



The Singareni Collieries Company Limited
(A Govt. Company)
Ramagundam – 1 area

Ref No: RGM/ENV/11C/1044

Date: 11.09.2025

To
The Member Secretary,
T.S.Pollution Control Board,
Paryavarana Bhavan,
A-3, Industrial Estate,
Sanatnagar, Hyderabad-500018.

Dear Sir,

Sub: Environmental statement in FORM – V under Rule No 14 of EPR'1986 Pertaining to Cluster of Godavarikhani No. 1&3 Incline and Godavarikhani Coal mine (No.2&2A and No.5) Opencast cum underground project of SCCL for the year 2024-25 – Reg.

Ref: Consent Order No.220523435879, Dated.18.02.2022.

With reference to the above, please find enclosed here with the Environmental statement pertaining to Cluster of Godavarikhani No. 1&3 Incline and Godavarikhani Coal Mine (No.2,2A and No.5) Opencast cum underground project of RG.I Area.

Thanking you,

Yours faithfully,

No

Project Officer/
GDKCM(No.2&2Aand No.5)
Ramagundam –I Area

Encl: As above.

Cc to: Environmental Engineer,
TS Pollution Control Board,
R/O. Ramagundam,
Quarter no. special C-3, TTS, NTPC,
Near Zilla Parishad High School,
Jyothinagar-505215, Peddapalli(dist), TS.
GM/RG.1



**THE SINGARENI COLLIERIES COMPANY LIMITED
(A GOVERNMENT COMPANY)
RAMAGUNDAM AREA-I**

**Annual Environmental Statement for Cluster of Godavarikhani No. 1&3 Incline and
Godavarikhani Coal Mine (No.2,2A and No.5) Opencast cum underground project
for the Year 2024-25**

Location of the Mine:

The GodavariKhani-1&3 (GDK-1&3) Incline is a working mine in Ramagundam Area -I of Singareni Collieries Company Limited (A Govt.Company).

GDK-1&3 Incline is located in the Northern part of Ramagundam Block of coal belt of Godavari Valley Coal Field (GVCF). The mine is located around 14 km from Ramagundam Railway station on Kazipet – Ballarsha line of south central railway in Peddapalli District of Telangana State and it is at a distance of 220 km from Hyderabad. GDK-1&3 Incline is lying in between North Latitude of N 18⁰45'24" to 18⁰46'53" and East Longitude of E 79⁰30'25" to 79⁰32'29" in Survey of India Topo sheet No. 56N/10.

Status of the project:

The GDK-1&3 Incline underground coal mine was started on 28-02-1959 and producing coal since 1961. It has produced 3.44 LT of coal production during 1993-94(EC Sanctioned capacity) and has achieved a max production of 4.04 LT in the year 2000-01. Public hearing was conducted on 28.11.2019 under violation category. The GDK-1&3 mine is being worked with conventional Board & Pillar method by hand section drills and semi-mechanization by using SDL's. The total coal produced from this mine since inception is 21.263 MT. This mine has produced 1,35,646 tonnes of coal during the year 2024-25.

Size of the project:

The total mine take area of GDK-1&3 Incline mine is 541.66 Ha Out of which 195.538 Ha is SCCL acquired land

CLIMATE

Description of Meteorological Station and Equipment

As per the CPCB guidelines on methods of monitoring and analysis, an automatic meteorological station was installed on the top of GM Office RG.1 Area for monitoring of the micro-meteorology for the Post Project Environmental Monitoring. The equipment has sensors to record wind speed, wind direction, rainfall, relative humidity and ambient temperature at predefined intervals ranging from 20 seconds to one hour intervals. The data logger provided in the instrument would facilitate downloading of the meteorological data on to the Computer with the help of the software provided. The meteorological data was recorded on hourly basis for the study period for the parameters of wind direction, wind speed, temperatures, relative humidity and rainfall

Topography

Topography:

The area is mainly flat to gently sloping towards river Godavari. The average mean Sea Level of the mine is 152.885 m (varies from 150m to 170m). The river Godavari is flowing from North-West to South- East at a distance varying from 2.5 Km to 5 Km.

Mining and allied activities:

There are 3 underground mines in this Area GDK1&3, GDK-2&2A, GDK-11A and one Opencast mine named GDK CM(No.2&2a and No.5) Opencast cum underground mines.

Process involved in coal production:

Unlike in the other industries, no chemical process or burning of fuel is involved in the process of coal extraction. Coal is blasted by using explosives and lifted into tubs by semi Mechanization in underground. The loaded coal tubs are transported to the tippler through a network of rope haulage, Conveyor and tipped into the bunker. From bunker the coal is transported to storage bunkers through belt conveyors and from surface bunkers to Coal Handling Plant (CHP) by trucks. Coal from CHP is transported to different consumers through railway wagons and trucks.

The seepage water from underground workings is collected at sumps. After settling the water is pumped out to surface filter bed. The mine water is being used for different purposes like drinking, washing, water spraying after treating the water by passing through settling tanks, filter beds and chlorination. Some of the water is used for plantation and sand stowing. The excess mine water is let out on surface, some of which is used directly for cultivation by the villagers nearby and remaining water reaches nearby irrigation tanks. The waste water generated at mine's ancillary units is negligible which is mainly used for plantations.

Water discharge from mines depend upon the specific yield of the aquifer potential, the source of recharge, extent of mine workings in the aquifer and other factors rather than coal output.

Rivers, nallahs, tanks within 5 km radius of RG-I Area: Godavari River, Janagaon irrigation tank, Sundilla irrigation tank, Jallaram tank, Yerra cheruvu and Jallaram vagu.

Industrial activities other than RG-I mining activities within 10km radius:

- SCCL: RG-II Area mines and Ramagundam opencast mines
- Other than SCCL: 2600 MW Power Plant of NTPC, 62.5 MW. Power Plant of TS GENCO, 10MW Solar Power Project, Brick Kilns, Pottery Kilns, Tiles Kilns, Stone crushers, Godavarikhani Bus Depot & Bus station, National High way, SCCL Railway Sidings etc.

Land use pattern in the surrounding areas: Industrial, agricultural lands both wet and dry waste land and fallow lands, settlements, residential colonies, tanks and nallahs, roadways and railway sidings.

The major sources of water for irrigation in this area are tanks, streams, SRSP canals, mine discharge water and domestic effluents let out from townships.

Brief note on GDK.2&2a Incline:

Brief Note about Godavarikhani-2&2A incline

GDK 2&2A mine is one of the working underground mine of RG.I area. GDK 2 mine was started on 09.12.1959 and GDK 2A on 02.10.1974. These two mines have been converted into a single mine called GDK 2&2A under the control of one Mine Manager. This mine is covered under South Godavari Mining Lease and total mine take area is 282.76 Ha.

The total coal produced from this mine since inception is 16.81 MT. This mine has produced 1,32,998 tonnes of coal during the year 2024-25

SITE LOCATION:

The GDK 2&2A mine is located near Janagam village of Ramagundam mandal, peddapalli district in T.S. The mine take area is bounded in between latitudes 18°45'37" to 18°45'40" and longitudes 79°31'21" to 79°32'30" covered in survey of India topo sheet No.56/10. The mine is about 12 KM away from Ramagundam Railway station. The area is well connected with roadways to the Mandal Headquarters, district headquarters and state capital.

The project area is surrounded by Janagam village on north east side, Sundilla village on East side, and a tank & fields in between, Godavarikhani town on South west side and GDK1 incline Mine on north and west sides. Surrounding villages falling within 3 Kms distance of the mine are Janagam village, Sundilla village Ramagundam Muncipal area, Mutyala village and Singireddypalli village

Description of Meteorological Station and Equipment

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Topography:

The area is mainly flat to gently sloping towards river Godavari. Mean Sea Level is 150.74 m. The river Godavari is flowing from North-West to East at a distance varying from 1.0 Km to 1.5 Km.

Process involved in coal production:

Unlike in the other industries, no chemical process or burning of fuel is involved in the process of coal extraction. Coal is blasted using explosives and lifted into tubs by manual in underground. SDL machines (12 No's) are also used for loading the coal in to tubs. The loaded coal tubs are transported to the tippler through a network of rope haulage and tipped into the bunker. From surface bunkers coal is transported in trucks to Coal Screening / Coal Handling Plants by trucks. From Coal Handling plant coal is transported to different consumers through railway wagons and trucks.

The seepage water from underground workings is collected at sumps. After settling, the water is pumped out to surface filter bed. The mine water is being used for different purposes like drinking, washing, water spraying after treating the water by passing through settling tanks, filter

beds and chlorination. Some of the water is used for plantation and sand stowing. The excess mine water is let out on surface, some of which is used directly for cultivation by the villagers nearby and remaining water reaches nearby irrigation tanks. The waste water generated at mine's ancillary units is negligible which is mainly used for plantations.

Water discharge from mines depend upon the specific yield of the aquifer potential, the source of recharge, extent of mine workings in the aquifer and other factors rather than coal output.

Rivers, nallahs, tanks within 5 km radius of RG-I Area:

Godavari River, Janagaon irrigation tank, Sundilla irrigation tank, Yerra cheruvu and Jallaram vagu.

Industrial activities within 10km radius:

- SCCL: Underground and opencast mines of SCCL.
- Other than SCCL: 2600 MW PP & 10MW solar power project of NTPC, 62.5 MW. Power Plant of TSGENCO, Nos. of Brick Kilns, Pottery Kilns, Tiles Kilns, Stone crushers, Godavarikhani Bus Depot & Bus station, National High way, SCCL Railway Sidings etc.

Land use pattern in the surrounding areas:

Industrial, agricultural lands both wet and dry waste land and fallow lands, settlements, residential colonies, tanks and nallahs, roadways and railway sidings.

The major sources of water for irrigation in this area are tanks, nallahs, SRSP canals, mine discharge water and domestic effluents let out from townships.

Brief Note on GDKCM(No.2&2A and No.5) :-

Annual Environmental Statement of GDKCM(No.2&2A and No.5) for the Year 2024-25

Brief Note on GDKCM(No.2&2A and No.5)

Godavarikhani Coal Mine (No2&2A and No5) opencast project was approved by Government of India vide Lr.No.38011/12/2017-PCA, dated. 22nd April, 2019 at an estimated capital cost of Rs.506.44 Crores, for a targeted annual output of 3.00 Mt. and 4.0Mt in peak with a project life of 15 years. This approval was based on the feasibility report (FR) submitted by SCCL to the Department of Coal. The Environmental Clearance for this project was issued Vide Lr.No.EC21A042TG137078 dated.01-12.2021 for a rated capacity of 3.0 MTPA and Peak 4.0MTPA.

The total coal produced from this mine since inception is 11.27 MT. This mine has produced 3.990 tonnes of coal during the year 2024-25

The coal produced from this proposed project is being transported to RG.1 CHP located in Ramagundam region. Coal is also dispatched to different consumers by road.

Location

Godavarikhani Coal Mine (No.2& 2A and No.5) is located in Janagama Village, Vittalnagar Post, Ramagundam Mandal in Peddapalli District of Telangana State. The mine area is covered in the Topo sheets No.56N/9, 56N/10 of Survey of India and bounded by North latitudes 18° 42' 25" to 18° 45' 45" and East longitude E 79° 31' 09" to 79° 33' 11". The mine covers an area of 1385.47Ha.

The block is situated North East of the Godavarikhani town at a distance of 3.0Km. The nearest Railhead is Ramagundam Railway Station, which is at a distance of about 12 Km. and established on Kazipet- Balharshah section of South Central Railway. The mine area is well connected with both the district headquarter, Peddapalli and state Capital, Hyderabad which are at a distance of about 30km and 225km respectively. Nearest airport is Shamshabad, Hyderabad at a distance of about 270km. The mine area is well connected with Godavarikhani Bus-stand at a distance of about 4km. The proposed project belongs to Ramagundam area.1 of Ramagundam Region SCCL.

Topography and Drainage:

Proposed project area has flat terrain underlain by sandy soil and weathered sand stone. The topographic elevation varies from 161 m to 138 m above MSL with general ground slope towards north and northeast. The ground slope is about 8m/km. The drainage of the proposed project area is of dendritic pattern. The drainage density is about 2.20 km/km². The surface drainage of the project area is affected by two ephemeral Nallahs viz. Nallah No.1 and Nallah No.2. These two are diverted North east of the project.

The area is generally an open scrub land with sparse vegetation. The Singareni Collieries Company Ltd. (SCCL) has grown Eucalyptus trees in most of its leasehold area. Hence, most of the area is covered by plantation and grazing land. Structures like main magazine building and service buildings of GDK No. 2&2A Incline and GDK No. 5 Incline are present over the area.

CLIMATE

Description of Meteorological Station and Equipment

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Summary of Micro-Meteorological data generated for the entire study period (April 2024 - March 2025)

S.No	Parameter (s)	Min	Max	Mean
1.	Temperature (°C)	13.3	43.6	29.07
2.	Wind Speed (m/s)	Calm (%) 16.64	9.0	1.4
3.	Relative Humidity (%)	8.5	99.9	34.29
4.	Predominant Wind direction for the study period	North East (NE), followed by North West (NW)		
5.	Total Rainfall (mm)	634.4		

The predominant wind direction is blowing from North East (NE), followed by North West (NW) winds and Calm conditions prevailed is 16.64% of the time during this period. The maximum wind speed recorded was 9.0 m/s. The maximum temperature recorded was found to be 43.6°C, while the minimum temperature was 13.3°C and the average temperature is 29.07°C. The average relative humidity was found to be 34.29%. The Total rainfall observed during this season is found to be 634.4mm.

FORM-V
(RULE NO.14 OF EPR 1986)

Environmental statement for the financial year ending the 31st March 2025 of Cluster of Godavarikhani No. 1&3 Incline and Godavarikhani Coal Mine (No.2,2A and No.5) Opencast cum underground project

PART-A

General

S.No.	Particulars	Details
1	Name and address of the Owner/Occupier of the industry/operation or process	Project Officer , (GDKCM(No.2&2a and No.5) Godavarikhani No. 1&3 Incline and Godavarikhani Coal Mine (No.2&2A and No.5) Opencast cum underground project, The Singareni Collieries Company Ltd P.O. GDKCM(No.2&2a and No.5 Mandal; Ramagundam,Dist; Karimnagar Pin 505209.Tele phone:08728-272964/65 Fax-08728-272954
2	Industry category	Opencast Project (Coal)
3	Production capacity	GDK.1&3 Inc-2.0Lakhtons/year, GDK.2&2a-.2.80Lakh tonnes/year GDKCM(No.2&2a and No.5)- 3.0M.t peak 4.0M.t
4	Year of establishment	GDK.1&3 Inc- 1959, GDK.2&2a Inc- 1959, GDKCM(No.2&2a and No.5)-2022
5	Date of last Environmental statement submitted	07.11.2024

Sl.no	Item	Unit	2024-25		
			GDK.1&3	GDK.2&2A	GDKCM(No.2&2a and No.5)
1	Total coal production	Lakh Ton	1,35,646	1,32,998	39.93
2	Output per man shift	Tonne	0.66	0.56	35.93
3	Total Overburden removed	LCu.m	-		250.94
4	Total men on roll	No	1010	1150	413

PART-B

a. Water Consumption details (as per CFO)

S.No	Activity wise Water Utilization	2024-25		
		GDK.1&3 Inc	GDK.2&2A	GDKCM(No.2&2a and No.5)
1	Sand stowing & Dust suppression	1800	4008	4865
2	Gardening	46	150	5
3	Water supply to nearby villages/colonies	1634	-	10
4	Domestic	545	-	20
(Mine pumping in KLD) Total		4025	4158	4900

b.Raw Material Consumption:**GDK.1&3 Incline:**

Sl.No	Description	Unit	2023-24	2024-25
1	Cement	Bags	5.27	7.31
2	Cement Capsule	No`s	379.66	381.51
3	Resin Capsule	No`s	190.33	311.18
4	O2 Gas Cylinder	No`s	1.16	1.66
5	DA Gas Cylinder	No`s	0.51	0.72
6	Chocks	No`s	91.89	97.26
7	P.V.C Conveyor Belt	Meter	3.55	1.47
8	Roof Bolts	No`s	148.43	213.05
9	Stone Drill Bits 43mm Tough	No`s	18.41	24.02
10	Stone Drill Bits 43mm EXT Tough	No`s	-	0.00
11	Coal Drill Bits 43mm EXT Tough	No`s	1.18	34.74
12	Coal Drill Rod 6.F.T 40mm	No`s	0.98	1.08
13	Stone Drill Rod 4 F.T 40mm	No`s	0.48	1.03
14	Stone Drill Rod 6 F.T 40mm	No`s	-	0.00
15	Stone Drill Bits 27mm	No`s	8.41	9.16
16	Dag Nails	Kg	13.61	26.54
17	Grinding wheel C60	No`s	2.04	2.33
18	Haulage Rope 22mm	Metre	-	11.06
19	Shovel round nose	No`s	-	0.11
20	Cap Lamp batteries	No`s	0.59	0.81
21	Bamboo thatties	No`s	23.67	97.68
22	Bamboo Basket	No`s	-	0.00
23	Cane Basket	No`s	0.59	0.07
24	Eucalyptus Props	No`s	1.18	0.44
25	Brattice cloth	Metre	4.14	2.58
26	Stemming Rods	No`s	0.41	2.06
27	Taper wedges	No`s	11.84	33.17
28	Sprags	No`s	6.27	22.85
29	6 Ft Plank	No`s	0.59	1.84
30	Shovel Handle	No`s	1.48	8.11
31	Lubrex 320 Oil	Ltr	3.73	15.48
32	Lubrex 460/Palex 460 oil/Protomac L460	Ltr	7.46	23.96
33	Sermesh Sp 320 oil	Ltr	0.83	0.00
34	Serve Mp Mp2 oil	Kg	-	0.00
35	H.F.B oil	Ltr	155.36	107.45
36	Servomesh Sp 460 oil	Ltr	-	0.00
37	Servo System Enclo 68 (oil)	Ltr	-	3.83
38	HFDUD-68 OIL(Fire resist Hydr fluid	Ltr	8.70	10.84
39	SER HYD100/POW FLD LTP100/PRTMAC H100SPL	Ltr	1.24	0.00
40	SERVOGEM EP2GR/LITHON EP2/LITHREX EP2 UG	Kg	3.34	5.37
41	SERVO MP/HP MP2 GREASE	Kg	-	0.00
42	Explosives	Kg	317.59	287.99
43	Detonators	No`s	700.81	609.56
44	Short firing cable	Metre	20.12	30.96
45	MS HRH Bolt & Nut	Kg	0.62	30.87

GDK.2&2Alncline:

SI.No	Description	Unit	2023-24	2024-25
1	Cement	Bag	4.190	7.293
2	Cement Capsule	No`s	620.152	1051.144
3	Resin Capsule	No`s	127.863	290.794
4	O2 Gas Cylinder	No`s	1.099	1.910
5	DA Gas Cylinder	No`s	0.284	0.579
7	C Chocks	No`s	115.859	392.607
8	P.V.C Conveyor Belt	M.T.R	-	0
9	Roof Bolts	No`s	108.712	234.214
10	Stone Drill Bits 43mm Tough	No`s	-	0
11	Stone Drill Bits 43mm EXT Tough	No`s	23.400	29.549
12	Coal Drill Bits 43mm EXT Tough	No`s	23.460	39.256
13	Coal Drill Rod 6.F.T 40mm	No`s	0.884	1.293
14	Stone Drill Rod 4 F.T 40mm	No`s	0.432	0.399
15	Stone Drill Rod 6 F.T 40mm	No`s	0.046	0
16	Stone Drill Bits 27mm	No`s	1.629	6.391
17	Dag Nails	K.G	18.62	32.707
18	Grinding wheel C60	No's	2.141	3.045
19	Haulage Rope 22mm	M.T.R	-	45.113
20	Shovel round nose	No`s	2.327	0.188
21	Cap Lamp batteries	No`s	1.304	0.474
22	Bamboo thatties	No`s	38.186	183.732
23	Bamboo Basket	No`s	-	0.263
24	Petrol	L.T.R	1.229	2.436
25	Eucalyptus Props	No`s	3.492	7.481
26	Brattice cloth	M.T.R	8.846	8.271
27	Stemming Rods	No	0.628	2.105
28	Taper wedges	No	5.586	12.782
29	Sprags	No	3.957	10.526
30	6 Ft Plank	No	0.512	1.880
31	Shovel Handle	No	0.233	0
32	Lubrex 320 Oil	L.T.R	2.933	1.579
33	Lubrex 460/Palex 460 oil/Protomac L460	L.T.R	2.933	7.895
34	Sermesh Sp 320 oil	L.T.R	4.88	1.579
35	Serve Mp Mp2 oil	K.G	-	0
36	H.F.B oil	L.T.R	42.041	62.896
37	Servomesh Sp 460 oil	L.T.R	2.933	0
38	Servo System Enclo 68 (oil)	L.T.R	-	0
39	HFDUD-68 OIL(Fire resist Hydr fluid	L.T.R	37.153	48.948
42	SERVO MP/HP MP2 GREASE	K.G	4.236	2.737
43	Explosives	K.G	395.713	330.035
44	Detonators	No`s	791.825	652.611
45	Short firing cable	M.T.R	19.554	28.572
46	MS HRH Bolt & Nut	K.G	-	3.384
47	Sand/Bottom Ash/POB used for stowing in mines	Cum.	830.541	697.719

Note: There is no process involved in the extraction of coal. Coal reserves hidden under the Earth crust are extracted by making an entry from surface through over lying strata. Raw material consumption varies from mine to mine depending upon the geological conditions, depth, extent of mine workings, method of working etc. Explosives are used for blasting the coal. Different types of machinery are used for drilling, coal transportation, ventilation and water pumping. Timber is used for supporting the roof strata. Girders, roof bolts, Channels are used for supporting the roof and sides. Rails, and dog nails are used for track laying. Tubs are used for a carrying the coal, cement, sand. Masonry stone and bricks are used for construction of ventilation and fire stopping. Diesel oil

is used for coal transportation and other conveyance vehicles on surface. Lubricating oils, gear oil, grease, engine oil and transforms oil is used for the maintenance of machinery in underground and surface. Sand is used for masonry works and filling of the voids in underground where coal is extracted.

GDKCM(No.2&2a and No.5) Opencast cum underground Project

Sl.No	Item	Unit	2025
1	a)Explosives for OB (per m ³ of OB) b)Explosives for Coal (per tonne of Coal)	Kgs	1.974 (12711609 Kgs) 12.78 (163650 Kgs)
2	Lubricant per Cum	Ltrs	
3	Diesel oil in liters Per Cu.m	Ltrs	1.264 (19847000 Ltrs)

Note: Raw material consumption like explosives, diesel oil, electric power and others are depend up on the stripping ratio, depth of coal reserves under earth cover, inclination of the seams, nature of rock strata, distance of dump yards and coal handling plant from the mine, method of working and technology adopted etc. Hence raw material consumption varies from mine to mine and time to time.

PART-C **POLLUTION GENERATED:**

Water Pollution sources and control:

The sources of water pollution at mines are mine discharge water and small amount of wastewater, generated in the Canteen, Service buildings / Offices, Workshops. The wastewater generated from these units other than mine water hardly reaches any water body and most of this water is diverted / used for plantation.

The mine discharge water mainly contains suspended solids and may also contain more dissolved solids compared to surface water. Dissolved solids content varies in mine water as per the chemical composition of the strata through which water percolates.

The mine seepage water is collected at specified locations called sumps from where the water is pumped out to surface filter beds. After passing through settling tanks and filter beds the water is used for drinking, washing and water spraying. Some of the water is used for plantation and sand stowing. Excess water is let out on surface which joins nearby irrigation tanks viz. Janagam tank, some of this excess water let out on surface is used for cultivation by the nearby villagers before joining the tanks.

. All the parameters in the excess water let out on surface are within the prescribed limits given in the Water consent order.

Analysis report of GDK-1&3 mine discharge& GDK.2&2a mine water samples collected during the year 2024-25 is enclosed herewith as **Annexure –II**.

AIR POLLUTION SOURCES:

Main sources of Air Pollution are loading and unloading operations at mines and Coal Handling Plant, coal transportation activities and stock coal heaps on surface. All these sources are fugitive in nature and as they are scattered all over the area, emissions cannot be measured near the sources unlike in point sources like boiler chimney, coke oven plants etc.

Air pollution control measures:

1. Water spraying arrangements are made and used for dust suppression near surface tippers, loading and unloading points at mines and Coal Handling Plants. Water spraying arrangements made at all conveyor transfer points, crushing points in Coal Handling Plant and also within the premises of mines and Coal Handling Plant.
2. The entire coal transportation route is asphalted to control the raising of dust while vehicles are passing.
3. Plantation rose on both sides of coal transportation route, around coal handling plants and mines and also over the vacant places available.

The Ambient air samples collected in and around GDKCM(No.2&2a and No.5) Opencast cum underground project in the year 2024-25 shows that PM₁₀, PM_{2.5}, SO₂, NO_x are within the limits in most of the samples. A statement of the ambient air quality in and around GDK-1&3 during the year 2024-25 is enclosed herewith as **Annexure-I**.

Land management and land use status:

GDK.1&3 Incline:

SI.No		Area in Ha. (2023-24)	Area in Ha. (2024-25)
1.	TOTAL MINE TAKE AREA	541.66	541.66
2.	Total Acquired land	195.538	195.538
	➤ Private land	137.272	137.272
	➤ Govt. land	58.2658	58.2658
	➤ Forest land	Nil	Nil
3			
a	Mine pithead infrastructure area	4.321	4.321
b	Infra structure for area administration (workshop, MVTC, CHP etc)	5.6	5.6
c	Approach roads	13.106	13.106
d	Townships /colony	6.0	6.0
e	sand stowing plant/sand stock area	21.7623	21.7623
f	Existing plantations	80.24	80.24
g	Proposed plantation area (most of this land is under cultivation)	-	-
h	Any other (Ashponds-44.23ha +Sammakka temple-8.63 ha+ grave yard -2.0 ha)	54.8687	54.8687
i	Peripheral area (Pvt & govt aquired lands)	9.64	9.64

GDK.2&2a Incline:

SI.No.		Area in Ha 2023-24	Area in Ha 2024-25
1.	TOTAL MINE TAKE AREA	282.76	282.76
2.	Total Acquired land	201.97	201.97
	➤ Private land	11.07	11.07
	➤ Govt. land	69.72	69.72
	➤ Forest land	Nil	Nil
3.	Land use details of acquired land in Ha		
a	Mine pit head infrastructure area	4.321	4.321
b	Infrastructure for area administration (workshop, MVTC, CHP etc)	5.6	5.6
c	Approach roads	13.106	13.106
d	Townships /colony	6.0	6.0
e	sand stowing plant/sand stock area	21.7623	21.7623
f	Existing plantations	80.24	80.24
g	Proposed plantation area (most of this land is under cultivation)	-	-
h	Any other (old garbage yard and peripheral area along nallah and tanks)	54.8687	54.8687
i	Peripheral area (Pvt & govt aquired lands)	9.64	9.64

GDKCM(No.2&2a and No.5) Opencast cum underground project**C) Present land use details of the 1385.47Ha of GDKCM(No.2&2A and No.5) up to 31.03.2025**

.No.	Land use	Area in Ha.
1	Quarry	177.72
2	O.B dumps and garland canals	160.70
3	Road & Transmission lines	40.66
4	Coal handling plant	2.57
5	Store and workshop	2.30
6	Office building and others	1.74
7	Township	
8	Rehabilitation	
9	Nallah & Tank etc.	31.67
10	Planted area, and peripheral area	210.15
11	Indirectly effected area/safety zone/peripheral area	0
12	Surface area blocked due to any other mining activity(specify)	0
13	Flood protection bund	0
14	Other vacant land proposed for plantations	0

4. SUBSIDENCE MANAGEMENT DETAILS:**GDK.1&3 Incline:****(a) Total seam wise area developed (including Depillaring area) as on 31.03.2025**

Sl. No.	Seam	Area in Ha.	Depth(m)		Total Thickness(m)	Working height(m)
			Min	Max		
1	1 seam	141.706	25	275	6.0	4.50
2	2 seam	160.215	25	320	3.70	3.70
3	3A SEAM	169.239	35	325	1.5 to1.80	1.5 to1.80
4	3 seam	0.428	297.096	339.56	8 to10	2.8
5	4 seam	5.606	169	350	3.66 m	2.8

(b) Seam wise area depillared so far since inception: as on 31.03.2025

Sl. No.	Seam	Area in Ha.	Total Thickness(m)	Working thickness(m)	Caving	Stowing
1	1 seam	141.706	6.00	4.50	Caving	Stowing
2	2 seam	160.215	3.50	3.40	Caving	Stowing
3	3A SEAM	169.239	1.50 to 1.80	1.5 to 1.80	Caving	Stowing
4	3 seam	258.876	8.0 to 10.0	4.5	Nil	Stowing
5	4 seam	141.270	3.66	3.66	Nil	Stowing

GDK.2&2A Incline:**(a) Total seam wise area developed (including Depillaring area) so far i.e: 31.03.2025**

Sl.No.	Seam	Area in Ha.	Depth (m)		Total Thickness(m)	Working height(m)
			Min.	Max.		
1	1 S	278.535	30	220	4.0 to 6.0	2.40
2	2 S	204.998	40	380	3.5 to 4.0	2.40
3	3A S	119.500	35	285	1.6 to 1.8	1.60
4	3 S	203.139	35	420	7.0 to 8.0	2.80
5	4 S	174.589	35	450	3.5 to 4.0	2.80

b) Total seam wise area depillared so far since inception: as on 31.03.2025

Sl.No.	Seam	Area in Ha.	Depth (m)		Total Thickness (m)	Working thickness (m)	Caving	Stowing
			Min	Max				
1	1 S	169.020	30	220	5.98	4.50	153.685	15.335
2	2 S	229.807	40	380	3.80	3.66	178.150	51.657
3	3A S	55.300	35	285	1.60	1.60	55.300	-
4	3 S	102.974	35	420	7.70	4.00	29.600	73.374
5	4 S	83.568	35	450	4.11	4.11	18.230	65.338

GDKCM(No.2&2a and No.5) Opencast cum underground project: Not Applicable**Subsidence Management****GDK1&3 Incline:**

		2024-25	
A	Total area affected due to subsidence during the year 2024-25	Nil	
B	Max crack width observed	Nil	
C	Max subsidence occurred	Nil	
D	Whether the vegetation effected if any	Nil	
E	If affected, give details	Nil	
F	Total man shifts worked in subsidence area for crack filling and dozing	Nil	
G	Total dozer shifts worked for subsidence reclamation	Nil	
H	Area filled up with OB/ subsoil material in ha	Nil	
I	Quantity of OB/ Subsoil dumped: in L.cu.m.	Nil	
J	Maximum height of dump:	Nil	
k	Total Subsidence area planted during the year 2024-25.	Nil	
L	Total expenditure incurred on subsidence area treatment	Nil	
M	Quantity of O.B. dumped over subsidence area during the year 2024-25 and amount spent	Nil	
N	Quantity of POB stowed in cu.m during the year 2024-25 and amount spent	42,341.371	Rs.5,67,371.96/-
O	Quantity of Bottom Ash/Sand stowed in cu.m during the year 2024-25 and amount spent.	55,928.711	Rs.4642009.67/-

GDK.2&2a Incline:**(c)Subsidence Management**

	2024-25
a. Total Area Affected due to subsidence in ha.	Nil
b. Max crack width observed	Nil
c. Max subsidence occurred	Nil
d. Whether the vegetation effected if an	Nil
e. Whether the vegetation effected if any	Nil
f. If affected, give details	Nil
g. Total man shift worked in subsidence area for crack filling and dozing	Nil
h. Total dozer shifts worked for subsidence Reclamation during last six months.	Nil
i. Area filled up with OB/ subsoil material in ha	Nil
j. Quantity of OB/ Subsoil dumped: in L.cu.m.	Nil
k. Maximum height of dump:	Nil
l. Total Subsidence area planted in ha.	Nil
m. expenditure incurred on subsidence area treatment during 2024-25	Nil
n. Quantity of O B dumped over subsidence area during the year 2024-25	Nil
o. Quantity of sand stowed during the year 2024-25 and Amount spent up to March 2025	92,795.242 Cum. Rs.1,27,87,230.16

GDKCM(No.2&2a and No.5) Opencast cum underground project :

		2025
A.	Total area affected due to subsidence during the year 2025	NA
B.	Max crack width observed	NA
C	Max subsidence occurred	NA
D	Whether the vegetation effected if any	NA
E	If affected, give details	NA
F	Total man shifts worked in subsidence area for crack filling and dozing	NA
G	Total dozer shifts worked for subsidence reclamation	NA
H	Area filled up with OB/ subsoil material in ha	170.77
I	Quantity of OB/ Subsoil dumped: in L.cu.m.	250.94
J	Maximum height of dump:	120
k.	Total Subsidence area planted during the year 2025	NA

L	Total expenditure incurred on subsidence area treatment	NA
M	Quantity of O.B. dumped over subsidence area during the year 2024-25 and amount spent	NA
N	Quantity of POB stowed in cu.m during the year 2024-25 and amount spent	NA NA
O	Quantity of Bottom Ash stowed in cu.m during the year 2024-25 and amount spent.	

PART-D

HAZARDOUS WASTES

Not applicable

PART-E

SOLID WASTES

The solid wastes generated in this area are mainly rejects separated from coal at the Coal handling Plant, scrap iron of various types generated at Workshop and mines.

REJECTS (STONE, SHALE & CLAY):

Rejects separated from coal consists of stone pieces, carbonaceous shale and clay material. These rejects are picked out from the coal manually when coal is passing on slow moving conveyor belts in Coal Screening Plant. The rejects picked out are put into separate stock. From the stock the rejects are loaded into trucks and dumped over low-lying areas and in ditches in the townships/subsidence areas.

OLD IRON SCRAP AND OTHER WASTE:

The scrap iron material generated at the mine consists of steel scrap of various types like old coal tub tops and bottom, worn out tub wheels, old pedestals, worn out friction rollers, old haulage wire ropes, worn out belt rollers and idler sections, old iron props and chalk frames, old CI pipes, worn out parts of various machinery and vehicles used in mines etc.,.

Many of these old materials are used at unit level for some other appropriate use. For example, old haulage wire ropes are used for roof stitching in underground mines and for fencing on surface, worn-out old conveyor belts are reused for coursing of air in underground workings, for making washers and wipers and cushioning over the chute plates at conveyor transfer points. Flat iron scrap is used for making washers; liners etc., some of the scrap iron materials such as tub pedestals couplings are melted in the cupola furnace and re casted into different items.

Old drill bits and old drill rods, generated during the year are sent to area stores.

The old iron scrap that cannot be used at unit level / workshops is stacked in the mine scrap yard from where it is disposed of by selling.

PART - F

CHARACTERISATION OF SOLID WASTE AND DISPOSAL PRACTICE

Solid wastes generated at coal screening plants are stones, carbonaceous shale and clay. These waste materials are picked out from coal when passing on slow moving belts by manual in coal screening plants.

These rejects are put into separate bunkers and loaded into truck and dumped at low-lying areas and ditches in the townships.

The Iron scrap of various types generated at mine, workshops are collected at the Area stores. Some of the scrap is utilized in the company and remaining is disposed of by auction through TSPCB certified agents

PART-G

IMPACT OF POLLUTION CONTROL MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

About 39 % of total mine discharge water is used for drinking, washing, dust suppression, plantation, supplying to nearby village and sand stowing after treatment in mine filter beds. The excess water let out on surface is used for irrigation by the villagers nearby directly or indirectly through irrigation tanks. Thus the entire quantity of water pumped out from the mine is utilized either directly or indirectly.

As a result of water spraying being done at the working places coal transportation points, mine premises, coal screening plant premises, coal loading and unloading points, along the conveyor belts, screening and crushing points in the CSPs the dust is getting suppressed near the source and thereby preventing it becoming air born and spreading into the surrounding areas.

GDK1&3 Incline:

*Voids created as a result of extraction of coal in underground are filled up with sand/bottom ash to control subsidence and thereby to control land degradation on surface.

42,341.371 Cu.m of POB, 40,037.599 Cu.m of Bottom Ash & 15,891.112 Cu.m of Sand was filled into the voids during the year 2024-25 for which an amount of Rs.52,09,381.63 has been spent.

Rs.2,62,403.20 spent on post project environmental monitoring of GDK 1&3 Incline during the year 2024-25

IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION:

The amount spent for pollution control measures during the year 2024-25 amounts to Rs.5,67,371.96/- + Rs.38,79,662.94/- + Rs.7,62,346.73/- for POB, Bottom ash and Sand for stowing (Total Rs.52,09,381.63/-) Total coal produced during the year 2024-25 is 1,35,646 Tonnes.

Impact of pollution abatement cost on the cost of coal production is Rs.38.40 per ton including stowing.

GDK.2&2a Incline:

IMPACT OF POLLUTION CONTROL MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

1. About 80% of total mine discharge water is used/ recycled for drinking, washing, dust suppression, plantation and sand stowing after treatment at mine filter beds. The excess water let out on surface is used for irrigation by the villagers nearby directly or indirectly through irrigation tanks. Thus the entire quantity of water pumped out from the mine is utilized either directly or indirectly.
2. As a result of water spraying being done at the working places coal transportation points, mine premises, coal screening plant premises, coal loading and unloading points, along the conveyor belts, screening and crushing points in the CSPs the dust is getting suppressed near the source and thereby preventing it becoming air borne and spreading into the surrounding areas.

**Voids created as a result of extraction of coal in underground are filled up with sand/bottom Ash/POB to control subsidence and thereby to control land degradation on surface. 23,582.983 Cum M-Sand, 29,817.806 Cum.of Bottom Ash & 39,394.453 Cum.of POB, (Total stowing 92,795.242 Cum) is filled into the voids during the year for which an amount of Rs.1,27,87,230.16 Lakhs has been spent Rs.1,51,807.60 on Post project environmental Monitoring of Gdk 2&2A incline during the year 2024-25

IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION:

The amount spent for pollution control measures during the year 2024-25 amounts to Rs:1,27,87,230.16 for Sand/Bottom Ash/POB Stowing Total coal produced during the year 2024-25 is 1,32,998 tones.

GDKCM(No.2&2a and No.5) Opencast cum underground project

Total amount spent towards environmental protection measures during the year 2024-25 is Rs.6,84,000 , Cost per ton = Rs 2930

Soil Erosion Control Measures:

(a) **GDK.1&3 Incline:** Not Applicable

(a) **GDK.2&2a Incline :** Not Applicable

(C) GDKCM(No.2&2a and No.5) Opencast cum underground project :

1. Soil Erosion Control Measures as on 31.03.2025

1	Toe Walls	1.0Kms
2	Garland drains	6.4 Kms
3	Settling ponds	3
4	Slope Channels	-

2. Progressive Green Belt Development In GDK As Per Emp As On 31.03.2025

Year		As per EMP		Actual		Remarks
		Plantation	Progressive	Plantation	Progressive	
Y-1	2021-22	57.82	57.82	Nil	Nil	
Y-2	2022-23	2.65	60.47	7.70	7.70	
Y-3	2023-24	8.97	69.44	15.15	22.85	
Y-5	2025-26	20.56	90.00	97.00	100.00	
Y-10	2030-31	418.41	508.41			
Y-15 (FINAL)	2035-36	216.62	725.03			
Y-18	2038-39	102.73	827.76			

3) Present land use details of the 1385.47Ha of GDKCM (No.2&2A and No.5) Opencast cum underground project up to 31.03.2025

1. Topsoil Management (in M.Cu.m)

		2025
1	Total Topsoil as per EMP	
2	Topsoil removed so far	1.961
3	Topsoil stored in temporary stockyard	1.077
4	Topsoil spread on Dumps	1.961
5	Topsoil removed in last six months	1.961

2. Overburden Management (in M.Cu.m) as on 31.03.2025

1	Total Overburden	:				
2	Total OB removed since inception	:			95.09	
3	Total OB removed during last six months	:			14.44	
4	Details of External OB dumps	:	Area (in Ha)	Quantity in (M.Cu.M)	Height (m)	Overall slope
	Dump-1	:	160.70	25.09	120	18
5	Details of Internal dump (Backfilling)					

PART-H

Additional measures / investment proposals for environmental protection and control of pollution

(a) GDK.1&3 Incline&GDK.2&2a Incline:


1. Reimbursement of cost of one LPG gas cylinder (at IOC rates) per month to the employees using LPG gas to discourage use of coal for domestic use. All the employees are using LPG gas at present.
2. Development of green belt over vacant places in phases.

(b) GDKCM(No.2&2a and No.5) Opencast cum underground project :Nil

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

1. Health & family planning camps were organized during the year.
2. The World Environment day was observed on 5th June 2024 planting of saplings, environment awareness rallies and awareness programmes on "Health & Environment" are organized throughout the year to bring awareness among employees, children & public in general.
3. Organizing Swachhta Hi Sevaprogrammes to bring awareness among the workmen in Mines, departments and general public in colonies of SCCL and bus stand areas.
4. Organizing Telanganaku Haritha haram programme during the year 2024-25.


 Project officer,
 GDKCM(No.2&2a and No.5)

Ambient Air Quality Data around Cluster of Godavarikhani No. 1&3 Incline and Godavarikhani Coal Mine (No.2&2A and No.5) Opencast cum underground project during the Period: April 2024 to March 2025

GDK 1 Incline (CA6)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
MoEF coal mine standards as per GSR 742(E), Dated 25.09.2000		250	—	120	120
1	03.04.2024	190	87.2	9.8	14.4
2	18.04.2024	159	54.3	10.4	14
3	04.05.2024	182	74.4	12.1	16.1
4	18.05.2024	177	69.2	10.6	14.2
5	04.06.2024	155	59.2	12.8	16
6	19.06.2024	152	56.9	11.1	14.3
7	03.07.2024	128	42.6	10.2	15
8	19.07.2024	94	46.4	9.1	15.1
9	03.08.2024	105	45.5	11.5	14.5
10	20.08.2024	116	49.2	10.1	13.9
11	04.09.2024	112	54.8	9.6	14.2
12	19.09.2024	130	53.7	9.8	14.9
13	03.10.2024	125	50.2	10.7	14.1
14	18.10.2024	152	69.3	10.5	14.7
15	04.11.2024	161	56.6	10.6	16.6
16	19.11.2024	174	61.2	10.2	16.9
17	04.12.2024	183	66.4	10.7	14.6
18	18.12.2024	134	64.7	11.9	15.6
19	03.01.2025	177	70.5	9.8	13.7
20	18.01.2025	166	55.2	10.5	14.8
21	04.02.2025	169	60.6	9.8	13.2
22	19.02.2025	149	54.3	11.2	15.4
23	04.03.2025	149	60.4	10.2	16.1
24	19.03.2025	165	58.9	11.4	16.8
Min		94.0	42.6	9.1	13.2
Max		183.0	74.4	12.8	16.9
Aver		148.4	58.0	10.6	15.0
98 per		182.6	72.7	12.5	16.9

GDK 2&2A Incline (CA7)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
MoEF coal mine standards as per GSR 742(E), Dated 25.09.2000		250	—	120	120
1	03.04.2024	202	85.6	13.5	17.1
2	18.04.2024	176	59.4	9.7	14.8
3	04.05.2024	176	70.4	11.6	16.7
4	18.05.2024	182	65.5	9.5	13.8
5	04.06.2024	137	60.1	12.1	16
6	19.06.2024	161	59.1	10.1	13.4
7	03.07.2024	149	45.2	10.9	13.9
8	19.07.2024	104	47.6	9.8	14.1
9	03.08.2024	112	48.3	10.9	15
10	20.08.2024	91	42.5	10.9	13.6
11	04.09.2024	124	56.9	9.5	14.8
12	19.09.2024	127	53.1	10	14.7
13	03.10.2024	139	53.3	13.6	16.9
14	18.10.2024	159	65.4	10.2	14.6
15	04.11.2024	172	59.4	9.8	14.2
16	19.11.2024	179	60.5	11.2	14.4
17	04.12.2024	140	57.9	9.8	13.9
18	18.12.2024	158	69.5	10.6	13.1
19	03.01.2025	182	75.1	9.7	13
20	18.01.2025	147	52.5	10.4	16.2
21	04.02.2025	142	62.5	11.5	16.9
22	19.02.2025	172	65.6	10	13.8
23	04.03.2025	132	62.8	12.8	16.4
24	19.03.2025	142	57.6	12.4	17.4
Min		91.0	42.5	9.5	13.0
Max		202.0	85.6	13.6	17.4
Aver		150.2	59.8	10.9	14.9
98 per		192.8	80.8	13.6	17.3

GDK.5 OC-V Project office (CA4)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
MoEF coal mine standards as per GSR 742(E), Dated 25.09.2000		250	—	120	120
1	02.04.2024	194	77.2	10.6	15.2
2	17.04.2024	170	69.5	12.6	15.7
3	03.05.2024	190	81.2	11.2	14
4	17.05.2024	186	67.4	9.7	14.2
5	03.06.2024	201	77.3	12.6	17.1
6	18.06.2024	189	69.4	11	16.1
7	02.07.2024	167	55.3	9.7	14.2
8	18.07.2024	109	48.9	9.5	12.7
9	02.08.2024	137	49.6	10.2	15
10	17.08.2024	114	46.3	10.4	12.6
11	03.09.2024	111	52.6	14.8	18.4
12	17.09.2024	122	52.4	11.2	14.3
13	02.10.2024	148	56.9	13.8	17.5
14	17.10.2024	169	65.6	9.7	14.6
15	02.11.2024	184	68.2	11.6	14.1
16	18.11.2024	169	65.3	11.9	14.6
17	03.12.2024	172	62.7	10.9	14.2
18	17.12.2024	166	70.6	9.7	15.6
19	02.01.2025	168	62.6	9.7	13
20	17.01.2025	181	61.5	10.2	15.2
21	03.02.2025	165	59.5	13.1	15.9
22	20.02.2025	189	67.4	9.7	15.2
23	03.03.2025	172	59.5	11.5	15.3
24	18.03.2025	189	64.2	10.5	15.8
Min		109.0	46.3	9.5	12.6
Max		201.0	81.2	14.8	18.4
Aver		165.1	63.0	11.1	15.0
98 per		197.8	79.4	14.3	18.0

GDK.5 Base workshop (CA5)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
MoEF coal mine standards as per GSR 742(E), Dated 25.09.2000		250	—	120	120
1	02.04.2024	215	86.3	11.5	17.1
2	17.04.2024	182	70.4	10.6	15.6
3	03.05.2024	172	78.6	12.9	15.6
4	17.05.2024	194	77.5	11.9	15.4
5	04.06.2024	166	69.4	11	15.9
6	20.06.2024	196	71.8	10.4	16.9
7	04.07.2024	172	58.2	9.5	15.4
8	20.07.2024	124	49.2	11.9	14.3
9	05.08.2024	142	49.7	10.9	13.9
10	21.08.2024	107	45.1	11	14.1
11	03.09.2024	120	57.5	8.1	15.6
12	18.09.2024	136	55.9	11.4	15.1
13	04.10.2024	142	52.4	11.2	15.6
14	19.10.2024	174	71.7	12.2	15.9
15	05.11.2024	193	71.1	11.9	17
16	20.11.2024	188	70.4	9.6	15.7
17	03.12.2024	209	54.5	9.7	16.9
18	17.12.2024	172	74.4	10.4	13.6
19	02.01.2025	191	74.4	8.8	14.6
20	17.01.2025	184	63.8	9.7	12.6
21	05.02.2025	181	64.2	10.7	16.9
22	18.02.2025	173	64.6	10.4	14.5
23	05.03.2025	179	64.3	10.5	15.4
24	20.03.2025	184	61.4	11.6	16.7
Min		107.0	45.1	8.1	12.6
Max		215.0	86.3	12.9	17.1
Aver		170.7	64.9	10.7	15.4
98 per		212.2	82.8	12.6	17.1

GDK 1 CSP (CA3)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
MoEF coal mine standards as per GSR 742(E), Dated 25.09.2000		250	—	120	120
1	02.04.2024	209	84.6	11.6	15.1
2	17.04.2024	219	78.9	12.5	15.3
3	03.05.2024	229	86.8	12.1	17
4	17.05.2024	213	76.7	10.5	13.6
5	03.06.2024	186	59.5	13	17.3
6	18.06.2024	234	72.6	9.2	14.2
7	02.07.2024	194	62.4	10.1	13.4
8	18.07.2024	142	51.8	10.1	13.2
9	02.08.2024	156	52.8	9.5	15.4
10	17.08.2024	159	58.2	10.5	13.2
11	03.09.2024	145	51.2	11	14.2
12	18.09.2024	175	62.4	10.2	16.9
13	02.10.2024	189	54.4	12.1	16.7
14	17.10.2024	186	67.2	10.2	15.6
15	02.11.2024	209	76.8	12.1	15.3
16	18.11.2024	193	77.4	10	15.4
17	03.12.2024	220	76.9	12.2	17.9
18	17.12.2024	182	71.2	10.6	14.3
19	02.01.2025	197	59.7	9.8	13.8
20	17.01.2025	175	55.6	11.2	15.9
21	03.02.2025	187	65.8	11.4	19.1
22	18.02.2025	209	74.2	9.8	13.8
23	03.03.2025	187	65.6	10.6	17.1
24	18.03.2025	207	68.8	10.7	14.2
Min		142.0	51.2	9.2	13.2
Max		234.0	86.8	13.0	19.1
Aver		191.0	66.4	10.8	15.3
98 per		231.8	83.3	12.8	18.6

Sundilla Village (BA6)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	03.04.2024	82	42.5	9.2	13.4
2	18.04.2024	84	42.2	8	12.2
3	04.05.2024	84	44.3	8.8	13
4	18.05.2024	88	47.2	9.2	14
5	04.06.2024	75	39.2	7.7	14.7
6	19.06.2024	79	42.4	9.2	13.8
7	03.07.2024	69	38	9.8	13.9
8	19.07.2024	57	30.6	9.2	12.3
9	03.08.2024	57	29.8	8.2	12.7
10	20.08.2024	68	36.4	9.5	12.8
11	04.09.2024	67	39.8	8.8	12.2
12	18.09.2024	62	34.6	10.1	13.4
13	03.10.2024	74	39.4	10.1	13.9
14	18.10.2024	69	40.1	8.2	12.6
15	04.11.2024	81	43.1	9.1	12.9
16	19.11.2024	79	42.4	9.1	12.6
17	04.12.2024	77	39.7	9.6	13
18	18.12.2024	82	44.7	9.2	14
19	03.01.2025	81	43.1	10.4	14.4
20	18.01.2025	72	39.7	9.2	12.5
21	04.02.2025	72	39.1	8.2	14.2
22	19.02.2025	86	44.8	9.8	12.9
23	04.03.2025	66	36.4	9.3	13.7
24	19.03.2025	84	45.7	9.1	13.6
Min		57.0	29.8	7.7	12.2
Max		88.0	47.2	10.4	14.7
Aver		74.8	40.2	9.1	13.3
98 per		87.1	46.5	10.3	14.6

Mustyala Village (BA5)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	04.04.2024	87	45.7	8.2	13.2
2	19.04.2024	86	44.8	9.8	14.2
3	06.05.2024	89	48.6	7.7	12.5
4	19.05.2024	85	45.3	10.6	14.8
5	04.06.2024	80	40.8	9.2	12.5
6	20.06.2024	75	40.2	8.2	13.1
7	04.07.2024	55	29	8.2	13.2
8	20.07.2024	60	32.2	8.6	12.8
9	05.08.2024	65	34.2	9.2	12.8
10	21.08.2024	52	27.6	9	12.9
11	05.09.2024	62	34.2	8	13
12	18.09.2024	59	29.7	10	14.3
13	04.10.2024	66	35.9	11.2	14.5
14	19.10.2024	77	40.2	10.7	13.4
15	05.11.2024	67	34.3	8.2	13.7
16	20.11.2024	69	36.3	9.1	13.6
17	05.12.2024	86	45.6	8.2	14
18	19.12.2024	79	42.9	10.5	13.6
19	04.01.2025	69	37	10.1	14.1
20	19.01.2025	75	39.5	9	13.6
21	05.02.2025	76	40.5	9.6	15.9
22	20.02.2025	82	43.6	8.6	13.3
23	05.03.2025	79	42.3	9.6	12
24	20.03.2025	72	38.8	8.8	12.1
Min		52.0	27.6	7.7	12.0
Max		89.0	48.6	11.2	15.9
Aver		73.0	38.7	9.2	13.5
98 per		88.1	47.3	11.0	15.4

Sector-II Township (BA7)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	02.04.2024	91	46.6	9.1	12.9
2	17.04.2024	79	39.7	9.6	14.5
3	03.05.2024	82	43.8	9.2	14.6
4	17.05.2024	77	40.2	11.6	14.5
5	03.06.2024	91	47.5	9.5	13.7
6	18.06.2024	82	43.8	10	13.9
7	02.07.2024	75	39	8	12.6
8	18.07.2024	50	28.4	9.1	11.8
9	02.08.2024	69	37.1	8.1	13.6
10	17.08.2024	61	33.3	9.7	13.6
11	03.09.2024	69	37.9	8.5	12.6
12	17.09.2024	64	35.9	9.2	13.5
13	02.10.2024	77	37.2	9.8	13
14	17.10.2024	79	42.3	9.7	13
15	02.11.2024	80	42.5	7.4	13.4
16	18.11.2024	72	38.9	8.6	12.8
17	03.12.2024	84	44.5	9.3	12.5
18	17.12.2024	89	47.5	8.6	13.8
19	02.01.2025	91	46.4	10.6	14.2
20	17.01.2025	80	42.6	9.1	13
21	03.02.2025	81	44.6	8.7	12.4
22	18.02.2025	84	43.7	8.3	12.7
23	03.03.2025	87	46.5	10.2	12.7
24	18.03.2025	91	48.3	8	13
Min		50.0	28.4	7.4	11.8
Max		91.0	48.3	11.6	14.6
Aver		78.5	41.6	9.2	13.3
98 per		91.0	47.9	11.1	14.6

Janagaon Village (BA8)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	03.04.2024	90	45.8	8.1	12.3
2	18.04.2024	73	38.2	9.5	13.6
3	04.05.2024	77	40.4	7.4	13.3
4	18.05.2024	78	42.2	9.6	14.3
5	04.06.2024	70	37.2	9	13.7
6	19.06.2024	85	44.7	10.1	13.1
7	03.07.2024	73	39	7.4	13.8
8	19.07.2024	59	32.8	9	13.7
9	03.08.2024	63	33.3	8.2	12.5
10	20.08.2024	63	34.4	8.8	12.4
11	04.09.2024	57	30.2	7.7	12.4
12	17.09.2024	62	33.4	8.6	13
13	03.10.2024	82	42.5	8	12.2
14	18.10.2024	74	44.4	10.1	15.1
15	04.11.2024	78	40.2	8.7	13.2
16	19.11.2024	84	44.5	9.3	12.7
17	04.12.2024	89	47.2	9.3	13
18	18.12.2024	84	44.3	9	13.4
19	03.01.2025	86	42.8	8.6	13.2
20	18.01.2025	61	32.4	8.7	13.4
21	04.02.2025	84	46.5	10.4	14.6
22	19.02.2025	76	39.5	9.2	13.1
23	04.03.2025	81	43.8	9.6	14.6
24	19.03.2025	90	47.9	9.6	12.7
Min		57.0	30.2	7.4	12.2
Max		90.0	47.9	10.4	15.1
Aver		75.8	40.3	8.9	13.3
98 per		90.0	47.6	10.3	14.9

Area Hospital RG-I (BA9)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	02.04.2024	87	48.2	10.1	14
2	17.04.2024	87	44.2	8.8	11.7
3	03.05.2024	76	40.9	8.3	15.7
4	17.05.2024	82	44.1	10.1	14.4
5	03.06.2024	72	37.6	11	14.6
6	18.06.2024	70	38.6	9.5	12.9
7	02.07.2024	77	38	8.2	12.3
8	18.07.2024	64	34.2	8.7	12.3
9	02.08.2024	68	36.7	10.2	13.9
10	17.08.2024	58	30.5	10.4	13.7
11	03.09.2024	65	35.5	8.8	13.2
12	17.09.2024	68	36.2	9.6	12.5
13	02.10.2024	77	36.9	9.2	12.6
14	17.10.2024	76	45.7	9.2	12.1
15	02.11.2024	81	44.8	9.1	12
16	18.11.2024	76	41.2	9.7	14
17	03.12.2024	75	41.5	9.6	12.2
18	17.12.2024	76	42.6	9	12.8
19	02.01.2025	82	43.7	10.7	14.2
20	17.01.2025	68	36.5	10.1	14.2
21	03.02.2025	79	41.7	9	14.7
22	18.02.2025	69	37.3	9	13.3
23	03.03.2025	65	34.6	8.3	14.7
24	18.03.2025	88	47.4	9	14.1
Min		58.0	30.5	8.2	11.7
Max		88.0	48.2	11.0	15.7
Aver		74.4	39.9	9.4	13.4
98 per		87.5	47.8	10.9	15.2

Power House Colony (BA10)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	03.04.2024	89	47.5	8.7	12.6
2	18.04.2024	76	38.9	9.8	12.6
3	04.05.2024	74	39.7	7.8	13.3
4	18.05.2024	66	35.6	9.5	15.2
5	04.06.2024	78	41.8	8.6	14.4
6	19.06.2024	76	37.5	9.3	12.2
7	03.07.2024	59	33	9.8	14.1
8	19.07.2024	61	32	8	11.5
9	03.08.2024	67	35.1	8	13.2
10	20.08.2024	64	34.8	8.5	13.7
11	04.09.2024	60	35.4	9.2	12.5
12	18.09.2024	67	35.4	10.1	13.8
13	03.10.2024	69	39.4	9.2	13.2
14	18.10.2024	58	32.3	8.5	13.5
15	04.11.2024	84	44.7	8	13.7
16	19.11.2024	72	39.4	10.1	13
17	04.12.2024	88	46.9	8.8	12.4
18	18.12.2024	72	39.5	10	13.2
19	03.01.2025	78	39.9	9.7	13.5
20	18.01.2025	72	38.5	9.5	13.1
21	04.02.2025	70	37.2	9	12.1
22	19.02.2025	78	39.4	8.8	13.4
23	04.03.2025	82	43.4	9.6	14
24	19.03.2025	86	45.5	9.6	14.2
Min		58.0	32.0	7.8	11.5
Max		89.0	47.5	10.1	15.2
Aver		72.8	38.9	9.1	13.3
98 per		88.5	47.2	10.1	14.8

Dubbapalli Village (BA11)					
S.No.	Date of Sampling	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
NAAQ Standards, CPCB Dated:18.11.2009		100	60	80	80
1	04.04.2024	75	38.3	9.3	14.1
2	19.04.2024	79	39.8	9.6	14.8
3	06.05.2024	62	33.3	7.3	13.9
4	20.05.2024	71	37.5	9.3	12.8
5	04.06.2024	67	35.8	11.1	15.4
6	20.06.2024	62	33.2	8.2	13.7
7	04.07.2024	54	29	7.1	12.8
8	20.07.2024	57	28.3	9.3	11.3
9	05.08.2024	59	31.9	9.7	14.3
10	21.08.2024	63	33.2	8.7	13.7
11	05.09.2024	52	27.3	7.4	13.4
12	19.09.2024	59	29.8	9.1	12.5
13	04.10.2024	71	40.2	7.4	13.2
14	19.10.2024	62	33.6	8.5	13
15	05.11.2024	75	39.6	8	15.2
16	20.11.2024	86	45.6	9.2	13
17	05.12.2024	79	40.4	9.7	12.2
18	19.12.2024	64	35.9	9.1	13.6
19	04.01.2025	74	39.2	8.3	12
20	20.01.2025	70	37.3	9.2	15.1
21	05.02.2025	75	39.4	8.3	14
22	20.02.2025	71	33.3	9.6	12.3
23	05.03.2025	65	36.1	9.6	14.8
24	20.03.2025	76	41.1	9.5	12.6
Min		52.0	27.3	7.1	11.3
Max		86.0	45.6	11.1	15.4
Aver		67.8	35.8	8.9	13.5
98 per		82.8	43.5	10.5	15.3

Mine discharge water at GDK 1 mine & GDK.2&2a mine from the period of 2024-25

GDK 1 mine discharge water (EW3)							
S.No.	Date of Sampling	pH (at 25°C)	Total Suspended Solids at 105 °C	Total Dissolved Solids at 180 °C	Chemical Oxygen Demand	BOD 27 °C	Oil & Grease
Unit		--	mg/L	mg/L	mg/L	mg/l	mg/L
Test Method		4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025 (part-44):1993 (Reaffirmed 1999)	5520-B
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines		5.5 to 9.0	100	--	250	30	10
1	10.04.2024	7.2	34	845	19	2.4	<1
2	22.04.2024	7.5	26	591	23	3.6	<1
3	09.05.2024	7.3	30	751	35	4.1	<1
4	23.05.2024	7.7	33	899	27	2.7	<1
5	10.06.2024	7.6	24	978	32	3.2	<1
6	20.06.2024	7.3	38	812	24	2.4	<1
7	08.07.2024	7.8	20	982	28	4.1	<1
8	21.07.2024	7.9	35	1012	35	3.5	<1
9	09.08.2024	7.8	24	896	31	4.4	<1
10	21.08.2024	7.8	19	952	19	2.2	<1
11	06.09.2024	7.2	26	855	36	3.6	<1
12	21.09.2024	7.4	17	792	27	4.2	<1
13	08.10.2024	7.7	23	651	32	3.6	<1
14	21.10.2024	7.7	41	913	35	5.2	<1
15	08.11.2024	7.1	20	591	28	2.5	<1
16	22.11.2024	7.8	31	683	24	3.1	<1
17	08.12.2024	7.7	43	742	36	4.2	<1
18	24.12.2024	7.5	29	539	20	2.6	<1
19	08.01.2025	7.3	18	625	16	3.2	<1
20	22.01.2025	7.7	24	756	32	3.6	<1
21	08.02.2025	7.5	20	862	28	3.2	<1
22	22.02.2025	7.8	15	945	20	2.6	<1
23	07.03.2025	8.1	22	834	36	4.4	<1
24	21.03.2025	7.4	32	612	24	2.8	<1
Min		7.1	15.0	539.0	16.0	2.2	0.0
Max		8.1	43.0	1012.0	36.0	5.2	0.0
Aver		7.6	26.8	796.6	27.8	3.4	0.0
98 % per		8.0	42.1	998.2	36.0	4.8	0.0

GDK 2 mine discharge water (EW4)							
S.No.	Date of Sampling	pH (at 25°C)	Total Suspended Solids at 105 °C	Total D Solids at 180 °C	Chemical Oxygen Demand	BOD 27 °C	Oil & Grease
Unit		--	mg/L	mg/L	mg/L	mg/l	mg/L
Test Method		4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025 (part-44):1993 (Reaffirmed 1999)	5520-B
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines		5.5 to 9.0	100	--	250	30	10
1	10.04.2024	7.9	18	977	23	2.4	<1
2	22.04.2024	7.6	22	640	31	3.2	<1
3	09.05.2024	7.2	14	856	27	2.6	<1
4	23.05.2024	7.7	24	712	35	3.5	<1
5	10.06.2024	7.2	19	897	20	2.2	<1
6	20.06.2024	7.6	25	785	16	3.2	<1
7	08.07.2024	7.3	30	623	24	2.4	<1
8	21.07.2024	7.9	41	741	19	3.2	<1
9	09.08.2024	7.1	36	866	27	3.6	<1
10	21.08.2024	7.7	28	910	23	2.4	<1
11	06.09.2024	7.3	33	792	32	3.2	<1
12	21.09.2024	7.2	21	863	15	2.6	<1
13	08.10.2024	7.7	30	719	24	3.2	<1
14	21.10.2024	7.3	34	714	35	3.5	<1
15	08.11.2024	7.8	34	596	28	3.2	<1
16	22.11.2024	7.3	22	694	20	2.4	<1
17	08.12.2024	7.5	26	752	16	3.6	<1
18	24.12.2024	7.3	32	513	32	4.2	<1
19	08.01.2025	7.7	19	682	24	2.8	<1
20	22.01.2025	7.3	35	710	20	2.8	<1
21	08.02.2025	7.4	26	571	16	2.8	<1
22	22.02.2025	7.7	34	638	28	3.2	<1
23	07.03.2025	7.4	27	491	32	3.8	<1
24	21.03.2025	7.5	33	575	24	2.8	<1
Min		7.1	14.0	491.0	15.0	2.2	0.0
Max		7.9	41.0	977.0	35.0	4.2	0.0
Aver		7.5	27.6	721.5	24.6	3.0	0.0
98 % per		7.9	38.7	946.2	35.0	4.0	0.0

GDK Coal mine Discharge water (EW5)							
S.No.	Date of Sampling	pH (at 25°C)	Total Suspended Solids at 105 °C	Total D Solids at 180 °C	Chemical Oxygen Demand	BOD 27 °C	Oil & Grease
Unit		--	mg/L	mg/L	mg/L	mg/l	mg/L
Test Method		4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025 (part-44):1993 (Reaffirmed 1999)	5520-B
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines		5.5 to 9.0	100	--	250	30	10
1	10.04.2024	7.2	20	688	35	6.8	<1
2	22.04.2024	7.7	34	714	19	2.2	<1
3	09.05.2024	7.4	44	840	23	3.1	<1
4	23.05.2024	7.1	36	691	27	4.1	<1
5	10.06.2024	7.3	45	765	20	2.4	<1
6	20.06.2024	7.3	61	834	24	3.3	<1
7	08.07.2024	7.9	74	910	28	2.8	<1
8	21.07.2024	8.1	68	715	19	3.4	<1
9	09.08.2024	7.2	77	652	31	4.4	<1
10	21.08.2024	7.7	43	810	15	2.2	<1
11	06.09.2024	7.5	61	956	20	3.2	<1
12	21.09.2024	7.4	54	781	27	4.4	<1
13	08.10.2024	7.8	66	639	16	2.2	<1
14	21.10.2024	7.6	58	596	23	2.8	<1
15	08.11.2024	7.4	71	627	32	3.4	<1
16	22.11.2024	7.1	64	714	24	2.8	<1
17	08.12.2024	7.8	72	810	20	3.8	<1
18	24.12.2024	7.8	69	641	32	4.1	<1
19	08.01.2025	7.5	57	583	36	5.1	<1
20	22.01.2025	7.7	76	752	28	3.2	<1
21	08.02.2025	6.9	62	592	20	2.4	<1
22	22.02.2025	7.5	59	711	16	3.2	<1
23	07.03.2025	7.6	66	634	24	2.8	<1
24	21.03.2025	7.8	57	592	32	3.8	<1
Min		6.9	20.0	583.0	15.0	2.2	0.0
Max		8.1	77.0	956.0	36.0	6.8	0.0
Aver		7.5	58.1	718.6	24.6	3.4	0.0
98 % per		8.0	76.5	934.8	35.5	6.0	0.0

GDK Coal mine BWS ETP Outlet (EW6)							
S.No	Date of Sampling	pH (at 25°C)	Total Suspended Solids at 105 °C	Total Dissolved Solids at 180 °C	Chemical Oxygen Demand	BOD 27 °C	Oil & Grease
Unit		--	mg/L	mg/L	mg/L	mg/l	mg/L
Test Method		4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025 (part-44):1993 (Reaffirmed 1999)	5520-B
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines		5.5 to 9.0	100	--	250	30	10
1	08.01.2025	7.9	66	955	68	16.4	1.8
2	22.01.2025	8.1	74	1028	56	13.3	2.4
3	08.02.2025	7.9	69	1164	72	16.6	2
4	22.02.2025	7.6	78	1291	60	12.5	2.2
5	07.03.2025	7.7	53	918	48	8.4	2
6	21.03.2025	7.6	62	1076	52	10.5	2.4
Min		7.6	53.0	918.0	48.0	8.4	1.8
Max		8.1	78.0	1291.0	72.0	16.6	2.4
Aver		7.8	67.0	1072.0	59.3	13.0	2.1
98 % per		8.1	77.6	1278.3	71.6	16.6	2.4

GDK I CHP Runoff water/Effluents (EW8)							
S.No.	Date of Sampling	pH (at 25°C)	Total Suspended Solids at 105 °C	Total Dissolved Solids at 180 °C	Chemical Oxygen Demand	BOD 27 °C	Oil & Grease
Unit		--	mg/L	mg/L	mg/L	mg/l	mg/L
Test Method		4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025 (part-44):1993 (Reaffirmed 1999)	5520-B
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines		5.5 to 9.0	100	--	250	30	10
1	10.04.2024	7.7	30	964	23	2.6	<1
2	22.04.2024	7.8	26	684	19	3.6	<1
3	09.05.2024	7.1	40	795	31	6.8	<1
4	23.05.2024	7.2	34	844	27	2.7	<1
5	10.06.2024	7.4	29	964	24	2.2	<1
6	20.06.2024	7.6	36	793	20	4.1	<1
7	08.07.2024	7.8	25	906	28	3.2	<1
8	21.07.2024	7.5	31	839	35	6.1	1
9	09.08.2024	8.1	42	933	23	3.2	<1
10	21.08.2024	7.6	35	891	31	4.6	<1
11	06.09.2024	7.9	41	932	36	5.1	<1
12	21.09.2024	7.5	33	876	27	3.8	<1
13	08.10.2024	7.9	29	714	32	4.1	<1
14	21.10.2024	7.7	34	691	23	2.4	<1
15	08.11.2024	7.2	26	546	28	3.4	<1
16	22.11.2024	7.6	19	761	20	2.4	<1
17	08.12.2024	7.4	31	855	16	3.6	<1
18	24.12.2024	7.8	23	628	36	4.4	<1
19	08.01.2025	7.2	17	577	24	3.2	<1
20	22.01.2025	7.3	26	811	32	4.1	<1
21	08.02.2025	7.6	30	532	28	3.6	<1
22	22.02.2025	7.4	21	685	20	4.4	<1
23	07.03.2025	7.7	19	511	24	2.8	<1
24	21.03.2025	7.9	27	638	36	4.4	<1
Min		7.1	17.0	511.0	16.0	2.2	1.0
Max		8.1	42.0	964.0	36.0	6.8	1.0
Aver		7.6	29.3	765.4	26.8	3.8	1.0

98 % per	8.0	41.5	964.0	36.0	6.5	1.0
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Annexure – III

Ambient noise levels recorded in around Cluster of Godavarikhani No. 1&3 Incline and Godavarikhani Coal Mine (No.2&2A and No.5) Opencast cum underground project during the year 2024-25

GDK-1 Incline (CN3)					
S.No	Date of Monitoring	Standard limits of Noise		Leq Day	Leq Night
		Day time	Night time		
1	04.04.2024	75	70	47.5	39.1
2	19.04.2024	75	70	55.7	44.3
3	05.05.2024	75	70	58.4	41.7
4	20.05.2024	75	70	58.3	42.8
5	05.06.2024	75	70	46.1	37.6
6	20.06.2024	75	70	58.5	42.6
7	04.07.2024	75	70	46.2	32.4
8	20.07.2024	75	70	54.2	40.7
9	05.08.2024	75	70	52.8	40.2
10	21.08.2024	75	70	46.9	36.7
11	05.09.2024	75	70	54.2	40.3
12	20.09.2024	75	70	51.3	44.1
13	04.10.2024	75	70	55.9	43.4
14	19.10.2024	75	70	50.3	40
15	05.11.2024	75	70	53.2	40.8
16	20.11.2024	75	70	52.9	38.5
17	05.12.2024	75	70	52.9	43.1
18	19.12.2024	75	70	55.5	46.9
19	04.01.2025	75	70	57.9	45.9
20	20.01.2025	75	70	51.8	45.9
21	05.02.2025	75	70	55.7	43.8
22	20.02.2025	75	70	58.3	44.1
23	05.03.2025	75	70	59.2	42.5
24	20.03.2025	75	70	54.4	46.7
Min				46.1	32.4
Max				59.2	46.9
Avrg				53.7	41.8

GDK-2 Incline (CN4)					
S.No	Date of Monitoring	Standard limits of Noise		Leq Day	Leq Night
		Day time	Night time		
1	04.04.2024	75	70	45.2	38.7
2	19.04.2024	75	70	45.6	38.9
3	05.05.2024	75	70	53.2	43.2
4	20.05.2024	75	70	54.3	43.8
5	05.06.2024	75	70	42.6	36.1
6	20.06.2024	75	70	53.3	43
7	04.07.2024	75	70	51.3	47.2
8	20.07.2024	75	70	50.4	41.2
9	05.08.2024	75	70	48.6	35.4
10	21.08.2024	75	70	46.9	39
11	05.09.2024	75	70	43.5	36.7
12	20.09.2024	75	70	54.6	43.2
13	04.10.2024	75	70	49.6	43.2
14	19.10.2024	75	70	51.4	41.7
15	05.11.2024	75	70	53.1	40.1
16	20.11.2024	75	70	52.4	42.8
17	05.12.2024	75	70	50.2	43.6
18	19.12.2024	75	70	53.6	39.9
19	04.01.2025	75	70	45.2	37.1
20	20.01.2025	75	70	55.9	43.5
21	05.02.2025	75	70	45.2	37.3
22	20.02.2025	75	70	54.7	42.6
23	05.03.2025	75	70	50.2	39
24	20.03.2025	75	70	57	45.9
Min				42.6	35.4
Max				57.0	47.2
Avrg				50.3	41.0

GDK OC-V PROJECT OFFICE (CN2)					
S.No	Date of Monitoring	Standard limits of Noise		Leq Day	Leq Night
		Day time	Night time		
1	03.04.2024	75	70	54.2	44.7
2	18.04.2024	75	70	52.9	44.6
3	04.05.2024	75	70	57.1	49.1
4	18.05.2024	75	70	56.2	46
5	01.06.2024	75	70	54.3	45.6
6	19.06.2024	75	70	59.6	48.7
7	01.07.2024	75	70	51.8	48.8
8	16.07.2024	75	70	50.8	45.1
9	01.08.2024	75	70	58	48
10	16.08.2024	75	70	58.5	48.2
11	04.09.2024	75	70	66.9	52
12	18.09.2024	75	70	60.8	50.8
13	01.10.2024	75	70	52.3	45.4
14	16.10.2024	75	70	58.6	49.2
15	01.11.2024	75	70	57.1	48.9
16	16.11.2024	75	70	59.1	47.6
17	04.12.2024	75	70	56.7	42.7
18	18.12.2024	75	70	57.2	46.9
19	03.01.2025	75	70	59.9	48.7
20	18.01.2025	75	70	53.6	41.8
21	01.02.2025	75	70	55.5	48.9
22	17.02.2025	75	70	53.4	42.6
23	01.03.2025	75	70	58.5	47.9
24	17.03.2025	75	70	57.2	45.3
Min				50.8	41.8
Max				66.9	52.0
Avrg				56.7	47.0

SUNDILLA VILLAGE (BN3)					
S.No	Date of Monitoring	Standard limits of Noise		Leq Day	Leq Night
		Day time	Night time		
1	04.04.2024	55	45	45.4	33.6
2	19.04.2024	55	45	48.4	31.1
3	05.05.2024	55	45	38.2	28.6
4	20.05.2024	55	45	47.6	33.1
5	05.06.2024	55	45	35.5	24.5
6	20.06.2024	55	45	45.4	38.2
7	04.07.2024	55	45	39.4	32.7
8	20.07.2024	55	45	47.6	36.3
9	05.08.2024	55	45	39.4	29.3
10	21.08.2024	55	45	43	30.2
11	05.09.2024	55	45	43.4	35.2
12	19.09.2024	55	45	46.2	31.4
13	04.10.2024	55	45	48.1	35.6
14	19.10.2024	55	45	47.1	34
15	05.11.2024	55	45	42.8	29.5
16	20.11.2024	55	45	48.4	36.6
17	05.12.2024	55	45	46.7	37.7
18	19.12.2024	55	45	48.4	33.2
19	01.01.2025	55	45	49.3	31.4
20	20.01.2025	55	45	41.3	39.3
21	05.02.2025	55	45	48.9	38.1
22	20.02.2025	55	45	44.4	36.6
23	05.03.2025	55	45	49.3	39.8
24	20.03.2025	55	45	48	39.9
Min				35.5	24.5
Max				49.3	39.9
Avrg				45.1	34.0

SUNDILLA VILLAGE(BN3)					
S.No	Date of Monitoring	Standard limits of Noise		Leq Day	Leq Night
		Day time	Night time		
1	04.04.2024	55	45	45.4	33.6
2	19.04.2024	55	45	48.4	31.1
3	05.05.2024	55	45	38.2	28.6
4	20.05.2024	55	45	47.6	33.1
5	05.06.2024	55	45	35.5	24.5
6	20.06.2024	55	45	45.4	38.2
7	04.07.2024	55	45	39.4	32.7
8	20.07.2024	55	45	47.6	36.3
9	05.08.2024	55	45	39.4	29.3
10	21.08.2024	55	45	43	30.2
11	05.09.2024	55	45	43.4	35.2
12	19.09.2024	55	45	46.2	31.4
13	04.10.2024	55	45	48.1	35.6
14	19.10.2024	55	45	47.1	34
15	05.11.2024	55	45	42.8	29.5
16	20.11.2024	55	45	48.4	36.6
17	05.12.2024	55	45	46.7	37.7
18	19.12.2024	55	45	48.4	33.2
19	01.01.2025	55	45	49.3	31.4
20	20.01.2025	55	45	41.3	39.3
21	05.02.2025	55	45	48.9	38.1
22	20.02.2025	55	45	44.4	36.6
23	05.03.2025	55	45	49.3	39.8
24	20.03.2025	55	45	48	39.9
Min				35.5	24.5
Max				49.3	39.9
Avrg				45.1	34.0

**Ground water levels recorded in the villages around Cluster of Godavarikhani No. 1&3
Incline and Godavarikhani Coal Mine (No.2&2A and No.5) Opencast cum
underground project during the year 2024-25
Depth to water in Mt).**

Village	Location	Winter 2025	Pre- monsoon 2025	Monsoon 2025	Post Monsoon 2025
Janagam village, 18 ⁰ 46'18" & 79 ⁰ 31'32"	Village centre M.Mallesh	WD	6.12	5.39	-
Janagam village 18 ⁰ 46'21" &79 ⁰ 31'37"	Village centre NukalaThirupathi	5.30	6.19	4.82	-
Janagam village 18 ⁰ 46'16" &79 ⁰ 31'43"	Near tank, Chukka Rajaiah	WD	-	-	-
Janagam village 18 ⁰ 46'21" &79 ⁰ 31'48"	Shiva temple	4.60	5.44	5.12	-
Janagam village 18 ⁰ 46'25" &79 ⁰ 31'45"	SC colony Govt well	WD	-	-	-
Sundilla village 18 ⁰ 45'42" &79 ⁰ 32'60"	Road side Ravindar Reddy/ *NaspuriChandraiah	7.10	7.30	-	-
Ganga nagar 18 ⁰ 46'11" &79 ⁰ 30'43"	Hanuman temple	3.60	4.12	2.51	-

REPORTS ON EFFLUENT QUALITY (Once in a Year)

Effluents Quality of general standards for discharge of environmental pollutants

The effluents sampling locations were selected considering their proximity to the project sites. Effluents samples were collected and analyzed, the effluents quality results were compared with general standards for discharge of environmental pollutants, Part-A: Effluents (GSR 801 (E)). The details of the effluents sampling locations are given below:-

Effluents sampling locations

Sl. No.	Sample code	Date of sampling	Name of the Location	Latitude	Longitude
1.	EW-4	28.06.2024	GDK 1 Mine Discharge Water	N 18° 45' 39.4"	E 79° 31' 13.4"
2.	EW-5	28.06.2024	GDK 2 Mine Discharge Water	N 18° 45' 25.5"	E 79° 31' 31.5"
3.	EW-8	28.06.2024	GDK 1 CHP Runoff Water / effluents	N 18° 45' 34.0"	E 79° 31' 6.8"

Physico-Chemical and Biological characteristics of Effluent samples collected at RG-I area

S.No	Test Parameter (s)	Unit	Test Method	Standards Part –A: Effluents (GSR 801) (E)			Result(28.06.2024)		
				Inland surface water	Public sewers	Land for irrigation	GDK 1 Mine Discharge	GDK 2 Mine Discharge	GDK 1 CHP Runoff Water / Effluents
				(a)	(b)	(c)	EW-3	EW-4	EW-8
1.	Colour	CU	2120. B	*	--	*	20	10	20
2.	Odour	TON	2150. B	*	--	*	No odour observed	No odour observed	No odour observed
3.	Total Suspended Solids	mg/L	2540. D	100	600	200	30	24	30
4.	Particle size of suspended solids	mg/L		Shall pass 850 Micron IS sieve	--	--	Pass	Pass	Pass
5.	pH	--	4500-H ⁺ B	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	7.4	7.7	7.8

6.	Temperature	°C	2550. B	Shall not exceed 5°C above the receiving water temperature	--	--	25.8	25.6	24.7
7.	Oil & Grease	mg/L	5520. B	10	20	10	<1	<1	<1
8.	Ammonical Nitrogen	mg/L	4500-NH ₃ -C	50	50	--	BDL	BDL	BDL
9.	Total Kjeldahl Nitrogen	mg/L	4500-N _{org} .C	100	--	--	BDL	BDL	BDL
10.	Nitrate Nitrogen	mg/L	PDA	10	--	--	3.8	5.3	2.3
11.	Total residual chlorine	mg/L	4500-Cl-B	1.0	--	--	BDL	BDL	BDL
12.	Free Ammonia	mg/L	4500-NH ₃ -D	5.0	--	--	BDL	BDL	BDL
13.	Biochemical Oxygen Demand (3 days at 27°C)	mg/L	IS:3025	30	350	100	2.8	2.4	3.2
14.	Chemical Oxygen Demand	mg/L	5220. D	250	--	--	24	28	24
15.	Fluoride as F ⁻	mg/L	4500-F.C	2.0	15	--	0.44	0.38	0.21
16.	Dissolved Phosphates	mg/L	4500-P.D	5.0	--	--	BDL	BDL	BDL
17.	Sulphide	mg/L	4500-S ²⁻ .G	2.0	--	--	BDL	BDL	BDL
18.	Phenolic Compounds as C ₆ H ₅ OH	mg/L	5530-D	1.0	5.0	--	BDL	BDL	BDL
19.	Arsenic as As	mg/L	3120.B	0.2	0.2	0.2	BDL	BDL	BDL
20.	Mercury as Hg	µg/L	3500-Hg.B	0.01	0.01	--	BDL	BDL	BDL
21.	Lead as Pb	mg/L	3120.B	0.1	1.0	--	BDL	BDL	BDL
22.	Cadmium as Cd	mg/L	3120.B	2.0	1.0	--	BDL	BDL	BDL
23.	Hexavalent Chromium as Cr ⁺⁶	mg/L	3500-Cr ⁺⁶ .B	0.1	2.0	--	BDL	BDL	BDL
24.	Total Chromium as Cr	mg/L	3120.B	2.0	2.0	--	BDL	0.07	BDL

25.	Copper as Cu	mg/L	3120.B	3.0	3.0	--	BDL	0.06	0.06
26.	Zinc as Zn	mg/L	3120.B	5.0	15	--	0.11	0.08	0.28
27.	Selenium as Se	mg/L	3120.B	0.05	0.05	--	BDL	BDL	BDL
28.	Nickel as Ni	mg/L	3120.B	3.0	3.0	--	BDL	BDL	BDL
29.	Manganese as Mn	mg/L	3120.B	2	2	--	0.09	BDL	BDL
30.	Iron as Fe	mg/L	3120.B	3	3	--	0.52	0.39	0.66
31.	Vanadium as V	mg/L	3120.B	0.2	0.2	--	0.08	0.09	BDL
32.	Bio-assay test	% Survival	8010 F, G &H	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent

Surface Water Sampling Locations

S.No	Sampling code	Date of sampling				Sampling Location	Latitude	Longitude
		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter			
1.	SW-3	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Godavari river U/S	N 18°49'13.4"	E 79°27'00.1"
2.	SW-4	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Godavari river D/S	N 18°47'01.5"	E 79°30'06.3"
3.	SW-5	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Janagam Village	N 18°46'18.2"	E 79°31'51.2"
4.	SW-6	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Sundilla Village	N 18°45'33.5"	E 79°32'26.3"
5.	SW-7	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Mustyala tank	N 18°44' 18.0"	E 79° 34' 20.1"

Physical-Chemical and Bacteriological Characteristics of Surface Water at Selected Locations in the Study Area

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT (19.03.2024)				
				Class A	Class B	Class C	Class D	Class E	SW-3	SW-4	SW-5	SW-6	SW-7
									Godavari River U/S	Godavari River D/S	Jangoan Tank	Sundilla Tank	Mustyala tank
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	7.9	8.2	7.6	7.3	7.9
2	Electric Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	740	900	940	1290	1095
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	-	5.1	5.3	5.5	5.8	5.6
4	Biochemical 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	-	-	3.4	3.8	3.4	3.2	3.5
5	Total Coliforms	MPN/100ml	9221 B	50 or less	500 or less	5000 or less	-	-	240	280	280	220	280
6	Free	mg/l	4500-	-	-	-	1.2 mg/l	-	BDL	BDL	BDL	BDL	BDL

	Ammonia (as N)		NH ₃ -F				or less						
7	Boron as B	mg/l	3120-B	-	-	-	-	Less than 2 mg/l	0.16	0.2	0.11	0.2	0.14
8	SAR	-	-	-	-	-	-	Less than 26	1.58	1.54	1.60	1.50	2.25

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

S. No	Parameters	Unit	Test Method	RESULT (19.03.2024)				
				SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
1	Colour	Hazen	2120. B	5	5	5	5	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	25.4	25.3	25.4	25.3	25.1
4	Turbidity	NTU	2130. B	2.9	3.7	7.3	4.2	3.3
5	Total Dissolved Solids at 180° C	mg/l	2540.C	450	530	550	777	642
6	Total Suspended Solids at 105° C	mg/l	2540. D	22	25	20	22	20
7	Chemical Oxygen Demand	mg/l	5220. D	20	28	16	20	28
8	Calcium as Ca	mg/l	3500-Ca.B	46	52	58	88	72
9	Magnesium as Mg	mg/l	3500-Mg.B	30	45	41	68	33
10	Sodium as Na	mg/l	3500-Na.B	56	63	65	77	92
11	Potassium as K	mg/l	3500-K.B	6.4	6.2	10	2.3	8.1
12	Chlorides as Cl ⁻	mg/l	4500-Cl ⁻ .B	77	83	107	105	107
13	Sulphates as SO ₄ ²⁻	mg/l	4500-SO ₄ ²⁻ .E	84	96	77	144	182
14	Fluoride as F ⁻	mg/l	4500-F ⁻ .C	1.2	0.8	1.1	1.3	1.4
15	Nitrates as NO ₃	mg/l	4500-NO ₃ ⁻ .B	2.1	6.5	28	41	5
16	Nitrites as NO ₂	mg/l	4500-NO ₂ ⁻ .B	BDL	BDL	BDL	0.01	BDL

S. No	Parameters	Unit	Test Method	RESULT (19.03.2024)				
				SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
17	Total Phosphates	mg/l	4500-P-D	0.19	0.33	0.83	0.27	0.07
18	Ammonical Nitrogen as NH ₃ -N	mg/l	4500-NH ₃ -C	BDL	BDL	BDL	BDL	BDL
19	Phenolic compounds as C ₆ H ₅ OH	mg/l	5530-D	BDL	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/l	5520. B	<1	<1	<1	<1	<1
21	Carbonates as CO ₃	mg/l	2320. B	Nil	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO ₃	mg/l	2320. B	225	280	250	400	220
23	Fecal Coliforms	MPN/100ml	9221 E	49	70	46	26	33
24	Zinc as Zn	mg/l	3120. B	0.63	0.49	0.45	0.68	0.74
25	Iron as Fe	mg/l	3120. B	0.21	0.09	0.16	0.24	0.2
26	Arsenic as As	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/l	3120-B	0.05	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT (27.06.2024)				
				Class A	Class B	Class C	Class D	Class E	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
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	8.2	8.4	8.4	8.5	8.5
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	1120	1245	1320	1455	1530
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	-	5.2	5.1	5.2	5.4	5.3
4	Biochemical 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	-	-	3.8	4.0	3.6	3.4	3.8
5	Total Coliforms	MPN/100ml	9221 B	50 or less	500 or less	5000 or less	-	-	350	540	350	350	350
6	Free Ammonia (as N)	mg/l	4500-NH ₃ -F	-	-	-	1.2 mg/l or less	-	BDL	BDL	BDL	BDL	BDL
7	Boron as B	mg/l	3120-B	-	-	-	-	Less than 2 mg/l	0.12	0.08	0.12	0.17	0.23
8	SAR	-	-	-	-	-	-	Less than 26	1.97	1.92	1.68	1.65	1.96

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

S. No	Parameters	Unit	Test Method	RESULT (27.06.2024)				
				SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
1	Colour	Hazen	2120. B	5	5	10	10	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	25.3	25.6	25	25.2	25
4	Turbidity	NTU	2130. B	2.2	3.8	4.5	4.6	2.6
5	Total Dissolved Solids at 180° C	mg/l	2540.C	659	742	778	870	900
6	Total Suspended Solids at 105° C	mg/l	2540. D	34	28	26	26	28
7	Chemical Oxygen Demand	mg/l	5220. D	30	30	24	30	32
8	Calcium as Ca	mg/l	3500-Ca.B	58	76	82	90	98
9	Magnesium as Mg	mg/l	3500-Mg.B	48	55	68	80	75
10	Sodium as Na	mg/l	3500-Na.B	84	90	85	90	106
11	Potassium as K	mg/l	3500-K.B	9.3	11.1	8.5	7.9	11.6
12	Chlorides as Cl ⁻	mg/l	4500-Cl ⁻ .B	104	124	122	134	215
13	Sulphates as SO ₄ ²⁻	mg/l	4500-SO ₄ ²⁻ .E	152	167	138	159	115
14	Fluoride as F ⁻	mg/l	4500-F ⁻ .C	0.97	1	1.25	1.64	2.5
15	Nitrates as NO ₃	mg/l	4500-NO ₃ ⁻ .B	4.4	7.5	32	30	12
16	Nitrites as NO ₂	mg/l	4500-NO ₂ ⁻ .B	BDL	BDL	BDL	BDL	BDL
17	Total Phosphates	mg/l	4500-P-D	BDL	BDL	BDL	BDL	BDL
18	Ammonical Nitrogen as NH ₃ -N	mg/l	4500-NH ₃ -C	BDL	BDL	BDL	BDL	BDL
19	Phenolic compounds as C ₆ H ₅ OH	mg/l	5530-D	BDL	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/l	5520. B	<1	<1	<1	<1	<1

21	Carbonates as CO ₃	mg/l	2320. B	Nil	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO ₃	mg/l	2320. B	315	335	385	450	425
23	Fecal Coliforms	MPN/100ml	9221 E	79	110	79	79	70
24	Zinc as Zn	mg/l	3120. B	0.09	0.16	0.15	0.08	0.12
25	Iron as Fe	mg/l	3120. B	0.49	0.42	0.39	0.44	0.53
26	Arsenic as As	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL

Physical-Chemical and Bacteriological Characteristics of Surface Water at Selected Locations in the Study Area

1) 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 (26.09.2024)				
				Class A	Class B	Class C	Class D	Class E	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyalla tank
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	8.5	7.5	8.4	8.1
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	405	775	850	552	830
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	-	5.8	6.2	5.8	6.0	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	-	-	3.2	2.4	3.0	2.4	3.6
5	Total Coliforms	MPN/100ml	9221 B	50 or less	500 or less	5000 or less	-	-	130	170	350	170	540
6	Free Ammonia (as N)	mg/l	4500-NH ₃ -F	-	-	-	1.2 mg/l or less	-	BDL	BDL	BDL	BDL	BDL
7	Boron as B	mg/l	3120-B	-	-	-	-	Less than 2 mg/l	0.16	0.12	0.09	0.13	0.08
8	SAR	-	-	-	-	-	-	Less than 26	0.94	0.80	0.88	0.58	0.47

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

S. No	Parameters	Unit	Test Method	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
1	Colour	Hazen	2120. B	5	5	10	10	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	26	25	26	26	26
4	Turbidity	NTU	2130. B	1.6	1.8	4.2	3.8	1.6
5	Total Dissolved Solids at 180° C	mg/l	2540.C	242	463	505	330	495
6	Total Suspended Solids at 105° C	mg/l	2540. D	20	22	24	12	20
7	Chemical Oxygen Demand	mg/l	5220. D	18	20	20	16	24

S. No	Parameters	Unit	Test Method	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
8	Calcium as Ca	mg/l	3500-Ca.B	38	80	76	42	88
9	Magnesium as Mg	mg/l	3500-Mg.B	12	26	40	30	39
10	Sodium as Na	mg/l	3500-Na.B	26	32	38	20	21
11	Potassium as K	mg/l	3500-K.B	2	3.8	2.03	4.3	3.02
12	Chlorides as Cl ⁻	mg/l	4500-Cl ⁻ .B	27	77	78	35	114
13	Sulphates as SO ₄ ²⁻	mg/l	4500-SO ₄ ²⁻ .E	38	120	89	52	89
14	Fluoride as F ⁻	mg/l	4500-F ⁻ .C	0.91	0.62	0.46	0.78	0.63
15	Nitrates as NO ₃	mg/l	4500-NO ₃ ⁻ .B	12.1	12.1	12	20	12
16	Nitrites as NO ₂	mg/l	4500-NO ₂ ⁻ .B	BDL	BDL	BDL	BDL	BDL
17	Total Phosphates	mg/l	4500-P-D	BDL	BDL	BDL	BDL	BDL
18	Ammonical Nitrogen as NH ₃ -N	mg/l	4500-NH ₃ -C	BDL	BDL	BDL	BDL	BDL
19	Phenolic compounds as C ₆ H ₅ OH	mg/l	5530-D	BDL	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/l	5520. B	<1	<1	<1	<1	<1
21	Carbonates as CO ₃	mg/l	2320. B	Nil	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO ₃	mg/l	2320. B	145	170	270	200	205
23	Fecal Coliforms	MPN/100ml	9221 E	11	14	46	11	70
24	Zinc as Zn	mg/l	3120. B	0.13	0.18	0.14	0.08	0.11

S. No	Parameters	Unit	Test Method	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
25	Iron as Fe	mg/l	3120. B	0.61	0.49	0.45	0.54	0.37
26	Arsenic as As	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL

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 (21.12.2024)				
				Class A	Class B	Class C	Class D	Class E	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
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	7.9	8.3	7.4	7.4
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	835	910	1035	1058	1170
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	6.0	6.2	5.8	5.7

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	-	-	2.7	3.0	2.9	2.7	2.8
5	Total Coliforms	MPN/100ml	9221 B	50 or less	500 or less	5000 or less	-	-	170	280	280	240	220
6	Free Ammonia (as N)	mg/l	4500-NH ₃ -F	-	-	-	1.2 mg/l or less	-	BDL	BDL	BDL	BDL	BDL
7	Boron as B	mg/l	3120-B	-	-	-	-	Less than 2 mg/l	0.08	0.12	0.09	0.14	0.19
8	SAR	-	-	-	-	-	-	Less than 26	0.8	1.17	1.20	1.02	1.25

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

S. No	Parameters	Unit	Test Method	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustyala tank
1	Colour	Hazen	2120. B	10	10	15	15	20
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	°C	2550. B	24.8	24.8	24.8	24.8	24.8
4	Turbidity	NTU	2130. B	1.19	1.34	1.41	1.3	1.26
5	Total Dissolved Solids at 180° C	mg/l	2540.C	500	546	620	633	700
6	Total Suspended Solids at 105° C	mg/l	2540. D	21	16	12	18	16
7	Chemical Oxygen Demand	mg/l	5220. D	28	24	36	32	40
8	Calcium as Ca	mg/l	3500-Ca.B	80	66	86	82	100
9	Magnesium as Mg	mg/l	3500-Mg.B	39	44	45	53	57

S. No	Parameters	Unit	Test Method	SW-3 Godavari River U/S	SW-4 Godavari River D/S	SW-5 Jangoan Tank	SW-6 Sundilla Tank	SW-7 Mustya la tank
10	Sodium as Na	mg/l	3500-Na.B	35	50	55	48	63
11	Potassium as K	mg/l	3500-K.B	0.2	10.1	3.9	10.1	2.3
12	Chlorides as Cl ⁻	mg/l	4500-Cl.B	93	73	105	97	150
13	Sulphates as SO ₄ ²⁻	mg/l	4500-SO ₄ ²⁻ .E	82	103	135	67	94
14	Fluoride as F ⁻	mg/l	4500-F.C	0.87	0.35	0.62	0.89	0.76
15	Nitrates as NO ₃	mg/l	4500-NO ₃ .B	2	4	23	56	12
16	Nitrites as NO ₂	mg/l	4500-NO ₂ .B	BDL	BDL	BDL	BDL	BDL
17	Total Phosphates	mg/l	4500-P-D	BDL	BDL	BDL	BDL	BDL
18	Ammonical Nitrogen as NH ₃ -N	mg/l	4500-NH ₃ -C	BDL	BDL	BDL	BDL	BDL
19	Phenolic compounds as C ₆ H ₅ OH	mg/l	5530-D	BDL	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/l	5520. B	<1	<1	<1	<1	<1
21	Carbonates as CO ₃	mg/l	2320. B	Nil	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO ₃	mg/l	2320. B	265	310	264	350	360
23	Fecal Coliforms	MPN/100ml	9221 E	11	33	27	22	11
24	Zinc as Zn	mg/l	3120. B	0.09	0.18	0.21	0.15	0.12
25	Iron as Fe	mg/l	3120. B	0.69	0.48	0.66	0.42	0.57
26	Arsenic as As	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/l	3120. B	BDL	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/l	3120-B	BDL	BDL	BDL	BDL	BDL

Groundwater Sampling Locations

Sl. No.	Sample code	Date of sampling				Sampling Location	Latitude	Longitude
		1st Quarter	2 nd Quarter	3rd Quarter	4 th Quarter			
1	GW-3	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Peddampet village	N18°46'21.5"	E79°31'36.2"
2.	GW-4	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Sundilla village	N18°45'32.5"	E79°32'32.8"
3	GW-5	19.03.2024	27.06.2024	26.09.2024	21.12.2024	Janagam village	N18°26'13.0"	E79°51'50.0"

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

S.No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (19.03.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Colour	Hazen	2120. B	5	15	5	5	5
2	Odour	TON	2150. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH	-	4500-H ⁺ B	6.5 to 8.5	No relaxation	7.4	7.6	7.4
4	Taste	FTN	2160. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	2130. B	1	5	0.3	0.1	0.4
6	Total Dissolved Solids at 180° C	mg/l	2540.C	500	2000	1290	580	788

General Parameters Concerning Substances Undesirable in Excessive Amounts

S.No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (19.03.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1.	Calcium as Ca	mg/l	3500-Ca.B	75	200	112	78	88
2.	Magnesium as Mg	mg/l	3500-Mg.B	30	100	93	56	79
3.	Chlorides as Cl-	mg/l	4500-Cl-.B	250	1000	272	55	81
4.	Sulphates as SO42-	mg/l	4500-SO42- .E	200	400	302	45	179
5.	Fluoride as F-	mg/l	4500-F-.C	1.0	1.5	0.7	1.5	1.16
6.	Nitrates as NO3	mg/l	4500-NO3-.B	45	No relaxation	18	22	37
7.	Total Alkalinity as CaCO3	mg/l	2320. B	200	600	465	450	410
8.	Total Hardness as CaCO3	mg/l	2340. C	200	600	663	425	545
9.	Sulphide as H ₂ S	mg/l	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL
10.	Total Ammonia-N	mg/l	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/l	5530-D	0.001	0.002	BDL	BDL	BDL
12.	Residual free chlorine	mg/l	4500-Cl-.B	0.2	1.0	BDL	BDL	BDL
13.	Mineral oil	mg/l	IS:3025 (part 39)	1.0	No relaxation	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/l	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2
15.	Aluminium as Al	mg/l	3120-B	0.03	0.2	0.08	0.1	BDL
16.	Barium as Ba	mg/l	3120. B	0.7	No relaxation	0.32	0.19	0.18
17.	Boron as B	mg/l	3120-B	0.5	2.4	0.09	0.14	0.08
18.	Iron as Fe	mg/l	3120-B	1.0	No relaxation	0.73	0.68	0.59
19.	Zinc as Zn	mg/l	3120-B	5	15	0.19	0.25	0.16
20.	Copper as Cu	mg/l	3120-B	0.05	1.5	0.06	0.08	BDL
21.	Manganese as Mn	mg/l	3120-B	0.1	0.3	0.08	BDL	0.07
22.	Selenium as Se	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
23.	Silver as Ag	mg/l	3120. B	0.1	No relaxation	BDL	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 (19.03.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Cadmium as Cd	mg/l	3120-B	0.003	No relaxation	BDL	BDL	BDL
2	Cyanide as CN-	mg/l	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL
3	Lead as Pb	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
4	Molybdenum as Mo	mg/l	3120. B	0.07	No relaxation	BDL	BDL	BDL
5	Nickel as Ni	mg/l	3120-B	0.02	No relaxation	BDL	BDL	BDL
6	Total Arsenic as As	mg/l	3120-B	0.01	0.05	BDL	BDL	BDL
7	Total Chromium as Cr	mg/l	3120-B	0.05	No relaxation	BDL	BDL	BDL
8	Mercury as Hg	µg/l	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL
9	Pesticides: 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	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): 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	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 (19.03.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Total Coliforms	MPN/100 ml	9221 B	-	-	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 ml	9221 E	-	-	<1.8	<1.8	<1.8

NTU – Nephelometric Turbidity Unit; BDL – Below Detection Limit

Detection Limits of Aluminium (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Chromium (Cr)/Total Chromium, Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Nickel (Ni), Selenium (Se), Silver (Ag), Vanadium (V), Zinc (Zn), Phenols is 0.01mg/l. Detection Limit of Mercury (Hg), Phosphates/Total Phosphates, Nitrites NO₂, Free Ammonia, Total Ammonia is 0.02mg/l. Detection Limits of Potassium (K), Sodium (Na) is 0.03mg/l. Detection Limits of Cyanide (CN), Sulfide (S₂), Hexavalent Chromium Cr+6 is 0.05mg/l. Detection Limits of Nitrates as NO₃, Fluoride is 0.1mg/l. Detection Limits of Residual Free chlorine, Free Available chlorine, O&G is 1mg/l. Detection Limits of Sulfate SO₄⁻², Ammonical Nitrogen, Total Kjeldahl Nitrogen (TKN), COD, Total Nitrogen (TN) is 5mg/l. BOD-3mg/l. ND-Not Detected; Detection Limit: Pesticides– 0.1 ppm; PAHs – 1 ppm.

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

S.No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (27.06.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Colour	Hazen	2120. B	5	15	5	5	5
2	Odour	TON	2150. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH	-	4500-H ⁺ B	6.5 to 8.5	No relaxation	7.6	7.6	7.7
4	Taste	FTN	2160. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	2130. B	1	5	0.6	0.62	1.2
6	Total Dissolved Solids at 180° C	mg/l	2540.C	500	2000	1050	642	900

General Parameters Concerning Substances Undesirable in Excessive Amounts

S.No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (27.06.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1.	Calcium as Ca	mg/l	3500-Ca.B	75	200	108	88	100
2.	Magnesium as Mg	mg/l	3500-Mg.B	30	100	96	61	75
3.	Chlorides as Cl-	mg/l	4500-Cl-.B	250	1000	239	57	184
4.	Sulphates as SO ₄ ²⁻	mg/l	4500-SO ₄ ²⁻ .E	200	400	178	48	177
5.	Fluoride as F-	mg/l	4500-F-.C	1.0	1.5	0.6	1.22	1.35
6.	Nitrates as NO ₃	mg/l	4500-NO ₃ -.B	45	No relaxation	26	30	25
7.	Total Alkalinity as CaCO ₃	mg/l	2320. B	200	600	455	505	385
8.	Total Hardness as CaCO ₃	mg/l	2340. C	200	600	582	470	560

9.	Sulphide as H ₂ S	mg/l	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL
10.	Total Ammonia-N	mg/l	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL
11.	Phenolic compounds as C ₆ H ₅ OH	mg/l	5530-D	0.001	0.002	BDL	BDL	BDL
12.	Residual free chlorine	mg/l	4500-Cl-B	0.2	1.0	BDL	BDL	BDL
13.	Mineral oil	mg/l	IS:3025 (part 39)	1.0	No relaxation	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/l	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2
15.	Aluminium as Al	mg/l	3120-B	0.03	0.2	0.07	0.1	0.07
16.	Barium as Ba	mg/l	3120. B	0.7	No relaxation	0.26	0.17	0.23
17.	Boron as B	mg/l	3120-B	0.5	2.4	0.12	0.2	0.18
18.	Iron as Fe	mg/l	3120-B	1.0	No relaxation	0.64	0.54	0.66
19.	Zinc as Zn	mg/l	3120-B	5	15	0.09	0.18	0.09
20.	Copper as Cu	mg/l	3120-B	0.05	1.5	BDL	BDL	BDL
21.	Manganese as Mn	mg/l	3120-B	0.1	0.3	0.06	0.09	BDL
22.	Selenium as Se	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
23.	Silver as Ag	mg/l	3120. B	0.1	No relaxation	BDL	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 (27.06.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Cadmium as Cd	mg/l	3120-B	0.003	No relaxation	BDL	BDL	BDL
2	Cyanide as CN-	mg/l	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL
3	Lead as Pb	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
4	Molybdenum as Mo	mg/l	3120. B	0.07	No relaxation	BDL	BDL	BDL
5	Nickel as Ni	mg/l	3120-B	0.02	No relaxation	BDL	BDL	BDL
6	Total Arsenic as As	mg/l	3120-B	0.01	0.05	BDL	BDL	BDL
7	Total Chromium as Cr	mg/l	3120-B	0.05	No relaxation	BDL	BDL	BDL
8	Mercury as Hg	µg/l	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL
9	Pesticides: 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	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): 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	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 (27.06.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Total Coliforms	MPN/100 ml	9221 B	-	-	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 ml	9221 E	-	-	<1.8	<1.8	<1.8

NTU – Nephelometric Turbidity Unit; BDL – Below Detection Limit

Detection Limits of Aluminium (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Chromium (Cr)/Total Chromium, Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Nickel (Ni), Selenium (Se), Silver (Ag), Vanadium (V), Zinc (Zn), Phenols is 0.01mg/l. Detection Limit of Mercury (Hg), Phosphates/Total Phosphates, Nitrites NO₂, Free Ammonia, Total Ammonia is 0.02mg/l. Detection Limits of Potassium (K), Sodium (Na) is 0.03mg/l. Detection Limits of Cyanide (CN), Sulfide (S₂), Hexavalent Chromium Cr+6 is 0.05mg/l. Detection Limits of Nitrates as NO₃, Fluoride is 0.1mg/l. Detection Limits of Residual Free chlorine, Free Available chlorine, O&G is 1mg/l. Detection Limits of Sulfate SO₄⁻², Ammonical Nitrogen, Total Kjeldhl Nitrogen (TKN), COD, Total Nitrogen (TN) is 5mg/l. BOD-3mg/l. ND-Not Detected; Detection Limit: Pesticides– 0.1 ppm; PAHs – 1 ppm.

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

S.No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (26.09.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Colour	Hazen	2120. B	5	15	<5	<5	<5
2	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.
3	pH	-	4500-H ⁺ B	6.5 to 8.5	No relaxation	7.3	7.4	7.4
4	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.
5	Turbidity	NTU	2130. B	1	5	0.4	0.1	0.2
6	Total Dissolved Solids at 180° C	mg/l	2540.C	500	2000	1210	708	862

General Parameters Concerning Substances Undesirable in Excessive Amounts

S.No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (26.09.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1.	Calcium as Ca	mg/l	3500-Ca.B	75	200	90	66	120
2.	Magnesium as Mg	mg/l	3500-Mg.B	30	100	73	54	61
3.	Chlorides as Cl-	mg/l	4500-Cl-.B	250	1000	297	97	172
4.	Sulphates as SO42-	mg/l	4500-SO42- .E	200	400	181	120	128
5.	Fluoride as F-	mg/l	4500-F-.C	1.0	1.5	0.54	0.32	0.62
6.	Nitrates as NO3	mg/l	4500-NO3-.B	45	No relaxation	30	17	27
7.	Total Alkalinity as CaCO3	mg/l	2320. B	200	600	490	400	420
8.	Total Hardness as CaCO3	mg/l	2340. C	200	600	525	387	551
9.	Sulphide as H2S	mg/l	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL
10.	Total Ammonia-N	mg/l	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/l	5530-D	0.001	0.002	BDL	BDL	BDL
12.	Residual free chlorine	mg/l	4500-Cl-.B	0.2	1.0	BDL	BDL	BDL
13.	Mineral oil	mg/l	IS:3025 (part 39)	1.0	No relaxation	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/l	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2
15.	Aluminium as Al	mg/l	3120-B	0.03	0.2	0.07	BDL	0.06
16.	Barium as Ba	mg/l	3120. B	0.7	No relaxation	0.08	0.15	0.19
17.	Boron as B	mg/l	3120-B	0.5	2.4	0.16	0.11	0.12
18.	Iron as Fe	mg/l	3120-B	1.0	No relaxation	0.75	0.83	0.58
19.	Zinc as Zn	mg/l	3120-B	5	15	0.2	0.16	0.09
20.	Copper as Cu	mg/l	3120-B	0.05	1.5	BDL	BDL	BDL
21.	Manganese as Mn	mg/l	3120-B	0.1	0.3	BDL	BDL	BDL
22.	Selenium as Se	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
23.	Silver as Ag	mg/l	3120. B	0.1	No relaxation	BDL	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 (26.09.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Cadmium as Cd	mg/l	3120-B	0.003	No relaxation	BDL	BDL	BDL
2	Cyanide as CN-	mg/l	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL
3	Lead as Pb	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
4	Molybdenum as Mo	mg/l	3120. B	0.07	No relaxation	BDL	BDL	BDL
5	Nickel as Ni	mg/l	3120-B	0.02	No relaxation	BDL	BDL	BDL
6	Total Arsenic as As	mg/l	3120-B	0.01	0.05	BDL	BDL	BDL
7	Total Chromium as Cr	mg/l	3120-B	0.05	No relaxation	BDL	BDL	BDL
8	Mercury as Hg	µg/l	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL
9	Pesticides: 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	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): 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	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 (26.09.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Total Coliforms	MPN/100 ml	9221 B	-	-	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 ml	9221 E	-	-	<1.8	<1.8	<1.8

NTU – Nephelometric Turbidity Unit; BDL – Below Detection Limit

Detection Limits of Aluminium (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Chromium (Cr)/Total Chromium, Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Nickel (Ni), Selenium (Se), Silver (Ag), Vanadium (V), Zinc (Zn), Phenols is 0.01mg/l. Detection Limit of Mercury (Hg), Phosphates/Total Phosphates, Nitrites NO₂, Free Ammonia, Total Ammonia is 0.02mg/l. Detection Limits of Potassium (K), Sodium (Na) is 0.03mg/l. Detection Limits of Cyanide (CN), Sulfide (S₂), Hexavalent Chromium Cr+6 is 0.05mg/l. Detection Limits of Nitrates as NO₃, Fluoride is 0.1mg/l. Detection Limits of Residual Free chlorine, Free Available chlorine, O&G is 1mg/l. Detection Limits of Sulfate SO₄²⁻, Ammonical Nitrogen, Total Kjeldahl Nitrogen (TKN), COD, Total Nitrogen (TN) is 5mg/l. BOD-3mg/l. ND-Not Detected; Detection Limit: Pesticides– 0.1 ppm; PAHs – 1 ppm.

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

S.No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (21.12.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Colour	Hazen	2120. B	5	15	5	5	5
2	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.
3	pH	-	4500-H ⁺ B	6.5 to 8.5	No relaxation	7.2	7.3	7.3
4	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.
5	Turbidity	NTU	2130. B	1	5	0.33	0.25	0.28
6	Total Dissolved Solids at 180° C	mg/l	2540.C	500	2000	1152	433	730

General Parameters Concerning Substances Undesirable in Excessive Amounts

S.No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT (21.12.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1.	Calcium as Ca	mg/l	3500-Ca.B	75	200	112	48	98
2.	Magnesium as Mg	mg/l	3500-Mg.B	30	100	54	36	52
3.	Chlorides as Cl-	mg/l	4500-Cl-.B	250	1000	280	57	110
4.	Sulphates as SO42-	mg/l	4500-SO42-.E	200	400	232	49	123
5.	Fluoride as F-	mg/l	4500-F-.C	1.0	1.5	0.46	0.22	0.33
6.	Nitrates as NO3	mg/l	4500-NO3-.B	45	No relaxation	18	24	33
7.	Total Alkalinity as CaCO3	mg/l	2320. B	200	600	350	270	380
8.	Total Hardness as CaCO3	mg/l	2340. C	200	600	502	268	458
9.	Sulphide as H ₂ S	mg/l	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL
10.	Total Ammonia-N	mg/l	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/l	5530-D	0.001	0.002	BDL	BDL	BDL
12.	Residual free chlorine	mg/l	4500-Cl-.B	0.2	1.0	BDL	BDL	BDL
13.	Mineral oil	mg/l	IS:3025 (part 39)	1.0	No relaxation	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/l	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2

15.	Aluminium as Al	mg/l	3120-B	0.03	0.2	0.07	BDL	BDL
16.	Barium as Ba	mg/l	3120. B	0.7	No relaxation	0.2	0.09	0.15
17.	Boron as B	mg/l	3120-B	0.5	2.4	0.18	0.15	0.09
18.	Iron as Fe	mg/l	3120-B	1.0	No relaxation	0.62	0.47	0.63
19.	Zinc as Zn	mg/l	3120-B	5	15	0.1	0.13	0.08
20.	Copper as Cu	mg/l	3120-B	0.05	1.5	BDL	BDL	BDL
21.	Manganese as Mn	mg/l	3120-B	0.1	0.3	BDL	BDL	BDL
22	Selenium as Se	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
23	Silver as Ag	mg/l	3120. B	0.1	No relaxation	BDL	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 (21.12.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Cadmium as Cd	mg/l	3120-B	0.003	No relaxation	BDL	BDL	BDL
2	Cyanide as CN-	mg/l	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL
3	Lead as Pb	mg/l	3120-B	0.01	No relaxation	BDL	BDL	BDL
4	Molybdenum as Mo	mg/l	3120. B	0.07	No relaxation	BDL	BDL	BDL
5	Nickel as Ni	mg/l	3120-B	0.02	No relaxation	BDL	BDL	BDL
6	Total Arsenic as As	mg/l	3120-B	0.01	0.05	BDL	BDL	BDL
7	Total Chromium as Cr	mg/l	3120-B	0.05	No relaxation	BDL	BDL	BDL
8	Mercury as Hg	µg/l	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL
9	Pesticides: 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	ND

	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): 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	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 (21.12.2024)		
						GW-3 Peddampet Village	GW-4 Sundilla Village	GW-5 Jangoan Village
1	Total Coliforms	MPN/100 ml	9221 B	-	-	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 ml	9221 E	-	-	<1.8	<1.8	<1.8

NTU – Nephelometric Turbidity Unit; BDL – Below Detection Limit

Detection Limits of Aluminium (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Chromium (Cr)/Total Chromium, Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Nickel (Ni), Selenium (Se), Silver (Ag), Vanadium (V), Zinc (Zn), Phenols is 0.01mg/l. Detection Limit of Mercury (Hg), Phosphates/Total Phosphates, Nitrites NO₂, Free Ammonia, Total Ammonia is 0.02mg/l. Detection Limits of Potassium (K), Sodium (Na) is 0.03mg/l. Detection Limits of Cyanide (CN), Sulfide (S₂), Hexavalent Chromium Cr+6 is 0.05mg/l. Detection Limits of Nitrates as NO₃, Fluoride is 0.1mg/l. Detection Limits of Residual Free chlorine, Free Available chlorine, O&G is 1mg/l. Detection Limits of Sulfate SO₄²⁻, Ammonical Nitrogen, Total Kjeldahl Nitrogen (TKN), COD, Total Nitrogen (TN) is 5mg/l. BOD-3mg/l. ND-Not Detected; Detection Limit: Pesticides– 0.1 ppm; PAHs – 1 ppm.

HEAVY METALS IN PARTICULATE MATTER (PM)

Particulate Matter (PM) sampling locations are presented in below table
Particulate Matter (PM) Sampling locations

S.No.	Sample code	Sampling Location
1.	S-1	GDK Coal Mine (OC-V)
2.	S-2	GDK- 1 Mine
3.	S-3	GDK 2&2A Mine

Summary of Heavy metals in Particulate Matter (PM)

The Particulate matter (PM) samples collected from the above sites were analyzed for Metals viz Chromium (as Cr), Cadmium (as Cd), Lead (as Pb), Zinc (as Zn), Iron (as Fe), Cobalt (as Co), Manganese (as Mn), Copper (as Cu), Molybdenum (as Mo), Nickel (as Ni), Vanadium (as V), Silver (as Ag), Aluminum (as Al), Arsenic (as As) and Selenium (as Se).

Heavy Metals in Particulate Matter (PM)

S No.	Parameters	Unit	Test method	Result		
				S-1	S-2	S-3
1	Chromium as Cr	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.035	0.028	0.022
2	Cadmium as Cd	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL
3	Lead as Pb	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.011	0.008	0.010
4	Zinc as Zn	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.210	0.126	0.174
5	Iron as Fe	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.715	0.603	0.692
6	Cobalt as Co	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL
7	Manganese as Mn	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.099	0.118	0.232
8	Copper as Cu	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.009	0.010	0.015
9	Molybdenum as Mo	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL
10	Nickel as Ni	ng/m^3	IO - 3 EPA	BDL	BDL	BDL
11	Vanadium as V	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.011	0.025	0.015
12	Silver as Ag	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL
13	Aluminium as Al	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	0.184	0.201	0.114
14	Arsenic as As	ng/m^3	IO - 3 EPA	BDL	BDL	BDL
15	Selenium as Se	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL
16	Mercury	$\mu\text{g}/\text{m}^3$	IO - 3 EPA	BDL	BDL	BDL

HEAVY METALS IN COAL

Coal Sampling Locations

S.No.	Sample code	Sampling Location
1.	C-1	GDK 1 Incline
2.	C-2	GDK 2 Incline
3.	C-3	GDK Coal Mine Project Office
4.	C-4	GDK CSP

Summary of Heavy Metals in Coal

S No.	Parameters	Unit	Test method	Result			
				C-1	C-2	C-3	C-4
1	Chromium as Cr	mg/Kg	SW846-6010B	24	18	32	25
2	Cadmium as Cd	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL
3	Lead as Pb	mg/Kg	SW846-6010B	8	16	12	10
4	Zinc as Zn	mg/Kg	SW846-6010B	56	85	110	92
5	Iron as Fe	mg/Kg	SW846-6010B	4326	5106	3942	4628
6	Cobalt as Co	mg/Kg	SW846-6010B	12	8	6	10
7	Manganese as Mn	mg/Kg	SW846-6010B	120	154	85	92
8	Copper as Cu	mg/Kg	SW846-6010B	6	10	8	9
9	Molybdenum as Mo	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL
10	Nickel as Ni	mg/Kg	SW846-6010B	22	25	18	16
11	Vanadium as V	mg/Kg	SW846-6010B	16	20	23	22
12	Silver as Ag	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL
13	Aluminium as Al	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL
14	Arsenic as As	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL
15	Selenium as Se	mg/Kg	SW846-6010B	BDL	BDL	BDL	BDL

Annexure-V

List of Plantations in RG1 area from 2020 to 2024								
Sl.No.	Year of raising	Location	Species	Area planted in Ha/Kms	No. of saplings planted	Survivals in Nos.	Legal status RF/SCCL	Mandate/ Non Mandate
1	2020	MOCP OB dumps	Misc.	45.00	111650	101650	SCCL	Mandate
2	2021	MOCP OB dumps	Misc.	46.00	114626	103163	SCCL	Mandate
3	2021	MOCP Block	Misc.	8.00	7700	7694	SCCL	Mandate
4	2022	MOCP OB dumps	Misc.	87.00	219098	175279	SCCL	Mandate
5	2022	MOCP Block	Misc.	9.00	8770	8754	SCCL	Mandate
6	2022	Ganga nagar to Mustyala	Misc.	4.20	1842	1842	SCCL	Mandate
7	2022	2 Incline under bridge to 5 Incline filter bed	Misc.	2.80	6796	6560	SCCL	Mandate
8	2023	GDKCM OB Dump	Misc.	15.00	37500	17500	SCCL	Mandate
9	2023	GDKCM OB Dump	Misc.	10.00	25400	10000	SCCL	Mandate
10	2023	MOCP Vacant patches	Misc.	13.00	9800	8000	SCCL	Mandate
11	2023	Near Chandanapur GDK-11 Inc.	EC	26.00	35820	21333	SCCL	Mandate
12	2023	Near Musthyala GDK-11 Inc.	EC	26.00	41680	32864	SCCL	Mandate
13	2023	Ganga nagar to Central nusery	Misc.	1.50	600	600	SCCL	Mandate
14	2023	Musthyala to GDK-11 Inc and Gunjapadugu Road	Misc.	3.40	1375	1300	SCCL	Mandate
15	2023	All along Railway line 2A inc under bridge to 5inc junction	Misc.	1.50	6340	6000	SCCL	Mandate
16	2023	All along diverted nallah from pumping station to 2 inc magazine road	Misc.	1.60	1280	1261	SCCL	Mandate

17	2023	Internal roads in Sundilla village	Misc.	2.00	801	801	SCCL	Mandate
18	2024	GDKCM OB Dump	Misc.	23.00	57850	52065	SCCL	Mandate
19	2024	MOCP Vacant patches	Misc.	37.00	43240	35923	SCCL	Mandate
20	2024	Chandanapur village GDK 11 Incline	EC	4.00	3980	3980	SCCL	Mandate