md. Julfkar                               | Tipper<br>Driver | Saffi<br>Mohammad        | 30.12.2016 | Vill: Baldhi, PS:<br>Chittaranjana, Dist:<br>Singrauli(MP)           |
| 15 | Md. Jamir                                 | Tipper<br>Driver | Lal<br>Mohammad          | 31.12.2016 | Vill: Kunjhun, PO: Nagihar,<br>Dist: Siddhi(MP)                      |
| 16 | Raj Kamal<br>Goswami                      | Tipper<br>Driver | Sudama<br>Goswami        | 31.12.2016 | Vill; Bathaya, PO: Chitoria,<br>Dist; Siddhi(MP)                     |
| 17 | Sanjit<br>Vishwakarma                     | Tipper<br>driver | Ram Patik<br>Vishwakarma | 01.01.2017 | Vill; Kodihar, PO: Sonbarsha,<br>Dist: Siddhi(MP)                    |
| 18 | Laddu Yadav                               | Exc. Optr.       | Yogeshwar<br>Yadav       | 01.01.2017 | Vill: Bsanda, PS: Channi,<br>Dist: Nalaanda(Bihar)                   |

## 7.0 INSPECTIONS AND ENQUIRY:-

- 7.1 As per the instructions of the undersigned on 30.12.2016, S/Sri Niranjan Sharma, Director of Mines Safety, Region No.3 along with Md. Niyazi, Dy. Director of Mines Safety left Sitarampur in the morning and reached the site of accident at the mine directly at about 1:45pm and they inspected the slided area & surrounding workings. During the inspection of failed OB dump and the haul roads, they observed visible and wide cracks existing beyond the slided portion of the OB dump. Therefore, M/s ECL management was directed to block entry of persons and machines in that area; and posting of guards round the clock to prevent any unauthorized entry. Afterwards they supervised the rescue and recovery work. NDRF teams, Mine rescue teams from M/s ECL and M/s BCCL had also arrived at the site and were part of rescue and recovery. District administration had taken control of the area for maintaining law and order.
- 7.2 Myself, along with Sri S G Bhaisare, Dy. Director of Mines Safety (Mech.) reached Rajmahal OCP in the evening at about 6:30pm on 30.01.2016.
- 7.3 Sri Rahul Guha, Director General of Mines Safety, DGMS, Dhanbad constituted a high level committee to enquire into the causes and circumstances leading to the accident, which occurred at Rajmahal OCP of M/s ECL on 29.12.2016 under Section 23(2) of the Mines Act, 1952 under the chairmanship of Sri Utpal Saha, Dy. Director General of Mines Safety, DGMS, Eastern Zone vide Order No.Z-20025/4/2016/MAMID/1187-97 Dhanbad dated 30.12.2016. The committee comprised of other four members namely, S/Sri Niranjan Sharma, Director of Mines Safety, Md. Niyazi, Dy. Director of Mines Safety (Mining), S G Bhaisare, Dy. Director of Mines Safety (Mechanical) and I. Satyanarayana, Dy. Director of Mines Safety (Soma), HQ. A Sub-Committee was also constituted consisting of S/Sri K Gyaneswar, Dy. Director of Mines Safety (HQ), Rajib Mandal, Head Surveyor (HQ), Gorakh Singh, Surveyor (CZ), Tapas Rajwar, Surveyor (HQ) and Rajib Ranjan Sinha, Surveyor (HQ) for conduct of survey work related to accident and assist the Inquiry Committee as per the above order.
- 7.4 S/Sri P K Sarkar, Dy. Director General of Mines Safety (HQ) along with S S Prasad, Director of Mines Safety (S&T), I Satyanarayana, Dy. Director of Mines Safety (Soma), S Gyaneshwer, Dy. Director of Mines Safety (HQ) and survey team from DGMS Dhanbad reached Rajmahal OCP in evening at about 7:00pm on 30.12.2016. At about 7:30pm, all the officials of DGMS along with CMD, Director Technical (OP) and other senior officials of M/s ECL went to visit the site of accident but it could not materialized due to bad climatic conditions (dense fog with poor visibility) returned back half way.
- 7.5 On 31.12.2016 there was heavy commotion at the site. Lots of villagers surrounded the mine premises and law & order situation was unmanageable for some time. When SP, Godda, gave clearance, myself along with the Inquiry Committee and survey team inspected the accident site and supervised the rescue and recovery work and took stock of the situation and did strategy planning. Dy. Director General of Mines Safety (HQ), along with other officers of DGMS, HQ and Senior officers of M/s ECL also inspected the site of accident. DDG (HQ) observed wide cracks upto 300mm on the top of failed OB dump and directed to take advice of scientific experts regarding stability of the dump immediately to ensure safety of the persons engaged in rescue and recovery operations.

- 7.6 A notice of enquiry as per Section 23(2) of the Mines Act, 1952 was served vide letter Camp: Rajmahal OCP/01 dated 01.01.2017 to M/s ECL management and the same was also posted on the notice boards.
- 7.7 A letter requiring the submission of remote sensing data of accident site was served to the Nominated Owner of M/s ECL vide letter no. DGMS/EZ/Rajmahal Camp/15-16/02 dated 01.01.2017.
- 7.8 Letter requiring the submission of data for scientific analysis of major slope failure was served to M/s ECL management vide letter no. DGMS/ Camp Rajmahal Area/2016/03 dated 01.01.2017.
- 7.9 Form B, D & E Registers of M/s MIPL-NKAS (JV), contractor(s) were seized on 31.12.2016. Blasting records and Statutory diaries of blasting officers, overman and sirdar of blasting section were seized on 01.01.2017, statutory plans, sections, agreement copy of contract, finance related bills of contractor were seized on 02.01.2017, Statutory diaries of manager, safety officer, asst. manager, measurement register, WI report were seized on 03.01.2017 (a copy of the seizure memo along with detailed list of all the documents seized during the course of enquiry was handed over to the manager).
- 7.10 On 01.01.2017, Sri Rahul Guha, Director-General of Mines Safety, Dhanbad along with Prof. Ram Madhav Bhattacharjee, ISM, Dhanbad arrived. Accompanied by DDG (EZ) and Director, Region No.3 and top M/s ECL officials, DG, DGMS inspected the site of accident where recovery was going on. He also inspected the top of OB dump and observed that the area had major cracks which were horizontal to vertical in nature. DG assessed the situation and took stock of the situation and left the place. A meeting was convened by DG with union representatives namely S/sri Angad Upadhyaya of BMS, Ram Swaroop of AITUC, Randhir Singh of RCMS and Mistry Marandi of JCM. They have suggested that regular meeting of tripartite committee shall be done. Unsafe areas of operations shall be marked. No work in unsafe manner shall be done and other matters were discussed.
- 7.11 An enquiry office was set up at the area office of General Manager for recording statements of evidences from 02.01.2017 to 14.01.2017 and a total of 53 statements were recorded at the Rajmahal Camp and other statements of GM,(I/C),GM( Safety & Rescue),Director Technical (Op)/ Nominated Owner and CMD were obtained/recorded at my Office.
- 7.12 Sri V Lakshmi Narayana, Director of Mines Safety/Staff Officer, EZ was co-opted in team of enquiry, inspected the site of accident on 03.01.2017 along with S Banerjee, GM (Safety) & other M/s ECL officials. Again on 05.01.2017 both of them inspected the slided area and observed development of fresh cracks and widening of old cracks. They immediately discussed with me and Director Technical (Operation) and a decision was taken to halt further recovery operations.
- 7.13 On 06.01.2017, Pit Safety Committee members along with senior officers inspected the site of accident and slided zone. Afterwards, S/sri Niranjan Sharma, Director and Md. Niyazi, Dy. Director attended the special safety committee meeting at the Agent's

office as observers of DGMS. Senior executives including GM (Safety) of M/s ECL management, Union Representatives & representatives of contractors were also present in the meeting. The cause of accident was thoroughly discussed.

- 7.14 DGMS, HQ survey team headed by Sri K. Gyaneshwar, Dy. Director of mines Safety conducted survey from 01.01.2017 to 12.01.2017 and preparation of accident plan was in progress. Lot of information was not available for the preparation of plan and sections. Therefore survey team visited mine and survey office several times and interacted with S/sri S. Dhibar, Area Survey Officer, D. Ram, Collier Surveyor and Nandan Kumar, in- charge surveyor of M/s MIPL-NKAS (JV) patch.
- 7.15 Vide letter no. EZ/Rajmahal OCP/ FAE/2017/43 Rajmahal dated 06.01.2017 addressed to the M/s ECL management calling for the detailed list of documents for submission to the Inquiry committee for further seizure.
- 7.16 On 07.01.2017 the workings of Dept. patch and M/s RCML patch were inspected by S/sri V Lakshminarayana, Director of Mines Safety/SO, DGMS, EZ and Md. Niyazi, Dy. Director of Mines Safety, Region No.3, Sitarampur along with S/Sri pramod Kumar, Manager, SRP Verma, Srea Safety Officer, S Dhibar, Area Survey officer, D Ram, Coll. Surveyor, Nanadan Kumar, in-charge Surveyor and B S Chakraborty, WL. They had observed workings of M/s RCML having high benches in excess of permitted heights. And also observed that haul roads were situated at the toes of the high walls. These observations were pointed out and noted in the spot violation book. It was directed that t no work shall be carried on the high walls side and proper benches shall be formed from top downwards in accordance with the permission and the haul roads shall be shifted away from the toe of high walls.
- 7.17 On 09.01.2017 myself, along with other DGMS officials accompanied by GM (Safety & Rescue), Area GM (I/c) and other ECL officers inspected recovery zone again. We observed development of new cracks on 4<sup>th</sup> bench and widening of old cracks. I directed not to resume recovery operations till a proper action plan is prepared.
- 7.18 Inspection of the site of accident revealed that “ the affected area of slide was very huge and in between the grids 188670E-189390E & 244180N-2443640N, measuring about 720m (length) along E-W and tip of the RL of the failed OB dump was at +146mRL and that of the working coal seam floor was at (-)52mRL and a horizontal affected distance (width) along N-S about 366.5m, an estimated volume of slide was about 3.99M m<sup>3</sup> in an area (dump + rock) of 263893m<sup>2</sup>. The height of OB dump failed varied from 35m to 55mand that of in-situ OB failed varied from 39m-51m.

The recovery operations were taking place at a depth of about 50m from the top of the OB dump. Inspected the area by approaching to the further south side and north side of haul roads leading to OB dump and observed there were major progressing cracks on the haul roads on OB dump.

- 7.19 On 02.01.2017, seized office file of survey dept. Finance related account bills (4 copies) of M/s MIPL-NKAS (JV), production registers of Rajmahal OCP (2 nos.), and agreement copy of M/s MIPL-NKAS (JV) along with the loose copies of modifications. On 03.01.2017, seized ACM's diaries, safety officers diaries, surveyor diary and crack

measurement register of Jan. & Feb. 2016, WI report and diary of manager and one letter on dump slide addressed to GM(I/C) by GM(CMC) were seized.

Myself along with S G Bhaisare proceeded to Sitarampur on 04.01.2017 to attended the meeting called by DG on 05.01.2017.

- 7.20 On 05.01.2017 attended the meeting with DG at HQ. Discussed last mine disaster report in nutshell. Discussed methodology of enquiry to be undertaken. Discussed about future course of action to be taken for other opencast mines a being worked in M/s ECL.
- 7.21 After the office work on 06.01.2017 & 07.01.2017, I retuned back to Rajmahal OCP on 08.01.2017 along with S G Bhaisare and continued the inquiry along with other committee members. Photographs showing the images of cracks in the OB dump, haul road and on the in-situ OB benches were produced by the witness during the time of evidence recording. In addition to this SMS clippings of report, which was being communicated to M/s ECL officials by the contractor were also produced during the enquiry. Preparation of plans and section was in progress.
- 7.22 On 10.01.2017, experts from CMPDIL arrived to guide for continuing the rescue and recovery operations. But operations could not be restarted.
- 7.23 On 14.01.2017, observation in spot violation was recorded regarding not to carry any mining work other than recovery work in the OB dump slide area i.e. M/s MIPL-NKAS (JV) patch. Thereafter the Enquiry Committee team left Rajmahal camp on 14.01.2016 and returned back to Sitarampur.
- 7.24 During the enquiry statements of following persons were recorded in connection with FATAL ACCIDENT, which occurred on 29.12.16 at Rajmahal OCP M/s ECL.

| Sl. No. | Name of the person      | Designation            | Date     | Name of recording Officer |
|---------|-------------------------|------------------------|----------|---------------------------|
| 1.      | Kameshwar Prasad        | Tipper Driver (MIPL)   | 02.01.17 | Niranjan Sharma           |
| 2.      | Chandrika Prasad Tiwari | Supervisor (MIPL)      | 02.01.17 | Niranjan Sharma           |
| 3.      | Munna Pandit            | Mining Sirdar          | 03.01.17 | Niranjan Sharma           |
| 4.      | Krishna Kant Upadhya    | Supervisor             | 03.01.16 | Niranjan Sharma           |
| 5.      | Bir Prakash Rai         | Clerk                  | 03.01.17 | Md. Niyazi                |
| 6.      | Bihamal Kumar Soren     | Clerk                  | 03.01.17 | Md. Niyazi                |
| 7.      | Ramchandra Pandit       | Drilling & blasting    | 03.01.17 | Md. Niyazi                |
| 8.      | Panchanand Mishra       | Mining Sirdar          | 04.01.17 | Md. Niyazi                |
| 9.      | Prasoon Kujur           | Sr. Overman            | 04.01.17 | Md. Niyazi                |
| 10.     | Naresh Prasad           | Blasting Officer       | 04.01.17 | Md. Niyazi                |
| 11.     | Santosh Pandit          | Excavator Operator     | 04.01.17 | Niranjan Sharma           |
| 12.     | Rajesh Patel            | Supervisor             | 04.01.17 | Niranjan Sharma           |
| 13.     | Sudhir Prasad Singh     | Asst. Manager Blasting | 05.01.17 | Md. Niyazi                |
| 14.     | Md. Ejaz Hussain Ansari | Mining Sirdar          | 05.01.17 | Niranjan Sharma           |
| 15.     | Sujay Kumar             | Overman                | 05.01.17 | Niranjan Sharma           |
| 16.     | Dinesh Yadav            | Excavator Operator     | 05.01.17 | Niranjan Sharma           |
| 17.     | Goutam Kumar            | Mining Sirdar          | 05.01.17 | Md. Niyazi                |
| 18.     | Nilam Toppo             | Overman                | 06.01.17 | Niranjan Sharma           |
| 19.     | Aravind Kumar           | Overman                | 06.01.17 | Md. Niyazi                |



|     |                           |                       |             |                  |
|-----|---------------------------|-----------------------|-------------|------------------|
| 20. | Bibhash Chandra Maji      | Chief Manager(Mining) | 06.01.17    | Niranjan Sharma  |
| 21. | Padma Charan Dhar         | Dy. Manager           | 07.01.17    | Niranjan Sharma  |
| 22. | Vijay Kumar Singh         | Chief Manager(Mining) | 07.01.17    | Niranjan Sharma  |
| 23. | Barun Shankar Chakraborty | Workman Inspector     | 07.01.17    | V.Lakshminarayan |
| 24. | Krishna Goswami           | Jeep Driver           | 08.01.17    | Niranjan Sharma  |
| 25. | Niraj Kumar Sinha         | Assistant Manager     | 08.01.17    | Niranjan Sharma  |
| 26. | Kumar Baibhar Singh       | Liasoning Officer     | 08.01.17    | Md. Niyazi       |
| 27. | Suraj Kumar Mahto         | Overman               | 08.01.17    | V.Lakshminarayan |
| 28. | Ashok Kumar Sinha         | Overman/ W.I.         | 08.01.17    | V.Lakshminarayan |
| 29. | Arvind Kumar Ramji Patel  | Camp Coordinator      | 09.01.17    | Niranjan Sharma  |
| 30. | Sudhir Prasad Barnwal     | Safety Officer        | 09.01.17    | V.Lakshminarayan |
| 31. | Ranjit Kumar Singh        | Assistant Manager     | 09.01.17    | Niranjan Sharma  |
| 32. | Kailash Kumar Upadhyay    | Sr. Overman           | 09.01.17    | Niranjan Sharma  |
| 33. | Ravindra Nath Singh       | Chief Manager (Excv)  | 09.01.17    | S.G.Bhaisare     |
| 34. | Devendra Kumar Sinha      | Chief Manager (Excv)  | 09.01.17    | S.G.Bhaisare     |
| 35. | Chiranjib Roy             | Area Engineer (Excv)  | 09.01.17    | S.G.Bhaisare     |
| 36. | B.K.P.Sharma              | Overman               | 09.01.17    | Md. Niyazi       |
| 37. | Anil Kumar Verma          | Area Engineer (E&M)   | 10.01.17    | S.G.Bhaisare     |
| 38. | Sitaram Prasad Verma      | Area Safety Officer   | 10.01.17    | V.Lakshminarayan |
| 39. | Hem Narayan Yadav         | Mining Sirdar         | 10.01.17    | Md. Niyazi       |
| 40. | Pramod Kumar              | Chief Manager         | 10.01.17    | Utpal Saha       |
| 41. | Vinay Prakash Singh       | Sr. Manager (E&M)     | 10.01.17    | S.G.Bhaisare     |
| 42. | Uday Kant Thakur          | Chief Manager (E&M)   | 10.01.17    | S.G.Bhaisare     |
| 43. | Rajiv Kumar Tiwari        | Dy. Manager (E&M)     | 10.01.17    | S.G.Bhaisare     |
| 44. | Mahendra Mal              | Asst. Foreman (E&M)   | 10.01.17    | S.G.Bhaisare     |
| 45. | Dilip Roy                 | Manager (Mining)      | 10.01.17    | Niranjan Sharma  |
| 46. | Jainarayan Ravidas        | Pump Khalasi          | 10.01.17    | S.G.Bhaisare     |
| 47. | Devendra Kumar Nayak      | GM (Operation)/Agent  | 11.01.17    | Niranjan Sharma  |
| 48. | Nandan Kumar              | Sr. Surveyor          | 12.01.17    | Md. Niyazi       |
| 49. | Patel Mayank Kumar        | Attendance Clerk      | 12.01.17    | Md. Niyazi       |
| 50. | Sadhan Dhibar             | Area Survey Officer   | 13.01.17    | Niranjan Sharma  |
| 51. | Dr. M.D.Naved Akhtar      | Medical Officer       | 13.01.17    | S.G.Bhaisare     |
| 52. | Damodar Ram               | Colliery Surveyor     | 13.01.17    | Md. Niyazi       |
| 53. | Sushanta Banerjee         | GM (Safety & Rescue)  | 17.01.17    | Utpal Saha       |
| 54. | Ashwini Kumar Rao         | Office Clerk,M/s MIPL | 18.01.17    | Md Niyazi        |
| 55. | S. K. Singh               | GM (I/C)              | 12/25.01.17 | Utpal Saha       |
| 56. | B. N. Shukla              | Director (T) OP       | 24.01.17    | Utpal Saha       |
| 57. | R. R. Mishra              | CMD                   | 30.01.17    | Utpal Saha       |

## 8.0 CONDUCT OF SURVEY OF ACCIDENT AREA AND PREPARATION OF PLANS AND SECTIONS:-

Director General of Mines Safety, DGMS, Dhanbad, vide officer order no. Z-20025/4/2016/MAMID/1187-97 dated 30.12.2016, constituted a sub- committee under the leadership of Sri K Gyaneswar, Dy. Director of Mines Safety (HQ) to assist the Inquiry Committee in conducting survey works related to the accident. The other members of the sub- committee include S/Sri Rajib Mondal, Head surveyor, HQ, Gorakh Singh, Surveyor, CZ, Tapas Rajwan, Surveyor, HQ and Rajib Ranjan Sinha, Surveyor, HQ, Dhanbad.

The survey team reached Rajmahal OCP on 30.12.2016 at 2:00pm. They have conducted survey works as follows:



| Date       | Work detail   |
|------------|---|
| 31.12.2016 | Inspected the site of accident and studied plans and sections.  |
| 01.01.2017 | Survey work could not be carried due to heavy fog.  |
| 02.01.2017 | Survey work could not be carried due to heavy fog.  |
| 03.01.2017 | Survey to locate positioned of faults and photographing of accident site.   |
| 04.01.2017 | Survey work of accident site.   |
| 05.01.2017 | Survey work of the slided OB area.  |
| 06.01.2017 | Survey work of the slided OB area.  |
| 07.01.2017 | Collection of data for preparation of plans and sections at colliery survey office.                               |
| 08.01.2017 | Preparation of plans and sections at Colliery survey office with the help of data submitted by Colliery Surveyor. |
| 09.01.2017 | Preparation of plans and sections at Colliery survey office.  |
| 10.01.2017 | Discussion with Inquiry team and incorporation of additional details on the plan.                                 |
| 11.01.2017 | Discussion with Inquiry team and incorporation of additional details on the plan.                                 |
| 12.01.2017 | Collection of statutory plans and other related plans.  |

There after survey team left for Dhanbad and engaged in final preparation of accident site plans and sections. The team discussed with Inquiry Committee and finalized the plan.

Plan bearing No. SHQ/ACCIDENT/01/2017 dated 27.01.2017 showing the outline position of slide, position of recovered dead bodies and HEMMs.

Sections were prepared at 100m interval showing the different profiles along with faults with dates to illustrate profiles of OB dump, in-situ OB benches & coal benches and also profiles showing before and after accident.

**ANALYSIS OF PLANS AND SECTIONS:-**

1. The outline of Dahernangi patch has been shown in green color in the plan bearing no SHQ/ACCIDENT/01/2017 dated 27.01.2017. The fault planes (F-8, F-10, F-10A) were shown in red color. The recovered dead bodies and HEMMs shown in symbols  . The area covered by the slide was shown in dotted line with red color.
2. Study of sections revealed the following:-
  - a. The section along (188800E) A-A' revealed that minimum width of in-situ OB at the down throw side of fault F-8 was 13.85 m (at 49.553mRL) and maximum width was 85.87 m (at 3.189m RL), height of OB dump was 85.27m (at 96.169mRL).
  - b. The section along (188900E) B-B' revealed that minimum width of in-situ OB at the down throw side of fault F-8 was 49.48m (at 50.629mRL), maximum width was 115.57m (at 20.653mRL) and height of OB dump was 77.21m (at 92.847mRL).
  - c. The section along (189000E) C-C' revealed that minimum width of in-situ OB at the down throw side of fault F-10 was 41.87m (at 46.75mRL) and maximum width was 105.9m (at 35.75mRL), width of in-situ OB between the F-8 and F-10 faults was 07.68m and height of OB dump was 118.54m (at 130.847mRL).
  - d. The section along (189100E) D-D' revealed that minimum width of in-situ OB at the down throw side of fault F-10 was 06.52m (at 416.40mRL), width of in-situ OB from F-8 fault is 37m and the maximum width was 46.4m between F-8 and F-10 fault and height of OB dump was 125.72m (at 136.489mRL).
  - e. The section along (189200E) E-E' revealed that workings had crossed beyond F-10 fault and the minimum width of in-situ OB between F-8 and F-10 faults on which OB dump rested is 3.79m (at 31.52mRL), the maximum width in-situ OB was 93.15m (-32.538mRL) and height of OB dump was 124.08m (at 133.90m RL).
  - f. The section along (189300E) F-F' revealed that minimum width of in-situ OB between F8 and F10 faults was 0.00 m and maximum width was 86.95m (at -45.93mRL) and height of the OB dump was 61.44m (at 76.97mRL).
  - g. The section along (189400E) G-G' revealed that minimum width of in-situ OB between F-8 & F -10 A was 0.00m and maximum was 28.59 m (at -42.38m RL) and the height of OB dump was 73.85m (at 83.098mRL).

## 9.0 ANALYSIS OF EVIDENCES:-

- 9.1.1 There were as many as six eye witnesses to this accident and they were S/sri Hemnarayan Yadav, Mahendra Mal, Krishna kant upadhaya, Krishna Goswami, Raj kumar, Md. Ejaz hussain Ansari and Sujay Kumar. Off these persons, S/sri Raj kumar And Krishna Goswami were standing only at a distance of 3.0m from where the slide ran down. They could have been a part of the victim.
- 9.1.2 Sri Hemnarayan Yadav, mining sirdar and Mahendra Mal, saw falling of electric poles containing lights and sliding of huge mass from top of OB benches with dust. Having seen this, they got panic and rushed towards west side by raising alarm "Slide ho raha hai, Bhago- Bhago" in walkie-talkie. Hemnarayan sustained injuries in the process. Sri R K Singh, ACM having heard his voice came in of search of him and took them to Area Hospital at Urjanagar. He also stated that no work was done in in-situ OB at this patch from 25.12.2016 to 27.12.2016 and no coal production was done beyond day light hours since 25.12.2016. He stated that surveyors, manager, safety officer and asst. managers were regularly inspecting the Dahernanagi patch workings, which indicated that all mine officials were aware of the fact of ground movement.
- Sri Mahendra Mal corroborated the statement of Hemnarayan Yadav.
- 9.1.3 Sri Krishna Kanth Upadhaya, Supervisor, M/s MIPL-NKAS (JV) also witnessed the slide and heard the voice of Gagan Singh, supervisor and one of the victim of the accident of 2<sup>nd</sup> shift at OB dump saying "ye ja raha hai" over walkie-talkie. He stated that at about 6:55pm when he was speaking with excavator operator he heard a violent sound of stone bursting and falling. Immediately he cautioned Lallu Khan for safety but within no time he saw huge mass of OB benches and OB dump sliding down partially filling the bottom of the deep mining area on the east side of the pump. The entire area became dark due to power cut-off and he heard voice of Krishna Goswami and Raj Kumar from OB dump. Immediately he rushed towards the slide and having reached he found both of them safe. Crack monitoring was being done since last one-month on OB bench but neither manager nor asst. manager gave any warning. Dangers of simultaneous working at three places i.e. re-handling of OB, in-situ OB removal and coal extraction were not informed to the contractor by the ECL management. He also stated that Pramod Kumar, manager was regularly being informed about the disturbance in the working area but he never took this matter seriously and instructed them to continue work. ECL's Supervisors never used to be present at this site.
- 9.1.4 Sri Krishna Goswami, jeep driver of Lallu Khan, along with Raj Kumar, excavator operator, who were standing at a distance of about 3m from Lallu Khan witnessed the sliding of entire workings of OB dump re-handling area, and also saw Lallu Khan, other supervisors and HEMMs sliding down to about 40m- 50m on E and SE direction and their subsequent disappearance from his view. Sri Goswami also stated that in the process of escaping in the subsequent slide he along with Raj Kumar got moved down about 30m-40m and partially buried upto knee level. They also raised alarm in an attempt to save themselves and were located and rescued by four persons after 10-15minutes.

- 9.1.5 Md. Ejaz Hussain Ansari, mining sirdar was at the monitoring station of crack zone located at the 4<sup>th</sup> OB bench (view point level) also saw sliding of OB dump. He observed rolling down of tippers along the slide and the entire area becoming dark. He heard the voice of the persons calling "Bachao- Bachao". He conveyed this message to control room and 2<sup>nd</sup> shift in-charge asst. manager V K Singh. He also observed increase in crack by 2.0cm in an hour and having sensed danger he immediately called control room and informed Jitendra Babu, overman, who in-turned conveyed the message to shift asst. manager in-charge. V K Singh reached at the site and after inspection informed this matter to R K Singh and Pramod Kumar. Md. Ejaz further stated Hemnarayan Yadav, mining sirdar stopped coal loading at 4:00 pm after hearing walkie-talkie message. He had also seen that Sri Pramod Kumar, mine manager going towards coal face at 5:00pm. He also stated that from last 15 days minor activities like side fall, small cracks on the floor of the benches, rolling of stone pieces had been observed. Thus he failed to place fencing in the working area to prevent inadvertent entry of persons.
- 9.1.6 Sri Sujay Kumar, overman, supervising haul road preparation on the south side of high wall had also witnessed the slide. He heard a big "BOOM" sound of OB/stone bursting and saw sliding down of stone and OB and entire bottom of deep mining zone got filled-up upto the south side high wall. He had seen in torch light that Hem Narayan & Mahendra Mal were fully covered with black dust and walking slowly for their safety. He further said that at about 04.00pm, he heard over walkie-talkie Hemnarayan was calling V. K. Singh to come to coal face, as the condition of the coal bench was not conducive to work. Thus he failed to report continued unsafe condition of the mine workings and enforcement of statute.
- 9.1.7 Sri Rajesh Patel, Supervisor of M/s MIPL-NKAS (JV) stated that on 29.12.2016, at the beginning of 1<sup>st</sup> shift he was informed by the Supervisor of night shift about newly developed cracks at coal face on 28.12.2016 (night shift) at 00:30am (29.12.2016) and the coal loading was stopped. He showed 25mm wide cracks to Pramod Kumar, Mine Manager, who reached to the coal loading area at about 10:00am but he insisted to start coal loading early and coal loading was started at about 10:45am which continued upto 01:00pm. After shift break, at about 02:15 pm coal loading was again started. Thereafter, he observed falling of coal left above the working level towards west. He then went to above bench from where small pieces were seen falling and observed continuous falls from the left out coal seam. He called Lallu Khan at 04.00pm to show the same and informed him that he was going to stop coal loading and requested Lallu Khan to stop the OB removable job also. Removal of OB and coal extraction were stopped. Thereafter he went to OB dump area and found that subsided OB haul road, was being repaired by dumping OB and leveled by dozer & grader. At about 05:45 pm he again went to the coal bench, asked the excavator operator to remove his machine to safer place as he noticed the falls were increasing gradually. He again called Lallu Khan and told him that the side falls were increasing continuously and it was unsafe to work and requested him to leave the workings and remove persons and machines from OB bench.

He also stated that Sri S. K. Singh, GM (I/C) was the final authority at Rajmahal OCP and his instruction was to be followed whatever be the situation or

condition. He further stated that Pramod Kumar, Manager, always gives instruction directly and forces to continue coal loading and transportation activity in the contractual patch in-spite of deteriorated condition.

This indicates the S K Singh, deemed Agent and Pramod Kumar, Manager ignored the impending danger of slide in-spite of witnessing widening of cracks, displacement of strata, rolling of stones and continuous side falls.

He had saved the precious lives of 15 persons and HEMMs from getting buried by his timely action of withdrawal, thus he made commendable work.

- 9.1.8 Sri Kamaleshwar Prasad, Tipper Driver was the driver of tipper bearing No. 168 in 2<sup>nd</sup> shift on 29.12.2016 at OB dump and his tipper was attached with excavator Sl. No.33, deployed on south side of 5<sup>th</sup> bench. At about 05.00pm, he saw that Manager was discussing with Lallu khan. He took the load at about 06.30pm, and went for unloading, while returning he noticed some electrical sparks and suddenly all lights went off. He has seen that tipper No. 186 was moving with sliding dump from where he was taking OB load.

He stated that since 24.12.2016 the haul roads were subsiding and became undulated.

- 9.1.9 Sri Dinesh Yadav, Excavator Operator was working in Volvo 460, serial No.4 excavator saw manager going to coal face side at about 5.00pm. At about 7.00pm he heard somebody's alarm calling "slide ho gaya, slide ho gaya" and power got tripped and whole area became dark. Due to fear of electrocution, he did not go to the site of slide. He further stated that he observed falls of rock pieces and crushed coal on the north side and Rajesh Patel, supervisor, restricted coal production in day shift since last ten days prior to the accident. No mining sirdar, overman or asst. manager gave any safety instruction to him or any of his co-workers.

His statement revealed that no statutory supervisor and mine officials inspecting the workings regularly and were not giving any cautions/safety instructions in-spite of prevailing disturbances in the strata.

- 9.1.10 Sri Jainarayan Ravidas, Pump Khalasi stated that he observed strata movement with abnormal sound but no action was taken by mining officials who regularly visited the pumping station of deep mining zone.

- 9.1.11 Statement of Sri Gautam Kumar, mining sirdar of 1<sup>st</sup> shift on 29.12.2016 revealed that mine management was fully aware of strata movement and did not take any precautionary measures including withdrawal of men & machineries on 29.12.2016 during 2<sup>nd</sup> shift.

- 9.1.12 Sri Nilam Toppo, Overman, 1<sup>st</sup> shift on 29.12.2016 stated that on 26.12.2016 & 27.12.2016, he was working in the coal face and observed vertical cracks in coal bench. He also observed fall of sides in OB benches. There was a visible fault plane above the exposed coal. The width at the bottom of the pit near the coal face was 20m only. He further stated that on 26.12.2016, he saw CMD, ECL and other

senior officers visiting the coal face. He further said that development of cracks across the coal road were informed to R. N. Rai, shift incharge on 27.12.2016 who visited the site at about 7.45am and informed the control room and instructed contractor supervisors to remove the men & machinery from that area. He also stated that during last 15 days prior to the accident, he observed fall of OB in-situ OB and coal benches.

His statement reveals that vertical cracks were existed on 26.12.2016 and on the same day senior officials including CMD, Director Technical (OP.) inspected the area and not taken any preventive measures to stop the working in the disturbed area.

- 9.1.13 Sri Arvind Kumar, overman, of 3<sup>rd</sup> Shift on 28.12.2016 stated that cracks at the top bench haul road were observed on 23<sup>rd</sup> & 24<sup>th</sup> Dec, 2016 and Niraj Kumar Sinha, Asst Manager instructed him not to park vehicles in loading area as it was not safe zone due to formation of cracks. At about 10.20pm, Munna Pandit and he inspected the crack monitoring station and found the scale reading as 28cm and whereas it was 23cm on 16-17.12.2016. The same was informed to control room. Since 25.12.2016, coal & OB excavation was being done in day light hours only as it was not possible to apprehend the danger of slide in night hours. The cracks at the top OB bench were 6m-7m. in length across the road. This was identified three days before the occurrence of the accident.

This accident could have been averted if similar decision to stop the work could have been taken by the then supervisors.

- 9.1.14 Sri Chandrika Prasad Tiwari, Supervisor M/s MIPL -NKAS (JV) stated that earlier he observed disturbance and increasing cracks on the haul roads leading to OB re-handling benches. The strata was subsiding at rate of 06 inches in a span of 12 hrs. but on 29.12.2016 it increased to about 30 inches when observed at 06:00am. He mentioned that the cracks in loose OB dump were being observed by the contractual supervisors. He further stated that on 29.12.2016 at about 07:00 am, he measured the sliding of OB dump along with Shri Munna Pandit, Mining Sirdar (Supervisor of 3<sup>rd</sup> Shift) and found to be about 15-16 inches and this information was communicated to Lallu Khan, Overall site In-charge.
- 9.1.15 Munna Pandit, mining sirdar stated that in the 3<sup>rd</sup> shift on 28.12.2016, he instructed to deploy the machines away from the edges as the side falls were occurring at the benches formed in OB. He further stated that an arrangement was established immediately above the haul road over coal seam to measure the subsidence, slide of OB benches and OB re-handled area. He also stated that he used to measure the subsidence regularly but did not maintain any record. He said that shift overman and shift asst. manager had not inspected the workings during 3<sup>rd</sup> shift on 28.12.2016. He also stated that haul road at OB dump was getting subsided gradually and it was being regularly filled up with OB and leveled by dozing operation.

His statement revealed that 3<sup>rd</sup> shift asst. manager did not inspect workings in spite of prevailing dangerous conditions.

9.1.16 Sri Suraj Kumar Mahato, Overman of 1<sup>st</sup> Shift stated that on 29.12.2016 at about 04:00pm Rajesh Patel of M/s MIPL-NKAS (JV) and in-charge (coal section) had withdrawn men and machinery from lower coal benches due to widening of cracks and rolling of stones. He further stated that simultaneous and fast extraction of coal, removal of in-situ OB and removal of OB from dump caused heavy loading and pressure on the mass, hence, movement took place resulting into failure of OB dump/slope.

9.1.17 Shri B.K.P. Sharma, Overman, in-charge control room in 1<sup>st</sup> Shift stated that he was on duty at control room. At about 06:10am, Nilam Toppo, overman in-charge of M/s MIPL-NKAS (JV) patch informed that the strata has subsided by 2cm. The information of the same was passed on to Manager, Safety Officer and GM, In-charge. In response to this message only Safety Officer had responded him back that it's OK. He further stated that as per the message received coal loading and transportation work at deep mining zone started at about 10:30am and was stopped at about 02:00pm. The crack monitoring was being reported regularly by the concerned supervisor of the patch to the control room, Safety Officer/ Manager/Agent at 07:30am, 03:30pm and 11:00pm in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> shift respectively.

His statement revealed that crack monitoring was being done round the clock and management knew about day to day widening of cracks/sliding/movement/displacement/side falls.

9.1.18 Sri Kailash Kumar Upadhyay, overman, in-charge control room in 2<sup>nd</sup> shift stated that any communication received was being noted and further conveyed to the concerned person. He further stated that on 29.12.2016 at about 4:30pm shift supervisor Md. Ezaj Hussain Ansari called control room to talk to V.K. Singh, 2<sup>nd</sup> shift in-charge, asst. manager, over telephone and conveyed the message of Md. Ezaj. At about 7:10pm he received a message from Hemnarayan Yadav that "patthar gir raha hai, dump slide ho raha hai" the message was repeated for 4-5 times in a minute and then the signal went off. He conveyed the information of occurrence of sliding to safety officer and manager. Then he informed Chandra Sekhar Prasad, engineer (E&M) about the power failure in the mine.

9.1.19 Sri Santosh Pandit, Excavator Operator stated that at about 08:00am on 29.12.2016 he enquired from supervisor of night shift about the stoppage of coal extraction job and came to know that the coal benches and overlying OB benches upto top had been cracked and lot of pressure was exerting on the bottom side of OB and coal benches. He further stated that he saw prominent visible vertical cracks in coal seam and overlying OB bench which were 15m-20m (approx) apart. He had also seen horizontal wide separation and sliding of strata (OB) at about 15m above the top coal seam. He further stated that manager visited at about 10:00am the site and Rajesh Patel (Raju), informed him that coal loading had been stopped due to dangerous conditions created due to heavy pressure on sides, widening of existing cracks and falling of sides. He stated that manager and Rajesh Patel inspected the coal loading area and at about 10:30am. Manager instructed to start the coal loading operation and coal loading commenced at about 11:00am and continued upto 01:00pm. He saw on 26.12.2016 in 1<sup>st</sup> shift CMD and four other VIP visitors visited the place of coal loading area. He also



stated that the cracks and disturbances in OB, coal bench and sides started one-month back and were increasing fifteen days back.

His statement revealed that manager was exerting pressure and forcing contractor's supervisors to work.

- 9.1.20 Sri Bir Prakash Rai, Magazine Clerk stated that as per the records maintained at the office regularly explosives were issued and blasts were conducted at M-20 patch (Dahernangi Patch). He further submitted the details of explosives consumption for the months of October, November and December, 2016 at Dahernangi Patch and the figures of explosive consumption for fifteen days prior to accident were as below:-

| S No. | Date       | Bench | SME in kg | Booster in kg | Total Explosive in kg |
|-------|------------|-------|-----------|---------------|-----------------------|
| 1     | 15.12.2016 | OB    | 5100      | 12.4          | 5112.4                |
| 2     | 16.12.2016 | OB    | 5100      | 12.5          | 5112.5                |
| 3     | 16.12.2016 | Coal  | 1300      | 3.1           | 1303.1                |
| 4     | 17.12.2016 | OB    | 770       | 2.2           | 772.2                 |
| 5     | 17.12.2016 | Coal  | 630       | 1.8           | 631.8                 |
| 6     | 18.12.2016 | Coal  | 950       | 2.4           | 952.4                 |
| 7     | 19.12.2016 | OB    | 4080      | 12.8          | 4087.8                |
| 8     | 19.12.2016 | Coal  | 480       | 1.8           | 481.8                 |
| 9     | 20.12.2016 | OB    | 3700      | 13.35         | 3713.35               |
| 10    | 22.12.2016 | OB    | 3000      | 10.8          | 3010.8                |
| 11    | 22.12.2016 | Coal  | 1200      | 4.5           | 1204.5                |
| 12    | 22.12.2016 | Coal  | 900       | 1.8           | 901.8                 |
| 13    | 23.12.2016 | OB    | 5200      | 18.45         | 5218.45               |
| 14    | 23.12.2016 | Coal  | 1480      | 5.55          | 1485.55               |
| 15    | 28.12.2016 | OB    | 1700      | 6.0           | 1706.00               |
| 16    | 28.12.2016 | Coal  | 2420      | 8.4           | 2428.4                |

Sri Bihmal Kumar Soren, Magazine Clerk also corroborated the statement of Bir Prakash Rai.

Both these statements established that continuous and repeated heavy blasting were conducted and in coal and in in-situ OB inducing ground vibration causing strata movement in the in-situ OB and OB dump.

- 9.1.21 Sri Panchanand Mishra, mining sirdar stated that he was in-charge of blasting on dated 28.12.2016 at M-20 patch and conducted blasting in coal as well as OB benches in M-20 Dahernangi Patch. The site of blasting was 40m-50m on the west side of the fault/crack area. No monitoring of blast induced ground vibration (PPV) was conducted on 28.12.2016 at M-20 Dahernangi Patch. On few occasions he reported to Blasting Officer & Asst Manager (Blasting) about the high walls, cracks and disturbances in fault area and also conveyed the danger while working at M-20 Dahernangi Patch.

This revealed that the ground condition at the site of blasting was getting deteriorated due to the regular conduct of deep-hole blasting for the last couple of months.

- 9.1.22 Sri Prasoon Kujur, Sr. Overman stated that on 28.12.2016 the blasting was done at department OB Patch, RCML OB & Coal benches and at M-20 (Dahernangi Patch) both in coal and OB benches. He used to carry out the blasting operation as per the instruction of blasting officer. At about 11:30am he had inspected M-20 coal and OB benches. He corroborated the statement of Panchanand Mishra, mining sirdar (blasting) about the condition at the blasting place.

His statement revealed that after 23.12.2016 the ground conditions at the coal bench were deteriorating with regular blasting and extraction of coal.

- 9.1.23 Sri Sudhir Prasad Singh, Asst. Manager (Blasting) stated that since last 2-3 months regular blasting at OB and coal benches was being carried out in M-20 (Dahernangi Patch) patch. He had inspected the site of blasting in M-20 patch on 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup> & 22<sup>nd</sup> December, 2016. He had also observed vertical cracks above operating OB 2<sup>nd</sup> bench i.e. above coal seam; these cracks were vertical upto 3m high and were observed in patches at an interval of about 10m for a length of about 30m-40m on the vertical OB high wall. He also stated that the daily blasts in OB and coal benches at M-20 Patch were approaching towards F-8 fault. He was usually discussing about the crack monitoring with Dilip Roy, asst. manager, overall in-charge of M-20 patch, who opined that there was no threats to safety. During his inspection he had seen the monitoring arrangements at the crack zone and observed about 1.5 inches wide crack along East-West direction for a length of about 8m-10m. He also said that blasting crew in M-20 patch was engaged after getting clearances from asst. manager. He further stated that the PPV of blast were not being measured by him.

His statement revealed Dilip Roy, overall in-charge of general shift of Dahernangi Patch ignored the widening of cracks and strata movement and instructed to continue blasting operation in the disturbed zone.

- 9.1.24 Sri Naresh Prasad, Blasting Officer, stated that he was responsible for scheduling blast in different patches in OB as well as coal benches. As per his instruction overman Prasun Kujur raises requisition for the requirement of explosives from magazine and SME suppliers. On 28.12.2016, Mining Sirdar cum Shot Firer had done one-blasting in each of coal face and in OB bench. He further stated that the area where the blasting was being carried out had major faults. He also corroborated the statement of P.C. Mishra, mining sirdar and Sudhir Prasad Singh, asst. manager. He further told that safety officer and surveyor informed him about the cracks in top bench of OB dump and the crack of 2 inches was subsiding gradually. He further stated that the cracks in this area were being monitored on daily basis since 08.11.2016 which was reported to him by Sudhir Prasad Singh, asst. manager (blasting).

His statement revealed that blasts were continuously taking place at both coal and OB benches and the benches were being advanced towards F-8 fault plane. The conditions of strata thereat the operating benches of OB and coal were deteriorating alarmingly.

- 9.1.25 Shri Barun Shankar Chakraborty, Overman/Workmen's Inspector (Mining) stated that he had visited the accident site after the accident and during his enquiry it revealed that appearance of cracks, sliding of small rock pieces and heavy pressure on rock mass was observed since few days and crack monitoring was being carried out by survey section.

He further stated that during his previous inspections he noticed dozing and levelling operation were being carried wherever step-down formation created due to crack on the OB benches. No adequate lighting arrangement was provided in Dahernangi Patch. He adduced that one-sliding of OB dump occurred during the month of August, 2016.

9.1.26 Shri Ashok Kumar Sinha, Overman/Workmen's Inspector (Mining) corroborated the statement given by Barun Shankar Chakraborty, Workmen's Inspector.

9.1.27 Sri Patel Mayank Kumar, Attendance Clerk of M/s MIPL-NKAS (JV) stated that on 29.12.2016 as per his records of attendance maintained in Form-D, in "B" shift 31 persons reported to duty and booked attendance at the beginning of the shift i.e. 01:00 pm and at the end of the shift i.e. at 09:00pm only eight (8) persons booked shift end attendance with him. Twenty three (23) persons out of thirty one have not returned back to book shift end attendance.

This statement confirmed that only 23 (twenty three) persons were involved in the accident which occurred on 29.12.2016 at 07:00pm.

9.1.28 Sri Ashwani Kumar Rao, Office Clerk of M/s MIPL-NKAS (JV) stated that he was on duty on 29.12.2016 as attendance clerk and booked attendance in "Form-E" register and "Form-E General" register. In the Form-E register, 38 persons out of 47 reported for duty at 09:00am and booked their shift end attendance at 05:00pm. In the Form-E General register, 08 persons out of 13 reported for duty at 09:00am and booked their shift end attendance at 05:00pm. He further stated that these workmen worked in camp workshop and camp office respectively and were not involved in the accident.

His statement confirmed that no person other than 23 (twenty three) as per the "Form-D" register were involved in the accident which occurred on 29.12.2016 at 07:00pm.

9.1.29 Sri Kumar Baibhav Singh (also known as Bunt Singh), Liaison officer of M/s MIPL-NKAS (JV) stated that a SMS system was established for sending the shift reports of OB re-handling, in-situ OB removal and coal extraction to GM (In-charge), Agent, Manager, Area Safety Officer, Asst. Manager and also to Lallu Khan and Arvind Patel on daily basis at 05:00pm. He also stated that for last two months a message of no work at deep mining zone due to dump/ bench slide was being sent in remark column. He stated that Lallu Khan used to tell him that some cracks had been developed in top OB dump and bottom OB benches due to which pressure was coming on bottom coal seam. Lallu Khan had told him that GM, used to visit the site and was pressurizing to speed up the work. GM was saying that "you should have daring nature without fear in mining and if you fear how you will work? I will impose penalty". Ten days prior to the accident, GM (I/C) called him over telephone and said that you inform to Lallu Khan to excavate the in-situ OB to expose the coal seam because there was lot of pressure from HQ to produce coal. If you would not do it he would impose penalty, and said that "ए सब माइनिंग में होते रहेता है इतना डरोगे तो माइन कैसे चलेगा, फाल्ट के आस-पास तो कैंक तो आते रहते है, पलटी नहीं मारेंगा, कुछ होगा तो बैठेगा ।"

He said that he informed GM (I/C) that you should go and see the condition and accordingly instruct Lallu Khan, if you feel ok, then आपकी मरजी to which GM (I/C) replied that it's OK, he would visit next day.

He further stated that GM (I/C) & Agent used to visit the workings of Dahernangi Patch area and the manager was regularly visiting twice i.e. in morning and evening time. He stated that the workings in night shift were stopped in in-situ OB removal area due to fear of slides and cracks but due to continuous pressure from Manager and GM (I/C) Lallu Khan continued the work of OB re-handling as a result he became victim.

He also stated that the cracks monitoring was being done by shift mining sirdar, overman & surveyor and they were reporting to the mine control room. He further stated that working in OB dump, in-situ OB and coal seam were being carried out simultaneously resulting into thinning of barrier against the fault plane which eventually failed due to excessive pressure. He said that the extraction of coal was carried out during October, November & December, 2016.

He also stated that when he was present at OB re-handling area, the GM (I/C) visited the area and said that “आप लोग किकेट ग्राउण्ड बनाके रखे हो, 30 मिटर x 30 मिटर एरिया लेके चलो, I can't wait, you should expose coal seam at the bottom and speed up the job.”

In support of his statement, Kumar Baibhav Singh submitted the copies of SMSs sent to mine management, photographs of workings taken prior to the accident showing cracks & condition of the benches/haul roads/monitoring station; and also given production records of OB removal and coal extraction done during the year 2015-16 and 2016-17 (till December, 2016). He also submitted the correspondences (dated 16.10.2016 & 17.11.2016) made by him with the GM (I/C), Rajmahal Area regarding not imposing penalty on contractor for not meeting the target due to severe cracks/strata failures/slides/disturbances (on 04.01.2016, 15.02.2016, 06.06.2016, 09.08.2016, 30.08.2016 & 17.11.2016) in M/s MIPL-NKAS (JV) patch, to which all mine and area officials certified correct.

Statement of Kumar Baibhav Singh (Bunty Singh), Liaison Officer of M/s MIPL-NKAS (JV) throws more light on the leading circumstances which caused a huge slide of in-situ OB benches followed by OB dump slide, which affected an area of 720m x 366m and about 3.99 million m<sup>3</sup> mass slid. GM (I/C) and Manager were regularly inspecting the Dahernangi Patch, collecting information regarding strata movement & failures, personally visited the crack zone but never bothered to take safety precaution as required under the statute and permissions' conditions. They ignored all the warnings and endangered the lives of persons working thereat. Further, they forced and exerted lot of pressure on Kumar Baibhav Singh (Bunty Singh), Lallu Khan and Rajesh Patel to work in the disturbed zone.

- 9.1.30 Sri Arvind Kumar Ramji Patel, Camp Coordinator/Site In-charge of M/s MIPL-NKAS (JV) narrated a facts about simultaneous workings at OB dump, in-situ OB and coal extraction; formation and widening of cracks; and crushing and falling of coal; conduct of deep hole blasting including blasting on 28.12.2016 resulting in reduction of barrier against the F-8 fault; stoppage of work from 23.12.2016 to 27.12.2016 due to slide and restriction of work beyond daylight hours.

He also stated that on 28.12.2016, 1600m<sup>3</sup> in-situ OB was removed in 3<sup>rd</sup> shift and on 29.12.2016, 716 tonne coal was lifted in 1<sup>st</sup> shift and 870 tonne in 2<sup>nd</sup> shift upto 4:30 pm. During his visit on 28.12.2016 at 04:30pm, Lallu Khan had shown him the cracks

at OB dump floor and the same was shown to the mine manager. He further stated that whenever the work was stopped by his supervisors owing to the fact of danger associated strata movement, mine officials forcefully instructed them to resume the work. The mine manager and GM (I/C) were not concern for safety of persons & machinery and overlooked the dangerous conditions which resulted into major mishap.

The statement of Arvind Kumar Ramji Patel, Camp Coordinator/site in-charge revealed that mine officials in general, GM (I/C) & Manager in particular, ignored all the warnings about impending failure of OB benches and OB dump and endangered safety of persons & machinery thereat.

9.1.31 Sri Bibhash Chandra Maji, Chief Manager (Mining) of M/s MIPL-NKAS (JV) stated that he had been entrusted with the job of studying new coal blocks. He reached at the site on 30.12.2016 night and over seen recovery operation. He further stated that he had arranged for post mortem examination of the recovered dead bodies and sending them to their respective villages by hired ambulances.

9.1.32 Sri Padma Charan Dhar, Asst. Manager in 1<sup>st</sup> shift stated that he visited Dahernangi Patch on 29.12.2016 at 01.45pm, when Nilam Toppo, overman informed him that plumb bob reading was 28cm. The monitoring was being carried out to keep the watch on the subsiding OB dump material and sliding of crack zone along the fault plane. The mine manager used to give instruction directly to each shift in-charges and in turn shift in-charges were reporting back to him.

The statement revealed that monitoring of the crack was being done and the workings were carried out simultaneously at three places i.e. OB dump, in-situ OB and coal extraction.

9.1.33 Sri Vijay Kumar Singh, Asst. Manager in 2<sup>nd</sup> shift stated that Ranjit Kumar Singh, Asst. Manager, worked as overall shifting in-charge of 2<sup>nd</sup> shift on 29.12.2016 at Dahernangi Patch workings.

He further stated that at about 3:45pm on 29.12.2016, he inspected the 4<sup>th</sup> and 5<sup>th</sup> working bench of OB dump. At about 4:10pm, he went to monitoring station and met Md. Ejaz Hussain Ansari, and noticed the scale reading showing 28.5cm. He further stated that at about 5:00 pm he met Hemnarayan Yadav at pumping station who informed that coal loading was stopped at about 4:15pm. He also stated that he saw manager arriving at coal face area and at about 5.30pm left the place and went towards the OB dump re-handling workings.

He further stated that at about 7:10pm, Hemnarayan Yadav over radio informed him that "Slide ho gaya hai" and he tried to contact him but there was no response. Later he found Hemnarayan Yadav lying in the mud splashed due to slide and rescued him.

He also corroborated the statement of Krishna goswami and rescued him and Rajkumar. He observed that the 4<sup>th</sup> and 5<sup>th</sup> OB cutting bench of the OB dump re-handling had fully slid down and did not see any person or machinery in that area and this message was conveyed to control room.

V K Singh, ACM was fully responsible to ensure safety of persons working under his charge. During his inspection he observed widening of the cracks and strata movement

but failed to withdraw persons from the OB dump (re-handling) Area. His statement further revealed that higher mine officials including manager knew about strata movement but neither passed safety instructions nor taken precautions to prevent sliding.

- 9.1.34 Sri Niraj Kumar Sinha, Asst. Manager of 3<sup>rd</sup> shift (28.12.2016) stated that during the loading of OB at old OB dump benches, he observed soil, OB lumps & rock pieces were falling down and also observed cracks developed in the benches. He further stated that cracks formed on the haul road were being filled by dumping OB soil and compacted by dozing to facilitate movement of tippers.

His statement revealed that cracks were developed on OB dump haul road & benches and workings were not stopped in-spite of worsening of condition at the OB dump re-handling area.

N K Sinha, ACM was responsible to ensure safety of persons working at the mine. During his inspection he observed widening of the cracks and strata movement but failed to take necessary action.

- 9.1.35 Sri Ranjit Kumar Singh, Asst. Manager in-charge of 2<sup>nd</sup> shift stated that at about 7:00 pm he heard over walkie- talkie "slide ho gaya - slide ho gaya" and he rushed to the pumping station and found that Hemnarayan Yadav & Mahendra Mal had fallen in mud splash and were rescued by him and sent to hospital. He further stated that the open void near pumping station was almost filled with slided coal, OB and large OB boulders.

He also stated that there was a fault plane visible on the north side coal face and barrier failed due to reduction and robbing of coal at the bottom benches.

His statement revealed that he did not inspect OB dump on 29.12.2016 during 2<sup>nd</sup> shift in-spite of knowing strata movement and deteriorated ground condition thus failed to withdraw men and machinery.

- 9.1.36 Sri Dilip Roy, Asst. Manager, Overall in-charge of General shift of Dahernangi Patch/ M/s MIPL-NKAS (JV) stated that during monsoon period no coal was exposed in the bottom side of main seam and seam was submerged with water. He further stated that in August, 2016, there was a failure of OB benches, which were about 12m-15m in height and were 20m in width and collapsed portion took a semi circular shape and was extended upto lower benches. He further stated that the strata monitoring station was established and it was being monitored.

His statement revealed that there was a failure of benches in OB in August, 2016, continuous monitoring of strata and simultaneous extraction of in-situ OB, coal and OB re-handling. Thus he failed to take preventive action of withdrawal of persons in-spite of prevailing dangerous condition in the working area.

- 9.1.37 Statements of S/Sri Rabindra Nath Singh, Chief Manager (Excv), Devendra Kumar Sinha, Chief Manager (Excv), Chiranjib Roy, Area Engineer (Excv), Anil Kumar Verma, Area Engineer (E&M), Vinay Prakash Singh, Sr. Manager (E&M), Uday Kant Thakur, Chief Manager (E&M) and Rajib Kumar Tiwary, Dy. Manager (E&M) did not

throw any light on the circumstances leading to the accident. They had never inspected the workings at Dahernangi patch and never bothered safety of the equipment and the person's employed.

- 9.1.38 Sri Sudhir Prasad Barnwal, Safety Officer stated that lot of cracks appeared on old OB dump top benches while benching and re-handling 13.44 Lakh m<sup>3</sup> OB to reduce the load on in-situ strata. He also stated that a slide of 3-4 Lakh m<sup>3</sup> OB had occurred on 09.08.2016. He narrated in detail about the slide.

He further stated that during his day-to-day inspection in Dahernangi patch he had observed cracks in upper benches in old OB dump and strata movement was being monitored by the colliery survey section and shift mining sirdar & overman; and the report was given to the control room at the end of each shift.

He further stated that during his inspection on 08.12.2016 & 28.12.2016 he observed fresh cracks in upper benches of OB dump and reported to the manager.

He said that blasting was being carried out in inter-burden OB bench and coal benches on 28.12.2016. He stated that no Scientific Agency was engaged to investigate this slope failure and suggest remedial measures before lifting of OB at old dump to prevent further sliding (after 09.08.2016 slide). He further stated that no information about the slide occurrence dated 09.08.2016 was given to DGMS authorities.

He stated that OB dumping was completed in 2012 at Dahernangi Patch and re-handling of this OB commenced in June, 2016 and there was no activity in this dump during the period 2012 – June 2016.

He stated that he inspected the coal benches on 29.12.2016 at about 05:30pm in deep mining zone and found that work was stopped. Initially 20-30mm wide cracks were there and they got widened upto 70mm-80mm during the period 25.12.2016 – 29.12.2016. He further stated that due to production pressure and non-availability of land all three operations (OB re-handling, in-situ OB removal & coal extraction) were being carried out simultaneously. He also stated that on 26.12.2016, CMD and Director Technical (OP)/Nominated Owner had inspected the Dahernangi patch workings.

The statement of S P Barnwal, safety officer revealed that lots of cracks were formed on OB dump top benches while re-handling, a major slide of about 3.0Lakh m<sup>3</sup> volume of material occurred on 09.08.2016 and no scientific agency was engaged to investigate this slope failure & to suggest remedial measures. No information was given about the slide to DGMS and widening of cracks of 20mm to 80mm during the period from 25.12.2016 to 29.12.2016. He being Safety officer of the mine failed to investigate and study incidence of slope/dump failure and appraise the manager of all possible sources of dangers while carrying out simultaneous workings in the disturbed area.

- 9.1.39 Statement of Sri Sita Ram Prasad Verma, Area Safety Officer revealed that formation of steep angle benches on the OBdump, simultaneous extraction of coal, in-situ OB and OB re-handling; continuous and regular blasting in coal and in-situ OB inducing ground vibration in the strata; and not taking adequate measures as follow up of strata monitoring; no scientific study to analyse dump failure & suggestions to prevent further slid; built up of lot of pressure on the in-situ OB and coal due to overlain a

heavy load of 10 Mm<sup>3</sup> OB dump etc were the major factors contributing to this huge slide. He also stated that the place of slide on 29.12.2016 coincided at one place (side) with that of earlier slide on 09.08.2016.

9.1.39A Sri Nandan Kumar, authorised Surveyor of M-20/Dahernangi Patch, stated that he had the knowledge of existence of faults viz. F-8, F-10, and F-10A; established crack monitoring system as per the design given by Agent; measured profile of cracks and marked them on mine plans and shown to colliery surveyor and manager. He further stated that on 09.08.2016, about 10-12 benches in the re-handled OB dump prematurely collapsed from about 144mRL-52mRL in the section of horizontal distance of about 110-120m. He also stated that he was aware of the fact that OB dumps were situated on the northern part of F-8 fault. After the preparation of profile and section it was revealed that the benches in OB dump was within 60m vertically and horizontally with respect to OB benches in in-situ OB. The barrier at down throw side bottom coal seam on the south side of F-8 fault was about 170m in the month of August, 2016.

He also stated that he did not issue any caution letter about the position of workings in OB dump, in-situ OB & coal and not submitted written letter to colliery surveyor/manager that the in-situ OB benches were approaching within 75m of old dumps in the respective horizon/RLs' and details were not recorded in surveyor's diary.

He further stated that there was reduction in barrier against the fault plane at in-situ OB benches and coal extraction benches due to simultaneous extraction for the last 2-3 months. The height of OB dump was about 50m at 146 mRL above the natural ground level and all these factors have triggered slide against the fault plane.

The re-handling at the top benches of OB dump was started in the last week of November, 2016 and continued in the month of December, 2016 and about 8-9 Lakh m<sup>3</sup> OB dump was removed from the top benches. In the month of November and December, 2016, simultaneous removal of OB dump, in-situ OB and coal extraction was being carried out by the contractor of M/s MIPL - NKAS (JV).

He further stated that a crack plan was prepared by him on dated 23.12.2016 which was shown to the Colliery Surveyor and the Manager. He stated that he felt that there was considerable amount of lapses on the part of top management of the mine which caused occurrence of major bench collapsed/ OB dump slide on 29.12.2016.

His statement revealed that a crack plan was being maintained at the mine and manager was fully aware of impending danger of strata movement and there were major lapses on the part of top management which caused reduction of barrier against fault planes by simultaneous extraction but he failed to inform the manager in writing through surveyor's diary.

9.1.40 Shri Damodar Ram, Colliery Surveyor, stated that during his inspection in the recent past he surveyed the area to know how much coal was available for extraction in another three months so that further production planning can be done in the Dahernangi patch as it was planned to produce 20,000t-25,000t coal per day in next three months from Dahernangi Patch on the down throw side of F-8 fault. He also corroborated the statement given by Nandan Kumar, Surveyor. He thus failed to inform the manager in writing through surveyor's diary.



- 9.1.41 Sri Sadan Dhibar, Area Survey Officer stated that he was employed at the area since 01.12.2011 and reporting to General Manager (I/C) and was looking after measurements of OB jointly with CMPDI. He further stated that opencast workings on the North of F-8 Fault were worked till 2007-08 and backfilled with OB. The depth of working in de-coaled area was about 90m and the dump height increased to about 50m above the ground level and the dump's northern boundary was near the main haul road(E-W) of the mine and its southern boundary was upto F-8 fault.

He further stated that monitoring of cracks on OB dump was started by Nandan Kumar, Surveyor before initiating re-handling of OB dump (13.44Lm<sup>3</sup>) and the observation of displacement of strata was being done at 42m RL bench at western side of boundary area of 20M patch. He also said that no scientific study was done regarding slope stability of benches and dumps at Rajmahal OCP.

He also stated that on 09.08.2016 there was a collapse of OB benches formed in loose OB dump and about 2.5Lakh m<sup>3</sup> mass was slid down which caused failure of formed benches. He also said that with the advancement of workings towards F-8 fault the condition of the workings further deteriorated.

He stated that in his opinion, accident was caused due to failure of OB rocks and coal strata left against F-8 fault on the dip side i.e. towards south side resulting sliding down of OB benches formed in OB dump and also opined that scientific study by experts would have been done at the initial stage of project for working near/across the fault planes.

The statement of S Dhibar, Area Survey officer revealed that with the advance of workings towards F-8 fault, working conditions deteriorated and caused failure of OB rocks and coal strata left against F-8 fault on the dip side which clearly indicates major failures at the mine & area level in planning and execution of M-20 Patch/M/s MIPL-NKAS(JV) patch/Dahernangi patch. It further revealed that a scientific study about the implication of presence of fault planes at the initial stage of project would have prevented the major slide on 29.12.2016.

- 9.1.42 Sri Pramod Kumar, Mine Manager of Rajmahal OCP stated that he was working as manager of the mine since 11.05.2013 and the mine produces about 15.55 million tonne of coal and overburden of about 34.0 million m<sup>3</sup>.

He also stated that Rajmahal OCP is a major project where contractual patches are operated under an agreement between the contractor and M/s ECL. As per the agreement each and every contract has an engineer in-charge who is of an appropriate seniority and responsible for supervising & administering the contract; and in present contracts, Sri Sanjay Kumar Singh, GM (I/C) of Rajmahal OCP is the engineer in-charge. The overall responsibility so far the contract is concerned, is that of GM (I/C) and he can further appoint his representative; however GM (I/C) continued to hold the overall responsibility.

He stated that he is statutory manager for entire mine including contractual patches and perform duties of manager in these areas as well as of CHP; and supervise & inspect the departmental, contractual and CHP operations and in respect of contractual patches, he

used to supervise deployment of departmental statutory supervisions. He further stated that deployment of machinery at times was also guided by seniors like GM (OP) and GM (I/C) whose decision used to prevail and that used to be quite often.

He stated that he was assisted by 22 Asst. Managers, 57 Engineers, 26 Overmen and 34 Mining Sirdars for supervision of mine workings. Among these persons, one ACM for each contractual patch holding the general charge was appointed and apart from this, in case of M/s MIPL-NKAS (JV) patch one Asst. Manager was appointed in each shift assisted by one overman in general shift and each shift operation were placed under either an Overman or two Sirdars. He stated that one Safety Officer was appointed to look after safety of the mine and the Safety officer used to function under my guidance; and one surveyor was appointed for the whole mine and under whom three surveyors used to function and for M/s MIPL-NKAS (JV) patch, Nandan Kumar was appointed as surveyor and the entire survey team was under his control and guidance.

He stated that the contractual patch operated by M/s MIPL-NKAS (JV) is also known as Dahernangi Patch in which the operational area of M/s MIPL-NKAS (JV) was 0.6 sq. km between the grids 243500N to 24400N and between 18850E to 189700E and was commonly called as 20 million patch. He further stated that the scope of the contract was for excavation and removal of 200 lakh m<sup>3</sup> OB and extraction & transportation of 70 lakh tonne coal; and the work order for the same was issued vide letter No.ECL/HQ/CMC/W.O/Dahernangi OC patch/502, dated 10.06.2015.

He stated that M/s MIPL-NKAS (JV), contractor started mining operations in the 20 million patch on 07.04.2015 and upto 28.12.2016, 14.7 million m<sup>3</sup> OB was removed. He also stated that during this operations, surface cracks were observed in the OB dump in the de-coaled area on the rise side of F-8 (60m throw) fault on 04.01.2016 and later a team of experts from ECL, HQ visited, observed, studied and suggested to competent authority to re-handle 13.44 lakh m<sup>3</sup> OB, which was approved.

He stated that collapse of old OB dump (2 to 3 lakh m<sup>3</sup>) occurred on 09.08.2016, HQ team visited the place on 24.08.2016 and suggested for further re-handle to prevent sliding and also stated that no information was given to DGMS about this slide either verbally or in writing. He stated that after this management awarded contract to M/s MIPL-NKAS (JV) of OB dump re-handling (17.3 Lakh m<sup>3</sup>) in addition to the existing contract of in-situ OB removal and coal extraction in 20m patch. A note for scientific study on slope stability was also made.

He stated that on 23.12.2016 during night shift, a land slide took place in the loose OB dump and he observed several cracks at the top of the loose OB dump and mining supervisors were asked to monitor strata movement with the help of plumb bobs in & around 100m of cracks; and formation of these cracks was informed to the ECL, HQ.

He stated that in his opinion, on 29.12.2016, probably due to failure of bottom benches in coal & OB followed by sliding of top OB dump benches resulted in trapping (death) of 23 contractor's workers and burying of 5 excavators, 12 tippers & 1 dozer belonging to M/s MIPL-NKAS (JV).

He also said that he apprehended danger and had moved note-sheet after detection of cracks on 04.01.2016 i.e. first time and further accepted that he failed to exercise his

authority to maintain safety due to pressure and was forced to listen to GM (OP) & GM (I/C), he also opined that known geological disturbances caused the slide and required measures were not taken at his end or from the GM (OP)/GM (I/C).

Statement of Pramod Kumar, Mine Manager revealed that development of cracks in old OB dump was a regular phenomena during execution of contract awarded to M/s MIPL-NKAS (JV) and it was informed to Area level and ECL, HQ by him but these dangerous occurrences were not informed to DGMS as required under the statute and also he failed in his statutory duties by not communicating the collapse of benches on 09.08.2016 and major slide which took place on 23.12.2016 at OB dump to DGMS. His statement further revealed that he miserably failed in exercising the authorities and powers enshrined upon him under the statute to ensure the safety of the persons employed in the mine by not taking adequate measures like study by scientific agency to investigate the dump failure and slope stability etc. and also failed to present the case with the top management and the consequences of simultaneous workings at three places. Therefore, he has accepted his failure in exercising his duties & responsibilities as a required of him under statute.

- 9.1.43 Sri Debendra Kumar Nayak, GM (Operation) & Agent stated that all contracts are executed by an engineer in-charge and in case of M-20 patch, GM (I/C) is the engineer in-charge and has overall responsibility. He further stated that he was not the Project Manager of the Rajmahal OCP, but working as Agent of the mine which implies that GM (I/C) was the Project Manager and did not appoint any representative for 20 million patch of M/s MIPL-NKAS (JV).

He stated that M/s MIPL-NKAS (JV) was awarded the operation area between 188500E to 189700E and 243500N to 244000N (0.6 Sq. km - 1200m x 500m) to remove 20 million m<sup>3</sup> OB and extract 7 million tonne coal. Since 07.04.2015 to 28.12.2016, they extracted 3.3 million tonne of coal and removed 14.7 million m<sup>3</sup> OB and during formation of benches in OB, surface cracks were observed in the OB dump on 04.01.2016 at rise side of F-8 fault (60m throw). 3 cracks were found, upto 10mm wide, one traversing east-west direction and two traversing north-south direction. The same was informed to the then GM (I/C) Akhilesh Panday who informed it to ECL, HQ. Subsequently, one ECL, HQ team visited, observed and studied cracks and suggested re-handling of 13.44 lakh m<sup>3</sup> OB from old dump. After approval by the competent authority, the job was awarded to M/s MIPL-NKAS (JV) and the same was executed from February, 2016 to September, 2016. A crack monitoring system was put in place from February 2016 using four plumb bobs with measuring scales, total station instruments, pegs, targets, etc. He also stated that no risk assessment was made for the hazard of slope & dump failure.

He stated that a part of OB benches formed in OB dump slid on 09.08.2016 which was informed to ECL, HQ through GM (I/C). One HQ team visited the mine on 24.08.2016 and suggested further re-handling of loose OB from the old dump. The slid material was about 2 to 3 lakh m<sup>3</sup>. This pre-mature collapse of OB benches/dangerous occurrence was not reported to DGMS in writing or verbally. He further stated that the competent authority approved re-handling of 17.3Lakh m<sup>3</sup> of OB and work was awarded to M/s MIPL-NKAS (JV) which started the job on 04.12.2016. They were forming 8m to 10m high and 12m to 15m wide benches from top downwards

towards south side of the dump in west to east direction. Parallel activities of formation of benches in in-situ OB, coal & OB dump were being carried forward at the mine.

He stated that a proposal for geo-technical study for optimum dump slope design vide Note sheet No.RJML/GM(OP)/MGR/231 dated 21.12.2013 was sent to GM (I/C). Another Note-sheet vide No.ECL/RJML/OCP/Sur/180 dated 06.01.2016 was initiated for slope stability and scientific study for 20 million patch, after apprehended danger in the workings in the vicinity of F-8 fault.

Agent opined that the accident was caused due to failure of lower hard benches of OB and coal and dragged down the overlying upper loose OB benches. The fallen debris was about 3.6 million m<sup>3</sup> and existence of 3 faults was a major contributing factor for failure of lower benches.

Statement of D.K. Nayak, Agent revealed many facts of the process of failure of strata at the mine. Since first appearance of cracks on 04.01.2016 to till the date of accident, there was a system of monitoring the strata movement but all the senior officers including him failed to take measures to prevent further slides and withdraw persons even after repeated symptoms of cracks/slides/displacements/falls/crushing & failure of strata. Though Agent initiated note sheets for scientific study to determine optimum design of slope & dump stability, he did not bother to pursue same and thus failed in discharging his duties as required under the statute.

- 9.1.44 Sri Sanjay Kumar Singh, General Manager (I/C) & Deemed Agent stated that Dahernangi Patch/M-20 Patch/Deep Mining Zone Contract was given to M/s MIPL-NKAS (JV) vide work order No.ECL/HQ/CMC/VO/Dahernangi Patch/502 dated 10.06.2015 and operations started from April, 2015. On the northern side of Dahernangi Patch i.e. on rise side, a huge old dump was lying, but there was space of 200m for working of this patch (coal extraction near sump zone & 200m away from F-8 fault on the dip side), however, with the progress of workings, space became insufficient to form proper benches and therefore, re-handling of loose OB of 13.44lakh m<sup>3</sup> was awarded to M/s MIPL-NKAS (JV) vide work order No.ECL/HQ/CMC/VO/RJML 13.44Lakh m<sup>3</sup>/864, dated 27.09.2016.

He stated that after slide in OB dump on 09.8.2016, he along with mine officials inspected and observed movement of OB dump due to heavy rain. An area of 100m long and 0.25m wide was subsided and there was no collapse of side /bench. As per the statements of accompanying officers viz. surveyor, in-charge of Dahernangi patch, colliery surveyor, general shift asst. manager, Area survey officer, Safety officer, Area Safety officer, manager and Agent, the slide was about 100m-120m x 100mx30m from 140mRL to 112mRL causing collapse of 12 benches formed in OB dump and a mass of 2.5 Lakh m<sup>3</sup>-3.0Lakh m<sup>3</sup> slid in a semicircular shape of failure. This clearly indicated that S. K. Singh, GM (I/C) concealed actual facts and misled the enquiry committee. Being the senior most operating manager in hierarchy and engineer in-charge of the patch this type of attitude on his part towards subordinates and to the operations was unethical and uncalled for.

He stated that he received SMS messages from contractor personnel that a slide took place on 23.12.2016 during 3<sup>rd</sup> shift and production was stopped from 24.12.2016 to 27.12.2016 due to slide. He further received letters addressed to him from the

contractor about formation of severe cracks/strata failures/slides/disturbances on 04.01.2016, 15.02.2016, 06.06.2016, 09.08.2016, 30.08.2016 & 17.11.2016 in M/s MIPL-NKAS (JV) patch. He did not take any preventive measures and on the contrary forced contractor's supervisors and in-charges to work in the disturbed zone. Being deemed agent of the sole operating and producing mine he was bounded by the duty to protect lives of persons working at the mine but acted callously to the visible warnings of the nature.

He further stated that on 26.12.2016, he inspected Dahernangi Patch along with CMD, Director Technical (Operation) and other senior officers of M/s ECL, during which period coal production was stopped beyond daylight hours due to slide on 23.12.2016 night shift and ground conditions were deteriorated.

Thus, S.K. Singh, GM (I/C) & deemed Agent failed to take immediate steps for the conduct of mining operation in safe manner and in accordance with the provisions of Mines Act, Regulations, Rules, Bye laws & Orders made thereunder, in spite of having full knowledge of the scenario. Being a qualified and experienced mining engineer, he can not escape the responsibility for the accident and liable to exercise proper supervision and control over the operations to avert the accident.

- 9.1.45 Shri Sushanta Banerjee, General Manager (Safety & Rescue), M/s ECL and Deemed Agent stated that he joined as GM( safety ) on 16.08.2016 and on 29.12.2016 he was informed about the accident at about 08:15 pm. He arranged rescue teams immediately and sent to Rajmahal.

He stated that on 23.08.2016 General Manager/TS to D(T)OP issued an order regarding formation of a committee comprising S/sri B. Prasad, Chief Manager (Mining) Safety Dept., N. Mishra, Sr. Manager (Mining), P&P Dept, A.K. Banerjee, Sr. Manager (Mining), CMC Dept., Pradip Kumar, Asst. Manager (Survey), Survey Dept. to visit Rajmahal OC in connection with a dump failure/slide occurred on 09.08.2016 and provides report for the status of the same and measures to be taken. The committee submitted their report to GM/TS to D (T) OP on 06.09.2016 after visiting Rajmahal OCP. After that a proposal for re-handling of 17.30 lakh m<sup>3</sup> OB from top down wards at Dahernangi Patch was initiated by Rajmahal OC mine on 31.10.2016. *It was agreed by Safety Department for re-handling of OB from top down wards to form benches to ensure stability of the dump and safe extraction of OB & Coal from Dahernangi Patch, with a recommendation that, OB & Coal below the adjacent unsafe zone of the slided OB dump shall be extracted after completion of proposed re-handling and formation of benches in the dump.* The proposal was placed before ECL Board of Directors on 30.11.2016 and approved. The job of re-handling of OB dump was started thereafter.

The recommendations of ISO was not taken care of and started working simultaneously in in-situ OB, coal and re-handling of OB dump which was the major contributing factor in causing the accident.

In his opinion the OB benches at North side of the Dahernangi Patch slid down followed by sliding of OB dump, where machinery & manpower of the hiring agency were deployed in 2<sup>nd</sup> shift at about 07:30 pm on 29.12.2016 for OB re-handling from OB dump. Excessive load of OB dump at the North up-throw side of F-8 (60m throw) fault of Dahernangi Patch partly resting over the OB benches and instability of the in-

situ strata along 60m throw fault zone followed by a parallel fault (F10) and another local fault within the in-situ rock weakened by blasting of in-situ OB & coal while operating Dahernangi Patch at deep mining zone might have resulted into failure at North side of the patch of OB benches followed by OB dump failure. He further opined that if continuous slope monitoring of OB benches & OB dump would have been taken up, failure of OB benches might be known before occurrence and deployment of men and machinery at the influence zone of OB re-handling would have been withdrawn.

The statement of S. Banerjee, GM (S & R) revealed that after the slide on 09.08.2016, he recommended that OB & Coal below the adjacent unsafe zone of the slided OB dump should have been extracted after completion of proposed re-handling and formation of benches in the dump, but that was not taken care off.

The ECL, HQ, Committee recommended vide letter No.ECL/Safety/Rajmahal OB dump/135 dated 06.09.2016 that as there was no clarity about barrier between previous working in the north side of Dahernangi Patch and F-8 fault plane, a further scientific study for ascertaining of barrier and slope stability of the OB dump was required. The Nominated Owner, Deemed Agent, Agent and Manager failed to implement this recommendation before commencement of further re-handling of 17.30 lakh m<sup>3</sup> OB at old OB dump on north of Dahernangi Patch. The simultaneous extraction of in-situ OB & coal by repeated blasting near F-8 fault plane and re-handling of OB at OB dump resulted into failure of OB benches followed by OB dump.

- 9.1.46 Sri Bhola Nath Shukla, Director Technical (Operation) & Nominated Owner stated that he visited Rajmahal OCP on 26.11.2016 and 26.12.2016 and inspected the workings including Dahernangi Patch.

He stated that nobody reported him about the stoppage of production of OB from 3<sup>rd</sup> shift of 23.12.2016 to 27.12.2016.

He stated that he constituted a committee after the slide (09.8.2016) and acted partially as per the recommendations of the committee. He further stated that the concerned persons who control the operations at the mine must have taken precautions for safe operation at the mine. He had studied the case in depth and presented before the board of directors meeting held on 30.11.2016. Further he concealed the facts such as reporting of slide on 23.12.2016; recommendations of ECL HQ, committee (constituted after slide on 09.8.2016) on conducting study for ascertaining barrier against F-8 fault and slope stability of OB dump; not ensuring that Area level and mine level management had taken due precautions for safe operation and thus failed in discharging his duties enshrined upon him under the statute. He was abdicating his responsibility as nominated owner from this accident.

Being a qualified and experienced mining engineer, he failed to exercise proper direction control and supervision of his subordinates.

- 9.1.47 Sri Rajiv Ranjan Mishra, CMD stated that as Chairman of Board of Director of ECL he has got overall responsibility of accomplishing the mission of the company which reads as under "to produce and market the plan, quantity of coal and coal product efficiently and economically in an eco-friendly manner with due regard to safety, quality and conservation". He stated that it was ensured that posting of requisite statutory personnel

at all the places was done and I trust upon to ensure Safety at work places for which I have ISO (Internal Safety Organization), Safety Committee, Bi-partite Safety Committee and Tri-partite Safety Committee.

He stated that he visited to Rajmahal Area on 26.12.2016 and during his visit neither any untoward happening was observed nor something of that sort was reported /brought to his knowledge by the colliery officials. He further stated that he instructed GM Rajmahal to ensure Safety at all work places and after the mine visit a power point presentation was also made, wherein no threat was reflected.

He also said that Workman Compensation ranging from Rs. 7.58 lakh to Rs. 8.96 lakh has been deposited to employee's compensation commissioner – cum – Presiding officer, Labour Court, Deoghar. He further stated that M/s ECL will pay a compensation of Rs. 5 lakh to the next of kin in addition to Workman Compensation. Jharkhand State Government has also declared a compensation of Rs. 2 lakh. He stated that a High Power Committee has been constituted by Chairman, CIL under chairmanship of Sri Sekhar Saran, CMD, CMPDIL/DTCIL consisting of experts in the field of slope stability from Scientific/Academic Institutions. The committee has been assigned the job of finding out the cause of such mishap and also to recommend preventive measures for avoiding such occurrence in future.

9.1.48 Dr. Md. Naved Akhtar, Medical Officer, Sadar Hospital, Godda (Member of Post-Mortem Board on dated 31.12.2016, 01.01.2017 & 02.01.2017) stated that he was the Medical Officer at Sadar Hospital, Godda, Government of Jharkhand and the Board for post-mortem examination was constituted and sixteen (16) dead bodies were received on 30/31.12.2016, two (2) bodies on 01.01.2017 from Lalmatia Police Station. Post mortem examination on 16 dead bodies were done on 31.12.2016; and that of one dead body each on 01.01.2017 and on 02.01.2017. The bodies were handed over to the Lalmatia Police after post-mortem. The report of the same was prepared, signed and recorded at Sadar Hospital, Godda. **The common cause of death in all the 18 dead bodies was "ASPHYXIA".**

The names of the deceased as reported by Lalmatia Police were as below:

|                      |                       |                         |
|----------------------|-----------------------|-------------------------|
| (a) Md. Julfikar,    | (b) Md. Jamir,        | (c) Sanjit Viswakarma,  |
| (d) Nageshwar Paswan | (e) Javed Akhtar      | (f) Hari Kishor Jadhao  |
| (g) Md. Nurul        | (h) Rajendra Yado     | (i) Brajesh Kumar yadao |
| (j) Jai Prakash Ram, | (k) Sanjoy Kumar Sahi | (l) Ajit Patel,         |
| (m) Vikas Patal,     | (n) Shakeel Ahmad,    | (o) Kaleshwar Kumar     |
| (p) Sunil Bengra,    | (q) Raj Kumal Goswami | (r) Laddu               |

A sample of blood, hair and a piece of bone of each dead body are preserved in sealed container and handed over to the Lalmatia police for DNA examination.

## 10 CONCLUSION ON CAUSE:-

- 10.1 Based on the study of plans and sections before and after the accident, document seized from the mine and area office, analysis of evidences adduced by various witnesses, photographs taken before and after the accident, I conclude that the accident had occurred due the following reasons:-
- 10.2 As many as three (3) parallel fault planes viz. F-8, F-10 and F-10A had intersected the operational area in close vicinity thereby dividing the area into small blocks/wedges. The up throw side of seam II & III was extracted in past without leaving any barrier against the fault planes viz.F-8 and F-10 and huge OB was dumped in the excavated area. This dump was exerting its dead weight over the excavated area. The amount of load per unit area was in the tune of 78t ( $W=1/3*y*h$ , here  $y=1.68-1.65$  and  $h=140m$  considering the ultimate pit slope as  $37.5^{\circ}$ ). This dead weight was also exerting lateral pressure against the thin barrier maintained in in-situ OB on down throw side.
- 10.3 It was observed that continuous advancement of in-situ OB benches, winning of coal at the coal benches and advancement of these benches towards north direction by conducting regular deep hole blasting using explosives to the tune of 1500-6700kgs per round of blast, continuously disturbed the strata and reduction of existing barrier against the OB dump.
- 10.4 Large scale deployment of HEMMs and its movement at the top benches in OB dump situated over the in-situ OB benches, coupled with the dead weight of the OB dump had exerted tremendous pressure and disturbed the equilibrium of the strata, thereby triggering sudden failure of in-situ OB and coal benches existing along and between the fault planes, and subsequent instantaneous slide of OB dump resulted in engulfing of all the men and machineries working in the area by the debris.
- 10.5 Though, prominent cracks were being formed from the past six months, no action was taken by the management to manage the situation in a scientific manner. Even though the formation of cracks and sliding of OB was being monitored by the mine management in a very crude method, no action apparently was taken to remedy this situation. Neither the reports by contractual agency was given any cognizance nor the report of the committee having reference no.ECL/safety/Rajmahal ob dump/135 dated 06.09.2016 was implemented in totality.
- 10.6 Geologically disturbed areas were always fraught with danger, whether in underground or in opencast mining. In the Dahernangi patch as many as three faults were running parallel, of which two faults viz. F-8 and F-10 were in close proximity to each other, thereby forming a separate block altogether, which should not have been mined in a normal OC operation. Study of plans further revealed that, the barrier with fault plane was 0-114m. There is no extant statute about the thickness of the barrier, however, as per permission letter issued by DGMS vide letter no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 it was emphasized that special care should be taken while operating in the vicinity of geologically disturbed area.



The sides in OB and coal should have been kept sloped to prevent danger from fall of sides. Also, the slope of a spoil bank face should have been determined by natural angle of repose i.e.  $37.5^{\circ}$ .

Thus a scientific study should have been done prior to starting operation at this area or at least at a point of time when crack formation in alarming nature started.

- 10.7 Study of plans on post failure revealed that initially failure occurred along a plane and subsequently along a curvilinear path.
- 10.8 Management of this mine having professional expertise, were very much complacent to that extent of not caring the above mentioned points and thought that nothing would perhaps happen which proved to be extremely dangerous and as a result of same 23 persons had paid the penalty by losing their valuable lives.
- 10.9 Therefore I, conclude the cause of the accident as:

While contractual workers and machineries were deployed to form benches in a back filled overburden dump, in-situ overburden and coal in an opencast mine containing known geological disturbances; cracks developed due to dead weight of dumped overburden, deep hole blasting and repeated plying of HEMMs, resulting into violent failure of in-situ overburden and coal benches, followed by instant sliding of dump in an area of 720m x 366m burying 23 workers along with 18 HEMMs.

**11.0 RESPONSIBILITY:-**

I, therefore hold the following persons responsible for this accident:-

1. Sri B.N Shukla, Director Technical cum Nominated Owner failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area. Further, the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. Also, the slope of a spoil bank face should have been determined by natural angle of repose i.e.  $37.5^{\circ}$  and undertake a scientific study prior to commencement of work in this patch, thereby as required under section 18(4) of the Mines Act'52, Sri Shukla, failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made there under.
2. Sri S.K Singh, General Manager (I/C), being the deemed agent of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area. Further, the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. Also, the slope of a spoil bank face should have been determined by natural angle of repose i.e.  $37.5^{\circ}$ . That in-spite of regular inspections at the patch by him, he failed to take appropriate measures in preventing the slide and undertake a scientific study prior to commencement of work in this patch, thereby as required under section 18(4) of Mines Act'52 and regulation 8A(3) Sri Singh, failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder.
3. Sri D.K Nayak, General Manager and Agent of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area. Further, the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. Also, the slope of a spoil bank face should have been determined by natural angle of repose i.e.  $37.5^{\circ}$ . That in-spite of regular inspections at the patch by him, he failed to take appropriate measures in preventing the slide and undertake a scientific study prior to commencement of work in this patch, thereby as required under sections 18(4) and 1(c) of Mines Act'52 and regulation 8A of CMR1957, Sri Nayak, failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made there under.
4. Sri Pramod Kumar, Mine Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area. Further, the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. Also, the slope of a spoil bank face should have been determined by natural angle of repose i.e.  $37.5^{\circ}$ , intimate DGMS in Form-I when the premature collapse of benches occurred on 09.08.2016 & 23.12.2016 and occurrences of significant cracks noticed in OB dumps, in-situ OB & coal benches during the last one month period prior to accident. Further he failed

to withdraw men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads of OB dumps and along edges of OB benches. He further did not heed to the observations of the unqualified contractor's supervisors, thereby as required under section 17 (2)&18(4) of Mines Act'52 and regulation 9(1)(a)(viii)& 41 of CMR1957, Sri Promod Kumar, failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made there under.

5. Sri Devendra Kumar Sinha, Chief Manager (Excavation)/ Engineer, in-charge of excavators, failed to comply with the condition of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 to ensure safe workings of the HEMM deployed at Dahernangi patch thereby as required under Regulation 50(a) & (d) of the CMR,1957, Sri D K Sinha failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made there under.
6. Sri Vinay Prakash Singh, Senior Manager (E& M)/ Engineer in-charge of tippers, failed to comply with the condition of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 to ensure safe workings of the HEMM deployed at Dahernangi patch thereby as required under Regulation 50(a) & (d) of the CMR, 1957, sri V P Singh failed to carry out mining operations in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made there under.
7. Sri Dilip Roy, Assistant Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He failed to ensure withdrawal of men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads on OB dump and along edges of the OB benches and pay heed to the observations of unqualified contractor's supervisors thereby not complying with the statutory duties enshrined upon him as required under regulation 42 of the CMR 1957.
8. Sri Vijay Kumar Singh, Assistant Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He also failed to withdraw men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads on OB dump and along edges of the OB benches and pay heed to the observations of unqualified contractor's supervisors thereby not complying with the statutory duties enshrined upon him as required under regulation 42 of the CMR 1957.
9. Sri R.K Singh, Assistant Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept

sloped to prevent danger from fall of sides. He also failed to withdraw men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads on OB dump and along edges of the OB benches and pay heed to the observations of unqualified contractor's supervisors thereby not complying with the statutory duties enshrined upon him as required under regulation 42 of the CMR 1957.

10. Sri P C Dhar, Assistant Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He failed to ensure withdrawal of men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads on OB dump and along edges of the OB benches and pay heed to the observations of unqualified contractor's supervisors thereby not complying with the statutory duties enshrined upon him as required under regulation 42 of the CMR 1957.
11. Sri Neraj Sinha, Assistant Manager of the mine failed to comply with the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area and the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. He failed to ensure withdrawal of men and machineries deployed at OB dump when the situation was alarming with the imminent visible cracks on haul roads on OB dump and along edges of the OB benches and pay heed to the observations of unqualified contractor's supervisors thereby not complying with the statutory duties enshrined upon him as required under regulation 42 of the CMR 1957.
12. Sri S.P Barnwal, Safety Officer of the mine failed to ensure compliance of the conditions of permission letter issued vide no. S4/03/26/006/II-B/87/1182 dated 08.04.1987 which says that special care should have been taken while operating in the vicinity of geologically disturbed area. Further, the sides in OB and coal should have been kept sloped to prevent danger from fall of sides. That in spite of regular inspections at the patch by him, he failed to take appropriate measures in preventing the slide nor did he withdrew persons to safety. Therefore, he had failed in complying with the statutory duties of informing manager on unsafe conditions and apprise manager on sources of danger in the mine as required of him under Reg.41A, (b)(iii)( f)&(h) of CMR1957.
13. Sri D. Ram, Colliery Surveyor of the mine failed to report the approaching of the mine workings within 75m of disused workings (OB dump) and maintain accurate plans and section indicating side fall that had occurred time to time as required under Reg.49(1)(a) & (2)(a) of the CMR1957.
14. Sri Nandan Kumar, Surveyor of Dahernangi patch failed to report the approaching of the mine workings within 75m of disused workings (OB dump) and maintain accurate plans and section indicating side fall that had occurred time to time as required under Reg.49(1)(a) & (2)(a) of the CMR1957.

15. Sri Sujay Kumar, Overman of the Dahernangi patch had failed to report continued unsafe condition of the mine workings, remove dangers observed by him and enforce the provisions of Act, regulations and orders made there under and to secure safety of the persons employed therein, thus failed to carry out duties as required under Reg.43(1)(e)&(6) of the CMR1957.
16. Md. Ejaz Hussain Ansari, Sirdar of the patch failed to observe dangerous places in the patch and also failed to withdraw persons from dangerous place and putting a fence to prevent persons from inadvertently entering dangerous place as required of him under Reg.44(1)(b) &(6)(a) of the CMR1957.
17. I do not hold Sri R. R. Mishra, CMD of M/s ECL as responsible in this accident, because as chairman of board of directors he had appointed a professionally qualified person as Nominated owner of the mine, so much so, he had also appointed other professionally qualified persons as GM (I/C) of the mine who was also deemed agent, another one full time Agent and Manager for direction, control and supervision of the mine. It is a fact that he had visited the mine on 26.12.2016, and instructed GM, in-charge to ensure safety at all work places.

I also do not hold S/sri S. Banerjee, GM (safety), S R P Verma, Area Safety officer and S Dhibar, Area Survey officer as responsible in this enquiry because they were rendering staff functions at ECL, HQ and at Area office.

18. I also do not hold owner of the contractual company i.e. M/s MIPL-NKAS (JV) and any of its supervisors responsible because they were performing their job as per contract deed and it was the operational management of the mine to caution them while they were performing their job at a risky area. Further, the contractual company has lost one of his most sincere supervisor namely Lallu Khan in this tragedy so much so they have lost as many as 18 nos. of HEMMs in this accident and valued life of their as many as 23 employees. Therefore, in my opinion they have already paid heavy penalty by losing their men & machineries including site in-charge.

Further more reasons to not to hold the contractor responsible, is that some of it's unqualified supervisors used to inform the operational management of the mine about the dangerous conditions prevailing in the working area of the mine by sending "SMS" to all of them to which they ignored. Also, Rajesh Patel, site supervisor saved the precious lives of 15 persons and HEMMs from getting buried by his timely action of withdrawal, thus he made commendable work.

## 12.0 MISCELLANEOUS:-

### 12.1 Inspection by DGMS officers:-

Rajmahal OCP was inspected by S/sri Niranjana Sharma, Director Mines Safety, Region 03, on 10.08.2016 and 11.08.2016. This inspection was undertaken by him as a part of his first inspection since he had joined in Region no.03 in the month of May, 2016 as Director of Mine Safety and Regional Inspector. Though a major side collapse occurred on 09.08.2016 in Dahernangi patch, this was not brought to his knowledge by the mine management during his visit. Rajmahal OCP has a working area of 15 km<sup>2</sup> and as such unless it is shown in the plan or reported by the management it is near impossible for any inspector to detect lapses at every nook and corner of the mine.

Md. Niyazi, Dy. Director of Mines Safety, Region no. 03 had called at the mine along with Sri N. Sharma but, with a different assignment. Md. Niyazi, DDMS was to conduct an enquiry into a complaint about drowning of a drill machine in the main sump area lodged by Sri Arvind Jha, Union representative cum secretary district congress committee, Godda. During the enquiry Sri Jha did not turn up to attend the enquiry officer in spite of several messages sent to him. In the complaint also he did not mention about the workings in Dahernangi Patch.

Both Sri N. Sharma & Md. Niyazi had addressed letters to mine management in respect of the observations made by them during their inspection and compliant enquiry.

Further, a work shop on Preparation of safety management plan was conducted by S/Sri V. Lakshmi Narayana, DMS/SO, EZ, C. Palanimalai, DDMS (Elect.), S. G Bhaisare, DDMS (Mech.) and Md. Niyazi, DDMS was made on 26 & 27 Sept., 2016 at Rajmahal OCP. During the program 40 executives of the Rajmahal OCP participated and as many as 35 hazards were identified, but, nothing about the dangerous occurrence on bench sliding on 09.08.2016 was reported to the team of officers of DGMS.

On 27.09.2016, Sri S.G Bhaisare, DDMS (Mech.) had inspected the mine and subsequently addressed management on his observations.

The ninth, tenth and eleventh Conferences on Safety in mines recommended to adopt Risk Assessment as a tool for development of an appropriate Safety Management Plan/System at each mine. In this connection, DGMS issued circulars vide DGMS (Tech)(S&T) No.13 of 2002 – “Safety Management System – a guideline for implementation” and DGMS (Tech)(S&T) No.05 of 2016 – “Integrated Approach for development of Safety Management Plan for coal and metalliferous mines”. These directives were issued to the mine management with an approach towards achieving “ZERO” harm at work places.

In developed countries the concept of Safety Management Plan/System is in vogue and yielded improvement in safety standards. It is not possible for any DGMS officer or any agency to detect all risks prevailing in the mines by making sample inspections only, since geo-mining conditions are dynamic in nature and working areas becomes hazardous within a short span of time.

**12.2 Compensations etc:-**

It has been reported by the nominated owner that an amount of Rs. 5,00,000/- to the next of kin of the deceased in addition to workmen compensation ranging from Rs. 7.58-8.96 Lakh will be paid. Jharkhand state government has also declared compensation of Rs. 02 Lakh each to the victim's family. The contractor company has also paid Rs. 05 Lakh to the next of the kin of the deceased as compensation. The nominated owner further stated that workmen compensation amount has been deposited to employee's compensation commissioner cum presiding officer, Labour Court, Deoghar.

An amount of Rs. 16,000/- has been given to family members of the deceased for performing their last rites and a vehicle was also family of each deceased to carry the dead bodies to their native place.

**12.3 Visit by state authorities:-**

The place of accident was visited on 30.12.2016 by Chief secretary of Govt. of Jharkhand along with DC and SP of district Godda, Jharkhand.

The place of accident was also visited on 04.01.2017 by Sri Babulal Marandi., Ex. Chief Minister of Jharkhand State and Sri Raj Paliwal, State Labour Minister of Jharkhand and on 14.01.2017 by Sri Nishikant Dubey, Hon'ble MP of Godda.

**13.0 LOSS OF PRODUCTION, MANDAYS AND MATERIALS:-**

Loss of 3.5 Lakh tonne (approx.) coal production and 11,200 man shifts was reported by the management due to this Accident.




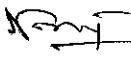

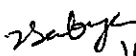

**14.0 TECHNICAL EXPERT COMMITTEE:-**


Chairman, M/s CIL had set up a technical expert committee headed by Sri S Sharan CMD, M/s CMPDIL, and comprising of S/Sri Dr V K Singh, of CIMFR; Dr Indrajit Roy of BIT, Sindri and Phalguni Sen of ISM, Dhanbad, to know the cause of bench failure at Dahernangi patch. This report has so far not been received by DGMS enquiry committee.

15.0 **RECOMMENDATIONS:-**

1. In pit dumping in OCPs over coal bearing areas shall be avoided at all cost.
2. Geologically disturbed areas shall be mined only with scientific guidance.
3. Continuous monitoring of strata behavior shall be done with available technology.
4. In big mining projects any deviation while execution of actual plan shall be taken up with due regards to safety.
5. DGMS, technical circular on "Design, Control and Monitoring of Pit and Dump Slopes in opencast mines" issued vide No.02 of 2001 and No.2 of 2010 shall be followed.
6. It is preferable that all inspections in open cast mines made by the DGMS officers shall be of a type called General Inspection.

**Members of the committee:**

- 1) Sri Niranjan Sharma, DMS, Reg. No.3.  10/02/2017
- 2) Md. Niyazi, DDMS, Reg.No.3.  10/21/2017
- 3) Sri S G Bhaisare, DDMS(Mech.), EZ. →  10.2.17
- 4) Sri I. Satyanarayana, DDMS(Soma), HQ.  10.02.2017
- 5) Sri. K. Gyaneshwar, DDMS, HQ.  10.2.17

  
 Chairman, Enquiry Committee and  
 Dy. Director - General of Mines Safety,  
 DGMS, Eastern Zone, Sitarampur.

**Encl: as above.**

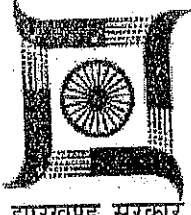
## **CHAPTER-IV**



## CHAPTER – IV

| Sl. No. | TITLE  | PAGES   |
|---------|--|---------|
| 1.      | Death Certificate/ Post Mortem Examination Report  | 84-101  |
| 2.      | Seizure Memos  | 102-107 |
| 3.      | Copies of SMS Messages   | 108-115 |
| 4.      | Copy of Special Pit Safety Committee   | 116-118 |
| 5.      | Letter to GM (I/C) regarding confirmation on number of death vide No.Camp Rajmahal/dated 13.01.2017.   | 119     |
| 6.      | Letter to Nominated owner calling for remote sensing data from NRSC, Hyderabad issued vide No.DGMS/EZ/Rajmahal Camp/15-16 /02 dated 01.01.2017 | 120     |
| 7.      | Letter to GM (I/C) regarding submission of action plan for further rescue & recovery operation issued vide no Camp Rajmahal / dated 13.01.2017 | 121     |
| 8.      | Letter to DT (OP) in connection with recording his evidence issued vide No.Rajmahal Camp/04 dated 09.01.2017                                   | 122-123 |
| 9.      | Letter to DT (OP) regarding submission of documents to be seized issued vide No.EZ/FAE/2017/43 dated 06.01.2017                                | 124-126 |





झारखण्ड सरकार



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झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र  
DEATH CERTIFICATE

No. A

792308

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

७३१ भोडाभ तहसील/प्रखण्ड कोआरीजोर  
जिला गौडडा राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name लड्डू प्रसाद लिंग/Sex पुं  
मृत्यु की तिथि/Date of Death 29/12/2016 मृत्यु का स्थान/Place of Death ७३१ भोडाभ (परगना) में  
पिता/पति का नाम/Name of Father/Husband श्री गौरीधर चौधरी

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
ग्राम - ७३१ भोडाभ (परगना), पन्नाप्रत ७३१ भोडाभ -  
जिला गौडडा, झारखण्ड

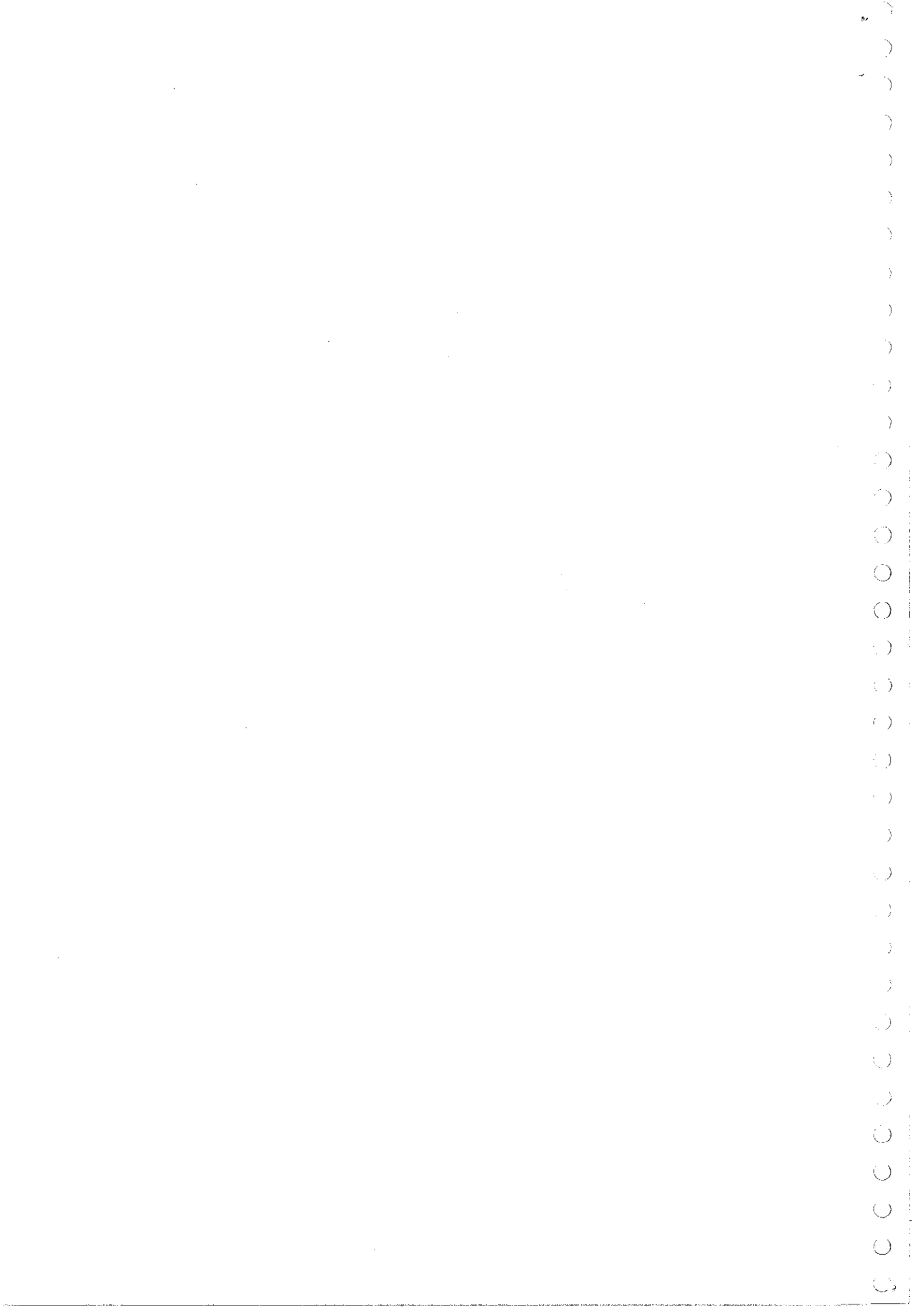
पंजीकरण संख्या/Registration No. 18/2017 पंजीकरण दिनांक/Date of Registration 01/01/2017

टिप्पणी/Remarks (if any)

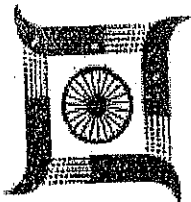
दिनांक/Date of Issue 01/01/2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal



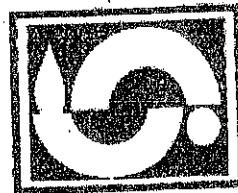




झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

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(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र  
DEATH CERTIFICATE

No. A 789040

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र) .....  
..... तहसील/प्रखण्ड ..... के रजिस्टर में उल्लिखित है।  
जिला ..... राज्य ..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

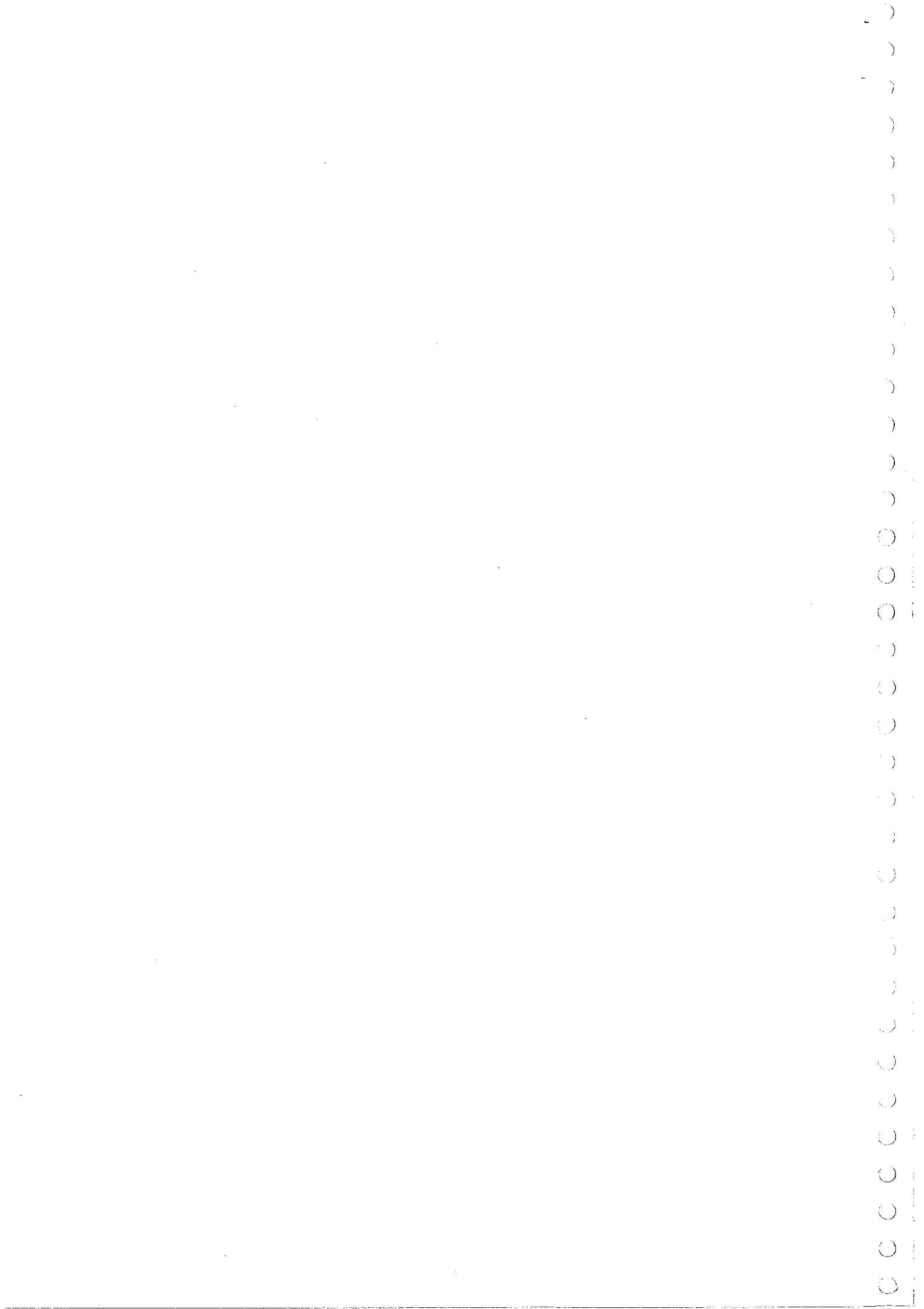
नाम/Name ..... लिंग/Sex .....  
मृत्यु की तिथि/Date of Death ..... मृत्यु का स्थान/Place of Death .....  
पिता/पति का नाम/Name of Father/Husband .....  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
.....  
पंजीकरण संख्या/Registration No. .... पंजीकरण दिनांक/Date of Registration .....

टिप्पणी/Remarks (if any)

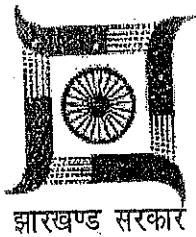
दिनांक/Date of Issue .....

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

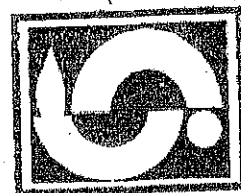


86/26



सत्यमेव जयते

(नियम 8 दाखल)



झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A 789041

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

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नाम/Name ..... मोड़ाय ..... तहसील/प्रखण्ड ..... गोआरी लोगर .....  
 जिला ..... गोड़िया ..... राज्य ..... झारखण्ड ..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name ..... मोहम्मद अख्तर ..... लिंग/Sex ..... पु. 0  
 मृत्यु की तिथि/Date of Death ..... 29.11.2016 ..... मृत्यु का स्थान/Place of Death ..... मोड़ाय (चरण देहा)  
 पिता/पति का नाम/Name of Father/Husband ..... सलीमुद्दीन अंजारी .....  
 मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
 गा. - मोड़ाय (चरण देहा), पंचायत - मोड़ाय -  
 जिला - गोड़िया

पंजीकरण संख्या/Registration No. .... 07/2017 ..... पंजीकरण दिनांक/Date of Registration ..... 01/01/2017

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue ..... 01/01/2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
 प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal





सत्यमेव जयते



आखण्ड सरकार

झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

## मृत्यु प्रमाण-पत्र

No. A

# DEATH CERTIFICATE

789042

(जन्म-मृत्यु) रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना सच है।  
 जिला- मोठास तहसील/प्रखण्ड- गोआरीबोर  
 जिला- मोठास राज्य- म.प्र. के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name ..... श्रीगणेश्वर पासवान ..... लिंग/Sex ..... पुरुष .....  
मृत्यु की तिथि/Date of Death ..... 29.11.2016 ..... मृत्यु का स्थान/Place of Death ..... बड़ानोडिया (चरगा टो)

पिता/पति का नाम/Name of Father/Husband ..... सुनील चन्द्र पाण्डे .....

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :

मा० - बाबा - मोडाय, पंजाब - बडा - मोडाय -

पंजीकरण संख्या/Registration No. ०४/२०१७ पंजीकरण दिनांक/Date of Registration ०१/०१/२०१७

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue ..01.10.2017

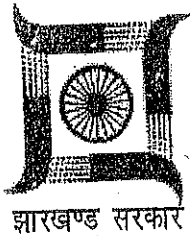
प्राधिकारी के हस्ताक्षर / Signature of the issuing authority

प्राधिकारी का पता / Address of the issuing authority

मोहर/Seal



88/126



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)  
DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

789034

## मृत्यु प्रमाण-पत्र DEATH CERTIFICATE

No. A

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

तहसील/प्रखण्ड..... गोआरीसौर  
जिला..... गोडा..... राज्य..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block..... of District ..... of State/Union territory.....

नाम/Name..... राजेश कुमार यादव..... लिंग/Sex..... पु.०

मृत्यु की तिथि/Date of Death..... २९.१.२०१७..... मृत्यु का स्थान/Place of Death.....

पिता/पति का नाम/Name of Father/Husband..... कमलेश कुमार यादव.....

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
..... रा.० - गोडा मोडा (चरण रोड), पंचायत - गोडा मोडा

.....

पंजीकरण संख्या/Registration No. ०९/२०१७..... पंजीकरण दिनांक/Date of Registration ०१/०१/२०१७

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue ०१/०१/२०१७

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority

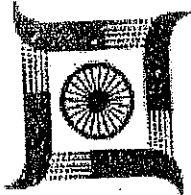
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal





89/126



झारखण्ड सरकार



सत्यमेव जयते

झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

## मृत्यु प्रमाण-पत्र DEATH CERTIFICATE

No. A

789035

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)  
वडा मोड़ा तहसील/प्रखण्ड बोकारो  
जिला बोकारो राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) of tahsil/block of District of State/Union territory.

नाम/Name अजीत पटेल लिंग/Sex पुं०  
मृत्यु की तिथि/Date of Death 29.12.2017 मृत्यु का स्थान/Place of Death वडा मोड़ा (चरण रोड)  
पिता/पति का नाम/Name of Father/Husband दिनेश प्रसाद पटेल  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
वडा मोड़ा (चरण रोड), पंचायत - वडा मोड़ा  
जिला - बोकारो  
पंजीकरण संख्या/Registration No. 10/2017 पंजीकरण दिनांक/Date of Registration 01.01.2017

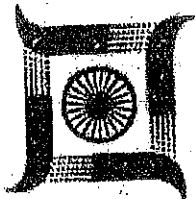
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.01.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

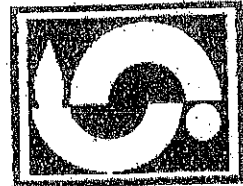
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झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र  
DEATH CERTIFICATE

No.A

488838

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि  
(स्थानीय क्षेत्र) ..... तहसील/प्रखण्ड ..... के रजिस्टर में उल्लिखित है।  
जिला ..... राज्य ..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name ..... लिंग/Sex .....  
मृत्यु की तिथि/Date of Death ..... मृत्यु का स्थान/Place of Death .....  
पिता/पति का नाम/Name of Father/Husband .....  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
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.....  
पंजीकरण संख्या/Registration No. .... पंजीकरण दिनांक/Date of Registration .....

टिप्पणी/Remarks (if any)

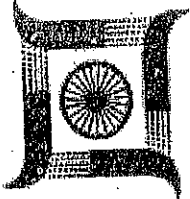
दिनांक/Date of Issue .....

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal



91/126



झारखण्ड सरकार



सत्यमेव जयते

झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A

792326

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

नाम - मोडाय तहसील/प्रखण्ड - कोठारीपौर  
 जिला - बोकारो राज्य - झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name ..... मो. लामिर ..... लिंग/Sex ..... पु.   
 मृत्यु की तिथि/Date of Death ..... 29.11.2017 ..... मृत्यु का स्थान/Place of Death ..... मोडाय (चरण टो)   
 पिता/पति का नाम/Name of Father/Husband ..... लाल मोहम्मद   
 मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :   
 गा. - मोडाय (चरण टो), पंचायत - मोडाय   
 जिला - बोकारो

पंजीकरण संख्या/Registration No. 12/2017 पंजीकरण दिनांक/Date of Registration 01.12.2017

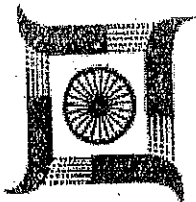
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.12.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
 प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

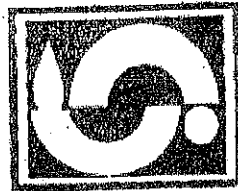




झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A 792323

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

बड़ा भोड़ा

तहसील/प्रखण्ड

बोझारी जोर

जिला..... रोड्डा..... राज्य..... झारखण्ड..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... H.I.L. .... of tahsil/block..... X ..... of District ..... X ..... of State/Union territory..... X .....

नाम/Name ..... मो० शकील अहमद ..... लिंग/Sex ..... पु०

मृत्यु की तिथि/Date of Death ..... 29.12.2016 ..... मृत्यु का स्थान/Place of Death ..... चरण रोड, बड़ा भोड़ा

पिता/पति का नाम/Name of Father/Husband ..... मु० मुनीस

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :

गा० - बड़ा भोड़ा (चरण रोड), पंचायत - बड़ा भोड़ा

प्रखण्ड - बोझारी जोर, जिला - रोड्डा (झारखण्ड)

पंजीकरण संख्या/Registration No. .... 01/2017 ..... पंजीकरण दिनांक/Date of Registration ..... 01/01/2017

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue ..... 01.01.2017

अधिकारी के हस्ताक्षर/Signature of the issuing authority  
अधिकारी का पता/Address of the issuing authority

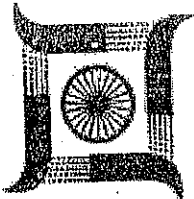
सोहर/Seal





93/126

(नियम 8 देखिए)



झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A

792324

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

बड़ा - भोजाय तहसील/प्रखण्ड कोआरीजोर  
 जिला गोडा राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) of tahsil/block of District of State/Union territory.

नाम/Name हरि किशोर यादव लिंग/Sex पुरुष  
 मृत्यु की तिथि/Date of Death 01.11.2017 मृत्यु का स्थान/Place of Death बड़ा - भोजाय (चरण टो  
 पिता/पति का नाम/Name of Father/Husband देवन यादव  
 मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
 ग्राम - बड़ा भोजाय (चरण टो), पंचायत - बड़ा - भोजाय  
 प्रखण्ड - कोआरीजोर, जिला - गोडा  
 पंजीकरण संख्या/Registration No. 02/2017 पंजीकरण दिनांक/Date of Registration 01.11.2017

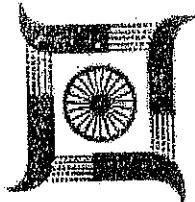
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.11.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
 प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal



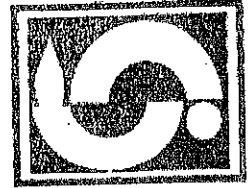


झारखण्ड सरकार



सत्यमेव जयते

(नियम ८ देखिए)



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A

789043

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, १९६९ की धारा १२/१७ तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली १९९९ के नियम ८/१३ के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

नाम/नामिका..... तहसील/प्रखण्ड..... गोआरीजोर  
जिला..... राज्य..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block..... of District ..... of State/Union territory.....

नाम/Name ..... लिंग/Sex.....  
मृत्यु की तिथि/Date of Death..... मृत्यु का स्थान/Place of Death.....  
पिता/पति का नाम/Name of Father/Husband .....  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
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पंजीकरण संख्या/Registration No. .... पंजीकरण दिनांक/Date of Registration.....

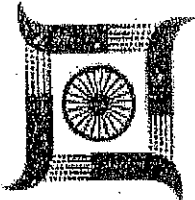
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue .....

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

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झारखण्ड सरकार



सत्यमेव जयते

झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A 789038

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

वडा मोडाय तहसील/प्रखण्ड गोआरी मोरे  
 जिला गोआ राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name जय प्रकाश राम लिंग/Sex पुरुष

मृत्यु की तिथि/Date of Death 29.11.2016 मृत्यु का स्थान/Place of Death वडा मोडाय (चरण गेट)

पिता/पति का नाम/Name of Father/Husband देवरा राम

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :

गा. - वडा मोडाय (चरण गेट), पंचायत - वडा मोडाय  
 जिला - गोआ

पंजीकरण संख्या/Registration No. 04/2017 पंजीकरण दिनांक/Date of Registration 01.10.2017

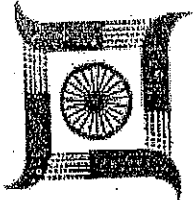
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.10.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
 प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

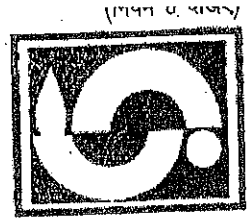




झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A

792305

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13  
of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

बड़ा-मोड़ा तहसील/प्रखण्ड बौआरी जिला-बोकारो राज्य-झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) of tahsil/block of District of State/Union territory.

नाम/Name कुलेश्वर कुमार कुशनाहा लिंग/Sex पुं०

मृत्यु की तिथि/Date of Death 24.11.2016 मृत्यु का स्थान/Place of Death बड़ा-मोड़ा (चरवा योग)

पिता/पति का नाम/Name of Father/Husband बालेश्वर महतो

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :

ग्राम - बड़ा-मोड़ा (चरवा योग) पंचायत - बड़ा-मोड़ा

जिला - बोकारो

पंजीकरण संख्या/Registration No. 15/2017 पंजीकरण दिनांक/Date of Registration 01.10.2017

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.10.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

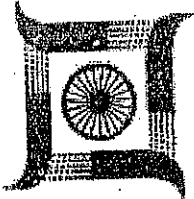
मोहर/Seal

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१७/१२६

(नियम ८ देखिए)



झारखण्ड सरकार



सत्यमेव जयते

झारखण्ड सरकार

GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग

(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT

(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A

792304

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, १९६९ की धारा १२/१७ तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण

नियमावली १९९९ के नियम ८/१३ के अंतर्गत जारी किया गया)

(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

गडा-भोजाय तहसील/प्रखण्ड गोसासीपौर  
जिला गोडा राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) of tahsil/block of District of State/Union territory.

नाम/Name राज कमान गोस्वामी लिंग/Sex पु

मृत्यु की तिथि/Date of Death 29.11.2016 मृत्यु का स्थान/Place of Death

पिता/पति का नाम/Name of Father/Husband सुदामा गोस्वामी

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :

गांव - गडा-भोजाय (परण थाना), पंचायत - गडा-भोजाय

जिला - गोडा

पंजीकरण संख्या/Registration No. 14/2017 पंजीकरण दिनांक/Date of Registration 01/01/2017

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01/01/2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority

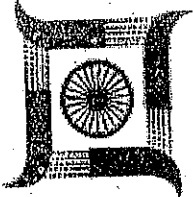
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal



१८/१२/२६

(11444 0 4444)



झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र  
DEATH CERTIFICATE

No. A

792306

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र) .....  
..... तहसील/प्रखण्ड ..... के रजिस्टर में उल्लिखित है।  
जिला ..... राज्य ..... के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name ..... लिंग/Sex .....  
मृत्यु की तिथि/Date of Death ..... मृत्यु का स्थान/Place of Death .....  
पिता/पति का नाम/Name of Father/Husband .....  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
.....  
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पंजीकरण संख्या/Registration No. .... पंजीकरण दिनांक/Date of Registration.....

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue .....

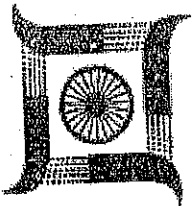
प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal



११/१२६

(नियम ८ देखिए)



झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

# मृत्यु प्रमाण-पत्र DEATH CERTIFICATE

No. A 792327

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, १९६९ की धारा १२/१७ तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली १९९९ के नियम ८/१३ के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र) बडा-भोजाय तहसील/प्रखण्ड बोझारीमोर जिला गोड्डा राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) X of tahsil/block X of District X of State/Union territory X

नाम/Name मो० सुनूप्रकाश लिंग/Sex पु०  
मृत्यु की तिथि/Date of Death २९.११.२०१७ मृत्यु का स्थान/Place of Death बडा-भोजाय (चरवाट)  
पिता/पति का नाम/Name of Father/Husband मो० राफी  
मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death :  
गांव - बडा-भोजाय (चरवाट रोड), पंचायत - बडा-भोजाय  
जिला - गोड्डा

पंजीकरण संख्या/Registration No. १३/२०१७ पंजीकरण दिनांक/Date of Registration ०१/०१/२०१७

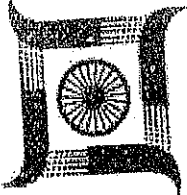
टिप्पणी/Remarks (if any)

दिनांक/Date of Issue ०१/०१/२०१७

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

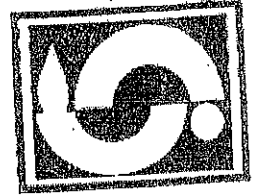




झारखण्ड सरकार



सत्यमेव जयते



झारखण्ड सरकार  
GOVERNMENT OF JHARKHAND

योजना एवं विकास विभाग  
(सांख्यिकी एवं मूल्यांकन निदेशालय)

DEPARTMENT OF PLANNING AND DEVELOPMENT  
(DIRECTORATE OF STATISTICS AND EVALUATION)

मृत्यु प्रमाण-पत्र

No. A 789039

DEATH CERTIFICATE

(जन्म-मृत्यु रजिस्ट्रीकरण अधिनियम, 1969 की धारा 12/17 तथा बिहार जन्म मृत्यु रजिस्ट्रीकरण नियमावली 1999 के नियम 8/13 के अंतर्गत जारी किया गया)  
(Issued under Section 12/17 of Registration of Births and Deaths Act, 1969 and Rule 8/13 of the Bihar Registration of Births and Deaths Rules 1999)

यह प्रमाणित किया जाता है कि निम्नांकित सूचना मृत्यु के मूल अभिलेख से ली गई है जो कि (स्थानीय क्षेत्र)

वडा मोडाया तहसील/प्रखण्ड बोआरीखोर  
जिला गोड्डा राज्य झारखण्ड के रजिस्टर में उल्लिखित है।

This is to certify that the following information has been taken from the original record of death which is the register for (local area/local body) ..... of tahsil/block ..... of District ..... of State/Union territory.....

नाम/Name संजय कुमार शाही उर्फ मजहर लिंग/Sex पुं

मृत्यु की तिथि/Date of Death 29.11.2016 मृत्यु का स्थान/Place of Death वडा मोडाया (चरण टो)

पिता/पति का नाम/Name of Father/Husband सुनील शाही

मृतक का मृत्यु के समय का पता/Address of the deceased at the time of death : गा. - वडा मोडाया (चरण टो) - पंचायत - वडा मोडाया

जिला - गोड्डा

पंजीकरण संख्या/Registration No. 5/2017 पंजीकरण दिनांक/Date of Registration 01.12.2017

टिप्पणी/Remarks (if any)

दिनांक/Date of Issue 01.12.2017

प्राधिकारी के हस्ताक्षर/Signature of the issuing authority  
प्राधिकारी का पता/Address of the issuing authority

मोहर/Seal

