



**PUBLIC HEARING DOCUMENT**

**SUMMARY OF DRAFT EIA/EMP  
FOR  
GAYATRI UNDERGROUND COAL MINE PROJECT  
CAPACITY: FROM 0.3 MTPA TO 0.88 MTPA  
PROJECT AREA: FROM 507.472 HA. TO 616.957HA.**

**VILLAGES: PONDI, GETRA, JOBGA  
TAHSIL: SURAJPUR; DISTRICT: SURAJPUR; STATE: CHHATTISGARH.**

**(Project categorized under Schedule 1(a): Mining of minerals, Category 'A';  
ToR issued vide MoEF&CC FILE NO. J-11015/26/2000-IA. II (M), dated  
15/11/2022)**

**Project proponent:  
*South Eastern Coalfields Limited*  
*(A Mini Ratna Company)***

**(MAY - 2023)**

**Consultant:  
Central Mine Planning & Design Institute Limited (CMPDIL)  
Kanke Road, Ranchi, Jharkhand-834031  
(A Mini Ratna Company & A Subsidiary of Coal India Ltd)  
NABET accreditation certificate no. NABET/EIA/2124/RA 0258 valid till 22.08.2024**

**PUBLIC HEARING DOCUMENT**  
**SUMMARY OF EIA/EMP GAYATRI UG COAL MINE PROJECT 0.88 MTPA**

**1.1 PROJECT DESCRIPTION:**

Gayatri UG is a brownfield/running underground coal mine project having capacity of 0.3 MTPA, tends to produce coal of average grade varies between C&D (G-5). To obtain Environmental clearance (EC) for Gayatri UG Mine expansion Project capacity from 0.30 MTPA to 0.88 MTPA and land area 507.472 Ha to 616.957 Ha under EIA notification 2006 with public hearing this EIA & EMP report has been prepared.

**1.1.1 PROJECT LOCATION:**

Gayatri UG coal mine project is located in Villages Getra, Pondi & Jobga Tehsil: Surajpur; District: Surajpur; State: Chhattisgarh. Gayatri underground mine is located in Rehar West block (Mani & Jogi Blocks). The block is located west of the Rehar river and is bounded by Latitudes 23°05'15" to 23°07'30"N and Longitudes 82°53'32" to 82°56'53" E. The area is covered under the Survey of India, topo-sheet No 64 I/16

**Table -1.1: Project Location Details**

Sl. No.	Particulars	
1.	Name	Gayatri UG Coal Mining Project
2.	Villages	Getra, Pondi, Jobga
3.	Tehsil	Surajpur
4.	Pin Code	497229
5.	District	Surajpur
6.	State	Chhattisgarh
7.	Latitudes	23°05'15" N to 23°07'30"N
8.	Longitudes	82°53'32" E to 82°56'53" E
9.	Maximum Elevation	562 m to 536 m above Mean Sea Level
10.	Topo sheet No.	64 I/16
11.	Seismic Zone	Zone-III as per IS 1893 (Part 1) :2002 (5 <sup>th</sup> revision)
12.	Nearest town	Surajpur, 18 km
13.	Nearest City	Ambikapur (C.G) , 71KM
14.	District head quarters	Surajpur
15.	State capital	Raipur (C.G)
16.	Nearest Airport	Raipur airport at about 230 km
17.	Nearest Railway Station	Bishrampur, 21 km
18.	Nearest River (If any)	Rehar River flowing 2 KM away from east direction of project
19.	Other water bodies (Lake/Nalla etc.)	Jobga Nallah –At the edge of mining lease in the direction of south west of project.

(Source- Mine plan/PFR of Gayatri UG/Form-I/Govt. Agencies)

### 1.1.2 PREVIOUS EC DETAILS:

**Table -1.2: Details of Previous EC**

Sl. No.	Particulars of EC obtained	File number	Date of EC granted	Validity
1	0.3 MTPA	J-11015/26/2000- IA.II (M)	27.11.2002	--
2	0.3 MTPA (revalidation of EC)	J-11015/26/2000- IA.II (M)	28.09.2022	Life of the mine

### 1.1.3 FOREST LAND AND ITS DETAILS:

**Table – 1.3: Status of Forest Clearance**

Sl no.	Area (in ha)	File No of MoEFCC, New Delhi	Final FC approval date
1	547.012 Ha	F.No. 8-90/99-FC (Gayatri UG and Rehar UG Combined)	27.09.2000

\*Out of 547.012 Ha of forest land 310.268 Ha of forest land falls under mining lease of Gayatri UG mine

### 1.1.4 ENVIRONMENTAL SENSITIVITY:

**Table -1.4: Environmental Sensitivity**

Sl. No	Areas	Name	Aerial Distance from centre of the project (in km.)	
			Core Zone	Buffer Zone (10Km)
1.	National Park/ Sanctuary	<i>None</i>	-	-
2.	Biosphere Reserve/ Tiger Reserve/ Elephant Reserve/any other Reserve	<i>None</i>	-	-
3.	Forest Areas- Reserved forest and Protected Forest	Rajapur PF	Core Zone & West of Mine Lease Boundary	
		Ketaka RF	4 kms in buffer zone NW	
		Surta RF	4.5 km South West	
		Limha PF	5 km South East	
		Pendrakhi RF	6 km East	
		Mukti PF	7 km South East	
		Bishrampur RF	9 km North East	
4.	Habitat for migratory birds	<i>None</i>	-	-
5.	Corridor for animals of schedule I & II of the Wildlife (Protection) Act, 1972	<i>None</i>	-	-
6.	Archaeological sites * Notified * Others	<i>None</i>	-	-
7.	Defence Installation	<i>None</i>	-	-

Sl. No	Areas	Name	Aerial Distance from centre of the project (in km.)	
			Core Zone	Buffer Zone (10Km)
8.	Industries/Thermal Power Plants	None	-	Within 10Kms.
9.	Other Mines	Rehar UG, Ketki UG	-	Within 10Kms.
9	Airports	Raipur	-	(App.) 200 Kms
10	Railway Lines	Bishrampur Rly. Stn.	-	21 km.
11	National / State Highways	State Highway	-	More than 1 Km.

\* Ref: MoEF&CC online proposal details on GIS.

(Source- Mine plan/PFR of Gayatri UG/Form-I/Govt. Agencies)

### 1.1.5 SALIENT FEATURES OF PROJECT:

**Table 1.5 Salient features of project**

Sl. No.	Particulars	Project Parameters
1	Type of the Project	Underground coal mining project
2	New / Expansion	Expansion
3	Item no. as per EIA Notification	1
4	Category as per EIA Notification	"A"
5	Mineable Reserve (MT):	14.133 as on 01/04/2022
6	(NC: Non-Coking & C: Coking)	(NC)
7	Life of mine (Years)	19 as on 01/04/2022
8	Grade	G-5
9	Forest Land (Ha.)	310.268
10	Total Land use (Ha.)	616.957
11	R&R involvement (Nos.)	NIL
12	Capital cost for Expansion (in Crore)	22.89

(Source- Mine plan/PFR of Gayatri UG/Form-I/Govt. Agencies)

**Table 1.6: Geo-mining characteristics of the project**

Sl. No.	Particulars	Unit	Values
1.	<b>Coal Seams</b>		
(i)	Seam IV	m	0.9 to 4.42
(ii)	Seam III	m	0.46 to 2.53
(iii)	Seam II	m	0.03 to 1.53
(iv)	Seam I (Top)	m	0.29 to 4.94
(v)	Seam I (Bottom)	m	0.03 to 4.0m
2.	Av. Quality of seam	Grade	G-5
3	Parting	m	

<b>Sl. No.</b>	<b>Particulars</b>	<b>Unit</b>	<b>Values</b>
(i)	Parting between Seam-IV and Seam-III	m	7.68 to 17.16
(ii)	Parting between Seam-III and Seam-II	m	16.69 to 24.23
(iii)	Parting between Seam-II and Seam-I (Top)	m	55.58 to 119.6
(iv)	Parting between Seam-I (Top) and Seam-I (Bottom)	m	9.95 to 30.41
4.	Depth of mining	m	150-300

### 1.1.6 PRODUCTION PROGRAMME:

**Table – 1.7: Calendar Programme**

<b>YEAR OF PRODUCTION</b>	<b>SDL/LHD</b>	<b>CM SET- I</b>	<b>LHCM SET 2</b>	<b>Annual Production</b>
Year 1	0.12	0.16	0	<b>0.28</b>
Year 2	0.06	0.3	0.17	<b>0.53</b>
Year 3	0.06	0.46	0.36	<b>0.88</b>
Year 4	0.06	0.46	0.36	<b>0.88</b>
Year 5	0.06	0.46	0.36	<b>0.88</b>
Year 6	0.06	0.46	0.36	<b>0.88</b>
Year 7	0.04	0.46	0.36	<b>0.86</b>
Year 8	0.04	0.44	0.36	<b>0.84</b>
Year 9	0.04	0.42	0.36	<b>0.82</b>
Year 10	--	0.42	0.36	<b>0.78</b>
Year 11	--	0.42	0.36	<b>0.78</b>
Year 12	--	0.42	0.36	<b>0.78</b>
Year 13	--	0.42	0.36	<b>0.78</b>
Year 14	--	0.42	0.36	<b>0.78</b>
Year 15	--	0.42	0.36	<b>0.78</b>
Year 16	--	0.42	0.36	<b>0.78</b>
Year 17	--	0.42	0.36	<b>0.78</b>
Year 18	--	0.42	0.36	<b>0.78</b>
Year 19	--	0.26	0.00	<b>0.26</b>
<b>Total</b>	0.54	7.66	5.93	<b>14.13</b>

SDL = SIDE DISCHARGE LOADER, LHD- LOAD HAUL DUMP (LOADER); CM= CONTINUES MINER, LHCM= LOW HEIGHT CONTINUES MINER

### 1.1.7 LAND USE (PRE, DURING AND POST):

#### Pre-mining Land Use:

Table-1.8A

S. No	Land Use	Within ML Area (Ha)	Outside ML Area (Ha)	Total(Ha)
1	Agriculture Land	168.551	0	168.551
2	Forest Land	310.268	0	310.268
3	Waste Land	0	0	0
4	Grazing Land	0	0	0
5	Surface Water Body	0.6	0	0.6
6	Settlements	66.618	0	66.618
7	Other (Govt. Land)	54.92	0	54.92
	Roads & Mine Infrastructure	7.45	0	7.45
	R&R Colony	0	0	0
	Staff Colony	0	8.55	8.55
	<b>Total Project Area</b>	<b>608.407</b>	<b>8.55</b>	<b>616.957</b>

#### Post-mining Land Use:

Table – 1.8B

No	Mining	Plantation	Water Body	Public Use	Undisturbed	Total
4	Roads	0	0	7.45	0	7.45
5	Built-up Area (Colony/Office)	0	0	8.55	0	8.55
7	Undisturbed Area	0	0	0	600.957	600.957
	<b>Total Area (Ha)</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>600.957</b>	<b>616.957</b>

(As per PR/Mine plan/PFR of Gayatri UG 0.88 MTPA)

### 1.1.8 NATIONAL AND REGIONAL IMPORTANCE:

India is dependent mostly on thermal power, and the project is contributing in production of thermal power hence it is of national importance. In case of regional terms, roads with state transport facilities will be developed. The State Government is being benefited through financial revenues in crores of rupees by way of royalty, taxes etc., from the direct and indirect operations in the Study area.

## 1.2 DESCRIPTION OF THE ENVIRONMENT

To assess the impact of mining operation on different components of environment of proposed Gayatri UG coal Mining Project, the study was carried out to collect baseline data w.r.t. air, water, noise and soil quality, land use pattern, hydrology, flora & fauna, socio-economic aspects etc. during the Pre-monsoon season (March 22- May 22). Also baseline study for ambient air is carried out on 12 monitoring stations as a part of ToR condition from December 2022 to February 2023. The present environmental status of the different monitored parameters is summarized.

**Table 1.9: Summary of Baseline Data**

S.No	Particulars	Details				
1	Period of Base Line Data Collection	01.03.2022 to 31.05.2022				
2	Ambient Air Quality Monitoring on 12 Stations as per Additional condition in ToR	01.12.2022 to 28.02.2023				
3	Season (Summer/Pre-monsoon/Post-monsoon/Winter)	Pre Monsoon and Post monsoon				
4	Socio-economic profile					
a	No. of Village (Core zone and Buffer Zone)	03 and 60				
b	Avg. house hold size (Core zone and Buffer Zone)	4 & 5				
c	Total Population (Core zone and Buffer Zone)	4025 and 111476				
d	ST population (Core zone and Buffer Zone)	2977 and 41265				
e	SC population (Core zone and Buffer Zone)	154 and 3042				
f	Literate population (Core zone and Buffer Zone)	1848 and 56071				
g	Sex ratio (Study Area)	976				
4	Micro-meteorological parameters					
a	Avg. Wind speed (m/s)	1.5				
b	Avg. Temperature (°C)	18				
c	Avg. Relative Humidity (%)	44				
d	Avg. Rainfall (mm)	0				
5	No. of Ambient Air Quality (AAQ) Monitoring Locations	12				
a	Summary of AAQ monitoring results					
	<b>CORE ZONE</b>					
	<b>Criteria Pollutants</b>	<b>Unit</b>	<b>Maximum Value</b>	<b>Minimum Value</b>	<b>Prescribed Standard</b>	
	PM <sub>10</sub>	µg/m <sup>3</sup>	194	81	<b>250</b>	
	PM <sub>2.5</sub>	µg/m <sup>3</sup>	55	18	--	
	SO <sub>2</sub>	µg/m <sup>3</sup>	37	15	<b>80</b>	
	No <sub>x</sub>	µg/m <sup>3</sup>	41	21	<b>80</b>	
	<b>BUFFER ZONE</b>					
	<b>Criteria Pollutants</b>	<b>Unit</b>	<b>Maximum Value</b>	<b>Minimum Value</b>	<b>Prescribed Standard</b>	
	PM <sub>10</sub>	µg/m <sup>3</sup>	79	35	<b>100</b>	
	PM <sub>2.5</sub>	µg/m <sup>3</sup>	30	11	<b>60</b>	
	SO <sub>2</sub>	µg/m <sup>3</sup>	26	10	<b>80</b>	
	No <sub>x</sub>	µg/m <sup>3</sup>	29	11	<b>80</b>	
6	Details of Water Quality Monitoring					
a	No. of Ground Water Monitoring Locations	08				
	Summary of Ground Water in buffer zone monitoring results standards: <b>IS 10500:2012</b>					
	<b>Criteria Pollutants</b>	<b>Unit</b>	<b>Max. Value</b>	<b>Min. Value</b>	<b>Acceptable Limit</b>	<b>Permissible Limit</b>
	pH	-	7.86	7.19	6.5 to 8.5	No Relaxation
	Total Dissolved Solids	mg/l	312	115	500	2000
	Total hardness as CaCO <sub>3</sub>	mg/l	184	70	200	600

	Chlorides	mg/l	52	6.9	250	1000	
	Fluoride	mg/l	25	0.11	1	1.5	
	Calcium as Ca	mg/l	48	17	75	200	
	Total suspended solids	mg/l	159	1.1	---	---	
	Nitrate	mg/l	29.1	0.53	45	No Relaxation	
b	No. of Surface Water Monitoring Locations					08	
Summary of Surface Water monitoring results standards: <b>IS 2296:1987 Class-C</b>							
	<b>Criteria Pollutants</b>	<b>Unit</b>	<b>Max. Value</b>	<b>Min. Value</b>	<b>Acceptable Limit</b>	<b>Permissible Limit</b>	
	pH	-	7.8	7.24		6.5 to 8.5	
	DO	mg/l	7.9	6.2		4 minimum	
	BOD	mg/l	2.6	2.1		3 Maximum	
	COD	mg/l	-	-		---	
	Total Dissolved Solids	mg/l	314	180		1500	
	Total Coliform	MPN/100ML	70	13		5000	
	Nitrate	mg/l	1.46	0.54		50	
7	No. of Ambient Noise Monitoring Locations					09	
Summary of Ambient Noise monitoring results buffer zone							
	<b>CORE ZONE</b>						
	<b>Parameter</b>	<b>Unit</b>	<b>Maximum Value</b>	<b>Minimum Value</b>	<b>Prescribed Standard</b>		
	L <sub>eq</sub> (Day)	dB(A)	69.1	52	75		
	L <sub>eq</sub> (Night)	dB(A)	56.3	37.7	70		
	<b>BUFFER ZONE</b>						
	<b>Parameter</b>	<b>Unit</b>	<b>Maximum Value</b>	<b>Minimum Value</b>	<b>Prescribed Standard</b>		
	L <sub>eq</sub> (Day)	dB(A)	51.9	44.1	55		
	L <sub>eq</sub> (Night)	dB(A)	38.5	33.6	45		
8	No. of Soil Quality Monitoring Locations					03	
Summary of Soil Quality monitoring results							
	<b>Criteria Pollutants</b>	<b>Unit</b>	<b>Maximum Value</b>		<b>Minimum Value</b>		
	pH		6.54		5.68		
	Nitrogen	kg/Ha	428.4		187		
	Potassium	kg/Ha	296.4		124.5		
	Phosphorus	kg/Ha	14.7		5.4		
	Electric Conductivity	mS/cm	324.7		236.7		
9	Details of Flora Fauna						
a	Simpson's Diversity Index in core zone					0.5	
b	Simpson's Diversity Index in buffer zone					0.48	
c	Presence of endangered, endemic and migratory species in study area					Sloth Bear ( <i>Melursus ursinus</i> ), Jungle Cat, Indian Grey Mongoos	
d	Presence of migratory corridors, flight paths and spawning grounds in study area					Not present	
e	Presence of Schedule-I species in core zone					No	



f	Presence of Schedule-I species in buffer zone	Yes
10	Details of Ground Water Table	
a	Range of Water Table Pre-Monsoon Season (m bgl)	6.0 m to 11.95 m
b	Range of Water Table Post-Monsoon Season (m bgl)	0.9 m to 8.40 m
c	Annual mine discharge (Cum/day)	6872 m <sup>3</sup> /Day

### 1.3 Anticipated Environmental Impacts & Mitigative Measures

#### 1.3.1 Impact due to Air Pollution and its Management

**Table – 1.10(i): Air Quality Impact Prediction**

S.No	Anticipated impacts							
	Impact on Ambient Air Quality							
	S. No	Criteria Pollutants	Unit	Baseline (98 percentile value)	Mini Value	Incremental concentration	Total GLC	Pre-scribed Standard (24 Hrs)
	1	PM <sub>10</sub>	µg/m <sup>3</sup>	194	154	4.56	198.56	250
	2	PM <sub>2.5</sub>	µg/m <sup>3</sup>	55	41	0.81	55.81	100
	3	SO <sub>2</sub>	µg/m <sup>3</sup>	37	22	00	37	80
	4	NO <sub>2</sub>	µg/m <sup>3</sup>	41	28	00	41.00	80
<b>Note:</b> Above values are highest incremental value obtained through modelling at in downwind direction (in buffer zone) for PM10 and PM2.5. For SO <sub>x</sub> and NO <sub>x</sub> in <b>Gayatri UG Mine Manager Office (Core Zone)</b>								

**Table – 1.10(ii): Air Pollution Control Measures**

Potential Sources of air pollution	Magnitude of air pollution	Control Measures (Existing and proposed)
Transportation	High dust potential	<ul style="list-style-type: none"> <li>•Provision for automatic water sprinkler system on permanent road and water spray by tankers on temporary road.</li> <li>•Green belt of trees with good footage on both sides of the haul road.</li> <li>•Fogging system for dust suppression.</li> <li>•Mechanized sweeping machine.</li> </ul>
Storage	High potential and Occupational hazards.	Covered storage yards with greenbelt of adequate width all around.

#### 1.3.2 Impact due to Water Pollution and its Management

The possible sources of water due to project activities are:

- Seepage from strata
- Direct precipitation of rainfall
- Workshop effluents and domestic effluent

### Mine Water

The quantity of mine water generated from seepage of strata will be drained by suitable pumps. In the rainy season heavy duty pumps will be deployed to throw accumulated water outside the mine

### 1.3.3 Hydrogeology

**Table – 1.10(iii): Stage of Ground Water extraction (%) for Gayatri UG mine**

SoGWE as per CMPDIL	Category	Ground Water Level Trend (cm/year)				Remarks
		Amgaon		Surajpur		
		pre-monsoon	post-monsoon	pre-monsoon	post-monsoon	
35.52	Safe ( $\leq 70\%$ )	6.00	0.9	11.95	8.40	Acceptable since there is no significant decline trend in both pre-monsoon and post-monsoon together.

### 1.3.4 Impact due to Noise and Vibration and its Management

The main sources of noise at the proposed project are:

- Vehicular movement
- Heavy machinery measures:
  - Diesel power machines and other HEMM, will be maintained properly as per maintenance schedule to prevent undesirable noise.
  - Continues Miner operator & SDL operator will be provided with earplugs and earmuffs, if required.
  - Regular noise level monitoring would be done periodically for taking corrective action, wherever required.
  - Excessive planting of green belt along the road and around the offices will be done.

Note: This is running mine and all safety measures are being implemented.

### 1.3.5 Impact on Land and its Management

No significant impact on Land use as mine having underground operations.

#### A. Status of existing land use:

Total land of the project is 616.957., including land for colony, roads, green belt, etc. The break-up of land use is given in Table 1.8A.

#### B. Conceptual post mining land use:

The conceptual post-mining land use plan is shown above in table – 1.8B. An area of 600.957 Ha. is proposed to be undisturbed and 16 Ha will be hand over for public use.

### 1.3.6 Impact on Flora and Fauna and its Management

There are no endangered or rare species of flora and fauna within the project area. In the buffer zone, some Scheduled-I species have been reported in forest records. Conservation plan is provided in chapter 3 with conservation budget. However, list of flora and fauna authenticated by District Forest Officer will be attached at the time of final submission.

### 1.3.7 Management of Socio-economic impacts

There is no R&R involved in expansion project.

## 1.4 ENVIRONMENTAL MONITORING PROGRAM:

**Table 1.11: Environment Monitoring Program**

S. No.	Name of Monitoring Station	Parameters	Frequency	Standards followed
<b>AIR /NOISE</b>				
1	Gayatri Mine Manager Office	Air-SPM, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>2</sub>  Heavy metals- Ni, As, Hg, Pb  Noise- Leq(in dB(A) – Day and Night time	Air- twice in a week	-NAAQS, 2009 for stations located outside the core zone. & Coal Mine Standards, 2000 for stations located in core zone -CPCB Protocol For Ambient Level Noise Monitoring -CTO Special Conditions
2	Pondi Village		Heavy metals- at six months	
3	Podi Village			
4	Lachha Village		Noise- fort- nightly	
5	Hanumangarh Village			
6	Shivnanda Village			
7	Ketki Village			
8	Jamdai Village			
<b>EFFLUENT WATER</b>				
		<b>Parameters</b>	<b>Frequency</b>	<b>Standards followed</b>
1	Mine Water before settling tank	pH , TSS, COD, TDS , BOD and Oil & Grease  All Parameters	Fortnightly	-Coal Mine Standards, 2000 and  -General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules -CTO Special Conditions
2	Mine Water after settling tank		Once a year	
<b>DRINKING WATER</b>				
		<b>Parameters</b>	<b>Frequency</b>	<b>Standards followed</b>
1	U/S of Rehar River	24 Parameters – Color, Odour, Phenolic compounds, Turbidity , pH, Alkalinity, Total Hardness, Iron, Chlorides, Residual free chlorine, TDS, Ca, Cu, Mn, Sulphate, Nitrate, F, Se, As, Pb,	Monthly	-IS 10500:2012
2	D/S of Rehar River			
3	Gungata River			
4	Chhirbhari Stream			

<b>GROUNDWATER</b>		<b>Parameters</b>	<b>Frequency</b>	<b>Standards followed</b>
		Cr, Sn, Bo, Fe-cal Coliform		
<b>1</b>	Bore well water at Pondi Village	35 Parameters – Color, Odour, Phenolic compounds, Turbidity, pH, Alkalinity, Total Hardness, Iron, Chlorides, Residual free chlorine, TDS, Ca, Cu, Mn, Sulphate, Nitrate, F, Se, As, Pb, Cr, Sn, Bo, Fe-cal Coliform and etc. + Ground water level	Four times a year-  Pre monsoon (April/ May), Monsoon(Aug), Post monsoon(Nov) & Winter(Jan)	-IS 10500:2012
<b>2</b>	Bore well water at Jobga Village			
<b>3</b>	Bore well water at Gayatri Mine Office			
<b>4</b>	Bore well water at Satpata Village			
<b>5</b>	Bore well water at Mahagai Village			
<b>6</b>	Bore well water at Salka Village			
<b>7</b>	Bore well water at Salhi Village			
<b>8</b>	Bore well water at Jamda Village			

### **EMERGENCY PROCEDURES**

In the process of regular monitoring as per the schedule discussed earlier, if any environmental parameters such as air quality, water quality, noise levels etc. found to be above the prescribed levels of standards immediate control measures are to be adopted at the source of generation of pollution.

### **1.5 ADDITIONAL STUDIES:**

#### **1.5.1 DISASTER MANAGEMENT AND RISK ASSESSMENT:**

Gayatri UG coal mine Expansion is an expansion of running mine. The “Emergency organization & Evacuation Plan” of Gayatri UG coal mine is in force. It has been prepared as per DGMS guidelines.

#### **1.5.2 SOCIAL IMPACT ASSESSMENT, R&R PLAN**

As per undertaking received from PP there is no R & R involved in expansion project. (Source – SECL).

#### **1.5.3 PUBLIC HEARING**

Public hearing will be conducted at site after submission of Draft EIA/EMP report (EIA notification, 2006). All the concerns/issues raised during public consultation would be recorded and appropriately dealt with and given due care by the project proponent. All the proceedings including the detailed action plan against the issues given by the project proponent and the authenticated compliance of the concerns/issues recorded during public consultation proceedings would be incorporated in the Final EIA/EMP report.

### 1.5.4 TRAFFIC SURVEY

The traffic density survey has been conducted at a strategic point (Mine Entry gate of Gayatri UG mine. The estimated average Level of Service (LoS) is A (Free Flow).

### 1.5.5 SUBSIDENCE STUDY

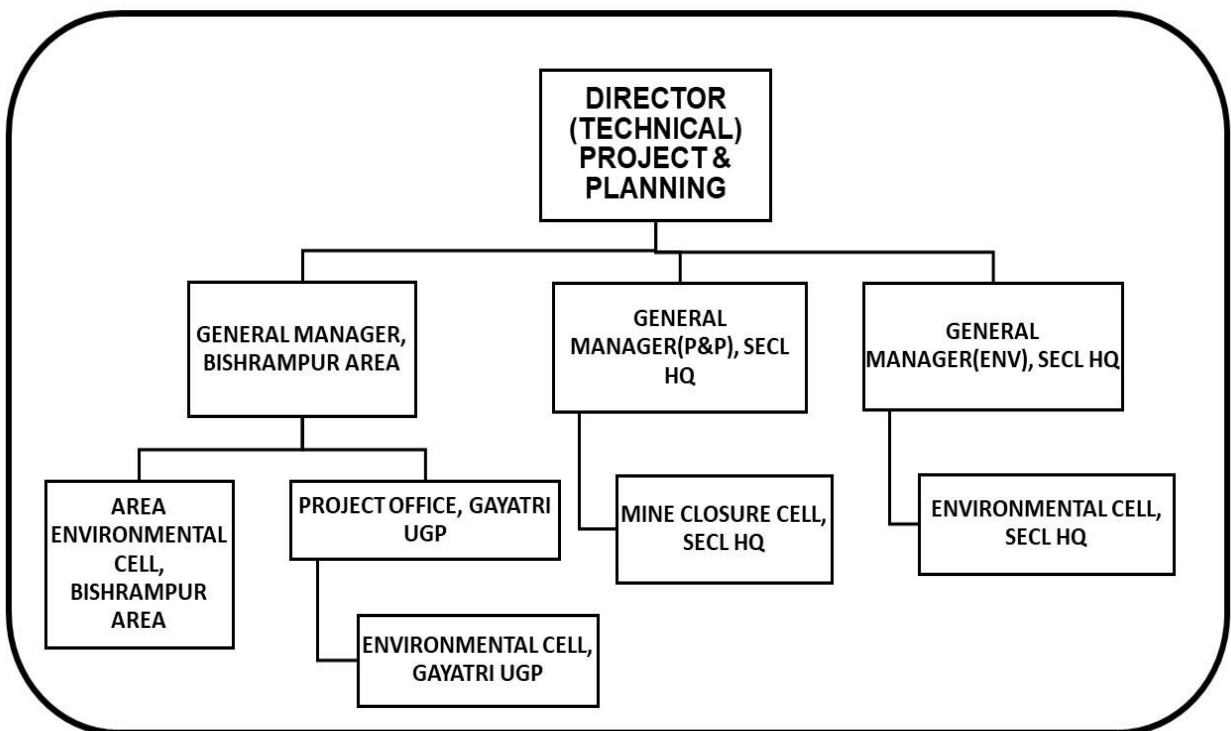
New Subsidence study is under progress and will be submitted during final submission of EIA/EMP report.

### 1.6 PROJECT BENEFITS:

The project activities will directly or indirectly improve physical infrastructure, social infrastructure, Central & state Exchequer, helps Nation in Energy self-sufficiency, secondary employment opportunities.

### 1.7 ENVIRONMENTAL MANAGEMENT PLAN:

The responsibility for implementing an environmental management plan would rest with the environment management structure who would be properly assisted by a team of qualified and trained personnel.



**Figure – 1.1 Organization Structure for Environment Management**

SECL Board vide its meeting dated 18.09.20 has accorded approval for adopting Corporate Environment Policy-2018 of Coal India Limited.

Environmental Policy Statement:

“Coal India Limited(CIL) is committed to promote sustainable development by protecting the environment through integrated project planning & design, prevention / mitigation of pollution, conservation of natural resources, restoration of ecology & biodiversity,

recycling/proper disposal of wastes, addressing climate change and inclusive growth. It also aims to bringing awareness amongst its stakeholders for continual improvement in environmental performances following best practices.”

## MECHANISM OF REPORTING OF NON-COMPLIANCES/INFRINGEMENTS

In order to monitor the compliance of Environmental Clearance (EC) and Forest Clearance (FC) stipulations in coal mines, an Apex Committee has been constituted at MoC level vide its OM dated 22.06.2019.

In continuation with the above, as per directives of MoC, Committees have also been made at CIL Level, at Subsidiaries level and at Area level for regular inspection, monitoring & compliance of EC/FC/CTO conditions with time bound action plan.

The committee at area level is doing an inter area audit and submitting its report/findings consisting of noncompliance to GM (Environment), SECL. Based on this report, corrective action as well as preventive action is being taken along with an action plan with a timeline. Some of the mines are also inspected by third parties like ICFRE (Indian Council of Forestry Research and Education) which submits its report to SECL (HQ). Based on the findings action is taken over the non-compliances or partial compliance.

SECL regularly submits half yearly compliance reports and also submits environmental audit statements of the previous financial year by 30th September to the Regional Office/ Integrated Regional Office of MoEFCC/SPCB on time which contains details of compliances of environmental clearance.

### 1.8 ENVIRONMENT MANAGEMENT COST

Capital and Revenue cost requirement for Environment and Social Measures as per revised mining plan of Gayatri UG Mine (0.88 MTY) is given below .

**TABLE 1.12 ESTIMATED CAPITAL REQUIREMENT FOR ENVIRONMENTAL AND SOCIAL MEASURES**  
(Rs in Lakh)

S.NO.	PARTICULARS		Provision Amount
<b>1</b>	<b><u>CAPITAL FOR ANTI-POLLUTION MEASURE</u></b>		
	<b><u>IN MINE &amp; INDUSTRIAL AREA</u></b>		
a)	Dust suppression arrangements at CHP/Stock yard/Rly siding	Rs.	10
	Continuous Ambient Air quality monitoring system		100
b)	CGWA NOC compliance measures such as piezometers/digital water flow meter/water level recorder etc	Rs.	20
c)	Rainwater harvesting	Rs.	5
d)	Oil & Grease trap at workshop	Rs.	5

e)	Hydrological study & modelling	Rs.	15
f)	Subsidence prediction study	Rs.	10
g)	Green initiatives such as Solar lighting etc	Rs.	40
h)	Dust barrier around mine premises	Rs.	10
i)	Misc. expenditure for other Statutory / obligatory compliance	Rs.	25
	<b>Sub-Total(1)</b>	<b>Rs.</b>	<b>240.00</b>
<b>2</b>	<b>ENVIRONMENTAL CONTROL MEASURES IN TOWNSHIP</b>		
a)	<b>Flora and fauna study</b>	<b>Rs.</b>	<b>10.00</b>
b)	<b>Green belt in &amp; around the mine</b>	<b>Rs.</b>	<b>50.00</b>
	<b>Sub Total (2)</b>	<b>Rs.</b>	<b>60.00</b>
<b>3</b>	<b>Cost of EMP preparation</b>	<b>Rs.</b>	<b>240.00</b>
<b>4</b>	<b>Community development in surrounding</b>	<b>Rs.</b>	<b>100.00</b>
	<b>villages</b>		
	<b>Total capital from 3 to 4</b>	<b>Rs.</b>	<b>340.00</b>
	<b>GRAND TOTAL</b>		<b>640.00</b>
<b>B.</b>	<b><u>Different type of Revenue nature cost to be considered</u></b>		
	in cost of production per tonne of Coal:-		
1	Environment/Transport monitoring@2.53 Crores/annum		253.00
2	Environment Audit @ 1.0 lakhs/annum		1.00
	<b>Total Revenue nature cost per annum</b>		<b>254.00</b>

(source : Mine plan for Gayatri UG 0.88MTY)

### 1.9 OVERALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT:

The existing capacity of Gayatri UG mine is 0.3 MTPA-project area 507.472Ha. The expansion of Gayatri UG mine 0.88 MTPA (project area 616.957 Ha.) has been proposed. The baseline study carried out for the study area indicates that all the physical, chemical and biological characteristics of the environmental attributes in the surrounding area are within the permissible limits. Based on this environmental assessment, the possible impacts during both pre-project and post-project phases are anticipated and the necessary Environmental Management Plan has been formulated to address the impacts. The coal extracted will be used for power generation which ultimately acts as a catalyst for country growth. The overall project implementation will not have an appreciable impact on the environment. The project benefits lead to direct and indirect employment opportunities, increased revenue and infrastructural development and other commercial business opportunities in the area. The affected stakeholders' demand will be fulfilled using appropriate

funds in consultation of central/state authority. Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed project can proceed without significant negative impact on the environment.

**1.10 EXPLANATION OF HOW, ADVERSE EFFECTS HAVE BEEN MITIGATED:**

The mining activities will be dealt with control measures along with its monitoring as feedback to strengthen the measures. The detailed analysis of the environmental impacts and the remedial measures proposed/recommended, it can be concluded that no significant deterioration in the ecosystem is likely to occur due to the proposed project as it is an underground project. The dedicated capital and revenue fund will be utilised for allocated remedial measures. Action Programme for EMP Implementation is given below:

S.No.	Activities in Progressive Phase	Progressive Phases																			Final & Post closure
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
<b>For Gayatri UG</b>																					
1	Handing of waste generated																				
2	Fencing of area																				
3	Plantation around the mine																				
4	Provision of garland drains																				
5	Provision of Mine water treatment facility																				
6	Subsidence monitoring																				
7	Subsidence management																				
	Fencing of subsided area																				
	Filling of cracks																				
	Grading and dozing																				
8	Site preparation for plantation																				
9	Plantation in subsided area																				
10	Environment Monitoring																				
11	Misc & Safety Measures																				

**Fig 1.2: ACTION PROGRAMME FOR EMP IMPLEMENTATION (GAYATRI UG)**