

## PART – II

### ENVIRONMENTAL PROTECTION MEASURES AS ON 30.09.2023.

#### 1. Production Details

Sl. No	Year	Coal (in MT)	
		As per EC	Actual
1.	2006-07	0.40	0.390
2.	2007-08	0.40	0.407
3.	2008-09	0.40	0.402
4.	2009-10	0.40	0.361
5.	2010-11	0.40	0.363
6.	2011-12	0.40	0.350
7.	2012-13	0.40	0.357
8.	2013-14	0.40	0.350
9.	2014-15	0.40	0.312
10.	2015-16	0.40	0.285
11.	2016-17	0.40	0.281
12.	2017-18	0.40	0.286
13.	2018-19	0.40	0.294
14.	2019-20	0.40	0.283
15.	2020-21	0.40	0.242
16.	2021-22	0.40	0.234
17.	2022-23	0.40	0.270
18.	2023-24 (apr-sep)	0.40	0.124

#### 2. Plantation:

1	No of plants planted during last year	Nil
2	Area covered in Ha	Nil
3	Expenditure incurred in Rs. Lakhs (Maintenance) during last year	0.39
4	Total area brought under plantation so far in Ha	51.70 Ha
5	Total no of plants planted so far since inception	65,230
6	Species of plants planted	Species of Plants: Eucalyptus, Gulmohar, Acascia, Jamun, Durshanam, Kanuga, Sisu, Pheltoform, Neem, Amla, Subabul, Iffa, Seethaful, Kunkudu and Guava.
7	Seeds sown so far	--
8	Small plants planted so far	8000 Agave suckers
9	Total expenditure in Rs. lakhs -	24.562

Note: Plan along with details of year wise plantation furnished as **Figure-I**.

### 3. Water Balance Statement:

Sl. No	Description	Quantity in KLD
1	Average quantity of water pumped out of the mine	2345.00
2.	<b>Water consumption :</b>	
A.	<b>Domestic:</b>	
	a) Water used for drinking/bathing and other industrial requirement	20.00
	b) Water supplied for nearest township/village for domestic purpose/CHP	1980.00
	<b>Sub – Total</b>	<b>2000.00</b>
B.	<b>Industrial :</b>	
	a) Water used for plantation	80.00
	b) Water used for dust suppression	50.00
	c) Water used for stowing	20.00
	<b>Sub – Total</b>	<b>150.00</b>
3	Excess water let out	195.00
4	Point of disposal (as per CFO)	i) Mine excess water: After treatment for agriculture use / gardening. ii) Domestic: STP followed by on-land use / gardening
5	Discharge Consent from TSPCB	2274.00

### 4. Micro-meteorological Monitoring:

Micro-meteorological station was installed at General Manager's Office: The summary of monthly micro-meteorological data generated at Srirampur area from April, 2023 to September, 2023 is as follows:

Month	Wind Speed (m/s)			Temperature (°C)			Relative Humidity (%)			Rainfall (mm)	
	Mean	Max	Calm %	Mean	Max	Min	Mean	Max	Min	Total	Hourly highest
April, 2023	2.4	6.9	14.17	25.6	46.6	33.0	35.4	79.1	8.3	0.0	0.0
May, 2023	1.8	6.1	29.97	35.0	47.8	20.9	23.7	73.0	8.2	63.5	22.3
June, 2023	1.9	6.7	22.22	32.2	45.1	23.7	48.1	93.5	18.7	76.6	18.2
July, 2023	2.1	6.0	8.33	28.6	44.3	20.2	67.1	99.5	16.4	615	52.8
August, 2023	1.7	6.1	26.48	29.9	39.8	19.3	67.4	99.7	20.8	69.2	6.0
September, 2023	1.6	5.0	15.42	28.2	40.6	18.9	46.6	99.8	19.0	194.2	23.3

## Summary of micro-meteorological data generated for the study period

**(April, 2023 to September, 2023)**

S.No	Parameter(s)	Min	Max	Mean
1.	Temperature (°C)	18.9	47.8	31.2
2.	Wind Speed (m/s)	Calm (%) 17.69	6.9	1.9
3.	Relative Humidity (%)	8.2	99.8	48.0
4.	Predominant Wind direction for the entire study period	South West(SW), followed by West-South West (W-SW)		
5.	Total Rainfall (mm)	1018.5mm		

### 5. Ambient Air Quality Monitoring:

#### Parameters:

In accordance with MoEF Notification, GSR-742 (E), dt. 25.09.2000 and National Ambient Air Quality Standards, the concentration of Suspended Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) is being monitored at work zone locations and also in nearby villages to assess the impact of mining operations on surrounding habitation.

Respirable Dust Sampler is used for monitoring of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> and Ambient Fine Dust Sampler is being used for monitoring of PM<sub>2.5</sub>. SCCL is carrying out post-project environmental monitoring through EPTRI, Hyderabad, a CPCB recognized and NABL accredited laboratory. EPTRI has also established laboratories in SCCL mining areas for analyzing critical parameters in the field.

#### Frequency of Monitoring:

Air quality monitoring is being carried out at a frequency of once in a fortnight (24 hourly sampling) at the identified locations near the dust generating sources.

#### Monitoring Locations:

S.No.	Station Code	Name of the Stations	Latitude	Longitude
<b>CORE ZONE</b>				
1	CA7	SRP- 3&3A Incline	N 18°51' 29.0"	E 79° 30' 09.0"
<b>BUFFER ZONE</b>				
2	BA1	Mudigunta village	N 18°51'24.7"	E 79°34'31.8"
3	BA4	Srirampur Village	N 18°51'41.6"	E 79°30'24.1"
4	BA6	Srirampur Colony	N 18°51'44.9"	E 79°30'14.0"
5	BA7	Sangamallaiahpalli	N 18°51'58.0"	E 79°29'23"

### Monitoring Data:

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

(All values in  $\mu\text{g}/\text{m}^3$ )

Location code	Name of the location	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )				PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )				SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )				NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )			
		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
<b>Core Zone</b>																	
<b>Coal mine standards (commenced after 25.09.2000), GSR 742(E), Dated 25.09.2000</b>		250				-				120				120			
CA 7	SRP- 3&3A Incline	58.0	241.0	190.08	239.90	24.10	66.10	54.33	66.01	8.40	18.10	12.61	17.44	17.80	25.10	19.69	24.44

### (B) Summary of Ambient Air Data Monitoring

Location code	Name of the location	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )				PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )				SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )				NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )			
		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
<b>NAAQ Standards, CPCB Dated: 18.11.2009</b>		100				60				80				80			
<b>Buffer Zone</b>																	
BA1	Mudigunta Village	35.0	86.0	70.25	85.12	16.10	45.80	34.85	45.07	7.70	14.10	9.88	13.66	12.10	19.10	14.64	18.57
BA4	Srirampur Colony	46.0	89.0	76.17	88.12	20.10	48.50	38.96	48.19	8.70	12.70	10.60	12.62	15.10	19.20	16.89	19.05
BA6	Srirampur Village	30.0	91.0	73.17	89.90	15.40	49.40	37.38	49.09	8.40	12.70	9.78	12.22	14.40	18.90	16.60	18.75
BA7	Sangamallaiahpalli	36.0	87.0	76.83	86.56	18.30	47.90	38.91	47.72	7.30	13.10	10.43	12.95	14.10	20.20	16.60	19.80

The air quality data monitored at the work zone locations and surrounding residential areas indicate that PM<sub>10</sub> concentration is within the stipulated limits at all locations. The PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>2</sub> levels are also well within the stipulated limits at all the locations. The fortnightly air quality data monitored during six months period ending 30<sup>th</sup> September 2023 is enclosed as **Annexure-I**.

SCCL is taking following control measures in the SRP-3&3A Incline for air pollution control including reduction of particulate emissions:

**Air Pollution Control Measures:**

- i) Water spraying arrangements have been made in underground at all working places, loading points and transfer points.
- ii) Arrangements have been made for water spraying on the surface coal handling arrangement.
- iii) The coal produced from the mine is transported to Area CHP, where effective mist spray arrangement is provided and maintained at transfer points and at loading points and the conveyor belts have been provided with covered structure.
- iv) Cleaning of coal dust is being taken up regularly.
- v) Coal transport route has been black topped from the mine to CHP. Internal roads have also been black topped.
- vi) Avenue plantation has been developed along the Coal Transportation Road.
- vii) All the transport lorries are optimally loaded for spillage of coal and covered with Tarpaulin.

**CONTROL OF EMISSION OF NOXIOUS GASES:**

The measures taken for mitigating the noxious gases are as follows:

- i) Coal transportation trucks and other vehicles are periodically maintained.
- ii) Notice boards have been displayed on the surface; advising persons to avoid burning of coal/wood/oil grease impregnated waste cotton/garbage etc., in the mine premises as a method of disposal.
- iii) Blasting operations at underground is carried out with delay action detonators and ultra safe P5 explosives, which helps in mitigating the emission of gases from explosives.
- iv) Stocks of coal are not allowed to be kept on surface of the mine. If any coal heap has to be kept for some time, water spraying is done over it to control oxidation of coal.
- v) Burning of firewood and coal for domestic purpose in colonies has been stopped due to usage of L.P Gas being distributed free of cost by the company to all the employees.

- Total manpower of the mine as on 30.09.2023 : 1279
- Total L.P Gas connections to the workers as on 30.09.2023 : 1011

vi) Post-project air quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] as per the frequency stipulated by MoEF & CC vide GSR 742 (E) for coal mining industry and all the necessary precautions are being taken to maintain the concentration of critical parameters well within the stipulated standards.

## 6. Water Quality Monitoring:

The impact of the mining activities on the water environment was assessed by studying the quality of groundwater and surface water bodies in the study area. The sampling locations were selected considering their proximity to the project sites. A total of 8 water samples i.e., 4 samples from surface and 4 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

### Post project water quality monitoring stations:

#### (i) Surface Water Quality Monitoring Locations:

Sl. No.	Sampling code	Sampling Location	Latitude	Longitude
1	SW-1	Godavari River Upstream (near sitharampalli)	N 18° 49' 33.5"	E 79° 28' 21.5"
2	SW-2	Godavari River Downstream (shettipalli)	N 18° 53' 41.8"	E 79° 40' 32.6"
3	SW-3	Naspur Tank	N 18° 52' 5"	E 79° 08' 15"

#### ii) Groundwater Quality Monitoring Locations:

Sl. No.	Sampling code	Sampling Location	Latitude	Longitude
1	GW-3	Ramaraopet Village	N 18° 49' 20.8"	E 79° 30' 53.1"
2	GW-4	Srirampur Village	N 18° 51' 18.4"	E 79° 29' 28.7"

#### (ii) Effluents sampling locations

Sl. No.	Sample code	Name of the Location	Latitude	Longitude
1.	EW-7	SRP-3&3A Inc. Mine discharge	N 18° 51' 44.5"	E 79° 30' 4.5"

### Parameters:

The ground water quality results are compared with IS: 10500 standards of groundwater quality and surface water quality with IS 2296, 1982 and CPCB Water Quality Criteria, Class- A (Drinking Water Source without conventional treatment but after Disinfection), Class – B (outdoor bathing (organized) and Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class –D propagation of wild life fisheries and Class-E (Irrigation, Industrial cooling, controlled waste disposal).

Effluent water quality monitoring involves periodical assessment of quality of mine discharge water, treated workshop effluents, CHP effluent, treated colony effluents, ground water and surface water. pH, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Chemical Oxygen demand (COD), Bio-chemical Oxygen Demand (BOD) and Oil & Grease are being periodically monitored in effluents as per the Environmental Standards for coalmines, GSR - 742 (E) dated 25.09.2000.

All the parameters as given in Part-A of General Standards for Discharge of Environmental Pollutants, GSR 801 (E) EPA 1986 prescribed by CPCB is being analyzed for all the effluents, in addition to the above parameters, once in a year for assessing the overall quality of effluents.

### Frequency of monitoring:

Monitoring of effluent water samples for four critical parameters is being done at a frequency of once in a fortnight. Effluents are also analyzed in every fortnight, whereas ground water (all parameters), surface water (all parameters) are being analyzed once in every quarter.

### Monitoring Data:

The surface water, ground water quality and effluent quality data monitored during April, 2023 to September, 2023 is enclosed as **Annexure-II**. The summarized data on effluent water quality in respect of six critical parameters stipulated for coal mines is furnished hereunder.

### Effluent Quality Monitoring:

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

(All values in mg/l except pH)

Location	Zone	Ph				
		Min.	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge	Core	7.30	7.90	7.59	7.88	5.50-9.0
Location	Zone	TSS (mg/l)				
		Min.	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge	Core	18.00	38.00	24.50	36.24	100
Location	Zone	TDS (mg/l)				
		Min.	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge	Core	598.0	968.0	755.08	946.22	--

Location	Zone	COD (mg/l)				
		Min.	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge	Core	12.0	31.0	19.75	30.34	250
		BOD (mg/l)				
		Min.	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge	Core	1.50	5.10	2.94	4.99	30.0
Location	Zone	Oil & Grease (mg/l)				
		Min	Max.	Avg	98%tile	STD
SRP-3 & 3A Incline Mine Discharge		1.00	1.20	1.07	1.19	10

#### Water Pollution Control Measures:

There is no chemical process involved, the mine discharge water may contain coal fines as such the water is being utilized for drinking and domestic purpose after treatment in slow sand filters followed by disinfections. The following control measures are being taken up at the mine to control the water pollution.

- i) The mine discharge water is being utilized for dust suppression, plantation, domestic use etc., after necessary treatment.
- ii) The excess mine discharge water is being treated in settling tanks before discharge into natural drains.
- iii) The domestic sewage from the mine is being treated in septic tank followed by soak pit.
- iv) An effective sewerage system is being maintained to treat the colony effluents by Sewage Treatment Plant at Naspur Colony of 3 MLD Capacity, and other colonies effluents treatment is being done with Septic tanks followed by soak pits.
- v) Post-project water quality monitoring is being carried through an outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] as per the frequency stipulated by MoEF&CC for coal mining industry.

#### 7. Phreatic surface monitoring: (Range of Water Table)

The Phreatic surface and peizometric levels monitoring is being carried out 4 times in a year pre-monsoon (May), Monsoon (August), Post monsoon (November) and winter (January) seasons in 25 existing wells and 6 peizometric wells in Srirampur Area. The Phreatic surface and peizometric levels monitoring from 2019(Winter) to 2023(Monsoon) is enclosed as **Annexure-IV**.

#### Water Conservation Measures:

- i) Mine water is colleted in sumps in side mine and pumped out after settling.
- ii) Mine water is filtered and used for domestic, washing the machinery, Plantation and Water Spraying etc,



- iii) Ground Water levels are recorded seasonally in near by villages
- iv) One ETP is provided area level at Area workshop to trap 70 liters of oil and grease in a year before letting out on surface water body.
- v) Ground Water levels recorded in the near by villages is furnished in **Annexure - IV**.
- vi) All the hazardous wastes like used oil, used batteries, waste oil, empty oil barrels are being disposed off to authorized recyclers.
- vii) Details of Rain water Harvesting structures in Srirampur Area is as below:

Sl. No	Location of the Rain water Harvesting Pits	No.of Rain water Harvesting pits
1.	G.M's Office	01
2.	Area Stores	02
3.	Auto garage	02
4.	RK-8 Dispensary	01
5.	SRP Dispensary (Deccan Gramina Bank)	01
6.	SC High School, SRP( ITI College)	02
7.	CER Club, Srirampur (Pragathi Stadium)	02
8.	M&R Office, Srirampur	01
9.	MVTC, SRP	01
10.	C-2 Type Quarters, RK-8 Colony	01
11.	'C' Type Quarters, RK-8 Colony	02
12.	Dispensary, Naspur Colony	01
13.	G.T Hostel, Naspur Colony	02
14.	Community Hall, Naspur Colony	01
15.	M& R Office, Naspur Colony	02
16.	Venkateswara Temple, Naspur Colony	01
17.	Sub-station premises, Godavari Colony	01
18.	Sub-station premises, Nagarjuna Colony	01
19.	Guest House, CCC	01
20.	M & R Office, CCC	01
21.	RK-5 GLSR	01
22.	Pump House, CCC	01
23.	SRP OCP-II	03
	<b>Total</b>	<b>32</b>

### 8. Noise Level Monitoring :

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

Location	Zone	Day Time in dB(A)					Night Time in dB(A)				
		Min.	Max.	Avg.	98%tile	STD	STD	Min.	Max.	Avg.	98%tile
SRP-3 & 3A Incline	Core	63.50	70.50	66.408	70.126	75	70	51.30	63.10	55.658	62.220
Sangamallaiah palli Village	Buffer	43.60	51.40	48.025	51.136	55	45	32.10	44.80	39.733	44.558
Srirampur Village	Buffer	42.10	49.60	47.142	49.490	55	45	32.50	40.50	37.517	40.434

Note: The Noise level monitoring from April, 2023 to September, 2023 is enclosed as **Annexure-III**

### Noise Pollution Control Measures:

- i) The main mechanical ventilators are provided with evasee which dampens the noise.
- ii) To dampen the noise levels at CHP, impact rollers are provided at transfer points.
- iii) Height of fall is minimized at all coal transfer points and internal lining of bins and chutes are done.
- iv) In the high noise intensity working areas / zones earmuffs or earplugs or any other suitable personal protective equipment is being provided to the workmen.
- v) Regular noise level monitoring is being done periodically for taking corrective action, wherever required.
- vi) Extensive plantation of green belt and vegetation along the roads and around the offices to create a barrier or screen between the source and the receiver so that the noise is absorbed and the exposure level is minimized.
- vii) Cushioning belt liners under the trippers are being provided under tripper resting pads to reduce the noise while tripling the tubs.
- viii) Post-project noise quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] at a frequency of once in a fortnight as stipulated by MoEF&CC for coal mining industry.

### 9. Capital and Revenue Expenditure incurred on Environment Management and Pollution Control Measures:

Sl. No	Expenditure Head	Capital Expenditure (in Rs.)			Revenue Expenditure (in Rs.)		
		Up to 2022-23	2023-24 (apr-sep)	Total	Up to 2022-23	2023-24 (apr-sep)	Total
I	Air pollution (Prevention & control)	119200	0	<b>119200</b>	3742281	51068.16	<b>3793349</b>
II	Water pollution (Prevention & Control)	0	0	<b>0</b>	5319902	81843.93	<b>5401746</b>
III	Land development	0	0	<b>0</b>	0	0	<b>0</b>
IV	Plantation	949449	0	<b>949449</b>	3091410	11507.12	<b>3102917</b>
V	Equipment for maintenance of environment protection	0	0	<b>0</b>	0	0	<b>0</b>
VI	Consultancy payments	1304371	0	<b>1304371</b>	0	0	<b>0</b>
VII	OB Reclamation / Subsidence management	0	0	<b>0</b>	56505	0	56505
VIII	Environment awareness / Environment	0	0	<b>0</b>	29000	1500	<b>30500</b>

	education						
IX	Noise & Blasting vibration	0	0	0	656789.2	17937.92	674727.1
X	Others	0	0	0	0	0	0
	<b>Total</b>	<b>2394020</b>	<b>0</b>	<b>2394020</b>	<b>12895887.2</b>	<b>163857.13</b>	<b>13059744.2</b>

## 10. Socio-economic Measures:

- i) Common Central Township is provided on non-coal bearing area and it is maintained with facilities such as dispensary, schools, drinking water supply, super-bazaar, recreation clubs, parks, well lighted approach roads, dust bins at various places in the colony, etc., and it is away from the mining activity.
- ii) Workmen are encouraged to undergo family planning operations by extending cash incentives and leave etc.,
- iii) Weekly vaccination for Polio, DPT, BCG, Measles, DT and Hepatitis 'B' are being given at Area Hospital and dispensaries. 1019 persons were vaccinated during the above period at area level.
- iv) Daily Street cleaning and sanitation works are looked after by Health & Civil departments in Srirampur Area. 1937.5 Cu.m of Garbage is removed from the colonies during the above period at area level.
- v) Workmen are encouraged to participate in sports and games which are conducted in Company's Pragati Stadium at Srirampur.
- vi) Existing number of quarters for this project : 779
- vii) Infrastructure development is being taken up in the surrounding areas through specially designed programme called as "Surrounding Habitat Assistance Programme" (SHAPE). Rs.1258.16 Lakhs has been spent in the area from 2004-05 to 2014-15 and as on date Rs.785.14 Lakhs were spent under CSR Programme from 2015-16 onwards in the Area.
- viii) Public hearing minutes compliance status enclosed as **Annexure-VI**.

## 11. Environment Management Committee:

Unit level Environmental Management committee has been constituted with following members.

- |                         |              |
|-------------------------|--------------|
| 1) Agent                | - Chairman.  |
| 2) Area Env. Officer    | - Secretary. |
| 3) Mine Manager         | - Member     |
| 4) Area Civil Engineer, | - Member     |
| 6) Area Survey officer  | - Member.    |
| 7) Area Estates Manager | - Member.    |
| 8) Area Forest Officer  | - Member.    |

9) Regional Hydro geologist - Member.

The minutes of EMC meeting held on 28.08.2023 is enclosed as **Annexure-V**

## 12. Land use based on satellite Imagery:

The satellite imagery of the study area around 10 km from mine site (core zone boundary) as captured by satellite. The Land use land cover in this study area is given here below.

### Land use / Land cover details of 10km Buffer zone:

Land Use Land Cover Class	2022	
	Area in Hectares	Area Percentage
Water Bodies	2615.09	6.61
Mining Area	1648.38	4.16
Industrial Establishments	154.49	0.39
Built-up Land	3029.64	7.65
Open Forest	2371.42	5.99
Dense Forest	6193.62	15.65
Roads	1017.47	2.57
Barren Land	612.85	1.55
Fallow Land	1421.20	3.59
Plantation	3436.09	8.68
Single Crop	4999.60	12.63
Double Crop	8266.93	20.88
Land with/without scrub	3816.57	9.64
<b>TOTAL AREA</b>	<b>39583.35</b>	<b>100.00</b>

### Land Use Land Cover Study of Core Mine Area

The Satellite data of the core zone of 299.01 Ha has been presented. The classified data of the Mine core zone. The extents of various Land Use/Land Cover classes pertaining to the study area.

Land Use Land Cover Class	Area in Hectares	Area in Percentage
Coal Dump	0.89	0.3

Plantations Greenbelt	63.71	21.3
Plantations Scrub	24.99	8.4
Service Buildings	2.63	0.9
Sand Dump Yard	10.08	3.4
Barren Land	4.33	1.4
Settlements	91.21	30.5
Roads	22.26	7.4
Dense Forest	69.32	23.2
Open Forest	9.58	3.2
<b>Total Area</b>	<b>299.01</b>	<b>100.0</b>

### Change Detection:

Land use and land cover comparison statement of Srirampur-3 & 3A Incline Underground Coal Mine Expansion Project Core Zone for 2019 and 2022.

Land Use Land Cover Class	2019		2022		Area change (in %) from 2019 to 2022**
	LULC area in Hectares (2019)	Area in Percentage	LULC area in Hectares (2022)	Area in Percentage	
Water Bodies	2,082.93	5.2	2615.09	6.61	1.41
Mining Area	1,110.39	2.77	1648.38	4.16	1.39
Industrial Establishments	575.02	1.44	154.49	0.39	-1.05
Built-up Land	3,511.44	8.76	3029.64	7.65	-1.11
Open Forest	3,243.58	8.1	2371.42	5.99	-2.11
Dense Forest	6,732.22	16.8	6193.62	15.65	-1.15
Roads	1,285.91	3.21	1017.47	2.57	-0.64
Barren Land	627.42	1.57	612.85	1.55	-0.02
Fallow Land	2,053.66	5.13	1421.20	3.59	-1.54
Plantation	3,990.51	9.96	3436.09	8.68	-1.28
Single Crop	5,066.12	12.65	4999.60	12.63	-0.02
Double Crop	7,618.38	19.02	8266.93	20.88	1.86
Land with/without scrub	2,166.61	5.41	3816.57	9.64	4.23
<b>Total Area</b>	<b>40,064.19</b>	<b>100</b>	<b>39583.35</b>	<b>100.00</b>	<b>---</b>

\*\* Positive and Negative value implies LULC specific class area (in %) correspondingly increases or decrease from 2019 to 2022. The formula used for calculating LULC changes is (% of area change = Percentage of LULC class area for 2022 - Percentage of LULC class area for 2019).

### 13. Subsidence management details:

(a) Total seam wise area developed (including Depillaring area) so far.

Sl. No	Seam	Area in Ha.	Depth(m)		Total Thickness (m)	Working Height (m)	Caving /Stowing
			Min.	Max			
1	1 Seam	54.31	45	214	7.11	1.80	Caving Standing on pillars
2	2 Seam	30.73	38	180	2.44	2.44	Standing on pillars
3	3A Seam	90.85	42	250	2.75	2.75	Caving/ Sand /Bottom ash stowing
4	3 Seam	111.84	32	290	6.09	2.80	Sand /Bottom ash stowing
5	4A Seam	7.80	36	83	1.58	1.58	Standing on pillars
6	4 Seam	22.35	45	280	1.52	1.52	Standing on pillars
7	5 Seam	82.33	42	287	2.43	2.43	Standing on pillars
8	6 Seam	109.38	45	300	2.75	2.75	Sand /Bottom ash stowing

(b) Total seam wise area depillared so far since inception.

Sl. No	Seam	Area in Ha.	Depth(m)		Total Thickness (m)	Working Height (m)	By Caving / Stowing
			Min.	Max.			
1	1 Seam	54.31	45	214	7.11	1.80	Caving
	2 Seam	30.70	38	180	2.44	2.44	Caving
2	3A Seam	90.85	42	250	2.75	2.75	Caving/ Sand / Bottom ash Stowing
3	3 Seam	111.84	32	290	6.09	2.80	Sand / Bottom ash Stowing
4	4A Seam	7.80	36	83	1.58	1.58	Caving

5	4 Seam	22.35	45	280	1.52	1.52	Sand / Bottom ash Stowing
6	5 Seam	82.33	42	287	2.43	2.43	Sand / Bottom ash Stowing
7	6 Seam	109.38	45	300	2.75	2.75	Sand / Bottom ash Stowing

- (c) Total surface area affected due to subsidence so far : Nil
- Max crack width observed so far : Nil
  - Max subsidence occurred so far : Nil
  - Whether the vegetation effected if any : Nil
  - If affected, give details : Not applicable

(d) Mode of treatment given to substantiate subsidence effect: Crack filling by manual

- Total man-shifts worked in subsidence area for crack filling and dozing: : Nil
- Total dozer shifts worked for subsidence reclamation : Nil
- Area filled up with OB/ Subsoil material : Nil
- Quantity of OB/Subsoil dumped : Nil
- Maximum height of dump : Nil

- (e) i) Expenditure incurred for last six months for subsidence treatment: --
- ii) Expenditure incurred for subsidence treatment so far : nil



*[Handwritten Signature]*  
**AGENT,**  
 SRP Group of Mines.  
**AGENT**  
**SRP-GROUP OF MINES**

**MONITORING DATA OF SRIRAMPUR No. 3&3A (SRP-3&3A) INCLINE  
FOR THE PERIOD APRIL, 2023 TO SEPTEMBER, 2023.**

**List of Annexures:**

<b>Sl.No.</b>	<b>Description</b>	<b>Annexure No.</b>
1.	Ambient Air Quality	I
2.	Surface, Ground Water & Effluents Quality.	II
3.	Noise	III
4.	Attitude of Phreatic Surface & Piezometric Levels	IV
5.	EMC Meeting minutes	V
6.	Illumination report	VI
7.	Status of GIST	VII
8.	Plantation plan	Fig-I



**POST PROJECT AIR QUALITY MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 to SEPTEMBER , 2023 FOR SRP-3&3A INCLINE.**

- ❖ Location of the Ambient Air  
Quality monitoring Station : SRP-3&3A Incline
- ❖ Direction (w.r.t. SRP–3&3A Incline.): Besides of the project.

Sl. No.	Station Name	Date of Sampling	Parameters ( µg/Cu. Mtr.)			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
1.	SRP-3&3A Incline	06.04.2023	225	64.9	11.7	19.1
		26.04.2023	236	64.7	12.5	18.7
		08.05.2023	241	66.1	15.1	22.1
		24.05.2023	220	62	12.8	20.7
		07.06.2023	232	64.1	18.1	25.1
		24.06.2023	231	65.7	12	18.3
		10.07.2023	144	47.6	11.2	17.8
		25.07.2023	58	24.1	8.4	18.3
		09.08.2023	191	52.3	13.1	20.2
		24.08.2023	178	48.2	11.6	18.4
		09.09.2023	141	45.6	12.4	19.3
		24.09.2023	184	46.7	12.4	18.3
		Minimum			<b>58.00</b>	<b>24.10</b>
Maximum			<b>241.00</b>	<b>66.10</b>	<b>18.10</b>	<b>25.10</b>
Average			<b>190.08</b>	<b>54.33</b>	<b>12.61</b>	<b>19.69</b>
98% tile			<b>239.90</b>	<b>66.01</b>	<b>17.44</b>	<b>24.44</b>
<b>Coal mine standards GSR 742(E), dtd.25.09.2000 &amp; NAAQS, Dtd.18.11.2009</b>			<b>250</b>	<b>--</b>	<b>120</b>	<b>120</b>

- ❖ Location of the Ambient Air  
Quality monitoring Station : Mudigunta village
- ❖ Direction (w.r.t. SRP–3&3A Incline.): East of the project.

Sl. No.	Station Name	Date of Sampling	Parameters ( µg/Cu. Mtr.)			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
2.	Mudigunta village	04.04.2023	76	41.7	14.1	19.1
		24.04.2023	73	38.8	11.2	14.6
		05.05.2023	68	36.2	9.2	13.8
		22.05.2023	77	45.8	12.1	16.7
		05.06.2023	70	37.4	10.7	14
		22.06.2023	82	35.8	8.4	14.6
		07.07.2023	35	16.1	7.7	12.1
		22.07.2023	65	29.2	8.1	12.9
		07.08.2023	81	32.1	8.4	14.1
		22.08.2023	86	42.5	8.4	13.4
		07.09.2023	68	30.5	10.6	16.1
		22.09.2023	62	32.1	9.6	14.3
		Minimum			<b>35.00</b>	<b>16.10</b>
Maximum			<b>86.00</b>	<b>45.80</b>	<b>14.10</b>	<b>19.10</b>
Average			<b>70.25</b>	<b>34.85</b>	<b>9.88</b>	<b>14.64</b>
98% tile			<b>85.12</b>	<b>45.07</b>	<b>13.66</b>	<b>18.57</b>
NAAQ Standards, CPCB Dtd.18.11.2009			100	60	80	80

- ❖ Location of the Ambient Air Quality monitoring Station : Top of the CER Club, Srirampur colony
- ❖ Direction (w.r.t. SRP–3&3A Incline.): East of the project.

Sl. No.	Station Name	Date of Sampling	Parameters ( µg/Cu. Mtr.)			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
3.	Srirampur Colony	06.04.2023	83	47.1	10.8	15.4
		26.04.2023	81	43.1	9.4	17.4
		08.05.2023	76	41.8	12.1	16.4
		24.05.2023	84	48.5	12.6	18.1
		07.06.2023	80	43.7	11.7	17.4
		24.06.2023	76	32.8	10.4	16.9
		10.07.2023	52	20.4	10	16.2
		25.07.2023	46	20.1	9.1	15.4
		09.08.2023	89	42.3	8.7	15.1
		24.08.2023	85	46.9	12.7	19.2
		09.09.2023	81	39.5	12.3	18.5
	24.09.2023	81	41.3	9.4	16.7	
	Minimum			<b>46.00</b>	<b>20.10</b>	<b>8.70</b>
Maximum			<b>89.00</b>	<b>48.50</b>	<b>12.70</b>	<b>19.20</b>
Average			<b>76.17</b>	<b>38.96</b>	<b>10.60</b>	<b>16.89</b>
98% tile			<b>88.12</b>	<b>48.19</b>	<b>12.62</b>	<b>19.05</b>
<b>NAAQ Standards, CPCB Dtd.18.11.2009</b>			<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

- ❖ Location of the Ambient Air Quality monitoring Station : Srirampur Village
- ❖ Direction (w.r.t. SRP–3&3A Incline.): East of the project.

Sl. No.	Station Name	Date of Sampling	Parameters ( µg/Cu. Mtr.)			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
4.	Srirampur village	06.04.2023	86	48	9.4	17.1
		26.04.2023	82	45.1	9.8	16.8
		08.05.2023	80	47.3	8.9	15.7
		24.05.2023	86	49.4	10	18.9
		07.06.2023	81	47.2	9.4	17.2
		24.06.2023	91	45.6	12.7	18.2
		10.07.2023	45	20.4	9.8	14.4
		25.07.2023	30	15.4	8.7	16.3
		09.08.2023	69	32.6	10.5	17.2
		24.08.2023	76	31.5	9.4	16.2
		09.09.2023	76	33.9	10.4	16.7
	24.09.2023	76	32.1	8.4	14.5	
	Minimum			<b>30.00</b>	<b>15.40</b>	<b>8.40</b>
Maximum			<b>91.00</b>	<b>49.40</b>	<b>12.70</b>	<b>18.90</b>
Average			<b>73.17</b>	<b>37.38</b>	<b>9.78</b>	<b>16.60</b>
98% tile			<b>89.90</b>	<b>49.09</b>	<b>12.22</b>	<b>18.75</b>
<b>NAAQ Standards, CPCB Dtd.18.11.2009</b>			<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

- ❖ Location of the Ambient Air  
Quality monitoring Station : Top of the Residential house, Sangamallaiahpalli
- ❖ Direction (w.r.t. SRP-3&3A Incline.): North west of the project

Sl. No.	Station Name	Date of Sampling	Parameters ( $\mu\text{g/ Cu. Mtr.}$ )			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
5.	Sangamallaiah palli	06.04.2023	87	47.1	9.9	14.8
		26.04.2023	80	40.9	10.7	15.9
		08.05.2023	84	45.8	9.6	18.4
		24.05.2023	85	47.9	11	16.1
		07.06.2023	77	43.7	10.1	14.5
		24.06.2023	85	42.1	10.5	16.3
		10.07.2023	55	18.3	8.7	15.1
		25.07.2023	36	18.3	12.4	18.2
		09.08.2023	82	41	11.3	18.4
		24.08.2023	81	40.8	7.3	14.1
		09.09.2023	85	42.1	13.1	20.2
		24.09.2023	85	38.9	10.5	17.2
	Minimum		<b>36.00</b>	<b>18.30</b>	<b>7.30</b>	<b>14.10</b>
	Maximum		<b>87.00</b>	<b>47.90</b>	<b>13.10</b>	<b>20.20</b>
	Average		<b>76.83</b>	<b>38.91</b>	<b>10.43</b>	<b>16.60</b>
	98% tile		<b>86.56</b>	<b>47.72</b>	<b>12.95</b>	<b>19.80</b>
	<b>NAAQ Standards, CPCB dtd.18.11.2009.</b>		<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

**Physico-Chemical and Bacteriological Characteristics of Surface Water**  
**Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria**

**Date of sampling : 28.04.2023**

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT		
				Class A	Class B	Class C	Class D	Class E	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Naspur Tank
	<b>Date of sampling</b>								<b>28.04.2023</b>	<b>28.04.2023</b>	<b>28.04.2023</b>
1	pH	-	4500-H+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	8.0	8.0	7.9
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	1455	1070	582
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.9	6.6	6.7
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	1.6	2.2	2.3
5	Total Coliforms	MPN/100mL	9221 B	50 or less	500 or less	5000 or less	-	-	94	140	140
6	Free Ammonia (as N)	mg/L	4500-NH <sub>3</sub> -F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.16	0.28	0.17
8	SAR	-	-	-	-	-	-	Less than 26	1.14	1.12	1.81

### Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Naspur Tank
	<b>Date of sampling</b>			<b>28.04.2023</b>	<b>28.04.2023</b>	<b>28.04.2023</b>
1	Colour	Hazen	2120. B	5	5	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	25.1	25.0	25.1
4	Turbidity	NTU	2130. B	0.26	0.44	0.49
5	Total Dissolved Solids at 180° C	mg/L	2540.C	865	626	345
6	Total Suspended Solids at 105° C	mg/L	2540. D	17	11	8
7	Chemical Oxygen Demand	mg/L	5220. D	4	8	8
8	Chlorides as Cl <sup>-</sup>	mg/L	4500-Cl <sup>-</sup> .B	260	197	78
9	Sulphates as SO <sub>4</sub> <sup>2-</sup>	mg/L	4500-SO <sub>4</sub> <sup>2-</sup> .E	106	86	29
10	Fluoride as F <sup>-</sup>	mg/L	4500-F.C	0.52	0.41	0.21
11	Calcium as Ca	mg/L	3500-Ca.B	84	80	21
12	Magnesium as Mg	mg/L	3500-Mg.B	51	47	15
13	Sodium as Na	mg/L	3500-Na.B	167	97	91
14	Potassium as K	mg/L	3500-K.B	33.7	11.8	3.1
15	Nitrites as NO <sub>2</sub>	mg/L	4500-NO <sub>2</sub> <sup>-</sup> .B	BDL	BDL	BDL
16	Nitrates as NO <sub>3</sub>	mg/L	4500-NO <sub>3</sub> <sup>-</sup> .B	43	10.3	9.6
17	Total Phosphates	mg/L	4500-P-D	BDL	BDL	BDL
18	Ammonical Nitrogen as NH <sub>3</sub> -N	mg/L	4500-NH <sub>3</sub> -C	BDL	BDL	BDL
19	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	5530-D	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1
21	Carbonates as CO <sub>3</sub>	mg/L	2320. B	nil	nil	nil
22	Bi-carbonates as HCO <sub>3</sub>	mg/L	2320. B	180	135	140
23	Fecal Coliforms	MPN/100mL	9221 E	11	17	13
24	Zinc as Zn	mg/L	3120. B	0.11	0.10	0.24

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Nasapur Tank
	<b>Date of sampling</b>			<b>28.04.2023</b>	<b>28.04.2023</b>	<b>28.04.2023</b>
25	Iron as Fe	mg/L	3120. B	0.58	0.35	0.74
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL

**Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area**  
**Organoleptic and Physical Parameters**

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	Date of sampling					<b>28.04.2023</b>	<b>28.04.2023</b>
1.	Colour	Hazen	2120. B	5	15	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.
3.	pH	-	4500-H+B	6.5 to 8.5	No relaxation	7.5	7.0
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.58	0.22
6.	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	988	1214

**General Parameters Concerning Substances Undesirable in Excessive Amounts**

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	Date of sampling					28.04.2023	28.04.2023
1.	Calcium as Ca	mg/L	3500-Ca.B	75	200	107	117
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	99	86
3.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	207	387
4.	Sulphates as SO42-	mg/L	4500-SO42-.E	200	400	104	124
5.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.86	0.99
6.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	48	59
7.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	480	400
8.	Total Hardness as CaCO3	mg/L	2340. C	200	600	689	742
9.	Sulphide as H2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL
10.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL
12.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL
13.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent
14.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2
15.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.10	0.06
16.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.22	0.18
17.	Boron as B	mg/L	3120-B	0.5	2.4	0.18	0.14
18.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.38	0.46
19.	Zinc as Zn	mg/L	3120-B	5	15	0.13	0.21
20.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL
21.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL
22.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL
23.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL

**Parameters Concerning Toxic Substances**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	<b>Date of sampling</b>					<b>28.04.2023</b>	<b>28.04.2023</b>
1.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL
2.	Cyanide as CN-	mg/L	4500-CN.F	0.05	No relaxation	BDL	BDL
3.	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL
4.	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL
5.	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL
6.	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL
7.	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL
8.	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL
9.	<b>Pesticides:</b> α-BHC, β-BHC, γ-BHC, δ-BHC, o,p-DDT, p,p' -DDT, Endosulfan, β-Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND
10.	<b>Polyaromatic Hydrocarbons (PAH's):</b> Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	-	-	ND	ND

**Bacteriological Quality of Drinking water**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	<b>Date of sampling</b>					<b>28.04.2023</b>	<b>28.04.2023</b>
1	Total Coliforms	MPN/100 mL	9221 B	-	-	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8



**Physico-Chemical and Bacteriological Characteristics of Surface Water**  
**Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria**

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT		
				Class A	Class B	Class C	Class D	Class E	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Naspur Tank
<b>Date of sampling</b>									<b>02.08.2023</b>	<b>02.08.2023</b>	<b>02.08.2023</b>
1	pH	-	4500-H+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	8.1	8.2	7.7
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	379	348	318
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	5.9	5.2	5.4
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	2.2	2.4	3.2
5	Total Coliforms	MPN/100mL	9221 B	50 or less	500 or less	5000 or less	-	-	110	110	280
6	Free Ammonia (as N)	mg/L	4500-NH <sub>3</sub> -F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.08	0.21	0.13
8	SAR	-	-	-	-	-	-	Less than 26	0.92	0.72	0.84

**Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area**

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Naspur Tank
<b>Date of sampling</b>				<b>02.08.2023</b>	<b>02.08.2023</b>	<b>02.08.2023</b>
1	Colour	Hazen	2120. B	5	5	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	25.2	25.3	25.3
4	Turbidity	NTU	2130. B	2.5	7.3	7.3
5	Total Dissolved Solids at 180° C	mg/L	2540.C	223	204	188
6	Total Suspended Solids at 105° C	mg/L	2540. D	41	37	43
7	Chemical Oxygen Demand	mg/L	5220. D	16	20	24
8	Chlorides as Cl <sup>-</sup>	mg/L	4500-Cl <sup>-</sup> .B	31	29	22
9	Sulphates as SO <sub>4</sub> <sup>2-</sup>	mg/L	4500-SO <sub>4</sub> <sup>2-</sup> .E	32	30	24
10	Fluoride as F <sup>-</sup>	mg/L	4500-F <sup>-</sup> .C	0.45	0.38	0.35
11	Calcium as Ca	mg/L	3500-Ca.B	26	28	18
12	Magnesium as Mg	mg/L	3500-Mg.B	21	22	15
13	Sodium as Na	mg/L	3500-Na.B	26	21	20
14	Potassium as K	mg/L	3500-K.B	1.2	2.4	6.5
15	Nitrites as NO <sub>2</sub>	mg/L	4500-NO <sub>2</sub> <sup>-</sup> .B	0.09	0.11	BDL
16	Nitrates as NO <sub>3</sub>	mg/L	4500-NO <sub>3</sub> <sup>-</sup> .B	4.24	4.22	3.22
17	Total Phosphates	mg/L	4500-P-D	0.02	BDL	0.019
18	Ammonical Nitrogen as NH <sub>3</sub> -N	mg/L	4500-NH <sub>3</sub> -C	BDL	BDL	BDL
19	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	5530-D	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1
21	Carbonates as CO <sub>3</sub>	mg/L	2320. B	nil	nil	Nil
22	Bi-carbonates as HCO <sub>3</sub>	mg/L	2320. B	120	95	115
23	Fecal Coliforms	MPN/100mL	9221 E	4.5	4.5	6.8
24	Zinc as Zn	mg/L	3120. B	0.19	0.29	0.14

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River downstream	SW-3 Naspur Tank
<b>Date of sampling</b>				<b>02.08.2023</b>	<b>02.08.2023</b>	<b>02.08.2023</b>
25	Iron as Fe	mg/L	3120. B	0.61	0.58	0.45
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL

**Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area**  
**Organoleptic and Physical Parameters**

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
<b>Date of sampling</b>						<b>02.08.2023</b>	<b>02.08.2023</b>
1.	Colour	Hazen	2120. B	5	15	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.
3.	pH	-	4500-H+B	6.5 to 8.5	No relaxation	7.1	7.1
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.39	0.47
6.	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	693	690

**General Parameters Concerning Substances Undesirable in Excessive Amounts**

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	Date of sampling					<b>02.08.2023</b>	<b>02.08.2023</b>
11.	Calcium as Ca	mg/L	3500-Ca.B	75	200	83	79
12.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	58	52
13.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	148	143
14.	Sulphates as SO42-	mg/L	4500-SO42- .E	200	400	49	56
15.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.78	0.64
16.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	48	39
17.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	325	320
18.	Total Hardness as CaCO3	mg/L	2340. C	200	600	446	411
19.	Sulphide as H2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL
20.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL
21.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL
22.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL
23.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent
24.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2
25.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.09	BDL
26.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.15	0.11
27.	Boron as B	mg/L	3120-B	0.5	2.4	0.07	0.10
28.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.12	0.42
29.	Zinc as Zn	mg/L	3120-B	5	15	BDL	0.11
30.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL
31.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL
32.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL
33.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL

**Parameters Concerning Toxic Substances**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	<b>Date of sampling</b>					<b>02.08.2023</b>	<b>02.08.2023</b>
34.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL
35.	Cyanide as CN-	mg/L	4500-CN.F	0.05	No relaxation	BDL	BDL
36.	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL
37.	Molybdenum as Mo	mg/L	3120.B	0.07	No relaxation	BDL	BDL
38.	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL
39.	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL
40.	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL
41.	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL
42.	<b>Pesticides:</b> α-BHC, β-BHC, γ-BHC, δ-BHC, o,p-DDT, p,p' -DDT, Endosulfan, β-Endosulfan, Aldrin, Dieldrin	µg/L	6630.D	Absent	0.001	ND	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630.D	Absent	0.001	ND	ND
43.	<b>Polyaromatic Hydrocarbons (PAH's):</b> Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	-	-	ND	ND

**Bacteriological Quality of Drinking water**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-3 Ramaraopet Village	GW-4 Srirampur Village
	<b>Date of sampling</b>					<b>02.08.2023</b>	<b>02.08.2023</b>
1	Total Coliforms	MPN/100 mL	9221 B	-	-	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8

**III. POST PROJECT WATER QUALITY (EFFLUENTS) MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 TO SEPTEMBER, 2023 FOR SRP-3&3A INCLINE.**

❖ Location of the water

Quality monitoring Station: SRP-3&3A incline mine discharge (filter bed outlet)

Sl. No.	Station name	Date of sampling	Concentration in mg/Liter (Except pH)					
			pH (at 25 <sup>o</sup> C)	TSS At 105 <sup>o</sup> C	TDS (At 180 <sup>o</sup> C)	COD	BOD	Oil & Grease
1.	SRP-3&3A Incline Mine discharge	15.04.2023	7.7	21	598	16	2.9	1
		29.04.2023	7.5	26	699	12	1.7	<1
		15.05.2023	7.6	18	768	15	2.1	<1
		31.05.2023	7.3	20	648	23	3.2	1.2
		15.06.2023	7.4	24	835	12	1.5	<1
		30.06.2023	7.6	38	711	15	2.7	<1
		15.07.2023	7.7	20	687	19	2.6	<1
		31.07.2023	7.5	27	869	16	2.6	<1
		14.08.2023	7.9	21	740	28	4.6	1
		31.08.2023	7.8	25	691	31	3.2	<1
		15.09.2023	7.3	30	847	23	5.1	<1
		29.09.2023	7.8	24	968	27	3.1	<1
	<b>Minimum</b>		<b>7.30</b>	<b>18.00</b>	<b>598.00</b>	<b>12.00</b>	<b>1.50</b>	<b>1.00</b>
	<b>Maximum</b>		<b>7.90</b>	<b>38.00</b>	<b>968.00</b>	<b>31.00</b>	<b>5.10</b>	<b>1.20</b>
	<b>Average</b>		<b>7.59</b>	<b>24.50</b>	<b>755.08</b>	<b>19.75</b>	<b>2.94</b>	<b>1.07</b>
	<b>98% tile</b>		<b>7.88</b>	<b>36.24</b>	<b>946.22</b>	<b>30.34</b>	<b>4.99</b>	<b>1.19</b>
<b>MoEF GSR 742(E) and GSR 801(E) Effluent standards for coal mines</b>			<b>5.5-9.0</b>	<b>100</b>	<b>--</b>	<b>250</b>	<b>30</b>	<b>10</b>
<b>Test Method</b>			<b>4500H+B</b>	<b>2540-D</b>	<b>2540-C</b>	<b>5220-D</b>	<b>IS 3025</b>	<b>2540-C</b>

**Analysis Report of monthly summary of 3.0MLD Sewage treatment Plant – Naspur Colony from April, 2023 to September, 2023.**

All Values in Mg/Liter (Except pH)

Month	Description	Characteristics of Raw Sewage				Characteristics of Aeration Water					Characteristics of Treated Water				
		pH	TSS	COD	BOD	pH	DO	MLSS	MLVSS	TDS	pH	DO	TSS	COD	BOD
Apr, 23	Min	7.8	205	205	205	7.4	1.7	3040	380	5	6.7	1.2	11	11	28
	Max	7.9	220	220	215	7.6	1.9	3220	399	3170	7.2	1.3	13	13	32
	Aver	7.85	214	211.33	209.17	7.53	1.84	3151.83	391.73	2318.50	6.94	1.25	11.87	11.67	29.87
May, 23	Min	7.7	210	205	205	7.4	1.7	2960	380	45	6.7	1.2	11	11	28
	Max	7.7	210	205	205	7.4	1.7	2960	380	45	6.7	1.2	11	11	28
	Aver	7.82	215.00	215.28	208.13	7.50	1.84	3103.63	392.00	2664.75	6.98	1.25	12.00	11.88	30.00
June, 23	Min	7.7	210	210	210	7.4	1.7	2956	382	5	6.9	1.2	11	11	28
	Max	7.9	220	220	220	7.6	1.8	3264	400	3184	7.2	1.3	13	13	32
	Aver	7.80	214.06	215.33	215.00	7.46	1.75	3134.87	394.23	2728.11	6.97	1.25	12.06	12.17	29.73
July,23	Min	7.7	210	205	205	7.4	1.7	2546	382	2452	6.8	1.2	11	11	28
	Max	7.9	220	220	220	7.6	1.9	3940	400	3102	7.1	1.3	13	13	32
	Aver	7.81	215.00	214.38	212.50	7.51	1.79	2934.13	392.26	2801.13	6.95	1.25	12.00	12.33	29.38
Aug, 23	Min	7.7	210	205	205	7.4	1.7	2590	300	2580	6.9	1.2	11	11	28
	Max	7.9	220	220	215	7.6	1.9	3342	400	3292	7.1	1.3	13	13	32
	Aver	7.79	213.67	213.75	210.00	7.47	1.79	3003.26	386.55	2924.00	6.97	1.25	12.33	11.83	30.40
Sep,23	Min	7.7	205	205	205	7.4	1.7	2760	382	2708	6.9	1.2	11	11	28
	Max	7.9	215	220	215	7.6	1.9	3168	400	3080	7.1	1.3	13	14	32
	Aver	7.79	212.00	211.33	210.00	7.47	1.82	2951.83	392.10	2897.14	6.99	1.25	11.93	12.50	30.13
	standard	-	-	-	-	-	-	-	-	--	5.5-9.0	--	100	30	250

## NOISE LEVEL MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 TO SEPTEMBER, 2023 AROUND SRP-3&amp;3A INCLINE

Fortnight	SRP-3&3A Incline			Sangamallaiah palli			Srirampur village		
	Date	L <sub>day</sub>	L <sub>night</sub>	Date	L <sub>day</sub>	L <sub>night</sub>	Date	L <sub>day</sub>	L <sub>night</sub>
April -I	07.04.2023	68.8	59.1	07.04.2023	51.4	40.9	07.04.2023	47.6	35.5
April -II	27.04.2023	66.8	54.8	27.04.2023	48.7	42.1	27.04.2023	49.1	40.2
May -I	10.05.2023	63.9	57.6	10.05.2023	50.2	43.7	10.05.2023	45.9	38.7
May -II	25.05.2023	67.1	54.1	25.05.2023	49.5	44.8	25.05.2023	48	39.2
June -I	09.06.2023	65.7	55	09.06.2023	48.9	41.8	09.06.2023	46.2	40.1
June - II	26.06.2023	70.5	63.1	26.06.2023	48.4	32.1	26.06.2023	46.7	40.5
July -I	11.07.2023	64.2	52.9	11.07.2023	48.5	41	11.07.2023	48.1	38.4
July-II	26.07.2023	63.5	52.7	26.07.2023	48.2	39.4	26.07.2023	47.3	36.5
Aug-I	10.08.2023	66.8	58.4	10.08.2023	46.8	38.4	10.08.2023	49.6	38.6
Aug-II	25.08.2023	66.7	51.3	25.08.2023	43.6	36.4	25.08.2023	46.8	32.5
Sep -I	11.09.2023	65.4	51.7	11.09.2023	45.6	36.7	11.09.2023	42.1	33.8
Sep -II	25.09.2023	67.5	57.2	25.09.2023	46.5	39.5	25.09.2023	48.3	36.2
Average		<b>66.408</b>	<b>55.658</b>		<b>48.025</b>	<b>39.733</b>		<b>47.142</b>	<b>37.517</b>
		<b>75</b>	<b>70</b>		<b>55</b>	<b>45</b>		<b>55</b>	<b>45</b>

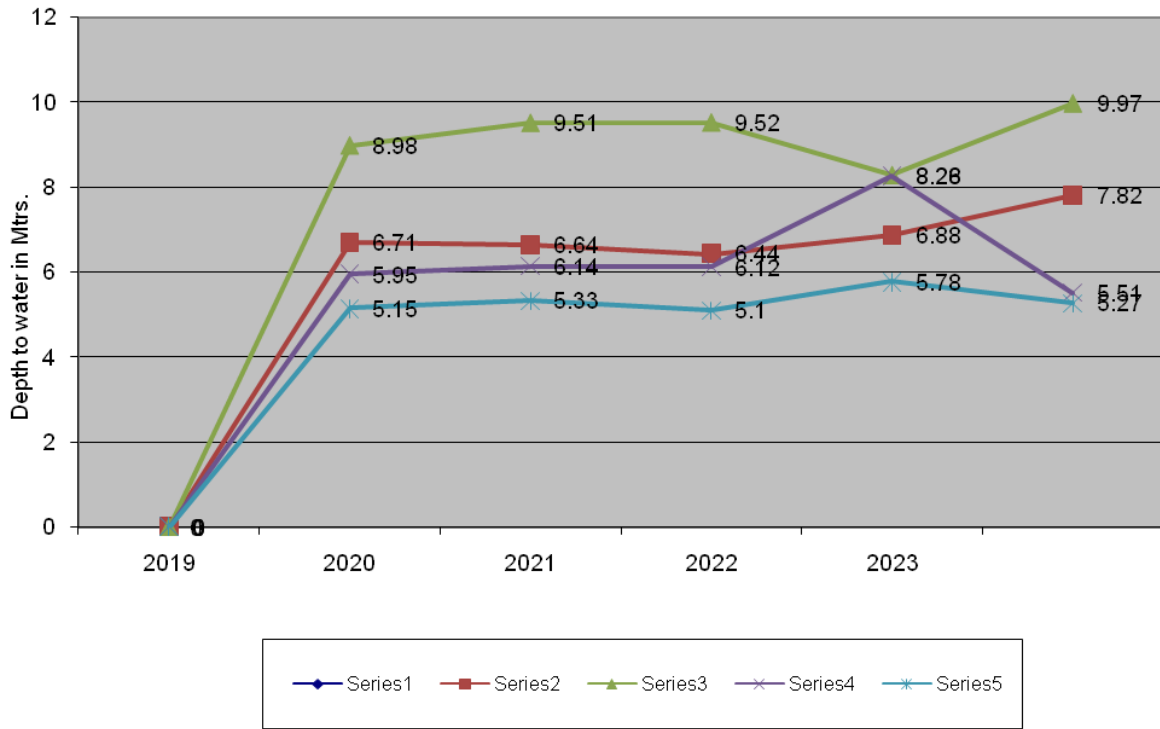


## A. ATTITUDE OF PHREATIC SURFACE IN SRIRAMPUR AREA

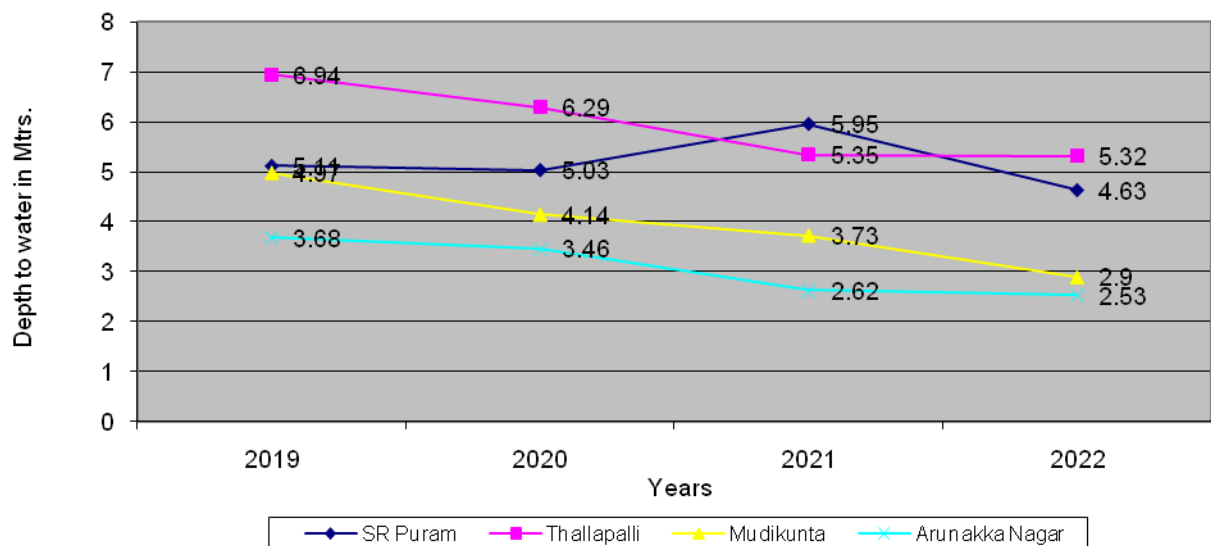
Sl. No	Name of village	Owner's Name	Type of Well	Dimensions (M)	Total Depth (M)	Geology	Measuring point(MAGL)	Period	Depth to Water (M)				
									2019	2020	2021	2022	2023
1	Arunakka nagar near GM office	N.Lingaiiah	Domestic	1.00	9.40	Barren Measur es Fm	0.30	Winter	5.09	5.01	4.31	3.70	3.84
								Pre-Monsoon	5.15	5.33	5.10	5.78	5.27
								Monsoon	2.89	2.54	1.52	1.50	1.64
								Post- Monsoon	3.68	3.46	2.62	2.53	
2	RK-6 Colony	Q.No.SA-13	Domestic	1.20	10.00	Barkar Fm	0.30	Winter	2.13	2.07	2.44	1.62	1.74
								Pre-Monsoon	2.51	2.48	2.63	4.06	3.53
								Monsoon	1.14	1.19	0.84	0.74	0.81
								Post- Monsoon	1.94	1.90	1.56	1.47	
3	RK-6 Colony/Kur mawada	Karre Posham	Domestic	1.00	6.50	Barkar Fm	GL	Winter	2.53	3.05	2.93	2.83	2.96
								Pre-Monsoon	3.07	3.11	3.17	3.85	1.90
								Monsoon	2.88	1.93	1.20	1.32	1.28
								Post- Monsoon	3.01	2.71	2.10	1.55	
4	RK-6 Colony/Kur mawada	Eshwaraiah	Domestic	1.00	6.50	Barkar Fm	GL	Winter	2.51	2.44	4.50	1.96	AB
								Pre-Monsoon	2.67	2.61	4.66	3.68	--
								Monsoon	2.09	1.96	1.44	WD	--
								Post- Monsoon	2.41	2.66	1.49	AB	
5	S.R.Puram Naspur X Road	Aasami Rajamallam ma/ Ippalapalli Kanakaiah	Domestic	1.2	13.50	Talchir	0.6	Winter	6.47	6.35	6.37	6.03	6.18
								Pre-Monsoon	6.71	6.64	6.44	6.88	7.82
								Monsoon	4.29	4.84	4.45	4.21	4.29
								Post- Monsoon	5.11	5.03	5.95	4.63	
6	Sitharampalli / on the way to intake well	Surimilla Lachanna	Domestic	2.5x3.5	6.90	Sullavai	0.60	Winter	7.43	7.38	7.14	2.98	2.92
								Pre-Monsoon	7.51	7.79	7.31	7.27	4.47
								Monsoon	6.18	4.34	1.75	1.63	2.23
								Post- Monsoon	7.21	4.58	2.48	2.71	
7	Sitharampalli/on the way to Thallapalli	M.Gopaiah	Domestic	1.20	11.50	Sullavai	GL	Winter	12.84	12.64	12.00	10.29	10.31
								Pre-Monsoon	12.98	13.04	12.63	12.28	13.30
								Monsoon	10.16	6.81	5.70	4.54	5.00
								Post- Monsoon	11.15	10.82	6.95	7.13	
8	Tallapalli/On the way to Intake well	Rukum. Ramaiah	Domestic	2.40	9.10	Sullavai	0.70	Winter	2.49	2.19	2.37	1.91	2.08
								Pre-Monsoon	2.70	2.67	2.73	2.93	2.17
								Monsoon	1.13	2.08	1.35	1.18	2.03
								Post- Monsoon	1.31	2.14	1.85	1.80	
9	Tallapalli/end of the village towards OC	B.Rajaiah	Domestic	1.20	10.50	Sullavai	1.10	Winter	7.89	7.56	7.22	5.85	5.97
								Pre-Monsoon	8.98	9.51	9.52	8.28	9.97
								Monsoon	3.1	3.15	4.55	3.74	4.40
								Post- Monsoon	6.94	6.29	5.35	5.32	
10	Singapuram /opp.panchayat office	Nammala Srinivasu	Domestic	2.40	7.40	Sullavai FM	0.30	Winter	3.94	4.07	5.16	3.33	3.18
								Pre-Monsoon	4.61	5.51	5.33	5.48	4.17
								Monsoon	2.13	2.71	1.70	1.30	1.83
								Post- Monsoon	2.44	2.83	2.35	2.48	
11	Singapuram /near teak plantation	Aggu Sailu	Agricultur e	4.00	10.50	Sullavai	GL	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	--
								Post- Monsoon	AB	AB	AB	--	--
12	Ramaraopet /Near bridge	Gunta. Chandraiah	Domestic	1.30	5.20	Talchir FM	0.60	Winter	6.31	5.29	6.24	5.08	5.22
								Pre-Monsoon	5.38	5.72	6.28	6.92	--
								Monsoon	2.71	2.97	2.52	1.02	1.08
								Post- Monsoon	5.24	5.11	AB	3.48	
13	Guttedarpalli/Near RWS tank	R.Venkati	Domestic	2.50	8.50	Barkar Fm	0.50	Winter	Dry	Dry	AB	--	--
								Pre-Monsoon	Dry	Dry	AB	--	--
								Monsoon	Dry	Dry	AB	--	--
								Post- Monsoon	Dry	Dry	AB	AB	

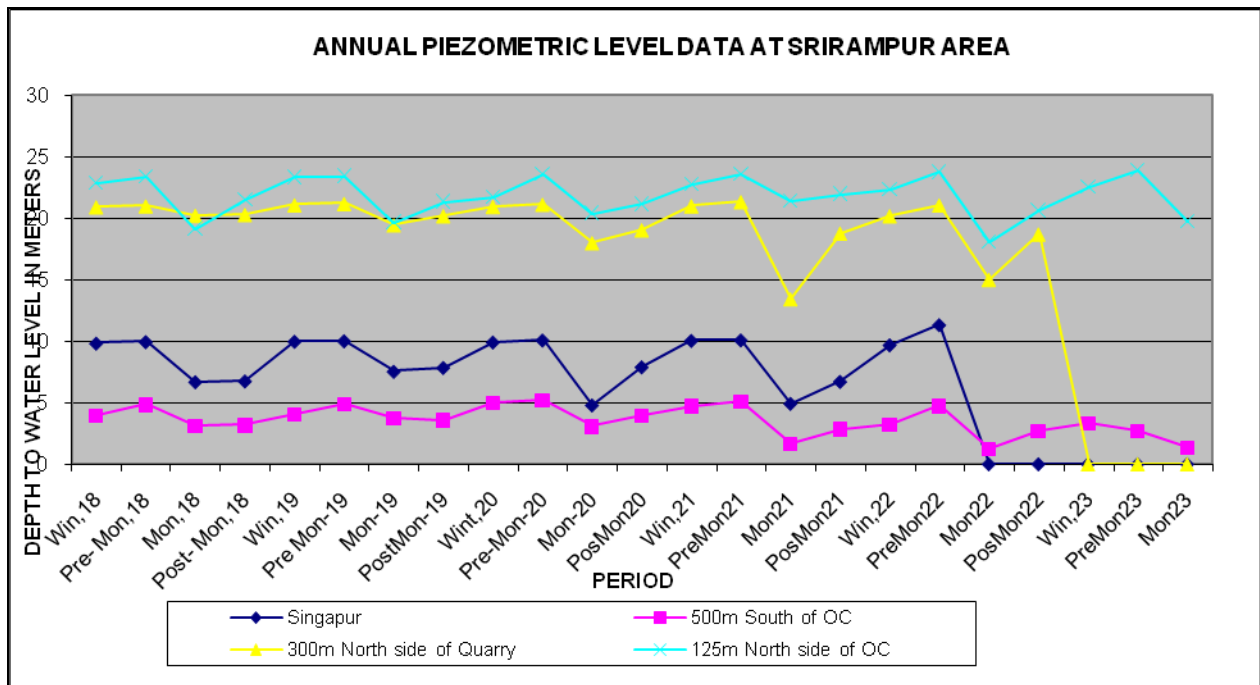
Sl. No	Name of village	Owner's Name	Type of Well	Dimensions (M)	Total Depth (M)	Geology	Measuring point(M AGL)	Period	Depth to Water (M)				
									2019	2020	2021	2022	2023
14	Indaram	A.Rajamallu/ opp.BP bunk	Domestic	3x4	11.50	Barren Measur es Fm	0.40	Winter	6.17	6.13	6.14	--	6.17
								Pre-Monsoon	6.89	7.37	7.35	7.54	3.60
								Monsoon	3.51	3.85	3.65	3.28	3.44
								Post- Monsoon	3.96	3.94	--	4.10	
15	Indram/ opp. Garden	M.Sankar/Po dusani Bhaskar reddy	Domestic	1.00	13.00	Barren Measur es Fm	0.90	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	--
								Post- Monsoon	AB	AB	--	--	
16	Indaram/IK- 1&1A X-roads	Rajanna	Agricultur e	6.50	8.50	Barren Measur es Fm	0.70	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	
								Post- Monsoon	AB	AB	--		
17	Tekumatla	Rice mill/ Kamalakar	Domestic	1.60	10.50	Barren Measur es Fm	0.60	Winter	9.70	9.67	9.84	--	9.74
								Pre-Monsoon	Dry	Dry	10.53	--	11.37
								Monsoon	9.21	8.22	9.00	7.81	7.68
								Post- Monsoon	9.63	9.75	--	8.10	
18	Tekumatla /behind Panchayat office	V.Ramireddy	Domestic	1.00	11.00	Barren Measur es Fm	GL	Winter	2.13	3.66	2.55	3.74	3.88
								Pre-Monsoon	5.32	5.71	5.28	5.32	--
								Monsoon	1.66	2.34	2.10	1.88	3.10
								Post- Monsoon	3.64	2.41	--	2.72	
19	Indaram	Govt. Well	Domestic	2.00	9.00	Barren Measur es Fm	0.50	Winter	6.79	6.68	6.34	4.76	4.86
								Pre-Monsoon	Dry	7.13	6.89	7.56	7.37
								Monsoon	Dry	3.82	3.92	3.51	3.73
								Post- Monsoon	5.44	4.95	--	--	
20	Indaram/sid e of HP Petrol bunk	M. Uppalaiah	Domestic	1.20	7.00	Barren Measur es Fm	0.60	Winter	6.24	6.18	6.08	6.24	6.33
								Pre-Monsoon	6.61	6.74	6.57	6.84	6.40
								Monsoon	4.74	4.31	2.05	1.91	2.01
								Post- Monsoon	4.81	4.67	--	--	
21	Rasulpalli	Madhukar	Domestic	1.00	8.00	Barren Measur es Fm	0.70	Winter	3.71	3.62	3.46	2.90	2.98
								Pre-Monsoon	5.14	5.54	5.22	4.37	3.05
								Monsoon	1.96	2.18	1.56	1.41	1.48
								Post- Monsoon	3.22	2.89	--	--	
22	Mudikunta	G.Rajaiah	Domestic	1.00	11.40	Barren Measur es Fm	0.40	Winter	5.90	5.89	4.93	5.00	5.08
								Pre-Monsoon	5.95	6.14	6.12	8.26	5.51
								Monsoon	4.54	3.61	2.72	2.50	2.70
								Post- Monsoon	4.97	4.14	3.73	2.90	
23	Mudikunta	Ellamma temple	Domestic	1.00	4.50	Barren Measur es Fm	0.40	Winter	2.98	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	
								Post- Monsoon	AB	AB	--	--	
24	Kankur/near school	Govt. Well /Regunta.Mallesh	Domestic	4.00	9.00/ 10.0	Barren Measur es Fm	0.40/ 0.50	Winter	Dry	6.55	AB	6.75	6.82
								Pre-Monsoon	Dry	AB	7.30	7.31	2.85
								Monsoon	7.39	AB	3.83	1.00	2.00
								Post- Monsoon	7.84	AB	--	--	
25	Jaipur	Behind AE Off. Near bus stop	Domestic	1.50	12.00	Kamthi FM	0.80	Winter	3.93	3.84	4.26	2.96	2.99
								Pre-Monsoon	4.05	5.11	5.91	4.87	3.80
								Monsoon	2.34	2.18	1.50	0.81	0.88
								Post- Monsoon	2.66	3.06	--	1.08	

### PRE-MONSOON HYDROGRAPHS IN SRIRAMPUR AREA



### POST-MONSOON HYDROGRAPHS IN SRIRAMPUR AREA



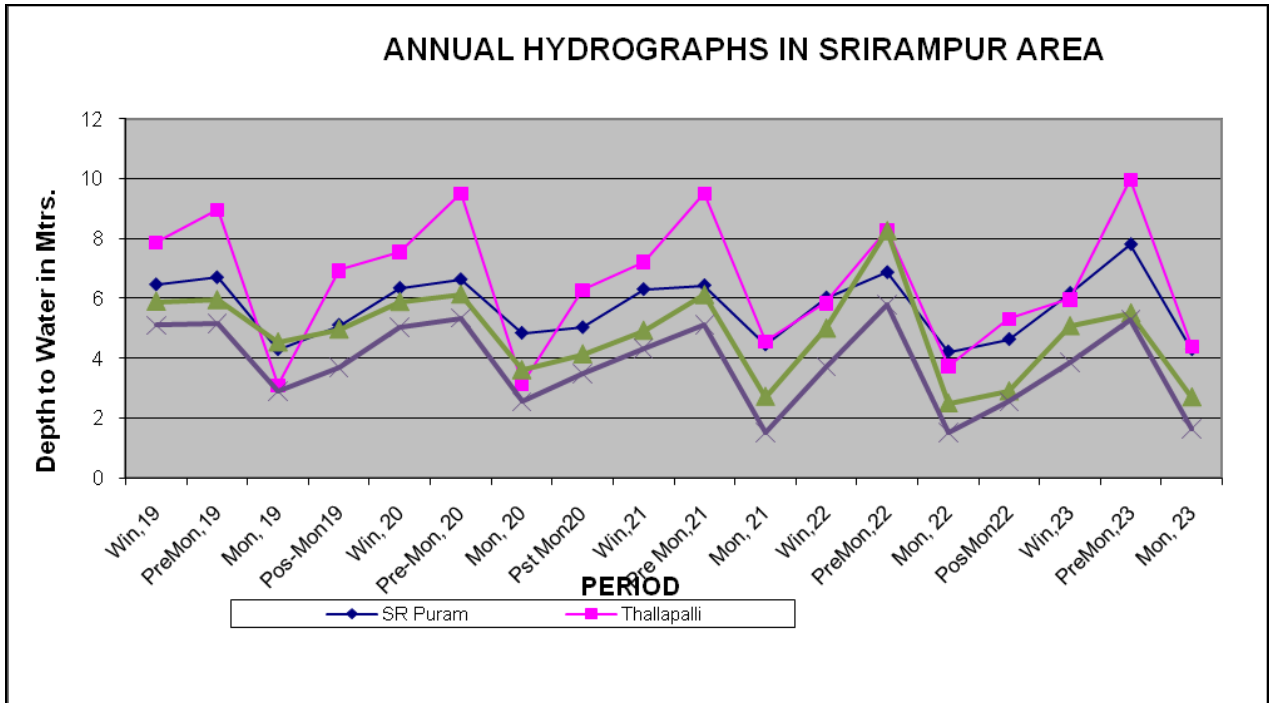
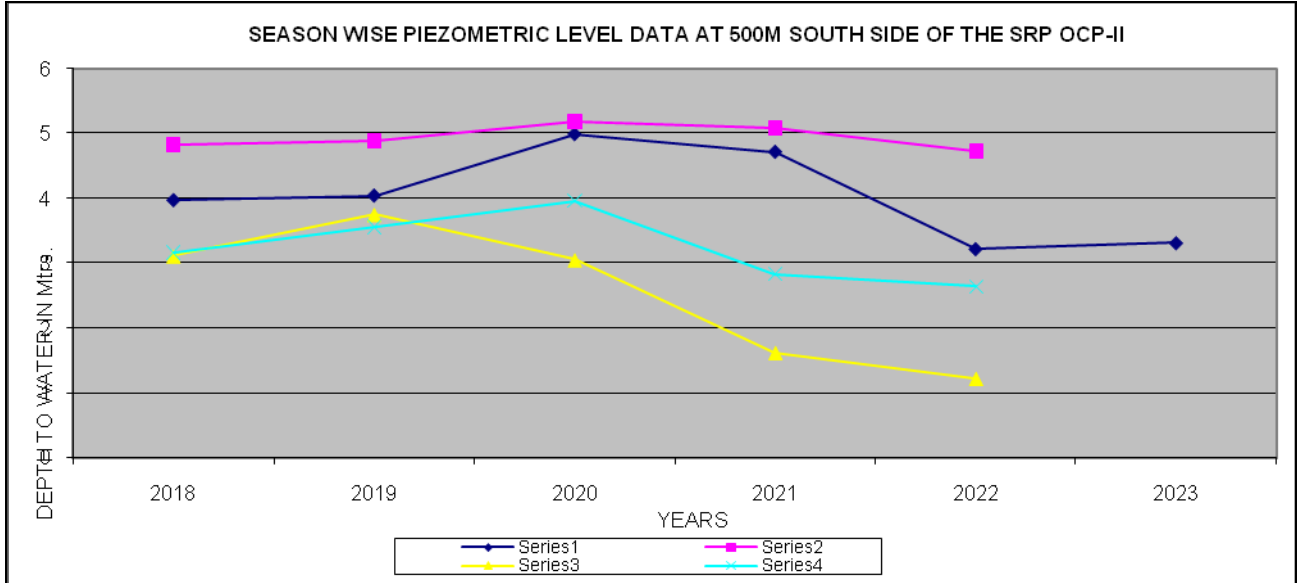


**B. PIEZOMETRIC LEVEL DATA OF SRIRAMPUR AREA.**

Well No.	Location	Depth (m)	Dia (m)	Measuring point (m above ground level)	Period	Depth to Water (m)					
						2018	2019	2020	2021	2022	2023
SRP_OCP.I PW-5	About 500 m south of the quarry and 150m north of Indaram Tank (N18°49'35.43" – E 79°30'57.60" )	208	0.10	0.30	Winter	3.97	4.04	4.98	4.71	3.22	3.31
					Pre-Monsoon	4.82	4.88	5.18	5.08	4.72	2.70
					Monsoon	3.11	3.75	3.05	1.62	1.22	1.31
					Post-Monsoon	3.16	3.56	3.96	2.83	2.64	
SRP_OCP.I PW-7	Near Singapur village (N18°49'46.47" – E 79°30'25.52" )	50	0.10	0.20	Winter	9.82	9.97	9.91	10.04	9.68	*NA
					Pre-Monsoon	9.94	10.01	10.07	10.08	11.32	AB
					Monsoon	6.68	7.53	4.79	4.92	*NA	AB
					Post-Monsoon	6.74	7.84	7.89	6.71	*NA	
SRP_OCP.I PW-8	Near Project Office sub-station. About 125m from N side of quarry surface limit. (N18°51'4.12" – E 79°29'39.90" )	50	0.10	0.40	Winter	22.90	23.35	21.72	22.73	22.32	22.52
					Pre-Monsoon	23.41	23.43	23.57	23.62	23.75	23.90
					Monsoon	19.13	19.67	20.4	21.42	18.06	19.73
					Post-Monsoon	21.48	21.33	21.14	21.97	20.63	
SRP_OCP.I PW-10	Road to SRP bus stand, about 300m from N side of quarry surface limit (N18°51'7.10" – E 79°30'11.26" )	50	0.1	0.50	Winter	20.90	21.07	20.94	20.99	20.19	NA*
					Pre-Monsoon	20.98	21.17	21.11	21.32	21.05	NA*
					Monsoon	20.21	19.44	17.98	13.42	15.00	NA*
					Post-Monsoon	20.28	20.19	1.03	18.77	18.70	
*SRP_CSIR O PW-11	West side External dump area, Near to Thallapalli village. (N18°49'54.731" – E 79°29'11.085	50	0.1	0.2	Winter	1.97	2.32	2.38	2.23	2.09	2.18
					Pre-Monsoon	2.38	2.53	2.57	2.64	3.17	2.60
					Monsoon	1.05	NA	0.91	1.15	1.05	NA*
					Post-Monsoon	2.00	2.07	2.00	1.89	1.88	
*SRP_CSIR O PW-12	West side External dump area. Near to Thallapalli village (N18°49'50.573" - E 79°29'06.202")	50	0.1	0.2	Winter	2.07	2.87	2.84	2.68	2.80	2.73
					Pre-Monsoon	2.28	2.91	2.93	3.01	4.65	2.80
					Monsoon	2.08	2.12	2.08	1.81	2.03	1.83
					Post-Monsoon	2.14	2.35	2.17	2.29	2.66	
*SRP_CSIR O PW-13	West side External dump	50	0.1	0.2	Winter	2.99	3.05	3.17	3.63	3.92	3.97
					Pre-Monsoon	3.28	3.76	3.84	4.07	4.56	3.70
					Monsoon	3.11	2.98	3.08	2.97	4.21	2.83

	area. Road to Godavari river (N18°49'45.286" – E 79°29'06.811")				Post-Monsoon	3.06	3.11	3.27	3.85	4.48	
*SRP_CSIR O PW-14	West side External dump area. Road to Godavari River (N18°49'32.305" – E 79°28'50.154")	50	0.1	0.2	Winter	4.73	4.77	4.68	4.37	4.62	4.54
					Pre-Monsoon	5.25	4.82	4.91	5.77	6.25	5.80
					Monsoon	4.12	4.18	4.13	3.92	4.06	3.38
					Post-Monsoon	4.19	4.24	4.28	4.22	4.45	

**Note :** NA:Not applicable and AB: Abonded.  
Piezometric well No.SRP OCP-I, PW-1,2,3,4,6&9 were abonded



**MINUTES OF THE ENVIRONMENTAL MANAGEMENT COMMITTEE MEETING HELD ON 28.08.2023 AT 5.30 PM AT GENERAL MANAGER'S OFFICE TO REVIEW THE EC, CFE, CFO AND F.C CONDITIONS COMPLIANCE STATUS OF ALL MINES / PROJECTS OF SRIRAMPUR AREA**

At the outset Addl Manager (Env) while welcoming the members explained about the need of Environmental Management Committee Meeting (EMC), complying of EC/CFE/CFO/FC conditions and discussed following points. General Manager instructed the concern to take up the works as discussed.

With reference to the letters cited, Area level Committee meeting was conducted under the chairmanship of GM SRP with the officers concerned (copy of list enclosed) from 5.30pm to 7.30pm on 28.08.2023 at general manager's office SRP on Non-compliance status of conditions stipulated in EC/FC/CFE/CFO of Mines of Srirampur Area.

The minutes of the meeting are given below.

While welcoming the participants to the area level committee meeting, Area Environment Officer in his opening remarks highlighted the points discussed in the Apex committee meeting and given small presentation on awareness of environmental laws.

Thereafter Chairman welcomed the members and advised all the Agents, Managers to strictly follow the rules connected to environment. Violation of Environment procedures will be viewed seriously and stringent action will be taken against the violation.

It is a fundamental responsibility of every citizen of India to protect environment. We have to follow environmental laws meticulously.

Some Laws we can implement, some are to be forwarded to higher ups and some are time taking.

The person personally will be held responsible for their own violation. Responsibility is demarcated.

**AREA LEVEL ENVIRONMENTAL COMMITTEE MEETING AGENDA**

**AREA ENGINEER (E&M)**

- Installation of flow meters on mine water discharge pipes.
- Crushers at the existing CHP and that to be constructed shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, and transfer points.
- ETP shall also be provided for CHP wastewater. Mine discharge water shall be treated to prescribed standards before discharge into any natural water course.
- The company shall provide water sprinkling system at coal stacking yards (CFO Condition)
- CFO Condition No:9 of Schedule- B, The Company shall provide water sprinkling system at Coal yard near GM Office and other coal Yards. (CFO Condition)
- The Industry shall provide Impact Rollers at transfer points to dampen the noise levels at Coal handling points (CFO Condition).

- The industry may explore the possibility of generating the solar power for their energy requirements.

#### **AREA ENGINEER (CIVIL)**

- ETP shall also be provided for workshop and CHP wastewater. Mine discharge water shall be treated to prescribed standards before discharge into any natural water course.
- The sewage treatment plant (STP) installed in the township shall meet the requirements of the expansion project as well as all colonies.
- The construction of retaining wall at the toe of the dumps and OB benches.
- The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource.
- CFO Condition No:9 of Schedule- B, The Company shall provide water sprinkling system at Coal yard near GM Office and other coal Yards. (CFO Condition)

#### **PROJECT OFFICER/MANAGER, SRP OC**

- Proper stacking of Top soil.
- Garland drains of suitable size.
- Settling ponds (20m L X 20m W x 2m D)
- An area Drainage Study shall be conducted and protective measures shall be taken to prevent mine inundation.
- The construction of retaining wall at the toe of the dumps and OB benches.
- Crushers at the existing CHP and that to be constructed shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, and transfer points.
- Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as **NIOH, Ahmadabad** within a period of one year and the results reported to this Ministry and to DGMS.
- ETP shall also be provided for workshop and CHP wastewater. Mine discharge water shall be treated to prescribed standards before discharge into any natural water course.
- The industry shall ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).

#### **AGENTS/MANAGERS (UG)**

- Sufficient coal pillars shall be left un-extracted around the airshaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- Drills should be wet operated
- ETP shall also be provided for workshop and CHP wastewater. Mine discharge water shall be treated to prescribed standards before discharge into any natural water course.
- CFO Condition No:9 of Schedule- B, The Company shall provide water sprinkling system at Coal yard near GM Office and other coal Yards. (CFO Condition) (RK 7 Gr Agent)

- Monthly water discharge and consumption details shall be prepared and submit to Corporate (Env Dept)
- The industry shall ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).

#### **PROJECT ENGINEER, SRP OC**

- Crushers at the existing CHP and that to be constructed shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, and transfer points
- The company shall provide water sprinkling system at coal stacking yards (CFO Condition)
- The Industry shall provide Impact Rollers at transfer points to dampen the noise levels at Coal handling points (CFO Condition).

#### **DGM (E&M) SRP CHP**

- Crushers at the existing CHP and that to be constructed shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, and transfer points.
- ETP shall also be provided for CHP wastewater. Mine discharge water shall be treated to prescribed standards before discharge into any natural water course.
- The company shall provide water sprinkling system at coal stacking yards (CFO Condition)
- The Industry shall provide Impact Rollers at transfer points to dampen the noise levels at Coal handling points (CFO Condition).
- The industry shall ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).

While reviewing the different environment activities as per conditions stipulated in EC/FC/CFE/CFO chairman advised to take up the following works.

### **CHAIRMAN'S INSTRUCTIONS/ADVISES**

#### **AREA ENGINEER (E&M)**

- Advised to put proposal with required input Data for Installation of flow meters on mine water discharge pipes.
- High efficiency bag filters – Advised to visit Orient cement/STPP along with DGM (CHP), SRP, PE (SRP OC), Area environment officer and prepare a Draft proposal for further course of action.
- Provide fixed and single valve operated water sprinkling system at Weigh Bridge near GM Office in consultation with DGM (Civil) and Agent RK 7 Group.
- Impact Rollers at transfer points to dampen the noise levels at Coal handling points – Advised to Study discuss with DGM (CHP), SRP, PE (SRP OC) and put up the status



### **AREA ENGINEER (CIVIL)**

- The sewage treatment plant (STP) – Advised to initiate proposal for another STP with suitable capacity at strategic location to serve CCC Township, Krishna Colony, RK 5 Colony, RK 8 Colony, SRP Colony and CISF Colony.
- Rain water harvesting pits– Advised to recondition present pits 32 NOs and propose for some more pits.
- The chairman, advised to take up construction of rock toe walls, rain water harvesting pits, rock fill dams, cleaning of drains, settling ponds, check dams, culverts, etc., as and when required. And to make field visits by audit committee formed.

### **PROJECT OFFICER/MANAGER, SRP OC**

#### **PROJECT ENGINEER, SRP OC**

- Advised to comply all conditions discussed in the meeting.
- ETP shall be proposed at OB out sourcing HEMM parking Area.
- The chairman, advised to take up construction of rock toe walls, rain water harvesting pits, rock fill dams, cleaning of drains, settling ponds, check dams, culverts, etc., as and when required.
- The chairman, advised to ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).

### **AGENTS/MANAGERS (UG)**

- The chairman, advised to ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).
- Advised to comply all conditions discussed in the meeting.

### **DGM (E&M) SRP CHP**

- Advised to comply all conditions discussed in the meeting
- Put up proposal for ETP for new CHP.
- The chairman, advised to ensure covering of coal trucks with tarpaulin to avoid spillages of coal and fugitive emissions due to transportation of coal. (CFO Condition).

### **AREA ENVIRONMENT/ FOREST OFFICER**

- To follow up and monitor everybody concerned to comply all above discussed conditions.

Chairman further advised HODs and members shall have positive approach towards environment protection and to co-ordinate with project authorities for rectifying Non compliance conditions of EC/FC/CFE/CFO of all mines of Srirampur area. A compliance report of the minutes may please be communicated to the office of the undersigned at the earliest.

Finally Area Environment Officer requested all members to kindly follow the procedures and try to comply the guidelines. Kindly take this as serious issue on the matter of non-compliance of guidelines. Also informed the copy of minutes of this meeting will be sent to G.M. (Environment) and Corporate Level Apex Committee.

Meeting ended with vote of thanks.

The following committee members/ Guests were present:

- 1 General Manager
- 2 Agent, SRP 3 Group
- 3 AGM(E&M), SRP
- 4 DGM(E&M), AWS
- 5 DGM(E&M). SRP CHP
- 6 DGM (Civil), SRP
- 7 Area Survey Officer
- 8 Addl Manager./Env.SRP
- 9 Sr. Estates Officer, SRP
- 10 Coll. Mgr., / SRP 3 Inc
- 11 Dy. Supdt. Survey Officer/ SRP 3 Inc

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**3.9.1 Flora & Fauna in Core Zone**

**Habitat:** Core zone is covered forestland of area about 94.0 ha. The habitat is well maintained with artificial rising of plants around the Core area with natural forest species. The tree species listed below are above 5 mts height and herbs and shrubs attracts the birds and butterflies. This area is good habitat for reptiles and amphibians.

**FLORA****i). Trees:**

<b>S.No.</b>	<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>Status</b>
1.	<i>Acacia auriculiformis</i>	Mimosaceae	Ari	C
2.	<i>Azadirachta indica</i>	Meliaceae	Vepa	C
3.	<i>Cassia fistula</i>	Caesalpiaceae	Rela	VC
4.	<i>Cassia siamea</i>	Caesalpiaceae	Seema tangedu	C
5.	<i>Chloroxylon swietenia</i>	Flindersiaceae	Billudu	C
6.	<i>Diospyros melanoxylon</i>	Ebenaceae	Tuniki aku	UC
7.	<i>Madhuca indica</i>	Sapotaceae	Ippa	C
8.	<i>Morinda pubescens</i>	Rubiaceae	Toguru	C
9.	<i>Ficus religiosa</i>	Moraceae	Raavi	C
10.	<i>Pongamia pinnata</i>	Fabaceae	Kanuga	A
11.	<i>Prosopis chilensis</i>	Mimosaceae	Thumma	C
12.	<i>Tectona grandis</i>	Verbenaceae	Teaku chettu	C

**ii). Shrubs:**

<b>S.No.</b>	<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>Status</b>
13.	<i>Abutilon indicum</i>	Malvaceae	Tutturubenda	VC
14.	<i>Barleria prionitis</i>	Acanthaceae	Mullagorinta	C
15.	<i>Calotropis gigantean</i>	Asclepiadaceae	Jilledu	A
16.	<i>Cassia auriculata</i>	Caesalpiaceae	Thangedu	A
17.	<i>Cassine glauca</i>	Celastraceae	Nerini, Neridi	C
18.	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Nepalamu	C
19.	<i>Pavetta indica</i>	Rubiaceae	Kommi	C
20.	<i>Hyptis sueolens</i>	Lamiaceae	Konda tulasi	A
21.	<i>Lantana camara</i>	Verbenaceae	Ranabheri	C
22.	<i>Plectranthu parviflora</i>	Rubiaceae	Balusu	C
23.	<i>Vitex negundo</i>	Verbenaceae	Vavili	A
24.	<i>Zizyphus maurtiana</i>	Rhamnaceae	Regu	C
25.	<i>Ricinus communis</i>	Euphorbiaceae	Amudamu	A

**iii). Herbs:**

<b>S.No.</b>	<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>Status</b>
26.	<i>Croton banplandianum</i>	Euphorbiaceae	Kukkamirapa	A
27.	<i>Evolvulus alsinoides</i>	Convolvulaceae	Vishnukranthamu	VC
28.	<i>Indigofera tinctoria</i>	Fabaceae	Nili	C
29.	<i>Solanum surattense</i>	Solanaceae	Ramamulaga/Kasi	C
30.	<i>Tephrosea purpurea</i>	Fabaceae	Vempali	VC

**iv). Lianas (Climbers/ Woody climbers):**

S.No.	Scientific Name	Family	Common Name	Status
31.	<i>Cuscuta reflexa</i>	Solanaceae	Akashavalli	R
32.	<i>Hemidesmus indicus</i>	Periplocaceae	Sugandhipala	C
33.	<i>Tylophora indica</i>	Asclepiadaceae	Kukkapala	C

**v). Grasses:**

S.No.	Scientific Name	Family	Common Name	Status
34.	<i>Aristida ascensions</i>	Poaceae	Cheepurugaddi	C
35.	<i>Cynodon dactylon</i>	Poaceae	Garika	VC
36.	<i>Cyperus javanicus</i>	Cyperaceae	Thunga musthalu	VC

**vi). Aquatic Plants:**

S.No.	Scientific Name	Family	Common Name	Status
37.	<i>Hydrilla verticillata</i>	Hydrocharitaceae	Pacchimokka	R
38.	<i>Ipomoea cornea</i>	Convolvulaceae	Samudra pala	C
39.	<i>Phyla nodiflora</i>	Verbenaceae	Bokkenaku	UC
40.	<i>Typha angustata</i>	Typhaceae	Jambhu	C

**FAUNA**

S.No	Scientific Name	Common Name	Status
1	<i>Felis chaus</i>	Jungle cat	R
2	<i>Herpestes edwardsi</i>	Common mongoose	C
3	<i>Hystrix indica</i>	Porcupine	UC
4	<i>Lepus nigricollis</i>	Hare	C
5	<i>Ardeola grayii</i>	Indian Pond Heron	VC
6	<i>Bubulcus ibis</i>	Cattle egret	VC
7	<i>Egretta gazetta</i>	Small egret	VC
8	<i>Galloperdix spadicea</i>	Red spur fowl	C
9	<i>Gallus sonneratii</i>	Grey jungle fowl	C
10	<i>Naja naja</i>	Cobra	C
11	<i>Ptyas mucosus</i>	Rat snake	C
12	<i>Vipera ruselli</i>	Russels viper	UC
13	<i>Hemidactylus brooki</i>	Brook's Gecko	C
14	<i>Hemidactylus flaviviridis</i>	Northern house Gecko	C
15	<i>Calotes versicolor</i>	Common Garden Lizard	VC
16	<i>Calotes rouxi</i>	Forest Calottes	VC
17	<i>Sitana ponticeriana</i>	Fan-throated lizard	VC
18	<i>Mabuya carinata</i>	Common Skink	C

**\*A: ABUNDANT; C : COMMON; VC: VERY COMMON; UC: UNCOMMON; R: RARE**

There are no endemic / endangered flora & fauna species found in the Core Zone

**3.9.2 Flora & Fauna in Buffer Zone :**

Habitat: Buffer zone falls in forestland. The forest type is Dry deciduous mixed forest comprises vegetation in dense patches, scrubs and type formations.

## FLORA

### i). Trees:

S.No.	Scientific Name	Family	Common Name	Status
1.	<i>Acacia nilotica</i>	Mimosaceae	Nallatamma	C
2.	<i>Albizia amera</i>	Mimosaceae	Chikireni	C
3.	<i>Albizia lebbek</i>	Mimosaceae	Dirisina, Sirisa	C
4.	<i>Bambusa arundianacea</i>	Poaceae	Bongu Veduru	VC
5.	<i>Cassia auriculata</i>	Caesalpiniaceae	Thangedu	VC
6.	<i>Cassia fistula</i>	Caesalpiniaceae	Rela	C
7.	<i>Chloroxylon swietenia</i>	Flindersiaceae	Billudu	C
8.	<i>Diospyros melanoxylon</i>	Ebenaceae	Tuniki aku	C
9.	<i>Eucalyptus globules</i>	Myrtaceae	Neelagiri thailamu	UC
10.	<i>Ficus benamina</i>	Moraceae	Bembedu	UC
11.	<i>Ficus religiosa</i>	Moraceae	Raavi	UC
12.	<i>Limonia acidissima</i>	Rutaceae	Velaga	UC
13.	<i>Litsea glutinosa</i>	Lauraceae	Narra alagi	R
14.	<i>Morinda pubescens</i>	Rubiaceae	Toguru	R
15.	<i>Phoenix sylvestris</i>	Palmae	Eethachettu	C
16.	<i>Pithecelobium dulce</i>	Mimosaceae	Seemachinta	C
17.	<i>Pongamia pinnata</i>	Fabaceae	Kanuga	VC
18.	<i>Prosopi chilensis</i>	Mimosaceae	Thumma	C
19.	<i>Tamarindus indica</i>	Caesalpiniaceae	Chinta/Tamarind	C
20.	<i>Tectona grandis</i>	Verbenaceae	Teaku chettu	C

### ii). Shrubs:

S.No.	Scientific Name	Family	Common Name	Status
21.	<i>Acacia caesia</i>	Mimosaceae	Korinda	C
22.	<i>Agave americana</i>	Agavaceae	Kithanara	C
23.	<i>Alangium salvifolium</i>	Alangiaceae	Uduga	C
24.	<i>Barleria prionitis</i>	Acanthaceae	Mullagorinta	UC
25.	<i>Calotropis gigantea</i>	Asclepiadaceae	Jilledu	VC
26.	<i>Carissa carandas</i>	Apocynaceae	Wakkayalu	C
27.	<i>Cleistanthus collinus</i>	Euphorbiaceae	Nalla vadisa	C
28.	<i>Hyptis sueolens</i>	Lamiaceae	Konda tulasi	C
29.	<i>Ricinus communis</i>	Euphorbiaceae	Amudamu	C
30.	<i>Vitex negundo</i>	Verbenaceae	Vavili	VC
31.	<i>Wrightia tinctoria</i>	Apocynaceae	Palakodisa	C
32.	<i>Ziziphus mauritiana</i>	Rhamnaceae	Regu	C

### iii). Herbs:

S.No.	Scientific Name	Family	Common Name	Status
33.	<i>Croton banplandianum</i>	Euphorbiaceae	Kukkamirapa	C
34.	<i>Evolvulus alsinoides</i>	Convolvulaceae	Vishnukranthamu	C
35.	<i>Solanum surattense</i>	Solanaceae	Ramamulaga/Kasi	C
36.	<i>Tephrosea purpurea</i>	Fabaceae	Vempali	VC

### iv). Lianas (Climbers/ Woody climbers)

S.No.	Scientific Name	Family	Common Name	Status
37.	<i>Coccinea grandis</i>	Cucurbitaceae	Donda	C
38.	<i>Cuscuta reflexa</i>	Solanaceae	Akashavalli,	VC
39.	<i>Hemidesmus indicus</i>	Periplocaceae	Sugandhipala	C
40.	<i>Tylophora indica</i>	Asclepiadaceae	Kukkapala	C

v). Aquatic Plants

S.No.	Scientific Name	Family	Common Name	Status
41.	<i>Hydrilla verticillata.</i>	Hydrocharitaceae	Pacchimokka	C
42.	<i>Ipomoea cornea</i>	Convolvulaceae	Samudra pala	C
43.	<i>Phyla nodiflora</i>	Verbenaceae	Bokkenaku	C
44.	<i>Typha angustata</i>	Typhaceae	Jambhu	C

vi). Crops/Cultivated Plants

S.No.	Scientific Name	Family	Common Name	Status
45.	<i>Gossypium herbacium</i>	Malvaceae	Cotton	C
46.	<i>Mangifera indica</i>	Anacardiaceae	Mamidi	C
47.	<i>Zea maize</i>	Poaceae	Mokkajonna	C

**D. FAUNA:**

S.No.	Scientific Name	Common Name	Status
1	<i>Axis axis</i>	Chital or Spotted deer	C
2	<i>Felis chaus</i>	Jungle cat	UC
3	<i>Presbytis entellus</i>	Common langur	C
4	<i>Sus scrofa</i>	Wild boar	C
5	<i>Aeridotheres tristis</i>	Common myna	C
6	<i>Copsychus saularis</i>	Mag-pie robin	C
7	<i>Corvus splendens</i>	Common crow	VC
8	<i>Dicrurus adsimilis</i>	Black drogon	C
9	<i>Pitta branchyura</i>	Indian pitta	C
10	<i>Psittacula cupatria</i>	Large Indian parakeet	UC
11	<i>Psittacula krameri</i>	Rose ringed parakeet	UC
12	<i>Pycnotus cafer</i>	Redvented bulbul	UC
13	<i>Saxicoloides fulicata</i>	Indian robin	VC
14	<i>Streptopelia senegalensis</i>	Ring dove	C
15	<i>Turdoides curdatus</i>	Common babbler	VC
16	<i>Turdoides striatus</i>	Jungle babbler	VC
17	<i>Naja naja</i>	Binocllate cobra	C
18	<i>Sitana ponticeriana</i>	Fan throated lizard	VC
19	<i>Typhlina amina</i>	Common blind snake	VC

**\*A: ABUNDANT; C : COMMON; VC: VERY COMMON; UC: UNCOMMON; R: RARE**

As seen from the above list, there are no endemic or endangered species present in this zone.



7.	man way	15H	24H	15H	19H	15H	18H	15H	17H	15H	17H	15H	21H
8.	Pumping station	30H	39H	30H	35H	30H	41H	30H	37H	30H	36H	30H	41H
9.	Area under filling/stowing	10H	-	-	-	-	-	-	-	-	-	-	-
10.	Conveyors	NA											
	1.Transfer points and drive/tail end area	40H	40H	40H	40H	40H	40H	40H	40H	40H	40H	40H	40H
	2.along conveyor	20H	-	-	-	-	-	-	-	-	-	-	-
11.	Hand picking points	50H	48H	50H	53H	50H	51H	50H	46H	50H	48H	50H	51H
12.	Loco charging station	50H	NA										
13.	Underground garage/workshop	50H	NA										
14.	1)Electrical substation	100H,50V	94H,42V	100H,50V	57H,36V	100H,50V	61H,32V	100H,50V	59H,37V	100H,50V	54H,32V	100H,50V	87H,41V
	2)Other places of operations of electrical apparatus/equipment	20H,20V	-	-	-	-	-	-	-	-	-	-	-
15.	At every first –aid station	50H	53H	50H	56H	50H	54H	50H	48H	50H	44H	50H	52H



16.	Miners station/rest shelter	25H	28H	25H	31H	25H	29H	25H	35 H	25H	31H	25H	37H
17.	Coal handling plant	NA											
	places of crushing, screening, segregation and loading/unloading	NA											
	2) operation points	NA											
	3) other places (in general)	NA											
18.	Workshop at surface	NA											
19.	General working areas as determined by the manager in writing  1. Bit grinder and black smith	10H	13H	10H	12H	10H	15H	10H	11H	10H	13H	10H	10H

**H - HORIZONTAL**

**V - VERTICAL**

**NA - NOT APPLICABLE**

## SRP-3&3A Incline

### Major issues raised during public hearing-Commitments given by the project proponent along with timelines and monetary provisions

S. No.	Representation	Proponent Replies	Time Line	Fund Provision
1	Provide employment to educated youth and to conduct skill development training programmes in surrounding villages for un employed youth.	<p>About 2600 Jobs were provided to the un-employed youth of the surrounding villages in outsourcing jobs in mines/departments of Srirampur Area and will also continue to give priority in providing jobs to local youth in outsourcing and other contract jobs.</p> <p>Vocational training is also being imparted to the un-employed youth of nearby villages in various fields which helped them to secure jobs in army and police departments. So far 853 un-employed persons have been trained to get jobs in Army/Police jobs, out of which 70 persons appointed in Army/Police jobs.</p> <p>Further, SCCL is also providing necessary training to local villagers for skill development so that they can get employment/self employment. So far, about 1506 un-employed youth were given training in different fields like computer hardware &amp; software, fashion designer, bags making, beautician, tailoring, sari rolling, embroidery, screen printing, lamination, driving, army/police training and electrician etc., and will be continued as per the requirement of local youth.</p> <p>In future also, SCCL will provide necessary training to local people to improve their skill so that they can get employment and also give the priority in outsourcing jobs to the land losers and local people, wherever their services are required.</p>	Every year	Under CSR Policy

S. No.	Representation	Proponent Replies	Time Line	Fund Provision
2	Providing infrastructure developments like C.C. Roads (repair/new), street lighting, public toilets, RWS and parks, etc., to surrounding villages.	<p>Infrastructure development works are being carried out in the surrounding villages from the CSR funds allocated as per the Company Act @ 2% of the average profit for last three years. DMFT funds are being deposited with the district authorities as per the provisions of Mines and Minerals (Development and Regulation) Act, 1957 for taking up developmental works.</p> <p>Under CSR activities, about Rs.21.35 Crores were spent for different development activities like laying of roads, CC drains, street lighting, bore wells, drinking water supply, bore wells, construction/renovation of school rooms, construction of toilets and community halls etc. in the surrounding villages of Srirampur area under CSR and about Rs. 415.19 Crores were deposited with District Authorities towards DMFT fund for carrying the development activities in the surrounding villages of the project. CSR activities will be taken up in future as per the requirement of the surrounding villagers.</p>	Every year	Under CSR Policy
		Further, the following community development works under EMP will be taken up as requested in the public hearing of SRP-3&3A Incline with an amount of Rs.23 Lakhs (1% of the capital cost of the project) as per MoEF&CC O dated 30.09.2020.		
		i. 2 No's RO plant in Srirampur and Naspur Villages.	2 Years	18.0 Lakhs
		ii. Development of parks with open gym facility in Tallapalli Village.	1 Year	5.0 Lakhs
		In addition to the above works the following works will be taken up under RP&NCRAP of SRP-3&3A Incline in the surrounding villages as requested in the Public Hearing.		
		i. Solar Street Lighting in Srirampur Village.	2 Years	1.2 Lakhs

S. No.	Representation	Proponent Replies	Time Line	Fund Provision
		ii. Development of parks with open gym facility at Santhi Stadium of Srirampur Village	1 Year	1.03 Lakhs
		The following below mentioned works are being undertaken by SCCL under RP&NCRAP and as per the community development works under EMP for the surrounding IK-1A, RK-6, RK-5 & RK-8 Inclines for the development of the villages in the Srirampur area.		
		i. CC roads in Indaram village	3 Years	46.5 Lakhs
		ii. Repair/widening of existing road leading from SRP 3&3A mine to Royal Talkies and from CCC Guest house to RK-5 colony up to Highway at RK-5 Colony,	1 Year	26.0 Lakhs
		iii. RO Plant for safe drinking water at Ramaraopet, Kankur Gudipalli and Indaram villages.	3 Years	45.0 Lakhs
		iv. Development of parks with open gym facility at Kankur Village, Gudipalli Village, Naspur Village and Srirampur village.	3 Years	23.72 Lakhs
		v. Construction of Dhobi Ghat at Ramaraopet tank.	1 Year	6.0 Lakhs
		vi. Solar Street Lighting in Indaram village, Tekumatla village, along coal transport route from IK-1A Incline to SH-1, Ramaraopet village, Kankur Village, Gudipalli Village.	3 Years	41.0 Lakhs
		vii. Construction of community hall at Indaram village and Tekumatla village.	3 Years	62.0 Lakhs
		viii. Hand pumps with bore wells (15 no.'s) at Indaram village and Tekumatla village.	3 Years	15.0 Lakhs
		ix. Development of infrastructure in Govt. High school, Ramaraopet (Repair / new class rooms) at Ramaraopet village	1 Years	14.0 Lakhs
		x. Distribution of Tricycles to differently able people at Nearby villagers	1 Years	3.0 Lakhs

S. No.	Representation	Proponent Replies	Time Line	Fund Provision
3	Providing Medical facilities in the surrounding villages.	SCCL is conducting medical camps in surrounding villages of Srerampur area. Doctor with paramedical staff and medicines are being sent with Ambulance to Naspur, Srirampur, Indaram, Tekumatla, Ramaraopet, Singapur, Guttedarupalli and Thallapalli villages, one day in a week to each village and about 12,272 persons were benefited till date. SCCL will conduct free medical camps in future also under CSR activities.	Regularly	CSR policy
4	Air, water, noise pollution are effecting the surrounding villages and controlling measures shall be taken and monitoring shall be done as per statute.	All the controlling/mitigation measures are being implemented as mentioned in the EIA/EMP to reduce air, water and noise pollution in the mines and in the surrounding villages are being done as as mentioned in the EIA/EMP. SCCL is monitoring Air quality (PM <sub>10</sub> , PM <sub>2.5</sub> SO <sub>x</sub> and NO <sub>x</sub> ) surface water quality, ground water quality and noise levels in mines and in the 10 km buffer zone by EPTRI, Hyderabad and the results of all the parameters are well within the CPCB standards.	Continuous	99.06 Lakhs/Year
5	Green belt development in and around the project and surrounding villages to control pollution and development of gardens/parks in the nearby villages.	SCCL has taken up plantation covering an area of 1485 ha in Srirampur area which includes 51.70 ha of mine take area. In addition, 4 parks have been developed in this area and about 7.03 lakh fruit bearing and other local species saplings were distributed in the surrounding villages during the last five years. SCCL is also undertaking extensive plantation in the vacant land under Haritaharam and Vriksharopan Abhiyan programmes and it will be continued.	Every Year  Every Year	--  --

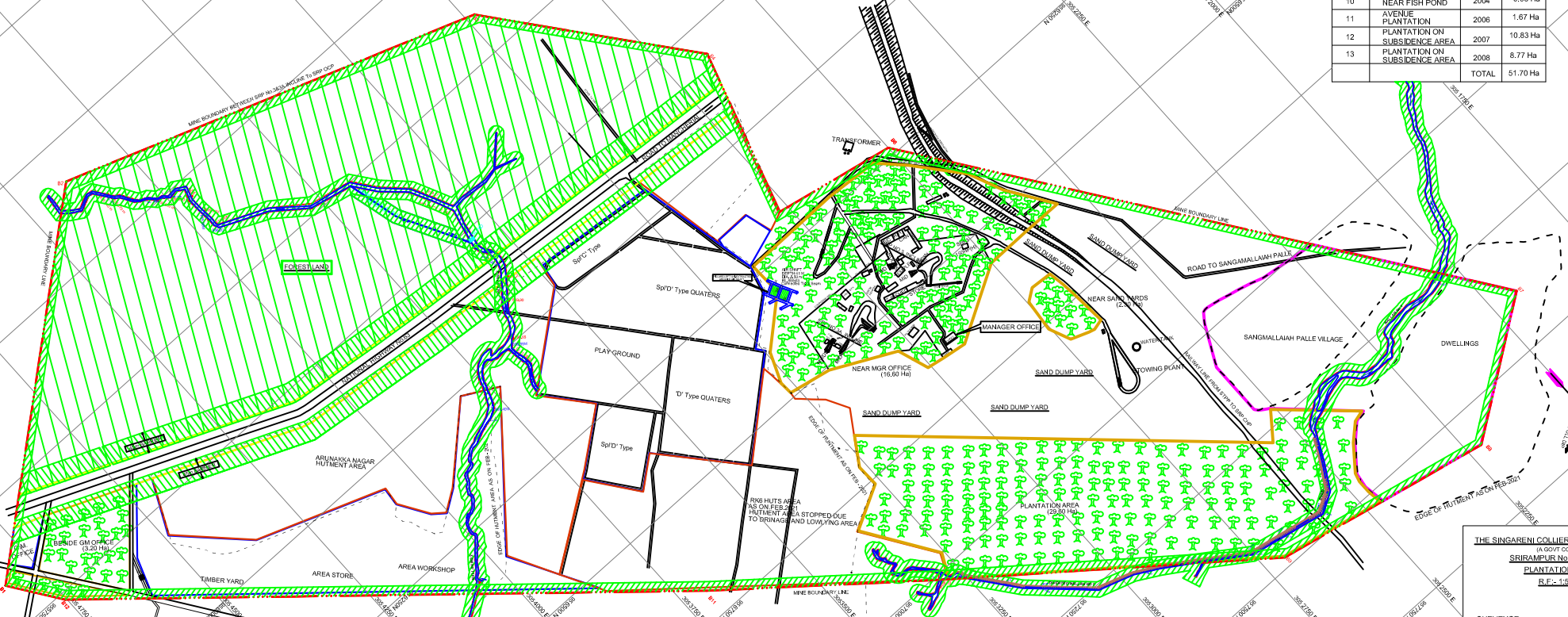
S. No.	Representation	Proponent Replies	Time Line	Fund Provision
6	<p>CSR and DMFT funds are to be spent in Project effected Villages and District Collector requested to see that the funds are properly utilized in the effected villages only.</p>	<p>SCCL is taking up infrastructure development works like lying of roads, construction of Drains, Sanitation, Education, Drinking Water Supply etc., in surrounding villages as a part of corporate social responsibility.</p> <p>CSR funds are allotted as per the Company Act and the funds allotted are 2% on the average profit of last three years. DMFT funds are deposited with district authorities as per the provisions of Mines and Minerals (Development and Regulation) Act, 1957.</p> <p>So far, an amount of Rs.21.35 Crores of CSR funds were spent for development activities in the affected villages like CC roads, digging of bore wells, repair of school buildings, water supply, free medical camps in past few years and SCCL will continue to develop the infrastructure facilities in the affected villages in future also under CSR.</p> <p>DMFT fund of about Rs.415.19 Crores deposited with the District Authorities. These funds were being utilized by District Collector in consultation with local MLA for development of the affected villages and SCCL will be requested District Authorities to spend the DMFT fund in surrounding villages.</p>	Every year	Under CSR funds and as per DMFT Rules

  
**Agent**  
 SRP Group of Mines  
 SCCL  
 AGENT  
 SRP-GROUP OF MINES

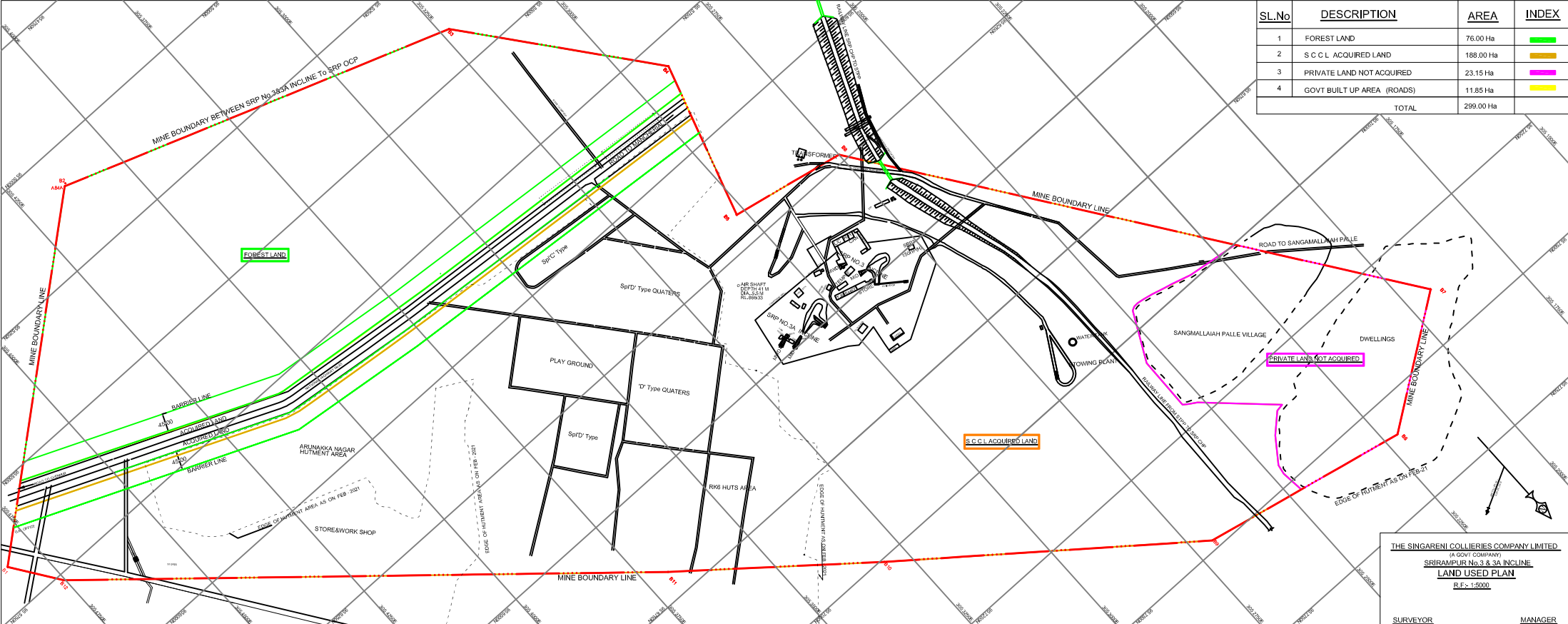

  
**General Manager**  
 Srirampur Area  
 SCCL  
*General Manager*  
 SRIRAMPUR

SL.No	DESCRIPTION	AREA	INDEX
1	FOREST LAND	76.00 Ha	█
2	S C C L ACQUIRED LAND	188.00 Ha	█
3	PRIVATE LAND NOT ACQUIRED	23.15 Ha	█
4	GOVT BUILT UP AREA (ROADS)	11.85 Ha	█
TOTAL		299.00 Ha	

	PRESENT LAND USE	AREA	INDEX	SL.No	LOCATION	YEAR	AREA
1	FOREST LAND	76.00 Ha	█	1&2	BEHIND MGR OFFICE	1993-94	10.00 Ha
2	S C C L BUILT UP AREA	39.00 Ha	█	3	BESIDE GM OFFICE	1994-95	3.20 Ha
3	HUTMENT BUILT UP AREA IN SCCL LAND	44.96 Ha	█	4	BEHIND CANTEN	1998-97	2.30 Ha
4	GOVT BUILT UP AREA (ROADS)	11.85 Ha	█	5	AIR SHAFT	1996-97	6.00 Ha
5	PRIVATE BUILT UP AREA (S.M.PALLE)	23.15 Ha	█	6	SUB STN	1996-97	2.70 Ha
6	PLANTATION AREA	51.70 Ha	█	7	NEAR SAND YARDS	1998-99	2.30 Ha
7	SAND DUMP YARD	52.34 Ha	█	8	NEAR GATE 1	2001	2.40 Ha
TOTAL		299.00 Ha		9	NEAR 3A SECTION	2003	0.60 Ha
				10	NEAR FILTER BED	2004	0.93 Ha
				11	NEAR FISH POND	2006	1.67 Ha
				12	AVENUE PLANTATION	2007	10.83 Ha
				13	PLANTATION ON SUBSIDENCE AREA	2008	8.77 Ha
				TOTAL			51.70 Ha



THE SINGARENI COLLIERIES COMPANY LIMITED  
 (A GOVT COMPANY)  
 SRIRAMPUR No.3 & 3A INCLINE  
 PLANTATION PLAN  
 S.F. - 1:5000  
 SURVEYOR MANAGER



SL.No	DESCRIPTION	AREA	INDEX
1	FOREST LAND	76.00 Ha	Green
2	S C C L ACQUIRED LAND	188.00 Ha	Orange
3	PRIVATE LAND NOT ACQUIRED	23.15 Ha	Pink
4	GOVT BUILT UP AREA (ROADS)	11.85 Ha	Yellow
TOTAL		299.00 Ha	

THE SINGARENI COLLIERIES COMPANY LIMITED  
 (A GOVT COMPANY)  
 SRIRAMPUR No. 3 & 3A INCLINE  
 LAND USED PLAN  
 S.F. - 1:5000  
 SURVEYOR MANAGER